Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-13-GW-10042016 — Lab Sample ID: 500-118151-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	400		5.0	1.5	ug/L	10		8260B	Total/NA
cis-1,2-Dichloroethene	19		10	4.1	ug/L	10		8260B	Total/NA
1,2-Dichlorobenzene	12		10	3.3	ug/L	10		8260B	Total/NA
Ethylbenzene	1000		5.0	1.8	ug/L	10		8260B	Total/NA
Isopropylbenzene	110		10	3.9	ug/L	10		8260B	Total/NA
Toluene	1700		5.0	1.5	ug/L	10		8260B	Total/NA
Xylenes, Total - DL	7000		100	22	ug/L	100		8260B	Total/NA
Acenaphthylene	2.2	J	3.7	0.98	ug/L	5		8270D	Total/NA
Acetophenone	26		18	2.4	ug/L	5		8270D	Total/NA
Diethyl phthalate	12		7.3	1.3	ug/L	5		8270D	Total/NA
2,4-Dimethylphenol	22	J	37	6.6	ug/L	5		8270D	Total/NA
Di-n-butyl phthalate	3.8	J	18	2.7	ug/L	5		8270D	Total/NA
Fluorene	1.0	J	3.7	0.89	ug/L	5		8270D	Total/NA
2-Methylnaphthalene	10		7.3	0.24	ug/L	5		8270D	Total/NA
2-Methylphenol	5.4	J	7.3	1.1	ug/L	5		8270D	Total/NA
3 & 4 Methylphenol	29		7.3	1.6	ug/L	5		8270D	Total/NA
Naphthalene	140		3.7	1.1	ug/L	5		8270D	Total/NA
N-Nitrosodiphenylamine	11		3.7	1.4	ug/L	5		8270D	Total/NA
Phenol	17	J	18	2.5	ug/L	5		8270D	Total/NA
1,1'-Biphenyl	1.8	J	18	1.3	ug/L	5		8270D	Total/NA
Aluminum	0.11	J	0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.0034	J	0.010	0.0034	mg/L	1		6010C	Total/NA
Barium	0.26		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	84		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0059	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0021	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.0029	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	8.9	^ B	0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.0036	J	0.0050	0.0025	mg/L	1		6010C	Total/NA
Magnesium	52		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.38		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.0079	J	0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	74		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	220		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0031	J	0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.011	J	0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.23		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	96		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0038	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.0015	J	0.0050	0.00096	mg/L	1		6010C	Dissolved
Iron	6.4	^ B	0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	46		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.34		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0072	J	0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	67		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	230		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0036	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Sulfate	21	B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	53	B	2.0	0.53	mg/L	2		9060A	Total/NA
Total Suspended Solids	24		5.0	2.5	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-13-GW-10042016 (Continued) — Lab Sample ID: 500-118151-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ammonia	79	B	5.0	2.5	mg/L	25		SM 4500 NH3 G	Total/NA

Client Sample ID: DUP-1 (10042016) — Lab Sample ID: 500-118151-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	370		5.0	1.5	ug/L	10		8260B	Total/NA
cis-1,2-Dichloroethene	16		10	4.1	ug/L	10		8260B	Total/NA
1,2-Dichlorobenzene	12		10	3.3	ug/L	10		8260B	Total/NA
1,1-Dichloroethane	7.6	J	10	4.1	ug/L	10		8260B	Total/NA
Ethylbenzene	970		5.0	1.8	ug/L	10		8260B	Total/NA
Isopropylbenzene	110		10	3.9	ug/L	10		8260B	Total/NA
Toluene	1500		5.0	1.5	ug/L	10		8260B	Total/NA
Xylenes, Total - DL	7100		100	22	ug/L	100		8260B	Total/NA
Acenaphthylene	1.7	J	3.6	0.98	ug/L	5		8270D	Total/NA
Acetophenone	20		18	2.4	ug/L	5		8270D	Total/NA
Benzo[a]anthracene	0.43	J	0.73	0.21	ug/L	5		8270D	Total/NA
Chrysene	0.35	J	1.8	0.25	ug/L	5		8270D	Total/NA
Diethyl phthalate	8.9		7.3	1.3	ug/L	5		8270D	Total/NA
2,4-Dimethylphenol	16	J	36	6.6	ug/L	5		8270D	Total/NA
Di-n-butyl phthalate	3.4	J	18	2.7	ug/L	5		8270D	Total/NA
2-Methylnaphthalene	8.1		7.3	0.24	ug/L	5		8270D	Total/NA
2-Methylphenol	4.8	J	7.3	1.1	ug/L	5		8270D	Total/NA
3 & 4 Methylphenol	22		7.3	1.6	ug/L	5		8270D	Total/NA
Naphthalene	110		3.6	1.1	ug/L	5		8270D	Total/NA
N-Nitrosodiphenylamine	7.7		3.6	1.3	ug/L	5		8270D	Total/NA
Phenol	12	J	18	2.4	ug/L	5		8270D	Total/NA
Aluminum	0.11	J	0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.0047	J	0.010	0.0034	mg/L	1		6010C	Total/NA
Barium	0.28		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	85		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0052	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0023	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.0040	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	9.6	^ B	0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.0077		0.0050	0.0025	mg/L	1		6010C	Total/NA
Magnesium	55		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.40		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.0069	J	0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	77		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	230		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0035	J	0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.013	J	0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	0.15	J	0.20	0.062	mg/L	1		6010C	Dissolved
Arsenic	0.0047	J	0.010	0.0034	mg/L	1		6010C	Dissolved
Barium	0.25		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	89		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0046	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.0017	J	0.0050	0.00096	mg/L	1		6010C	Dissolved
Iron	7.6	^ B	0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	50		0.10	0.041	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-1 (10042016) (Continued) — Lab Sample ID: 500-118151-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.36		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0063	J	0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	71		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0065	J	0.010	0.0051	mg/L	1		6010C	Dissolved
Sodium	230		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0036	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Sulfide	0.57	J	1.0	0.18	mg/L	1		9034	Total/NA
Sulfate	19	B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	54	B	2.0	0.53	mg/L	2		9060A	Total/NA
Total Suspended Solids	25		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	80	B	5.0	2.5	mg/L	25		SM 4500 NH3 G	Total/NA

Client Sample ID: MW-08-GW-10052016 — Lab Sample ID: 500-118151-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Isopropylbenzene	0.40	J	1.0	0.39	ug/L	1		8260B	Total/NA
Xylenes, Total	0.82	J	1.0	0.22	ug/L	1		8260B	Total/NA
2-Methylnaphthalene	0.10	J	1.5	0.048	ug/L	1		8270D	Total/NA
3 & 4 Methylphenol	0.39	J	1.5	0.33	ug/L	1		8270D	Total/NA
Aluminum	0.062	J	0.20	0.062	mg/L	1		6010C	Total/NA
Barium	0.56		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	97		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0028	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Iron	8.4	^ B	0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.0025	J	0.0050	0.0025	mg/L	1		6010C	Total/NA
Magnesium	72		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.14		0.010	0.0034	mg/L	1		6010C	Total/NA
Potassium	37		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	210		1.0	0.43	mg/L	1		6010C	Total/NA
Barium	0.52		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	92		0.20	0.059	mg/L	1		6010C	Dissolved
Iron	7.8	^ B	0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	68		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.13		0.010	0.0034	mg/L	1		6010C	Dissolved
Potassium	35		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	200		1.0	0.43	mg/L	1		6010C	Dissolved
Sulfate	3.0	J B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	17	B	1.0	0.27	mg/L	1		9060A	Total/NA
Total Suspended Solids	19		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	39	B	5.0	2.5	mg/L	25		SM 4500 NH3 G	Total/NA

Client Sample ID: MW-09-GW-10052016 — Lab Sample ID: 500-118151-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.3		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	13		1.0	0.39	ug/L	1		8260B	Total/NA
Cyclohexane	1.1		1.0	0.49	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	1.2		1.0	0.36	ug/L	1		8260B	Total/NA
Isopropylbenzene	2.5		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	0.99	J	1.0	0.32	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-09-GW-10052016 (Continued) — Lab Sample ID: 500-118151-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Xylenes, Total	0.46	J	1.0	0.22	ug/L	1		8260B	Total/NA
Acenaphthene	0.88		0.74	0.23	ug/L	1		8270D	Total/NA
Dibenzofuran	0.21	J	1.5	0.19	ug/L	1		8270D	Total/NA
Fluorene	0.39	J	0.74	0.18	ug/L	1		8270D	Total/NA
2-Methylnaphthalene	2.3		1.5	0.048	ug/L	1		8270D	Total/NA
3 & 4 Methylphenol	1.5		1.5	0.33	ug/L	1		8270D	Total/NA
Naphthalene	0.30	J	0.74	0.23	ug/L	1		8270D	Total/NA
N-Nitrosodiphenylamine	0.57	J	0.74	0.27	ug/L	1		8270D	Total/NA
Phenanthrene	0.37	J	0.74	0.22	ug/L	1		8270D	Total/NA
Barium	0.77		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	120		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0050	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Iron	24	^ B	0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	79		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.15		0.010	0.0034	mg/L	1		6010C	Total/NA
Potassium	74		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	190		1.0	0.43	mg/L	1		6010C	Total/NA
Barium	0.77		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	120		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0044	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.0010	J	0.0050	0.00096	mg/L	1		6010C	Dissolved
Iron	25	^ B	0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	79		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.15		0.010	0.0034	mg/L	1		6010C	Dissolved
Potassium	74		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0058	J	0.010	0.0051	mg/L	1		6010C	Dissolved
Sodium	190		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0019	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Sulfate	2.1	J B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	27	F1 B	1.0	0.27	mg/L	1		9060A	Total/NA
Total Suspended Solids	28		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	78	B	5.0	2.5	mg/L	25		SM 4500 NH3 G	Total/NA

Client Sample ID: MW-06-GW-10052016 — Lab Sample ID: 500-118151-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	41		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	6.6		0.50	0.15	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	5.3		1.0	0.41	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	2.6		1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	14		1.0	0.36	ug/L	1		8260B	Total/NA
1,2-Dichloroethane	1.3		1.0	0.39	ug/L	1		8260B	Total/NA
Ethylbenzene	63		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	4.0		1.0	0.39	ug/L	1		8260B	Total/NA
Methyl Ethyl Ketone	19		5.0	2.1	ug/L	1		8260B	Total/NA
methyl isobutyl ketone	44		5.0	2.2	ug/L	1		8260B	Total/NA
Toluene	160		0.50	0.15	ug/L	1		8260B	Total/NA
Vinyl chloride	4.4		0.50	0.20	ug/L	1		8260B	Total/NA
Xylenes, Total	240		1.0	0.22	ug/L	1		8260B	Total/NA
Acetophenone	7.2	J	37	4.9	ug/L	10		8270D	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-06-GW-10052016 (Continued) — Lab Sample ID: 500-118151-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Bis(2-ethylhexyl) phthalate	120		74	13	ug/L	10		8270D	Total/NA
2,4-Dimethylphenol	79		74	13	ug/L	10		8270D	Total/NA
2-Methylnaphthalene	2.2	J	15	0.48	ug/L	10		8270D	Total/NA
2-Methylphenol	21		15	2.3	ug/L	10		8270D	Total/NA
3 & 4 Methylphenol	160		15	3.3	ug/L	10		8270D	Total/NA
Naphthalene	14		7.4	2.3	ug/L	10		8270D	Total/NA
N-Nitrosodiphenylamine	3.2	J	7.4	2.7	ug/L	10		8270D	Total/NA
PCB-1242	5.3		0.36	0.18	ug/L	1		8082A	Total/NA
Aluminum	0.55	J	1.0	0.31	mg/L	1		6010C	Total/NA
Arsenic	0.030	J	0.050	0.017	mg/L	1		6010C	Total/NA
Barium	0.37		0.050	0.011	mg/L	1		6010C	Total/NA
Calcium	11		1.0	0.30	mg/L	1		6010C	Total/NA
Chromium	0.19		0.050	0.012	mg/L	1		6010C	Total/NA
Cobalt	0.036		0.025	0.0048	mg/L	1		6010C	Total/NA
Copper	0.016	J	0.050	0.011	mg/L	1		6010C	Total/NA
Iron	2.7	^ B	1.0	0.50	mg/L	1		6010C	Total/NA
Lead	0.22		0.025	0.013	mg/L	1		6010C	Total/NA
Magnesium	28		0.50	0.20	mg/L	1		6010C	Total/NA
Nickel	0.14		0.050	0.018	mg/L	1		6010C	Total/NA
Potassium	650		2.5	0.81	mg/L	1		6010C	Total/NA
Sodium	3200		5.0	2.2	mg/L	1		6010C	Total/NA
Vanadium	0.065		0.025	0.0093	mg/L	1		6010C	Total/NA
Zinc	0.20		0.10	0.045	mg/L	1		6010C	Total/NA
Arsenic	0.028	J	0.050	0.017	mg/L	1		6010C	Dissolved
Barium	0.35		0.050	0.011	mg/L	1		6010C	Dissolved
Calcium	11		1.0	0.30	mg/L	1		6010C	Dissolved
Chromium	0.18		0.050	0.012	mg/L	1		6010C	Dissolved
Cobalt	0.038		0.025	0.0048	mg/L	1		6010C	Dissolved
Iron	2.1	^ B	1.0	0.50	mg/L	1		6010C	Dissolved
Lead	0.029		0.025	0.013	mg/L	1		6010C	Dissolved
Magnesium	29		0.50	0.20	mg/L	1		6010C	Dissolved
Nickel	0.15		0.050	0.018	mg/L	1		6010C	Dissolved
Potassium	690		2.5	0.81	mg/L	1		6010C	Dissolved
Selenium	0.039	J	0.050	0.026	mg/L	1		6010C	Dissolved
Sodium	3300		5.0	2.2	mg/L	1		6010C	Dissolved
Vanadium	0.053		0.025	0.0093	mg/L	1		6010C	Dissolved
Zinc	0.056	J	0.10	0.045	mg/L	1		6010C	Dissolved
Mercury	0.00023		0.00020	0.00011	mg/L	1		7470A	Total/NA
Sulfide	8.0		1.0	0.18	mg/L	1		9034	Total/NA
Sulfate	12	J B	25	7.4	mg/L	5		9038	Total/NA
Total Organic Carbon - Duplicates	530	B	20	5.3	mg/L	20		9060A	Total/NA
Nitrogen, Nitrate	0.053	J	0.10	0.035	mg/L	1		Nitrate by calc	Total/NA
Total Suspended Solids	7.0		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	790		50	25	mg/L	250		SM 4500 NH3 G	Total/NA
Nitrogen, Nitrate Nitrite	0.053	J	0.10	0.035	mg/L	1		SM 4500 NO3 F	Total/NA

Client Sample ID: DUP-2 (10052016) — Lab Sample ID: 500-118151-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	44		5.0	1.7	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-2 (10052016) (Continued) — Lab Sample ID: 500-118151-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	7.6		0.50	0.15	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	5.5		1.0	0.41	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	3.2		1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	18		1.0	0.36	ug/L	1		8260B	Total/NA
1,2-Dichloroethane	1.3		1.0	0.39	ug/L	1		8260B	Total/NA
Ethylbenzene	78		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	5.1		1.0	0.39	ug/L	1		8260B	Total/NA
Methyl Ethyl Ketone	20		5.0	2.1	ug/L	1		8260B	Total/NA
methyl isobutyl ketone	49		5.0	2.2	ug/L	1		8260B	Total/NA
Toluene	200		0.50	0.15	ug/L	1		8260B	Total/NA
Vinyl chloride	5.3		0.50	0.20	ug/L	1		8260B	Total/NA
Xylenes, Total - DL	220		10	2.2	ug/L	10		8260B	Total/NA
Acetophenone	6.6	J	37	4.9	ug/L	10		8270D	Total/NA
Bis(2-ethylhexyl) phthalate	120		74	13	ug/L	10		8270D	Total/NA
2,4-Dimethylphenol	77		74	13	ug/L	10		8270D	Total/NA
2-Methylnaphthalene	2.1	J	15	0.48	ug/L	10		8270D	Total/NA
2-Methylphenol	17		15	2.3	ug/L	10		8270D	Total/NA
3 & 4 Methylphenol	150		15	3.3	ug/L	10		8270D	Total/NA
Naphthalene	13		7.4	2.3	ug/L	10		8270D	Total/NA
PCB-1242	4.9		0.37	0.18	ug/L	1		8082A	Total/NA
Aluminum	0.56	J	1.0	0.31	mg/L	1		6010C	Total/NA
Arsenic	0.019	J	0.050	0.017	mg/L	1		6010C	Total/NA
Barium	0.40		0.050	0.011	mg/L	1		6010C	Total/NA
Calcium	12		1.0	0.30	mg/L	1		6010C	Total/NA
Chromium	0.20		0.050	0.012	mg/L	1		6010C	Total/NA
Cobalt	0.046		0.025	0.0048	mg/L	1		6010C	Total/NA
Copper	0.022	J	0.050	0.011	mg/L	1		6010C	Total/NA
Iron	2.6		1.0	0.50	mg/L	1		6010C	Total/NA
Lead	0.24		0.025	0.013	mg/L	1		6010C	Total/NA
Magnesium	30		0.50	0.20	mg/L	1		6010C	Total/NA
Nickel	0.17		0.050	0.018	mg/L	1		6010C	Total/NA
Potassium	700		2.5	0.81	mg/L	1		6010C	Total/NA
Sodium	3500		5.0	2.2	mg/L	1		6010C	Total/NA
Vanadium	0.064		0.025	0.0093	mg/L	1		6010C	Total/NA
Zinc	0.31		0.10	0.045	mg/L	1		6010C	Total/NA
Arsenic	0.022	J	0.050	0.017	mg/L	1		6010C	Dissolved
Barium	0.37		0.050	0.011	mg/L	1		6010C	Dissolved
Calcium	11		1.0	0.30	mg/L	1		6010C	Dissolved
Chromium	0.19		0.050	0.012	mg/L	1		6010C	Dissolved
Cobalt	0.046		0.025	0.0048	mg/L	1		6010C	Dissolved
Iron	2.4		1.0	0.50	mg/L	1		6010C	Dissolved
Magnesium	30		0.50	0.20	mg/L	1		6010C	Dissolved
Nickel	0.17		0.050	0.018	mg/L	1		6010C	Dissolved
Potassium	710		2.5	0.81	mg/L	1		6010C	Dissolved
Sodium	3500		5.0	2.2	mg/L	1		6010C	Dissolved
Vanadium	0.058		0.025	0.0093	mg/L	1		6010C	Dissolved
Zinc	0.051	J	0.10	0.045	mg/L	1		6010C	Dissolved
Mercury	0.00018	J	0.00020	0.00011	mg/L	1		7470A	Total/NA
Sulfide	8.6		1.0	0.18	mg/L	1		9034	Total/NA
Total Organic Carbon - Duplicates	520	B	20	5.3	mg/L	20		9060A	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-2 (10052016) (Continued) — Lab Sample ID: 500-118151-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrogen, Nitrate	0.058	J	0.10	0.035	mg/L	1		Nitrate by calc	Total/NA
Total Suspended Solids	7.5		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	780		50	25	mg/L	250		SM 4500 NH3 G	Total/NA
Nitrogen, Nitrate Nitrite	0.058	J	0.10	0.035	mg/L	1		SM 4500 NO3 F	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CHI
8081B	Organochlorine Pesticides (GC)	SW846	TAL CHI
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL CHI
6010C	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	TAL CHI
9038	Sulfate, Turbidimetric	SW846	TAL CHI
9060A	Organic Carbon, Total (TOC)	SW846	TAL CHI
Nitrate by calc	Nitrogen, Nitrate-Nitrite	SM	TAL CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
SM 4500 NH3 G	Ammonia	SM	TAL CHI
SM 4500 NO2 B	Nitrogen, Nitrite	SM	TAL CHI
SM 4500 NO3 F	Nitrogen, Nitrate	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-118151-1	MW-13-GW-10042016	Water	10/04/16 15:15	10/05/16 16:35
500-118151-2	DUP-1 (10042016)	Water	10/04/16 00:00	10/05/16 16:35
500-118151-3	MW-08-GW-10052016	Water	10/05/16 12:05	10/05/16 16:35
500-118151-4	MW-09-GW-10052016	Water	10/05/16 13:35	10/05/16 16:35
500-118151-5	MW-06-GW-10052016	Water	10/05/16 08:40	10/05/16 16:35
500-118151-6	DUP-2 (10052016)	Water	10/05/16 00:00	10/05/16 16:35

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-13-GW-10042016

Lab Sample ID: 500-118151-1

Date Collected: 10/04/16 15:15
Matrix: Water
Date Received: 10/05/16 16:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<50		50	17	ug/L			10/11/16 22:11	10
Benzene	**400**		5.0	1.5	ug/L			10/11/16 22:11	10
Bromodichloromethane	<10		10	3.7	ug/L			10/11/16 22:11	10
Bromoform	<10		10	4.8	ug/L			10/11/16 22:11	10
Bromomethane	<20		20	8.0	ug/L			10/11/16 22:11	10
Carbon disulfide	<20		20	4.5	ug/L			10/11/16 22:11	10
Carbon tetrachloride	<10		10	3.8	ug/L			10/11/16 22:11	10
Chlorobenzene	<10		10	3.9	ug/L			10/11/16 22:11	10
Chloroethane	<10		10	5.1	ug/L			10/11/16 22:11	10
Chloroform	<10		10	3.7	ug/L			10/11/16 22:11	10
Chloromethane	<10		10	3.2	ug/L			10/11/16 22:11	10
cis-1,2-Dichloroethene	**19**		10	4.1	ug/L			10/11/16 22:11	10
cis-1,3-Dichloropropene	<10		10	4.2	ug/L			10/11/16 22:11	10
Cyclohexane	<10		10	4.9	ug/L			10/11/16 22:11	10
Dibromochloromethane	<10		10	4.9	ug/L			10/11/16 22:11	10
1,2-Dibromo-3-Chloropropane	<50		50	20	ug/L			10/11/16 22:11	10
1,2-Dibromoethane	<10		10	3.9	ug/L			10/11/16 22:11	10
1,2-Dichlorobenzene	**12**		10	3.3	ug/L			10/11/16 22:11	10
1,3-Dichlorobenzene	<10		10	4.0	ug/L			10/11/16 22:11	10
1,4-Dichlorobenzene	<10		10	3.6	ug/L			10/11/16 22:11	10
Dichlorodifluoromethane	<20		20	6.7	ug/L			10/11/16 22:11	10
1,1-Dichloroethane	<10		10	4.1	ug/L			10/11/16 22:11	10
1,2-Dichloroethane	<10		10	3.9	ug/L			10/11/16 22:11	10
1,1-Dichloroethene	<10		10	3.9	ug/L			10/11/16 22:11	10
1,2-Dichloropropane	<10		10	4.3	ug/L			10/11/16 22:11	10
Ethylbenzene	**1000**		5.0	1.8	ug/L			10/11/16 22:11	10
2-Hexanone	<50		50	16	ug/L			10/11/16 22:11	10
Isopropylbenzene	**110**		10	3.9	ug/L			10/11/16 22:11	10
Methyl acetate	<50		50	20	ug/L			10/11/16 22:11	10
Methylcyclohexane	<10		10	3.2	ug/L			10/11/16 22:11	10
Methylene Chloride	<50		50	16	ug/L			10/11/16 22:11	10
Methyl Ethyl Ketone	<50		50	21	ug/L			10/11/16 22:11	10
methyl isobutyl ketone	<50		50	22	ug/L			10/11/16 22:11	10
Methyl tert-butyl ether	<10		10	3.9	ug/L			10/11/16 22:11	10
Styrene	<10		10	3.9	ug/L			10/11/16 22:11	10
1,1,2,2-Tetrachloroethane	<10		10	4.0	ug/L			10/11/16 22:11	10
Tetrachloroethene	<10		10	3.7	ug/L			10/11/16 22:11	10
Toluene	**1700**		5.0	1.5	ug/L			10/11/16 22:11	10
trans-1,2-Dichloroethene	<10		10	3.5	ug/L			10/11/16 22:11	10
trans-1,3-Dichloropropene	<10		10	3.6	ug/L			10/11/16 22:11	10
1,2,4-Trichlorobenzene	<10		10	3.4	ug/L			10/11/16 22:11	10
1,1,1-Trichloroethane	<10		10	3.8	ug/L			10/11/16 22:11	10
1,1,2-Trichloroethane	<10		10	3.5	ug/L			10/11/16 22:11	10
Trichloroethene	<5.0		5.0	1.6	ug/L			10/11/16 22:11	10
Trichlorofluoromethane	<10		10	4.3	ug/L			10/11/16 22:11	10
1,1,2-Trichloro-1,2,2-trifluoroethane	<10		10	4.6	ug/L			10/11/16 22:11	10
Vinyl chloride	<5.0		5.0	2.0	ug/L			10/11/16 22:11	10

Client Sample ID: MW-13-GW-10042016

Lab Sample ID: 500-118151-1

Date Collected: 10/04/16 15:15

Matrix: Water

Date Received: 10/05/16 16:35

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		71 - 120		10/11/16 22:11	10
Dibromofluoromethane	89		70 - 120		10/11/16 22:11	10
1,2-Dichloroethane-d4 (Surr)	85		71 - 127		10/11/16 22:11	10
Toluene-d8 (Surr)	102		75 - 120		10/11/16 22:11	10

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**7000**		100	22	ug/L			10/11/16 22:38	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		71 - 120		10/11/16 22:38	100
Dibromofluoromethane	92		70 - 120		10/11/16 22:38	100
1,2-Dichloroethane-d4 (Surr)	83		71 - 127		10/11/16 22:38	100
Toluene-d8 (Surr)	98		75 - 120		10/11/16 22:38	100

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<3.7		3.7	1.1	ug/L		10/06/16 16:12	10/07/16 15:28	5
Acenaphthylene	**2.2**	**J**	3.7	0.98	ug/L		10/06/16 16:12	10/07/16 15:28	5
Acetophenone	**26**		18	2.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
Anthracene	<3.7		3.7	1.2	ug/L		10/06/16 16:12	10/07/16 15:28	5
Benzo[a]anthracene	<0.73		0.73	0.21	ug/L		10/06/16 16:12	10/07/16 15:28	5
Benzo[a]pyrene	<0.73		0.73	0.36	ug/L		10/06/16 16:12	10/07/16 15:28	5
Benzo[b]fluoranthene	<0.73		0.73	0.29	ug/L		10/06/16 16:12	10/07/16 15:28	5
Benzo[g,h,i]perylene	<3.7		3.7	1.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
Benzo[k]fluoranthene	<0.73		0.73	0.23	ug/L		10/06/16 16:12	10/07/16 15:28	5
Bis(2-chloroethoxy)methane	<7.3		7.3	1.0	ug/L		10/06/16 16:12	10/07/16 15:28	5
Bis(2-chloroethyl)ether	<7.3		7.3	1.1	ug/L		10/06/16 16:12	10/07/16 15:28	5
Bis(2-ethylhexyl) phthalate	<37		37	6.3	ug/L		10/06/16 16:12	10/07/16 15:28	5
4-Bromophenyl phenyl ether	<18		18	2.0	ug/L		10/06/16 16:12	10/07/16 15:28	5
Butyl benzyl phthalate	<7.3		7.3	1.8	ug/L		10/06/16 16:12	10/07/16 15:28	5
Carbazole	<18		18	1.3	ug/L		10/06/16 16:12	10/07/16 15:28	5
4-Chloroaniline	<37	*	37	7.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
4-Chloro-3-methylphenol	<37		37	8.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
2-Chloronaphthalene	<7.3		7.3	0.86	ug/L		10/06/16 16:12	10/07/16 15:28	5
2-Chlorophenol	<18		18	2.0	ug/L		10/06/16 16:12	10/07/16 15:28	5
4-Chlorophenyl phenyl ether	<18		18	2.3	ug/L		10/06/16 16:12	10/07/16 15:28	5
Chrysene	<1.8		1.8	0.25	ug/L		10/06/16 16:12	10/07/16 15:28	5
Dibenz(a,h)anthracene	<1.1		1.1	0.19	ug/L		10/06/16 16:12	10/07/16 15:28	5
Dibenzofuran	<7.3		7.3	0.96	ug/L		10/06/16 16:12	10/07/16 15:28	5
3,3'-Dichlorobenzidine	<18		18	6.3	ug/L		10/06/16 16:12	10/07/16 15:28	5
2,4-Dichlorophenol	<37		37	9.5	ug/L		10/06/16 16:12	10/07/16 15:28	5
Diethyl phthalate	**12**		7.3	1.3	ug/L		10/06/16 16:12	10/07/16 15:28	5
2,4-Dimethylphenol	**22**	**J**	37	6.6	ug/L		10/06/16 16:12	10/07/16 15:28	5
Dimethyl phthalate	<7.3		7.3	1.1	ug/L		10/06/16 16:12	10/07/16 15:28	5
Di-n-butyl phthalate	**3.8**	**J**	18	2.7	ug/L		10/06/16 16:12	10/07/16 15:28	5
4,6-Dinitro-2-methylphenol	<73		73	22	ug/L		10/06/16 16:12	10/07/16 15:28	5
2,4-Dinitrophenol	<73		73	31	ug/L		10/06/16 16:12	10/07/16 15:28	5
2,4-Dinitrotoluene	<3.7		3.7	0.90	ug/L		10/06/16 16:12	10/07/16 15:28	5
2,6-Dinitrotoluene	<3.7		3.7	0.27	ug/L		10/06/16 16:12	10/07/16 15:28	5
Di-n-octyl phthalate	<37		37	3.8	ug/L		10/06/16 16:12	10/07/16 15:28	5

Client Sample ID: MW-13-GW-10042016

Lab Sample ID: 500-118151-1

Date Collected: 10/04/16 15:15

Matrix: Water

Date Received: 10/05/16 16:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<3.7		3.7	1.7	ug/L		10/06/16 16:12	10/07/16 15:28	5
Fluorene	**1.0**	**J**	3.7	0.89	ug/L		10/06/16 16:12	10/07/16 15:28	5
Hexachlorobenzene	<1.8		1.8	0.29	ug/L		10/06/16 16:12	10/07/16 15:28	5
Hexachlorobutadiene	<18		18	1.9	ug/L		10/06/16 16:12	10/07/16 15:28	5
Hexachlorocyclopentadiene	<73		73	23	ug/L		10/06/16 16:12	10/07/16 15:28	5
Hexachloroethane	<18		18	2.2	ug/L		10/06/16 16:12	10/07/16 15:28	5
Indeno[1,2,3-cd]pyrene	<0.73		0.73	0.27	ug/L		10/06/16 16:12	10/07/16 15:28	5
Isophorone	<7.3		7.3	1.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
2-Methylnaphthalene	**10**		7.3	0.24	ug/L		10/06/16 16:12	10/07/16 15:28	5
2-Methylphenol	**5.4**	**J**	7.3	1.1	ug/L		10/06/16 16:12	10/07/16 15:28	5
3 & 4 Methylphenol	**29**		7.3	1.6	ug/L		10/06/16 16:12	10/07/16 15:28	5
Naphthalene	**140**		3.7	1.1	ug/L		10/06/16 16:12	10/07/16 15:28	5
2-Nitroaniline	<18		18	4.7	ug/L		10/06/16 16:12	10/07/16 15:28	5
3-Nitroaniline	<37		37	6.5	ug/L		10/06/16 16:12	10/07/16 15:28	5
4-Nitroaniline	<37		37	6.1	ug/L		10/06/16 16:12	10/07/16 15:28	5
Nitrobenzene	<3.7		3.7	1.6	ug/L		10/06/16 16:12	10/07/16 15:28	5
2-Nitrophenol	<37		37	9.1	ug/L		10/06/16 16:12	10/07/16 15:28	5
4-Nitrophenol	<73		73	27	ug/L		10/06/16 16:12	10/07/16 15:28	5
N-Nitrosodi-n-propylamine	<1.8		1.8	0.56	ug/L		10/06/16 16:12	10/07/16 15:28	5
N-Nitrosodiphenylamine	**11**		3.7	1.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
2,2'-oxybis[1-chloropropane]	<7.3		7.3	1.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
Pentachlorophenol	<73		73	14	ug/L		10/06/16 16:12	10/07/16 15:28	5
Phenanthrene	<3.7		3.7	1.1	ug/L		10/06/16 16:12	10/07/16 15:28	5
Phenol	**17**	**J**	18	2.5	ug/L		10/06/16 16:12	10/07/16 15:28	5
Pyrene	<3.7		3.7	1.6	ug/L		10/06/16 16:12	10/07/16 15:28	5
2,4,5-Trichlorophenol	<37		37	9.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
2,4,6-Trichlorophenol	<18		18	2.6	ug/L		10/06/16 16:12	10/07/16 15:28	5
Benzaldehyde	<150	^	150	55	ug/L		10/06/16 16:12	10/07/16 15:28	5
Caprolactam	<37		37	5.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
Atrazine	<18		18	2.3	ug/L		10/06/16 16:12	10/07/16 15:28	5
1,1'-Biphenyl	**1.8**	**J**	18	1.3	ug/L		10/06/16 16:12	10/07/16 15:28	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*92*		*30 - 123*	*10/06/16 16:12*	*10/07/16 15:28*	*5*
2-Fluorophenol (Surr)	*61*		*30 - 110*	*10/06/16 16:12*	*10/07/16 15:28*	*5*
Nitrobenzene-d5 (Surr)	*79*		*33 - 139*	*10/06/16 16:12*	*10/07/16 15:28*	*5*
Phenol-d5 (Surr)	*62*		*20 - 100*	*10/06/16 16:12*	*10/07/16 15:28*	*5*
Terphenyl-d14 (Surr)	*114*		*42 - 150*	*10/06/16 16:12*	*10/07/16 15:28*	*5*
2,4,6-Tribromophenol (Surr)	*134*		*30 - 150*	*10/06/16 16:12*	*10/07/16 15:28*	*5*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0048	ug/L		10/06/16 07:53	10/10/16 12:12	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/06/16 07:53	10/10/16 12:12	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		10/06/16 07:53	10/10/16 12:12	1
beta-BHC	<0.037		0.037	0.0093	ug/L		10/06/16 07:53	10/10/16 12:12	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/10/16 12:12	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/06/16 07:53	10/10/16 12:12	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		10/06/16 07:53	10/10/16 12:12	1
delta-BHC	<0.037		0.037	0.0094	ug/L		10/06/16 07:53	10/10/16 12:12	1

Client Sample ID: MW-13-GW-10042016

Lab Sample ID: 500-118151-1

Date Collected: 10/04/16 15:15

Matrix: Water

Date Received: 10/05/16 16:35

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/10/16 12:12	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/06/16 07:53	10/10/16 12:12	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/06/16 07:53	10/10/16 12:12	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/06/16 07:53	10/10/16 12:12	1
Endrin	<0.037		0.037	0.013	ug/L		10/06/16 07:53	10/10/16 12:12	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		10/06/16 07:53	10/10/16 12:12	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/06/16 07:53	10/10/16 12:12	1
gamma-BHC (Lindane)	<0.037		0.037	0.0051	ug/L		10/06/16 07:53	10/10/16 12:12	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		10/06/16 07:53	10/10/16 12:12	1
Heptachlor	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/10/16 12:12	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/06/16 07:53	10/10/16 12:12	1
Methoxychlor	<0.073		0.073	0.021	ug/L		10/06/16 07:53	10/10/16 12:12	1
Toxaphene	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/10/16 12:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*64*		*30 - 143*	*10/06/16 07:53*	*10/10/16 12:12*	*1*
Tetrachloro-m-xylene	*633*	*X*	*30 - 120*	*10/06/16 07:53*	*10/10/16 12:12*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.061	ug/L		10/06/16 07:53	10/07/16 14:27	1
PCB-1221	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:27	1
PCB-1232	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:27	1
PCB-1242	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:27	1
PCB-1248	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:27	1
PCB-1254	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:27	1
PCB-1260	<0.37		0.37	0.064	ug/L		10/06/16 07:53	10/07/16 14:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*45*		*30 - 127*	*10/06/16 07:53*	*10/07/16 14:27*	*1*
DCB Decachlorobiphenyl	*51*		*30 - 150*	*10/06/16 07:53*	*10/07/16 14:27*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.11**	**J**	0.20	0.062	mg/L		10/11/16 15:30	10/14/16 03:49	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 03:49	1
Arsenic	**0.0034**	**J**	0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 03:49	1
Barium	**0.26**		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 03:49	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 03:49	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 03:49	1
Calcium	**84**		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 03:49	1
Chromium	**0.0059**	**J**	0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 03:49	1
Cobalt	**0.0021**	**J**	0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 03:49	1
Copper	**0.0029**	**J**	0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 03:49	1
Iron	**8.9**	**^ B**	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 03:49	1
Lead	**0.0036**	**J**	0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 03:49	1
Magnesium	**52**		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 17:28	1
Manganese	**0.38**		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 03:49	1
Nickel	**0.0079**	**J**	0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 03:49	1
Potassium	**74**		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 03:49	1

Client Sample ID: MW-13-GW-10042016

Lab Sample ID: 500-118151-1

Date Collected: 10/04/16 15:15

Matrix: Water

Date Received: 10/05/16 16:35

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 03:49	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 03:49	1
Sodium	**220**		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 03:49	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 03:49	1
Vanadium	**0.0031**	**J**	0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 03:49	1
Zinc	**0.011**	**J**	0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 03:49	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 15:30	10/14/16 04:00	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 04:00	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:00	1
Barium	**0.23**		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:00	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 04:00	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 04:00	1
Calcium	**96**		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 04:00	1
Chromium	**0.0038**	**J**	0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 04:00	1
Cobalt	**0.0015**	**J**	0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 04:00	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:00	1
Iron	**6.4**	**^ B**	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 04:00	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 04:00	1
Magnesium	**46**		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 17:33	1
Manganese	**0.34**		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:00	1
Nickel	**0.0072**	**J**	0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 04:00	1
Potassium	**67**		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 04:00	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 04:00	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 04:00	1
Sodium	**230**		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 04:00	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:00	1
Vanadium	**0.0036**	**J**	0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 04:00	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 04:00	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:18	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			10/10/16 00:41	1
Sulfate	**21**	**B**	5.0	1.5	mg/L			10/07/16 08:41	1
Total Organic Carbon - Duplicates	**53**	**B**	2.0	0.53	mg/L			10/07/16 20:18	2
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/16/16 19:52	1
Total Suspended Solids	**24**		5.0	2.5	mg/L			10/06/16 12:44	1
Ammonia	**79**	**B**	5.0	2.5	mg/L		10/12/16 19:17	10/12/16 23:03	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/06/16 13:26	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/14/16 00:11	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-1 (10042016)

Date Collected: 10/04/16 00:00
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-2

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<50		50	17	ug/L			10/11/16 23:04	10
Benzene	**370**		5.0	1.5	ug/L			10/11/16 23:04	10
Bromodichloromethane	<10		10	3.7	ug/L			10/11/16 23:04	10
Bromoform	<10		10	4.8	ug/L			10/11/16 23:04	10
Bromomethane	<20		20	8.0	ug/L			10/11/16 23:04	10
Carbon disulfide	<20		20	4.5	ug/L			10/11/16 23:04	10
Carbon tetrachloride	<10		10	3.8	ug/L			10/11/16 23:04	10
Chlorobenzene	<10		10	3.9	ug/L			10/11/16 23:04	10
Chloroethane	<10		10	5.1	ug/L			10/11/16 23:04	10
Chloroform	<10		10	3.7	ug/L			10/11/16 23:04	10
Chloromethane	<10		10	3.2	ug/L			10/11/16 23:04	10
cis-1,2-Dichloroethene	**16**		10	4.1	ug/L			10/11/16 23:04	10
cis-1,3-Dichloropropene	<10		10	4.2	ug/L			10/11/16 23:04	10
Cyclohexane	<10		10	4.9	ug/L			10/11/16 23:04	10
Dibromochloromethane	<10		10	4.9	ug/L			10/11/16 23:04	10
1,2-Dibromo-3-Chloropropane	<50		50	20	ug/L			10/11/16 23:04	10
1,2-Dibromoethane	<10		10	3.9	ug/L			10/11/16 23:04	10
1,2-Dichlorobenzene	**12**		10	3.3	ug/L			10/11/16 23:04	10
1,3-Dichlorobenzene	<10		10	4.0	ug/L			10/11/16 23:04	10
1,4-Dichlorobenzene	<10		10	3.6	ug/L			10/11/16 23:04	10
Dichlorodifluoromethane	<20		20	6.7	ug/L			10/11/16 23:04	10
1,1-Dichloroethane	**7.6**	**J**	10	4.1	ug/L			10/11/16 23:04	10
1,2-Dichloroethane	<10		10	3.9	ug/L			10/11/16 23:04	10
1,1-Dichloroethene	<10		10	3.9	ug/L			10/11/16 23:04	10
1,2-Dichloropropane	<10		10	4.3	ug/L			10/11/16 23:04	10
Ethylbenzene	**970**		5.0	1.8	ug/L			10/11/16 23:04	10
2-Hexanone	<50		50	16	ug/L			10/11/16 23:04	10
Isopropylbenzene	**110**		10	3.9	ug/L			10/11/16 23:04	10
Methyl acetate	<50		50	20	ug/L			10/11/16 23:04	10
Methylcyclohexane	<10		10	3.2	ug/L			10/11/16 23:04	10
Methylene Chloride	<50		50	16	ug/L			10/11/16 23:04	10
Methyl Ethyl Ketone	<50		50	21	ug/L			10/11/16 23:04	10
methyl isobutyl ketone	<50		50	22	ug/L			10/11/16 23:04	10
Methyl tert-butyl ether	<10		10	3.9	ug/L			10/11/16 23:04	10
Styrene	<10		10	3.9	ug/L			10/11/16 23:04	10
1,1,2,2-Tetrachloroethane	<10		10	4.0	ug/L			10/11/16 23:04	10
Tetrachloroethene	<10		10	3.7	ug/L			10/11/16 23:04	10
Toluene	**1500**		5.0	1.5	ug/L			10/11/16 23:04	10
trans-1,2-Dichloroethene	<10		10	3.5	ug/L			10/11/16 23:04	10
trans-1,3-Dichloropropene	<10		10	3.6	ug/L			10/11/16 23:04	10
1,2,4-Trichlorobenzene	<10		10	3.4	ug/L			10/11/16 23:04	10
1,1,1-Trichloroethane	<10		10	3.8	ug/L			10/11/16 23:04	10
1,1,2-Trichloroethane	<10		10	3.5	ug/L			10/11/16 23:04	10
Trichloroethene	<5.0		5.0	1.6	ug/L			10/11/16 23:04	10
Trichlorofluoromethane	<10		10	4.3	ug/L			10/11/16 23:04	10
1,1,2-Trichloro-1,2,2-trifluoroethane	<10		10	4.6	ug/L			10/11/16 23:04	10
Vinyl chloride	<5.0		5.0	2.0	ug/L			10/11/16 23:04	10

Client Sample ID: DUP-1 (10042016)

Lab Sample ID: 500-118151-2

Date Collected: 10/04/16 00:00

Matrix: Water

Date Received: 10/05/16 16:35

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*71 - 120*		*10/11/16 23:04*	*10*
Dibromofluoromethane	*91*		*70 - 120*		*10/11/16 23:04*	*10*
1,2-Dichloroethane-d4 (Surr)	*85*		*71 - 127*		*10/11/16 23:04*	*10*
Toluene-d8 (Surr)	*97*		*75 - 120*		*10/11/16 23:04*	*10*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**7100**		100	22	ug/L			10/11/16 23:31	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*		*10/11/16 23:31*	*100*
Dibromofluoromethane	*91*		*70 - 120*		*10/11/16 23:31*	*100*
1,2-Dichloroethane-d4 (Surr)	*86*		*71 - 127*		*10/11/16 23:31*	*100*
Toluene-d8 (Surr)	*99*		*75 - 120*		*10/11/16 23:31*	*100*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<3.6		3.6	1.1	ug/L		10/06/16 16:12	10/07/16 15:57	5
Acenaphthylene	**1.7**	**J**	3.6	0.98	ug/L		10/06/16 16:12	10/07/16 15:57	5
Acetophenone	**20**		18	2.4	ug/L		10/06/16 16:12	10/07/16 15:57	5
Anthracene	<3.6		3.6	1.2	ug/L		10/06/16 16:12	10/07/16 15:57	5
Benzo[a]anthracene	**0.43**	**J**	0.73	0.21	ug/L		10/06/16 16:12	10/07/16 15:57	5
Benzo[a]pyrene	<0.73		0.73	0.36	ug/L		10/06/16 16:12	10/07/16 15:57	5
Benzo[b]fluoranthene	<0.73		0.73	0.29	ug/L		10/06/16 16:12	10/07/16 15:57	5
Benzo[g,h,i]perylene	<3.6		3.6	1.4	ug/L		10/06/16 16:12	10/07/16 15:57	5
Benzo[k]fluoranthene	<0.73		0.73	0.23	ug/L		10/06/16 16:12	10/07/16 15:57	5
Bis(2-chloroethoxy)methane	<7.3		7.3	1.0	ug/L		10/06/16 16:12	10/07/16 15:57	5
Bis(2-chloroethyl)ether	<7.3		7.3	1.1	ug/L		10/06/16 16:12	10/07/16 15:57	5
Bis(2-ethylhexyl) phthalate	<36		36	6.2	ug/L		10/06/16 16:12	10/07/16 15:57	5
4-Bromophenyl phenyl ether	<18		18	2.0	ug/L		10/06/16 16:12	10/07/16 15:57	5
Butyl benzyl phthalate	<7.3		7.3	1.8	ug/L		10/06/16 16:12	10/07/16 15:57	5
Carbazole	<18		18	1.3	ug/L		10/06/16 16:12	10/07/16 15:57	5
4-Chloroaniline	<36	*	36	7.3	ug/L		10/06/16 16:12	10/07/16 15:57	5
4-Chloro-3-methylphenol	<36		36	8.4	ug/L		10/06/16 16:12	10/07/16 15:57	5
2-Chloronaphthalene	<7.3		7.3	0.86	ug/L		10/06/16 16:12	10/07/16 15:57	5
2-Chlorophenol	<18		18	2.0	ug/L		10/06/16 16:12	10/07/16 15:57	5
4-Chlorophenyl phenyl ether	<18		18	2.3	ug/L		10/06/16 16:12	10/07/16 15:57	5
Chrysene	**0.35**	**J**	1.8	0.25	ug/L		10/06/16 16:12	10/07/16 15:57	5
Dibenz(a,h)anthracene	<1.1		1.1	0.19	ug/L		10/06/16 16:12	10/07/16 15:57	5
Dibenzofuran	<7.3		7.3	0.96	ug/L		10/06/16 16:12	10/07/16 15:57	5
3,3'-Dichlorobenzidine	<18		18	6.2	ug/L		10/06/16 16:12	10/07/16 15:57	5
2,4-Dichlorophenol	<36		36	9.5	ug/L		10/06/16 16:12	10/07/16 15:57	5
Diethyl phthalate	**8.9**		7.3	1.3	ug/L		10/06/16 16:12	10/07/16 15:57	5
2,4-Dimethylphenol	**16**	**J**	36	6.6	ug/L		10/06/16 16:12	10/07/16 15:57	5
Dimethyl phthalate	<7.3		7.3	1.1	ug/L		10/06/16 16:12	10/07/16 15:57	5
Di-n-butyl phthalate	**3.4**	**J**	18	2.7	ug/L		10/06/16 16:12	10/07/16 15:57	5
4,6-Dinitro-2-methylphenol	<73		73	22	ug/L		10/06/16 16:12	10/07/16 15:57	5
2,4-Dinitrophenol	<73		73	31	ug/L		10/06/16 16:12	10/07/16 15:57	5
2,4-Dinitrotoluene	<3.6		3.6	0.89	ug/L		10/06/16 16:12	10/07/16 15:57	5
2,6-Dinitrotoluene	<3.6		3.6	0.27	ug/L		10/06/16 16:12	10/07/16 15:57	5
Di-n-octyl phthalate	<36		36	3.8	ug/L		10/06/16 16:12	10/07/16 15:57	5

Client Sample ID: DUP-1 (10042016)

Lab Sample ID: 500-118151-2

Date Collected: 10/04/16 00:00

Matrix: Water

Date Received: 10/05/16 16:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<3.6		3.6	1.7	ug/L		10/06/16 16:12	10/07/16 15:57	5
Fluorene	<3.6		3.6	0.89	ug/L		10/06/16 16:12	10/07/16 15:57	5
Hexachlorobenzene	<1.8		1.8	0.29	ug/L		10/06/16 16:12	10/07/16 15:57	5
Hexachlorobutadiene	<18		18	1.9	ug/L		10/06/16 16:12	10/07/16 15:57	5
Hexachlorocyclopentadiene	<73		73	23	ug/L		10/06/16 16:12	10/07/16 15:57	5
Hexachloroethane	<18		18	2.2	ug/L		10/06/16 16:12	10/07/16 15:57	5
Indeno[1,2,3-cd]pyrene	<0.73		0.73	0.27	ug/L		10/06/16 16:12	10/07/16 15:57	5
Isophorone	<7.3		7.3	1.4	ug/L		10/06/16 16:12	10/07/16 15:57	5
2-Methylnaphthalene	**8.1**		7.3	0.24	ug/L		10/06/16 16:12	10/07/16 15:57	5
2-Methylphenol	**4.8**	**J**	7.3	1.1	ug/L		10/06/16 16:12	10/07/16 15:57	5
3 & 4 Methylphenol	**22**		7.3	1.6	ug/L		10/06/16 16:12	10/07/16 15:57	5
Naphthalene	**110**		3.6	1.1	ug/L		10/06/16 16:12	10/07/16 15:57	5
2-Nitroaniline	<18		18	4.7	ug/L		10/06/16 16:12	10/07/16 15:57	5
3-Nitroaniline	<36		36	6.5	ug/L		10/06/16 16:12	10/07/16 15:57	5
4-Nitroaniline	<36		36	6.1	ug/L		10/06/16 16:12	10/07/16 15:57	5
Nitrobenzene	<3.6		3.6	1.6	ug/L		10/06/16 16:12	10/07/16 15:57	5
2-Nitrophenol	<36		36	9.1	ug/L		10/06/16 16:12	10/07/16 15:57	5
4-Nitrophenol	<73		73	27	ug/L		10/06/16 16:12	10/07/16 15:57	5
N-Nitrosodi-n-propylamine	<1.8		1.8	0.56	ug/L		10/06/16 16:12	10/07/16 15:57	5
N-Nitrosodiphenylamine	**7.7**		3.6	1.3	ug/L		10/06/16 16:12	10/07/16 15:57	5
2,2'-oxybis[1-chloropropane]	<7.3		7.3	1.4	ug/L		10/06/16 16:12	10/07/16 15:57	5
Pentachlorophenol	<73		73	14	ug/L		10/06/16 16:12	10/07/16 15:57	5
Phenanthrene	<3.6		3.6	1.1	ug/L		10/06/16 16:12	10/07/16 15:57	5
Phenol	**12**	**J**	18	2.4	ug/L		10/06/16 16:12	10/07/16 15:57	5
Pyrene	<3.6		3.6	1.6	ug/L		10/06/16 16:12	10/07/16 15:57	5
2,4,5-Trichlorophenol	<36		36	9.3	ug/L		10/06/16 16:12	10/07/16 15:57	5
2,4,6-Trichlorophenol	<18		18	2.6	ug/L		10/06/16 16:12	10/07/16 15:57	5
Benzaldehyde	<150	^	150	55	ug/L		10/06/16 16:12	10/07/16 15:57	5
Caprolactam	<36		36	5.4	ug/L		10/06/16 16:12	10/07/16 15:57	5
Atrazine	<18		18	2.3	ug/L		10/06/16 16:12	10/07/16 15:57	5
1,1'-Biphenyl	<18		18	1.3	ug/L		10/06/16 16:12	10/07/16 15:57	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*70*		*30 - 123*	*10/06/16 16:12*	*10/07/16 15:57*	*5*
2-Fluorophenol (Surr)	*49*		*30 - 110*	*10/06/16 16:12*	*10/07/16 15:57*	*5*
Nitrobenzene-d5 (Surr)	*59*		*33 - 139*	*10/06/16 16:12*	*10/07/16 15:57*	*5*
Phenol-d5 (Surr)	*47*		*20 - 100*	*10/06/16 16:12*	*10/07/16 15:57*	*5*
Terphenyl-d14 (Surr)	*81*		*42 - 150*	*10/06/16 16:12*	*10/07/16 15:57*	*5*
2,4,6-Tribromophenol (Surr)	*93*		*30 - 150*	*10/06/16 16:12*	*10/07/16 15:57*	*5*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		10/06/16 07:53	10/10/16 12:31	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/06/16 07:53	10/10/16 12:31	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		10/06/16 07:53	10/10/16 12:31	1
beta-BHC	<0.037		0.037	0.0094	ug/L		10/06/16 07:53	10/10/16 12:31	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/10/16 12:31	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/06/16 07:53	10/10/16 12:31	1
4,4'-DDT	<0.037		0.037	0.0030	ug/L		10/06/16 07:53	10/10/16 12:31	1
delta-BHC	<0.037		0.037	0.0095	ug/L		10/06/16 07:53	10/10/16 12:31	1

Client Sample ID: DUP-1 (10042016)

Lab Sample ID: 500-118151-2

Date Collected: 10/04/16 00:00

Matrix: Water

Date Received: 10/05/16 16:35

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/10/16 12:31	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/06/16 07:53	10/10/16 12:31	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/06/16 07:53	10/10/16 12:31	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/06/16 07:53	10/10/16 12:31	1
Endrin	<0.037		0.037	0.013	ug/L		10/06/16 07:53	10/10/16 12:31	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		10/06/16 07:53	10/10/16 12:31	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/06/16 07:53	10/10/16 12:31	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		10/06/16 07:53	10/10/16 12:31	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		10/06/16 07:53	10/10/16 12:31	1
Heptachlor	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/10/16 12:31	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/06/16 07:53	10/10/16 12:31	1
Methoxychlor	<0.074		0.074	0.021	ug/L		10/06/16 07:53	10/10/16 12:31	1
Toxaphene	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/10/16 12:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*50*		*30 - 143*	*10/06/16 07:53*	*10/10/16 12:31*	*1*
Tetrachloro-m-xylene	*638*	*X*	*30 - 120*	*10/06/16 07:53*	*10/10/16 12:31*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		10/06/16 07:53	10/07/16 14:42	1
PCB-1221	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:42	1
PCB-1232	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:42	1
PCB-1242	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:42	1
PCB-1248	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:42	1
PCB-1254	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:42	1
PCB-1260	<0.37		0.37	0.065	ug/L		10/06/16 07:53	10/07/16 14:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*88*		*30 - 127*	*10/06/16 07:53*	*10/07/16 14:42*	*1*
DCB Decachlorobiphenyl	*45*		*30 - 150*	*10/06/16 07:53*	*10/07/16 14:42*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.11**	**J**	0.20	0.062	mg/L		10/11/16 15:30	10/14/16 04:05	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 04:05	1
Arsenic	**0.0047**	**J**	0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:05	1
Barium	**0.28**		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:05	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 04:05	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 04:05	1
Calcium	**85**		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 04:05	1
Chromium	**0.0052**	**J**	0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 04:05	1
Cobalt	**0.0023**	**J**	0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 04:05	1
Copper	**0.0040**	**J**	0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:05	1
Iron	**9.6**	**^ B**	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 04:05	1
Lead	**0.0077**		0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 04:05	1
Magnesium	**55**		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 17:37	1
Manganese	**0.40**		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:05	1
Nickel	**0.0069**	**J**	0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 04:05	1
Potassium	**77**		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 04:05	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-1 (10042016)

Date Collected: 10/04/16 00:00
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-2

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 04:05	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 04:05	1
Sodium	**230**		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 04:05	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:05	1
Vanadium	**0.0035**	**J**	0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 04:05	1
Zinc	**0.013**	**J**	0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 04:05	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.15**	**J**	0.20	0.062	mg/L		10/11/16 15:30	10/14/16 04:09	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 04:09	1
Arsenic	**0.0047**	**J**	0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:09	1
Barium	**0.25**		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:09	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 04:09	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 04:09	1
Calcium	**89**		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 04:09	1
Chromium	**0.0046**	**J**	0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 04:09	1
Cobalt	**0.0017**	**J**	0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 04:09	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:09	1
Iron	**7.6**	**^ B**	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 04:09	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 04:09	1
Magnesium	**50**		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 17:42	1
Manganese	**0.36**		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:09	1
Nickel	**0.0063**	**J**	0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 04:09	1
Potassium	**71**		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 04:09	1
Selenium	**0.0065**	**J**	0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 04:09	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 04:09	1
Sodium	**230**		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 04:09	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:09	1
Vanadium	**0.0036**	**J**	0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 04:09	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 04:09	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:21	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**0.57**	**J**	1.0	0.18	mg/L			10/10/16 00:45	1
Sulfate	**19**	**B**	5.0	1.5	mg/L			10/07/16 08:42	1
Total Organic Carbon - Duplicates	**54**	**B**	2.0	0.53	mg/L			10/07/16 20:35	2
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/16/16 19:52	1
Total Suspended Solids	**25**		5.0	2.5	mg/L			10/06/16 12:45	1
Ammonia	**80**	**B**	5.0	2.5	mg/L		10/12/16 19:17	10/12/16 23:06	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/06/16 13:27	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/14/16 00:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-08-GW-10052016

Lab Sample ID: 500-118151-3

Date Collected: 10/05/16 12:05
Matrix: Water
Date Received: 10/05/16 16:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			10/11/16 23:58	1
Benzene	<0.50		0.50	0.15	ug/L			10/11/16 23:58	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/11/16 23:58	1
Bromoform	<1.0		1.0	0.48	ug/L			10/11/16 23:58	1
Bromomethane	<2.0		2.0	0.80	ug/L			10/11/16 23:58	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/11/16 23:58	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/11/16 23:58	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			10/11/16 23:58	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/11/16 23:58	1
Chloroform	<1.0		1.0	0.37	ug/L			10/11/16 23:58	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/11/16 23:58	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			10/11/16 23:58	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/11/16 23:58	1
Cyclohexane	<1.0		1.0	0.49	ug/L			10/11/16 23:58	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/11/16 23:58	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			10/11/16 23:58	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/11/16 23:58	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			10/11/16 23:58	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/11/16 23:58	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			10/11/16 23:58	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/11/16 23:58	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/11/16 23:58	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/11/16 23:58	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/11/16 23:58	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/11/16 23:58	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			10/11/16 23:58	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/11/16 23:58	1
Isopropylbenzene	**0.40**	**J**	1.0	0.39	ug/L			10/11/16 23:58	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/11/16 23:58	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			10/11/16 23:58	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/11/16 23:58	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/11/16 23:58	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			10/11/16 23:58	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/11/16 23:58	1
Styrene	<1.0		1.0	0.39	ug/L			10/11/16 23:58	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/11/16 23:58	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/11/16 23:58	1
Toluene	<0.50		0.50	0.15	ug/L			10/11/16 23:58	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/11/16 23:58	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/11/16 23:58	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/11/16 23:58	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/11/16 23:58	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/11/16 23:58	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/11/16 23:58	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/11/16 23:58	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/11/16 23:58	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			10/11/16 23:58	1
Xylenes, Total	**0.82**	**J**	1.0	0.22	ug/L			10/11/16 23:58	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-08-GW-10052016

Lab Sample ID: 500-118151-3

Date Collected: 10/05/16 12:05
Matrix: Water
Date Received: 10/05/16 16:35

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*71 - 120*		*10/11/16 23:58*	*1*
Dibromofluoromethane	*90*		*70 - 120*		*10/11/16 23:58*	*1*
1,2-Dichloroethane-d4 (Surr)	*83*		*71 - 127*		*10/11/16 23:58*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*10/11/16 23:58*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.74		0.74	0.23	ug/L		10/06/16 16:12	10/07/16 13:59	1
Acenaphthylene	<0.74		0.74	0.20	ug/L		10/06/16 16:12	10/07/16 13:59	1
Acetophenone	<3.7		3.7	0.49	ug/L		10/06/16 16:12	10/07/16 13:59	1
Anthracene	<0.74		0.74	0.25	ug/L		10/06/16 16:12	10/07/16 13:59	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		10/06/16 16:12	10/07/16 13:59	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		10/06/16 16:12	10/07/16 13:59	1
Benzo[b]fluoranthene	<0.15		0.15	0.060	ug/L		10/06/16 16:12	10/07/16 13:59	1
Benzo[g,h,i]perylene	<0.74		0.74	0.28	ug/L		10/06/16 16:12	10/07/16 13:59	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		10/06/16 16:12	10/07/16 13:59	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		10/06/16 16:12	10/07/16 13:59	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		10/06/16 16:12	10/07/16 13:59	1
Bis(2-ethylhexyl) phthalate	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 13:59	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		10/06/16 16:12	10/07/16 13:59	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		10/06/16 16:12	10/07/16 13:59	1
Carbazole	<3.7		3.7	0.26	ug/L		10/06/16 16:12	10/07/16 13:59	1
4-Chloroaniline	<7.4	*	7.4	1.5	ug/L		10/06/16 16:12	10/07/16 13:59	1
4-Chloro-3-methylphenol	<7.4		7.4	1.7	ug/L		10/06/16 16:12	10/07/16 13:59	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		10/06/16 16:12	10/07/16 13:59	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		10/06/16 16:12	10/07/16 13:59	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		10/06/16 16:12	10/07/16 13:59	1
Chrysene	<0.37		0.37	0.050	ug/L		10/06/16 16:12	10/07/16 13:59	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		10/06/16 16:12	10/07/16 13:59	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		10/06/16 16:12	10/07/16 13:59	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		10/06/16 16:12	10/07/16 13:59	1
2,4-Dichlorophenol	<7.4		7.4	1.9	ug/L		10/06/16 16:12	10/07/16 13:59	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		10/06/16 16:12	10/07/16 13:59	1
2,4-Dimethylphenol	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 13:59	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		10/06/16 16:12	10/07/16 13:59	1
Di-n-butyl phthalate	<3.7		3.7	0.54	ug/L		10/06/16 16:12	10/07/16 13:59	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		10/06/16 16:12	10/07/16 13:59	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		10/06/16 16:12	10/07/16 13:59	1
2,4-Dinitrotoluene	<0.74		0.74	0.18	ug/L		10/06/16 16:12	10/07/16 13:59	1
2,6-Dinitrotoluene	<0.74		0.74	0.054	ug/L		10/06/16 16:12	10/07/16 13:59	1
Di-n-octyl phthalate	<7.4		7.4	0.77	ug/L		10/06/16 16:12	10/07/16 13:59	1
Fluoranthene	<0.74		0.74	0.33	ug/L		10/06/16 16:12	10/07/16 13:59	1
Fluorene	<0.74		0.74	0.18	ug/L		10/06/16 16:12	10/07/16 13:59	1
Hexachlorobenzene	<0.37		0.37	0.059	ug/L		10/06/16 16:12	10/07/16 13:59	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		10/06/16 16:12	10/07/16 13:59	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		10/06/16 16:12	10/07/16 13:59	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		10/06/16 16:12	10/07/16 13:59	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		10/06/16 16:12	10/07/16 13:59	1
Isophorone	<1.5		1.5	0.28	ug/L		10/06/16 16:12	10/07/16 13:59	1
2-Methylnaphthalene	**0.10**	**J**	1.5	0.048	ug/L		10/06/16 16:12	10/07/16 13:59	1

Client Sample ID: MW-08-GW-10052016

Lab Sample ID: 500-118151-3

Date Collected: 10/05/16 12:05

Matrix: Water

Date Received: 10/05/16 16:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.23	ug/L		10/06/16 16:12	10/07/16 13:59	1
3 & 4 Methylphenol	**0.39**	**J**	1.5	0.33	ug/L		10/06/16 16:12	10/07/16 13:59	1
Naphthalene	<0.74		0.74	0.23	ug/L		10/06/16 16:12	10/07/16 13:59	1
2-Nitroaniline	<3.7		3.7	0.95	ug/L		10/06/16 16:12	10/07/16 13:59	1
3-Nitroaniline	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 13:59	1
4-Nitroaniline	<7.4		7.4	1.2	ug/L		10/06/16 16:12	10/07/16 13:59	1
Nitrobenzene	<0.74		0.74	0.33	ug/L		10/06/16 16:12	10/07/16 13:59	1
2-Nitrophenol	<7.4		7.4	1.8	ug/L		10/06/16 16:12	10/07/16 13:59	1
4-Nitrophenol	<15		15	5.5	ug/L		10/06/16 16:12	10/07/16 13:59	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		10/06/16 16:12	10/07/16 13:59	1
N-Nitrosodiphenylamine	<0.74		0.74	0.27	ug/L		10/06/16 16:12	10/07/16 13:59	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		10/06/16 16:12	10/07/16 13:59	1
Pentachlorophenol	<15		15	2.9	ug/L		10/06/16 16:12	10/07/16 13:59	1
Phenanthrene	<0.74		0.74	0.22	ug/L		10/06/16 16:12	10/07/16 13:59	1
Phenol	<3.7		3.7	0.50	ug/L		10/06/16 16:12	10/07/16 13:59	1
Pyrene	<0.74		0.74	0.31	ug/L		10/06/16 16:12	10/07/16 13:59	1
2,4,5-Trichlorophenol	<7.4		7.4	1.9	ug/L		10/06/16 16:12	10/07/16 13:59	1
2,4,6-Trichlorophenol	<3.7		3.7	0.53	ug/L		10/06/16 16:12	10/07/16 13:59	1
Benzaldehyde	<30	^	30	11	ug/L		10/06/16 16:12	10/07/16 13:59	1
Caprolactam	<7.4		7.4	1.1	ug/L		10/06/16 16:12	10/07/16 13:59	1
Atrazine	<3.7		3.7	0.46	ug/L		10/06/16 16:12	10/07/16 13:59	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		10/06/16 16:12	10/07/16 13:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*67*		*30 - 123*	*10/06/16 16:12*	*10/07/16 13:59*	*1*
2-Fluorophenol (Surr)	*49*		*30 - 110*	*10/06/16 16:12*	*10/07/16 13:59*	*1*
Nitrobenzene-d5 (Surr)	*55*		*33 - 139*	*10/06/16 16:12*	*10/07/16 13:59*	*1*
Phenol-d5 (Surr)	*39*		*20 - 100*	*10/06/16 16:12*	*10/07/16 13:59*	*1*
Terphenyl-d14 (Surr)	*110*		*42 - 150*	*10/06/16 16:12*	*10/07/16 13:59*	*1*
2,4,6-Tribromophenol (Surr)	*125*		*30 - 150*	*10/06/16 16:12*	*10/07/16 13:59*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.036		0.036	0.0048	ug/L		10/06/16 07:53	10/06/16 16:13	1
alpha-BHC	<0.036		0.036	0.0024	ug/L		10/06/16 07:53	10/06/16 16:13	1
alpha-Chlordane	<0.036		0.036	0.0040	ug/L		10/06/16 07:53	10/06/16 16:13	1
beta-BHC	<0.036		0.036	0.0093	ug/L		10/06/16 07:53	10/06/16 16:13	1
4,4'-DDD	<0.036		0.036	0.012	ug/L		10/06/16 07:53	10/06/16 16:13	1
4,4'-DDE	<0.036		0.036	0.0035	ug/L		10/06/16 07:53	10/06/16 16:13	1
4,4'-DDT	<0.036		0.036	0.0029	ug/L		10/06/16 07:53	10/06/16 16:13	1
delta-BHC	<0.036		0.036	0.0094	ug/L		10/06/16 07:53	10/06/16 16:13	1
Dieldrin	<0.036		0.036	0.012	ug/L		10/06/16 07:53	10/06/16 16:13	1
Endosulfan I	<0.036		0.036	0.0037	ug/L		10/06/16 07:53	10/06/16 16:13	1
Endosulfan II	<0.036		0.036	0.0025	ug/L		10/06/16 07:53	10/06/16 16:13	1
Endosulfan sulfate	<0.036		0.036	0.011	ug/L		10/06/16 07:53	10/06/16 16:13	1
Endrin	<0.036		0.036	0.013	ug/L		10/06/16 07:53	10/06/16 16:13	1
Endrin aldehyde	<0.036		0.036	0.0074	ug/L		10/06/16 07:53	10/06/16 16:13	1
Endrin ketone	<0.036		0.036	0.015	ug/L		10/06/16 07:53	10/06/16 16:13	1
gamma-BHC (Lindane)	<0.036		0.036	0.0051	ug/L		10/06/16 07:53	10/06/16 16:13	1
gamma-Chlordane	<0.036		0.036	0.0065	ug/L		10/06/16 07:53	10/06/16 16:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-08-GW-10052016

Lab Sample ID: 500-118151-3

Date Collected: 10/05/16 12:05
Matrix: Water
Date Received: 10/05/16 16:35

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.036		0.036	0.012	ug/L		10/06/16 07:53	10/06/16 16:13	1
Heptachlor epoxide	<0.036		0.036	0.013	ug/L		10/06/16 07:53	10/06/16 16:13	1
Methoxychlor	<0.073		0.073	0.021	ug/L		10/06/16 07:53	10/06/16 16:13	1
Toxaphene	<0.36		0.36	0.18	ug/L		10/06/16 07:53	10/06/16 16:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*86*		*30 - 143*	*10/06/16 07:53*	*10/06/16 16:13*	*1*
Tetrachloro-m-xylene	*54*		*30 - 120*	*10/06/16 07:53*	*10/06/16 16:13*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.36		0.36	0.061	ug/L		10/06/16 07:53	10/07/16 14:58	1
PCB-1221	<0.36		0.36	0.18	ug/L		10/06/16 07:53	10/07/16 14:58	1
PCB-1232	<0.36		0.36	0.18	ug/L		10/06/16 07:53	10/07/16 14:58	1
PCB-1242	<0.36		0.36	0.18	ug/L		10/06/16 07:53	10/07/16 14:58	1
PCB-1248	<0.36		0.36	0.18	ug/L		10/06/16 07:53	10/07/16 14:58	1
PCB-1254	<0.36		0.36	0.18	ug/L		10/06/16 07:53	10/07/16 14:58	1
PCB-1260	<0.36		0.36	0.064	ug/L		10/06/16 07:53	10/07/16 14:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*64*		*30 - 127*	*10/06/16 07:53*	*10/07/16 14:58*	*1*
DCB Decachlorobiphenyl	*79*		*30 - 150*	*10/06/16 07:53*	*10/07/16 14:58*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.062**	**J**	0.20	0.062	mg/L		10/11/16 15:30	10/14/16 04:13	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 04:13	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:13	1
Barium	**0.56**		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:13	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 04:13	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 04:13	1
Calcium	**97**		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 04:13	1
Chromium	**0.0028**	**J**	0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 04:13	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 04:13	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:13	1
Iron	**8.4**	**^ B**	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 04:13	1
Lead	**0.0025**	**J**	0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 04:13	1
Magnesium	**72**		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 17:53	1
Manganese	**0.14**		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:13	1
Nickel	<0.010		0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 04:13	1
Potassium	**37**		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 04:13	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 04:13	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 04:13	1
Sodium	**210**		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 04:13	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:13	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 04:13	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 04:13	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 15:30	10/14/16 04:19	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-08-GW-10052016

Lab Sample ID: 500-118151-3

Date Collected: 10/05/16 12:05
Date Received: 10/05/16 16:35

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 04:19	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:19	1
Barium	**0.52**		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:19	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 04:19	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 04:19	1
Calcium	**92**		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 04:19	1
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 04:19	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 04:19	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:19	1
Iron	**7.8**	**^ B**	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 04:19	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 04:19	1
Magnesium	**68**		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 17:57	1
Manganese	**0.13**		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:19	1
Nickel	<0.010		0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 04:19	1
Potassium	**35**		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 04:19	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 04:19	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 04:19	1
Sodium	**200**		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 04:19	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:19	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 04:19	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 04:19	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:27	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			10/10/16 00:49	1
Sulfate	**3.0**	**J B**	5.0	1.5	mg/L			10/07/16 08:43	1
Total Organic Carbon - Duplicates	**17**	**B**	1.0	0.27	mg/L			10/07/16 04:12	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/16/16 19:52	1
Total Suspended Solids	**19**		5.0	2.5	mg/L			10/06/16 12:47	1
Ammonia	**39**	**B**	5.0	2.5	mg/L		10/12/16 19:17	10/12/16 23:14	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/06/16 13:27	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/14/16 00:15	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-09-GW-10052016

Lab Sample ID: 500-118151-4

Date Collected: 10/05/16 13:35
Date Received: 10/05/16 16:35

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			10/12/16 00:25	1
Benzene	**1.3**		0.50	0.15	ug/L			10/12/16 00:25	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/12/16 00:25	1
Bromoform	<1.0		1.0	0.48	ug/L			10/12/16 00:25	1
Bromomethane	<2.0		2.0	0.80	ug/L			10/12/16 00:25	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/12/16 00:25	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/12/16 00:25	1
Chlorobenzene	**13**		1.0	0.39	ug/L			10/12/16 00:25	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/12/16 00:25	1
Chloroform	<1.0		1.0	0.37	ug/L			10/12/16 00:25	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/12/16 00:25	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			10/12/16 00:25	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/12/16 00:25	1
Cyclohexane	**1.1**		1.0	0.49	ug/L			10/12/16 00:25	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/12/16 00:25	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			10/12/16 00:25	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/12/16 00:25	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			10/12/16 00:25	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/12/16 00:25	1
1,4-Dichlorobenzene	**1.2**		1.0	0.36	ug/L			10/12/16 00:25	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/12/16 00:25	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/12/16 00:25	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/12/16 00:25	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/12/16 00:25	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/12/16 00:25	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			10/12/16 00:25	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/12/16 00:25	1
Isopropylbenzene	**2.5**		1.0	0.39	ug/L			10/12/16 00:25	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/12/16 00:25	1
Methylcyclohexane	**0.99**	**J**	1.0	0.32	ug/L			10/12/16 00:25	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/12/16 00:25	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/12/16 00:25	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			10/12/16 00:25	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/12/16 00:25	1
Styrene	<1.0		1.0	0.39	ug/L			10/12/16 00:25	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/12/16 00:25	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/12/16 00:25	1
Toluene	<0.50		0.50	0.15	ug/L			10/12/16 00:25	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/12/16 00:25	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/12/16 00:25	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/12/16 00:25	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/12/16 00:25	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/12/16 00:25	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/12/16 00:25	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/12/16 00:25	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/12/16 00:25	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			10/12/16 00:25	1
Xylenes, Total	**0.46**	**J**	1.0	0.22	ug/L			10/12/16 00:25	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-09-GW-10052016

Lab Sample ID: 500-118151-4

Date Collected: 10/05/16 13:35
Matrix: Water
Date Received: 10/05/16 16:35

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*71 - 120*		*10/12/16 00:25*	*1*
Dibromofluoromethane	*92*		*70 - 120*		*10/12/16 00:25*	*1*
1,2-Dichloroethane-d4 (Surr)	*86*		*71 - 127*		*10/12/16 00:25*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*10/12/16 00:25*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.88**		0.74	0.23	ug/L		10/06/16 16:12	10/07/16 14:29	1
Acenaphthylene	<0.74		0.74	0.20	ug/L		10/06/16 16:12	10/07/16 14:29	1
Acetophenone	<3.7		3.7	0.49	ug/L		10/06/16 16:12	10/07/16 14:29	1
Anthracene	<0.74		0.74	0.25	ug/L		10/06/16 16:12	10/07/16 14:29	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		10/06/16 16:12	10/07/16 14:29	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		10/06/16 16:12	10/07/16 14:29	1
Benzo[b]fluoranthene	<0.15		0.15	0.060	ug/L		10/06/16 16:12	10/07/16 14:29	1
Benzo[g,h,i]perylene	<0.74		0.74	0.28	ug/L		10/06/16 16:12	10/07/16 14:29	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		10/06/16 16:12	10/07/16 14:29	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		10/06/16 16:12	10/07/16 14:29	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		10/06/16 16:12	10/07/16 14:29	1
Bis(2-ethylhexyl) phthalate	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 14:29	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		10/06/16 16:12	10/07/16 14:29	1
Butyl benzyl phthalate	<1.5		1.5	0.36	ug/L		10/06/16 16:12	10/07/16 14:29	1
Carbazole	<3.7		3.7	0.26	ug/L		10/06/16 16:12	10/07/16 14:29	1
4-Chloroaniline	<7.4	*	7.4	1.5	ug/L		10/06/16 16:12	10/07/16 14:29	1
4-Chloro-3-methylphenol	<7.4		7.4	1.7	ug/L		10/06/16 16:12	10/07/16 14:29	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		10/06/16 16:12	10/07/16 14:29	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		10/06/16 16:12	10/07/16 14:29	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		10/06/16 16:12	10/07/16 14:29	1
Chrysene	<0.37		0.37	0.051	ug/L		10/06/16 16:12	10/07/16 14:29	1
Dibenz(a,h)anthracene	<0.22		0.22	0.038	ug/L		10/06/16 16:12	10/07/16 14:29	1
Dibenzofuran	**0.21**	**J**	1.5	0.19	ug/L		10/06/16 16:12	10/07/16 14:29	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		10/06/16 16:12	10/07/16 14:29	1
2,4-Dichlorophenol	<7.4		7.4	1.9	ug/L		10/06/16 16:12	10/07/16 14:29	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		10/06/16 16:12	10/07/16 14:29	1
2,4-Dimethylphenol	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 14:29	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		10/06/16 16:12	10/07/16 14:29	1
Di-n-butyl phthalate	<3.7		3.7	0.54	ug/L		10/06/16 16:12	10/07/16 14:29	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		10/06/16 16:12	10/07/16 14:29	1
2,4-Dinitrophenol	<15		15	6.4	ug/L		10/06/16 16:12	10/07/16 14:29	1
2,4-Dinitrotoluene	<0.74		0.74	0.18	ug/L		10/06/16 16:12	10/07/16 14:29	1
2,6-Dinitrotoluene	<0.74		0.74	0.055	ug/L		10/06/16 16:12	10/07/16 14:29	1
Di-n-octyl phthalate	<7.4		7.4	0.78	ug/L		10/06/16 16:12	10/07/16 14:29	1
Fluoranthene	<0.74		0.74	0.34	ug/L		10/06/16 16:12	10/07/16 14:29	1
Fluorene	**0.39**	**J**	0.74	0.18	ug/L		10/06/16 16:12	10/07/16 14:29	1
Hexachlorobenzene	<0.37		0.37	0.059	ug/L		10/06/16 16:12	10/07/16 14:29	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		10/06/16 16:12	10/07/16 14:29	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		10/06/16 16:12	10/07/16 14:29	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		10/06/16 16:12	10/07/16 14:29	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		10/06/16 16:12	10/07/16 14:29	1
Isophorone	<1.5		1.5	0.28	ug/L		10/06/16 16:12	10/07/16 14:29	1
2-Methylnaphthalene	**2.3**		1.5	0.048	ug/L		10/06/16 16:12	10/07/16 14:29	1

Client Sample ID: MW-09-GW-10052016

Lab Sample ID: 500-118151-4

Date Collected: 10/05/16 13:35

Matrix: Water

Date Received: 10/05/16 16:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.23	ug/L		10/06/16 16:12	10/07/16 14:29	1
3 & 4 Methylphenol	**1.5**		1.5	0.33	ug/L		10/06/16 16:12	10/07/16 14:29	1
Naphthalene	**0.30**	**J**	0.74	0.23	ug/L		10/06/16 16:12	10/07/16 14:29	1
2-Nitroaniline	<3.7		3.7	0.95	ug/L		10/06/16 16:12	10/07/16 14:29	1
3-Nitroaniline	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 14:29	1
4-Nitroaniline	<7.4		7.4	1.2	ug/L		10/06/16 16:12	10/07/16 14:29	1
Nitrobenzene	<0.74		0.74	0.33	ug/L		10/06/16 16:12	10/07/16 14:29	1
2-Nitrophenol	<7.4		7.4	1.9	ug/L		10/06/16 16:12	10/07/16 14:29	1
4-Nitrophenol	<15		15	5.5	ug/L		10/06/16 16:12	10/07/16 14:29	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		10/06/16 16:12	10/07/16 14:29	1
N-Nitrosodiphenylamine	**0.57**	**J**	0.74	0.27	ug/L		10/06/16 16:12	10/07/16 14:29	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		10/06/16 16:12	10/07/16 14:29	1
Pentachlorophenol	<15		15	2.9	ug/L		10/06/16 16:12	10/07/16 14:29	1
Phenanthrene	**0.37**	**J**	0.74	0.22	ug/L		10/06/16 16:12	10/07/16 14:29	1
Phenol	<3.7		3.7	0.50	ug/L		10/06/16 16:12	10/07/16 14:29	1
Pyrene	<0.74		0.74	0.32	ug/L		10/06/16 16:12	10/07/16 14:29	1
2,4,5-Trichlorophenol	<7.4		7.4	1.9	ug/L		10/06/16 16:12	10/07/16 14:29	1
2,4,6-Trichlorophenol	<3.7		3.7	0.53	ug/L		10/06/16 16:12	10/07/16 14:29	1
Benzaldehyde	<30	^	30	11	ug/L		10/06/16 16:12	10/07/16 14:29	1
Caprolactam	<7.4		7.4	1.1	ug/L		10/06/16 16:12	10/07/16 14:29	1
Atrazine	<3.7		3.7	0.46	ug/L		10/06/16 16:12	10/07/16 14:29	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		10/06/16 16:12	10/07/16 14:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*62*		*30 - 123*	*10/06/16 16:12*	*10/07/16 14:29*	*1*
2-Fluorophenol (Surr)	*51*		*30 - 110*	*10/06/16 16:12*	*10/07/16 14:29*	*1*
Nitrobenzene-d5 (Surr)	*56*		*33 - 139*	*10/06/16 16:12*	*10/07/16 14:29*	*1*
Phenol-d5 (Surr)	*39*		*20 - 100*	*10/06/16 16:12*	*10/07/16 14:29*	*1*
Terphenyl-d14 (Surr)	*97*		*42 - 150*	*10/06/16 16:12*	*10/07/16 14:29*	*1*
2,4,6-Tribromophenol (Surr)	*104*		*30 - 150*	*10/06/16 16:12*	*10/07/16 14:29*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		10/06/16 07:53	10/06/16 16:33	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/06/16 07:53	10/06/16 16:33	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		10/06/16 07:53	10/06/16 16:33	1
beta-BHC	<0.037		0.037	0.0094	ug/L		10/06/16 07:53	10/06/16 16:33	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/06/16 16:33	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/06/16 07:53	10/06/16 16:33	1
4,4'-DDT	<0.037		0.037	0.0030	ug/L		10/06/16 07:53	10/06/16 16:33	1
delta-BHC	<0.037		0.037	0.0095	ug/L		10/06/16 07:53	10/06/16 16:33	1
Dieldrin	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/06/16 16:33	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/06/16 07:53	10/06/16 16:33	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/06/16 07:53	10/06/16 16:33	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/06/16 07:53	10/06/16 16:33	1
Endrin	<0.037		0.037	0.013	ug/L		10/06/16 07:53	10/06/16 16:33	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		10/06/16 07:53	10/06/16 16:33	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/06/16 07:53	10/06/16 16:33	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		10/06/16 07:53	10/06/16 16:33	1
gamma-Chlordane	<0.037		0.037	0.0067	ug/L		10/06/16 07:53	10/06/16 16:33	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-09-GW-10052016

Lab Sample ID: 500-118151-4

Date Collected: 10/05/16 13:35
Matrix: Water
Date Received: 10/05/16 16:35

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/06/16 16:33	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/06/16 07:53	10/06/16 16:33	1
Methoxychlor	<0.074		0.074	0.021	ug/L		10/06/16 07:53	10/06/16 16:33	1
Toxaphene	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/06/16 16:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*58*		*30 - 143*	*10/06/16 07:53*	*10/06/16 16:33*	*1*
Tetrachloro-m-xylene	*69*		*30 - 120*	*10/06/16 07:53*	*10/06/16 16:33*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		10/06/16 07:53	10/07/16 15:13	1
PCB-1221	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 15:13	1
PCB-1232	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 15:13	1
PCB-1242	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 15:13	1
PCB-1248	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 15:13	1
PCB-1254	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 15:13	1
PCB-1260	<0.37		0.37	0.065	ug/L		10/06/16 07:53	10/07/16 15:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*84*		*30 - 127*	*10/06/16 07:53*	*10/07/16 15:13*	*1*
DCB Decachlorobiphenyl	*54*		*30 - 150*	*10/06/16 07:53*	*10/07/16 15:13*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 15:30	10/14/16 04:24	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 04:24	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:24	1
Barium	**0.77**		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:24	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 04:24	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 04:24	1
Calcium	**120**		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 04:24	1
Chromium	**0.0050**	**J**	0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 04:24	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 04:24	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:24	1
Iron	**24**	**^ B**	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 04:24	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 04:24	1
Magnesium	**79**		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 18:01	1
Manganese	**0.15**		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:24	1
Nickel	<0.010		0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 04:24	1
Potassium	**74**		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 04:24	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 04:24	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 04:24	1
Sodium	**190**		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 04:24	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:24	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 04:24	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 04:24	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 15:30	10/14/16 04:28	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-09-GW-10052016

Lab Sample ID: 500-118151-4

Date Collected: 10/05/16 13:35
Matrix: Water
Date Received: 10/05/16 16:35

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 04:28	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:28	1
Barium	**0.77**		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:28	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 04:28	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 04:28	1
Calcium	**120**		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 04:28	1
Chromium	**0.0044**	**J**	0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 04:28	1
Cobalt	**0.0010**	**J**	0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 04:28	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:28	1
Iron	**25**	**^ B**	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 04:28	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 04:28	1
Magnesium	**79**		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 18:05	1
Manganese	**0.15**		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:28	1
Nickel	<0.010		0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 04:28	1
Potassium	**74**		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 04:28	1
Selenium	**0.0058**	**J**	0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 04:28	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 04:28	1
Sodium	**190**		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 04:28	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:28	1
Vanadium	**0.0019**	**J**	0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 04:28	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 04:28	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:30	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			10/10/16 00:53	1
Sulfate	**2.1**	**J B**	5.0	1.5	mg/L			10/12/16 07:51	1
Total Organic Carbon - Duplicates	**27**	**F1 B**	1.0	0.27	mg/L			10/07/16 04:28	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/16/16 19:52	1
Total Suspended Solids	**28**		5.0	2.5	mg/L			10/06/16 12:48	1
Ammonia	**78**	**B**	5.0	2.5	mg/L		10/12/16 19:17	10/12/16 23:17	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/06/16 13:27	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/14/16 00:18	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-06-GW-10052016

Lab Sample ID: 500-118151-5

Date Collected: 10/05/16 08:40
Matrix: Water
Date Received: 10/05/16 16:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**41**		5.0	1.7	ug/L			10/12/16 00:52	1
Benzene	**6.6**		0.50	0.15	ug/L			10/12/16 00:52	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/12/16 00:52	1
Bromoform	<1.0		1.0	0.48	ug/L			10/12/16 00:52	1
Bromomethane	<2.0		2.0	0.80	ug/L			10/12/16 00:52	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/12/16 00:52	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/12/16 00:52	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			10/12/16 00:52	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/12/16 00:52	1
Chloroform	<1.0		1.0	0.37	ug/L			10/12/16 00:52	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/12/16 00:52	1
cis-1,2-Dichloroethene	**5.3**		1.0	0.41	ug/L			10/12/16 00:52	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/12/16 00:52	1
Cyclohexane	<1.0		1.0	0.49	ug/L			10/12/16 00:52	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/12/16 00:52	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			10/12/16 00:52	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/12/16 00:52	1
1,2-Dichlorobenzene	**2.6**		1.0	0.33	ug/L			10/12/16 00:52	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/12/16 00:52	1
1,4-Dichlorobenzene	**14**		1.0	0.36	ug/L			10/12/16 00:52	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/12/16 00:52	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/12/16 00:52	1
1,2-Dichloroethane	**1.3**		1.0	0.39	ug/L			10/12/16 00:52	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/12/16 00:52	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/12/16 00:52	1
Ethylbenzene	**63**		0.50	0.18	ug/L			10/12/16 00:52	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/12/16 00:52	1
Isopropylbenzene	**4.0**		1.0	0.39	ug/L			10/12/16 00:52	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/12/16 00:52	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			10/12/16 00:52	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/12/16 00:52	1
Methyl Ethyl Ketone	**19**		5.0	2.1	ug/L			10/12/16 00:52	1
methyl isobutyl ketone	**44**		5.0	2.2	ug/L			10/12/16 00:52	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/12/16 00:52	1
Styrene	<1.0		1.0	0.39	ug/L			10/12/16 00:52	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/12/16 00:52	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/12/16 00:52	1
Toluene	**160**		0.50	0.15	ug/L			10/12/16 00:52	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/12/16 00:52	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/12/16 00:52	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/12/16 00:52	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/12/16 00:52	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/12/16 00:52	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/12/16 00:52	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/12/16 00:52	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/12/16 00:52	1
Vinyl chloride	**4.4**		0.50	0.20	ug/L			10/12/16 00:52	1
Xylenes, Total	**240**		1.0	0.22	ug/L			10/12/16 00:52	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-06-GW-10052016

Lab Sample ID: 500-118151-5

Date Collected: 10/05/16 08:40
Matrix: Water
Date Received: 10/05/16 16:35

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*		*10/12/16 00:52*	*1*
Dibromofluoromethane	*92*		*70 - 120*		*10/12/16 00:52*	*1*
1,2-Dichloroethane-d4 (Surr)	*86*		*71 - 127*		*10/12/16 00:52*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*10/12/16 00:52*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<7.4		7.4	2.3	ug/L		10/06/16 16:12	10/07/16 16:27	10
Acenaphthylene	<7.4		7.4	2.0	ug/L		10/06/16 16:12	10/07/16 16:27	10
Acetophenone	**7.2**	**J**	37	4.9	ug/L		10/06/16 16:12	10/07/16 16:27	10
Anthracene	<7.4		7.4	2.5	ug/L		10/06/16 16:12	10/07/16 16:27	10
Benzo[a]anthracene	<1.5		1.5	0.42	ug/L		10/06/16 16:12	10/07/16 16:27	10
Benzo[a]pyrene	<1.5	*	1.5	0.73	ug/L		10/06/16 16:12	10/07/16 16:27	10
Benzo[b]fluoranthene	<1.5	*	1.5	0.60	ug/L		10/06/16 16:12	10/07/16 16:27	10
Benzo[g,h,i]perylene	<7.4	*	7.4	2.8	ug/L		10/06/16 16:12	10/07/16 16:27	10
Benzo[k]fluoranthene	<1.5	*	1.5	0.47	ug/L		10/06/16 16:12	10/07/16 16:27	10
Bis(2-chloroethoxy)methane	<15		15	2.1	ug/L		10/06/16 16:12	10/07/16 16:27	10
Bis(2-chloroethyl)ether	<15		15	2.2	ug/L		10/06/16 16:12	10/07/16 16:27	10
Bis(2-ethylhexyl) phthalate	**120**		74	13	ug/L		10/06/16 16:12	10/07/16 16:27	10
4-Bromophenyl phenyl ether	<37		37	4.0	ug/L		10/06/16 16:12	10/07/16 16:27	10
Butyl benzyl phthalate	<15		15	3.5	ug/L		10/06/16 16:12	10/07/16 16:27	10
Carbazole	<37		37	2.6	ug/L		10/06/16 16:12	10/07/16 16:27	10
4-Chloroaniline	<74	*	74	15	ug/L		10/06/16 16:12	10/07/16 16:27	10
4-Chloro-3-methylphenol	<74		74	17	ug/L		10/06/16 16:12	10/07/16 16:27	10
2-Chloronaphthalene	<15		15	1.7	ug/L		10/06/16 16:12	10/07/16 16:27	10
2-Chlorophenol	<37		37	4.1	ug/L		10/06/16 16:12	10/07/16 16:27	10
4-Chlorophenyl phenyl ether	<37		37	4.7	ug/L		10/06/16 16:12	10/07/16 16:27	10
Chrysene	<3.7		3.7	0.50	ug/L		10/06/16 16:12	10/07/16 16:27	10
Dibenz(a,h)anthracene	<2.2	*	2.2	0.37	ug/L		10/06/16 16:12	10/07/16 16:27	10
Dibenzofuran	<15		15	1.9	ug/L		10/06/16 16:12	10/07/16 16:27	10
3,3'-Dichlorobenzidine	<37		37	13	ug/L		10/06/16 16:12	10/07/16 16:27	10
2,4-Dichlorophenol	<74		74	19	ug/L		10/06/16 16:12	10/07/16 16:27	10
Diethyl phthalate	<15		15	2.7	ug/L		10/06/16 16:12	10/07/16 16:27	10
2,4-Dimethylphenol	**79**		74	13	ug/L		10/06/16 16:12	10/07/16 16:27	10
Dimethyl phthalate	<15		15	2.3	ug/L		10/06/16 16:12	10/07/16 16:27	10
Di-n-butyl phthalate	<37		37	5.4	ug/L		10/06/16 16:12	10/07/16 16:27	10
4,6-Dinitro-2-methylphenol	<150		150	44	ug/L		10/06/16 16:12	10/07/16 16:27	10
2,4-Dinitrophenol	<150		150	63	ug/L		10/06/16 16:12	10/07/16 16:27	10
2,4-Dinitrotoluene	<7.4		7.4	1.8	ug/L		10/06/16 16:12	10/07/16 16:27	10
2,6-Dinitrotoluene	<7.4		7.4	0.54	ug/L		10/06/16 16:12	10/07/16 16:27	10
Di-n-octyl phthalate	<74		74	7.8	ug/L		10/06/16 16:12	10/07/16 16:27	10
Fluoranthene	<7.4		7.4	3.3	ug/L		10/06/16 16:12	10/07/16 16:27	10
Fluorene	<7.4		7.4	1.8	ug/L		10/06/16 16:12	10/07/16 16:27	10
Hexachlorobenzene	<3.7		3.7	0.59	ug/L		10/06/16 16:12	10/07/16 16:27	10
Hexachlorobutadiene	<37		37	3.8	ug/L		10/06/16 16:12	10/07/16 16:27	10
Hexachlorocyclopentadiene	<150		150	47	ug/L		10/06/16 16:12	10/07/16 16:27	10
Hexachloroethane	<37		37	4.4	ug/L		10/06/16 16:12	10/07/16 16:27	10
Indeno[1,2,3-cd]pyrene	<1.5	*	1.5	0.55	ug/L		10/06/16 16:12	10/07/16 16:27	10
Isophorone	<15		15	2.8	ug/L		10/06/16 16:12	10/07/16 16:27	10
2-Methylnaphthalene	**2.2**	**J**	15	0.48	ug/L		10/06/16 16:12	10/07/16 16:27	10

Client Sample ID: MW-06-GW-10052016

Lab Sample ID: 500-118151-5

Date Collected: 10/05/16 08:40

Matrix: Water

Date Received: 10/05/16 16:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	**21**		15	2.3	ug/L		10/06/16 16:12	10/07/16 16:27	10
3 & 4 Methylphenol	**160**		15	3.3	ug/L		10/06/16 16:12	10/07/16 16:27	10
Naphthalene	**14**		7.4	2.3	ug/L		10/06/16 16:12	10/07/16 16:27	10
2-Nitroaniline	<37		37	9.5	ug/L		10/06/16 16:12	10/07/16 16:27	10
3-Nitroaniline	<74		74	13	ug/L		10/06/16 16:12	10/07/16 16:27	10
4-Nitroaniline	<74		74	12	ug/L		10/06/16 16:12	10/07/16 16:27	10
Nitrobenzene	<7.4		7.4	3.3	ug/L		10/06/16 16:12	10/07/16 16:27	10
2-Nitrophenol	<74		74	18	ug/L		10/06/16 16:12	10/07/16 16:27	10
4-Nitrophenol	<150		150	55	ug/L		10/06/16 16:12	10/07/16 16:27	10
N-Nitrosodi-n-propylamine	<3.7		3.7	1.1	ug/L		10/06/16 16:12	10/07/16 16:27	10
N-Nitrosodiphenylamine	**3.2**	**J**	7.4	2.7	ug/L		10/06/16 16:12	10/07/16 16:27	10
2,2'-oxybis[1-chloropropane]	<15		15	2.8	ug/L		10/06/16 16:12	10/07/16 16:27	10
Pentachlorophenol	<150		150	29	ug/L		10/06/16 16:12	10/07/16 16:27	10
Phenanthrene	<7.4		7.4	2.2	ug/L		10/06/16 16:12	10/07/16 16:27	10
Phenol	<37		37	5.0	ug/L		10/06/16 16:12	10/07/16 16:27	10
Pyrene	<7.4		7.4	3.1	ug/L		10/06/16 16:12	10/07/16 16:27	10
2,4,5-Trichlorophenol	<74		74	19	ug/L		10/06/16 16:12	10/07/16 16:27	10
2,4,6-Trichlorophenol	<37		37	5.3	ug/L		10/06/16 16:12	10/07/16 16:27	10
Benzaldehyde	<300	^	300	110	ug/L		10/06/16 16:12	10/07/16 16:27	10
Caprolactam	<74		74	11	ug/L		10/06/16 16:12	10/07/16 16:27	10
Atrazine	<37		37	4.6	ug/L		10/06/16 16:12	10/07/16 16:27	10
1,1'-Biphenyl	<37		37	2.7	ug/L		10/06/16 16:12	10/07/16 16:27	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*60*		*30 - 123*	*10/06/16 16:12*	*10/07/16 16:27*	*10*
2-Fluorophenol (Surr)	*74*		*30 - 110*	*10/06/16 16:12*	*10/07/16 16:27*	*10*
Nitrobenzene-d5 (Surr)	*68*		*33 - 139*	*10/06/16 16:12*	*10/07/16 16:27*	*10*
Phenol-d5 (Surr)	*69*		*20 - 100*	*10/06/16 16:12*	*10/07/16 16:27*	*10*
Terphenyl-d14 (Surr)	*131*		*42 - 150*	*10/06/16 16:12*	*10/07/16 16:27*	*10*
2,4,6-Tribromophenol (Surr)	*88*		*30 - 150*	*10/06/16 16:12*	*10/07/16 16:27*	*10*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.036		0.036	0.0048	ug/L		10/07/16 10:36	10/07/16 20:44	1
alpha-BHC	<0.036		0.036	0.0024	ug/L		10/07/16 10:36	10/07/16 20:44	1
alpha-Chlordane	<0.036		0.036	0.0040	ug/L		10/07/16 10:36	10/07/16 20:44	1
beta-BHC	<0.036		0.036	0.0093	ug/L		10/07/16 10:36	10/07/16 20:44	1
4,4'-DDD	<0.036		0.036	0.012	ug/L		10/07/16 10:36	10/07/16 20:44	1
4,4'-DDE	<0.036		0.036	0.0035	ug/L		10/07/16 10:36	10/07/16 20:44	1
4,4'-DDT	<0.036		0.036	0.0029	ug/L		10/07/16 10:36	10/07/16 20:44	1
delta-BHC	<0.036		0.036	0.0094	ug/L		10/07/16 10:36	10/07/16 20:44	1
Dieldrin	<0.036		0.036	0.012	ug/L		10/07/16 10:36	10/07/16 20:44	1
Endosulfan I	<0.036		0.036	0.0037	ug/L		10/07/16 10:36	10/07/16 20:44	1
Endosulfan II	<0.036		0.036	0.0026	ug/L		10/07/16 10:36	10/07/16 20:44	1
Endosulfan sulfate	<0.036		0.036	0.011	ug/L		10/07/16 10:36	10/07/16 20:44	1
Endrin	<0.036		0.036	0.013	ug/L		10/07/16 10:36	10/07/16 20:44	1
Endrin aldehyde	<0.036		0.036	0.0075	ug/L		10/07/16 10:36	10/07/16 20:44	1
Endrin ketone	<0.036		0.036	0.015	ug/L		10/07/16 10:36	10/07/16 20:44	1
gamma-BHC (Lindane)	<0.036		0.036	0.0051	ug/L		10/07/16 10:36	10/07/16 20:44	1
gamma-Chlordane	<0.036		0.036	0.0066	ug/L		10/07/16 10:36	10/07/16 20:44	1

Client Sample ID: MW-06-GW-10052016

Lab Sample ID: 500-118151-5

Date Collected: 10/05/16 08:40

Matrix: Water

Date Received: 10/05/16 16:35

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.036		0.036	0.012	ug/L		10/07/16 10:36	10/07/16 20:44	1
Heptachlor epoxide	<0.036		0.036	0.013	ug/L		10/07/16 10:36	10/07/16 20:44	1
Methoxychlor	<0.073		0.073	0.021	ug/L		10/07/16 10:36	10/07/16 20:44	1
Toxaphene	<0.36		0.36	0.18	ug/L		10/07/16 10:36	10/07/16 20:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*109*		*30 - 143*	*10/07/16 10:36*	*10/07/16 20:44*	*1*
Tetrachloro-m-xylene	*226*	*X*	*30 - 120*	*10/07/16 10:36*	*10/07/16 20:44*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.36		0.36	0.061	ug/L		10/07/16 10:36	10/17/16 12:19	1
PCB-1221	<0.36		0.36	0.18	ug/L		10/07/16 10:36	10/17/16 12:19	1
PCB-1232	<0.36		0.36	0.18	ug/L		10/07/16 10:36	10/17/16 12:19	1
PCB-1242	**5.3**		0.36	0.18	ug/L		10/07/16 10:36	10/17/16 12:19	1
PCB-1248	<0.36		0.36	0.18	ug/L		10/07/16 10:36	10/17/16 12:19	1
PCB-1254	<0.36		0.36	0.18	ug/L		10/07/16 10:36	10/17/16 12:19	1
PCB-1260	<0.36		0.36	0.064	ug/L		10/07/16 10:36	10/17/16 12:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*34*		*30 - 127*	*10/07/16 10:36*	*10/17/16 12:19*	*1*
DCB Decachlorobiphenyl	*14*	*X*	*30 - 150*	*10/07/16 10:36*	*10/17/16 12:19*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.55**	**J**	1.0	0.31	mg/L		10/11/16 15:30	10/14/16 04:31	1
Antimony	<0.10		0.10	0.032	mg/L		10/11/16 15:30	10/14/16 04:31	1
Arsenic	**0.030**	**J**	0.050	0.017	mg/L		10/11/16 15:30	10/14/16 04:31	1
Barium	**0.37**		0.050	0.011	mg/L		10/11/16 15:30	10/14/16 04:31	1
Beryllium	<0.020		0.020	0.0043	mg/L		10/11/16 15:30	10/14/16 04:31	1
Cadmium	<0.010		0.010	0.0047	mg/L		10/11/16 15:30	10/14/16 04:31	1
Calcium	**11**		1.0	0.30	mg/L		10/11/16 15:30	10/14/16 04:31	1
Chromium	**0.19**		0.050	0.012	mg/L		10/11/16 15:30	10/14/16 04:31	1
Cobalt	**0.036**		0.025	0.0048	mg/L		10/11/16 15:30	10/14/16 04:31	1
Copper	**0.016**	**J**	0.050	0.011	mg/L		10/11/16 15:30	10/14/16 04:31	1
Iron	**2.7**	**^ B**	1.0	0.50	mg/L		10/11/16 15:30	10/14/16 04:31	1
Lead	**0.22**		0.025	0.013	mg/L		10/11/16 15:30	10/14/16 04:31	1
Magnesium	**28**		0.50	0.20	mg/L		10/11/16 15:30	10/14/16 18:09	1
Manganese	<0.050		0.050	0.017	mg/L		10/11/16 15:30	10/14/16 04:31	1
Nickel	**0.14**		0.050	0.018	mg/L		10/11/16 15:30	10/14/16 04:31	1
Potassium	**650**		2.5	0.81	mg/L		10/11/16 15:30	10/14/16 04:31	1
Selenium	<0.050		0.050	0.026	mg/L		10/11/16 15:30	10/14/16 04:31	1
Silver	<0.025		0.025	0.0066	mg/L		10/11/16 15:30	10/14/16 04:31	1
Sodium	**3200**		5.0	2.2	mg/L		10/11/16 15:30	10/14/16 04:31	1
Thallium	<0.050		0.050	0.017	mg/L		10/11/16 15:30	10/14/16 04:31	1
Vanadium	**0.065**		0.025	0.0093	mg/L		10/11/16 15:30	10/14/16 04:31	1
Zinc	**0.20**		0.10	0.045	mg/L		10/11/16 15:30	10/14/16 04:31	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<1.0		1.0	0.31	mg/L		10/11/16 15:30	10/14/16 04:36	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-06-GW-10052016

Lab Sample ID: 500-118151-5

Date Collected: 10/05/16 08:40
Matrix: Water
Date Received: 10/05/16 16:35

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.10		0.10	0.032	mg/L		10/11/16 15:30	10/14/16 04:36	1
Arsenic	**0.028**	**J**	0.050	0.017	mg/L		10/11/16 15:30	10/14/16 04:36	1
Barium	**0.35**		0.050	0.011	mg/L		10/11/16 15:30	10/14/16 04:36	1
Beryllium	<0.020		0.020	0.0043	mg/L		10/11/16 15:30	10/14/16 04:36	1
Cadmium	<0.010		0.010	0.0047	mg/L		10/11/16 15:30	10/14/16 04:36	1
Calcium	**11**		1.0	0.30	mg/L		10/11/16 15:30	10/14/16 04:36	1
Chromium	**0.18**		0.050	0.012	mg/L		10/11/16 15:30	10/14/16 04:36	1
Cobalt	**0.038**		0.025	0.0048	mg/L		10/11/16 15:30	10/14/16 04:36	1
Copper	<0.050		0.050	0.011	mg/L		10/11/16 15:30	10/14/16 04:36	1
Iron	**2.1**	**^ B**	1.0	0.50	mg/L		10/11/16 15:30	10/14/16 04:36	1
Lead	**0.029**		0.025	0.013	mg/L		10/11/16 15:30	10/14/16 04:36	1
Magnesium	**29**		0.50	0.20	mg/L		10/11/16 15:30	10/14/16 18:14	1
Manganese	<0.050		0.050	0.017	mg/L		10/11/16 15:30	10/14/16 04:36	1
Nickel	**0.15**		0.050	0.018	mg/L		10/11/16 15:30	10/14/16 04:36	1
Potassium	**690**		2.5	0.81	mg/L		10/11/16 15:30	10/14/16 04:36	1
Selenium	**0.039**	**J**	0.050	0.026	mg/L		10/11/16 15:30	10/14/16 04:36	1
Silver	<0.025		0.025	0.0066	mg/L		10/11/16 15:30	10/14/16 04:36	1
Sodium	**3300**		5.0	2.2	mg/L		10/11/16 15:30	10/14/16 04:36	1
Thallium	<0.050		0.050	0.017	mg/L		10/11/16 15:30	10/14/16 04:36	1
Vanadium	**0.053**		0.025	0.0093	mg/L		10/11/16 15:30	10/14/16 04:36	1
Zinc	**0.056**	**J**	0.10	0.045	mg/L		10/11/16 15:30	10/14/16 04:36	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00023**		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:33	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**8.0**		1.0	0.18	mg/L			10/10/16 00:58	1
Sulfate	**12**	**J B**	25	7.4	mg/L			10/12/16 07:46	5
Total Organic Carbon - Duplicates	**530**	**B**	20	5.3	mg/L			10/07/16 20:51	20
Nitrogen, Nitrate	**0.053**	**J**	0.10	0.035	mg/L			10/16/16 19:52	1
Total Suspended Solids	**7.0**		5.0	2.5	mg/L			10/06/16 12:49	1
Ammonia	**790**		50	25	mg/L		10/12/16 19:17	10/13/16 16:08	250
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/06/16 13:28	1
Nitrogen, Nitrate Nitrite	**0.053**	**J**	0.10	0.035	mg/L			10/14/16 00:20	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-2 (10052016)

Date Collected: 10/05/16 00:00
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-6

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**44**		5.0	1.7	ug/L			10/12/16 01:45	1
Benzene	**7.6**		0.50	0.15	ug/L			10/12/16 01:45	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/12/16 01:45	1
Bromoform	<1.0		1.0	0.48	ug/L			10/12/16 01:45	1
Bromomethane	<2.0		2.0	0.80	ug/L			10/12/16 01:45	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/12/16 01:45	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/12/16 01:45	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			10/12/16 01:45	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/12/16 01:45	1
Chloroform	<1.0		1.0	0.37	ug/L			10/12/16 01:45	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/12/16 01:45	1
cis-1,2-Dichloroethene	**5.5**		1.0	0.41	ug/L			10/12/16 01:45	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/12/16 01:45	1
Cyclohexane	<1.0		1.0	0.49	ug/L			10/12/16 01:45	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/12/16 01:45	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			10/12/16 01:45	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/12/16 01:45	1
1,2-Dichlorobenzene	**3.2**		1.0	0.33	ug/L			10/12/16 01:45	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/12/16 01:45	1
1,4-Dichlorobenzene	**18**		1.0	0.36	ug/L			10/12/16 01:45	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/12/16 01:45	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/12/16 01:45	1
1,2-Dichloroethane	**1.3**		1.0	0.39	ug/L			10/12/16 01:45	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/12/16 01:45	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/12/16 01:45	1
Ethylbenzene	**78**		0.50	0.18	ug/L			10/12/16 01:45	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/12/16 01:45	1
Isopropylbenzene	**5.1**		1.0	0.39	ug/L			10/12/16 01:45	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/12/16 01:45	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			10/12/16 01:45	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/12/16 01:45	1
Methyl Ethyl Ketone	**20**		5.0	2.1	ug/L			10/12/16 01:45	1
methyl isobutyl ketone	**49**		5.0	2.2	ug/L			10/12/16 01:45	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/12/16 01:45	1
Styrene	<1.0		1.0	0.39	ug/L			10/12/16 01:45	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/12/16 01:45	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/12/16 01:45	1
Toluene	**200**		0.50	0.15	ug/L			10/12/16 01:45	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/12/16 01:45	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/12/16 01:45	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/12/16 01:45	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/12/16 01:45	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/12/16 01:45	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/12/16 01:45	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/12/16 01:45	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/12/16 01:45	1
Vinyl chloride	**5.3**		0.50	0.20	ug/L			10/12/16 01:45	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-2 (10052016)

Date Collected: 10/05/16 00:00
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-6

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*		*10/12/16 01:45*	*1*
Dibromofluoromethane	*91*		*70 - 120*		*10/12/16 01:45*	*1*
1,2-Dichloroethane-d4 (Surr)	*84*		*71 - 127*		*10/12/16 01:45*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*10/12/16 01:45*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**220**		10	2.2	ug/L			10/12/16 02:12	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*71 - 120*		*10/12/16 02:12*	*10*
Dibromofluoromethane	*89*		*70 - 120*		*10/12/16 02:12*	*10*
1,2-Dichloroethane-d4 (Surr)	*84*		*71 - 127*		*10/12/16 02:12*	*10*
Toluene-d8 (Surr)	*98*		*75 - 120*		*10/12/16 02:12*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<7.4		7.4	2.3	ug/L		10/06/16 16:12	10/07/16 16:56	10
Acenaphthylene	<7.4		7.4	2.0	ug/L		10/06/16 16:12	10/07/16 16:56	10
Acetophenone	**6.6**	**J**	37	4.9	ug/L		10/06/16 16:12	10/07/16 16:56	10
Anthracene	<7.4		7.4	2.5	ug/L		10/06/16 16:12	10/07/16 16:56	10
Benzo[a]anthracene	<1.5		1.5	0.42	ug/L		10/06/16 16:12	10/07/16 16:56	10
Benzo[a]pyrene	<1.5	*	1.5	0.73	ug/L		10/06/16 16:12	10/07/16 16:56	10
Benzo[b]fluoranthene	<1.5	*	1.5	0.60	ug/L		10/06/16 16:12	10/07/16 16:56	10
Benzo[g,h,i]perylene	<7.4	*	7.4	2.8	ug/L		10/06/16 16:12	10/07/16 16:56	10
Benzo[k]fluoranthene	<1.5	*	1.5	0.47	ug/L		10/06/16 16:12	10/07/16 16:56	10
Bis(2-chloroethoxy)methane	<15		15	2.1	ug/L		10/06/16 16:12	10/07/16 16:56	10
Bis(2-chloroethyl)ether	<15		15	2.2	ug/L		10/06/16 16:12	10/07/16 16:56	10
Bis(2-ethylhexyl) phthalate	**120**		74	13	ug/L		10/06/16 16:12	10/07/16 16:56	10
4-Bromophenyl phenyl ether	<37		37	4.0	ug/L		10/06/16 16:12	10/07/16 16:56	10
Butyl benzyl phthalate	<15		15	3.6	ug/L		10/06/16 16:12	10/07/16 16:56	10
Carbazole	<37		37	2.6	ug/L		10/06/16 16:12	10/07/16 16:56	10
4-Chloroaniline	<74	*	74	15	ug/L		10/06/16 16:12	10/07/16 16:56	10
4-Chloro-3-methylphenol	<74		74	17	ug/L		10/06/16 16:12	10/07/16 16:56	10
2-Chloronaphthalene	<15		15	1.7	ug/L		10/06/16 16:12	10/07/16 16:56	10
2-Chlorophenol	<37		37	4.1	ug/L		10/06/16 16:12	10/07/16 16:56	10
4-Chlorophenyl phenyl ether	<37		37	4.7	ug/L		10/06/16 16:12	10/07/16 16:56	10
Chrysene	<3.7		3.7	0.50	ug/L		10/06/16 16:12	10/07/16 16:56	10
Dibenz(a,h)anthracene	<2.2	*	2.2	0.38	ug/L		10/06/16 16:12	10/07/16 16:56	10
Dibenzofuran	<15		15	1.9	ug/L		10/06/16 16:12	10/07/16 16:56	10
3,3'-Dichlorobenzidine	<37		37	13	ug/L		10/06/16 16:12	10/07/16 16:56	10
2,4-Dichlorophenol	<74		74	19	ug/L		10/06/16 16:12	10/07/16 16:56	10
Diethyl phthalate	<15		15	2.7	ug/L		10/06/16 16:12	10/07/16 16:56	10
2,4-Dimethylphenol	**77**		74	13	ug/L		10/06/16 16:12	10/07/16 16:56	10
Dimethyl phthalate	<15		15	2.3	ug/L		10/06/16 16:12	10/07/16 16:56	10
Di-n-butyl phthalate	<37		37	5.4	ug/L		10/06/16 16:12	10/07/16 16:56	10
4,6-Dinitro-2-methylphenol	<150		150	44	ug/L		10/06/16 16:12	10/07/16 16:56	10
2,4-Dinitrophenol	<150		150	64	ug/L		10/06/16 16:12	10/07/16 16:56	10
2,4-Dinitrotoluene	<7.4		7.4	1.8	ug/L		10/06/16 16:12	10/07/16 16:56	10
2,6-Dinitrotoluene	<7.4		7.4	0.55	ug/L		10/06/16 16:12	10/07/16 16:56	10
Di-n-octyl phthalate	<74		74	7.8	ug/L		10/06/16 16:12	10/07/16 16:56	10

Client Sample ID: DUP-2 (10052016)

Lab Sample ID: 500-118151-6

Date Collected: 10/05/16 00:00

Matrix: Water

Date Received: 10/05/16 16:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<7.4		7.4	3.4	ug/L		10/06/16 16:12	10/07/16 16:56	10
Fluorene	<7.4		7.4	1.8	ug/L		10/06/16 16:12	10/07/16 16:56	10
Hexachlorobenzene	<3.7		3.7	0.59	ug/L		10/06/16 16:12	10/07/16 16:56	10
Hexachlorobutadiene	<37		37	3.8	ug/L		10/06/16 16:12	10/07/16 16:56	10
Hexachlorocyclopentadiene	<150		150	47	ug/L		10/06/16 16:12	10/07/16 16:56	10
Hexachloroethane	<37		37	4.4	ug/L		10/06/16 16:12	10/07/16 16:56	10
Indeno[1,2,3-cd]pyrene	<1.5	*	1.5	0.55	ug/L		10/06/16 16:12	10/07/16 16:56	10
Isophorone	<15		15	2.8	ug/L		10/06/16 16:12	10/07/16 16:56	10
2-Methylnaphthalene	**2.1**	**J**	15	0.48	ug/L		10/06/16 16:12	10/07/16 16:56	10
2-Methylphenol	**17**		15	2.3	ug/L		10/06/16 16:12	10/07/16 16:56	10
3 & 4 Methylphenol	**150**		15	3.3	ug/L		10/06/16 16:12	10/07/16 16:56	10
Naphthalene	**13**		7.4	2.3	ug/L		10/06/16 16:12	10/07/16 16:56	10
2-Nitroaniline	<37		37	9.5	ug/L		10/06/16 16:12	10/07/16 16:56	10
3-Nitroaniline	<74		74	13	ug/L		10/06/16 16:12	10/07/16 16:56	10
4-Nitroaniline	<74		74	12	ug/L		10/06/16 16:12	10/07/16 16:56	10
Nitrobenzene	<7.4		7.4	3.3	ug/L		10/06/16 16:12	10/07/16 16:56	10
2-Nitrophenol	<74		74	19	ug/L		10/06/16 16:12	10/07/16 16:56	10
4-Nitrophenol	<150		150	55	ug/L		10/06/16 16:12	10/07/16 16:56	10
N-Nitrosodi-n-propylamine	<3.7		3.7	1.1	ug/L		10/06/16 16:12	10/07/16 16:56	10
N-Nitrosodiphenylamine	<7.4		7.4	2.7	ug/L		10/06/16 16:12	10/07/16 16:56	10
2,2'-oxybis[1-chloropropane]	<15		15	2.8	ug/L		10/06/16 16:12	10/07/16 16:56	10
Pentachlorophenol	<150		150	29	ug/L		10/06/16 16:12	10/07/16 16:56	10
Phenanthrene	<7.4		7.4	2.2	ug/L		10/06/16 16:12	10/07/16 16:56	10
Phenol	<37		37	5.0	ug/L		10/06/16 16:12	10/07/16 16:56	10
Pyrene	<7.4		7.4	3.2	ug/L		10/06/16 16:12	10/07/16 16:56	10
2,4,5-Trichlorophenol	<74		74	19	ug/L		10/06/16 16:12	10/07/16 16:56	10
2,4,6-Trichlorophenol	<37		37	5.3	ug/L		10/06/16 16:12	10/07/16 16:56	10
Benzaldehyde	<300	^	300	110	ug/L		10/06/16 16:12	10/07/16 16:56	10
Caprolactam	<74		74	11	ug/L		10/06/16 16:12	10/07/16 16:56	10
Atrazine	<37		37	4.6	ug/L		10/06/16 16:12	10/07/16 16:56	10
1,1'-Biphenyl	<37		37	2.7	ug/L		10/06/16 16:12	10/07/16 16:56	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*54*		*30 - 123*	*10/06/16 16:12*	*10/07/16 16:56*	*10*
2-Fluorophenol (Surr)	*62*		*30 - 110*	*10/06/16 16:12*	*10/07/16 16:56*	*10*
Nitrobenzene-d5 (Surr)	*45*		*33 - 139*	*10/06/16 16:12*	*10/07/16 16:56*	*10*
Phenol-d5 (Surr)	*63*		*20 - 100*	*10/06/16 16:12*	*10/07/16 16:56*	*10*
Terphenyl-d14 (Surr)	*116*		*42 - 150*	*10/06/16 16:12*	*10/07/16 16:56*	*10*
2,4,6-Tribromophenol (Surr)	*79*		*30 - 150*	*10/06/16 16:12*	*10/07/16 16:56*	*10*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		10/07/16 10:36	10/07/16 21:22	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/07/16 10:36	10/07/16 21:22	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		10/07/16 10:36	10/07/16 21:22	1
beta-BHC	<0.037		0.037	0.0094	ug/L		10/07/16 10:36	10/07/16 21:22	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/07/16 10:36	10/07/16 21:22	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/07/16 10:36	10/07/16 21:22	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		10/07/16 10:36	10/07/16 21:22	1
delta-BHC	<0.037		0.037	0.0095	ug/L		10/07/16 10:36	10/07/16 21:22	1

Client Sample ID: DUP-2 (10052016)

Lab Sample ID: 500-118151-6

Date Collected: 10/05/16 00:00

Matrix: Water

Date Received: 10/05/16 16:35

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.037		0.037	0.012	ug/L		10/07/16 10:36	10/07/16 21:22	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/07/16 10:36	10/07/16 21:22	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/07/16 10:36	10/07/16 21:22	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/07/16 10:36	10/07/16 21:22	1
Endrin	<0.037		0.037	0.013	ug/L		10/07/16 10:36	10/07/16 21:22	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		10/07/16 10:36	10/07/16 21:22	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/07/16 10:36	10/07/16 21:22	1
gamma-BHC (Lindane)	<0.037		0.037	0.0051	ug/L		10/07/16 10:36	10/07/16 21:22	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		10/07/16 10:36	10/07/16 21:22	1
Heptachlor	<0.037		0.037	0.012	ug/L		10/07/16 10:36	10/07/16 21:22	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/07/16 10:36	10/07/16 21:22	1
Methoxychlor	<0.073		0.073	0.021	ug/L		10/07/16 10:36	10/07/16 21:22	1
Toxaphene	<0.37		0.37	0.18	ug/L		10/07/16 10:36	10/07/16 21:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*21*	*X*	*30 - 143*	*10/07/16 10:36*	*10/07/16 21:22*	*1*
Tetrachloro-m-xylene	*245*	*X*	*30 - 120*	*10/07/16 10:36*	*10/07/16 21:22*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		10/07/16 10:36	10/17/16 12:34	1
PCB-1221	<0.37		0.37	0.18	ug/L		10/07/16 10:36	10/17/16 12:34	1
PCB-1232	<0.37		0.37	0.18	ug/L		10/07/16 10:36	10/17/16 12:34	1
PCB-1242	**4.9**		0.37	0.18	ug/L		10/07/16 10:36	10/17/16 12:34	1
PCB-1248	<0.37		0.37	0.18	ug/L		10/07/16 10:36	10/17/16 12:34	1
PCB-1254	<0.37		0.37	0.18	ug/L		10/07/16 10:36	10/17/16 12:34	1
PCB-1260	<0.37		0.37	0.064	ug/L		10/07/16 10:36	10/17/16 12:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*30*		*30 - 127*	*10/07/16 10:36*	*10/17/16 12:34*	*1*
DCB Decachlorobiphenyl	*13*	*X*	*30 - 150*	*10/07/16 10:36*	*10/17/16 12:34*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.56**	**J**	1.0	0.31	mg/L		10/12/16 08:54	10/14/16 05:04	1
Antimony	<0.10		0.10	0.032	mg/L		10/12/16 08:54	10/14/16 05:04	1
Arsenic	**0.019**	**J**	0.050	0.017	mg/L		10/12/16 08:54	10/14/16 05:04	1
Barium	**0.40**		0.050	0.011	mg/L		10/12/16 08:54	10/14/16 05:04	1
Beryllium	<0.020		0.020	0.0043	mg/L		10/12/16 08:54	10/14/16 05:04	1
Cadmium	<0.010		0.010	0.0047	mg/L		10/12/16 08:54	10/14/16 05:04	1
Calcium	**12**		1.0	0.30	mg/L		10/12/16 08:54	10/14/16 05:04	1
Chromium	**0.20**		0.050	0.012	mg/L		10/12/16 08:54	10/14/16 05:04	1
Cobalt	**0.046**		0.025	0.0048	mg/L		10/12/16 08:54	10/14/16 05:04	1
Copper	**0.022**	**J**	0.050	0.011	mg/L		10/12/16 08:54	10/14/16 05:04	1
Iron	**2.6**		1.0	0.50	mg/L		10/12/16 08:54	10/14/16 05:04	1
Lead	**0.24**		0.025	0.013	mg/L		10/12/16 08:54	10/14/16 05:04	1
Magnesium	**30**		0.50	0.20	mg/L		10/12/16 08:54	10/14/16 05:04	1
Manganese	<0.050		0.050	0.017	mg/L		10/12/16 08:54	10/14/16 05:04	1
Nickel	**0.17**		0.050	0.018	mg/L		10/12/16 08:54	10/14/16 05:04	1
Potassium	**700**		2.5	0.81	mg/L		10/12/16 08:54	10/14/16 05:04	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-2 (10052016)

Date Collected: 10/05/16 00:00
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-6

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.050		0.050	0.026	mg/L		10/12/16 08:54	10/14/16 05:04	1
Silver	<0.025		0.025	0.0066	mg/L		10/12/16 08:54	10/14/16 05:04	1
Sodium	**3500**		5.0	2.2	mg/L		10/12/16 08:54	10/14/16 05:04	1
Thallium	<0.050		0.050	0.017	mg/L		10/12/16 08:54	10/14/16 05:04	1
Vanadium	**0.064**		0.025	0.0093	mg/L		10/12/16 08:54	10/14/16 05:04	1
Zinc	**0.31**		0.10	0.045	mg/L		10/12/16 08:54	10/14/16 05:04	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<1.0		1.0	0.31	mg/L		10/12/16 08:54	10/14/16 05:09	1
Antimony	<0.10		0.10	0.032	mg/L		10/12/16 08:54	10/14/16 05:09	1
Arsenic	**0.022**	**J**	0.050	0.017	mg/L		10/12/16 08:54	10/14/16 05:09	1
Barium	**0.37**		0.050	0.011	mg/L		10/12/16 08:54	10/14/16 05:09	1
Beryllium	<0.020		0.020	0.0043	mg/L		10/12/16 08:54	10/14/16 05:09	1
Cadmium	<0.010		0.010	0.0047	mg/L		10/12/16 08:54	10/14/16 05:09	1
Calcium	**11**		1.0	0.30	mg/L		10/12/16 08:54	10/14/16 05:09	1
Chromium	**0.19**		0.050	0.012	mg/L		10/12/16 08:54	10/14/16 05:09	1
Cobalt	**0.046**		0.025	0.0048	mg/L		10/12/16 08:54	10/14/16 05:09	1
Copper	<0.050		0.050	0.011	mg/L		10/12/16 08:54	10/14/16 05:09	1
Iron	**2.4**		1.0	0.50	mg/L		10/12/16 08:54	10/14/16 05:09	1
Lead	<0.025		0.025	0.013	mg/L		10/12/16 08:54	10/14/16 05:09	1
Magnesium	**30**		0.50	0.20	mg/L		10/12/16 08:54	10/14/16 05:09	1
Manganese	<0.050		0.050	0.017	mg/L		10/12/16 08:54	10/14/16 05:09	1
Nickel	**0.17**		0.050	0.018	mg/L		10/12/16 08:54	10/14/16 05:09	1
Potassium	**710**		2.5	0.81	mg/L		10/12/16 08:54	10/14/16 05:09	1
Selenium	<0.050		0.050	0.026	mg/L		10/12/16 08:54	10/14/16 05:09	1
Silver	<0.025		0.025	0.0066	mg/L		10/12/16 08:54	10/14/16 05:09	1
Sodium	**3500**		5.0	2.2	mg/L		10/12/16 08:54	10/14/16 05:09	1
Thallium	<0.050		0.050	0.017	mg/L		10/12/16 08:54	10/14/16 05:09	1
Vanadium	**0.058**		0.025	0.0093	mg/L		10/12/16 08:54	10/14/16 05:09	1
Zinc	**0.051**	**J**	0.10	0.045	mg/L		10/12/16 08:54	10/14/16 05:09	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00018**	**J**	0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:36	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**8.6**		1.0	0.18	mg/L			10/10/16 01:02	1
Sulfate	<50		50	15	mg/L			10/12/16 07:49	10
Total Organic Carbon - Duplicates	**520**	**B**	20	5.3	mg/L			10/07/16 21:27	20
Nitrogen, Nitrate	**0.058**	**J**	0.10	0.035	mg/L			10/16/16 19:52	1
Total Suspended Solids	**7.5**		5.0	2.5	mg/L			10/06/16 12:50	1
Ammonia	**780**		50	25	mg/L		10/12/16 19:17	10/13/16 16:15	250
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/06/16 13:29	1
Nitrogen, Nitrate Nitrite	**0.058**	**J**	0.10	0.035	mg/L			10/14/16 00:22	1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	RPD of the LCS and LCSD exceeds the control limits
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
*	ISTD response or retention time outside acceptable limits

GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
B	Compound was found in the blank and sample.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
F1	MS and/or MSD Recovery is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

GC/MS VOA

Analysis Batch: 355629

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Total/NA	Water	8260B	
500-118151-1 - DL	MW-13-GW-10042016	Total/NA	Water	8260B	
500-118151-2	DUP-1 (10042016)	Total/NA	Water	8260B	
500-118151-2 - DL	DUP-1 (10042016)	Total/NA	Water	8260B	
500-118151-3	MW-08-GW-10052016	Total/NA	Water	8260B	
500-118151-4	MW-09-GW-10052016	Total/NA	Water	8260B	
500-118151-5	MW-06-GW-10052016	Total/NA	Water	8260B	
500-118151-6	DUP-2 (10052016)	Total/NA	Water	8260B	
500-118151-6 - DL	DUP-2 (10052016)	Total/NA	Water	8260B	
MB 500-355629/6	Method Blank	Total/NA	Water	8260B	
LCS 500-355629/4	Lab Control Sample	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 354970

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Total/NA	Water	3510C	
500-118151-2	DUP-1 (10042016)	Total/NA	Water	3510C	
500-118151-3	MW-08-GW-10052016	Total/NA	Water	3510C	
500-118151-4	MW-09-GW-10052016	Total/NA	Water	3510C	
500-118151-5	MW-06-GW-10052016	Total/NA	Water	3510C	
500-118151-6	DUP-2 (10052016)	Total/NA	Water	3510C	
MB 500-354970/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-354970/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-354970/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 355044

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Total/NA	Water	8270D	354970
500-118151-2	DUP-1 (10042016)	Total/NA	Water	8270D	354970
500-118151-3	MW-08-GW-10052016	Total/NA	Water	8270D	354970
500-118151-4	MW-09-GW-10052016	Total/NA	Water	8270D	354970
500-118151-5	MW-06-GW-10052016	Total/NA	Water	8270D	354970
500-118151-6	DUP-2 (10052016)	Total/NA	Water	8270D	354970
MB 500-354970/1-A	Method Blank	Total/NA	Water	8270D	354970
LCS 500-354970/2-A	Lab Control Sample	Total/NA	Water	8270D	354970
LCSD 500-354970/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	354970

GC Semi VOA

Prep Batch: 354838

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Total/NA	Water	3510C	
500-118151-2	DUP-1 (10042016)	Total/NA	Water	3510C	
500-118151-3	MW-08-GW-10052016	Total/NA	Water	3510C	
500-118151-4	MW-09-GW-10052016	Total/NA	Water	3510C	
MB 500-354838/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-354838/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 500-354838/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-354838/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

GC Semi VOA (Continued)

Prep Batch: 354838 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 500-354838/5-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 354874

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-3	MW-08-GW-10052016	Total/NA	Water	8081B	354838
500-118151-4	MW-09-GW-10052016	Total/NA	Water	8081B	354838
MB 500-354838/1-A	Method Blank	Total/NA	Water	8081B	354838
LCS 500-354838/2-A	Lab Control Sample	Total/NA	Water	8081B	354838
LCSD 500-354838/3-A	Lab Control Sample Dup	Total/NA	Water	8081B	354838

Analysis Batch: 355065

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Total/NA	Water	8082A	354838
500-118151-2	DUP-1 (10042016)	Total/NA	Water	8082A	354838
500-118151-3	MW-08-GW-10052016	Total/NA	Water	8082A	354838
500-118151-4	MW-09-GW-10052016	Total/NA	Water	8082A	354838
MB 500-354838/1-A	Method Blank	Total/NA	Water	8082A	354838
LCS 500-354838/4-A	Lab Control Sample	Total/NA	Water	8082A	354838
LCSD 500-354838/5-A	Lab Control Sample Dup	Total/NA	Water	8082A	354838

Prep Batch: 355087

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-5	MW-06-GW-10052016	Total/NA	Water	3510C	
500-118151-6	DUP-2 (10052016)	Total/NA	Water	3510C	
MB 500-355087/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-355087/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 500-355087/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-355087/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
LCSD 500-355087/5-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 355155

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-5	MW-06-GW-10052016	Total/NA	Water	8081B	355087
500-118151-6	DUP-2 (10052016)	Total/NA	Water	8081B	355087
MB 500-355087/1-A	Method Blank	Total/NA	Water	8081B	355087
LCS 500-355087/2-A	Lab Control Sample	Total/NA	Water	8081B	355087
LCSD 500-355087/3-A	Lab Control Sample Dup	Total/NA	Water	8081B	355087

Analysis Batch: 355347

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-355087/1-A	Method Blank	Total/NA	Water	8082A	355087
LCS 500-355087/4-A	Lab Control Sample	Total/NA	Water	8082A	355087
LCSD 500-355087/5-A	Lab Control Sample Dup	Total/NA	Water	8082A	355087

Analysis Batch: 355366

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Total/NA	Water	8081B	354838
500-118151-2	DUP-1 (10042016)	Total/NA	Water	8081B	354838

GC Semi VOA (Continued)

Analysis Batch: 356515

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-5	MW-06-GW-10052016	Total/NA	Water	8082A	355087
500-118151-6	DUP-2 (10052016)	Total/NA	Water	8082A	355087

Metals

Prep Batch: 355614

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Dissolved	Water	3010A	
500-118151-1	MW-13-GW-10042016	Total/NA	Water	3010A	
500-118151-2	DUP-1 (10042016)	Dissolved	Water	3010A	
500-118151-2	DUP-1 (10042016)	Total/NA	Water	3010A	
500-118151-3	MW-08-GW-10052016	Dissolved	Water	3010A	
500-118151-3	MW-08-GW-10052016	Total/NA	Water	3010A	
500-118151-4	MW-09-GW-10052016	Dissolved	Water	3010A	
500-118151-4	MW-09-GW-10052016	Total/NA	Water	3010A	
500-118151-5	MW-06-GW-10052016	Dissolved	Water	3010A	
500-118151-5	MW-06-GW-10052016	Total/NA	Water	3010A	
MB 500-355614/1-A	Method Blank	Total/NA	Water	3010A	
LCS 500-355614/2-A	Lab Control Sample	Total/NA	Water	3010A	

Prep Batch: 355734

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-6	DUP-2 (10052016)	Dissolved	Water	3010A	
500-118151-6	DUP-2 (10052016)	Total/NA	Water	3010A	
MB 500-355734/1-A	Method Blank	Total/NA	Water	3010A	
LCS 500-355734/2-A	Lab Control Sample	Total/NA	Water	3010A	

Prep Batch: 355866

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Dissolved	Water	7470A	
500-118151-1	MW-13-GW-10042016	Total/NA	Water	7470A	
500-118151-2	DUP-1 (10042016)	Dissolved	Water	7470A	
500-118151-2	DUP-1 (10042016)	Total/NA	Water	7470A	
500-118151-3	MW-08-GW-10052016	Dissolved	Water	7470A	
500-118151-3	MW-08-GW-10052016	Total/NA	Water	7470A	
500-118151-4	MW-09-GW-10052016	Dissolved	Water	7470A	
500-118151-4	MW-09-GW-10052016	Total/NA	Water	7470A	
500-118151-5	MW-06-GW-10052016	Dissolved	Water	7470A	
500-118151-5	MW-06-GW-10052016	Total/NA	Water	7470A	
500-118151-6	DUP-2 (10052016)	Dissolved	Water	7470A	
500-118151-6	DUP-2 (10052016)	Total/NA	Water	7470A	
MB 500-355866/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-355866/13-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 356007

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Dissolved	Water	7470A	355866
500-118151-1	MW-13-GW-10042016	Total/NA	Water	7470A	355866
500-118151-2	DUP-1 (10042016)	Dissolved	Water	7470A	355866
500-118151-2	DUP-1 (10042016)	Total/NA	Water	7470A	355866

Metals (Continued)

Analysis Batch: 356007 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-3	MW-08-GW-10052016	Dissolved	Water	7470A	355866
500-118151-3	MW-08-GW-10052016	Total/NA	Water	7470A	355866
500-118151-4	MW-09-GW-10052016	Dissolved	Water	7470A	355866
500-118151-4	MW-09-GW-10052016	Total/NA	Water	7470A	355866
500-118151-5	MW-06-GW-10052016	Dissolved	Water	7470A	355866
500-118151-5	MW-06-GW-10052016	Total/NA	Water	7470A	355866
500-118151-6	DUP-2 (10052016)	Dissolved	Water	7470A	355866
500-118151-6	DUP-2 (10052016)	Total/NA	Water	7470A	355866
MB 500-355866/12-A	Method Blank	Total/NA	Water	7470A	355866
LCS 500-355866/13-A	Lab Control Sample	Total/NA	Water	7470A	355866

Analysis Batch: 356190

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-6	DUP-2 (10052016)	Dissolved	Water	6010C	355734
500-118151-6	DUP-2 (10052016)	Total/NA	Water	6010C	355734
MB 500-355734/1-A	Method Blank	Total/NA	Water	6010C	355734
LCS 500-355734/2-A	Lab Control Sample	Total/NA	Water	6010C	355734

Analysis Batch: 356195

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Dissolved	Water	6010C	355614
500-118151-1	MW-13-GW-10042016	Total/NA	Water	6010C	355614
500-118151-2	DUP-1 (10042016)	Dissolved	Water	6010C	355614
500-118151-2	DUP-1 (10042016)	Total/NA	Water	6010C	355614
500-118151-3	MW-08-GW-10052016	Dissolved	Water	6010C	355614
500-118151-3	MW-08-GW-10052016	Total/NA	Water	6010C	355614
500-118151-4	MW-09-GW-10052016	Dissolved	Water	6010C	355614
500-118151-4	MW-09-GW-10052016	Total/NA	Water	6010C	355614
500-118151-5	MW-06-GW-10052016	Dissolved	Water	6010C	355614
500-118151-5	MW-06-GW-10052016	Total/NA	Water	6010C	355614
MB 500-355614/1-A	Method Blank	Total/NA	Water	6010C	355614
LCS 500-355614/2-A	Lab Control Sample	Total/NA	Water	6010C	355614

Analysis Batch: 356352

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Dissolved	Water	6010C	355614
500-118151-1	MW-13-GW-10042016	Total/NA	Water	6010C	355614
500-118151-2	DUP-1 (10042016)	Dissolved	Water	6010C	355614
500-118151-2	DUP-1 (10042016)	Total/NA	Water	6010C	355614
500-118151-3	MW-08-GW-10052016	Dissolved	Water	6010C	355614
500-118151-3	MW-08-GW-10052016	Total/NA	Water	6010C	355614
500-118151-4	MW-09-GW-10052016	Dissolved	Water	6010C	355614
500-118151-4	MW-09-GW-10052016	Total/NA	Water	6010C	355614
500-118151-5	MW-06-GW-10052016	Dissolved	Water	6010C	355614
500-118151-5	MW-06-GW-10052016	Total/NA	Water	6010C	355614
MB 500-355614/1-A	Method Blank	Total/NA	Water	6010C	355614
LCS 500-355614/2-A	Lab Control Sample	Total/NA	Water	6010C	355614

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

General Chemistry

Analysis Batch: 354929

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Total/NA	Water	SM 2540D	
500-118151-2	DUP-1 (10042016)	Total/NA	Water	SM 2540D	
500-118151-3	MW-08-GW-10052016	Total/NA	Water	SM 2540D	
500-118151-4	MW-09-GW-10052016	Total/NA	Water	SM 2540D	
500-118151-5	MW-06-GW-10052016	Total/NA	Water	SM 2540D	
500-118151-6	DUP-2 (10052016)	Total/NA	Water	SM 2540D	
MB 500-354929/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 500-354929/2	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 355060

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Total/NA	Water	9038	
500-118151-2	DUP-1 (10042016)	Total/NA	Water	9038	
500-118151-3	MW-08-GW-10052016	Total/NA	Water	9038	
MB 500-355060/3	Method Blank	Total/NA	Water	9038	
LCS 500-355060/4	Lab Control Sample	Total/NA	Water	9038	

Analysis Batch: 355160

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-3	MW-08-GW-10052016	Total/NA	Water	9060A	
500-118151-4	MW-09-GW-10052016	Total/NA	Water	9060A	
MB 500-355160/4	Method Blank	Total/NA	Water	9060A	
LCS 500-355160/5	Lab Control Sample	Total/NA	Water	9060A	
500-118151-4 MS	MW-09-GW-10052016	Total/NA	Water	9060A	
500-118151-4 MSD	MW-09-GW-10052016	Total/NA	Water	9060A	

Analysis Batch: 355173

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Total/NA	Water	SM 4500 NO2 B	
500-118151-2	DUP-1 (10042016)	Total/NA	Water	SM 4500 NO2 B	
500-118151-3	MW-08-GW-10052016	Total/NA	Water	SM 4500 NO2 B	
500-118151-4	MW-09-GW-10052016	Total/NA	Water	SM 4500 NO2 B	
500-118151-5	MW-06-GW-10052016	Total/NA	Water	SM 4500 NO2 B	
500-118151-6	DUP-2 (10052016)	Total/NA	Water	SM 4500 NO2 B	
MB 500-355173/3	Method Blank	Total/NA	Water	SM 4500 NO2 B	
LCS 500-355173/4	Lab Control Sample	Total/NA	Water	SM 4500 NO2 B	
500-118151-1 MS	MW-13-GW-10042016	Total/NA	Water	SM 4500 NO2 B	
500-118151-1 MSD	MW-13-GW-10042016	Total/NA	Water	SM 4500 NO2 B	

Analysis Batch: 355288

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Total/NA	Water	9034	
500-118151-2	DUP-1 (10042016)	Total/NA	Water	9034	
500-118151-3	MW-08-GW-10052016	Total/NA	Water	9034	
500-118151-4	MW-09-GW-10052016	Total/NA	Water	9034	
500-118151-5	MW-06-GW-10052016	Total/NA	Water	9034	
500-118151-6	DUP-2 (10052016)	Total/NA	Water	9034	
MB 500-355288/1	Method Blank	Total/NA	Water	9034	
LCS 500-355288/2	Lab Control Sample	Total/NA	Water	9034	

General Chemistry (Continued)

Analysis Batch: 355462

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Total/NA	Water	9060A	
500-118151-2	DUP-1 (10042016)	Total/NA	Water	9060A	
500-118151-5	MW-06-GW-10052016	Total/NA	Water	9060A	
500-118151-6	DUP-2 (10052016)	Total/NA	Water	9060A	
MB 500-355462/4	Method Blank	Total/NA	Water	9060A	
LCS 500-355462/5	Lab Control Sample	Total/NA	Water	9060A	

Analysis Batch: 355715

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-4	MW-09-GW-10052016	Total/NA	Water	9038	
500-118151-5	MW-06-GW-10052016	Total/NA	Water	9038	
500-118151-6	DUP-2 (10052016)	Total/NA	Water	9038	
MB 500-355715/3	Method Blank	Total/NA	Water	9038	
LCS 500-355715/4	Lab Control Sample	Total/NA	Water	9038	

Prep Batch: 355872

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Total/NA	Water	SM 4500 NH3 B	
500-118151-2	DUP-1 (10042016)	Total/NA	Water	SM 4500 NH3 B	
500-118151-3	MW-08-GW-10052016	Total/NA	Water	SM 4500 NH3 B	
500-118151-4	MW-09-GW-10052016	Total/NA	Water	SM 4500 NH3 B	
500-118151-5	MW-06-GW-10052016	Total/NA	Water	SM 4500 NH3 B	
500-118151-6	DUP-2 (10052016)	Total/NA	Water	SM 4500 NH3 B	
MB 500-355872/14-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	
LCS 500-355872/15-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	

Analysis Batch: 356043

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Total/NA	Water	SM 4500 NH3 G	355872
500-118151-2	DUP-1 (10042016)	Total/NA	Water	SM 4500 NH3 G	355872
500-118151-3	MW-08-GW-10052016	Total/NA	Water	SM 4500 NH3 G	355872
500-118151-4	MW-09-GW-10052016	Total/NA	Water	SM 4500 NH3 G	355872
MB 500-355872/14-A	Method Blank	Total/NA	Water	SM 4500 NH3 G	355872
LCS 500-355872/15-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	355872

Analysis Batch: 356095

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-5	MW-06-GW-10052016	Total/NA	Water	SM 4500 NH3 G	355872
500-118151-6	DUP-2 (10052016)	Total/NA	Water	SM 4500 NH3 G	355872
MB 500-355872/14-A	Method Blank	Total/NA	Water	SM 4500 NH3 G	355872
LCS 500-355872/15-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	355872

Analysis Batch: 356272

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Total/NA	Water	SM 4500 NO3 F	
500-118151-2	DUP-1 (10042016)	Total/NA	Water	SM 4500 NO3 F	
500-118151-3	MW-08-GW-10052016	Total/NA	Water	SM 4500 NO3 F	
500-118151-4	MW-09-GW-10052016	Total/NA	Water	SM 4500 NO3 F	
500-118151-5	MW-06-GW-10052016	Total/NA	Water	SM 4500 NO3 F	
500-118151-6	DUP-2 (10052016)	Total/NA	Water	SM 4500 NO3 F	
MB 500-356272/21	Method Blank	Total/NA	Water	SM 4500 NO3 F	

General Chemistry (Continued)

Analysis Batch: 356272 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 500-356272/63	Lab Control Sample	Total/NA	Water	SM 4500 NO3 F	

Analysis Batch: 356421

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118151-1	MW-13-GW-10042016	Total/NA	Water	Nitrate by calc	
500-118151-2	DUP-1 (10042016)	Total/NA	Water	Nitrate by calc	
500-118151-3	MW-08-GW-10052016	Total/NA	Water	Nitrate by calc	
500-118151-4	MW-09-GW-10052016	Total/NA	Water	Nitrate by calc	
500-118151-5	MW-06-GW-10052016	Total/NA	Water	Nitrate by calc	
500-118151-6	DUP-2 (10052016)	Total/NA	Water	Nitrate by calc	

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	12DCE	TOL
Lab Sample ID	Client Sample ID	(71-120)	(70-120)	(71-127)	(75-120)
500-118151-1	MW-13-GW-10042016	94	89	85	102
500-118151-1 - DL	MW-13-GW-10042016	94	92	83	98
500-118151-2 - DL	DUP-1 (10042016)	96	91	86	99
500-118151-2	DUP-1 (10042016)	94	91	85	97
500-118151-3	MW-08-GW-10052016	94	90	83	98
500-118151-4	MW-09-GW-10052016	94	92	86	98
500-118151-5	MW-06-GW-10052016	97	92	86	97
500-118151-6	DUP-2 (10052016)	97	91	84	97
500-118151-6 - DL	DUP-2 (10052016)	92	89	84	98
LCS 500-355629/4	Lab Control Sample	93	96	86	101
MB 500-355629/6	Method Blank	96	93	87	97

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPH	TBP
Lab Sample ID	Client Sample ID	(30-123)	(30-110)	(33-139)	(20-100)	(42-150)	(30-150)
500-118151-1	MW-13-GW-10042016	92	61	79	62	114	134
500-118151-2	DUP-1 (10042016)	70	49	59	47	81	93
500-118151-3	MW-08-GW-10052016	67	49	55	39	110	125
500-118151-4	MW-09-GW-10052016	62	51	56	39	97	104
500-118151-5	MW-06-GW-10052016	60	74	68	69	131	88
500-118151-6	DUP-2 (10052016)	54	62	45	63	116	79
LCS 500-354970/2-A	Lab Control Sample	100	91	101	68	122	124
LCSD 500-354970/3-A	Lab Control Sample Dup	95	87	99	69	116	121
MB 500-354970/1-A	Method Blank	90	77	87	55	120	99

Surrogate Legend

FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPH = Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(30-143)	(30-120)
500-118151-1	MW-13-GW-10042016	64	633 X
500-118151-2	DUP-1 (10042016)	50	638 X

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(30-143)	(30-120)
500-118151-3	MW-08-GW-10052016	86	54
500-118151-4	MW-09-GW-10052016	58	69
500-118151-5	MW-06-GW-10052016	109	226 X
500-118151-6	DUP-2 (10052016)	21 X	245 X
LCS 500-354838/2-A	Lab Control Sample	82	65
LCS 500-355087/2-A	Lab Control Sample	109	84
LCSD 500-354838/3-A	Lab Control Sample Dup	98	63
LCSD 500-355087/3-A	Lab Control Sample Dup	103	86
MB 500-354838/1-A	Method Blank	83	62
MB 500-355087/1-A	Method Blank	87	83

Surrogate Legend

DCB = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		TCX1	TCX2	DCB1	DCB2
Lab Sample ID	Client Sample ID	(30-127)	(30-127)	(30-150)	(30-150)
500-118151-1	MW-13-GW-10042016		45		51
500-118151-2	DUP-1 (10042016)		88		45
500-118151-3	MW-08-GW-10052016		64		79
500-118151-4	MW-09-GW-10052016		84		54
500-118151-5	MW-06-GW-10052016	34	34	13 X	14 X
500-118151-6	DUP-2 (10052016)	38	30	12 X	13 X
LCS 500-354838/4-A	Lab Control Sample		69		81
LCS 500-355087/4-A	Lab Control Sample	88	80	95	91
LCSD 500-354838/5-A	Lab Control Sample Dup		65		97
LCSD 500-355087/5-A	Lab Control Sample Dup	72	69	96	94
MB 500-354838/1-A	Method Blank		64		90
MB 500-355087/1-A	Method Blank	91	82	119	110

Surrogate Legend

TCX = Tetrachloro-m-xylene

DCB = DCB Decachlorobiphenyl

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-355629/6
Matrix: Water
Analysis Batch: 355629

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			10/11/16 21:44	1
Benzene	<0.50		0.50	0.15	ug/L			10/11/16 21:44	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/11/16 21:44	1
Bromoform	<1.0		1.0	0.48	ug/L			10/11/16 21:44	1
Bromomethane	<2.0		2.0	0.80	ug/L			10/11/16 21:44	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/11/16 21:44	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/11/16 21:44	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			10/11/16 21:44	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/11/16 21:44	1
Chloroform	<1.0		1.0	0.37	ug/L			10/11/16 21:44	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/11/16 21:44	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			10/11/16 21:44	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/11/16 21:44	1
Cyclohexane	<1.0		1.0	0.49	ug/L			10/11/16 21:44	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/11/16 21:44	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			10/11/16 21:44	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/11/16 21:44	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			10/11/16 21:44	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/11/16 21:44	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			10/11/16 21:44	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/11/16 21:44	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/11/16 21:44	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/11/16 21:44	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/11/16 21:44	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/11/16 21:44	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			10/11/16 21:44	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/11/16 21:44	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			10/11/16 21:44	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/11/16 21:44	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			10/11/16 21:44	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/11/16 21:44	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/11/16 21:44	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			10/11/16 21:44	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/11/16 21:44	1
Styrene	<1.0		1.0	0.39	ug/L			10/11/16 21:44	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/11/16 21:44	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/11/16 21:44	1
Toluene	<0.50		0.50	0.15	ug/L			10/11/16 21:44	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/11/16 21:44	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/11/16 21:44	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/11/16 21:44	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/11/16 21:44	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/11/16 21:44	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/11/16 21:44	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/11/16 21:44	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/11/16 21:44	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			10/11/16 21:44	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			10/11/16 21:44	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		71 - 120		10/11/16 21:44	1
Dibromofluoromethane	93		70 - 120		10/11/16 21:44	1
1,2-Dichloroethane-d4 (Surr)	87		71 - 127		10/11/16 21:44	1
Toluene-d8 (Surr)	97		75 - 120		10/11/16 21:44	1

Lab Sample ID: LCS 500-355629/4
Matrix: Water
Analysis Batch: 355629

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	39.0		ug/L		78	37 - 141
Benzene	50.0	43.7		ug/L		87	70 - 125
Bromodichloromethane	50.0	38.9		ug/L		78	70 - 125
Bromoform	50.0	38.6		ug/L		77	54 - 128
Bromomethane	50.0	37.1		ug/L		74	40 - 150
Carbon disulfide	50.0	44.1		ug/L		88	68 - 125
Carbon tetrachloride	50.0	42.5		ug/L		85	70 - 125
Chlorobenzene	50.0	44.6		ug/L		89	70 - 125
Chloroethane	50.0	37.7		ug/L		75	60 - 139
Chloroform	50.0	43.0		ug/L		86	70 - 125
Chloromethane	50.0	50.2		ug/L		100	60 - 140
cis-1,2-Dichloroethene	50.0	45.6		ug/L		91	70 - 125
cis-1,3-Dichloropropene	50.0	40.6		ug/L		81	70 - 125
Cyclohexane	50.0	48.1		ug/L		96	56 - 149
Dibromochloromethane	50.0	39.1		ug/L		78	66 - 125
1,2-Dibromo-3-Chloropropane	50.0	34.5		ug/L		69	51 - 125
1,2-Dibromoethane	50.0	42.9		ug/L		86	70 - 125
1,2-Dichlorobenzene	50.0	45.3		ug/L		91	70 - 125
1,3-Dichlorobenzene	50.0	45.1		ug/L		90	70 - 125
1,4-Dichlorobenzene	50.0	44.1		ug/L		88	70 - 125
Dichlorodifluoromethane	50.0	47.7		ug/L		95	51 - 140
1,1-Dichloroethane	50.0	42.8		ug/L		86	70 - 125
1,2-Dichloroethane	50.0	39.9		ug/L		80	70 - 125
1,1-Dichloroethene	50.0	48.1		ug/L		96	70 - 125
1,2-Dichloropropane	50.0	43.5		ug/L		87	70 - 125
Ethylbenzene	50.0	43.3		ug/L		87	70 - 125
2-Hexanone	50.0	38.8		ug/L		78	49 - 139
Isopropylbenzene	50.0	42.9		ug/L		86	70 - 125
Methyl acetate	250	261		ug/L		105	60 - 148
Methylcyclohexane	50.0	46.0		ug/L		92	70 - 127
Methylene Chloride	50.0	45.5		ug/L		91	68 - 125
Methyl Ethyl Ketone	50.0	36.7		ug/L		73	52 - 142
methyl isobutyl ketone	50.0	40.5		ug/L		81	47 - 140
Methyl tert-butyl ether	50.0	40.7		ug/L		81	67 - 125
Styrene	50.0	41.7		ug/L		83	70 - 125
1,1,2,2-Tetrachloroethane	50.0	39.5		ug/L		79	68 - 125
Tetrachloroethene	50.0	49.5		ug/L		99	70 - 125
Toluene	50.0	44.0		ug/L		88	70 - 125
trans-1,2-Dichloroethene	50.0	46.2		ug/L		92	70 - 125
trans-1,3-Dichloropropene	50.0	38.1		ug/L		76	70 - 125
1,2,4-Trichlorobenzene	50.0	47.0		ug/L		94	64 - 126
1,1,1-Trichloroethane	50.0	42.2		ug/L		84	70 - 125
1,1,2-Trichloroethane	50.0	43.4		ug/L		87	70 - 125
Trichloroethene	50.0	49.8		ug/L		100	70 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-355629/4
Matrix: Water
Analysis Batch: 355629

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	43.9		ug/L		88	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	47.7		ug/L		95	57 - 141
Vinyl chloride	50.0	43.9		ug/L		88	70 - 126
Xylenes, Total	100	82.8		ug/L		83	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*71 - 120*
Dibromofluoromethane	*96*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*86*		*71 - 127*
Toluene-d8 (Surr)	*101*		*75 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-354970/1-A
Matrix: Water
Analysis Batch: 355044

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354970

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.80		0.80	0.25	ug/L		10/06/16 16:12	10/07/16 12:31	1
Acenaphthylene	<0.80		0.80	0.21	ug/L		10/06/16 16:12	10/07/16 12:31	1
Acetophenone	<4.0		4.0	0.53	ug/L		10/06/16 16:12	10/07/16 12:31	1
Anthracene	<0.80		0.80	0.27	ug/L		10/06/16 16:12	10/07/16 12:31	1
Benzo[a]anthracene	<0.16		0.16	0.045	ug/L		10/06/16 16:12	10/07/16 12:31	1
Benzo[a]pyrene	<0.16		0.16	0.079	ug/L		10/06/16 16:12	10/07/16 12:31	1
Benzo[b]fluoranthene	<0.16		0.16	0.065	ug/L		10/06/16 16:12	10/07/16 12:31	1
Benzo[g,h,i]perylene	<0.80		0.80	0.30	ug/L		10/06/16 16:12	10/07/16 12:31	1
Benzo[k]fluoranthene	<0.16		0.16	0.051	ug/L		10/06/16 16:12	10/07/16 12:31	1
Bis(2-chloroethoxy)methane	<1.6		1.6	0.23	ug/L		10/06/16 16:12	10/07/16 12:31	1
Bis(2-chloroethyl)ether	<1.6		1.6	0.23	ug/L		10/06/16 16:12	10/07/16 12:31	1
Bis(2-ethylhexyl) phthalate	<8.0		8.0	1.4	ug/L		10/06/16 16:12	10/07/16 12:31	1
4-Bromophenyl phenyl ether	<4.0		4.0	0.43	ug/L		10/06/16 16:12	10/07/16 12:31	1
Butyl benzyl phthalate	<1.6		1.6	0.38	ug/L		10/06/16 16:12	10/07/16 12:31	1
Carbazole	<4.0		4.0	0.28	ug/L		10/06/16 16:12	10/07/16 12:31	1
4-Chloroaniline	<8.0		8.0	1.6	ug/L		10/06/16 16:12	10/07/16 12:31	1
4-Chloro-3-methylphenol	<8.0		8.0	1.8	ug/L		10/06/16 16:12	10/07/16 12:31	1
2-Chloronaphthalene	<1.6		1.6	0.19	ug/L		10/06/16 16:12	10/07/16 12:31	1
2-Chlorophenol	<4.0		4.0	0.45	ug/L		10/06/16 16:12	10/07/16 12:31	1
4-Chlorophenyl phenyl ether	<4.0		4.0	0.51	ug/L		10/06/16 16:12	10/07/16 12:31	1
Chrysene	<0.40		0.40	0.055	ug/L		10/06/16 16:12	10/07/16 12:31	1
Dibenz(a,h)anthracene	<0.24		0.24	0.041	ug/L		10/06/16 16:12	10/07/16 12:31	1
Dibenzofuran	<1.6		1.6	0.21	ug/L		10/06/16 16:12	10/07/16 12:31	1
3,3'-Dichlorobenzidine	<4.0		4.0	1.4	ug/L		10/06/16 16:12	10/07/16 12:31	1
2,4-Dichlorophenol	<8.0		8.0	2.1	ug/L		10/06/16 16:12	10/07/16 12:31	1
Diethyl phthalate	<1.6		1.6	0.29	ug/L		10/06/16 16:12	10/07/16 12:31	1
2,4-Dimethylphenol	<8.0		8.0	1.4	ug/L		10/06/16 16:12	10/07/16 12:31	1
Dimethyl phthalate	<1.6		1.6	0.25	ug/L		10/06/16 16:12	10/07/16 12:31	1
Di-n-butyl phthalate	<4.0		4.0	0.58	ug/L		10/06/16 16:12	10/07/16 12:31	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-354970/1-A
Matrix: Water
Analysis Batch: 355044

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354970

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,6-Dinitro-2-methylphenol	<16		16	4.7	ug/L		10/06/16 16:12	10/07/16 12:31	1
2,4-Dinitrophenol	<16		16	6.9	ug/L		10/06/16 16:12	10/07/16 12:31	1
2,4-Dinitrotoluene	<0.80		0.80	0.20	ug/L		10/06/16 16:12	10/07/16 12:31	1
2,6-Dinitrotoluene	<0.80		0.80	0.059	ug/L		10/06/16 16:12	10/07/16 12:31	1
Di-n-octyl phthalate	<8.0		8.0	0.84	ug/L		10/06/16 16:12	10/07/16 12:31	1
Fluoranthene	<0.80		0.80	0.36	ug/L		10/06/16 16:12	10/07/16 12:31	1
Fluorene	<0.80		0.80	0.20	ug/L		10/06/16 16:12	10/07/16 12:31	1
Hexachlorobenzene	<0.40		0.40	0.064	ug/L		10/06/16 16:12	10/07/16 12:31	1
Hexachlorobutadiene	<4.0		4.0	0.41	ug/L		10/06/16 16:12	10/07/16 12:31	1
Hexachlorocyclopentadiene	<16		16	5.1	ug/L		10/06/16 16:12	10/07/16 12:31	1
Hexachloroethane	<4.0		4.0	0.48	ug/L		10/06/16 16:12	10/07/16 12:31	1
Indeno[1,2,3-cd]pyrene	<0.16		0.16	0.060	ug/L		10/06/16 16:12	10/07/16 12:31	1
Isophorone	<1.6		1.6	0.30	ug/L		10/06/16 16:12	10/07/16 12:31	1
2-Methylnaphthalene	<1.6		1.6	0.052	ug/L		10/06/16 16:12	10/07/16 12:31	1
2-Methylphenol	<1.6		1.6	0.24	ug/L		10/06/16 16:12	10/07/16 12:31	1
3 & 4 Methylphenol	<1.6		1.6	0.36	ug/L		10/06/16 16:12	10/07/16 12:31	1
Naphthalene	<0.80		0.80	0.25	ug/L		10/06/16 16:12	10/07/16 12:31	1
2-Nitroaniline	<4.0		4.0	1.0	ug/L		10/06/16 16:12	10/07/16 12:31	1
3-Nitroaniline	<8.0		8.0	1.4	ug/L		10/06/16 16:12	10/07/16 12:31	1
4-Nitroaniline	<8.0		8.0	1.3	ug/L		10/06/16 16:12	10/07/16 12:31	1
Nitrobenzene	<0.80		0.80	0.36	ug/L		10/06/16 16:12	10/07/16 12:31	1
2-Nitrophenol	<8.0		8.0	2.0	ug/L		10/06/16 16:12	10/07/16 12:31	1
4-Nitrophenol	<16		16	5.9	ug/L		10/06/16 16:12	10/07/16 12:31	1
N-Nitrosodi-n-propylamine	<0.40		0.40	0.12	ug/L		10/06/16 16:12	10/07/16 12:31	1
N-Nitrosodiphenylamine	<0.80		0.80	0.30	ug/L		10/06/16 16:12	10/07/16 12:31	1
2,2'-oxybis[1-chloropropane]	<1.6		1.6	0.30	ug/L		10/06/16 16:12	10/07/16 12:31	1
Pentachlorophenol	<16		16	3.2	ug/L		10/06/16 16:12	10/07/16 12:31	1
Phenanthrene	<0.80		0.80	0.24	ug/L		10/06/16 16:12	10/07/16 12:31	1
Phenol	<4.0		4.0	0.54	ug/L		10/06/16 16:12	10/07/16 12:31	1
Pyrene	<0.80		0.80	0.34	ug/L		10/06/16 16:12	10/07/16 12:31	1
2,4,5-Trichlorophenol	<8.0		8.0	2.1	ug/L		10/06/16 16:12	10/07/16 12:31	1
2,4,6-Trichlorophenol	<4.0		4.0	0.57	ug/L		10/06/16 16:12	10/07/16 12:31	1
Benzaldehyde	<32	^	32	12	ug/L		10/06/16 16:12	10/07/16 12:31	1
Caprolactam	<8.0		8.0	1.2	ug/L		10/06/16 16:12	10/07/16 12:31	1
Atrazine	<4.0		4.0	0.50	ug/L		10/06/16 16:12	10/07/16 12:31	1
1,1'-Biphenyl	<4.0		4.0	0.29	ug/L		10/06/16 16:12	10/07/16 12:31	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*90*		*30 - 123*	*10/06/16 16:12*	*10/07/16 12:31*	*1*
2-Fluorophenol (Surr)	*77*		*30 - 110*	*10/06/16 16:12*	*10/07/16 12:31*	*1*
Nitrobenzene-d5 (Surr)	*87*		*33 - 139*	*10/06/16 16:12*	*10/07/16 12:31*	*1*
Phenol-d5 (Surr)	*55*		*20 - 100*	*10/06/16 16:12*	*10/07/16 12:31*	*1*
Terphenyl-d14 (Surr)	*120*		*42 - 150*	*10/06/16 16:12*	*10/07/16 12:31*	*1*
2,4,6-Tribromophenol (Surr)	*99*		*30 - 150*	*10/06/16 16:12*	*10/07/16 12:31*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-354970/2-A
Matrix: Water
Analysis Batch: 355044

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354970

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	32.0	30.5		ug/L		95	41 - 112
Acenaphthylene	32.0	29.5		ug/L		92	48 - 110
Acetophenone	32.0	29.6		ug/L		92	54 - 116
Anthracene	32.0	32.2		ug/L		100	65 - 118
Benzo[a]anthracene	32.0	34.7		ug/L		108	69 - 121
Benzo[a]pyrene	32.0	35.5		ug/L		111	69 - 130
Benzo[b]fluoranthene	32.0	37.2		ug/L		116	66 - 133
Benzo[g,h,i]perylene	32.0	35.3		ug/L		110	47 - 145
Benzo[k]fluoranthene	32.0	36.2		ug/L		113	64 - 134
Bis(2-chloroethoxy)methane	32.0	31.3		ug/L		98	55 - 115
Bis(2-chloroethyl)ether	32.0	28.4		ug/L		89	46 - 110
Bis(2-ethylhexyl) phthalate	32.0	33.9		ug/L		106	60 - 132
4-Bromophenyl phenyl ether	32.0	33.6		ug/L		105	60 - 124
Butyl benzyl phthalate	32.0	34.1		ug/L		107	63 - 127
Carbazole	32.0	35.7		ug/L		112	71 - 132
4-Chloroaniline	32.0	24.0		ug/L		75	15 - 125
4-Chloro-3-methylphenol	32.0	34.7		ug/L		109	63 - 120
2-Chloronaphthalene	32.0	28.9		ug/L		90	38 - 110
2-Chlorophenol	32.0	29.6		ug/L		93	49 - 110
4-Chlorophenyl phenyl ether	32.0	33.1		ug/L		103	55 - 115
Chrysene	32.0	32.9		ug/L		103	70 - 126
Dibenz(a,h)anthracene	32.0	35.1		ug/L		110	59 - 145
Dibenzofuran	32.0	32.2		ug/L		101	54 - 111
3,3'-Dichlorobenzidine	32.0	37.7		ug/L		118	57 - 145
2,4-Dichlorophenol	32.0	36.0		ug/L		112	53 - 123
Diethyl phthalate	32.0	33.6		ug/L		105	64 - 126
2,4-Dimethylphenol	32.0	25.5		ug/L		80	42 - 115
Dimethyl phthalate	32.0	33.3		ug/L		104	66 - 120
Di-n-butyl phthalate	32.0	33.8		ug/L		106	67 - 125
4,6-Dinitro-2-methylphenol	64.0	59.9		ug/L		94	34 - 152
2,4-Dinitrophenol	64.0	53.1		ug/L		83	20 - 140
2,4-Dinitrotoluene	32.0	35.1		ug/L		110	67 - 131
2,6-Dinitrotoluene	32.0	33.3		ug/L		104	66 - 125
Di-n-octyl phthalate	32.0	34.8		ug/L		109	63 - 133
Fluoranthene	32.0	33.8		ug/L		106	68 - 127
Fluorene	32.0	32.0		ug/L		100	54 - 113
Hexachlorobenzene	32.0	32.3		ug/L		101	63 - 127
Hexachlorobutadiene	32.0	20.0		ug/L		63	20 - 110
Hexachlorocyclopentadiene	32.0	20.6		ug/L		65	10 - 110
Hexachloroethane	32.0	18.5		ug/L		58	20 - 110
Indeno[1,2,3-cd]pyrene	32.0	35.0		ug/L		109	52 - 150
Isophorone	32.0	28.8		ug/L		90	55 - 120
2-Methylnaphthalene	32.0	24.9		ug/L		78	32 - 110
2-Methylphenol	32.0	29.9		ug/L		93	49 - 113
3 & 4 Methylphenol	32.0	30.9		ug/L		96	49 - 114
Naphthalene	32.0	24.1		ug/L		75	32 - 110
2-Nitroaniline	32.0	34.1		ug/L		107	61 - 126
3-Nitroaniline	32.0	31.8		ug/L		99	42 - 134

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-354970/2-A
Matrix: Water
Analysis Batch: 355044

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354970

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4-Nitroaniline	32.0	31.8		ug/L		99	40 - 142
Nitrobenzene	32.0	31.3		ug/L		98	49 - 116
2-Nitrophenol	32.0	30.5		ug/L		95	51 - 120
4-Nitrophenol	64.0	47.9		ug/L		75	21 - 110
N-Nitrosodi-n-propylamine	32.0	30.1		ug/L		94	52 - 122
N-Nitrosodiphenylamine	32.0	30.9		ug/L		96	63 - 117
2,2'-oxybis[1-chloropropane]	32.0	27.4		ug/L		86	34 - 110
Pentachlorophenol	64.0	54.3		ug/L		85	29 - 138
Phenanthrene	32.0	32.7		ug/L		102	63 - 121
Phenol	32.0	20.9		ug/L		65	33 - 100
Pyrene	32.0	32.9		ug/L		103	65 - 122
2,4,5-Trichlorophenol	32.0	34.7		ug/L		109	63 - 121
2,4,6-Trichlorophenol	32.0	31.7		ug/L		99	61 - 120
Caprolactam	32.0	18.4		ug/L		58	25 - 100
Atrazine	32.0	33.0		ug/L		103	57 - 128
1,1'-Biphenyl	32.0	30.1		ug/L		94	42 - 110

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*100*		*30 - 123*
2-Fluorophenol (Surr)	*91*		*30 - 110*
Nitrobenzene-d5 (Surr)	*101*		*33 - 139*
Phenol-d5 (Surr)	*68*		*20 - 100*
Terphenyl-d14 (Surr)	*122*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*124*		*30 - 150*

Lab Sample ID: LCSD 500-354970/3-A
Matrix: Water
Analysis Batch: 355044

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 354970

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	32.0	30.6		ug/L		96	41 - 112	0	20
Acenaphthylene	32.0	29.8		ug/L		93	48 - 110	1	20
Acetophenone	32.0	30.0		ug/L		94	54 - 116	1	20
Anthracene	32.0	32.1		ug/L		100	65 - 118	0	20
Benzo[a]anthracene	32.0	34.1		ug/L		107	69 - 121	2	20
Benzo[a]pyrene	32.0	34.7		ug/L		108	69 - 130	2	20
Benzo[b]fluoranthene	32.0	36.5		ug/L		114	66 - 133	2	20
Benzo[g,h,i]perylene	32.0	34.2		ug/L		107	47 - 145	3	20
Benzo[k]fluoranthene	32.0	35.3		ug/L		110	64 - 134	2	20
Bis(2-chloroethoxy)methane	32.0	31.6		ug/L		99	55 - 115	1	20
Bis(2-chloroethyl)ether	32.0	28.3		ug/L		89	46 - 110	0	20
Bis(2-ethylhexyl) phthalate	32.0	33.2		ug/L		104	60 - 132	2	20
4-Bromophenyl phenyl ether	32.0	33.5		ug/L		105	60 - 124	1	20
Butyl benzyl phthalate	32.0	33.6		ug/L		105	63 - 127	2	20
Carbazole	32.0	35.6		ug/L		111	71 - 132	0	20
4-Chloroaniline	32.0	31.4	*	ug/L		98	15 - 125	27	20
4-Chloro-3-methylphenol	32.0	35.4		ug/L		111	63 - 120	2	20
2-Chloronaphthalene	32.0	29.4		ug/L		92	38 - 110	2	20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 500-354970/3-A
Matrix: Water
Analysis Batch: 355044

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 354970

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Chlorophenol	32.0	29.7		ug/L		93	49 - 110	0	20
4-Chlorophenyl phenyl ether	32.0	32.8		ug/L		103	55 - 115	1	20
Chrysene	32.0	32.4		ug/L		101	70 - 126	1	20
Dibenz(a,h)anthracene	32.0	34.2		ug/L		107	59 - 145	3	20
Dibenzofuran	32.0	32.1		ug/L		100	54 - 111	0	20
3,3'-Dichlorobenzidine	32.0	38.7		ug/L		121	57 - 145	2	20
2,4-Dichlorophenol	32.0	36.1		ug/L		113	53 - 123	0	20
Diethyl phthalate	32.0	33.3		ug/L		104	64 - 126	1	20
2,4-Dimethylphenol	32.0	26.3		ug/L		82	42 - 115	3	20
Dimethyl phthalate	32.0	33.5		ug/L		105	66 - 120	1	20
Di-n-butyl phthalate	32.0	33.2		ug/L		104	67 - 125	2	20
4,6-Dinitro-2-methylphenol	64.0	62.6		ug/L		98	34 - 152	4	20
2,4-Dinitrophenol	64.0	58.4		ug/L		91	20 - 140	10	20
2,4-Dinitrotoluene	32.0	35.1		ug/L		110	67 - 131	0	20
2,6-Dinitrotoluene	32.0	33.8		ug/L		105	66 - 125	1	20
Di-n-octyl phthalate	32.0	34.5		ug/L		108	63 - 133	1	20
Fluoranthene	32.0	33.8		ug/L		106	68 - 127	0	20
Fluorene	32.0	31.5		ug/L		99	54 - 113	2	20
Hexachlorobenzene	32.0	32.5		ug/L		102	63 - 127	0	20
Hexachlorobutadiene	32.0	23.6		ug/L		74	20 - 110	16	20
Hexachlorocyclopentadiene	32.0	23.1		ug/L		72	10 - 110	11	20
Hexachloroethane	32.0	22.1		ug/L		69	20 - 110	18	20
Indeno[1,2,3-cd]pyrene	32.0	34.1		ug/L		107	52 - 150	3	20
Isophorone	32.0	29.6		ug/L		93	55 - 120	3	20
2-Methylnaphthalene	32.0	26.4		ug/L		82	32 - 110	6	20
2-Methylphenol	32.0	31.4		ug/L		98	49 - 113	5	20
3 & 4 Methylphenol	32.0	31.4		ug/L		98	49 - 114	2	20
Naphthalene	32.0	26.4		ug/L		83	32 - 110	9	20
2-Nitroaniline	32.0	34.1		ug/L		106	61 - 126	0	20
3-Nitroaniline	32.0	31.9		ug/L		100	42 - 134	0	20
4-Nitroaniline	32.0	31.5		ug/L		98	40 - 142	1	20
Nitrobenzene	32.0	31.4		ug/L		98	49 - 116	0	20
2-Nitrophenol	32.0	30.7		ug/L		96	51 - 120	1	20
4-Nitrophenol	64.0	47.0		ug/L		73	21 - 110	2	20
N-Nitrosodi-n-propylamine	32.0	30.7		ug/L		96	52 - 122	2	20
N-Nitrosodiphenylamine	32.0	33.0		ug/L		103	63 - 117	7	20
2,2'-oxybis[1-chloropropane]	32.0	27.0		ug/L		84	34 - 110	1	20
Pentachlorophenol	64.0	51.6		ug/L		81	29 - 138	5	20
Phenanthrene	32.0	32.2		ug/L		101	63 - 121	2	20
Phenol	32.0	22.1		ug/L		69	33 - 100	6	20
Pyrene	32.0	32.5		ug/L		102	65 - 122	1	20
2,4,5-Trichlorophenol	32.0	35.7		ug/L		112	63 - 121	3	20
2,4,6-Trichlorophenol	32.0	33.1		ug/L		103	61 - 120	4	20
Caprolactam	32.0	17.3		ug/L		54	25 - 100	6	20
Atrazine	32.0	33.0		ug/L		103	57 - 128	0	20
1,1'-Biphenyl	32.0	30.2		ug/L		94	42 - 110	0	20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 500-354970/3-A
Matrix: Water
Analysis Batch: 355044

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 354970

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl	*95*		*30 - 123*
2-Fluorophenol (Surr)	*87*		*30 - 110*
Nitrobenzene-d5 (Surr)	*99*		*33 - 139*
Phenol-d5 (Surr)	*69*		*20 - 100*
Terphenyl-d14 (Surr)	*116*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*121*		*30 - 150*

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 500-354838/1-A
Matrix: Water
Analysis Batch: 354874

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354838

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.040		0.040	0.0053	ug/L		10/06/16 07:30	10/06/16 14:38	1
alpha-BHC	<0.040		0.040	0.0026	ug/L		10/06/16 07:30	10/06/16 14:38	1
alpha-Chlordane	<0.040		0.040	0.0044	ug/L		10/06/16 07:30	10/06/16 14:38	1
beta-BHC	<0.040		0.040	0.010	ug/L		10/06/16 07:30	10/06/16 14:38	1
4,4'-DDD	<0.040		0.040	0.013	ug/L		10/06/16 07:30	10/06/16 14:38	1
4,4'-DDE	<0.040		0.040	0.0038	ug/L		10/06/16 07:30	10/06/16 14:38	1
4,4'-DDT	<0.040		0.040	0.0032	ug/L		10/06/16 07:30	10/06/16 14:38	1
delta-BHC	<0.040		0.040	0.010	ug/L		10/06/16 07:30	10/06/16 14:38	1
Dieldrin	<0.040		0.040	0.013	ug/L		10/06/16 07:30	10/06/16 14:38	1
Endosulfan I	<0.040		0.040	0.0041	ug/L		10/06/16 07:30	10/06/16 14:38	1
Endosulfan II	<0.040		0.040	0.0028	ug/L		10/06/16 07:30	10/06/16 14:38	1
Endosulfan sulfate	<0.040		0.040	0.012	ug/L		10/06/16 07:30	10/06/16 14:38	1
Endrin	<0.040		0.040	0.014	ug/L		10/06/16 07:30	10/06/16 14:38	1
Endrin aldehyde	<0.040		0.040	0.0082	ug/L		10/06/16 07:30	10/06/16 14:38	1
Endrin ketone	<0.040		0.040	0.017	ug/L		10/06/16 07:30	10/06/16 14:38	1
gamma-BHC (Lindane)	<0.040		0.040	0.0056	ug/L		10/06/16 07:30	10/06/16 14:38	1
gamma-Chlordane	<0.040		0.040	0.0072	ug/L		10/06/16 07:30	10/06/16 14:38	1
Heptachlor	<0.040		0.040	0.014	ug/L		10/06/16 07:30	10/06/16 14:38	1
Heptachlor epoxide	<0.040		0.040	0.014	ug/L		10/06/16 07:30	10/06/16 14:38	1
Methoxychlor	<0.080		0.080	0.023	ug/L		10/06/16 07:30	10/06/16 14:38	1
Toxaphene	<0.40		0.40	0.20	ug/L		10/06/16 07:30	10/06/16 14:38	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*83*		*30 - 143*	*10/06/16 07:30*	*10/06/16 14:38*	*1*
Tetrachloro-m-xylene	*62*		*30 - 120*	*10/06/16 07:30*	*10/06/16 14:38*	*1*

Lab Sample ID: LCS 500-354838/2-A
Matrix: Water
Analysis Batch: 354874

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354838

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.320	0.221		ug/L		69	40 - 130
alpha-BHC	0.320	0.281		ug/L		88	70 - 130

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 500-354838/2-A
Matrix: Water
Analysis Batch: 354874

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354838

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
alpha-Chlordane	0.320	0.282		ug/L		88	70 - 130
beta-BHC	0.320	0.262		ug/L		82	70 - 130
4,4'-DDD	0.320	0.277		ug/L		87	70 - 130
4,4'-DDE	0.320	0.282		ug/L		88	56 - 130
4,4'-DDT	0.320	0.279		ug/L		87	50 - 137
delta-BHC	0.320	0.296		ug/L		92	70 - 130
Dieldrin	0.320	0.276		ug/L		86	70 - 130
Endosulfan I	0.320	0.217		ug/L		68	40 - 130
Endosulfan II	0.320	0.236		ug/L		74	49 - 130
Endosulfan sulfate	0.320	0.304		ug/L		95	70 - 130
Endrin	0.320	0.276		ug/L		86	69 - 130
Endrin aldehyde	0.320	0.276		ug/L		86	63 - 130
Endrin ketone	0.320	0.259		ug/L		81	54 - 141
gamma-BHC (Lindane)	0.320	0.278		ug/L		87	70 - 130
gamma-Chlordane	0.320	0.244		ug/L		76	63 - 130
Heptachlor	0.320	0.210		ug/L		66	40 - 130
Heptachlor epoxide	0.320	0.264		ug/L		82	70 - 130
Methoxychlor	0.320	0.291		ug/L		91	47 - 153

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*82*		*30 - 143*
Tetrachloro-m-xylene	*65*		*30 - 120*

Lab Sample ID: LCSD 500-354838/3-A
Matrix: Water
Analysis Batch: 354874

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 354838

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	0.320	0.225		ug/L		70	40 - 130	1	20
alpha-BHC	0.320	0.292		ug/L		91	70 - 130	4	20
alpha-Chlordane	0.320	0.294		ug/L		92	70 - 130	4	20
beta-BHC	0.320	0.271		ug/L		85	70 - 130	3	20
4,4'-DDD	0.320	0.290		ug/L		91	70 - 130	5	20
4,4'-DDE	0.320	0.294		ug/L		92	56 - 130	4	20
4,4'-DDT	0.320	0.294		ug/L		92	50 - 137	5	20
delta-BHC	0.320	0.310		ug/L		97	70 - 130	5	20
Dieldrin	0.320	0.290		ug/L		91	70 - 130	5	20
Endosulfan I	0.320	0.226		ug/L		71	40 - 130	4	20
Endosulfan II	0.320	0.249		ug/L		78	49 - 130	5	20
Endosulfan sulfate	0.320	0.317		ug/L		99	70 - 130	4	20
Endrin	0.320	0.288		ug/L		90	69 - 130	4	20
Endrin aldehyde	0.320	0.288		ug/L		90	63 - 130	4	20
Endrin ketone	0.320	0.273		ug/L		85	54 - 141	5	20
gamma-BHC (Lindane)	0.320	0.290		ug/L		91	70 - 130	4	20
gamma-Chlordane	0.320	0.254		ug/L		79	63 - 130	4	20
Heptachlor	0.320	0.218		ug/L		68	40 - 130	4	20
Heptachlor epoxide	0.320	0.275		ug/L		86	70 - 130	4	20
Methoxychlor	0.320	0.304		ug/L		95	47 - 153	5	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
DCB Decachlorobiphenyl	98		30 - 143
Tetrachloro-m-xylene	63		30 - 120

Lab Sample ID: MB 500-355087/1-A
Matrix: Water
Analysis Batch: 355155

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 355087

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.040		0.040	0.0053	ug/L		10/07/16 10:20	10/07/16 17:13	1
alpha-BHC	<0.040		0.040	0.0026	ug/L		10/07/16 10:20	10/07/16 17:13	1
alpha-Chlordane	<0.040		0.040	0.0044	ug/L		10/07/16 10:20	10/07/16 17:13	1
beta-BHC	<0.040		0.040	0.010	ug/L		10/07/16 10:20	10/07/16 17:13	1
4,4'-DDD	<0.040		0.040	0.013	ug/L		10/07/16 10:20	10/07/16 17:13	1
4,4'-DDE	<0.040		0.040	0.0038	ug/L		10/07/16 10:20	10/07/16 17:13	1
4,4'-DDT	<0.040		0.040	0.0032	ug/L		10/07/16 10:20	10/07/16 17:13	1
delta-BHC	<0.040		0.040	0.010	ug/L		10/07/16 10:20	10/07/16 17:13	1
Dieldrin	<0.040		0.040	0.013	ug/L		10/07/16 10:20	10/07/16 17:13	1
Endosulfan I	<0.040		0.040	0.0041	ug/L		10/07/16 10:20	10/07/16 17:13	1
Endosulfan II	<0.040		0.040	0.0028	ug/L		10/07/16 10:20	10/07/16 17:13	1
Endosulfan sulfate	<0.040		0.040	0.012	ug/L		10/07/16 10:20	10/07/16 17:13	1
Endrin	<0.040		0.040	0.014	ug/L		10/07/16 10:20	10/07/16 17:13	1
Endrin aldehyde	<0.040		0.040	0.0082	ug/L		10/07/16 10:20	10/07/16 17:13	1
Endrin ketone	<0.040		0.040	0.017	ug/L		10/07/16 10:20	10/07/16 17:13	1
gamma-BHC (Lindane)	<0.040		0.040	0.0056	ug/L		10/07/16 10:20	10/07/16 17:13	1
gamma-Chlordane	<0.040		0.040	0.0072	ug/L		10/07/16 10:20	10/07/16 17:13	1
Heptachlor	<0.040		0.040	0.014	ug/L		10/07/16 10:20	10/07/16 17:13	1
Heptachlor epoxide	<0.040		0.040	0.014	ug/L		10/07/16 10:20	10/07/16 17:13	1
Methoxychlor	<0.080		0.080	0.023	ug/L		10/07/16 10:20	10/07/16 17:13	1
Toxaphene	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/07/16 17:13	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	87		30 - 143	10/07/16 10:20	10/07/16 17:13	1
Tetrachloro-m-xylene	83		30 - 120	10/07/16 10:20	10/07/16 17:13	1

Lab Sample ID: LCS 500-355087/2-A
Matrix: Water
Analysis Batch: 355155

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 355087

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.320	0.298		ug/L		93	40 - 130
alpha-BHC	0.320	0.307		ug/L		96	70 - 130
alpha-Chlordane	0.320	0.316		ug/L		99	70 - 130
beta-BHC	0.320	0.287		ug/L		90	70 - 130
4,4'-DDD	0.320	0.300		ug/L		94	70 - 130
4,4'-DDE	0.320	0.333		ug/L		104	56 - 130
4,4'-DDT	0.320	0.318		ug/L		99	50 - 137
delta-BHC	0.320	0.315		ug/L		99	70 - 130
Dieldrin	0.320	0.304		ug/L		95	70 - 130
Endosulfan I	0.320	0.231		ug/L		72	40 - 130
Endosulfan II	0.320	0.251		ug/L		78	49 - 130
Endosulfan sulfate	0.320	0.332		ug/L		104	70 - 130
Endrin	0.320	0.298		ug/L		93	69 - 130
Endrin aldehyde	0.320	0.290		ug/L		91	63 - 130

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 500-355087/2-A
Matrix: Water
Analysis Batch: 355155

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 355087

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Endrin ketone	0.320	0.279		ug/L		87	54 - 141
gamma-BHC (Lindane)	0.320	0.301		ug/L		94	70 - 130
gamma-Chlordane	0.320	0.281		ug/L		88	63 - 130
Heptachlor	0.320	0.276		ug/L		86	40 - 130
Heptachlor epoxide	0.320	0.286		ug/L		90	70 - 130
Methoxychlor	0.320	0.299		ug/L		93	47 - 153

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*109*		*30 - 143*
Tetrachloro-m-xylene	*84*		*30 - 120*

Lab Sample ID: LCSD 500-355087/3-A
Matrix: Water
Analysis Batch: 355155

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 355087

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	0.320	0.307		ug/L		96	40 - 130	3	20
alpha-BHC	0.320	0.315		ug/L		98	70 - 130	3	20
alpha-Chlordane	0.320	0.324		ug/L		101	70 - 130	2	20
beta-BHC	0.320	0.293		ug/L		92	70 - 130	2	20
4,4'-DDD	0.320	0.310		ug/L		97	70 - 130	3	20
4,4'-DDE	0.320	0.343		ug/L		107	56 - 130	3	20
4,4'-DDT	0.320	0.326		ug/L		102	50 - 137	2	20
delta-BHC	0.320	0.324		ug/L		101	70 - 130	3	20
Dieldrin	0.320	0.313		ug/L		98	70 - 130	3	20
Endosulfan I	0.320	0.238		ug/L		74	40 - 130	3	20
Endosulfan II	0.320	0.259		ug/L		81	49 - 130	3	20
Endosulfan sulfate	0.320	0.347		ug/L		109	70 - 130	4	20
Endrin	0.320	0.309		ug/L		96	69 - 130	4	20
Endrin aldehyde	0.320	0.298		ug/L		93	63 - 130	3	20
Endrin ketone	0.320	0.287		ug/L		90	54 - 141	3	20
gamma-BHC (Lindane)	0.320	0.308		ug/L		96	70 - 130	3	20
gamma-Chlordane	0.320	0.289		ug/L		90	63 - 130	3	20
Heptachlor	0.320	0.283		ug/L		89	40 - 130	3	20
Heptachlor epoxide	0.320	0.294		ug/L		92	70 - 130	3	20
Methoxychlor	0.320	0.311		ug/L		97	47 - 153	4	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*103*		*30 - 143*
Tetrachloro-m-xylene	*86*		*30 - 120*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 500-354838/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355065 — **Prep Batch: 354838**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.40		0.40	0.067	ug/L		10/06/16 07:30	10/07/16 12:55	1
PCB-1221	<0.40		0.40	0.20	ug/L		10/06/16 07:30	10/07/16 12:55	1
PCB-1232	<0.40		0.40	0.20	ug/L		10/06/16 07:30	10/07/16 12:55	1
PCB-1242	<0.40		0.40	0.20	ug/L		10/06/16 07:30	10/07/16 12:55	1
PCB-1248	<0.40		0.40	0.20	ug/L		10/06/16 07:30	10/07/16 12:55	1
PCB-1254	<0.40		0.40	0.20	ug/L		10/06/16 07:30	10/07/16 12:55	1
PCB-1260	<0.40		0.40	0.070	ug/L		10/06/16 07:30	10/07/16 12:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*64*		*30 - 127*	*10/06/16 07:30*	*10/07/16 12:55*	*1*
DCB Decachlorobiphenyl	*90*		*30 - 150*	*10/06/16 07:30*	*10/07/16 12:55*	*1*

Lab Sample ID: LCS 500-354838/4-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355065 — **Prep Batch: 354838**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	4.00	3.30		ug/L		83	58 - 121
PCB-1260	4.00	3.86		ug/L		96	62 - 137

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*69*		*30 - 127*
DCB Decachlorobiphenyl	*81*		*30 - 150*

Lab Sample ID: LCSD 500-354838/5-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355065 — **Prep Batch: 354838**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	4.00	3.26		ug/L		82	58 - 121	1	20
PCB-1260	4.00	3.93		ug/L		98	62 - 137	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*65*		*30 - 127*
DCB Decachlorobiphenyl	*97*		*30 - 150*

Lab Sample ID: MB 500-355087/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355347 — **Prep Batch: 355087**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.40		0.40	0.067	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1221	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1232	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1242	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1248	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1254	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/10/16 12:25	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: MB 500-355087/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355347 — **Prep Batch: 355087**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1260	<0.40		0.40	0.070	ug/L		10/07/16 10:20	10/10/16 12:25	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*82*		*30 - 127*	*10/07/16 10:20*	*10/10/16 12:25*	*1*
DCB Decachlorobiphenyl	*110*		*30 - 150*	*10/07/16 10:20*	*10/10/16 12:25*	*1*

Lab Sample ID: LCS 500-355087/4-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355347 — **Prep Batch: 355087**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	4.00	3.47		ug/L		87	58 - 121
PCB-1260	4.00	4.19		ug/L		105	62 - 137

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*80*		*30 - 127*
DCB Decachlorobiphenyl	*91*		*30 - 150*

Lab Sample ID: LCSD 500-355087/5-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355347 — **Prep Batch: 355087**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	4.00	3.21		ug/L		80	58 - 121	8	20
PCB-1260	4.00	3.71		ug/L		93	62 - 137	12	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*69*		*30 - 127*
DCB Decachlorobiphenyl	*94*		*30 - 150*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 500-355614/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356195 — **Prep Batch: 355614**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 15:30	10/14/16 02:39	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 02:39	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 02:39	1
Barium	<0.010		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 02:39	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 02:39	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 02:39	1
Calcium	<0.20		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 02:39	1
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 02:39	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 02:39	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 02:39	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 500-355614/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356195 — **Prep Batch: 355614**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.164	J ^	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 02:39	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 02:39	1
Manganese	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 02:39	1
Nickel	<0.010		0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 02:39	1
Potassium	<0.50		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 02:39	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 02:39	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 02:39	1
Sodium	<1.0		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 02:39	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 02:39	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 02:39	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 02:39	1

Lab Sample ID: MB 500-355614/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356352 — **Prep Batch: 355614**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	<0.10		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 17:02	1

Lab Sample ID: LCS 500-355614/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356195 — **Prep Batch: 355614**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	2.02		mg/L		101	80 - 120
Antimony	0.500	0.492		mg/L		98	80 - 120
Arsenic	0.100	0.0934		mg/L		93	80 - 120
Barium	2.00	2.04		mg/L		102	80 - 120
Beryllium	0.0500	0.0488		mg/L		98	80 - 120
Cadmium	0.0500	0.0487		mg/L		97	80 - 120
Calcium	10.0	9.98		mg/L		100	80 - 120
Chromium	0.200	0.199		mg/L		100	80 - 120
Cobalt	0.500	0.491		mg/L		98	80 - 120
Copper	0.250	0.249		mg/L		100	80 - 120
Iron	1.00	1.06	^	mg/L		106	80 - 120
Lead	0.100	0.0971		mg/L		97	80 - 120
Manganese	0.500	0.487		mg/L		97	80 - 120
Nickel	0.500	0.489		mg/L		98	80 - 120
Potassium	10.0	10.3		mg/L		103	80 - 120
Selenium	0.100	0.0952		mg/L		95	80 - 120
Silver	0.0500	0.0475		mg/L		95	80 - 120
Sodium	10.0	10.4		mg/L		104	80 - 120
Thallium	0.100	0.0965		mg/L		96	80 - 120
Vanadium	0.500	0.494		mg/L		99	80 - 120
Zinc	0.500	0.474		mg/L		95	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 500-355614/2-A
Matrix: Water
Analysis Batch: 356352

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 355614

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Magnesium	10.0	9.92		mg/L		99	80 - 120

Lab Sample ID: MB 500-355734/1-A
Matrix: Water
Analysis Batch: 356190

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 355734

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/12/16 08:54	10/14/16 03:29	1
Antimony	<0.020		0.020	0.0064	mg/L		10/12/16 08:54	10/14/16 03:29	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/12/16 08:54	10/14/16 03:29	1
Barium	<0.010		0.010	0.0022	mg/L		10/12/16 08:54	10/14/16 03:29	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/12/16 08:54	10/14/16 03:29	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/12/16 08:54	10/14/16 03:29	1
Calcium	<0.20		0.20	0.059	mg/L		10/12/16 08:54	10/14/16 03:29	1
Chromium	<0.010		0.010	0.0024	mg/L		10/12/16 08:54	10/14/16 03:29	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/12/16 08:54	10/14/16 03:29	1
Copper	<0.010		0.010	0.0022	mg/L		10/12/16 08:54	10/14/16 03:29	1
Iron	<0.20		0.20	0.10	mg/L		10/12/16 08:54	10/14/16 03:29	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/12/16 08:54	10/14/16 03:29	1
Magnesium	<0.10		0.10	0.041	mg/L		10/12/16 08:54	10/14/16 03:29	1
Manganese	<0.010		0.010	0.0034	mg/L		10/12/16 08:54	10/14/16 03:29	1
Nickel	<0.010		0.010	0.0037	mg/L		10/12/16 08:54	10/14/16 03:29	1
Potassium	<0.50		0.50	0.16	mg/L		10/12/16 08:54	10/14/16 03:29	1
Selenium	<0.010		0.010	0.0051	mg/L		10/12/16 08:54	10/14/16 03:29	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/12/16 08:54	10/14/16 03:29	1
Sodium	<1.0		1.0	0.43	mg/L		10/12/16 08:54	10/14/16 03:29	1
Thallium	<0.010		0.010	0.0034	mg/L		10/12/16 08:54	10/14/16 03:29	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/12/16 08:54	10/14/16 03:29	1
Zinc	<0.020		0.020	0.0090	mg/L		10/12/16 08:54	10/14/16 03:29	1

Lab Sample ID: LCS 500-355734/2-A
Matrix: Water
Analysis Batch: 356190

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 355734

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	2.04		mg/L		102	80 - 120
Antimony	0.500	0.471		mg/L		94	80 - 120
Arsenic	0.100	0.0946		mg/L		95	80 - 120
Barium	2.00	1.98		mg/L		99	80 - 120
Beryllium	0.0500	0.0495		mg/L		99	80 - 120
Cadmium	0.0500	0.0470		mg/L		94	80 - 120
Calcium	10.0	10.1		mg/L		101	80 - 120
Chromium	0.200	0.194		mg/L		97	80 - 120
Cobalt	0.500	0.487		mg/L		97	80 - 120
Copper	0.250	0.242		mg/L		97	80 - 120
Iron	1.00	1.16		mg/L		116	80 - 120
Lead	0.100	0.0932		mg/L		93	80 - 120
Magnesium	10.0	9.77		mg/L		98	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 500-355734/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356190 — **Prep Batch: 355734**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Manganese	0.500	0.493		mg/L		99	80 - 120
Nickel	0.500	0.484		mg/L		97	80 - 120
Potassium	10.0	9.97		mg/L		100	80 - 120
Selenium	0.100	0.0894		mg/L		89	80 - 120
Silver	0.0500	0.0452		mg/L		90	80 - 120
Sodium	10.0	10.2		mg/L		102	80 - 120
Thallium	0.100	0.0961		mg/L		96	80 - 120
Vanadium	0.500	0.487		mg/L		97	80 - 120
Zinc	0.500	0.485		mg/L		97	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-355866/12-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356007 — **Prep Batch: 355866**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 09:55	1

Lab Sample ID: LCS 500-355866/13-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356007 — **Prep Batch: 355866**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00200	0.00174		mg/L		87	80 - 120

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 500-355288/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355288

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			10/10/16 00:11	1

Lab Sample ID: LCS 500-355288/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355288

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	6.87	6.33		mg/L		92	80 - 120

Method: 9038 - Sulfate, Turbidimetric

Lab Sample ID: MB 500-355060/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355060

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2.00	J	5.0	1.5	mg/L			10/07/16 08:23	1

Lab Sample ID: LCS 500-355060/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355060

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	20.0		mg/L		100	80 - 120

Lab Sample ID: MB 500-355715/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355715

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2.22	J	5.0	1.5	mg/L			10/12/16 07:40	1

Lab Sample ID: LCS 500-355715/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355715

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	19.2		mg/L		96	80 - 120

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 500-355160/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355160

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	0.527	J	1.0	0.27	mg/L			10/06/16 23:12	1

Lab Sample ID: LCS 500-355160/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355160

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	10.0	10.7		mg/L		107	80 - 120
TOC Result 1	10.0	10.7		mg/L		107	80 - 120
TOC Result 2	10.0	10.7		mg/L		107	80 - 120

Lab Sample ID: 500-118151-4 MS — **Client Sample ID: MW-09-GW-10052016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355160

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	27	F1 B	10.0	34.0	F1	mg/L		68	75 - 125
TOC Result 1	27	F1 B	10.0	34.0	F1	mg/L		68	75 - 125

Method: 9060A - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: 500-118151-4 MS — **Client Sample ID: MW-09-GW-10052016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355160

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
TOC Result 2	27	F1 B	10.0	34.0	F1	mg/L		68	75 - 125

Lab Sample ID: 500-118151-4 MSD — **Client Sample ID: MW-09-GW-10052016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355160

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	27	F1 B	10.0	33.9	F1	mg/L		68	75 - 125	0	20
TOC Result 1	27	F1 B	10.0	33.9	F1	mg/L		68	75 - 125	0	20
TOC Result 2	27	F1 B	10.0	33.9	F1	mg/L		67	75 - 125	0	20

Lab Sample ID: MB 500-355462/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355462

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	0.507	J	1.0	0.27	mg/L			10/07/16 18:24	1

Lab Sample ID: LCS 500-355462/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355462

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	10.0	9.84		mg/L		98	80 - 120
TOC Result 1	10.0	9.78		mg/L		98	80 - 120
TOC Result 2	10.0	9.90		mg/L		99	80 - 120

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 500-354929/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 354929

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.0		5.0	2.5	mg/L			10/06/16 12:35	1

Lab Sample ID: LCS 500-354929/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 354929

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	200	188		mg/L		94	80 - 120

Method: SM 4500 NH3 G - Ammonia

Lab Sample ID: MB 500-355872/14-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356043 — **Prep Batch: 355872**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.185	J	0.20	0.10	mg/L		10/12/16 19:17	10/12/16 22:49	1

Lab Sample ID: MB 500-355872/14-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356095 — **Prep Batch: 355872**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.20		0.20	0.10	mg/L		10/12/16 19:17	10/13/16 15:12	1

Lab Sample ID: LCS 500-355872/15-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356043 — **Prep Batch: 355872**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.50	2.46		mg/L		98	80 - 120

Lab Sample ID: LCS 500-355872/15-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356095 — **Prep Batch: 355872**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.50	2.35		mg/L		94	80 - 120

Method: SM 4500 NO2 B - Nitrogen, Nitrite

Lab Sample ID: MB 500-355173/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355173

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/06/16 13:25	1

Lab Sample ID: LCS 500-355173/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355173

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrite	0.100	0.107		mg/L		107	80 - 120

Lab Sample ID: 500-118151-1 MS — **Client Sample ID: MW-13-GW-10042016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355173

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrite	<0.020		0.100	0.0954		mg/L		95	75 - 125

Method: SM 4500 NO2 B - Nitrogen, Nitrite (Continued)

Lab Sample ID: 500-118151-1 MSD — **Client Sample ID: MW-13-GW-10042016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355173

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrogen, Nitrite	<0.020		0.100	0.0960		mg/L		96	75 - 125	1	20

Method: SM 4500 NO3 F - Nitrogen, Nitrate

Lab Sample ID: MB 500-356272/21 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356272

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/13/16 21:08	1

Lab Sample ID: LCS 500-356272/63 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356272

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate Nitrite			1.00	0.955		mg/L		95	80 - 120		

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-13-GW-10042016

Date Collected: 10/04/16 15:15
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10	355629	10/11/16 22:11	PMF	TAL CHI
Total/NA	Analysis	8260B	DL	100	355629	10/11/16 22:38	PMF	TAL CHI
Total/NA	Prep	3510C			354970	10/06/16 16:12	JP1	TAL CHI
Total/NA	Analysis	8270D		5	355044	10/07/16 15:28	AJD	TAL CHI
Total/NA	Prep	3510C			354838	10/06/16 07:53	JJH	TAL CHI
Total/NA	Analysis	8081B		1	355366	10/10/16 12:12	PJG	TAL CHI
Total/NA	Prep	3510C			354838	10/06/16 07:53	JJH	TAL CHI
Total/NA	Analysis	8082A		1	355065	10/07/16 14:27	BJH	TAL CHI
Dissolved	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Dissolved	Analysis	6010C		1	356352	10/14/16 17:33	PJ1	TAL CHI
Dissolved	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Dissolved	Analysis	6010C		1	356195	10/14/16 04:00	PJ1	TAL CHI
Total/NA	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Total/NA	Analysis	6010C		1	356352	10/14/16 17:28	PJ1	TAL CHI
Total/NA	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Total/NA	Analysis	6010C		1	356195	10/14/16 03:49	PJ1	TAL CHI
Dissolved	Prep	7470A			355866	10/12/16 16:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	356007	10/13/16 10:20	MJD	TAL CHI
Total/NA	Prep	7470A			355866	10/12/16 16:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	356007	10/13/16 10:18	MJD	TAL CHI
Total/NA	Analysis	9034		1	355288		CLB	TAL CHI
					(Start)	10/10/16 00:41		
					(End)	10/10/16 00:45		
Total/NA	Analysis	9038		1	355060		CLB	TAL CHI
					(Start)	10/07/16 08:41		
					(End)	10/07/16 08:42		
Total/NA	Analysis	9060A		2	355462	10/07/16 20:18	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	356421	10/16/16 19:52	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	354929		SMO	TAL CHI
					(Start)	10/06/16 12:44		
					(End)	10/06/16 12:45		
Total/NA	Prep	SM 4500 NH3 B			355872	10/12/16 19:17	JBJ	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		25	356043		JBJ	TAL CHI
					(Start)	10/12/16 23:03		
					(End)	10/12/16 23:34		
Total/NA	Analysis	SM 4500 NO2 B		1	355173		EAT	TAL CHI
					(Start)	10/06/16 13:26		
					(End)	10/06/16 13:26		
Total/NA	Analysis	SM 4500 NO3 F		1	356272	10/14/16 00:11	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-1 (10042016)

Date Collected: 10/04/16 00:00
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10	355629	10/11/16 23:04	PMF	TAL CHI
Total/NA	Analysis	8260B	DL	100	355629	10/11/16 23:31	PMF	TAL CHI
Total/NA	Prep	3510C			354970	10/06/16 16:12	JP1	TAL CHI
Total/NA	Analysis	8270D		5	355044	10/07/16 15:57	AJD	TAL CHI
Total/NA	Prep	3510C			354838	10/06/16 07:53	JJH	TAL CHI
Total/NA	Analysis	8081B		1	355366	10/10/16 12:31	PJG	TAL CHI
Total/NA	Prep	3510C			354838	10/06/16 07:53	JJH	TAL CHI
Total/NA	Analysis	8082A		1	355065	10/07/16 14:42	BJH	TAL CHI
Dissolved	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Dissolved	Analysis	6010C		1	356352	10/14/16 17:42	PJ1	TAL CHI
Dissolved	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Dissolved	Analysis	6010C		1	356195	10/14/16 04:09	PJ1	TAL CHI
Total/NA	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Total/NA	Analysis	6010C		1	356352	10/14/16 17:37	PJ1	TAL CHI
Total/NA	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Total/NA	Analysis	6010C		1	356195	10/14/16 04:05	PJ1	TAL CHI
Dissolved	Prep	7470A			355866	10/12/16 16:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	356007	10/13/16 10:23	MJD	TAL CHI
Total/NA	Prep	7470A			355866	10/12/16 16:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	356007	10/13/16 10:21	MJD	TAL CHI
Total/NA	Analysis	9034		1	355288		CLB	TAL CHI
					(Start)	10/10/16 00:45		
					(End)	10/10/16 00:49		
Total/NA	Analysis	9038		1	355060		CLB	TAL CHI
					(Start)	10/07/16 08:42		
					(End)	10/07/16 08:43		
Total/NA	Analysis	9060A		2	355462	10/07/16 20:35	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	356421	10/16/16 19:52	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	354929		SMO	TAL CHI
					(Start)	10/06/16 12:45		
					(End)	10/06/16 12:47		
Total/NA	Prep	SM 4500 NH3 B			355872	10/12/16 19:17	JBJ	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		25	356043		JBJ	TAL CHI
					(Start)	10/12/16 23:06		
					(End)	10/12/16 23:34		
Total/NA	Analysis	SM 4500 NO2 B		1	355173		EAT	TAL CHI
					(Start)	10/06/16 13:27		
					(End)	10/06/16 13:27		
Total/NA	Analysis	SM 4500 NO3 F		1	356272	10/14/16 00:13	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-08-GW-10052016

Lab Sample ID: 500-118151-3

Date Collected: 10/05/16 12:05

Matrix: Water

Date Received: 10/05/16 16:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	355629	10/11/16 23:58	PMF	TAL CHI
Total/NA	Prep	3510C			354970	10/06/16 16:12	JP1	TAL CHI
Total/NA	Analysis	8270D		1	355044	10/07/16 13:59	AJD	TAL CHI
Total/NA	Prep	3510C			354838	10/06/16 07:53	JJH	TAL CHI
Total/NA	Analysis	8081B		1	354874	10/06/16 16:13	PJG	TAL CHI
Total/NA	Prep	3510C			354838	10/06/16 07:53	JJH	TAL CHI
Total/NA	Analysis	8082A		1	355065	10/07/16 14:58	BJH	TAL CHI
Dissolved	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Dissolved	Analysis	6010C		1	356352	10/14/16 17:57	PJ1	TAL CHI
Dissolved	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Dissolved	Analysis	6010C		1	356195	10/14/16 04:19	PJ1	TAL CHI
Total/NA	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Total/NA	Analysis	6010C		1	356352	10/14/16 17:53	PJ1	TAL CHI
Total/NA	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Total/NA	Analysis	6010C		1	356195	10/14/16 04:13	PJ1	TAL CHI
Dissolved	Prep	7470A			355866	10/12/16 16:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	356007	10/13/16 10:29	MJD	TAL CHI
Total/NA	Prep	7470A			355866	10/12/16 16:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	356007	10/13/16 10:27	MJD	TAL CHI
Total/NA	Analysis	9034		1	355288		CLB	TAL CHI
					(Start)	10/10/16 00:49		
					(End)	10/10/16 00:53		
Total/NA	Analysis	9038		1	355060		CLB	TAL CHI
					(Start)	10/07/16 08:43		
					(End)	10/07/16 08:44		
Total/NA	Analysis	9060A		1	355160	10/07/16 04:12	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	356421	10/16/16 19:52	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	354929		SMO	TAL CHI
					(Start)	10/06/16 12:47		
					(End)	10/06/16 12:48		
Total/NA	Prep	SM 4500 NH3 B			355872	10/12/16 19:17	JBJ	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		25	356043		JBJ	TAL CHI
					(Start)	10/12/16 23:14		
					(End)	10/12/16 23:34		
Total/NA	Analysis	SM 4500 NO2 B		1	355173		EAT	TAL CHI
					(Start)	10/06/16 13:27		
					(End)	10/06/16 13:27		
Total/NA	Analysis	SM 4500 NO3 F		1	356272	10/14/16 00:15	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-09-GW-10052016

Date Collected: 10/05/16 13:35
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	355629	10/12/16 00:25	PMF	TAL CHI
Total/NA	Prep	3510C			354970	10/06/16 16:12	JP1	TAL CHI
Total/NA	Analysis	8270D		1	355044	10/07/16 14:29	AJD	TAL CHI
Total/NA	Prep	3510C			354838	10/06/16 07:53	JJH	TAL CHI
Total/NA	Analysis	8081B		1	354874	10/06/16 16:33	PJG	TAL CHI
Total/NA	Prep	3510C			354838	10/06/16 07:53	JJH	TAL CHI
Total/NA	Analysis	8082A		1	355065	10/07/16 15:13	BJH	TAL CHI
Dissolved	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Dissolved	Analysis	6010C		1	356352	10/14/16 18:05	PJ1	TAL CHI
Dissolved	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Dissolved	Analysis	6010C		1	356195	10/14/16 04:28	PJ1	TAL CHI
Total/NA	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Total/NA	Analysis	6010C		1	356352	10/14/16 18:01	PJ1	TAL CHI
Total/NA	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Total/NA	Analysis	6010C		1	356195	10/14/16 04:24	PJ1	TAL CHI
Dissolved	Prep	7470A			355866	10/12/16 16:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	356007	10/13/16 10:31	MJD	TAL CHI
Total/NA	Prep	7470A			355866	10/12/16 16:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	356007	10/13/16 10:30	MJD	TAL CHI
Total/NA	Analysis	9034		1	355288		CLB	TAL CHI
					(Start)	10/10/16 00:53		
					(End)	10/10/16 00:58		
Total/NA	Analysis	9038		1	355715		CLB	TAL CHI
					(Start)	10/12/16 07:51		
					(End)	10/12/16 07:52		
Total/NA	Analysis	9060A		1	355160	10/07/16 04:28	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	356421	10/16/16 19:52	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	354929		SMO	TAL CHI
					(Start)	10/06/16 12:48		
					(End)	10/06/16 12:49		
Total/NA	Prep	SM 4500 NH3 B			355872	10/12/16 19:17	JBJ	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		25	356043		JBJ	TAL CHI
					(Start)	10/12/16 23:17		
					(End)	10/12/16 23:34		
Total/NA	Analysis	SM 4500 NO2 B		1	355173		EAT	TAL CHI
					(Start)	10/06/16 13:27		
					(End)	10/06/16 13:28		
Total/NA	Analysis	SM 4500 NO3 F		1	356272	10/14/16 00:18	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-06-GW-10052016

Date Collected: 10/05/16 08:40
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	355629	10/12/16 00:52	PMF	TAL CHI
Total/NA	Prep	3510C			354970	10/06/16 16:12	JP1	TAL CHI
Total/NA	Analysis	8270D		10	355044	10/07/16 16:27	AJD	TAL CHI
Total/NA	Prep	3510C			355087	10/07/16 10:36	JJH	TAL CHI
Total/NA	Analysis	8081B		1	355155	10/07/16 20:44	PJG	TAL CHI
Total/NA	Prep	3510C			355087	10/07/16 10:36	JJH	TAL CHI
Total/NA	Analysis	8082A		1	356515	10/17/16 12:19	BJH	TAL CHI
Dissolved	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Dissolved	Analysis	6010C		1	356352	10/14/16 18:14	PJ1	TAL CHI
Dissolved	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Dissolved	Analysis	6010C		1	356195	10/14/16 04:36	PJ1	TAL CHI
Total/NA	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Total/NA	Analysis	6010C		1	356352	10/14/16 18:09	PJ1	TAL CHI
Total/NA	Prep	3010A			355614	10/11/16 15:30	JNH	TAL CHI
Total/NA	Analysis	6010C		1	356195	10/14/16 04:31	PJ1	TAL CHI
Dissolved	Prep	7470A			355866	10/12/16 16:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	356007	10/13/16 10:34	MJD	TAL CHI
Total/NA	Prep	7470A			355866	10/12/16 16:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	356007	10/13/16 10:33	MJD	TAL CHI
Total/NA	Analysis	9034		1	355288		CLB	TAL CHI
					(Start)	10/10/16 00:58		
					(End)	10/10/16 01:02		
Total/NA	Analysis	9038		5	355715		CLB	TAL CHI
					(Start)	10/12/16 07:46		
					(End)	10/12/16 07:47		
Total/NA	Analysis	9060A		20	355462	10/07/16 20:51	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	356421	10/16/16 19:52	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	354929		SMO	TAL CHI
					(Start)	10/06/16 12:49		
					(End)	10/06/16 12:50		
Total/NA	Prep	SM 4500 NH3 B			355872	10/12/16 19:17	JBJ	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		250	356095		JBJ	TAL CHI
					(Start)	10/13/16 16:08		
					(End)	10/13/16 16:15		
Total/NA	Analysis	SM 4500 NO2 B		1	355173		EAT	TAL CHI
					(Start)	10/06/16 13:28		
					(End)	10/06/16 13:28		
Total/NA	Analysis	SM 4500 NO3 F		1	356272	10/14/16 00:20	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-2 (10052016)

Date Collected: 10/05/16 00:00
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	355629	10/12/16 01:45	PMF	TAL CHI
Total/NA	Analysis	8260B	DL	10	355629	10/12/16 02:12	PMF	TAL CHI
Total/NA	Prep	3510C			354970	10/06/16 16:12	JP1	TAL CHI
Total/NA	Analysis	8270D		10	355044	10/07/16 16:56	AJD	TAL CHI
Total/NA	Prep	3510C			355087	10/07/16 10:36	JJH	TAL CHI
Total/NA	Analysis	8081B		1	355155	10/07/16 21:22	PJG	TAL CHI
Total/NA	Prep	3510C			355087	10/07/16 10:36	JJH	TAL CHI
Total/NA	Analysis	8082A		1	356515	10/17/16 12:34	BJH	TAL CHI
Dissolved	Prep	3010A			355734	10/12/16 08:54	JEF	TAL CHI
Dissolved	Analysis	6010C		1	356190	10/14/16 05:09	PJ1	TAL CHI
Total/NA	Prep	3010A			355734	10/12/16 08:54	JEF	TAL CHI
Total/NA	Analysis	6010C		1	356190	10/14/16 05:04	PJ1	TAL CHI
Dissolved	Prep	7470A			355866	10/12/16 16:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	356007	10/13/16 10:37	MJD	TAL CHI
Total/NA	Prep	7470A			355866	10/12/16 16:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	356007	10/13/16 10:36	MJD	TAL CHI
Total/NA	Analysis	9034		1	355288		CLB	TAL CHI
					(Start)	10/10/16 01:02		
					(End)	10/10/16 01:06		
Total/NA	Analysis	9038		10	355715		CLB	TAL CHI
					(Start)	10/12/16 07:49		
					(End)	10/12/16 07:51		
Total/NA	Analysis	9060A		20	355462	10/07/16 21:27	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	356421	10/16/16 19:52	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	354929		SMO	TAL CHI
					(Start)	10/06/16 12:50		
					(End)	10/06/16 12:51		
Total/NA	Prep	SM 4500 NH3 B			355872	10/12/16 19:17	JBJ	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		250	356095		JBJ	TAL CHI
					(Start)	10/13/16 16:15		
					(End)	10/13/16 16:21		
Total/NA	Analysis	SM 4500 NO2 B		1	355173		EAT	TAL CHI
					(Start)	10/06/16 13:29		
					(End)	10/06/16 13:29		
Total/NA	Analysis	SM 4500 NO3 F		1	356272	10/14/16 00:22	HMW	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Laboratory: TestAmerica Chicago

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	100201	04-30-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	Cyclohexane
8260B		Water	Methyl acetate
8260B		Water	Methylcyclohexane
8270D	3510C	Water	1,1'-Biphenyl
8270D	3510C	Water	Atrazine
8270D	3510C	Water	Benzaldehyde
8270D	3510C	Water	Caprolactam

TestAmerica

THE LEADER IN ENVIRONMENTAL

2417 Bond Street, University Park, IL 60
Phone: 708.534.5200 Fax: 708.534

500-118151 COC

Chain of Custody Record

Lab Job #: 500-118151

Chain of Custody Number:

Page _____ of _____

Temperature °C of Cooler: 2.7, 3.1, 2.6

Report To (optional)		Bill To (optional)	
Contact:	Jack Kratzmeyer	Contact:	
Company:	Arcadis	Company:	
Address:	120 S. La Salle St Ste 850	Address:	
Address:	Chicago, IL 60603	Address:	
Phone:	312-575-3700	Phone:	
Fax:		Fax:	
E-Mail:	Jack.Kratzmeyer@arcadis.com	PO#/Reference#	

Client: Arcadis
Client Project #: CI001805.0001.00003
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: R. Thornhatter
Lab PM: Therese Margraves

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOCs, PCBs, Pesticides (Preservative 8)	Total metals (3)	Dissolved metals (3)	Ammonia, NO_3, NO_2 (6)	Sulfide (5)	VOCs (1)	TOC (2)	TSS, SO_4, NO_2 (8)	Dissolved Gas (9)	Comments
1		MW-13-GW-10042016	10/4/16	1515	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	-Diss Metals
2		Dup-1 (10042016)	10/4/16	—	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	field filtered
3		MW-08-GW-10052016	10/5/16	1205	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
4		MW-09-GW-10052016	10/5/16	1335	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
5		MW-06-GW-10052016	10/5/16	0840	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	-MW-6 Highly
6		Dup-2 (10052016)	10/5/16	—	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	reactive water preservative
																for TOC & VOC grab
																unable to remove
																bubbles

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date: Standard

Sample Disposal
[ ] Return to Client [X] Disposal by Lab [ ] Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	Arcadis	10/5/16	1555	David Baker	TA	10/5/16	15:55
David Baker	TA	10/5/16	1635	[signature]	TA-CHI	10/6/16	0715

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

TAL-4124-500 (1209)

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-118151-1

Login Number: 118151
List Number: 1
Creator: Scott, Sherri L

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.7,3.1,2.6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-118151-2
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Therese Hargraves

Authorized for release by:
10/19/2016 3:24:52 PM

Therese Hargraves, Project Manager I
(708)534-5200
therese.hargraves@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Subcontract Data 4
Chain of Custody 21
Receipt Checklists 22

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-2

Job ID: 500-118151-2

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-118151-2

Comments
No additional comments.

Receipt
The samples were received on 10/5/2016 4:35 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 2.6º C, 2.7º C and 3.1º C.

Subcontract non-Sister
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen: This method was subcontracted to Pace-Pittsburgh (Microseeps). The subcontract laboratory certification is different from that of the facility issuing the final report.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

October 19, 2016

Therese Hargraves
Test America Inc.
2417 Bond Street
University Park, IL 60484

RE: **500-118151-1**
Pace Workorder: 20524

Dear Therese Hargraves:

Enclosed are the analytical results for sample(s) received by the laboratory on Friday, October 07, 2016. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

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

Sincerely,

Ruth Welsh 10/19/2016
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email info@microseeps.com.

Total Number of Pages 103

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water and Solid & Hazardous Waste
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water; Solid and Chemical Materials
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water; Solid and Hazardous Waste
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 20524 500-118151-1

Lab ID	Sample ID	Matrix	Date Collected	Date Received
205240001	MW-13-GW-10042016	Water	10/4/2016 15:15	10/7/2016 12:00
205240002	DUP-01(10042016)	Water	10/4/2016 00:00	10/7/2016 12:00
205240003	MW-08-GW-10052016	Water	10/5/2016 12:05	10/7/2016 12:00
205240004	MW-09-GW-10052016	Water	10/5/2016 13:35	10/7/2016 12:00
205240005	MW-06-GW-10052016	Water	10/5/2016 08:40	10/7/2016 12:00
205240006	DUP-2(10052016)	Water	10/5/2016 00:00	10/7/2016 12:00

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

PROJECT SUMMARY

Workorder: 20524 500-118151-1

Workorder Comments

The analysis for light hydrocarbons/dissolved gases, method AM20GAx, was reported at dilution due to foaming during the headspace preparation/equilibration of the sample. Samples 20524 (0005-0006).

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20524 500-118151-1

Lab ID: **205240001** Date Received: 10/7/2016 12:00 Matrix: Water

Sample ID: **MW-13-GW-10042016** Date Collected: 10/4/2016 15:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**21000**	ug/l	0.50	0.027	1	10/17/2016 14:45	MM	n
Carbon Dioxide	**82**	mg/l	5.0	0.24	1	10/17/2016 14:45	MM	n
Oxygen	**2.7**	mg/l	0.50	0.13	1	10/17/2016 14:45	MM	n
Nitrogen	**10**	mg/l	2.0	0.24	1	10/17/2016 14:45	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20524 500-118151-1

Lab ID: **205240002** Date Received: 10/7/2016 12:00 Matrix: Water
Sample ID: **DUP-01(10042016)** Date Collected: 10/4/2016 00:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**20000**	ug/l	0.50	0.027	1	10/17/2016 14:58	MM	n
Carbon Dioxide	**82**	mg/l	5.0	0.24	1	10/17/2016 14:58	MM	n
Oxygen	**3.0**	mg/l	0.50	0.13	1	10/17/2016 14:58	MM	n
Nitrogen	10	mg/l	2.0	0.24	1	10/17/2016 14:58	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20524 500-118151-1

Lab ID: **205240003** Date Received: 10/7/2016 12:00 Matrix: Water

Sample ID: **MW-08-GW-10052016** Date Collected: 10/5/2016 12:05

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**12000**	ug/l	0.50	0.027	1	10/17/2016 15:10	MM	n
Carbon Dioxide	**180**	mg/l	5.0	0.24	1	10/17/2016 15:10	MM	n
Oxygen	**3.5**	mg/l	0.50	0.13	1	10/17/2016 15:10	MM	n
Nitrogen	**11**	mg/l	2.0	0.24	1	10/17/2016 15:10	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20524 500-118151-1

Lab ID: **205240004** Date Received: 10/7/2016 12:00 Matrix: Water

Sample ID: **MW-09-GW-10052016** Date Collected: 10/5/2016 13:35

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**13000**	ug/l	0.50	0.027	1	10/17/2016 15:23	MM	n
Carbon Dioxide	**410**	mg/l	5.0	0.24	1	10/17/2016 15:23	MM	n
Oxygen	**3.0**	mg/l	0.50	0.13	1	10/17/2016 15:23	MM	n
Nitrogen	**13**	mg/l	2.0	0.24	1	10/17/2016 15:23	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20524 500-118151-1

Lab ID: **205240005** Date Received: 10/7/2016 12:00 Matrix: Water
Sample ID: **MW-06-GW-10052016** Date Collected: 10/5/2016 08:40

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**20000**	ug/l	1.8	0.094	3.5	10/17/2016 16:05	MM	d,n
Carbon Dioxide	**38**	mg/l	18	0.84	3.5	10/17/2016 16:05	MM	d,n
Oxygen	**1.9**	mg/l	1.8	0.46	3.5	10/17/2016 16:05	MM	d,n
Nitrogen	**10**	mg/l	7.0	0.83	3.5	10/17/2016 16:05	MM	d,n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20524 500-118151-1

Lab ID: **205240006** Date Received: 10/7/2016 12:00 Matrix: Water
Sample ID: **DUP-2(10052016)** Date Collected: 10/5/2016 00:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**21000**	ug/l	1.8	0.094	3.5	10/17/2016 16:17	MM	d,n
Carbon Dioxide	**40**	mg/l	18	0.84	3.5	10/17/2016 16:17	MM	d,n
Oxygen	**2.3**	mg/l	1.8	0.46	3.5	10/17/2016 16:17	MM	d,n
Nitrogen	**10**	mg/l	7.0	0.83	3.5	10/17/2016 16:17	MM	d,n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 20524 500-118151-1

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.
d	The analyte concentration was determined from a dilution.

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 20524 500-118151-1

QC Batch: DISG/5675 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 205240001, 205240002, 205240003, 205240004, 205240005, 205240006

METHOD BLANK: 44836

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n

METHOD BLANK: 44837

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Carbon Dioxide	mg/l	<5.0	5.0	n
Oxygen	mg/l	<0.50	0.50	n
Nitrogen	mg/l	<2.0	2.0	n

LABORATORY CONTROL SAMPLE & LCSD: 44838 44840

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Methane	ug/l	750	690	750	93	101	80-120	8.2	20	n

LABORATORY CONTROL SAMPLE & LCSD: 44839 44841

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Carbon Dioxide	mg/l	120	120	120	104	107	80-120	2.8	20	n
Oxygen	mg/l	11	10	11	92	98	80-120	6.3	20	n
Nitrogen	mg/l	140	110	120	80	84	80-120	4.9	20	n

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA QUALIFIERS

Workorder: 20524 500-118151-1

QUALITY CONTROL PARAMETER QUALIFIERS

n The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 20524 500-118151-1

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
205240001	MW-13-GW-10042016			AM20GAX	DISG/5675
205240002	DUP-01(10042016)			AM20GAX	DISG/5675
205240003	MW-08-GW-10052016			AM20GAX	DISG/5675
205240004	MW-09-GW-10052016			AM20GAX	DISG/5675
205240005	MW-06-GW-10052016			AM20GAX	DISG/5675
205240006	DUP-2(10052016)			AM20GAX	DISG/5675

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Chain of Custody Documents

10/19/2016

WO 20524

16 of 103

TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Phone (708) 534-5200 Fax (708) 534-5211

20524

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hargraves, Therese M	Carrier Tracking No(s):	COC No: 500-78910.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: therese.hargraves@testamericainc.com		Page: Page 1 of 1
Company: Pace Analytical Services, Inc.				Job #: 500-118151-1
Address: 220 William Pitt Way, ,	Due Date Requested: 10/17/2016			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-826-5245(Tel)	PO #:			
Email:	WO #:			
Project Name: Lake Calumet Cluster Site	Project #: 50011099			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-13-GW-10042016 (500-118151-1)	10/4/16	15:15 Central		Water			X	2	
DUP-1 (10042016) (500-118151-2)	10/4/16	Central		Water			X	2	
MW-08-GW-10052016 (500-118151-3)	10/5/16	12:05 Central		Water			X	2	
MW-09-GW-10052016 (500-118151-4)	10/5/16	13:35 Central		Water			X	2	
MW-06-GW-10052016 (500-118151-5)	10/5/16	08:40 Central		Water			X	2	
DUP-2 (10052016) (500-118151-6)	10/5/16	Central		Water			X	2	

Possible Hazard Identification
Unconfirmed

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:		Method of Shipment:	
Relinquished by:	Date/Time: 10/06/16 1600	Company TA	Received by:	Date/Time: 10-7-16 1200	Company PAS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Custody Seals Intact:	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		

Cooler Receipt Form

Client Name: TA Project: 500-118151-1 Lab Work Order: 20524

A. Shipping/Container Information (circle appropriate response)

Courier: FedEx UPS USPS Client Other:_____ Air bill Present: Yes No

Tracking Number: 6514842788 61

Custody Seal on Cooler/Box Present: Yes No Seals Intact: Yes No

Cooler/Box Packing Material: Bubble Wrap Absorbent Foam Other:_____

Type of Ice: Wet Blue None Ice Intact: Yes Melted

Cooler Temperature: 2°C Radiation Screened: Yes No Chain of Custody Present: Yes No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC		✓		
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	

Comments:_____

Cooler contents examined/received by: LJ Date: 10.7.16

Project Manager Review: RW Date: 10-7-16

F-PAE-Q-009-rev.00, 20 Nov2014

TestAmerica

THE LEADER IN ENVIRONMENTAL

2417 Bond Street, University Park, IL 60
Phone: 708.534.5200 Fax: 708.534

500-118151 COC

Report To (optional)
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 120 S. La Salle St Ste 850
Address: Chicago, IL 60603
Phone: 312-575-3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis.com

Bill To (optional)
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-118151
Chain of Custody Number:
Page ____ of ____
Temperature °C of Cooler: 2.7, 3.1, 2.6

Client: Arcadis
Client Project #: CI001805.0001.00003
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: R. Thornhatter
Lab PM: Therese Margraves

Preservative: 8, 3, 3, 6, 5, 1, 2, 8, 9

Parameter: SVOCs, PCBs, Pesticides; Total metals; Dissolved metals; Ammonia, NO_3, NO_2; Sulfide; VOCs; TOC; TSS, SO_4, NO_2; Dissolved Gas

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOCs, PCBs, Pesticides	Total metals	Dissolved metals	Ammonia, NO_3, NO_2	Sulfide	VOCs	TOC	TSS, SO_4, NO_2	Dissolved Gas	Comments
1		MW-13-GW-10042016	10/4/16	1515	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	-Diss Metals
2		Dup-1 (10042016)	10/4/16	—	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	field filtered
3		MW-08-GW-10052016	10/5/16	1205	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
4		MW-09-GW-10052016	10/5/16	1335	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
5		MW-06-GW-10052016	10/5/16	0840	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	-MW-6 Highly
6		Dup-2 (10052016)	10/5/16	—	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	reactive with preservative
																for TOC & VOC grab
																unable to remove
																bubbles

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date: Standard

Sample Disposal
[ ] Return to Client [X] Disposal by Lab [ ] Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	Arcadis	10/5/16	1555	David Baker	TA	10/5/16	15:55
David Baker	TA	10/5/16	1635	[signature]	TA-CHI	10/6/16	0715

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

TAL-4124-500 (1209)

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-118151-2

Login Number: 118151
List Number: 1
Creator: Scott, Sherri L

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.7,3.1,2.6
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-118189-1
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Therese Hargraves

Authorized for release by:
10/19/2016 4:03:13 PM

Therese Hargraves, Project Manager I
(708)534-5200
therese.hargraves@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Detection Summary 5
Method Summary 7
Sample Summary 8
Client Sample Results 9
Definitions 19
QC Association 20
Surrogate Summary 24
QC Sample Results 26
Chronicle 44
Certification Summary 46
Chain of Custody 47
Receipt Checklists 48

Job ID: 500-118189-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-118189-1

Comments
No additional comments.

Receipt
The samples were received on 10/6/2016 12:25 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.3º C.

GC/MS VOA
Method(s) 8260B: The initial calibration verification (ICV) result for Dichlorodifluoromethane was above the upper control limit. Sample results were non-detects, and have been reported as qualified data.

Method(s) 8260B: The following samples were collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, the pH was outside the required criteria when verified by the laboratory: MW11-GW-10062016 (500-118189-1) and MW10-GW-10052016 (500-118189-2). The samples were analyzed within 7 days per EPA recommendation, therefore, no further corrective action was needed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method(s) 8270D: CCVIS 500-355044/2 was outside the method criteria for 2,4-Dinitrophenol (36.9%D), low; 4,6-Dinitro-2-methylphenol (20.5%D, low); 4-Chloroaniline (49.9%D, high) and Benzaldehyde (45.6%D, low). A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analytes is considered estimated.(CCVIS 500-355044/2)

Method(s) 8270D: The following sample was diluted due to the nature of the sample matrix: MW11-GW-10062016 (500-118189-1). Elevated reporting limits (RLs) are provided.

Method(s) 8270D: The %RPD of the laboratory control sample (LCS) and laboratory control standard duplicate (LCSD) for preparation batch 500-354970 recovered outside control limits (20%) for 4-Chloroaniline at 27%. The % recoveries were within limits. No further action was required.(LCS 500-354970/2-A) and (LCSD 500-354970/3-A)

Method(s) 8270D: The following analyte has been identified, in the reference method and/or via historical data, to be a poor and/or erratic performer: Benzaldehyde. This analyte may have a %D>60% if the average %D of all the analytes in the initial calibration verification (ICV) is 30%. ICV 500-354143/13 had Benzaldehyde at 35.8%D, low. (ICV 500-354143/13)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
Method(s) 8081B: The continuing calibration verification (CCV) associated with batch 500-355155 recovered above the upper control limit for 4,4'-DDE. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: MW11-GW-10062016 (500-118189-1) and MW10-GW-10052016 (500-118189-2).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Field Service / Mobile Lab
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Job ID: 500-118189-1 (Continued)

Laboratory: TestAmerica Chicago (Continued)

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW11-GW-10062016 — Lab Sample ID: 500-118189-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	84		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	8.9		1.0	0.39	ug/L	1		8260B	Total/NA
Chloroethane	4.4		1.0	0.51	ug/L	1		8260B	Total/NA
Cyclohexane	78		1.0	0.49	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	0.85	J	1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	2.6		1.0	0.36	ug/L	1		8260B	Total/NA
Ethylbenzene	2.6		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	39		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	76		1.0	0.32	ug/L	1		8260B	Total/NA
Toluene	1.5		0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	15		1.0	0.22	ug/L	1		8260B	Total/NA
4-Chloroaniline	8.2	J *	37	7.4	ug/L	5		8270D	Total/NA
2-Methylnaphthalene	1.8	J	7.4	0.24	ug/L	5		8270D	Total/NA
3 & 4 Methylphenol	2.2	J	7.4	1.7	ug/L	5		8270D	Total/NA
Naphthalene	1.9	J	3.7	1.1	ug/L	5		8270D	Total/NA
N-Nitrosodiphenylamine	1.6	J	3.7	1.4	ug/L	5		8270D	Total/NA
Aluminum	0.095	J	0.20	0.062	mg/L	1		6010C	Total/NA
Barium	0.75		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0015	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	120		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0083	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0017	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.0053	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	28		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.0060		0.0050	0.0025	mg/L	1		6010C	Total/NA
Magnesium	110		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.21		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.016		0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	100		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	320		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0055		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.018	J	0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.76		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0011	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	130		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0075	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.0018	J	0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.0025	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	28		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	120		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.22		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.016		0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	110		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	330		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0048	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Sulfate	6.7	B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	65		5.0	1.3	mg/L	5		9060A	Total/NA
Total Suspended Solids	68		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	59		4.0	2.0	mg/L	20		SM 4500 NH3 G	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW10-GW-10052016 — Lab Sample ID: 500-118189-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.54		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	0.92	J	1.0	0.39	ug/L	1		8260B	Total/NA
Vinyl chloride	0.42	J	0.50	0.20	ug/L	1		8260B	Total/NA
3 & 4 Methylphenol	0.47	J	1.5	0.33	ug/L	1		8270D	Total/NA
N-Nitrosodiphenylamine	0.56	J	0.74	0.27	ug/L	1		8270D	Total/NA
Barium	0.44		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0010	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	120		0.20	0.059	mg/L	1		6010C	Total/NA
Copper	0.0034	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	13		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.0026	J	0.0050	0.0025	mg/L	1		6010C	Total/NA
Magnesium	58		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.58		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.0038	J	0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	52		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	140		1.0	0.43	mg/L	1		6010C	Total/NA
Zinc	0.038		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.45		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0010	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	130		0.20	0.059	mg/L	1		6010C	Dissolved
Iron	13		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	61		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.61		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0039	J	0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	54		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	150		1.0	0.43	mg/L	1		6010C	Dissolved
Sulfate	22	B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	20	B	1.0	0.27	mg/L	1		9060A	Total/NA
Total Suspended Solids	42		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	19	B	1.0	0.50	mg/L	5		SM 4500 NH3 G	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CHI
8081B	Organochlorine Pesticides (GC)	SW846	TAL CHI
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL CHI
6010C	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	TAL CHI
9038	Sulfate, Turbidimetric	SW846	TAL CHI
9060A	Organic Carbon, Total (TOC)	SW846	TAL CHI
Nitrate by calc	Nitrogen, Nitrate-Nitrite	SM	TAL CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
SM 4500 NH3 G	Ammonia	SM	TAL CHI
SM 4500 NO2 B	Nitrogen, Nitrite	SM	TAL CHI
SM 4500 NO3 F	Nitrogen, Nitrate	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-118189-1	MW11-GW-10062016	Water	10/06/16 08:30	10/06/16 12:25
500-118189-2	MW10-GW-10052016	Water	10/05/16 17:05	10/06/16 12:25

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW11-GW-10062016

Lab Sample ID: 500-118189-1

Date Collected: 10/06/16 08:30
Matrix: Water
Date Received: 10/06/16 12:25

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			10/11/16 17:26	1
Benzene	**84**		0.50	0.15	ug/L			10/11/16 17:26	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/11/16 17:26	1
Bromoform	<1.0		1.0	0.48	ug/L			10/11/16 17:26	1
Bromomethane	<2.0		2.0	0.80	ug/L			10/11/16 17:26	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/11/16 17:26	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/11/16 17:26	1
Chlorobenzene	**8.9**		1.0	0.39	ug/L			10/11/16 17:26	1
Chloroethane	**4.4**		1.0	0.51	ug/L			10/11/16 17:26	1
Chloroform	<1.0		1.0	0.37	ug/L			10/11/16 17:26	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/11/16 17:26	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			10/11/16 17:26	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/11/16 17:26	1
Cyclohexane	**78**		1.0	0.49	ug/L			10/11/16 17:26	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/11/16 17:26	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			10/11/16 17:26	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/11/16 17:26	1
1,2-Dichlorobenzene	**0.85**	**J**	1.0	0.33	ug/L			10/11/16 17:26	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/11/16 17:26	1
1,4-Dichlorobenzene	**2.6**		1.0	0.36	ug/L			10/11/16 17:26	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/11/16 17:26	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/11/16 17:26	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/11/16 17:26	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/11/16 17:26	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/11/16 17:26	1
Ethylbenzene	**2.6**		0.50	0.18	ug/L			10/11/16 17:26	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/11/16 17:26	1
Isopropylbenzene	**39**		1.0	0.39	ug/L			10/11/16 17:26	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/11/16 17:26	1
Methylcyclohexane	**76**		1.0	0.32	ug/L			10/11/16 17:26	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/11/16 17:26	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/11/16 17:26	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			10/11/16 17:26	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/11/16 17:26	1
Styrene	<1.0		1.0	0.39	ug/L			10/11/16 17:26	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/11/16 17:26	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/11/16 17:26	1
Toluene	**1.5**		0.50	0.15	ug/L			10/11/16 17:26	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/11/16 17:26	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/11/16 17:26	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/11/16 17:26	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/11/16 17:26	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/11/16 17:26	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/11/16 17:26	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/11/16 17:26	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/11/16 17:26	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			10/11/16 17:26	1
Xylenes, Total	**15**		1.0	0.22	ug/L			10/11/16 17:26	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW11-GW-10062016

Lab Sample ID: 500-118189-1

Date Collected: 10/06/16 08:30

Matrix: Water

Date Received: 10/06/16 12:25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*		*10/11/16 17:26*	*1*
Dibromofluoromethane	*94*		*70 - 120*		*10/11/16 17:26*	*1*
1,2-Dichloroethane-d4 (Surr)	*84*		*71 - 127*		*10/11/16 17:26*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*10/11/16 17:26*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<3.7		3.7	1.1	ug/L		10/06/16 16:12	10/07/16 14:58	5
Acenaphthylene	<3.7		3.7	0.98	ug/L		10/06/16 16:12	10/07/16 14:58	5
Acetophenone	<18		18	2.4	ug/L		10/06/16 16:12	10/07/16 14:58	5
Anthracene	<3.7		3.7	1.2	ug/L		10/06/16 16:12	10/07/16 14:58	5
Benzo[a]anthracene	<0.74		0.74	0.21	ug/L		10/06/16 16:12	10/07/16 14:58	5
Benzo[a]pyrene	<0.74		0.74	0.36	ug/L		10/06/16 16:12	10/07/16 14:58	5
Benzo[b]fluoranthene	<0.74		0.74	0.30	ug/L		10/06/16 16:12	10/07/16 14:58	5
Benzo[g,h,i]perylene	<3.7		3.7	1.4	ug/L		10/06/16 16:12	10/07/16 14:58	5
Benzo[k]fluoranthene	<0.74		0.74	0.24	ug/L		10/06/16 16:12	10/07/16 14:58	5
Bis(2-chloroethoxy)methane	<7.4		7.4	1.0	ug/L		10/06/16 16:12	10/07/16 14:58	5
Bis(2-chloroethyl)ether	<7.4		7.4	1.1	ug/L		10/06/16 16:12	10/07/16 14:58	5
Bis(2-ethylhexyl) phthalate	<37		37	6.3	ug/L		10/06/16 16:12	10/07/16 14:58	5
4-Bromophenyl phenyl ether	<18		18	2.0	ug/L		10/06/16 16:12	10/07/16 14:58	5
Butyl benzyl phthalate	<7.4		7.4	1.8	ug/L		10/06/16 16:12	10/07/16 14:58	5
Carbazole	<18		18	1.3	ug/L		10/06/16 16:12	10/07/16 14:58	5
4-Chloroaniline	**8.2**	**J ***	37	7.4	ug/L		10/06/16 16:12	10/07/16 14:58	5
4-Chloro-3-methylphenol	<37		37	8.5	ug/L		10/06/16 16:12	10/07/16 14:58	5
2-Chloronaphthalene	<7.4		7.4	0.86	ug/L		10/06/16 16:12	10/07/16 14:58	5
2-Chlorophenol	<18		18	2.1	ug/L		10/06/16 16:12	10/07/16 14:58	5
4-Chlorophenyl phenyl ether	<18		18	2.3	ug/L		10/06/16 16:12	10/07/16 14:58	5
Chrysene	<1.8		1.8	0.25	ug/L		10/06/16 16:12	10/07/16 14:58	5
Dibenz(a,h)anthracene	<1.1		1.1	0.19	ug/L		10/06/16 16:12	10/07/16 14:58	5
Dibenzofuran	<7.4		7.4	0.97	ug/L		10/06/16 16:12	10/07/16 14:58	5
3,3'-Dichlorobenzidine	<18		18	6.3	ug/L		10/06/16 16:12	10/07/16 14:58	5
2,4-Dichlorophenol	<37		37	9.6	ug/L		10/06/16 16:12	10/07/16 14:58	5
Diethyl phthalate	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 14:58	5
2,4-Dimethylphenol	<37		37	6.6	ug/L		10/06/16 16:12	10/07/16 14:58	5
Dimethyl phthalate	<7.4		7.4	1.2	ug/L		10/06/16 16:12	10/07/16 14:58	5
Di-n-butyl phthalate	<18		18	2.7	ug/L		10/06/16 16:12	10/07/16 14:58	5
4,6-Dinitro-2-methylphenol	<74		74	22	ug/L		10/06/16 16:12	10/07/16 14:58	5
2,4-Dinitrophenol	<74		74	32	ug/L		10/06/16 16:12	10/07/16 14:58	5
2,4-Dinitrotoluene	<3.7		3.7	0.90	ug/L		10/06/16 16:12	10/07/16 14:58	5
2,6-Dinitrotoluene	<3.7		3.7	0.27	ug/L		10/06/16 16:12	10/07/16 14:58	5
Di-n-octyl phthalate	<37		37	3.9	ug/L		10/06/16 16:12	10/07/16 14:58	5
Fluoranthene	<3.7		3.7	1.7	ug/L		10/06/16 16:12	10/07/16 14:58	5
Fluorene	<3.7		3.7	0.90	ug/L		10/06/16 16:12	10/07/16 14:58	5
Hexachlorobenzene	<1.8		1.8	0.29	ug/L		10/06/16 16:12	10/07/16 14:58	5
Hexachlorobutadiene	<18		18	1.9	ug/L		10/06/16 16:12	10/07/16 14:58	5
Hexachlorocyclopentadiene	<74		74	23	ug/L		10/06/16 16:12	10/07/16 14:58	5
Hexachloroethane	<18		18	2.2	ug/L		10/06/16 16:12	10/07/16 14:58	5
Indeno[1,2,3-cd]pyrene	<0.74		0.74	0.28	ug/L		10/06/16 16:12	10/07/16 14:58	5
Isophorone	<7.4		7.4	1.4	ug/L		10/06/16 16:12	10/07/16 14:58	5
2-Methylnaphthalene	**1.8**	**J**	7.4	0.24	ug/L		10/06/16 16:12	10/07/16 14:58	5

Client Sample ID: MW11-GW-10062016

Lab Sample ID: 500-118189-1

Date Collected: 10/06/16 08:30

Matrix: Water

Date Received: 10/06/16 12:25

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<7.4		7.4	1.1	ug/L		10/06/16 16:12	10/07/16 14:58	5
3 & 4 Methylphenol	**2.2**	**J**	7.4	1.7	ug/L		10/06/16 16:12	10/07/16 14:58	5
Naphthalene	**1.9**	**J**	3.7	1.1	ug/L		10/06/16 16:12	10/07/16 14:58	5
2-Nitroaniline	<18		18	4.7	ug/L		10/06/16 16:12	10/07/16 14:58	5
3-Nitroaniline	<37		37	6.6	ug/L		10/06/16 16:12	10/07/16 14:58	5
4-Nitroaniline	<37		37	6.1	ug/L		10/06/16 16:12	10/07/16 14:58	5
Nitrobenzene	<3.7		3.7	1.7	ug/L		10/06/16 16:12	10/07/16 14:58	5
2-Nitrophenol	<37		37	9.2	ug/L		10/06/16 16:12	10/07/16 14:58	5
4-Nitrophenol	<74		74	27	ug/L		10/06/16 16:12	10/07/16 14:58	5
N-Nitrosodi-n-propylamine	<1.8		1.8	0.57	ug/L		10/06/16 16:12	10/07/16 14:58	5
N-Nitrosodiphenylamine	**1.6**	**J**	3.7	1.4	ug/L		10/06/16 16:12	10/07/16 14:58	5
2,2'-oxybis[1-chloropropane]	<7.4		7.4	1.4	ug/L		10/06/16 16:12	10/07/16 14:58	5
Pentachlorophenol	<74		74	14	ug/L		10/06/16 16:12	10/07/16 14:58	5
Phenanthrene	<3.7		3.7	1.1	ug/L		10/06/16 16:12	10/07/16 14:58	5
Phenol	<18		18	2.5	ug/L		10/06/16 16:12	10/07/16 14:58	5
Pyrene	<3.7		3.7	1.6	ug/L		10/06/16 16:12	10/07/16 14:58	5
2,4,5-Trichlorophenol	<37		37	9.4	ug/L		10/06/16 16:12	10/07/16 14:58	5
2,4,6-Trichlorophenol	<18		18	2.6	ug/L		10/06/16 16:12	10/07/16 14:58	5
Benzaldehyde	<150	^	150	56	ug/L		10/06/16 16:12	10/07/16 14:58	5
Caprolactam	<37		37	5.5	ug/L		10/06/16 16:12	10/07/16 14:58	5
Atrazine	<18		18	2.3	ug/L		10/06/16 16:12	10/07/16 14:58	5
1,1'-Biphenyl	<18		18	1.3	ug/L		10/06/16 16:12	10/07/16 14:58	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*80*		*30 - 123*	*10/06/16 16:12*	*10/07/16 14:58*	*5*
2-Fluorophenol (Surr)	*53*		*30 - 110*	*10/06/16 16:12*	*10/07/16 14:58*	*5*
Nitrobenzene-d5 (Surr)	*59*		*33 - 139*	*10/06/16 16:12*	*10/07/16 14:58*	*5*
Phenol-d5 (Surr)	*48*		*20 - 100*	*10/06/16 16:12*	*10/07/16 14:58*	*5*
Terphenyl-d14 (Surr)	*97*		*42 - 150*	*10/06/16 16:12*	*10/07/16 14:58*	*5*
2,4,6-Tribromophenol (Surr)	*119*		*30 - 150*	*10/06/16 16:12*	*10/07/16 14:58*	*5*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.036		0.036	0.0048	ug/L		10/07/16 10:20	10/07/16 20:06	1
alpha-BHC	<0.036		0.036	0.0024	ug/L		10/07/16 10:20	10/07/16 20:06	1
alpha-Chlordane	<0.036		0.036	0.0040	ug/L		10/07/16 10:20	10/07/16 20:06	1
beta-BHC	<0.036		0.036	0.0093	ug/L		10/07/16 10:20	10/07/16 20:06	1
4,4'-DDD	<0.036		0.036	0.012	ug/L		10/07/16 10:20	10/07/16 20:06	1
4,4'-DDE	<0.036		0.036	0.0035	ug/L		10/07/16 10:20	10/07/16 20:06	1
4,4'-DDT	<0.036		0.036	0.0029	ug/L		10/07/16 10:20	10/07/16 20:06	1
delta-BHC	<0.036		0.036	0.0094	ug/L		10/07/16 10:20	10/07/16 20:06	1
Dieldrin	<0.036		0.036	0.012	ug/L		10/07/16 10:20	10/07/16 20:06	1
Endosulfan I	<0.036		0.036	0.0037	ug/L		10/07/16 10:20	10/07/16 20:06	1
Endosulfan II	<0.036		0.036	0.0025	ug/L		10/07/16 10:20	10/07/16 20:06	1
Endosulfan sulfate	<0.036		0.036	0.011	ug/L		10/07/16 10:20	10/07/16 20:06	1
Endrin	<0.036		0.036	0.013	ug/L		10/07/16 10:20	10/07/16 20:06	1
Endrin aldehyde	<0.036		0.036	0.0075	ug/L		10/07/16 10:20	10/07/16 20:06	1
Endrin ketone	<0.036		0.036	0.015	ug/L		10/07/16 10:20	10/07/16 20:06	1
gamma-BHC (Lindane)	<0.036		0.036	0.0051	ug/L		10/07/16 10:20	10/07/16 20:06	1
gamma-Chlordane	<0.036		0.036	0.0066	ug/L		10/07/16 10:20	10/07/16 20:06	1

Client Sample ID: MW11-GW-10062016

Lab Sample ID: 500-118189-1

Date Collected: 10/06/16 08:30

Matrix: Water

Date Received: 10/06/16 12:25

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.036		0.036	0.012	ug/L		10/07/16 10:20	10/07/16 20:06	1
Heptachlor epoxide	<0.036		0.036	0.013	ug/L		10/07/16 10:20	10/07/16 20:06	1
Methoxychlor	<0.073		0.073	0.021	ug/L		10/07/16 10:20	10/07/16 20:06	1
Toxaphene	<0.36		0.36	0.18	ug/L		10/07/16 10:20	10/07/16 20:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*55*		*30 - 143*	*10/07/16 10:20*	*10/07/16 20:06*	*1*
Tetrachloro-m-xylene	*70*		*30 - 120*	*10/07/16 10:20*	*10/07/16 20:06*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.36		0.36	0.061	ug/L		10/07/16 10:20	10/10/16 13:26	1
PCB-1221	<0.36		0.36	0.18	ug/L		10/07/16 10:20	10/10/16 13:26	1
PCB-1232	<0.36		0.36	0.18	ug/L		10/07/16 10:20	10/10/16 13:26	1
PCB-1242	<0.36		0.36	0.18	ug/L		10/07/16 10:20	10/10/16 13:26	1
PCB-1248	<0.36		0.36	0.18	ug/L		10/07/16 10:20	10/10/16 13:26	1
PCB-1254	<0.36		0.36	0.18	ug/L		10/07/16 10:20	10/10/16 13:26	1
PCB-1260	<0.36		0.36	0.064	ug/L		10/07/16 10:20	10/10/16 13:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*76*		*30 - 127*	*10/07/16 10:20*	*10/10/16 13:26*	*1*
DCB Decachlorobiphenyl	*60*		*30 - 150*	*10/07/16 10:20*	*10/10/16 13:26*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.095**	**J**	0.20	0.062	mg/L		10/11/16 15:34	10/14/16 18:27	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:34	10/14/16 18:27	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:27	1
Barium	**0.75**		0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:27	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:34	10/14/16 18:27	1
Cadmium	**0.0015**	**J**	0.0020	0.00094	mg/L		10/11/16 15:34	10/14/16 18:27	1
Calcium	**120**		0.20	0.059	mg/L		10/11/16 15:34	10/14/16 18:27	1
Chromium	**0.0083**	**J**	0.010	0.0024	mg/L		10/11/16 15:34	10/14/16 18:27	1
Cobalt	**0.0017**	**J**	0.0050	0.00096	mg/L		10/11/16 15:34	10/14/16 18:27	1
Copper	**0.0053**	**J**	0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:27	1
Iron	**28**		0.20	0.10	mg/L		10/11/16 15:34	10/14/16 18:27	1
Lead	**0.0060**		0.0050	0.0025	mg/L		10/11/16 15:34	10/14/16 18:27	1
Magnesium	**110**		0.10	0.041	mg/L		10/11/16 15:34	10/14/16 18:27	1
Manganese	**0.21**		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:27	1
Nickel	**0.016**		0.010	0.0037	mg/L		10/11/16 15:34	10/14/16 18:27	1
Potassium	**100**		0.50	0.16	mg/L		10/11/16 15:34	10/14/16 18:27	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:34	10/14/16 18:27	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:34	10/14/16 18:27	1
Sodium	**320**		1.0	0.43	mg/L		10/11/16 15:34	10/14/16 18:27	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:27	1
Vanadium	**0.0055**		0.0050	0.0019	mg/L		10/11/16 15:34	10/14/16 18:27	1
Zinc	**0.018**	**J**	0.020	0.0090	mg/L		10/11/16 15:34	10/14/16 18:27	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 15:34	10/14/16 18:32	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW11-GW-10062016

Date Collected: 10/06/16 08:30
Date Received: 10/06/16 12:25

Lab Sample ID: 500-118189-1
Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:34	10/14/16 18:32	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:32	1
Barium	**0.76**		0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:32	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:34	10/14/16 18:32	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		10/11/16 15:34	10/14/16 18:32	1
Calcium	**130**		0.20	0.059	mg/L		10/11/16 15:34	10/14/16 18:32	1
Chromium	**0.0075**	**J**	0.010	0.0024	mg/L		10/11/16 15:34	10/14/16 18:32	1
Cobalt	**0.0018**	**J**	0.0050	0.00096	mg/L		10/11/16 15:34	10/14/16 18:32	1
Copper	**0.0025**	**J**	0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:32	1
Iron	**28**		0.20	0.10	mg/L		10/11/16 15:34	10/14/16 18:32	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 15:34	10/14/16 18:32	1
Magnesium	**120**		0.10	0.041	mg/L		10/11/16 15:34	10/14/16 18:32	1
Manganese	**0.22**		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:32	1
Nickel	**0.016**		0.010	0.0037	mg/L		10/11/16 15:34	10/14/16 18:32	1
Potassium	**110**		0.50	0.16	mg/L		10/11/16 15:34	10/14/16 18:32	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:34	10/14/16 18:32	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:34	10/14/16 18:32	1
Sodium	**330**		1.0	0.43	mg/L		10/11/16 15:34	10/14/16 18:32	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:32	1
Vanadium	**0.0048**	**J**	0.0050	0.0019	mg/L		10/11/16 15:34	10/14/16 18:32	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:34	10/14/16 18:32	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 09:49	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 09:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			10/12/16 23:38	1
Sulfate	**6.7**	**B**	5.0	1.5	mg/L			10/14/16 06:12	1
Total Organic Carbon - Duplicates	**65**		5.0	1.3	mg/L			10/12/16 00:44	5
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/18/16 11:13	1
Total Suspended Solids	**68**		5.0	2.5	mg/L			10/07/16 13:31	1
Ammonia	**59**		4.0	2.0	mg/L		10/13/16 21:45	10/16/16 19:37	20
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/07/16 16:43	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/14/16 21:50	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW10-GW-10052016

Lab Sample ID: 500-118189-2

Date Collected: 10/05/16 17:05
Matrix: Water
Date Received: 10/06/16 12:25

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			10/11/16 16:59	1
Benzene	**0.54**		0.50	0.15	ug/L			10/11/16 16:59	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/11/16 16:59	1
Bromoform	<1.0		1.0	0.48	ug/L			10/11/16 16:59	1
Bromomethane	<2.0		2.0	0.80	ug/L			10/11/16 16:59	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/11/16 16:59	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/11/16 16:59	1
Chlorobenzene	**0.92**	**J**	1.0	0.39	ug/L			10/11/16 16:59	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/11/16 16:59	1
Chloroform	<1.0		1.0	0.37	ug/L			10/11/16 16:59	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/11/16 16:59	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			10/11/16 16:59	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/11/16 16:59	1
Cyclohexane	<1.0		1.0	0.49	ug/L			10/11/16 16:59	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/11/16 16:59	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			10/11/16 16:59	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/11/16 16:59	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			10/11/16 16:59	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/11/16 16:59	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			10/11/16 16:59	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/11/16 16:59	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/11/16 16:59	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/11/16 16:59	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/11/16 16:59	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/11/16 16:59	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			10/11/16 16:59	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/11/16 16:59	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			10/11/16 16:59	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/11/16 16:59	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			10/11/16 16:59	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/11/16 16:59	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/11/16 16:59	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			10/11/16 16:59	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/11/16 16:59	1
Styrene	<1.0		1.0	0.39	ug/L			10/11/16 16:59	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/11/16 16:59	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/11/16 16:59	1
Toluene	<0.50		0.50	0.15	ug/L			10/11/16 16:59	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/11/16 16:59	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/11/16 16:59	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/11/16 16:59	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/11/16 16:59	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/11/16 16:59	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/11/16 16:59	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/11/16 16:59	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/11/16 16:59	1
Vinyl chloride	**0.42**	**J**	0.50	0.20	ug/L			10/11/16 16:59	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			10/11/16 16:59	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW10-GW-10052016

Date Collected: 10/05/16 17:05
Date Received: 10/06/16 12:25

Lab Sample ID: 500-118189-2

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*71 - 120*		*10/11/16 16:59*	*1*
Dibromofluoromethane	*92*		*70 - 120*		*10/11/16 16:59*	*1*
1,2-Dichloroethane-d4 (Surr)	*84*		*71 - 127*		*10/11/16 16:59*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*10/11/16 16:59*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.74		0.74	0.23	ug/L		10/06/16 16:12	10/07/16 13:30	1
Acenaphthylene	<0.74		0.74	0.20	ug/L		10/06/16 16:12	10/07/16 13:30	1
Acetophenone	<3.7		3.7	0.49	ug/L		10/06/16 16:12	10/07/16 13:30	1
Anthracene	<0.74		0.74	0.25	ug/L		10/06/16 16:12	10/07/16 13:30	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		10/06/16 16:12	10/07/16 13:30	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		10/06/16 16:12	10/07/16 13:30	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		10/06/16 16:12	10/07/16 13:30	1
Benzo[g,h,i]perylene	<0.74		0.74	0.28	ug/L		10/06/16 16:12	10/07/16 13:30	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		10/06/16 16:12	10/07/16 13:30	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		10/06/16 16:12	10/07/16 13:30	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		10/06/16 16:12	10/07/16 13:30	1
Bis(2-ethylhexyl) phthalate	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 13:30	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		10/06/16 16:12	10/07/16 13:30	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		10/06/16 16:12	10/07/16 13:30	1
Carbazole	<3.7		3.7	0.26	ug/L		10/06/16 16:12	10/07/16 13:30	1
4-Chloroaniline	<7.4	*	7.4	1.5	ug/L		10/06/16 16:12	10/07/16 13:30	1
4-Chloro-3-methylphenol	<7.4		7.4	1.7	ug/L		10/06/16 16:12	10/07/16 13:30	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		10/06/16 16:12	10/07/16 13:30	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		10/06/16 16:12	10/07/16 13:30	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		10/06/16 16:12	10/07/16 13:30	1
Chrysene	<0.37		0.37	0.050	ug/L		10/06/16 16:12	10/07/16 13:30	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		10/06/16 16:12	10/07/16 13:30	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		10/06/16 16:12	10/07/16 13:30	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		10/06/16 16:12	10/07/16 13:30	1
2,4-Dichlorophenol	<7.4		7.4	1.9	ug/L		10/06/16 16:12	10/07/16 13:30	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		10/06/16 16:12	10/07/16 13:30	1
2,4-Dimethylphenol	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 13:30	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		10/06/16 16:12	10/07/16 13:30	1
Di-n-butyl phthalate	<3.7		3.7	0.54	ug/L		10/06/16 16:12	10/07/16 13:30	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		10/06/16 16:12	10/07/16 13:30	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		10/06/16 16:12	10/07/16 13:30	1
2,4-Dinitrotoluene	<0.74		0.74	0.18	ug/L		10/06/16 16:12	10/07/16 13:30	1
2,6-Dinitrotoluene	<0.74		0.74	0.054	ug/L		10/06/16 16:12	10/07/16 13:30	1
Di-n-octyl phthalate	<7.4		7.4	0.77	ug/L		10/06/16 16:12	10/07/16 13:30	1
Fluoranthene	<0.74		0.74	0.33	ug/L		10/06/16 16:12	10/07/16 13:30	1
Fluorene	<0.74		0.74	0.18	ug/L		10/06/16 16:12	10/07/16 13:30	1
Hexachlorobenzene	<0.37		0.37	0.059	ug/L		10/06/16 16:12	10/07/16 13:30	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		10/06/16 16:12	10/07/16 13:30	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		10/06/16 16:12	10/07/16 13:30	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		10/06/16 16:12	10/07/16 13:30	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		10/06/16 16:12	10/07/16 13:30	1
Isophorone	<1.5		1.5	0.28	ug/L		10/06/16 16:12	10/07/16 13:30	1
2-Methylnaphthalene	<1.5		1.5	0.048	ug/L		10/06/16 16:12	10/07/16 13:30	1

Client Sample ID: MW10-GW-10052016

Lab Sample ID: 500-118189-2

Date Collected: 10/05/16 17:05

Matrix: Water

Date Received: 10/06/16 12:25

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.22	ug/L		10/06/16 16:12	10/07/16 13:30	1
3 & 4 Methylphenol	**0.47**	**J**	1.5	0.33	ug/L		10/06/16 16:12	10/07/16 13:30	1
Naphthalene	<0.74		0.74	0.23	ug/L		10/06/16 16:12	10/07/16 13:30	1
2-Nitroaniline	<3.7		3.7	0.95	ug/L		10/06/16 16:12	10/07/16 13:30	1
3-Nitroaniline	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 13:30	1
4-Nitroaniline	<7.4		7.4	1.2	ug/L		10/06/16 16:12	10/07/16 13:30	1
Nitrobenzene	<0.74		0.74	0.33	ug/L		10/06/16 16:12	10/07/16 13:30	1
2-Nitrophenol	<7.4		7.4	1.8	ug/L		10/06/16 16:12	10/07/16 13:30	1
4-Nitrophenol	<15		15	5.5	ug/L		10/06/16 16:12	10/07/16 13:30	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		10/06/16 16:12	10/07/16 13:30	1
N-Nitrosodiphenylamine	**0.56**	**J**	0.74	0.27	ug/L		10/06/16 16:12	10/07/16 13:30	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		10/06/16 16:12	10/07/16 13:30	1
Pentachlorophenol	<15		15	2.9	ug/L		10/06/16 16:12	10/07/16 13:30	1
Phenanthrene	<0.74		0.74	0.22	ug/L		10/06/16 16:12	10/07/16 13:30	1
Phenol	<3.7		3.7	0.50	ug/L		10/06/16 16:12	10/07/16 13:30	1
Pyrene	<0.74		0.74	0.31	ug/L		10/06/16 16:12	10/07/16 13:30	1
2,4,5-Trichlorophenol	<7.4		7.4	1.9	ug/L		10/06/16 16:12	10/07/16 13:30	1
2,4,6-Trichlorophenol	<3.7		3.7	0.53	ug/L		10/06/16 16:12	10/07/16 13:30	1
Benzaldehyde	<29	^	29	11	ug/L		10/06/16 16:12	10/07/16 13:30	1
Caprolactam	<7.4		7.4	1.1	ug/L		10/06/16 16:12	10/07/16 13:30	1
Atrazine	<3.7		3.7	0.46	ug/L		10/06/16 16:12	10/07/16 13:30	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		10/06/16 16:12	10/07/16 13:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*83*		*30 - 123*	*10/06/16 16:12*	*10/07/16 13:30*	*1*
2-Fluorophenol (Surr)	*63*		*30 - 110*	*10/06/16 16:12*	*10/07/16 13:30*	*1*
Nitrobenzene-d5 (Surr)	*74*		*33 - 139*	*10/06/16 16:12*	*10/07/16 13:30*	*1*
Phenol-d5 (Surr)	*49*		*20 - 100*	*10/06/16 16:12*	*10/07/16 13:30*	*1*
Terphenyl-d14 (Surr)	*107*		*42 - 150*	*10/06/16 16:12*	*10/07/16 13:30*	*1*
2,4,6-Tribromophenol (Surr)	*128*		*30 - 150*	*10/06/16 16:12*	*10/07/16 13:30*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		10/07/16 10:20	10/07/16 20:25	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/07/16 10:20	10/07/16 20:25	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		10/07/16 10:20	10/07/16 20:25	1
beta-BHC	<0.037		0.037	0.0095	ug/L		10/07/16 10:20	10/07/16 20:25	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/07/16 10:20	10/07/16 20:25	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/07/16 10:20	10/07/16 20:25	1
4,4'-DDT	<0.037		0.037	0.0030	ug/L		10/07/16 10:20	10/07/16 20:25	1
delta-BHC	<0.037		0.037	0.0096	ug/L		10/07/16 10:20	10/07/16 20:25	1
Dieldrin	<0.037		0.037	0.012	ug/L		10/07/16 10:20	10/07/16 20:25	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/07/16 10:20	10/07/16 20:25	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/07/16 10:20	10/07/16 20:25	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/07/16 10:20	10/07/16 20:25	1
Endrin	<0.037		0.037	0.013	ug/L		10/07/16 10:20	10/07/16 20:25	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		10/07/16 10:20	10/07/16 20:25	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/07/16 10:20	10/07/16 20:25	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		10/07/16 10:20	10/07/16 20:25	1
gamma-Chlordane	<0.037		0.037	0.0067	ug/L		10/07/16 10:20	10/07/16 20:25	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW10-GW-10052016

Lab Sample ID: 500-118189-2
Matrix: Water

Date Collected: 10/05/16 17:05
Date Received: 10/06/16 12:25

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.013	ug/L		10/07/16 10:20	10/07/16 20:25	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/07/16 10:20	10/07/16 20:25	1
Methoxychlor	<0.074		0.074	0.021	ug/L		10/07/16 10:20	10/07/16 20:25	1
Toxaphene	<0.37		0.37	0.19	ug/L		10/07/16 10:20	10/07/16 20:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*82*		*30 - 143*	*10/07/16 10:20*	*10/07/16 20:25*	*1*
Tetrachloro-m-xylene	*66*		*30 - 120*	*10/07/16 10:20*	*10/07/16 20:25*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		10/07/16 10:20	10/10/16 13:42	1
PCB-1221	<0.37		0.37	0.19	ug/L		10/07/16 10:20	10/10/16 13:42	1
PCB-1232	<0.37		0.37	0.19	ug/L		10/07/16 10:20	10/10/16 13:42	1
PCB-1242	<0.37		0.37	0.19	ug/L		10/07/16 10:20	10/10/16 13:42	1
PCB-1248	<0.37		0.37	0.19	ug/L		10/07/16 10:20	10/10/16 13:42	1
PCB-1254	<0.37		0.37	0.19	ug/L		10/07/16 10:20	10/10/16 13:42	1
PCB-1260	<0.37		0.37	0.065	ug/L		10/07/16 10:20	10/10/16 13:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*105*		*30 - 127*	*10/07/16 10:20*	*10/10/16 13:42*	*1*
DCB Decachlorobiphenyl	*97*		*30 - 150*	*10/07/16 10:20*	*10/10/16 13:42*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 15:34	10/14/16 18:48	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:34	10/14/16 18:48	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:48	1
Barium	**0.44**		0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:48	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:34	10/14/16 18:48	1
Cadmium	**0.0010**	**J**	0.0020	0.00094	mg/L		10/11/16 15:34	10/14/16 18:48	1
Calcium	**120**		0.20	0.059	mg/L		10/11/16 15:34	10/14/16 18:48	1
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 15:34	10/14/16 18:48	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 15:34	10/14/16 18:48	1
Copper	**0.0034**	**J**	0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:48	1
Iron	**13**		0.20	0.10	mg/L		10/11/16 15:34	10/14/16 18:48	1
Lead	**0.0026**	**J**	0.0050	0.0025	mg/L		10/11/16 15:34	10/14/16 18:48	1
Magnesium	**58**		0.10	0.041	mg/L		10/11/16 15:34	10/14/16 18:48	1
Manganese	**0.58**		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:48	1
Nickel	**0.0038**	**J**	0.010	0.0037	mg/L		10/11/16 15:34	10/14/16 18:48	1
Potassium	**52**		0.50	0.16	mg/L		10/11/16 15:34	10/14/16 18:48	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:34	10/14/16 18:48	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:34	10/14/16 18:48	1
Sodium	**140**		1.0	0.43	mg/L		10/11/16 15:34	10/14/16 18:48	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:48	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 15:34	10/14/16 18:48	1
Zinc	**0.038**		0.020	0.0090	mg/L		10/11/16 15:34	10/14/16 18:48	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 15:34	10/14/16 18:52	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW10-GW-10052016

Lab Sample ID: 500-118189-2

Date Collected: 10/05/16 17:05
Matrix: Water
Date Received: 10/06/16 12:25

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:34	10/14/16 18:52	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:52	1
Barium	**0.45**		0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:52	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:34	10/14/16 18:52	1
Cadmium	**0.0010**	**J**	0.0020	0.00094	mg/L		10/11/16 15:34	10/14/16 18:52	1
Calcium	**130**		0.20	0.059	mg/L		10/11/16 15:34	10/14/16 18:52	1
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 15:34	10/14/16 18:52	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 15:34	10/14/16 18:52	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:52	1
Iron	**13**		0.20	0.10	mg/L		10/11/16 15:34	10/14/16 18:52	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 15:34	10/14/16 18:52	1
Magnesium	**61**		0.10	0.041	mg/L		10/11/16 15:34	10/14/16 18:52	1
Manganese	**0.61**		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:52	1
Nickel	**0.0039**	**J**	0.010	0.0037	mg/L		10/11/16 15:34	10/14/16 18:52	1
Potassium	**54**		0.50	0.16	mg/L		10/11/16 15:34	10/14/16 18:52	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:34	10/14/16 18:52	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:34	10/14/16 18:52	1
Sodium	**150**		1.0	0.43	mg/L		10/11/16 15:34	10/14/16 18:52	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:52	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 15:34	10/14/16 18:52	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:34	10/14/16 18:52	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 09:52	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 09:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			10/12/16 23:42	1
Sulfate	**22**	**B**	5.0	1.5	mg/L			10/14/16 06:16	1
Total Organic Carbon - Duplicates	**20**	**B**	1.0	0.27	mg/L			10/08/16 01:11	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/18/16 11:13	1
Total Suspended Solids	**42**		5.0	2.5	mg/L			10/07/16 13:32	1
Ammonia	**19**	**B**	1.0	0.50	mg/L		10/13/16 21:45	10/14/16 00:48	5
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/07/16 16:43	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/14/16 21:52	1

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	RPD of the LCS and LCSD exceeds the control limits
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

GC/MS VOA

Analysis Batch: 355490

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Total/NA	Water	8260B	
500-118189-2	MW10-GW-10052016	Total/NA	Water	8260B	
MB 500-355490/6	Method Blank	Total/NA	Water	8260B	
LCS 500-355490/4	Lab Control Sample	Total/NA	Water	8260B	
500-118189-2 MS	MW10-GW-10052016	Total/NA	Water	8260B	
500-118189-2 MSD	MW10-GW-10052016	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 354970

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Total/NA	Water	3510C	
500-118189-2	MW10-GW-10052016	Total/NA	Water	3510C	
MB 500-354970/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-354970/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-354970/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 355044

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Total/NA	Water	8270D	354970
500-118189-2	MW10-GW-10052016	Total/NA	Water	8270D	354970
MB 500-354970/1-A	Method Blank	Total/NA	Water	8270D	354970
LCS 500-354970/2-A	Lab Control Sample	Total/NA	Water	8270D	354970
LCSD 500-354970/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	354970

GC Semi VOA

Prep Batch: 355087

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Total/NA	Water	3510C	
500-118189-2	MW10-GW-10052016	Total/NA	Water	3510C	
MB 500-355087/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-355087/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 500-355087/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-355087/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
LCSD 500-355087/5-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 355155

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Total/NA	Water	8081B	355087
500-118189-2	MW10-GW-10052016	Total/NA	Water	8081B	355087
MB 500-355087/1-A	Method Blank	Total/NA	Water	8081B	355087
LCS 500-355087/2-A	Lab Control Sample	Total/NA	Water	8081B	355087
LCSD 500-355087/3-A	Lab Control Sample Dup	Total/NA	Water	8081B	355087

Analysis Batch: 355347

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Total/NA	Water	8082A	355087
500-118189-2	MW10-GW-10052016	Total/NA	Water	8082A	355087
MB 500-355087/1-A	Method Blank	Total/NA	Water	8082A	355087

GC Semi VOA (Continued)

Analysis Batch: 355347 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 500-355087/4-A	Lab Control Sample	Total/NA	Water	8082A	355087
LCSD 500-355087/5-A	Lab Control Sample Dup	Total/NA	Water	8082A	355087

Metals

Prep Batch: 355615

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Dissolved	Water	3010A	
500-118189-1	MW11-GW-10062016	Total/NA	Water	3010A	
500-118189-2	MW10-GW-10052016	Dissolved	Water	3010A	
500-118189-2	MW10-GW-10052016	Total/NA	Water	3010A	
MB 500-355615/1-A	Method Blank	Total/NA	Water	3010A	
LCS 500-355615/2-A	Lab Control Sample	Total/NA	Water	3010A	

Prep Batch: 355862

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Dissolved	Water	7470A	
500-118189-1	MW11-GW-10062016	Total/NA	Water	7470A	
500-118189-2	MW10-GW-10052016	Dissolved	Water	7470A	
500-118189-2	MW10-GW-10052016	Total/NA	Water	7470A	
MB 500-355862/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-355862/13-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 356007

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Dissolved	Water	7470A	355862
500-118189-1	MW11-GW-10062016	Total/NA	Water	7470A	355862
500-118189-2	MW10-GW-10052016	Dissolved	Water	7470A	355862
500-118189-2	MW10-GW-10052016	Total/NA	Water	7470A	355862
MB 500-355862/12-A	Method Blank	Total/NA	Water	7470A	355862
LCS 500-355862/13-A	Lab Control Sample	Total/NA	Water	7470A	355862

Analysis Batch: 356352

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Dissolved	Water	6010C	355615
500-118189-1	MW11-GW-10062016	Total/NA	Water	6010C	355615
500-118189-2	MW10-GW-10052016	Dissolved	Water	6010C	355615
500-118189-2	MW10-GW-10052016	Total/NA	Water	6010C	355615
MB 500-355615/1-A	Method Blank	Total/NA	Water	6010C	355615
LCS 500-355615/2-A	Lab Control Sample	Total/NA	Water	6010C	355615

General Chemistry

Analysis Batch: 355125

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Total/NA	Water	SM 2540D	
500-118189-2	MW10-GW-10052016	Total/NA	Water	SM 2540D	
MB 500-355125/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 500-355125/2	Lab Control Sample	Total/NA	Water	SM 2540D	

General Chemistry (Continued)

Analysis Batch: 355172

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Total/NA	Water	SM 4500 NO2 B	
500-118189-2	MW10-GW-10052016	Total/NA	Water	SM 4500 NO2 B	
MB 500-355172/3	Method Blank	Total/NA	Water	SM 4500 NO2 B	
LCS 500-355172/4	Lab Control Sample	Total/NA	Water	SM 4500 NO2 B	

Analysis Batch: 355462

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-2	MW10-GW-10052016	Total/NA	Water	9060A	
MB 500-355462/4	Method Blank	Total/NA	Water	9060A	
LCS 500-355462/5	Lab Control Sample	Total/NA	Water	9060A	

Analysis Batch: 355895

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Total/NA	Water	9034	
500-118189-2	MW10-GW-10052016	Total/NA	Water	9034	
MB 500-355895/1	Method Blank	Total/NA	Water	9034	
LCS 500-355895/2	Lab Control Sample	Total/NA	Water	9034	

Analysis Batch: 356087

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Total/NA	Water	9060A	
MB 500-356087/4	Method Blank	Total/NA	Water	9060A	
LCS 500-356087/5	Lab Control Sample	Total/NA	Water	9060A	

Prep Batch: 356123

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Total/NA	Water	SM 4500 NH3 B	
500-118189-2	MW10-GW-10052016	Total/NA	Water	SM 4500 NH3 B	
MB 500-356123/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	
LCS 500-356123/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	

Analysis Batch: 356143

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Total/NA	Water	9038	
500-118189-2	MW10-GW-10052016	Total/NA	Water	9038	
MB 500-356143/3	Method Blank	Total/NA	Water	9038	
LCS 500-356143/4	Lab Control Sample	Total/NA	Water	9038	
500-118189-1 MS	MW11-GW-10062016	Total/NA	Water	9038	
500-118189-1 MSD	MW11-GW-10062016	Total/NA	Water	9038	

Analysis Batch: 356271

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-2	MW10-GW-10052016	Total/NA	Water	SM 4500 NH3 G	356123
MB 500-356123/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 G	356123
LCS 500-356123/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	356123

Analysis Batch: 356397

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Total/NA	Water	SM 4500 NO3 F	
500-118189-2	MW10-GW-10052016	Total/NA	Water	SM 4500 NO3 F	
MB 500-356397/4	Method Blank	Total/NA	Water	SM 4500 NO3 F	

General Chemistry (Continued)

Analysis Batch: 356397 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 500-356397/5	Lab Control Sample	Total/NA	Water	SM 4500 NO3 F	

Analysis Batch: 356419

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Total/NA	Water	SM 4500 NH3 G	356123
MB 500-356123/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 G	356123
LCS 500-356123/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	356123

Analysis Batch: 356421

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-118189-1	MW11-GW-10062016	Total/NA	Water	Nitrate by calc	
500-118189-2	MW10-GW-10052016	Total/NA	Water	Nitrate by calc	

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	12DCE	TOL
Lab Sample ID	Client Sample ID	(71-120)	(70-120)	(71-127)	(75-120)
500-118189-1	MW11-GW-10062016	96	94	84	97
500-118189-2	MW10-GW-10052016	99	92	84	98
500-118189-2 MS	MW10-GW-10052016	97	95	86	97
500-118189-2 MSD	MW10-GW-10052016	98	97	85	96
LCS 500-355490/4	Lab Control Sample	97	97	88	98
MB 500-355490/6	Method Blank	95	95	88	100

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPH	TBP
Lab Sample ID	Client Sample ID	(30-123)	(30-110)	(33-139)	(20-100)	(42-150)	(30-150)
500-118189-1	MW11-GW-10062016	80	53	59	48	97	119
500-118189-2	MW10-GW-10052016	83	63	74	49	107	128
LCS 500-354970/2-A	Lab Control Sample	100	91	101	68	122	124
LCSD 500-354970/3-A	Lab Control Sample Dup	95	87	99	69	116	121
MB 500-354970/1-A	Method Blank	90	77	87	55	120	99

Surrogate Legend

FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPH = Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB1	TCX1
Lab Sample ID	Client Sample ID	(30-143)	(30-120)
500-118189-1	MW11-GW-10062016	55	70
500-118189-2	MW10-GW-10052016	82	66
LCS 500-355087/2-A	Lab Control Sample	109	84
LCSD 500-355087/3-A	Lab Control Sample Dup	103	86
MB 500-355087/1-A	Method Blank	87	83

Surrogate Legend

DCB = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)							
		TCX2	DCB2						
Lab Sample ID	**Client Sample ID**	**(30-127)**	**(30-150)**						
500-118189-1	MW11-GW-10062016	76	60						
500-118189-2	MW10-GW-10052016	105	97						
LCS 500-355087/4-A	Lab Control Sample	80	91						
LCSD 500-355087/5-A	Lab Control Sample Dup	69	94						
MB 500-355087/1-A	Method Blank	82	110						

Surrogate Legend

TCX = Tetrachloro-m-xylene

DCB = DCB Decachlorobiphenyl

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-355490/6
Matrix: Water
Analysis Batch: 355490

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			10/11/16 09:50	1
Benzene	<0.50		0.50	0.15	ug/L			10/11/16 09:50	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/11/16 09:50	1
Bromoform	<1.0		1.0	0.48	ug/L			10/11/16 09:50	1
Bromomethane	<2.0		2.0	0.80	ug/L			10/11/16 09:50	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/11/16 09:50	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/11/16 09:50	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			10/11/16 09:50	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/11/16 09:50	1
Chloroform	<1.0		1.0	0.37	ug/L			10/11/16 09:50	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/11/16 09:50	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			10/11/16 09:50	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/11/16 09:50	1
Cyclohexane	<1.0		1.0	0.49	ug/L			10/11/16 09:50	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/11/16 09:50	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			10/11/16 09:50	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/11/16 09:50	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			10/11/16 09:50	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/11/16 09:50	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			10/11/16 09:50	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/11/16 09:50	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/11/16 09:50	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/11/16 09:50	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/11/16 09:50	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/11/16 09:50	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			10/11/16 09:50	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/11/16 09:50	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			10/11/16 09:50	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/11/16 09:50	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			10/11/16 09:50	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/11/16 09:50	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/11/16 09:50	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			10/11/16 09:50	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/11/16 09:50	1
Styrene	<1.0		1.0	0.39	ug/L			10/11/16 09:50	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/11/16 09:50	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/11/16 09:50	1
Toluene	<0.50		0.50	0.15	ug/L			10/11/16 09:50	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/11/16 09:50	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/11/16 09:50	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/11/16 09:50	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/11/16 09:50	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/11/16 09:50	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/11/16 09:50	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/11/16 09:50	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/11/16 09:50	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			10/11/16 09:50	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			10/11/16 09:50	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		71 - 120		10/11/16 09:50	1
Dibromofluoromethane	95		70 - 120		10/11/16 09:50	1
1,2-Dichloroethane-d4 (Surr)	88		71 - 127		10/11/16 09:50	1
Toluene-d8 (Surr)	100		75 - 120		10/11/16 09:50	1

Lab Sample ID: LCS 500-355490/4
Matrix: Water
Analysis Batch: 355490

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	37.7		ug/L		75	37 - 141
Benzene	50.0	51.8		ug/L		104	70 - 125
Bromodichloromethane	50.0	46.7		ug/L		93	70 - 125
Bromoform	50.0	47.1		ug/L		94	54 - 128
Bromomethane	50.0	36.9		ug/L		74	40 - 150
Carbon disulfide	50.0	52.6		ug/L		105	68 - 125
Carbon tetrachloride	50.0	51.1		ug/L		102	70 - 125
Chlorobenzene	50.0	52.7		ug/L		105	70 - 125
Chloroethane	50.0	45.2		ug/L		90	60 - 139
Chloroform	50.0	51.2		ug/L		102	70 - 125
Chloromethane	50.0	56.9		ug/L		114	60 - 140
cis-1,2-Dichloroethene	50.0	53.0		ug/L		106	70 - 125
cis-1,3-Dichloropropene	50.0	48.0		ug/L		96	70 - 125
Cyclohexane	50.0	59.3		ug/L		119	56 - 149
Dibromochloromethane	50.0	47.1		ug/L		94	66 - 125
1,2-Dibromo-3-Chloropropane	50.0	41.4		ug/L		83	51 - 125
1,2-Dibromoethane	50.0	50.9		ug/L		102	70 - 125
1,2-Dichlorobenzene	50.0	53.3		ug/L		107	70 - 125
1,3-Dichlorobenzene	50.0	53.5		ug/L		107	70 - 125
1,4-Dichlorobenzene	50.0	53.0		ug/L		106	70 - 125
Dichlorodifluoromethane	50.0	56.5		ug/L		113	51 - 140
1,1-Dichloroethane	50.0	51.1		ug/L		102	70 - 125
1,2-Dichloroethane	50.0	47.4		ug/L		95	70 - 125
1,1-Dichloroethene	50.0	57.8		ug/L		116	70 - 125
1,2-Dichloropropane	50.0	51.1		ug/L		102	70 - 125
Ethylbenzene	50.0	52.1		ug/L		104	70 - 125
2-Hexanone	50.0	41.7		ug/L		83	49 - 139
Isopropylbenzene	50.0	53.6		ug/L		107	70 - 125
Methyl acetate	250	309		ug/L		124	60 - 148
Methylcyclohexane	50.0	57.1		ug/L		114	70 - 127
Methylene Chloride	50.0	53.0		ug/L		106	68 - 125
Methyl Ethyl Ketone	50.0	42.4		ug/L		85	52 - 142
methyl isobutyl ketone	50.0	45.4		ug/L		91	47 - 140
Methyl tert-butyl ether	50.0	48.7		ug/L		97	67 - 125
Styrene	50.0	50.3		ug/L		101	70 - 125
1,1,2,2-Tetrachloroethane	50.0	46.7		ug/L		93	68 - 125
Tetrachloroethene	50.0	59.0		ug/L		118	70 - 125
Toluene	50.0	51.4		ug/L		103	70 - 125
trans-1,2-Dichloroethene	50.0	53.8		ug/L		108	70 - 125
trans-1,3-Dichloropropene	50.0	45.7		ug/L		91	70 - 125
1,2,4-Trichlorobenzene	50.0	61.3		ug/L		123	64 - 126
1,1,1-Trichloroethane	50.0	51.1		ug/L		102	70 - 125
1,1,2-Trichloroethane	50.0	50.0		ug/L		100	70 - 125
Trichloroethene	50.0	60.7		ug/L		121	70 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-355490/4
Matrix: Water
Analysis Batch: 355490

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	52.6		ug/L		105	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	58.5		ug/L		117	57 - 141
Vinyl chloride	50.0	49.3		ug/L		99	70 - 126
Xylenes, Total	100	100		ug/L		100	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*
Dibromofluoromethane	*97*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*88*		*71 - 127*
Toluene-d8 (Surr)	*98*		*75 - 120*

Lab Sample ID: 500-118189-2 MS
Matrix: Water
Analysis Batch: 355490

Client Sample ID: MW10-GW-10052016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	<5.0		50.0	40.1		ug/L		80	37 - 141
Benzene	0.54		50.0	49.8		ug/L		99	70 - 125
Bromodichloromethane	<1.0		50.0	43.3		ug/L		87	70 - 125
Bromoform	<1.0		50.0	42.6		ug/L		85	54 - 128
Bromomethane	<2.0		50.0	36.9		ug/L		74	40 - 150
Carbon disulfide	<2.0		50.0	50.7		ug/L		101	68 - 125
Carbon tetrachloride	<1.0		50.0	47.1		ug/L		94	70 - 125
Chlorobenzene	0.92	J	50.0	50.9		ug/L		100	70 - 125
Chloroethane	<1.0		50.0	45.3		ug/L		91	60 - 139
Chloroform	<1.0		50.0	47.6		ug/L		95	70 - 125
Chloromethane	<1.0		50.0	48.8		ug/L		98	60 - 140
cis-1,2-Dichloroethene	<1.0		50.0	50.8		ug/L		102	70 - 125
cis-1,3-Dichloropropene	<1.0		50.0	43.6		ug/L		87	70 - 125
Cyclohexane	<1.0		50.0	55.8		ug/L		112	56 - 149
Dibromochloromethane	<1.0		50.0	43.6		ug/L		87	66 - 125
1,2-Dibromo-3-Chloropropane	<5.0		50.0	41.8		ug/L		84	51 - 125
1,2-Dibromoethane	<1.0		50.0	47.7		ug/L		95	70 - 125
1,2-Dichlorobenzene	<1.0		50.0	50.8		ug/L		102	70 - 125
1,3-Dichlorobenzene	<1.0		50.0	51.2		ug/L		102	70 - 125
1,4-Dichlorobenzene	<1.0		50.0	50.4		ug/L		101	70 - 125
Dichlorodifluoromethane	<2.0		50.0	56.9		ug/L		114	51 - 140
1,1-Dichloroethane	<1.0		50.0	48.0		ug/L		96	70 - 125
1,2-Dichloroethane	<1.0		50.0	44.5		ug/L		89	70 - 125
1,1-Dichloroethene	<1.0		50.0	53.6		ug/L		107	70 - 125
1,2-Dichloropropane	<1.0		50.0	48.9		ug/L		98	70 - 125
Ethylbenzene	<0.50		50.0	49.8		ug/L		100	70 - 125
2-Hexanone	<5.0		50.0	41.5		ug/L		83	49 - 139
Isopropylbenzene	<1.0		50.0	51.1		ug/L		102	70 - 125
Methyl acetate	<5.0		250	277		ug/L		111	60 - 148
Methylcyclohexane	<1.0		50.0	54.2		ug/L		108	70 - 127
Methylene Chloride	<5.0		50.0	50.7		ug/L		101	68 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-118189-2 MS — **Client Sample ID: MW10-GW-10052016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355490

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl Ethyl Ketone	<5.0		50.0	42.4		ug/L		85	52 - 142
methyl isobutyl ketone	<5.0		50.0	41.3		ug/L		83	47 - 140
Methyl tert-butyl ether	<1.0		50.0	45.1		ug/L		90	67 - 125
Styrene	<1.0		50.0	47.7		ug/L		95	70 - 125
1,1,2,2-Tetrachloroethane	<1.0		50.0	43.6		ug/L		87	68 - 125
Tetrachloroethene	<1.0		50.0	56.5		ug/L		113	70 - 125
Toluene	<0.50		50.0	49.0		ug/L		98	70 - 125
trans-1,2-Dichloroethene	<1.0		50.0	50.8		ug/L		102	70 - 125
trans-1,3-Dichloropropene	<1.0		50.0	41.4		ug/L		83	70 - 125
1,2,4-Trichlorobenzene	<1.0		50.0	56.2		ug/L		112	64 - 126
1,1,1-Trichloroethane	<1.0		50.0	48.8		ug/L		98	70 - 125
1,1,2-Trichloroethane	<1.0		50.0	47.7		ug/L		95	70 - 125
Trichloroethene	<0.50		50.0	57.0		ug/L		114	70 - 125
Trichlorofluoromethane	<1.0		50.0	51.9		ug/L		104	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		50.0	55.3		ug/L		111	57 - 141
Vinyl chloride	0.42	J	50.0	48.7		ug/L		97	70 - 126
Xylenes, Total	<1.0		100	95.7		ug/L		96	70 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*
Dibromofluoromethane	*95*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*86*		*71 - 127*
Toluene-d8 (Surr)	*97*		*75 - 120*

Lab Sample ID: 500-118189-2 MSD — **Client Sample ID: MW10-GW-10052016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355490

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	<5.0		50.0	44.4		ug/L		89	37 - 141	10	20
Benzene	0.54		50.0	50.7		ug/L		100	70 - 125	2	20
Bromodichloromethane	<1.0		50.0	45.1		ug/L		90	70 - 125	4	20
Bromoform	<1.0		50.0	46.2		ug/L		92	54 - 128	8	20
Bromomethane	<2.0		50.0	37.7		ug/L		75	40 - 150	2	20
Carbon disulfide	<2.0		50.0	50.9		ug/L		102	68 - 125	0	20
Carbon tetrachloride	<1.0		50.0	47.0		ug/L		94	70 - 125	0	20
Chlorobenzene	0.92	J	50.0	51.8		ug/L		102	70 - 125	2	20
Chloroethane	<1.0		50.0	44.6		ug/L		89	60 - 139	2	20
Chloroform	<1.0		50.0	49.4		ug/L		99	70 - 125	4	20
Chloromethane	<1.0		50.0	46.5		ug/L		93	60 - 140	5	20
cis-1,2-Dichloroethene	<1.0		50.0	52.9		ug/L		106	70 - 125	4	20
cis-1,3-Dichloropropene	<1.0		50.0	44.8		ug/L		90	70 - 125	3	20
Cyclohexane	<1.0		50.0	55.6		ug/L		111	56 - 149	0	20
Dibromochloromethane	<1.0		50.0	45.1		ug/L		90	66 - 125	3	20
1,2-Dibromo-3-Chloropropane	<5.0		50.0	39.2		ug/L		78	51 - 125	7	20
1,2-Dibromoethane	<1.0		50.0	50.2		ug/L		100	70 - 125	5	20
1,2-Dichlorobenzene	<1.0		50.0	51.1		ug/L		102	70 - 125	0	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-118189-2 MSD
Matrix: Water
Analysis Batch: 355490

Client Sample ID: MW10-GW-10052016
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3-Dichlorobenzene	<1.0		50.0	51.7		ug/L		103	70 - 125	1	20
1,4-Dichlorobenzene	<1.0		50.0	51.2		ug/L		102	70 - 125	2	20
Dichlorodifluoromethane	<2.0		50.0	53.6		ug/L		107	51 - 140	6	20
1,1-Dichloroethane	<1.0		50.0	49.7		ug/L		99	70 - 125	3	20
1,2-Dichloroethane	<1.0		50.0	45.4		ug/L		91	70 - 125	2	20
1,1-Dichloroethene	<1.0		50.0	53.8		ug/L		108	70 - 125	0	20
1,2-Dichloropropane	<1.0		50.0	50.8		ug/L		102	70 - 125	4	20
Ethylbenzene	<0.50		50.0	49.0		ug/L		98	70 - 125	2	20
2-Hexanone	<5.0		50.0	42.3		ug/L		85	49 - 139	2	20
Isopropylbenzene	<1.0		50.0	51.6		ug/L		103	70 - 125	1	20
Methyl acetate	<5.0		250	289		ug/L		116	60 - 148	4	20
Methylcyclohexane	<1.0		50.0	54.5		ug/L		109	70 - 127	1	20
Methylene Chloride	<5.0		50.0	52.7		ug/L		105	68 - 125	4	20
Methyl Ethyl Ketone	<5.0		50.0	43.9		ug/L		88	52 - 142	4	20
methyl isobutyl ketone	<5.0		50.0	43.0		ug/L		86	47 - 140	4	20
Methyl tert-butyl ether	<1.0		50.0	47.2		ug/L		94	67 - 125	5	20
Styrene	<1.0		50.0	47.8		ug/L		96	70 - 125	0	20
1,1,2,2-Tetrachloroethane	<1.0		50.0	47.3		ug/L		95	68 - 125	8	20
Tetrachloroethene	<1.0		50.0	56.1		ug/L		112	70 - 125	1	20
Toluene	<0.50		50.0	49.3		ug/L		99	70 - 125	1	20
trans-1,2-Dichloroethene	<1.0		50.0	52.8		ug/L		106	70 - 125	4	20
trans-1,3-Dichloropropene	<1.0		50.0	42.8		ug/L		86	70 - 125	3	20
1,2,4-Trichlorobenzene	<1.0		50.0	51.6		ug/L		103	64 - 126	9	20
1,1,1-Trichloroethane	<1.0		50.0	48.4		ug/L		97	70 - 125	1	20
1,1,2-Trichloroethane	<1.0		50.0	48.3		ug/L		97	70 - 125	1	20
Trichloroethene	<0.50		50.0	56.2		ug/L		112	70 - 125	1	20
Trichlorofluoromethane	<1.0		50.0	48.0		ug/L		96	60 - 126	8	20
1,1,2-Trichloro-1,2,2-trifluoroetha ne	<1.0		50.0	53.9		ug/L		108	57 - 141	3	20
Vinyl chloride	0.42	J	50.0	45.8		ug/L		91	70 - 126	6	20
Xylenes, Total	<1.0		100	94.9		ug/L		95	70 - 125	1	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*71 - 120*
Dibromofluoromethane	*97*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*85*		*71 - 127*
Toluene-d8 (Surr)	*96*		*75 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-354970/1-A
Matrix: Water
Analysis Batch: 355044

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354970

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.80		0.80	0.25	ug/L		10/06/16 16:12	10/07/16 12:31	1
Acenaphthylene	<0.80		0.80	0.21	ug/L		10/06/16 16:12	10/07/16 12:31	1
Acetophenone	<4.0		4.0	0.53	ug/L		10/06/16 16:12	10/07/16 12:31	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-354970/1-A
Matrix: Water
Analysis Batch: 355044

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354970

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	<0.80		0.80	0.27	ug/L		10/06/16 16:12	10/07/16 12:31	1
Benzo[a]anthracene	<0.16		0.16	0.045	ug/L		10/06/16 16:12	10/07/16 12:31	1
Benzo[a]pyrene	<0.16		0.16	0.079	ug/L		10/06/16 16:12	10/07/16 12:31	1
Benzo[b]fluoranthene	<0.16		0.16	0.065	ug/L		10/06/16 16:12	10/07/16 12:31	1
Benzo[g,h,i]perylene	<0.80		0.80	0.30	ug/L		10/06/16 16:12	10/07/16 12:31	1
Benzo[k]fluoranthene	<0.16		0.16	0.051	ug/L		10/06/16 16:12	10/07/16 12:31	1
Bis(2-chloroethoxy)methane	<1.6		1.6	0.23	ug/L		10/06/16 16:12	10/07/16 12:31	1
Bis(2-chloroethyl)ether	<1.6		1.6	0.23	ug/L		10/06/16 16:12	10/07/16 12:31	1
Bis(2-ethylhexyl) phthalate	<8.0		8.0	1.4	ug/L		10/06/16 16:12	10/07/16 12:31	1
4-Bromophenyl phenyl ether	<4.0		4.0	0.43	ug/L		10/06/16 16:12	10/07/16 12:31	1
Butyl benzyl phthalate	<1.6		1.6	0.38	ug/L		10/06/16 16:12	10/07/16 12:31	1
Carbazole	<4.0		4.0	0.28	ug/L		10/06/16 16:12	10/07/16 12:31	1
4-Chloroaniline	<8.0		8.0	1.6	ug/L		10/06/16 16:12	10/07/16 12:31	1
4-Chloro-3-methylphenol	<8.0		8.0	1.8	ug/L		10/06/16 16:12	10/07/16 12:31	1
2-Chloronaphthalene	<1.6		1.6	0.19	ug/L		10/06/16 16:12	10/07/16 12:31	1
2-Chlorophenol	<4.0		4.0	0.45	ug/L		10/06/16 16:12	10/07/16 12:31	1
4-Chlorophenyl phenyl ether	<4.0		4.0	0.51	ug/L		10/06/16 16:12	10/07/16 12:31	1
Chrysene	<0.40		0.40	0.055	ug/L		10/06/16 16:12	10/07/16 12:31	1
Dibenz(a,h)anthracene	<0.24		0.24	0.041	ug/L		10/06/16 16:12	10/07/16 12:31	1
Dibenzofuran	<1.6		1.6	0.21	ug/L		10/06/16 16:12	10/07/16 12:31	1
3,3'-Dichlorobenzidine	<4.0		4.0	1.4	ug/L		10/06/16 16:12	10/07/16 12:31	1
2,4-Dichlorophenol	<8.0		8.0	2.1	ug/L		10/06/16 16:12	10/07/16 12:31	1
Diethyl phthalate	<1.6		1.6	0.29	ug/L		10/06/16 16:12	10/07/16 12:31	1
2,4-Dimethylphenol	<8.0		8.0	1.4	ug/L		10/06/16 16:12	10/07/16 12:31	1
Dimethyl phthalate	<1.6		1.6	0.25	ug/L		10/06/16 16:12	10/07/16 12:31	1
Di-n-butyl phthalate	<4.0		4.0	0.58	ug/L		10/06/16 16:12	10/07/16 12:31	1
4,6-Dinitro-2-methylphenol	<16		16	4.7	ug/L		10/06/16 16:12	10/07/16 12:31	1
2,4-Dinitrophenol	<16		16	6.9	ug/L		10/06/16 16:12	10/07/16 12:31	1
2,4-Dinitrotoluene	<0.80		0.80	0.20	ug/L		10/06/16 16:12	10/07/16 12:31	1
2,6-Dinitrotoluene	<0.80		0.80	0.059	ug/L		10/06/16 16:12	10/07/16 12:31	1
Di-n-octyl phthalate	<8.0		8.0	0.84	ug/L		10/06/16 16:12	10/07/16 12:31	1
Fluoranthene	<0.80		0.80	0.36	ug/L		10/06/16 16:12	10/07/16 12:31	1
Fluorene	<0.80		0.80	0.20	ug/L		10/06/16 16:12	10/07/16 12:31	1
Hexachlorobenzene	<0.40		0.40	0.064	ug/L		10/06/16 16:12	10/07/16 12:31	1
Hexachlorobutadiene	<4.0		4.0	0.41	ug/L		10/06/16 16:12	10/07/16 12:31	1
Hexachlorocyclopentadiene	<16		16	5.1	ug/L		10/06/16 16:12	10/07/16 12:31	1
Hexachloroethane	<4.0		4.0	0.48	ug/L		10/06/16 16:12	10/07/16 12:31	1
Indeno[1,2,3-cd]pyrene	<0.16		0.16	0.060	ug/L		10/06/16 16:12	10/07/16 12:31	1
Isophorone	<1.6		1.6	0.30	ug/L		10/06/16 16:12	10/07/16 12:31	1
2-Methylnaphthalene	<1.6		1.6	0.052	ug/L		10/06/16 16:12	10/07/16 12:31	1
2-Methylphenol	<1.6		1.6	0.24	ug/L		10/06/16 16:12	10/07/16 12:31	1
3 & 4 Methylphenol	<1.6		1.6	0.36	ug/L		10/06/16 16:12	10/07/16 12:31	1
Naphthalene	<0.80		0.80	0.25	ug/L		10/06/16 16:12	10/07/16 12:31	1
2-Nitroaniline	<4.0		4.0	1.0	ug/L		10/06/16 16:12	10/07/16 12:31	1
3-Nitroaniline	<8.0		8.0	1.4	ug/L		10/06/16 16:12	10/07/16 12:31	1
4-Nitroaniline	<8.0		8.0	1.3	ug/L		10/06/16 16:12	10/07/16 12:31	1
Nitrobenzene	<0.80		0.80	0.36	ug/L		10/06/16 16:12	10/07/16 12:31	1
2-Nitrophenol	<8.0		8.0	2.0	ug/L		10/06/16 16:12	10/07/16 12:31	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-354970/1-A
Matrix: Water
Analysis Batch: 355044

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 354970

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Nitrophenol	<16		16	5.9	ug/L		10/06/16 16:12	10/07/16 12:31	1
N-Nitrosodi-n-propylamine	<0.40		0.40	0.12	ug/L		10/06/16 16:12	10/07/16 12:31	1
N-Nitrosodiphenylamine	<0.80		0.80	0.30	ug/L		10/06/16 16:12	10/07/16 12:31	1
2,2'-oxybis[1-chloropropane]	<1.6		1.6	0.30	ug/L		10/06/16 16:12	10/07/16 12:31	1
Pentachlorophenol	<16		16	3.2	ug/L		10/06/16 16:12	10/07/16 12:31	1
Phenanthrene	<0.80		0.80	0.24	ug/L		10/06/16 16:12	10/07/16 12:31	1
Phenol	<4.0		4.0	0.54	ug/L		10/06/16 16:12	10/07/16 12:31	1
Pyrene	<0.80		0.80	0.34	ug/L		10/06/16 16:12	10/07/16 12:31	1
2,4,5-Trichlorophenol	<8.0		8.0	2.1	ug/L		10/06/16 16:12	10/07/16 12:31	1
2,4,6-Trichlorophenol	<4.0		4.0	0.57	ug/L		10/06/16 16:12	10/07/16 12:31	1
Benzaldehyde	<32	^	32	12	ug/L		10/06/16 16:12	10/07/16 12:31	1
Caprolactam	<8.0		8.0	1.2	ug/L		10/06/16 16:12	10/07/16 12:31	1
Atrazine	<4.0		4.0	0.50	ug/L		10/06/16 16:12	10/07/16 12:31	1
1,1'-Biphenyl	<4.0		4.0	0.29	ug/L		10/06/16 16:12	10/07/16 12:31	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*90*		*30 - 123*	*10/06/16 16:12*	*10/07/16 12:31*	*1*
2-Fluorophenol (Surr)	*77*		*30 - 110*	*10/06/16 16:12*	*10/07/16 12:31*	*1*
Nitrobenzene-d5 (Surr)	*87*		*33 - 139*	*10/06/16 16:12*	*10/07/16 12:31*	*1*
Phenol-d5 (Surr)	*55*		*20 - 100*	*10/06/16 16:12*	*10/07/16 12:31*	*1*
Terphenyl-d14 (Surr)	*120*		*42 - 150*	*10/06/16 16:12*	*10/07/16 12:31*	*1*
2,4,6-Tribromophenol (Surr)	*99*		*30 - 150*	*10/06/16 16:12*	*10/07/16 12:31*	*1*

Lab Sample ID: LCS 500-354970/2-A
Matrix: Water
Analysis Batch: 355044

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354970

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	32.0	30.5		ug/L		95	41 - 112
Acenaphthylene	32.0	29.5		ug/L		92	48 - 110
Acetophenone	32.0	29.6		ug/L		92	54 - 116
Anthracene	32.0	32.2		ug/L		100	65 - 118
Benzo[a]anthracene	32.0	34.7		ug/L		108	69 - 121
Benzo[a]pyrene	32.0	35.5		ug/L		111	69 - 130
Benzo[b]fluoranthene	32.0	37.2		ug/L		116	66 - 133
Benzo[g,h,i]perylene	32.0	35.3		ug/L		110	47 - 145
Benzo[k]fluoranthene	32.0	36.2		ug/L		113	64 - 134
Bis(2-chloroethoxy)methane	32.0	31.3		ug/L		98	55 - 115
Bis(2-chloroethyl)ether	32.0	28.4		ug/L		89	46 - 110
Bis(2-ethylhexyl) phthalate	32.0	33.9		ug/L		106	60 - 132
4-Bromophenyl phenyl ether	32.0	33.6		ug/L		105	60 - 124
Butyl benzyl phthalate	32.0	34.1		ug/L		107	63 - 127
Carbazole	32.0	35.7		ug/L		112	71 - 132
4-Chloroaniline	32.0	24.0		ug/L		75	15 - 125
4-Chloro-3-methylphenol	32.0	34.7		ug/L		109	63 - 120
2-Chloronaphthalene	32.0	28.9		ug/L		90	38 - 110
2-Chlorophenol	32.0	29.6		ug/L		93	49 - 110
4-Chlorophenyl phenyl ether	32.0	33.1		ug/L		103	55 - 115

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-354970/2-A
Matrix: Water
Analysis Batch: 355044

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354970

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chrysene	32.0	32.9		ug/L		103	70 - 126
Dibenz(a,h)anthracene	32.0	35.1		ug/L		110	59 - 145
Dibenzofuran	32.0	32.2		ug/L		101	54 - 111
3,3'-Dichlorobenzidine	32.0	37.7		ug/L		118	57 - 145
2,4-Dichlorophenol	32.0	36.0		ug/L		112	53 - 123
Diethyl phthalate	32.0	33.6		ug/L		105	64 - 126
2,4-Dimethylphenol	32.0	25.5		ug/L		80	42 - 115
Dimethyl phthalate	32.0	33.3		ug/L		104	66 - 120
Di-n-butyl phthalate	32.0	33.8		ug/L		106	67 - 125
4,6-Dinitro-2-methylphenol	64.0	59.9		ug/L		94	34 - 152
2,4-Dinitrophenol	64.0	53.1		ug/L		83	20 - 140
2,4-Dinitrotoluene	32.0	35.1		ug/L		110	67 - 131
2,6-Dinitrotoluene	32.0	33.3		ug/L		104	66 - 125
Di-n-octyl phthalate	32.0	34.8		ug/L		109	63 - 133
Fluoranthene	32.0	33.8		ug/L		106	68 - 127
Fluorene	32.0	32.0		ug/L		100	54 - 113
Hexachlorobenzene	32.0	32.3		ug/L		101	63 - 127
Hexachlorobutadiene	32.0	20.0		ug/L		63	20 - 110
Hexachlorocyclopentadiene	32.0	20.6		ug/L		65	10 - 110
Hexachloroethane	32.0	18.5		ug/L		58	20 - 110
Indeno[1,2,3-cd]pyrene	32.0	35.0		ug/L		109	52 - 150
Isophorone	32.0	28.8		ug/L		90	55 - 120
2-Methylnaphthalene	32.0	24.9		ug/L		78	32 - 110
2-Methylphenol	32.0	29.9		ug/L		93	49 - 113
3 & 4 Methylphenol	32.0	30.9		ug/L		96	49 - 114
Naphthalene	32.0	24.1		ug/L		75	32 - 110
2-Nitroaniline	32.0	34.1		ug/L		107	61 - 126
3-Nitroaniline	32.0	31.8		ug/L		99	42 - 134
4-Nitroaniline	32.0	31.8		ug/L		99	40 - 142
Nitrobenzene	32.0	31.3		ug/L		98	49 - 116
2-Nitrophenol	32.0	30.5		ug/L		95	51 - 120
4-Nitrophenol	64.0	47.9		ug/L		75	21 - 110
N-Nitrosodi-n-propylamine	32.0	30.1		ug/L		94	52 - 122
N-Nitrosodiphenylamine	32.0	30.9		ug/L		96	63 - 117
2,2'-oxybis[1-chloropropane]	32.0	27.4		ug/L		86	34 - 110
Pentachlorophenol	64.0	54.3		ug/L		85	29 - 138
Phenanthrene	32.0	32.7		ug/L		102	63 - 121
Phenol	32.0	20.9		ug/L		65	33 - 100
Pyrene	32.0	32.9		ug/L		103	65 - 122
2,4,5-Trichlorophenol	32.0	34.7		ug/L		109	63 - 121
2,4,6-Trichlorophenol	32.0	31.7		ug/L		99	61 - 120
Caprolactam	32.0	18.4		ug/L		58	25 - 100
Atrazine	32.0	33.0		ug/L		103	57 - 128
1,1'-Biphenyl	32.0	30.1		ug/L		94	42 - 110

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*100*		*30 - 123*
2-Fluorophenol (Surr)	*91*		*30 - 110*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-354970/2-A
Matrix: Water
Analysis Batch: 355044

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 354970

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*101*		*33 - 139*
Phenol-d5 (Surr)	*68*		*20 - 100*
Terphenyl-d14 (Surr)	*122*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*124*		*30 - 150*

Lab Sample ID: LCSD 500-354970/3-A
Matrix: Water
Analysis Batch: 355044

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 354970

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	32.0	30.6		ug/L		96	41 - 112	0	20
Acenaphthylene	32.0	29.8		ug/L		93	48 - 110	1	20
Acetophenone	32.0	30.0		ug/L		94	54 - 116	1	20
Anthracene	32.0	32.1		ug/L		100	65 - 118	0	20
Benzo[a]anthracene	32.0	34.1		ug/L		107	69 - 121	2	20
Benzo[a]pyrene	32.0	34.7		ug/L		108	69 - 130	2	20
Benzo[b]fluoranthene	32.0	36.5		ug/L		114	66 - 133	2	20
Benzo[g,h,i]perylene	32.0	34.2		ug/L		107	47 - 145	3	20
Benzo[k]fluoranthene	32.0	35.3		ug/L		110	64 - 134	2	20
Bis(2-chloroethoxy)methane	32.0	31.6		ug/L		99	55 - 115	1	20
Bis(2-chloroethyl)ether	32.0	28.3		ug/L		89	46 - 110	0	20
Bis(2-ethylhexyl) phthalate	32.0	33.2		ug/L		104	60 - 132	2	20
4-Bromophenyl phenyl ether	32.0	33.5		ug/L		105	60 - 124	1	20
Butyl benzyl phthalate	32.0	33.6		ug/L		105	63 - 127	2	20
Carbazole	32.0	35.6		ug/L		111	71 - 132	0	20
4-Chloroaniline	32.0	31.4	*	ug/L		98	15 - 125	27	20
4-Chloro-3-methylphenol	32.0	35.4		ug/L		111	63 - 120	2	20
2-Chloronaphthalene	32.0	29.4		ug/L		92	38 - 110	2	20
2-Chlorophenol	32.0	29.7		ug/L		93	49 - 110	0	20
4-Chlorophenyl phenyl ether	32.0	32.8		ug/L		103	55 - 115	1	20
Chrysene	32.0	32.4		ug/L		101	70 - 126	1	20
Dibenz(a,h)anthracene	32.0	34.2		ug/L		107	59 - 145	3	20
Dibenzofuran	32.0	32.1		ug/L		100	54 - 111	0	20
3,3'-Dichlorobenzidine	32.0	38.7		ug/L		121	57 - 145	2	20
2,4-Dichlorophenol	32.0	36.1		ug/L		113	53 - 123	0	20
Diethyl phthalate	32.0	33.3		ug/L		104	64 - 126	1	20
2,4-Dimethylphenol	32.0	26.3		ug/L		82	42 - 115	3	20
Dimethyl phthalate	32.0	33.5		ug/L		105	66 - 120	1	20
Di-n-butyl phthalate	32.0	33.2		ug/L		104	67 - 125	2	20
4,6-Dinitro-2-methylphenol	64.0	62.6		ug/L		98	34 - 152	4	20
2,4-Dinitrophenol	64.0	58.4		ug/L		91	20 - 140	10	20
2,4-Dinitrotoluene	32.0	35.1		ug/L		110	67 - 131	0	20
2,6-Dinitrotoluene	32.0	33.8		ug/L		105	66 - 125	1	20
Di-n-octyl phthalate	32.0	34.5		ug/L		108	63 - 133	1	20
Fluoranthene	32.0	33.8		ug/L		106	68 - 127	0	20
Fluorene	32.0	31.5		ug/L		99	54 - 113	2	20
Hexachlorobenzene	32.0	32.5		ug/L		102	63 - 127	0	20
Hexachlorobutadiene	32.0	23.6		ug/L		74	20 - 110	16	20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 500-354970/3-A
Matrix: Water
Analysis Batch: 355044

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 354970

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hexachlorocyclopentadiene	32.0	23.1		ug/L		72	10 - 110	11	20
Hexachloroethane	32.0	22.1		ug/L		69	20 - 110	18	20
Indeno[1,2,3-cd]pyrene	32.0	34.1		ug/L		107	52 - 150	3	20
Isophorone	32.0	29.6		ug/L		93	55 - 120	3	20
2-Methylnaphthalene	32.0	26.4		ug/L		82	32 - 110	6	20
2-Methylphenol	32.0	31.4		ug/L		98	49 - 113	5	20
3 & 4 Methylphenol	32.0	31.4		ug/L		98	49 - 114	2	20
Naphthalene	32.0	26.4		ug/L		83	32 - 110	9	20
2-Nitroaniline	32.0	34.1		ug/L		106	61 - 126	0	20
3-Nitroaniline	32.0	31.9		ug/L		100	42 - 134	0	20
4-Nitroaniline	32.0	31.5		ug/L		98	40 - 142	1	20
Nitrobenzene	32.0	31.4		ug/L		98	49 - 116	0	20
2-Nitrophenol	32.0	30.7		ug/L		96	51 - 120	1	20
4-Nitrophenol	64.0	47.0		ug/L		73	21 - 110	2	20
N-Nitrosodi-n-propylamine	32.0	30.7		ug/L		96	52 - 122	2	20
N-Nitrosodiphenylamine	32.0	33.0		ug/L		103	63 - 117	7	20
2,2'-oxybis[1-chloropropane]	32.0	27.0		ug/L		84	34 - 110	1	20
Pentachlorophenol	64.0	51.6		ug/L		81	29 - 138	5	20
Phenanthrene	32.0	32.2		ug/L		101	63 - 121	2	20
Phenol	32.0	22.1		ug/L		69	33 - 100	6	20
Pyrene	32.0	32.5		ug/L		102	65 - 122	1	20
2,4,5-Trichlorophenol	32.0	35.7		ug/L		112	63 - 121	3	20
2,4,6-Trichlorophenol	32.0	33.1		ug/L		103	61 - 120	4	20
Caprolactam	32.0	17.3		ug/L		54	25 - 100	6	20
Atrazine	32.0	33.0		ug/L		103	57 - 128	0	20
1,1'-Biphenyl	32.0	30.2		ug/L		94	42 - 110	0	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl	*95*		*30 - 123*
2-Fluorophenol (Surr)	*87*		*30 - 110*
Nitrobenzene-d5 (Surr)	*99*		*33 - 139*
Phenol-d5 (Surr)	*69*		*20 - 100*
Terphenyl-d14 (Surr)	*116*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*121*		*30 - 150*

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 500-355087/1-A
Matrix: Water
Analysis Batch: 355155

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 355087

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.040		0.040	0.0053	ug/L		10/07/16 10:20	10/07/16 17:13	1
alpha-BHC	<0.040		0.040	0.0026	ug/L		10/07/16 10:20	10/07/16 17:13	1
alpha-Chlordane	<0.040		0.040	0.0044	ug/L		10/07/16 10:20	10/07/16 17:13	1
beta-BHC	<0.040		0.040	0.010	ug/L		10/07/16 10:20	10/07/16 17:13	1
4,4'-DDD	<0.040		0.040	0.013	ug/L		10/07/16 10:20	10/07/16 17:13	1
4,4'-DDE	<0.040		0.040	0.0038	ug/L		10/07/16 10:20	10/07/16 17:13	1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: MB 500-355087/1-A
Matrix: Water
Analysis Batch: 355155

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 355087

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDT	<0.040		0.040	0.0032	ug/L		10/07/16 10:20	10/07/16 17:13	1
delta-BHC	<0.040		0.040	0.010	ug/L		10/07/16 10:20	10/07/16 17:13	1
Dieldrin	<0.040		0.040	0.013	ug/L		10/07/16 10:20	10/07/16 17:13	1
Endosulfan I	<0.040		0.040	0.0041	ug/L		10/07/16 10:20	10/07/16 17:13	1
Endosulfan II	<0.040		0.040	0.0028	ug/L		10/07/16 10:20	10/07/16 17:13	1
Endosulfan sulfate	<0.040		0.040	0.012	ug/L		10/07/16 10:20	10/07/16 17:13	1
Endrin	<0.040		0.040	0.014	ug/L		10/07/16 10:20	10/07/16 17:13	1
Endrin aldehyde	<0.040		0.040	0.0082	ug/L		10/07/16 10:20	10/07/16 17:13	1
Endrin ketone	<0.040		0.040	0.017	ug/L		10/07/16 10:20	10/07/16 17:13	1
gamma-BHC (Lindane)	<0.040		0.040	0.0056	ug/L		10/07/16 10:20	10/07/16 17:13	1
gamma-Chlordane	<0.040		0.040	0.0072	ug/L		10/07/16 10:20	10/07/16 17:13	1
Heptachlor	<0.040		0.040	0.014	ug/L		10/07/16 10:20	10/07/16 17:13	1
Heptachlor epoxide	<0.040		0.040	0.014	ug/L		10/07/16 10:20	10/07/16 17:13	1
Methoxychlor	<0.080		0.080	0.023	ug/L		10/07/16 10:20	10/07/16 17:13	1
Toxaphene	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/07/16 17:13	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*87*		*30 - 143*	*10/07/16 10:20*	*10/07/16 17:13*	*1*
Tetrachloro-m-xylene	*83*		*30 - 120*	*10/07/16 10:20*	*10/07/16 17:13*	*1*

Lab Sample ID: LCS 500-355087/2-A
Matrix: Water
Analysis Batch: 355155

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 355087

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.320	0.298		ug/L		93	40 - 130
alpha-BHC	0.320	0.307		ug/L		96	70 - 130
alpha-Chlordane	0.320	0.316		ug/L		99	70 - 130
beta-BHC	0.320	0.287		ug/L		90	70 - 130
4,4'-DDD	0.320	0.300		ug/L		94	70 - 130
4,4'-DDE	0.320	0.333		ug/L		104	56 - 130
4,4'-DDT	0.320	0.318		ug/L		99	50 - 137
delta-BHC	0.320	0.315		ug/L		99	70 - 130
Dieldrin	0.320	0.304		ug/L		95	70 - 130
Endosulfan I	0.320	0.231		ug/L		72	40 - 130
Endosulfan II	0.320	0.251		ug/L		78	49 - 130
Endosulfan sulfate	0.320	0.332		ug/L		104	70 - 130
Endrin	0.320	0.298		ug/L		93	69 - 130
Endrin aldehyde	0.320	0.290		ug/L		91	63 - 130
Endrin ketone	0.320	0.279		ug/L		87	54 - 141
gamma-BHC (Lindane)	0.320	0.301		ug/L		94	70 - 130
gamma-Chlordane	0.320	0.281		ug/L		88	63 - 130
Heptachlor	0.320	0.276		ug/L		86	40 - 130
Heptachlor epoxide	0.320	0.286		ug/L		90	70 - 130
Methoxychlor	0.320	0.299		ug/L		93	47 - 153

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 500-355087/2-A
Matrix: Water
Analysis Batch: 355155

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 355087

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*109*		*30 - 143*
Tetrachloro-m-xylene	*84*		*30 - 120*

Lab Sample ID: LCSD 500-355087/3-A
Matrix: Water
Analysis Batch: 355155

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 355087

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	0.320	0.307		ug/L		96	40 - 130	3	20
alpha-BHC	0.320	0.315		ug/L		98	70 - 130	3	20
alpha-Chlordane	0.320	0.324		ug/L		101	70 - 130	2	20
beta-BHC	0.320	0.293		ug/L		92	70 - 130	2	20
4,4'-DDD	0.320	0.310		ug/L		97	70 - 130	3	20
4,4'-DDE	0.320	0.343		ug/L		107	56 - 130	3	20
4,4'-DDT	0.320	0.326		ug/L		102	50 - 137	2	20
delta-BHC	0.320	0.324		ug/L		101	70 - 130	3	20
Dieldrin	0.320	0.313		ug/L		98	70 - 130	3	20
Endosulfan I	0.320	0.238		ug/L		74	40 - 130	3	20
Endosulfan II	0.320	0.259		ug/L		81	49 - 130	3	20
Endosulfan sulfate	0.320	0.347		ug/L		109	70 - 130	4	20
Endrin	0.320	0.309		ug/L		96	69 - 130	4	20
Endrin aldehyde	0.320	0.298		ug/L		93	63 - 130	3	20
Endrin ketone	0.320	0.287		ug/L		90	54 - 141	3	20
gamma-BHC (Lindane)	0.320	0.308		ug/L		96	70 - 130	3	20
gamma-Chlordane	0.320	0.289		ug/L		90	63 - 130	3	20
Heptachlor	0.320	0.283		ug/L		89	40 - 130	3	20
Heptachlor epoxide	0.320	0.294		ug/L		92	70 - 130	3	20
Methoxychlor	0.320	0.311		ug/L		97	47 - 153	4	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*103*		*30 - 143*
Tetrachloro-m-xylene	*86*		*30 - 120*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 500-355087/1-A
Matrix: Water
Analysis Batch: 355347

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 355087

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.40		0.40	0.067	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1221	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1232	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1242	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1248	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1254	<0.40		0.40	0.20	ug/L		10/07/16 10:20	10/10/16 12:25	1
PCB-1260	<0.40		0.40	0.070	ug/L		10/07/16 10:20	10/10/16 12:25	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: MB 500-355087/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355347 — **Prep Batch: 355087**

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*82*		*30 - 127*	*10/07/16 10:20*	*10/10/16 12:25*	*1*
DCB Decachlorobiphenyl	*110*		*30 - 150*	*10/07/16 10:20*	*10/10/16 12:25*	*1*

Lab Sample ID: LCS 500-355087/4-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355347 — **Prep Batch: 355087**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	4.00	3.47		ug/L		87	58 - 121
PCB-1260	4.00	4.19		ug/L		105	62 - 137

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*80*		*30 - 127*
DCB Decachlorobiphenyl	*91*		*30 - 150*

Lab Sample ID: LCSD 500-355087/5-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355347 — **Prep Batch: 355087**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	4.00	3.21		ug/L		80	58 - 121	8	20
PCB-1260	4.00	3.71		ug/L		93	62 - 137	12	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*69*		*30 - 127*
DCB Decachlorobiphenyl	*94*		*30 - 150*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 500-355615/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356352 — **Prep Batch: 355615**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 15:34	10/14/16 18:19	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:34	10/14/16 18:19	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:19	1
Barium	<0.010		0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:19	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:34	10/14/16 18:19	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:34	10/14/16 18:19	1
Calcium	<0.20		0.20	0.059	mg/L		10/11/16 15:34	10/14/16 18:19	1
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 15:34	10/14/16 18:19	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 15:34	10/14/16 18:19	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:19	1
Iron	<0.20		0.20	0.10	mg/L		10/11/16 15:34	10/14/16 18:19	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 15:34	10/14/16 18:19	1
Magnesium	<0.10		0.10	0.041	mg/L		10/11/16 15:34	10/14/16 18:19	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 500-355615/1-A
Matrix: Water
Analysis Batch: 356352

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 355615

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:19	1
Nickel	<0.010		0.010	0.0037	mg/L		10/11/16 15:34	10/14/16 18:19	1
Potassium	<0.50		0.50	0.16	mg/L		10/11/16 15:34	10/14/16 18:19	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:34	10/14/16 18:19	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:34	10/14/16 18:19	1
Sodium	<1.0		1.0	0.43	mg/L		10/11/16 15:34	10/14/16 18:19	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:19	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 15:34	10/14/16 18:19	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:34	10/14/16 18:19	1

Lab Sample ID: LCS 500-355615/2-A
Matrix: Water
Analysis Batch: 356352

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 355615

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	2.15		mg/L		108	80 - 120
Antimony	0.500	0.499		mg/L		100	80 - 120
Arsenic	0.100	0.0920		mg/L		92	80 - 120
Barium	2.00	2.15		mg/L		108	80 - 120
Beryllium	0.0500	0.0540		mg/L		108	80 - 120
Cadmium	0.0500	0.0501		mg/L		100	80 - 120
Calcium	10.0	10.8		mg/L		108	80 - 120
Chromium	0.200	0.212		mg/L		106	80 - 120
Cobalt	0.500	0.519		mg/L		104	80 - 120
Copper	0.250	0.267		mg/L		107	80 - 120
Iron	1.00	1.15		mg/L		115	80 - 120
Lead	0.100	0.0980		mg/L		98	80 - 120
Magnesium	10.0	10.4		mg/L		104	80 - 120
Manganese	0.500	0.526		mg/L		105	80 - 120
Nickel	0.500	0.518		mg/L		104	80 - 120
Potassium	10.0	10.7		mg/L		107	80 - 120
Selenium	0.100	0.0999		mg/L		100	80 - 120
Silver	0.0500	0.0496		mg/L		99	80 - 120
Sodium	10.0	10.7		mg/L		107	80 - 120
Thallium	0.100	0.101		mg/L		101	80 - 120
Vanadium	0.500	0.537		mg/L		107	80 - 120
Zinc	0.500	0.513		mg/L		103	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-355862/12-A
Matrix: Water
Analysis Batch: 356007

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 355862

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 09:07	1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 500-355862/13-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356007 — **Prep Batch: 355862**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00200	0.00198		mg/L		99	80 - 120

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 500-355895/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355895

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			10/12/16 23:09	1

Lab Sample ID: LCS 500-355895/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355895

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	3.61	3.52		mg/L		97	80 - 120

Method: 9038 - Sulfate, Turbidimetric

Lab Sample ID: MB 500-356143/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356143

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2.00	J	5.0	1.5	mg/L			10/14/16 06:03	1

Lab Sample ID: LCS 500-356143/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356143

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	19.6		mg/L		98	80 - 120

Lab Sample ID: 500-118189-1 MS — **Client Sample ID: MW11-GW-10062016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356143

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	6.7	B	20.0	24.9		mg/L		91	75 - 125

Lab Sample ID: 500-118189-1 MSD — **Client Sample ID: MW11-GW-10062016**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356143

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	6.7	B	20.0	25.3		mg/L		93	75 - 125	2	20

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 500-355462/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355462

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	0.507	J	1.0	0.27	mg/L			10/07/16 18:24	1

Lab Sample ID: LCS 500-355462/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355462

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	10.0	9.84		mg/L		98	80 - 120
TOC Result 1	10.0	9.78		mg/L		98	80 - 120
TOC Result 2	10.0	9.90		mg/L		99	80 - 120

Lab Sample ID: MB 500-356087/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356087

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	<1.0		1.0	0.27	mg/L			10/11/16 18:53	1

Lab Sample ID: LCS 500-356087/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356087

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	10.0	10.0		mg/L		100	80 - 120
TOC Result 1	10.0	9.92		mg/L		99	80 - 120
TOC Result 2	10.0	10.1		mg/L		101	80 - 120

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 500-355125/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355125

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.0		5.0	2.5	mg/L			10/07/16 13:25	1

Lab Sample ID: LCS 500-355125/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355125

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	200	210		mg/L		105	80 - 120

Method: SM 4500 NH3 G - Ammonia

Lab Sample ID: MB 500-356123/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356271 — **Prep Batch: 356123**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	0.121	J	0.20	0.10	mg/L		10/13/16 21:45	10/13/16 23:57	1

Lab Sample ID: MB 500-356123/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356419 — **Prep Batch: 356123**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.20		0.20	0.10	mg/L		10/13/16 21:45	10/16/16 19:31	1

Lab Sample ID: LCS 500-356123/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356271 — **Prep Batch: 356123**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.50	2.44		mg/L		98	80 - 120

Lab Sample ID: LCS 500-356123/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356419 — **Prep Batch: 356123**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.50	2.52		mg/L		101	80 - 120

Method: SM 4500 NO2 B - Nitrogen, Nitrite

Lab Sample ID: MB 500-355172/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355172

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/07/16 16:40	1

Lab Sample ID: LCS 500-355172/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 355172

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrite	0.100	0.102		mg/L		102	80 - 120

Method: SM 4500 NO3 F - Nitrogen, Nitrate

Lab Sample ID: MB 500-356397/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 356397

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/14/16 21:15	1

Method: SM 4500 NO3 F - Nitrogen, Nitrate (Continued)

Lab Sample ID: LCS 500-356397/5
Matrix: Water
Analysis Batch: 356397

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrogen, Nitrate Nitrite			1.00	1.02		mg/L		102	80 - 120		

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW11-GW-10062016

Lab Sample ID: 500-118189-1
Date Collected: 10/06/16 08:30
Matrix: Water
Date Received: 10/06/16 12:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	355490	10/11/16 17:26	EMA	TAL CHI
Total/NA	Prep	3510C			354970	10/06/16 16:12	JP1	TAL CHI
Total/NA	Analysis	8270D		5	355044	10/07/16 14:58	AJD	TAL CHI
Total/NA	Prep	3510C			355087	10/07/16 10:20	JJH	TAL CHI
Total/NA	Analysis	8081B		1	355155	10/07/16 20:06	PJG	TAL CHI
Total/NA	Prep	3510C			355087	10/07/16 10:20	JJH	TAL CHI
Total/NA	Analysis	8082A		1	355347	10/10/16 13:26	BJH	TAL CHI
Dissolved	Prep	3010A			355615	10/11/16 15:34	JNH	TAL CHI
Dissolved	Analysis	6010C		1	356352	10/14/16 18:32	PJ1	TAL CHI
Total/NA	Prep	3010A			355615	10/11/16 15:34	JNH	TAL CHI
Total/NA	Analysis	6010C		1	356352	10/14/16 18:27	PJ1	TAL CHI
Dissolved	Prep	7470A			355862	10/12/16 16:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	356007	10/13/16 09:50	MJD	TAL CHI
Total/NA	Prep	7470A			355862	10/12/16 16:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	356007	10/13/16 09:49	MJD	TAL CHI
Total/NA	Analysis	9034		1	355895		CLB	TAL CHI
					(Start)	10/12/16 23:38		
					(End)	10/12/16 23:42		
Total/NA	Analysis	9038		1	356143		CLB	TAL CHI
					(Start)	10/14/16 06:12		
					(End)	10/14/16 06:14		
Total/NA	Analysis	9060A		5	356087	10/12/16 00:44	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	356421	10/18/16 11:13	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	355125		SMO	TAL CHI
					(Start)	10/07/16 13:31		
					(End)	10/07/16 13:32		
Total/NA	Prep	SM 4500 NH3 B			356123	10/13/16 21:45	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		20	356419	10/16/16 19:37	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	355172		EAT	TAL CHI
					(Start)	10/07/16 16:43		
					(End)	10/07/16 16:43		
Total/NA	Analysis	SM 4500 NO3 F		1	356397	10/14/16 21:50	HMW	TAL CHI

Client Sample ID: MW10-GW-10052016

Lab Sample ID: 500-118189-2
Date Collected: 10/05/16 17:05
Matrix: Water
Date Received: 10/06/16 12:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	355490	10/11/16 16:59	EMA	TAL CHI
Total/NA	Prep	3510C			354970	10/06/16 16:12	JP1	TAL CHI
Total/NA	Analysis	8270D		1	355044	10/07/16 13:30	AJD	TAL CHI
Total/NA	Prep	3510C			355087	10/07/16 10:20	JJH	TAL CHI
Total/NA	Analysis	8081B		1	355155	10/07/16 20:25	PJG	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW10-GW-10052016

Lab Sample ID: 500-118189-2

Date Collected: 10/05/16 17:05

Matrix: Water

Date Received: 10/06/16 12:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			355087	10/07/16 10:20	JJH	TAL CHI
Total/NA	Analysis	8082A		1	355347	10/10/16 13:42	BJH	TAL CHI
Dissolved	Prep	3010A			355615	10/11/16 15:34	JNH	TAL CHI
Dissolved	Analysis	6010C		1	356352	10/14/16 18:52	PJ1	TAL CHI
Total/NA	Prep	3010A			355615	10/11/16 15:34	JNH	TAL CHI
Total/NA	Analysis	6010C		1	356352	10/14/16 18:48	PJ1	TAL CHI
Dissolved	Prep	7470A			355862	10/12/16 16:15	MJD	TAL CHI
Dissolved	Analysis	7470A		1	356007	10/13/16 09:53	MJD	TAL CHI
Total/NA	Prep	7470A			355862	10/12/16 16:15	MJD	TAL CHI
Total/NA	Analysis	7470A		1	356007	10/13/16 09:52	MJD	TAL CHI
Total/NA	Analysis	9034		1	355895		CLB	TAL CHI
					(Start)	10/12/16 23:42		
					(End)	10/12/16 23:46		
Total/NA	Analysis	9038		1	356143		CLB	TAL CHI
					(Start)	10/14/16 06:16		
					(End)	10/14/16 06:17		
Total/NA	Analysis	9060A		1	355462	10/08/16 01:11	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	356421	10/18/16 11:13	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	355125		SMO	TAL CHI
					(Start)	10/07/16 13:32		
					(End)	10/07/16 13:34		
Total/NA	Prep	SM 4500 NH3 B			356123	10/13/16 21:45	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		5	356271	10/14/16 00:48	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	355172		EAT	TAL CHI
					(Start)	10/07/16 16:43		
					(End)	10/07/16 16:44		
Total/NA	Analysis	SM 4500 NO3 F		1	356397	10/14/16 21:52	HMW	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Laboratory: TestAmerica Chicago

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	100201	04-30-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	Cyclohexane
8260B		Water	Methyl acetate
8260B		Water	Methylcyclohexane
8270D	3510C	Water	1,1'-Biphenyl
8270D	3510C	Water	Atrazine
8270D	3510C	Water	Benzaldehyde
8270D	3510C	Water	Caprolactam

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Chain of Custody Record

Report To (optional)
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 120 S. LaSalle St Ste 1350
Address: Chicago, IL 60603
Phone: 312-575-3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis.com

Bill To (optional)
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Lab Job #: 500-118189
Chain of Custody Number:
Page ____ of ____
Temperature °C of Cooler: 4.3

Client: Arcadis
Client Project #: CI001805.0002.00005
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thurnhoffer
Lab PM: Therese Hargraves

Preservative Key: 4° to 4° 4° 4° to 4°

500-118189 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOCs, PCBs, Pesticides	Total Metals	Dissolved Metals	Ammonia, NO3, NO2	Sulfide	VOCs	TOC	TSS, SO4, NO2	Dissolved Gases	Comments
1		MW-11-GW-10062016	10/6/16	0830	1.8	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	- Diss Metals
2		MW-10-GW-10052016	10/5/16	1705	1.8	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Field filtered
																- MW-11 & Sample
																reactive with preservative
																in VOC vial. Unable
																to remove all bubbles
																- Diss Gas Samples,
																Not able to remove
																all headspace

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days ___ Other
Requested Due Date: Standard

Sample Disposal: [ ] Return to Client [X] Disposal by Lab [ ] Archive for ___ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	Arcadis	10/6/16	1225	[signature]	TA-CHI	10/6/16	1225

Lab Courier:
Shipped:
Hand Delivered: X

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
QL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

Ben
312-420-3651

TAL-4124-500 (1209)
10/19/2016

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-118189-1

Login Number: 118189
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.3
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ARCADIS Design & Consultancy for natural and built assets

Lake Calumet Cluster Site

DATA REVIEW

Chicago, Illinois

Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs), Pesticides, Polychlorinated Biphenyls (PCBs), Metals, and Miscellaneous General Chemistry Analyses

SDGs #: 500-118024, 500-118070, 500-118151, and 500-118189

Analyses Performed By:
TestAmerica Laboratories, Inc.
Chicago, Illinois

Report #: 26665
Review Level: Tier III
Project: CI001805.0002.00005

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Groups (SDGs) # 500-118024, 500-118070, 500-118151, and 500-118189 for samples collected in association with the Lake Calumet Cluster Site. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data as reported by the laboratory were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chains of custody. Analyses were performed on the following samples:

SDG	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis					
						VOC	SVOC	Pest/ PCB	Metal	Misc	Diss. Gases
500-118024	MW-01-GW-10032016	500-118024-1	Water	10/3/2016		X	X	X	X	X	X
	MW-02-GW-10032016	500-118024-2	Water	10/3/2016		X	X	X	X	X	X
500-118070	MW-03-GW-10042016	500-118070-1	Water	10/4/2016		X	X	X	X	X	X
	MW-04-GW-10042016	500-118070-2	Water	10/4/2016		X	X	X	X	X	X
	MW-05-GW-10042016	500-118070-3	Water	10/4/2016		X	X	X	X	X	X
	MW-07-GW-10042016	500-118070-4	Water	10/4/2016		X	X	X	X	X	X
500-118151	MW-13-GW-10042016	500-118151-1	Water	10/4/2016		X	X	X	X	X	X
	DUP-01(10042016)	500-118151-2	Water	10/4/2016	MW-13-GW-10042016	X	X	X	X	X	X
	MW-08-GW-10052016	500-118151-3	Water	10/5/2016		X	X	X	X	X	X
	MW-09-GW-10052016	500-118151-4	Water	10/5/2016		X	X	X	X	X	X
	MW-06-GW-10052016	500-118151-5	Water	10/5/2016		X	X	X	X	X	X
	DUP-2(10052016)	500-118151-6	Water	10/5/2016	MW-06-GW-10052016	X	X	X	X	X	X
500-118189	MW11-GW-10062016	500-118189-1	Water	10/6/2016		X	X	X	X	X	X
	MW10-GW-10052016	500-118189-2	Water	10/5/2016		X	X	X	X	X	X

Notes:

1. Misc - Miscellaneous parameters include sulfate, sulfide, total organic carbon (TOC), total suspended solids (TSS), ammonia, nitrite, nitrate, and nitrate+nitrite.
2. The dissolved gases analysis was sub-contracted out to Pace/Microseeps, located in Pittsburg, Pennsylvania (SDG number 20508, 20509, 20524, and 20525).

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of Quality Assurance (QA) or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 8260B, 8270D, 8081B, 8082A, and Method AM20GAx (Dissolved gases). Data were reviewed in accordance with *USEPA National Functional Guidelines for Organic Data Review* (October 1999).

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected; the analyte may or may not be present in the sample.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260B	Water	14 days from collection to analysis (preserved)	Cool to < 6 °C; pH < 2 with HCl
		Aromatics: 7 days from collection to analysis Non-aromatics: 14 days from collection to analysis	Cool to < 6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Target compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and system performance and column resolution were acceptable. All analyses were performed within 12 hours of the associated tune analysis.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration Verification (ICV)

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration Verification (CCV)

Each target compound associated with the continuing calibration standard must exhibit a RRF value

greater than control limit (0.05) and a percent difference (%D) from the initial calibration within the control limit (20%).

All compounds associated with the calibrations were within the specified control limits, except for the compounds presented in the following table.

Samples	Initial/Continuing	Compound	Criteria
SDG 500-118024: MW-01-GW-10032016 MW-02-GW-10032016	CCV %D	Acetone	-29.5 %
SDG 500-118151: MW-13-GW-10042016 DUP-01(10042016) MW-08-GW-10052016 MW-09-GW-10052016 MW-06-GW-10052016 DUP-2(10052016)	CCV %D	1,2-Dibromo-3-chloropropane	-21.1 %
	CCV %D	Bromomethane	-22.2 %
SDG 500-118189: MW11-GW-10062016 MW10-GW-10052016	CCV %D	Acetone	-22.1 %
	CCV %D	Bromomethane	-22.8 %
	CCV %D	Methyl N-Butyl Ketone (2-Hexanone)	-21.0 %
	CCV %D	1,2-Dibromo-3-chloropropane	-24.9 %

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibrations	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	
Initial Calibrations	%RSD > 15% or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
	%RSD >90%	Non-detect	R
		Detect	J
Continuing Calibrations	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J
	%D >90% (increase/decrease in sensitivity)	Non-detect	R
		Detect	J

Note:

[1] RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketones, 1,4-dioxane, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

Samples associated with surrogates exhibiting recoveries outside of the control limits are presented in the following table.

Sample	Surrogate	Recovery
SDG 500-118024: MW-01-GW-10032016 (undiluted analysis)	Dibromofluoromethane	< LL but > 10%
	1,2-Dichloroethane-d_4 Toluene-d_8 4-Bromofluorobenzene	Acceptable

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL (Upper Control Limit)	Non-detect	No Action
	Detect	J
< LL (Lower Control Limit) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
D - Surrogates diluted below the calibration curve	Non-detect	UJ[1]
	Detect	J[1]

[1] A more concentrated analysis was not performed with surrogate compounds within the calibration range; therefore, no determination of extraction efficiency could be made.

Note: Sample MW-01-GW-10032016 was also analyzed at a ten-fold (10x) dilution because the compound methyl isobutyl ketone exceeded the calibration range in the initial analysis. The surrogate recoveries in the dilution analysis were within the control limits. Only methyl isobutyl ketone was reported from the dilution analysis and therefore it does not warrant qualification.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria require the internal standard compounds associated with the VOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within the control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established

acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on samples where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

Samples MW-05-GW-10042016 and MW10-GW-10052016 were used in the MS/MSD analyses. The MS/MSDs exhibited acceptable recoveries and RPDs.

8. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

9. Field Duplicate Sample Analysis

The field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied to the difference between the results for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG 500-118151: MW-13-GW-10042016 / DUP-01(10042016)	1,1-Dichloroethane	10 U	7.6 J	AC
	1,2-Dichlorobenzene	12	12	0.0 %
	Benzene	400	370	7.8 %
	cis-1,2-Dichloroethene	19	16	17.1 %
	Ethylbenzene	1000	970	3.0 %
	Isopropylbenzene	110	110	0.0 %
	Toluene	1700	1500	12.5 %
	Total Xylenes	7000	7100	1.4 %
SDG 500-118151: MW-06-GW-10052016 / DUP-2(10052016)	1,2-Dichlorobenzene	2.6	3.2	20.7 %
	1,2-Dichloroethane	1.3	1.3	0.0 %
	1,4-Dichlorobenzene	14	18	25 %
	2-Butanone (MEK)	19	20	5.1 %
	4-Methyl-2-Pentanone	44	49	10.8 %
	Acetone	41	44	7.1 %
	Benzene	6.6	7.6	14.1 %
	cis-1,2-Dichloroethene	5.3	5.5	3.7 %
	Ethylbenzene	63	78	21.3 %
	Isopropylbenzene	4.0	5.1	24.2 %

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG 500-118151: MW-06-GW-10052016 / DUP-2(10052016)	Toluene	160	200	22.2 %
	Total Xylenes	240	220	8.7 %
	Vinyl chloride	4.4	5.3	18.6 %

AC Acceptable
J Estimated (result is < RL)
U Not detected

The field duplicate samples exhibited acceptable results.

10. Compound Identification

A positive identification of a target compound is made when the relative retention time (RRT) is within ±0.06 RRT units of the compound's RRT in the associated calibration standard and the mass spectrum of the compound matches the compound's mass spectrum in the associated calibration standard within the method-specified criteria.

All identified compounds met the specified criteria.

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCS

VOCs: SW-846 8260B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Gas Chromatography/Mass Spectrometry (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
C. Trip blanks					X
Laboratory Control Sample (LCS) Accuracy (%R)		X		X	
Laboratory Control Sample Duplicate (LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision RPD		X		X	
Laboratory Duplicate Sample RPD	X				X
Field Duplicate Sample RPD		X		X	
Surrogate Spike %R		X	X		
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:
%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

DISSOLVED GASES ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
AM20GAX	Water	14 days from collection to analysis	Cool to <6 °C; pH > 10

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Target compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Calibration

Satisfactory instrument calibration is established to Ensure that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

3.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a correlation coefficient greater than 0.995.

3.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (15%).

All compounds associated with the calibrations were within the specified control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit recoveries within the laboratory-established

acceptance limits. The relative percent difference (RPD) between the MS and MSD results must be within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on samples where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD analysis was not performed on a sample from within these SDGs.

5. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

6. Field Duplicate Sample Analysis

The field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied to the difference between the results for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG 500-118151: MW-13-GW-10042016 / DUP-01(10042016)	Carbon Dioxide	82	82	0.0 %
	Methane	21000	20000	4.9 %
	Nitrogen	10	10	0.0 %
	Oxygen	2.7	3.0	10.5 %
SDG 500-118151: MW-06-GW-10052016 / DUP-2(10052016)	Carbon Dioxide	38	40	5.1 %
	Methane	20000	21000	4.9 %
	Nitrogen	10	10	0.0 %
	Oxygen	1.9	2.3	19.0 %

The field duplicate samples exhibited acceptable results.

7. System Performance and Overall Assessment

Samples MW-06-GW-10052016 and DUP-2(10052016) were diluted prior to analysis due to foaming observed during sample preparation procedures.

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR DISSOLVED GASES

DISSOLVED GASES: AM20GAx	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Gas Chromatography/Thermal Conductivity Detector (GC/TCD)					
Tier II Validation					
Holding times/Temperature/Preservation		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method/Calibration blanks		X		X	
B. Equipment blanks					X
C. Trip blanks					X
Laboratory Control Sample (LCS) Accuracy (%R)		X		X	
Laboratory Control Sample Duplicate (LCSD) (%R)		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike Sample (MS) (%R)	X				X
Matrix Spike Duplicate Sample (MSD) (%R)	X				X
MS/MSD Precision (RPD)	X				X
Laboratory Duplicate Sample (RPD)	X				X
Field Duplicate Sample (RPD)		X		X	
Surrogate Spike Recoveries	X				X
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration correlation coefficients		X		X	
Continuing calibration RRFs					X
Continuing calibration %Ds		X		X	
Compound identification and quantitation		X		X	
A. Chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:
%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

SEMIVOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270D	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to < 6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All compounds associated with the QA blanks exhibited concentrations less than the MDL, except for the compound(s) listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) of data. Sample results less than the BAL associated with the following samples were qualified as listed in the following table.

Sample	Analyte	Sample Result	Qualification
SDG 500-118070: MW-05-GW-10042016	2-Methylnaphthalene	Detected sample results < RL and < BAL	"UB" at the Reporting Limit (RL)

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and system performance and column resolution were acceptable. All analyses were performed within 12 hours of the associated tune analysis.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (20%) or a correlation coefficient greater than 0.99 and an RRF value greater than control

limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, except for the compounds presented in the following table.

Samples	Initial/Continuing	Compound	Criteria
SDG 500-118024: MW-02-GW-10032016	ICV %RSD	Benzaldehyde	39.8 %
		4-Chloroaniline	35.0 %
	CCV %D	Benzaldehyde	-43.8 %
		4-Chloroaniline	+26.4 %
		4-Nitroaniline	-21.4 %
SDG 500-118024: MW-01-GW-10032016	CCV %D	Benzaldehyde	-44.0 %
		Caprolactam	+72.5 %
		Carbazole	+25.5 %
		Hexachlorocyclopentadiene	-35.7 %
		Nitrobenzene	+20.2 %
		4-Nitroaniline	+48.4 %
SDG 500-118070: MW-04-GW-10042016 MW-05-GW-10042016	ICV %RSD	Benzaldehyde	31.9 %
	CCV %D	2,2-Oxybis(1-Chloropropane)	-21.7 %
SDG 500-118070: MW-03-GW-10042016 MW-07-GW-10042016	CCV %D	Benzaldehyde	-43.8 %
		Hexachlorocyclopentadiene	-24.2 %
		Pentachlorophenol	-24.4 %
SDG 500-118151: MW-13-GW-10042016 DUP-01(10042016) MW-08-GW-10052016 MW-09-GW-10052016 MW-06-GW-10052016 DUP-2(10052016) SDG 500-118189: MW11-GW-10062016 MW10-GW-10052016	ICV %RSD	Benzaldehyde	39.8 %
		4-Chloroaniline	35.0 %
	CCV %D	Benzaldehyde	-45.6 %
		p-Chloroaniline	+49.9 %
		2,4-Dinitrophenol	-36.9 %
		2-Methyl-4,6-dinitrophenol	-20.5 %

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	

Initial/Continuing	Criteria	Sample Result	Qualification
Initial Calibration	%RSD > 20% or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
	%RSD >90%	Non-detect	R
		Detect	J
Continuing Calibration	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J
	%D >90% (increase/decrease in sensitivity)	Non-detect	R
		Detect	J

Note:
[1] RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketones, 1,4-dioxane, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within the control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria require the internal standard compounds associated with the SVOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

Samples associated with internal standards exhibiting responses outside of the control limits are presented in the following table.

Samples	Internal Standard	Response
SDG 500-118151: MW-06-GW-10052016 DUP-2(10052016)	1,4-Dichlorobenzene-d_4 Naphthalene-d_8 Acenaphthene-d_{10} Phenanthrene-d_{10} Chrysene-d_{12}	Acceptable
	Perylene-d_{12}	< LL but > 25%

The criteria used to evaluate the internal standard responses are presented in the following table. In the case of an internal standard deviation, the compounds quantitated under the deviant internal standard are qualified as documented in the table below.

Control limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No action
	Detect	J

Control limit	Sample Result	Qualification
< the lower control limit (LL) but > 25%	Non-detect	UJ
	Detect	J
< 25%	Non-detect	R
	Detect	J

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The spiked compounds used in the MS/MSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS and MSD results must be within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSDs performed on samples where the compound concentration detected in the parent sample exceeds the MS/MSD spiking concentration by a factor of four or greater. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

The MS/MSD analysis was not performed on a sample associated with these SDGs.

8. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The spiked compounds used in the LCS/LCSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the LCS and LCSD results must be within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analyses exhibited recoveries and RPDs within the control limits.

All compounds associated with the LCS/LCSD analyses exhibited recoveries within the control limits; however, samples associated with LCS/LCSDs exhibiting RPDs greater than the control limit are presented in the following table.

Samples	Compound
SDG 500-118151: MW-13-GW-10042016 DUP-01(10042016) MW-08-GW-10052016 MW-09-GW-10052016 MW-06-GW-10052016 DUP-2(10052016) SDG 500-118189: MW11-GW-10062016 MW10-GW-10052016	4-Chloroaniline

The criteria used to evaluate the RPD between the LCS and LCSD are presented in the following table. In the case of RPD deviations, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	UJ
	Detect	J

9. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied to the difference between the results for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG 500-118151: MW-13-GW-10042016 / DUP-01(10042016)	1,1-Biphenyl	1.8 J	18 U	AC
	2,4-Dimethylphenol	22 J	16 J	31.6 %
	2-Methylnaphthalene	10	8.1	21.0 %
	2-Methylphenol	5.4 J	4.8 J	11.8 %
	4-Methylphenol	29	22	27.5 %
	Acenaphthylene	2.2 J	1.7 J	25.6 %
	Acetophenone	26	20	26.1 %
	Benzo(a)anthracene	0.73 U	0.43 J	AC
	Chrysene	1.8 U	0.35 J	AC
	Diethyl phthalate	12	8.9	29.7 %
	Di-n-butyl phthalate	3.8 J	3.4 J	11.1 %
	Fluorene	1.0 J	3.6 U	AC
	Naphthalene	140	110	24.0 %
	N-nitrosodiphenylamine	11	7.7	AC
	Phenol	17 J	12 J	AC
SDG 500-118151: MW-06-GW-10052016 / DUP-2(10052016)	2,4-Dimethylphenol	79	77	2.6 %
	2-Methylnaphthalene	2.2 J	2.1 J	AC
	2-Methylphenol	21	17	21.1 %
	4-Methylphenol	160	150	6.5 %
	Acetophenone	7.2 J	6.6 J	AC
	bis-(2-Ethylhexyl) phthalate	120	120	0.0 %
	Naphthalene	14	13	7.4 %
	N-nitrosodiphenylamine	3.2 J	7.4 U	AC

AC Acceptable
J Estimated (result is < RL)
U Not detected

The field duplicate samples exhibited acceptable results.

10. Compound Identification

A positive identification of a target compound is made when the relative retention time (RRT) is within ±0.06 RRT units of the compound's RRT in the associated calibration standard and the mass spectrum of the compound matches the compound's mass spectrum in the associated calibration standard within the method-specified criteria.

All identified compounds met the specified criteria.

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCS

SVOCs: SW-846 8270D	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Gas Chromatography/Mass Spectrometry (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X	X		
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X	X		
Matrix Spike (MS) %R	X				X
Matrix Spike Duplicate (MSD) %R	X				X
MS/MSD Precision (RPD)	X				X
Laboratory Duplicate Sample RPD		X		X	
Field Duplicate Sample RPD		X		X	
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X	X		
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard response		X	X		
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Quantitation transcriptions/calculations		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:
%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

PESTICIDES ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8081B	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to < 6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. System Performance

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (20%) or a correlation coefficient greater than 0.99.

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%).

All compounds associated with the initial and continuing calibrations were within the specified control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample

preparation to evaluate overall laboratory performance and efficiency of the analytical technique. Pesticide analysis requires that at least one of the two pesticide surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

Samples associated with surrogates exhibiting recoveries outside of the control limits are presented in the following table.

Samples	Surrogate	Recovery
SDG 500-118070: MW-07-GW-10042016	Tetrachloro-m-xylene	> UL
SDG 500-118151: DUP-2(10052016)	Decachlorobiphenyl	< LL but > 10%

UL Upper control limit
AC Acceptable

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL (Upper Control Limit)	Non-detect	No Action
	Detect	J
< LL (Lower Control Limit) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The spiked compounds used in the MS/MSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS and MSD results must be within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSDs performed on samples where the compound concentration detected in the parent sample exceeds the MS/MSD spiking concentration by a factor of four or greater. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

The MS/MSD analysis was not performed on a sample from within these SDGs.

7. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The spiked compounds used in the LCS/LCSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The RPD between the LCS and LCSD results must be within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analyses exhibited recoveries and RPDs within the control limits.

8. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied to the difference between the results for water matrices.

Results for the field duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG 500-118151: MW-13-GW-10042016 / DUP-01(10042016)	All compounds	U	U	AC
SDG 500-118151: MW-06-GW-10052016 / DUP-2(10052016)	All compounds	U	U	AC

AC Acceptable
U Not detected

The calculated RPDs between the parent sample and field duplicate were acceptable.

9. Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows for both the primary and confirmation columns. When dual column analysis is performed the percent difference (%D) of detected sample results must be less than 40%.

Target compounds were not detected in any of the samples.

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR PESTICIDES

PESTICIDES: SW-846 8081B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Gas Chromatography (GC/ECD)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate (LCSD)		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS)	X				X
Matrix Spike Duplicate (MSD)	X				X
MS/MSD Precision (RPD)	X				X
Laboratory Duplicate Sample RPD	X				X
Field Duplicate Sample RPD		X		X	
Surrogate Spike Recoveries		X	X		
Column %D $\leq$ 40% (If dual column is performed for reporting - not confirmation)	X				X
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
Initial calibration %RSDs		X		X	
Continuing calibration %Ds		X		X	
System performance and column resolution		X		X	
Compound identification and quantitation		X		X	
A. Quantitation Reports		X		X	
B. RT of sample compounds within the established RT windows		X		X	
C. Identification/confirmation		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:
%RSD – relative standard deviation
%R - percent recovery
RPD - relative percent difference
%D – difference.

POLYCHLORINATED BIPHENYLS (PCBs) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8082A	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Target analytes were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. System Performance

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

A maximum RSD of 20% is allowed or a correlation coefficient greater than 0.99. Multiple-point calibrations were performed for Aroclor 1016 and 1260 only. Single-point calibrations were performed for the remaining Aroclors.

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%).

All Aroclors associated with the calibrations were within the specified control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. PCB

analysis requires that one of the two PCB surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

All samples exhibited surrogate recoveries within the specified control limits. Samples MW-07-GW-10042016, MW-06-GW-10052016, and DUP-2(10052016) exhibited recoveries of the surrogate tetrachloro-m-xylene that were less than the lower control limit in both the primary and confirmation columns. The laboratory reported Aroclor results from both columns for these samples. The concentrations of the detected Aroclors from the confirmation column were greater than those reported from the primary column for these samples. The confirmation column results were preferentially retained as being the more conservative results.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The spiked compounds used in the MS/MSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS and MSD results must be within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSDs performed on samples where the compound concentration detected in the parent sample exceeds the MS/MSD spiking concentration by a factor of four or greater. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

The MS/MSD analysis was not performed on a sample from within these SDGs.

7. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The spiked compounds used in the LCS/LCSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The RPD between the LCS and LCSD results must be within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analyses exhibited recoveries and RPDs within the control limits.

8. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied to the difference between the results for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
SDG 500-118151: MW-13-GW-10042016 / DUP-01(10042016)	All Aroclors	0.37 U	0.37 U	AC
SDG 500-118151: MW-06-GW-10052016 / DUP-2(10052016)	Aroclor 1242	5.3	4.9	7.8 %

AC Acceptable
U Not detected

The field duplicate samples exhibited acceptable results.

9. Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows for both the primary and confirmation columns. When dual column analysis is performed the relative percent difference (RPD) of detected sample results must be less than 40%.

All detected Aroclors exhibited acceptable %Ds between the primary and confirmation columns.

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR PCBS

PCBs: SW-846 8082A	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Gas Chromatography (GC/ECD)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R	X				X
Matrix Spike Duplicate (MSD) %R	X				X
MS/MSD Precision (RPD)	X				X
Laboratory Duplicate Sample RPD	X				X
Field Duplicate Sample RPD		X		X	
Surrogate Spike Recoveries		X		X	
Column (RPD) (If dual column is performed-not confirmation purposes only)		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
Initial calibration %RSDs		X		X	
Continuing calibration %Ds		X		X	
System performance and column resolution		X		X	
Compound identification and quantitation		X		X	
A. Quantitation Reports		X		X	
B. RT of sample compounds within the established RT windows		X		X	
C. Pattern identification		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD – relative standard deviation
%R - percent recovery,
RPD - relative percent difference,
%D – difference

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) Method 353.2, USEPA SW-846 Methods 6010C, 7470A, 9034, 9038, and 9060A, and Standard Methods (SM) 2540D, 4500-NH3-G, 4500-NO2-B, and 4500-NO3-F. Data were reviewed in accordance with *USEPA National Functional Guidelines for Inorganic Data Review* (October 2004).

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
  - U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.
  - J The reported value was obtained from a reading less than the reporting limit (RL), but greater than or equal to the method detection limit (MDL).
- Quantitation (Q) Qualifiers
  - E The reported value is estimated due to the presence of interference.
  - N Spiked sample recovery is not within the control limits.
  - * Duplicate analysis is not within the control limits.
- Validation Qualifiers
  - J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.
  - UJ The analyte was not detected above the reporting limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.
  - UB Analyte considered non-detect at the listed value due to associated blank contamination.
  - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

METALS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 6010C	Water	180 days from collection to analysis	Cool to < 6 °C; pH < 2 with HNO_3
SW-846 7470A	Water	28 days from collection to analysis	Cool to < 6 °C; pH < 2 with HNO_3

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All analytes associated with the QA blanks exhibited a concentration less than the MDL, except for the analytes listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) from the data. Sample results less than the BAL associated with the following samples were qualified as listed in the following table.

Samples	Analyte	Sample Result	Qualification
SDG 500-118151: DUP-01(10042016) MW-09-GW-10052016 MW-06-GW-10052016	Dissolved Selenium (Initial calibration blank)	Detected sample results < RL and < BAL	"UB" at the RL

RL = reporting limit

3. Calibration

Satisfactory instrument calibration is established to provide that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument's continuing performance is satisfactory.

3.1 Initial Calibration

The initial calibration must exhibit a correlation coefficient greater than 0.995. A technical review of the data applies limits to all analytes with no exceptions.

3.2 Continuing Calibration

All target analytes associated with the continuing calibration standard must exhibit a percent difference

(%D) less than the control limit (10%).

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 for all non-ICP analytes and all initial calibration verification standard recoveries were within the control limits.

All initial and continuing calibration verification standards were within the control limits.

3.3 Reporting limit (RL) Check Standard

The RL check standard serves to verify the linearity of calibration of the analysis at the reporting limit. The RL standard is not required for the analysis of aluminum (Al), barium (Ba), calcium (Ca), iron (Fe), magnesium (Mg), sodium (Na), or potassium (K). The RL check standard must exhibit recoveries between 70-130% (50-150% for antimony (Sb), lead (Pb), and thallium (Tl)).

All analytes associated with RL standard recoveries were within the control limits except for the analytes presented in the following table.

Samples	Analyte	RL Check Standard Recovery
SDG 500-118024: MW-01-GW-10032016 MW-02-GW-10032016 SDG 500-118070: MW-03-GW-10042016 MW-04-GW-10042016 MW-05-GW-10042016 MW-07-GW-10042016	Dissolved Copper Total Copper	277 %

The criteria applied to evaluate the RL check standard criteria are presented below. In the case of a calibration deviation, the sample results are qualified.

Analytes	Control Limit	Sample Result	Qualification
All analytes except Al, Ba, Ca, Fe, Mg, K, & Na	RL %R < 50% (< 30% for Sb, Pb, Tl)	Sample results ≥ MDL but < 2x RL	R
		Non-detect sample results	R
		Detected sample results ≥ 2x RL	J
	RL %R 50-69% (30-49% for Sb, Pb, Tl)	Sample results ≥ MDL but < 2x RL	J
		Non-detect sample results	UJ
		Detected sample results ≥ 2x RL	No Action
	%R >130% but < 180% (> 150% but < 200% for Sb, Pb, Tl)	Sample results ≥ MDL but < 2x RL	J
		Non-detect sample results	No Action
		Detected sample results ≥ 2x RL	No Action
	RL %R >180% (> 200% for Sb, Pb, Tl)	Sample results ≥ MDL	R

3.4 ICP Interference Check Sample (ICS)

The ICS verifies the laboratory's interelement and background correction factors.

All ICS exhibited recoveries within the control limits.

4. Matrix Spike (MS)/Laboratory Duplicate Analysis

MS and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS Analysis

All metal analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS recovery control limits do not apply for MS performed on samples where the analyte's concentration detected in the parent sample exceeds the MS concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory flag will be removed.

The MS analysis was not performed on a sample from within these SDGs.

4.2 Laboratory Duplicate Sample Analysis

The laboratory duplicate sample relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to five times the RL. A control limit of 20% for water matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of one times the RL is applied to the difference between the results for water matrices.

The laboratory duplicate sample analysis was not performed on a sample from within these SDGs.

5. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied to the difference between the results for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
SDG 500-118151: MW-13-GW-10042016 / DUP-01(10042016)	Total Aluminum	0.11 J	0.11 J	AC
	Dissolved Aluminum	0.20 U	0.15 J	AC
	Total Arsenic	0.0034 J	0.0047 J	AC
	Dissolved Arsenic	0.010 U	0.0047 J	AC
	Total Barium	0.26	0.28	7.4 %
	Dissolved Barium	0.23	0.25	8.3 %
	Total Calcium	84	85	1.2 %
	Dissolved Calcium	96	89	7.6 %
	Total Chromium	0.0059 J	0.0052 J	AC
	Dissolved Chromium	0.0038 J	0.0046 J	AC
	Total Cobalt	0.0021 J	0.0023 J	AC
	Dissolved Cobalt	0.0015 J	0.0017 J	AC
	Total Copper	0.0029 J	0.0040 J	AC
	Total Iron	8.9	9.6	7.6 %

Sample ID / Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
SDG 500-118151: MW-13-GW-10042016 / DUP-01(10042016)	Dissolved Iron	6.4	7.6	17.1 %
	Total Lead	0.0036 J	0.0077	AC
	Total Magnesium	52	55	5.6 %
	Dissolved Magnesium	46	50	8.3 %
	Total Manganese	0.38	0.40	5.1 %
	Dissolved Manganese	0.34	0.36	5.7 %
	Total Nickel	0.0079 J	0.0069 J	AC
	Dissolved Nickel	0.0072 J	0.0063 J	AC
	Total Potassium	74	77	4.0 %
	Dissolved Potassium	67	71	5.8 %
	Dissolved Selenium	0.010 U	0.0065 J	AC
	Total Sodium	220	230	4.4 %
	Dissolved Sodium	230	230	0.0 %
	Total Vanadium	0.0031 J	0.0035 J	AC
	Dissolved Vanadium	0.0036 J	0.0036 J	AC
	Total Zinc	0.011 J	0.013 J	AC
SDG 500-118151: MW-06-GW-10052016 / DUP-2(10052016)	Total Aluminum	0.55 J	0.56 J	AC
	Total Arsenic	0.030 J	0.019 J	AC
	Dissolved Arsenic	0.028 J	0.022 J	AC
	Total Barium	0.37	0.40	7.8 %
	Dissolved Barium	0.35	0.37	5.6 %
	Total Calcium	11	12	8.7 %
	Dissolved Calcium	11	11	0.0 %
	Total Chromium	0.19	0.20	5.1 %
	Dissolved Chromium	0.18	0.19	5.4 %
	Total Cobalt	0.036	0.046	24.4 %
	Dissolved Cobalt	0.038	0.046	19 %
	Total Copper	0.016 J	0.022 J	AC
	Total Iron	2.7 B	2.6	3.8 %
	Dissolved Iron	2.1 B	2.4	13.3 %
	Total Lead	0.22	0.24	8.7 %
	Dissolved Lead	0.029	0.025 U	AC
	Total Magnesium	28	30	6.9 %
	Dissolved Magnesium	29	30	3.4 %
	Total Nickel	0.14	0.17	19.4 %
	Dissolved Nickel	0.15	0.17	12.5 %
	Total Potassium	650	700	7.4 %
	Dissolved Potassium	690	710	2.9 %

Sample ID / Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
SDG 500-118151: MW-06-GW-10052016 / DUP-2(10052016)	Dissolved Selenium	0.039 J	0.050 U	AC
	Total Sodium	3200	3500	9.0 %
	Dissolved Sodium	3300	3500	5.9 %
	Total Vanadium	0.065	0.064	1.6 %
	Dissolved Vanadium	0.053	0.058	9.0 %
	Total Zinc	0.20	0.31	AC
	Dissolved Zinc	0.056 J	0.051 J	AC
	Total Mercury	0.00023	0.00018 J	AC

The field duplicate samples exhibited acceptable results.

6. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS/LCSD analysis must exhibit recoveries between the control limits of 80% and 120%. The relative percent difference (RPD) between the LCS and LCSD results must be no greater than the established acceptance limit of 20%.

All analytes associated with the LCS/LCSD analysis exhibited recoveries and RPDs within the control limits.

7. Serial Dilution (SD) Analysis

The serial dilution analysis is used to assess if a significant physical or chemical interference exists due to sample matrix. Analytes exhibiting concentrations greater than 50 times the MDL in the undiluted sample are evaluated to determine if matrix interference exists. These analytes are required to have less than a 10% difference (%D) between sample results from the undiluted (parent) sample and results associated with the same sample analyzed with a five-fold dilution.

Sample MW-07-GW-10042016 was used in the serial dilution analyses. All analytes associated with the serial dilution analyses exhibited %Ds within the control limits except for those presented in the following table.

Sample	Analytes	SD %D
SDG 500-118070: MW-07-GW-10042016	Dissolved Barium	13 %
	Dissolved Magnesium	17 %
	Dissolved Potassium	15 %
	Total Sodium	13 %
	Dissolved Sodium	20 %

The criteria used to evaluate SD recoveries are presented in the following table. In the case of SD exceedance, the sample results are qualified. The qualifications are applied to all sample results associated with this SDG.

Control limit	Sample Result	Qualification
SD %D > 10%	Non-detect	UJ
	Detect	J

8. Assessment of Dissolved versus Total Results

The results for dissolved metal analytes should be less than 120% of the associated total metal result for those analytes that are at least five times the reporting limit (RL).

The calculated %D between the total and the dissolved sample results were within the control limit.

9. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR METALS

METALS: SW-846 6010C and 7470A	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP-AES) Atomic Absorption – Manual Cold Vapor (CV)					
Tier II Validation					
Holding Times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Instrument Blanks		X	X		
B. Method Blanks		X	X		
C. Equipment/Field Blanks					X
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate (LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R	X				X
Matrix Spike Duplicate (MSD) %R	X				X
MS/MSD Precision (RPD)	X				X
Laboratory Duplicate Sample RPD	X				X
Field Duplicate Sample RPD		X		X	
ICP Serial Dilution %D		X	X		
Total vs. Dissolved		X		X	
Tier III Validation					
Initial Calibration Verification		X		X	
Continuing Calibration Verification		X		X	
RL Standard Recovery		X	X		
ICP Interference Check		X		X	
ICP-MS Internal Standards					X
Transcription/calculations acceptable		X		X	
Raw Data		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:
%R Percent recovery
RPD Relative percent difference

GENERAL CHEMISTRY ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Ammonia-N by SM 4500-NH3-G	Water	28 days from collection to analysis	Cool to < 6 °C; pH of < 2
Nitrite-N by SM 4500-NO2-B	Water	48 hours from collection to analysis	Cool to < 6 °C
Nitrate-N by USEPA 353.2	Water	48 hours from collection to analysis	Cool to < 6 °C
Nitrate+Nitrite as N by SM 4500-NO3-F	Water	28 days from collection to analysis	Cool to < 6 °C; pH of < 2
Sulfate by SW-846 9038A	Water	28 days from collection to analysis	Cool to < 6 °C.
Sulfide by SW-846 9034	Water	7 days from collection to analysis	Cool to < 6 °C.
Total Organic Carbon (TOC) by SW-846 9060A	Water	28 days from collection to analysis	Cool to < 6 °C; pH of < 2
Total Suspended Solids (TSS) by SM 2540D	Water	7 days from collection to analysis	Cool to < 6 °C

The analyses that exceeded the holding time are presented in the following table; all other holding times were met.

Samples	Analysis	Holding Time	Criteria
SDG 500-118024: MW-01-GW-10032016 MW-02-GW-10032016 SDG 500-118070: MW-03-GW-10042016 MW-04-GW-10042016 MW-05-GW-10042016 MW-07-GW-10042016 SDG 500-118151: MW-13-GW-10042016 DUP-01(10042016) MW-08-GW-10052016 MW-09-GW-10052016 MW-06-GW-10052016 DUP-2(10052016) SDG 500-118189: MW11-GW-10062016 MW10-GW-10052016	Nitrate-N by USEPA 353.2	> 48 Hours but < 28 Days	< 48 Hours

Note: Due to the tendency of nitrite converting into nitrate, nitrate results for samples analyzed greater than 48 hours after collection should be considered as nitrate+nitrite. The nitrite results for the samples which were analyzed for nitrate after 48 hours (but within 28 days) were non-detects. Therefore, the nitrate results do not require qualification.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination

which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All analytes associated with the QA blanks exhibited a concentration less than the MDL, except for the analytes listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) of data. Sample results less than the BAL associated with the following samples were qualified as listed in the following table.

Samples	Analyte	Sample Result	Qualification
SDG 500-118024: MW-02-GW-10032016 SDG 500-118070: MW-03-GW-10042016 MW-05-GW-10042016 SDG 500-118151: MW-08-GW-10052016 MW-09-GW-10052016	Sulfate	Detected sample results < RL and < BAL	"UB" at the RL
SDG 500-118189: MW11-GW-10062016	Sulfate	Detected sample results > RL and < BAL	"UB" at detected sample concentration

RL = reporting limit

3. Calibration

Satisfactory instrument calibration is established to ensure that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 and all initial calibration verification standard recoveries were within the control limits.

All calibration standard recoveries were within the control limit.

4. Matrix Spike/Matrix Spike Duplicate Sample (MS/MSD)/Laboratory Duplicate Sample Analysis

MS/MSD and laboratory duplicate sample data are used to assess the precision and accuracy of the analytical method.

4.1 MS/MSD Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. All metal analytes must exhibit recoveries within the established acceptance limits of 75% to 125%. The relative percent difference (RPD) between the MS and MSD results must be no greater than the established acceptance limit of 20%. The MS/MSD control limits do not apply for MS/MSDs performed on samples where the analyte's concentration detected in the parent sample exceeds the MS/MSD spiking concentration by a factor of four or greater. In instance where this is true, the data will not be qualified and any laboratory

qualifiers will be removed. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

Samples MW-01-GW-10032016, MW-05-GW-10042016, MW-13-GW-10042016, MW-09-GW-10052016, and MW11-GW-10062016 were used in the MS/MSD analyses. All analytes associated with MS/MSD recoveries were within the control limits except for the following analyte present in the table below.

Sample	Analyte	MS Recovery	MSD Recovery
SDG 500-118151: MW-09-GW-10052016	TOC	68 %	68 %

The criteria used to evaluate MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified. The qualifications are only applied to the parent sample result.

Control limit	Sample Result	Qualification
MS/MSD recovery between 30% to 74%	Non-detect	UJ
	Detect	J
MS/MSD recovery < 30%	Non-detect	R
	Detect	J
MS/MSD recovery > 125%	Non-detect	No Action
	Detect	J

4.2 Laboratory Duplicate Sample Analysis

The laboratory duplicate sample RPD criterion is applied when parent and duplicate sample concentrations are at least five times the RL. A control limit of 20% for water matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of one times the RL is applied to the difference between the results for water matrices.

MS/MSD analysis was performed in lieu of the laboratory duplicate sample analysis. The MS/MSD recoveries exhibited acceptable RPD, except as where indicate above.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 35% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG 500-118151: MW-13-GW-10042016 / DUP-01(10042016)	Total Suspended Solids	24	25	4.1 %
	Ammonia Nitrogen	79	80	1.3 %
	Sulfide	1.0 U	0.57 J	AC
	Sulfate	21	19	10.0 %
	Total Organic Carbon	53	54	1.9 %

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG 500-118151: MW-06-GW-10052016 / DUP-2(10052016)	Nitrate-N	0.053 J	0.058 J	AC
	Total Suspended Solids	7.0	7.5	6.9 %
	Total Ammonia Nitrogen	790	780	1.3 %
	Nitrate/Nitrite	0.053 J	0.058 J	AC
	Sulfide	8.0	8.6	7.2 %
	Sulfate	12 J	50 U	AC
	Total Organic Carbon	530	520	1.9 %

AC Acceptable
J Estimated (result is < RL)
U Not detected

The field duplicate samples exhibited acceptable results.

6. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit recoveries between the control limits of 80% and 120%.

The LCS analyses exhibited recoveries within the control limits.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR GENERAL CHEMISTRY

General Chemistry: EPA 353.2, SW-846 9034, 9038, 9060A, SM 2540D, 4500-NH3-G, 4500-NO2-B, and 4500-NO3-F	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Miscellaneous Instrumentation					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X	X		
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD) %R	X				X
LCS/LCSD Precision (RPD)	X				X
Matrix Spike (MS) %R		X	X		
Matrix Spike Duplicate (MSD) %R		X	X		
MS/MSD Precision (RPD)		X		X	
Laboratory Duplicate Sample RPD	X				X
Field Duplicate Sample RPD		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
Initial calibration %RSD or correlation coefficient		X		X	
Continuing calibration %R		X		X	
Raw Data		X		X	
Transcription/calculation errors present		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:
%RSD – relative standard deviation
%R - percent recovery
RPD - relative percent difference,
%D – difference

VALIDATION PERFORMED BY: Dennis Dyke

SIGNATURE:

DATE: November 29, 2016

PEER REVIEW: Dennis Capria

DATE: December 7, 2016

CHAIN OF CUSTODY

CORRECTED SAMPLE ANALYSIS DATA SHEETS

TestAmerica

THE LEADER IN ENVIRONMENTAL

2417 Bond Street, University Park, IL 60
Phone: 708.534.5200 Fax: 708.534

500-118024 COC

(optional)
Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 120 S. LaSalle St Ste 1350
Address: Chicago, IL 60603
Phone: 312-575-3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-118024
Chain of Custody Number:
Page ____ of ____
Temperature °C of Cooler: 3.4

Client: Arcadis
Client Project #: CI001805.0002.00009
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thumhoffer
Lab PM: Therese Hargraves

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOCs, PCBs, Pesticides	total metals	Dissolved Metals	Ammonia, NO3, NO2	Sulfide	TOC	TSS, SO4, NO2	Dissolved Gases	VOC	Comments
							8	3	3	6	5	2	8	9	1	
1		MW-01-GW-10032016	10/3/16	1105	18	W	—	—	—	—	—	—	—	—	—	D,3S Metals
2		MW-02-GW-10032016	10/3/16	1350	18	W	—	—	—	—	—	—	—	—	—	field filtered
																- Poor meniscus
																formed in diss
																Gas samples so
																bubbles couldn't be
																removed.

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days ___ Other
Requested Due Date: Standard

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	Arcadis	10/3/16	1600	David Bedan	TA	10/3/16	16:00
David Bedan	TA	10/3/16	16:38	Sherri Scott	TA-CHI	10/4/16	0730

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-01-GW-10032016

Lab Sample ID: 500-118024-1

Date Collected: 10/03/16 11:05
Matrix: Water
Date Received: 10/03/16 16:38

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**110**	J	5.0	1.7	ug/L			10/05/16 13:55	1
Benzene	**36**	J	0.50	0.15	ug/L			10/05/16 13:55	1
Bromodichloromethane	<1.0	UJ	1.0	0.37	ug/L			10/05/16 13:55	1
Bromoform	<1.0	UJ	1.0	0.48	ug/L			10/05/16 13:55	1
Bromomethane	<2.0	UJ	2.0	0.80	ug/L			10/05/16 13:55	1
Carbon disulfide	<2.0	UJ	2.0	0.45	ug/L			10/05/16 13:55	1
Carbon tetrachloride	<1.0	UJ	1.0	0.38	ug/L			10/05/16 13:55	1
Chlorobenzene	**5.3**	UJ	1.0	0.39	ug/L			10/05/16 13:55	1
Chloroethane	<1.0	UJ	1.0	0.51	ug/L			10/05/16 13:55	1
Chloroform	<1.0	UJ	1.0	0.37	ug/L			10/05/16 13:55	1
Chloromethane	<1.0	UJ	1.0	0.32	ug/L			10/05/16 13:55	1
cis-1,2-Dichloroethene	<1.0	UJ	1.0	0.41	ug/L			10/05/16 13:55	1
cis-1,3-Dichloropropene	<1.0	UJ	1.0	0.42	ug/L			10/05/16 13:55	1
Cyclohexane	**1.5**	J	1.0	0.49	ug/L			10/05/16 13:55	1
Dibromochloromethane	<1.0	UJ	1.0	0.49	ug/L			10/05/16 13:55	1
1,2-Dibromo-3-Chloropropane	<5.0	UJ	5.0	2.0	ug/L			10/05/16 13:55	1
1,2-Dibromoethane	<1.0	UJ	1.0	0.39	ug/L			10/05/16 13:55	1
1,2-Dichlorobenzene	**1.6**	J	1.0	0.33	ug/L			10/05/16 13:55	1
1,3-Dichlorobenzene	<1.0	UJ	1.0	0.40	ug/L			10/05/16 13:55	1
1,4-Dichlorobenzene	**2.8**	J	1.0	0.36	ug/L			10/05/16 13:55	1
Dichlorodifluoromethane	<2.0	UJ	2.0	0.67	ug/L			10/05/16 13:55	1
1,1-Dichloroethane	<1.0	UJ	1.0	0.41	ug/L			10/05/16 13:55	1
1,2-Dichloroethane	<1.0	UJ	1.0	0.39	ug/L			10/05/16 13:55	1
1,1-Dichloroethene	<1.0	UJ	1.0	0.39	ug/L			10/05/16 13:55	1
1,2-Dichloropropane	<1.0	UJ	1.0	0.43	ug/L			10/05/16 13:55	1
Ethylbenzene	**24**	J	0.50	0.18	ug/L			10/05/16 13:55	1
2-Hexanone	<5.0	UJ	5.0	1.6	ug/L			10/05/16 13:55	1
Isopropylbenzene	**11**	J	1.0	0.39	ug/L			10/05/16 13:55	1
Methyl acetate	<5.0	UJ	5.0	2.0	ug/L			10/05/16 13:55	1
Methylcyclohexane	**1.4**	J	1.0	0.32	ug/L			10/05/16 13:55	1
Methylene Chloride	<5.0	UJ	5.0	1.6	ug/L			10/05/16 13:55	1
Methyl Ethyl Ketone	**110**	J	5.0	2.1	ug/L			10/05/16 13:55	1
Methyl tert-butyl ether	<1.0	UJ	1.0	0.39	ug/L			10/05/16 13:55	1
Styrene	<1.0	UJ	1.0	0.39	ug/L			10/05/16 13:55	1
1,1,2,2-Tetrachloroethane	<1.0	UJ	1.0	0.40	ug/L			10/05/16 13:55	1
Tetrachloroethene	<1.0	UJ	1.0	0.37	ug/L			10/05/16 13:55	1
Toluene	**13**	J	0.50	0.15	ug/L			10/05/16 13:55	1
trans-1,2-Dichloroethene	<1.0	UJ	1.0	0.35	ug/L			10/05/16 13:55	1
trans-1,3-Dichloropropene	<1.0	UJ	1.0	0.36	ug/L			10/05/16 13:55	1
1,2,4-Trichlorobenzene	<1.0	UJ	1.0	0.34	ug/L			10/05/16 13:55	1
1,1,1-Trichloroethane	<1.0	UJ	1.0	0.38	ug/L			10/05/16 13:55	1
1,1,2-Trichloroethane	<1.0	UJ	1.0	0.35	ug/L			10/05/16 13:55	1
Trichloroethene	<0.50	UJ	0.50	0.16	ug/L			10/05/16 13:55	1
Trichlorofluoromethane	<1.0	UJ	1.0	0.43	ug/L			10/05/16 13:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0	UJ	1.0	0.46	ug/L			10/05/16 13:55	1
Vinyl chloride	**0.33**	J	0.50	0.20	ug/L			10/05/16 13:55	1
Xylenes, Total	**27**	J	1.0	0.22	ug/L			10/05/16 13:55	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-01-GW-10032016

Date Collected: 10/03/16 11:05
Date Received: 10/03/16 16:38

Lab Sample ID: 500-118024-1

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*71 - 120*		*10/05/16 13:55*	*1*
Dibromofluoromethane	*14*	*X*	*70 - 120*		*10/05/16 13:55*	*1*
1,2-Dichloroethane-d4 (Surr)	*112*		*71 - 127*		*10/05/16 13:55*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*10/05/16 13:55*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
methyl isobutyl ketone	**230**		50	22	ug/L			10/06/16 11:44	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*113*		*71 - 120*		*10/06/16 11:44*	*10*
Dibromofluoromethane	*101*		*70 - 120*		*10/06/16 11:44*	*10*
1,2-Dichloroethane-d4 (Surr)	*120*		*71 - 127*		*10/06/16 11:44*	*10*
Toluene-d8 (Surr)	*96*		*75 - 120*		*10/06/16 11:44*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**6.9**		0.75	0.23	ug/L		10/04/16 15:42	10/13/16 00:58	1
Acenaphthylene	<0.75		0.75	0.20	ug/L		10/04/16 15:42	10/13/16 00:58	1
Acetophenone	**2.2**	**J**	3.8	0.50	ug/L		10/04/16 15:42	10/13/16 00:58	1
Anthracene	<0.75		0.75	0.25	ug/L		10/04/16 15:42	10/13/16 00:58	1
Benzo[a]anthracene	<0.15		0.15	0.043	ug/L		10/04/16 15:42	10/13/16 00:58	1
Benzo[a]pyrene	<0.15		0.15	0.075	ug/L		10/04/16 15:42	10/13/16 00:58	1
Benzo[b]fluoranthene	<0.15		0.15	0.061	ug/L		10/04/16 15:42	10/13/16 00:58	1
Benzo[g,h,i]perylene	<0.75		0.75	0.28	ug/L		10/04/16 15:42	10/13/16 00:58	1
Benzo[k]fluoranthene	<0.15		0.15	0.048	ug/L		10/04/16 15:42	10/13/16 00:58	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		10/04/16 15:42	10/13/16 00:58	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		10/04/16 15:42	10/13/16 00:58	1
Bis(2-ethylhexyl) phthalate	<7.5		7.5	1.3	ug/L		10/04/16 15:42	10/13/16 00:58	1
4-Bromophenyl phenyl ether	<3.8		3.8	0.41	ug/L		10/04/16 15:42	10/13/16 00:58	1
Butyl benzyl phthalate	<1.5		1.5	0.36	ug/L		10/04/16 15:42	10/13/16 00:58	1
Carbazole	**6.7**	**J**	3.8	0.27	ug/L		10/04/16 15:42	10/13/16 00:58	1
4-Chloroaniline	**13**		7.5	1.5	ug/L		10/04/16 15:42	10/13/16 00:58	1
4-Chloro-3-methylphenol	<7.5		7.5	1.7	ug/L		10/04/16 15:42	10/13/16 00:58	1
2-Chloronaphthalene	<1.5		1.5	0.18	ug/L		10/04/16 15:42	10/13/16 00:58	1
2-Chlorophenol	<3.8		3.8	0.42	ug/L		10/04/16 15:42	10/13/16 00:58	1
4-Chlorophenyl phenyl ether	<3.8		3.8	0.48	ug/L		10/04/16 15:42	10/13/16 00:58	1
Chrysene	<0.38		0.38	0.051	ug/L		10/04/16 15:42	10/13/16 00:58	1
Dibenz(a,h)anthracene	<0.23		0.23	0.038	ug/L		10/04/16 15:42	10/13/16 00:58	1
Dibenzofuran	**0.91**	**J**	1.5	0.20	ug/L		10/04/16 15:42	10/13/16 00:58	1
3,3'-Dichlorobenzidine	<3.8		3.8	1.3	ug/L		10/04/16 15:42	10/13/16 00:58	1
2,4-Dichlorophenol	<7.5		7.5	2.0	ug/L		10/04/16 15:42	10/13/16 00:58	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		10/04/16 15:42	10/13/16 00:58	1
2,4-Dimethylphenol	**5.9**	**J**	7.5	1.4	ug/L		10/04/16 15:42	10/13/16 00:58	1
Dimethyl phthalate	<1.5		1.5	0.24	ug/L		10/04/16 15:42	10/13/16 00:58	1
Di-n-butyl phthalate	<3.8		3.8	0.55	ug/L		10/04/16 15:42	10/13/16 00:58	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		10/04/16 15:42	10/13/16 00:58	1
2,4-Dinitrophenol	<15		15	6.5	ug/L		10/04/16 15:42	10/13/16 00:58	1
2,4-Dinitrotoluene	<0.75		0.75	0.18	ug/L		10/04/16 15:42	10/13/16 00:58	1
2,6-Dinitrotoluene	<0.75		0.75	0.056	ug/L		10/04/16 15:42	10/13/16 00:58	1
Di-n-octyl phthalate	<7.5		7.5	0.79	ug/L		10/04/16 15:42	10/13/16 00:58	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-01-GW-10032016

Lab Sample ID: 500-118024-1

Date Collected: 10/03/16 11:05
Matrix: Water
Date Received: 10/03/16 16:38

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.75		0.75	0.34	ug/L		10/04/16 15:42	10/13/16 00:58	1
Fluorene	**1.7**		0.75	0.18	ug/L		10/04/16 15:42	10/13/16 00:58	1
Hexachlorobenzene	<0.38		0.38	0.060	ug/L		10/04/16 15:42	10/13/16 00:58	1
Hexachlorobutadiene	<3.8		3.8	0.39	ug/L		10/04/16 15:42	10/13/16 00:58	1
Hexachlorocyclopentadiene	<15	UJ	15	4.8	ug/L		10/04/16 15:42	10/13/16 00:58	1
Hexachloroethane	<3.8		3.8	0.45	ug/L		10/04/16 15:42	10/13/16 00:58	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.056	ug/L		10/04/16 15:42	10/13/16 00:58	1
Isophorone	<1.5		1.5	0.28	ug/L		10/04/16 15:42	10/13/16 00:58	1
2-Methylnaphthalene	**5.0**		1.5	0.049	ug/L		10/04/16 15:42	10/13/16 00:58	1
2-Methylphenol	**2.3**		1.5	0.23	ug/L		10/04/16 15:42	10/13/16 00:58	1
3 & 4 Methylphenol	**10**		1.5	0.34	ug/L		10/04/16 15:42	10/13/16 00:58	1
2-Nitroaniline	<3.8		3.8	0.97	ug/L		10/04/16 15:42	10/13/16 00:58	1
3-Nitroaniline	<7.5		7.5	1.3	ug/L		10/04/16 15:42	10/13/16 00:58	1
4-Nitroaniline	<7.5		7.5	1.3	ug/L		10/04/16 15:42	10/13/16 00:58	1
Nitrobenzene	<0.75		0.75	0.34	ug/L		10/04/16 15:42	10/13/16 00:58	1
2-Nitrophenol	<7.5		7.5	1.9	ug/L		10/04/16 15:42	10/13/16 00:58	1
4-Nitrophenol	<15		15	5.6	ug/L		10/04/16 15:42	10/13/16 00:58	1
N-Nitrosodi-n-propylamine	<0.38		0.38	0.12	ug/L		10/04/16 15:42	10/13/16 00:58	1
N-Nitrosodiphenylamine	<0.75		0.75	0.28	ug/L		10/04/16 15:42	10/13/16 00:58	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.29	ug/L		10/04/16 15:42	10/13/16 00:58	1
Pentachlorophenol	<15		15	3.0	ug/L		10/04/16 15:42	10/13/16 00:58	1
Phenanthrene	**0.88**		0.75	0.23	ug/L		10/04/16 15:42	10/13/16 00:58	1
Pyrene	<0.75		0.75	0.32	ug/L		10/04/16 15:42	10/13/16 00:58	1
2,4,5-Trichlorophenol	<7.5		7.5	1.9	ug/L		10/04/16 15:42	10/13/16 00:58	1
2,4,6-Trichlorophenol	<3.8		3.8	0.54	ug/L		10/04/16 15:42	10/13/16 00:58	1
Benzaldehyde	<30	UJ	30	11	ug/L		10/04/16 15:42	10/13/16 00:58	1
Caprolactam	<7.5		7.5	1.1	ug/L		10/04/16 15:42	10/13/16 00:58	1
Atrazine	<3.8		3.8	0.47	ug/L		10/04/16 15:42	10/13/16 00:58	1
1,1'-Biphenyl	<3.8		3.8	0.27	ug/L		10/04/16 15:42	10/13/16 00:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*76*		*30 - 123*	*10/04/16 15:42*	*10/13/16 00:58*	*1*
2-Fluorophenol (Surr)	*60*		*30 - 110*	*10/04/16 15:42*	*10/13/16 00:58*	*1*
Nitrobenzene-d5 (Surr)	*81*		*33 - 139*	*10/04/16 15:42*	*10/13/16 00:58*	*1*
Phenol-d5 (Surr)	*57*		*20 - 100*	*10/04/16 15:42*	*10/13/16 00:58*	*1*
Terphenyl-d14 (Surr)	*102*		*42 - 150*	*10/04/16 15:42*	*10/13/16 00:58*	*1*
2,4,6-Tribromophenol (Surr)	*111*		*30 - 150*	*10/04/16 15:42*	*10/13/16 00:58*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**230**		7.5	2.3	ug/L		10/04/16 15:42	10/06/16 02:49	10
Phenol	**160**		38	5.1	ug/L		10/04/16 15:42	10/06/16 02:49	10

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		10/05/16 07:55	10/05/16 16:27	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/05/16 07:55	10/05/16 16:27	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		10/05/16 07:55	10/05/16 16:27	1
beta-BHC	<0.037		0.037	0.0094	ug/L		10/05/16 07:55	10/05/16 16:27	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/05/16 16:27	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-01-GW-10032016

Date Collected: 10/03/16 11:05
Date Received: 10/03/16 16:38

Lab Sample ID: 500-118024-1
Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/05/16 07:55	10/05/16 16:27	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		10/05/16 07:55	10/05/16 16:27	1
delta-BHC	<0.037		0.037	0.0095	ug/L		10/05/16 07:55	10/05/16 16:27	1
Dieldrin	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/05/16 16:27	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/05/16 07:55	10/05/16 16:27	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/05/16 07:55	10/05/16 16:27	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/05/16 07:55	10/05/16 16:27	1
Endrin	<0.037		0.037	0.013	ug/L		10/05/16 07:55	10/05/16 16:27	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		10/05/16 07:55	10/05/16 16:27	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/05/16 07:55	10/05/16 16:27	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		10/05/16 07:55	10/05/16 16:27	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		10/05/16 07:55	10/05/16 16:27	1
Heptachlor	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/05/16 16:27	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/05/16 07:55	10/05/16 16:27	1
Methoxychlor	<0.074		0.074	0.021	ug/L		10/05/16 07:55	10/05/16 16:27	1
Toxaphene	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 16:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*110*		*30 - 143*	*10/05/16 07:55*	*10/05/16 16:27*	*1*
Tetrachloro-m-xylene	*86*		*30 - 120*	*10/05/16 07:55*	*10/05/16 16:27*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		10/05/16 07:55	10/05/16 20:11	1
PCB-1221	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 20:11	1
PCB-1232	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 20:11	1
PCB-1242	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 20:11	1
PCB-1248	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 20:11	1
PCB-1254	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 20:11	1
PCB-1260	<0.37		0.37	0.065	ug/L		10/05/16 07:55	10/05/16 20:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*71*		*30 - 127*	*10/05/16 07:55*	*10/05/16 20:11*	*1*
DCB Decachlorobiphenyl	*103*		*30 - 150*	*10/05/16 07:55*	*10/05/16 20:11*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.42**		0.20	0.062	mg/L		10/11/16 08:58	10/13/16 02:01	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 08:58	10/13/16 02:01	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:01	1
Barium	**0.82**		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:01	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 08:58	10/13/16 02:01	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 08:58	10/13/16 02:01	1
Calcium	**730**		1.0	0.30	mg/L		10/11/16 08:58	10/13/16 18:00	5
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 08:58	10/13/16 02:01	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 08:58	10/13/16 02:01	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:01	1
Iron	**0.12**	**J**	0.20	0.10	mg/L		10/11/16 08:58	10/13/16 02:01	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 08:58	10/13/16 17:55	1
Magnesium	**0.25**		0.10	0.041	mg/L		10/11/16 08:58	10/13/16 02:01	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-01-GW-10032016

Lab Sample ID: 500-118024-1

Date Collected: 10/03/16 11:05
Matrix: Water
Date Received: 10/03/16 16:38

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	0.0045	J	0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:01	1
Nickel	0.023		0.010	0.0037	mg/L		10/11/16 08:58	10/13/16 02:01	1
Potassium	52		0.50	0.16	mg/L		10/11/16 08:58	10/13/16 02:01	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 08:58	10/13/16 02:01	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 08:58	10/13/16 02:01	1
Sodium	200		1.0	0.43	mg/L		10/11/16 08:58	10/13/16 02:01	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:01	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 08:58	10/13/16 02:01	1
Zinc	0.015	J	0.020	0.0090	mg/L		10/11/16 08:58	10/13/16 02:01	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.40		0.20	0.062	mg/L		10/11/16 08:58	10/13/16 02:06	1
Antimony	0.0079	J	0.020	0.0064	mg/L		10/11/16 08:58	10/13/16 02:06	1
Arsenic	0.0045	J	0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:06	1
Barium	0.81		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:06	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 08:58	10/13/16 02:06	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 08:58	10/13/16 02:06	1
Calcium	790		1.0	0.30	mg/L		10/11/16 08:58	10/13/16 18:07	5
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 08:58	10/13/16 02:06	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 08:58	10/13/16 02:06	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:06	1
Iron	<0.20		0.20	0.10	mg/L		10/11/16 08:58	10/13/16 02:06	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 08:58	10/13/16 18:03	1
Magnesium	0.051	J	0.10	0.041	mg/L		10/11/16 08:58	10/13/16 02:06	1
Manganese	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:06	1
Nickel	0.021		0.010	0.0037	mg/L		10/11/16 08:58	10/13/16 02:06	1
Potassium	50		0.50	0.16	mg/L		10/11/16 08:58	10/13/16 02:06	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 08:58	10/13/16 02:06	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 08:58	10/13/16 02:06	1
Sodium	200		1.0	0.43	mg/L		10/11/16 08:58	10/13/16 02:06	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:06	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 08:58	10/13/16 02:06	1
Zinc	0.012	J	0.020	0.0090	mg/L		10/11/16 08:58	10/13/16 02:06	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:08	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	3.6		1.0	0.18	mg/L			10/05/16 06:24	1
Sulfate	44	~~B~~	10	2.9	mg/L			10/07/16 08:28	2
Total Organic Carbon - Duplicates	49	~~B~~	4.0	1.1	mg/L			10/07/16 19:29	4
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/10/16 19:05	1
Total Suspended Solids	10		5.0	2.5	mg/L			10/06/16 12:37	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-01-GW-10032016
Date Collected: 10/03/16 11:05
Date Received: 10/03/16 16:38

Lab Sample ID: 500-118024-1
Matrix: Water

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**59**	~~B~~	5.0	2.5	mg/L		10/12/16 11:30	10/12/16 14:29	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/04/16 16:16	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/07/16 23:48	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-02-GW-10032016

Lab Sample ID: 500-118024-2

Date Collected: 10/03/16 13:50
Matrix: Water
Date Received: 10/03/16 16:38

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**9.0**	J	5.0	1.7	ug/L			10/05/16 14:21	1
Benzene	**15**		0.50	0.15	ug/L			10/05/16 14:21	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/05/16 14:21	1
Bromoform	<1.0		1.0	0.48	ug/L			10/05/16 14:21	1
Bromomethane	<2.0		2.0	0.80	ug/L			10/05/16 14:21	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/05/16 14:21	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/05/16 14:21	1
Chloroethane	**5.0**		1.0	0.51	ug/L			10/05/16 14:21	1
Chloroform	<1.0		1.0	0.37	ug/L			10/05/16 14:21	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/05/16 14:21	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			10/05/16 14:21	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/05/16 14:21	1
Cyclohexane	<1.0		1.0	0.49	ug/L			10/05/16 14:21	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/05/16 14:21	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			10/05/16 14:21	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/05/16 14:21	1
1,2-Dichlorobenzene	**5.6**		1.0	0.33	ug/L			10/05/16 14:21	1
1,3-Dichlorobenzene	**3.9**		1.0	0.40	ug/L			10/05/16 14:21	1
1,4-Dichlorobenzene	**9.2**		1.0	0.36	ug/L			10/05/16 14:21	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/05/16 14:21	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/05/16 14:21	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/05/16 14:21	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/05/16 14:21	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/05/16 14:21	1
Ethylbenzene	**1.7**		0.50	0.18	ug/L			10/05/16 14:21	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/05/16 14:21	1
Isopropylbenzene	**4.2**		1.0	0.39	ug/L			10/05/16 14:21	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/05/16 14:21	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			10/05/16 14:21	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/05/16 14:21	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/05/16 14:21	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			10/05/16 14:21	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/05/16 14:21	1
Styrene	<1.0		1.0	0.39	ug/L			10/05/16 14:21	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/05/16 14:21	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/05/16 14:21	1
Toluene	**1.4**		0.50	0.15	ug/L			10/05/16 14:21	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/05/16 14:21	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/05/16 14:21	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/05/16 14:21	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/05/16 14:21	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/05/16 14:21	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/05/16 14:21	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/05/16 14:21	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/05/16 14:21	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			10/05/16 14:21	1
Xylenes, Total	**4.4**		1.0	0.22	ug/L			10/05/16 14:21	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-02-GW-10032016

Date Collected: 10/03/16 13:50
Date Received: 10/03/16 16:38

Lab Sample ID: 500-118024-2

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*108*		*71 - 120*		*10/05/16 14:21*	*1*
Dibromofluoromethane	*94*		*70 - 120*		*10/05/16 14:21*	*1*
1,2-Dichloroethane-d4 (Surr)	*109*		*71 - 127*		*10/05/16 14:21*	*1*
Toluene-d8 (Surr)	*95*		*75 - 120*		*10/05/16 14:21*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	**560**		10	3.9	ug/L			10/06/16 12:09	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*114*		*71 - 120*		*10/06/16 12:09*	*10*
Dibromofluoromethane	*114*		*70 - 120*		*10/06/16 12:09*	*10*
1,2-Dichloroethane-d4 (Surr)	*113*		*71 - 127*		*10/06/16 12:09*	*10*
Toluene-d8 (Surr)	*95*		*75 - 120*		*10/06/16 12:09*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.98**		0.72	0.22	ug/L		10/04/16 15:42	10/06/16 03:18	1
Acenaphthylene	<0.72		0.72	0.19	ug/L		10/04/16 15:42	10/06/16 03:18	1
Acetophenone	<3.6		3.6	0.48	ug/L		10/04/16 15:42	10/06/16 03:18	1
Anthracene	<0.72		0.72	0.24	ug/L		10/04/16 15:42	10/06/16 03:18	1
Benzo[a]anthracene	<0.14		0.14	0.041	ug/L		10/04/16 15:42	10/06/16 03:18	1
Benzo[a]pyrene	<0.14		0.14	0.071	ug/L		10/04/16 15:42	10/06/16 03:18	1
Benzo[b]fluoranthene	<0.14		0.14	0.058	ug/L		10/04/16 15:42	10/06/16 03:18	1
Benzo[g,h,i]perylene	<0.72		0.72	0.27	ug/L		10/04/16 15:42	10/06/16 03:18	1
Benzo[k]fluoranthene	<0.14		0.14	0.046	ug/L		10/04/16 15:42	10/06/16 03:18	1
Bis(2-chloroethoxy)methane	<1.4		1.4	0.21	ug/L		10/04/16 15:42	10/06/16 03:18	1
Bis(2-chloroethyl)ether	**1.2**	**J**	1.4	0.21	ug/L		10/04/16 15:42	10/06/16 03:18	1
Bis(2-ethylhexyl) phthalate	<7.2		7.2	1.2	ug/L		10/04/16 15:42	10/06/16 03:18	1
4-Bromophenyl phenyl ether	<3.6		3.6	0.39	ug/L		10/04/16 15:42	10/06/16 03:18	1
Butyl benzyl phthalate	<1.4		1.4	0.35	ug/L		10/04/16 15:42	10/06/16 03:18	1
Carbazole	**0.29**	**J**	3.6	0.26	ug/L		10/04/16 15:42	10/06/16 03:18	1
4-Chloroaniline	<7.2	UJ	7.2	1.5	ug/L		10/04/16 15:42	10/06/16 03:18	1
4-Chloro-3-methylphenol	<7.2		7.2	1.7	ug/L		10/04/16 15:42	10/06/16 03:18	1
2-Chloronaphthalene	**0.55**	**J**	1.4	0.17	ug/L		10/04/16 15:42	10/06/16 03:18	1
2-Chlorophenol	**2.7**	**J**	3.6	0.40	ug/L		10/04/16 15:42	10/06/16 03:18	1
4-Chlorophenyl phenyl ether	<3.6		3.6	0.46	ug/L		10/04/16 15:42	10/06/16 03:18	1
Chrysene	<0.36		0.36	0.049	ug/L		10/04/16 15:42	10/06/16 03:18	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		10/04/16 15:42	10/06/16 03:18	1
Dibenzofuran	**0.29**	**J**	1.4	0.19	ug/L		10/04/16 15:42	10/06/16 03:18	1
3,3'-Dichlorobenzidine	<3.6		3.6	1.2	ug/L		10/04/16 15:42	10/06/16 03:18	1
2,4-Dichlorophenol	<7.2		7.2	1.9	ug/L		10/04/16 15:42	10/06/16 03:18	1
Diethyl phthalate	**0.43**	**J**	1.4	0.26	ug/L		10/04/16 15:42	10/06/16 03:18	1
2,4-Dimethylphenol	<7.2		7.2	1.3	ug/L		10/04/16 15:42	10/06/16 03:18	1
Dimethyl phthalate	<1.4		1.4	0.23	ug/L		10/04/16 15:42	10/06/16 03:18	1
Di-n-butyl phthalate	**0.79**	**J**	3.6	0.53	ug/L		10/04/16 15:42	10/06/16 03:18	1
4,6-Dinitro-2-methylphenol	<14		14	4.3	ug/L		10/04/16 15:42	10/06/16 03:18	1
2,4-Dinitrophenol	<14		14	6.2	ug/L		10/04/16 15:42	10/06/16 03:18	1
2,4-Dinitrotoluene	<0.72		0.72	0.18	ug/L		10/04/16 15:42	10/06/16 03:18	1
2,6-Dinitrotoluene	<0.72		0.72	0.053	ug/L		10/04/16 15:42	10/06/16 03:18	1
Di-n-octyl phthalate	<7.2		7.2	0.76	ug/L		10/04/16 15:42	10/06/16 03:18	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-02-GW-10032016

Date Collected: 10/03/16 13:50
Date Received: 10/03/16 16:38

Lab Sample ID: 500-118024-2

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.72		0.72	0.33	ug/L		10/04/16 15:42	10/06/16 03:18	1
Fluorene	**0.53**	**J**	0.72	0.18	ug/L		10/04/16 15:42	10/06/16 03:18	1
Hexachlorobenzene	<0.36		0.36	0.057	ug/L		10/04/16 15:42	10/06/16 03:18	1
Hexachlorobutadiene	<3.6		3.6	0.37	ug/L		10/04/16 15:42	10/06/16 03:18	1
Hexachlorocyclopentadiene	<14		14	4.6	ug/L		10/04/16 15:42	10/06/16 03:18	1
Hexachloroethane	<3.6		3.6	0.43	ug/L		10/04/16 15:42	10/06/16 03:18	1
Indeno[1,2,3-cd]pyrene	<0.14		0.14	0.054	ug/L		10/04/16 15:42	10/06/16 03:18	1
Isophorone	<1.4		1.4	0.27	ug/L		10/04/16 15:42	10/06/16 03:18	1
2-Methylphenol	<1.4		1.4	0.22	ug/L		10/04/16 15:42	10/06/16 03:18	1
3 & 4 Methylphenol	**2.7**		1.4	0.32	ug/L		10/04/16 15:42	10/06/16 03:18	1
2-Nitroaniline	<3.6		3.6	0.93	ug/L		10/04/16 15:42	10/06/16 03:18	1
3-Nitroaniline	<7.2		7.2	1.3	ug/L		10/04/16 15:42	10/06/16 03:18	1
4-Nitroaniline	<7.2	UJ	7.2	1.2	ug/L		10/04/16 15:42	10/06/16 03:18	1
Nitrobenzene	<0.72		0.72	0.32	ug/L		10/04/16 15:42	10/06/16 03:18	1
2-Nitrophenol	<7.2		7.2	1.8	ug/L		10/04/16 15:42	10/06/16 03:18	1
4-Nitrophenol	<14		14	5.4	ug/L		10/04/16 15:42	10/06/16 03:18	1
N-Nitrosodi-n-propylamine	<0.36		0.36	0.11	ug/L		10/04/16 15:42	10/06/16 03:18	1
N-Nitrosodiphenylamine	**6.3**		0.72	0.27	ug/L		10/04/16 15:42	10/06/16 03:18	1
2,2'-oxybis[1-chloropropane]	<1.4		1.4	0.27	ug/L		10/04/16 15:42	10/06/16 03:18	1
Pentachlorophenol	<14		14	2.8	ug/L		10/04/16 15:42	10/06/16 03:18	1
Phenanthrene	**0.26**	**J**	0.72	0.22	ug/L		10/04/16 15:42	10/06/16 03:18	1
Phenol	<3.6		3.6	0.49	ug/L		10/04/16 15:42	10/06/16 03:18	1
Pyrene	<0.72		0.72	0.31	ug/L		10/04/16 15:42	10/06/16 03:18	1
2,4,5-Trichlorophenol	<7.2		7.2	1.9	ug/L		10/04/16 15:42	10/06/16 03:18	1
2,4,6-Trichlorophenol	<3.6		3.6	0.52	ug/L		10/04/16 15:42	10/06/16 03:18	1
Benzaldehyde	<29	UJ	29	11	ug/L		10/04/16 15:42	10/06/16 03:18	1
Caprolactam	<7.2		7.2	1.1	ug/L		10/04/16 15:42	10/06/16 03:18	1
Atrazine	<3.6		3.6	0.45	ug/L		10/04/16 15:42	10/06/16 03:18	1
1,1'-Biphenyl	**0.53**	**J**	3.6	0.26	ug/L		10/04/16 15:42	10/06/16 03:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*82*		*30 - 123*	*10/04/16 15:42*	*10/06/16 03:18*	*1*
2-Fluorophenol (Surr)	*73*		*30 - 110*	*10/04/16 15:42*	*10/06/16 03:18*	*1*
Nitrobenzene-d5 (Surr)	*77*		*33 - 139*	*10/04/16 15:42*	*10/06/16 03:18*	*1*
Phenol-d5 (Surr)	*53*		*20 - 100*	*10/04/16 15:42*	*10/06/16 03:18*	*1*
Terphenyl-d14 (Surr)	*105*		*42 - 150*	*10/04/16 15:42*	*10/06/16 03:18*	*1*
2,4,6-Tribromophenol (Surr)	*114*		*30 - 150*	*10/04/16 15:42*	*10/06/16 03:18*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**120**		7.2	0.24	ug/L		10/04/16 15:42	10/13/16 19:32	5
Naphthalene	**92**		3.6	1.1	ug/L		10/04/16 15:42	10/13/16 19:32	5

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		10/05/16 07:55	10/05/16 16:46	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/05/16 07:55	10/05/16 16:46	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		10/05/16 07:55	10/05/16 16:46	1
beta-BHC	<0.037		0.037	0.0095	ug/L		10/05/16 07:55	10/05/16 16:46	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/05/16 16:46	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-02-GW-10032016

Date Collected: 10/03/16 13:50
Date Received: 10/03/16 16:38

Lab Sample ID: 500-118024-2

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/05/16 07:55	10/05/16 16:46	1
4,4'-DDT	<0.037		0.037	0.0030	ug/L		10/05/16 07:55	10/05/16 16:46	1
delta-BHC	<0.037		0.037	0.0096	ug/L		10/05/16 07:55	10/05/16 16:46	1
Dieldrin	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/05/16 16:46	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/05/16 07:55	10/05/16 16:46	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/05/16 07:55	10/05/16 16:46	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/05/16 07:55	10/05/16 16:46	1
Endrin	<0.037		0.037	0.013	ug/L		10/05/16 07:55	10/05/16 16:46	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		10/05/16 07:55	10/05/16 16:46	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/05/16 07:55	10/05/16 16:46	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		10/05/16 07:55	10/05/16 16:46	1
gamma-Chlordane	<0.037		0.037	0.0067	ug/L		10/05/16 07:55	10/05/16 16:46	1
Heptachlor	<0.037		0.037	0.013	ug/L		10/05/16 07:55	10/05/16 16:46	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/05/16 07:55	10/05/16 16:46	1
Methoxychlor	<0.075		0.075	0.021	ug/L		10/05/16 07:55	10/05/16 16:46	1
Toxaphene	<0.37		0.37	0.19	ug/L		10/05/16 07:55	10/05/16 16:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*81*		*30 - 143*	*10/05/16 07:55*	*10/05/16 16:46*	*1*
Tetrachloro-m-xylene	*109*		*30 - 120*	*10/05/16 07:55*	*10/05/16 16:46*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		10/05/16 07:55	10/05/16 20:26	1
PCB-1221	<0.37		0.37	0.19	ug/L		10/05/16 07:55	10/05/16 20:26	1
PCB-1232	<0.37		0.37	0.19	ug/L		10/05/16 07:55	10/05/16 20:26	1
PCB-1242	<0.37		0.37	0.19	ug/L		10/05/16 07:55	10/05/16 20:26	1
PCB-1248	<0.37		0.37	0.19	ug/L		10/05/16 07:55	10/05/16 20:26	1
PCB-1254	<0.37		0.37	0.19	ug/L		10/05/16 07:55	10/05/16 20:26	1
PCB-1260	<0.37		0.37	0.065	ug/L		10/05/16 07:55	10/05/16 20:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*72*		*30 - 127*	*10/05/16 07:55*	*10/05/16 20:26*	*1*
DCB Decachlorobiphenyl	*92*		*30 - 150*	*10/05/16 07:55*	*10/05/16 20:26*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 08:58	10/13/16 02:11	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 08:58	10/13/16 02:11	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:11	1
Barium	**0.36**		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:11	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 08:58	10/13/16 02:11	1
Cadmium	**0.00096**	**J**	0.0020	0.00094	mg/L		10/11/16 08:58	10/13/16 02:11	1
Calcium	**110**		0.20	0.059	mg/L		10/11/16 08:58	10/13/16 02:11	1
Chromium	**0.0035**	**J**	0.010	0.0024	mg/L		10/11/16 08:58	10/13/16 02:11	1
Cobalt	**0.0012**	**J**	0.0050	0.00096	mg/L		10/11/16 08:58	10/13/16 02:11	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:11	1
Iron	**41**		0.20	0.10	mg/L		10/11/16 08:58	10/13/16 02:11	1
Lead	**0.0028**	**J**	0.0050	0.0025	mg/L		10/11/16 08:58	10/13/16 18:10	1
Magnesium	**54**		0.10	0.041	mg/L		10/11/16 08:58	10/13/16 02:11	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-02-GW-10032016

Date Collected: 10/03/16 13:50
Date Received: 10/03/16 16:38

Lab Sample ID: 500-118024-2

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**0.30**		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:11	1
Nickel	**0.0037**	**J**	0.010	0.0037	mg/L		10/11/16 08:58	10/13/16 02:11	1
Potassium	**38**		0.50	0.16	mg/L		10/11/16 08:58	10/13/16 02:11	1
Selenium	**0.0053**	**J**	0.010	0.0051	mg/L		10/11/16 08:58	10/13/16 02:11	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 08:58	10/13/16 02:11	1
Sodium	**180**		1.0	0.43	mg/L		10/11/16 08:58	10/13/16 02:11	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:11	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 08:58	10/13/16 02:11	1
Zinc	**0.067**		0.020	0.0090	mg/L		10/11/16 08:58	10/13/16 02:11	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 08:58	10/13/16 02:15	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 08:58	10/13/16 02:15	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:15	1
Barium	**0.35**		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:15	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 08:58	10/13/16 02:15	1
Cadmium	**0.0012**	**J**	0.0020	0.00094	mg/L		10/11/16 08:58	10/13/16 02:15	1
Calcium	**110**		0.20	0.059	mg/L		10/11/16 08:58	10/13/16 02:15	1
Chromium	**0.0028**	**J**	0.010	0.0024	mg/L		10/11/16 08:58	10/13/16 02:15	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 08:58	10/13/16 02:15	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:15	1
Iron	**39**		0.20	0.10	mg/L		10/11/16 08:58	10/13/16 02:15	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 08:58	10/13/16 18:14	1
Magnesium	**51**		0.10	0.041	mg/L		10/11/16 08:58	10/13/16 02:15	1
Manganese	**0.28**		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:15	1
Nickel	**0.0037**	**J**	0.010	0.0037	mg/L		10/11/16 08:58	10/13/16 02:15	1
Potassium	**36**		0.50	0.16	mg/L		10/11/16 08:58	10/13/16 02:15	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 08:58	10/13/16 02:15	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 08:58	10/13/16 02:15	1
Sodium	**170**		1.0	0.43	mg/L		10/11/16 08:58	10/13/16 02:15	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:15	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 08:58	10/13/16 02:15	1
Zinc	**0.021**		0.020	0.0090	mg/L		10/11/16 08:58	10/13/16 02:15	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:14	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			10/05/16 06:36	1
Sulfate	< 5.0 ~~**4.0**~~	~~**J B**~~	5.0	1.5	mg/L			10/07/16 08:31	1
Total Organic Carbon - Duplicates	**20**	~~**B**~~	1.0	0.27	mg/L			10/07/16 02:18	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/10/16 19:05	1
Total Suspended Solids	**57**		5.0	2.5	mg/L			10/05/16 10:22	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118024-1

Client Sample ID: MW-02-GW-10032016

Lab Sample ID: 500-118024-2

Date Collected: 10/03/16 13:50
Date Received: 10/03/16 16:38

Matrix: Water

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**45**	~~B~~	5.0	2.5	mg/L		10/12/16 11:30	10/12/16 14:32	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/05/16 12:42	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/07/16 23:51	1

TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Phone (708) 534-5200 Fax (708) 534-5211

20508

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hargraves, Therese M	Carrier Tracking No(s):	COC No: 500-78752.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: therese.hargraves@testamericainc.com		Page: Page 1 of 1
Company: Pace Analytical Services, Inc.				Job #: 500-118024-2
Address: 220 William Pitt Way, ,	Due Date Requested: 10/13/2016			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-826-5245(Tel)	PO #:			
Email:	WO #:			
Project Name: Lake Calumet Cluster Site	Project #: 50011099			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL	M - Hexane
B - NaOH	N - None
C - Zn Acetate	O - AsNaO2
D - Nitric Acid	P - Na2O4S
E - NaHSO4	Q - Na2SO3
F - MeOH	R - Na2S2O3
G - Amchlor	S - H2SO4
H - Ascorbic Acid	T - TSP Dodecahydrate
I - Ice	U - Acetone
J - DI Water	V - MCAA
K - EDTA	W - pH 4-5
L - EDA	Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered/Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen)	Total Number of containers	Special Instructions/Note:
			Preservation Code:		X	X		X	
MW-01-GW-10032016 (500-118024-1)	10/3/16	11:05 Central		Water			X	2	
MW-02-GW-10032016 (500-118024-2)	10/3/16	13:50 Central		Water			X	2	

Possible Hazard Identification
Unconfirmed 1.1°C

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	10/04/16 1330	TA	Thomas Sarg	10/5/16 840	Test America
[signature]	10/5/16 [illegible]		[signature] PAFS	10.6.16 1015	PAFS

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20508 500-118024-2

Lab ID: 205080001 Date Received: 10/6/2016 10:15 Matrix: Water
Sample ID: MW-01-GW-10032016 Date Collected: 10/3/2016 11:05

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	12000	ug/l	0.50	0.027	1	10/12/2016 13:57	TD	n
Carbon Dioxide	<5.0	mg/l	5.0	0.24	1	10/12/2016 13:57	TD	n
Oxygen	3.9	mg/l	0.50	0.13	1	10/12/2016 13:57	TD	n
Nitrogen	10	mg/l	2.0	0.24	1	10/12/2016 13:57	TD	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20508 500-118024-2

Lab ID: 205080002 Date Received: 10/6/2016 10:15 Matrix: Water
Sample ID: MW-02-GW-10032016 Date Collected: 10/3/2016 13:50

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	12000	ug/l	0.50	0.027	1	10/12/2016 14:10	TD	n
Carbon Dioxide	290	mg/l	5.0	0.24	1	10/12/2016 14:10	TD	n
Oxygen	1.6	mg/l	0.50	0.13	1	10/12/2016 14:10	TD	n
Nitrogen	8.3	mg/l	2.0	0.24	1	10/12/2016 14:10	TD	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

(optional)
Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 120 S. LaSalle St #1350
Address: Chicago, IL 60603
Phone: 312-575-3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-118070
Chain of Custody Number:
Page _____ of _____
Temperature °C of Cooler: 3.2, 2.7

Client: Arcadis
Client Project #: CI001805.0002.00005
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thurnhoffer
Lab PM: Therese Hargraves

500-118070 COC

7. Other
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOCs, PCBs, Pesticides	Total Metals	Dissolved Metals	Ammonia, NO3, NO2	Sulfide	VOCs	TOC	TSS, SO4, NO2	Dissolved Gases	Comments
Preservative							8	3	3	6	5	1	2	8	9	
1		MW-03-GW-10042016	10/4/16	0810	18	W	—	✓	✓	✓	✓	✓	✓	✓	✓	Dissolved Metals
2		MW-04-GW-10042016	10/4/16	0935	18	W	—	✓	✓	✓	✓	✓	✓	✓	✓	field filtered
3		MW-05-GW-10042016	10/4/16	1110	18	W	—	✓	✓	✓	✓	✓	✓	✓	✓	
4		MW-07-GW-10042016	10/4/16	1250	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	- MW-07, Reactive with preservative
																unable to remove bubbles from VOC, TOC
																samples
																- Poor Meniscus formed
																in all Diss Gas Samples
																unable to remove bubbles

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date: standard

Sample Disposal
[ ] Return to Client [X] Disposal by Lab [ ] Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Ben Thurnhoffer	Arcadis	10/4/16	1600	David Bedin	TA	10/4/16	1600
David Bedin	TA	10/4/16	1650	[illegible]	TA-CHI	10/04/16	16:50
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

TAL-4124-500 (1209)

10/18/2016

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-03-GW-10042016

Lab Sample ID: 500-118070-1

Date Collected: 10/04/16 08:10
Matrix: Water
Date Received: 10/04/16 16:50

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<50		50	17	ug/L			10/07/16 21:01	10
Benzene	**110**		5.0	1.5	ug/L			10/07/16 21:01	10
Bromodichloromethane	<10		10	3.7	ug/L			10/07/16 21:01	10
Bromoform	<10		10	4.8	ug/L			10/07/16 21:01	10
Bromomethane	<20		20	8.0	ug/L			10/07/16 21:01	10
Carbon disulfide	<20		20	4.5	ug/L			10/07/16 21:01	10
Carbon tetrachloride	<10		10	3.8	ug/L			10/07/16 21:01	10
Chlorobenzene	<10		10	3.9	ug/L			10/07/16 21:01	10
Chloroethane	<10		10	5.1	ug/L			10/07/16 21:01	10
Chloroform	<10		10	3.7	ug/L			10/07/16 21:01	10
Chloromethane	<10		10	3.2	ug/L			10/07/16 21:01	10
cis-1,2-Dichloroethene	<10		10	4.1	ug/L			10/07/16 21:01	10
cis-1,3-Dichloropropene	<10		10	4.2	ug/L			10/07/16 21:01	10
Cyclohexane	<10		10	4.9	ug/L			10/07/16 21:01	10
Dibromochloromethane	<10		10	4.9	ug/L			10/07/16 21:01	10
1,2-Dibromo-3-Chloropropane	<50		50	20	ug/L			10/07/16 21:01	10
1,2-Dibromoethane	<10		10	3.9	ug/L			10/07/16 21:01	10
1,2-Dichlorobenzene	<10		10	3.3	ug/L			10/07/16 21:01	10
1,3-Dichlorobenzene	<10		10	4.0	ug/L			10/07/16 21:01	10
1,4-Dichlorobenzene	<10		10	3.6	ug/L			10/07/16 21:01	10
Dichlorodifluoromethane	<20		20	6.7	ug/L			10/07/16 21:01	10
1,1-Dichloroethane	<10		10	4.1	ug/L			10/07/16 21:01	10
1,2-Dichloroethane	<10		10	3.9	ug/L			10/07/16 21:01	10
1,1-Dichloroethene	<10		10	3.9	ug/L			10/07/16 21:01	10
1,2-Dichloropropane	<10		10	4.3	ug/L			10/07/16 21:01	10
Ethylbenzene	**25**		5.0	1.8	ug/L			10/07/16 21:01	10
2-Hexanone	<50		50	16	ug/L			10/07/16 21:01	10
Isopropylbenzene	<10		10	3.9	ug/L			10/07/16 21:01	10
Methyl acetate	<50		50	20	ug/L			10/07/16 21:01	10
Methylcyclohexane	<10		10	3.2	ug/L			10/07/16 21:01	10
Methylene Chloride	<50		50	16	ug/L			10/07/16 21:01	10
Methyl Ethyl Ketone	<50		50	21	ug/L			10/07/16 21:01	10
methyl isobutyl ketone	<50		50	22	ug/L			10/07/16 21:01	10
Methyl tert-butyl ether	<10		10	3.9	ug/L			10/07/16 21:01	10
Styrene	<10		10	3.9	ug/L			10/07/16 21:01	10
1,1,2,2-Tetrachloroethane	<10		10	4.0	ug/L			10/07/16 21:01	10
Tetrachloroethene	<10		10	3.7	ug/L			10/07/16 21:01	10
Toluene	**96**		5.0	1.5	ug/L			10/07/16 21:01	10
trans-1,2-Dichloroethene	<10		10	3.5	ug/L			10/07/16 21:01	10
trans-1,3-Dichloropropene	<10		10	3.6	ug/L			10/07/16 21:01	10
1,2,4-Trichlorobenzene	<10		10	3.4	ug/L			10/07/16 21:01	10
1,1,1-Trichloroethane	<10		10	3.8	ug/L			10/07/16 21:01	10
1,1,2-Trichloroethane	<10		10	3.5	ug/L			10/07/16 21:01	10
Trichloroethene	<5.0		5.0	1.6	ug/L			10/07/16 21:01	10
Trichlorofluoromethane	<10		10	4.3	ug/L			10/07/16 21:01	10
1,1,2-Trichloro-1,2,2-trifluoroethane	<10		10	4.6	ug/L			10/07/16 21:01	10
Vinyl chloride	<5.0		5.0	2.0	ug/L			10/07/16 21:01	10
Xylenes, Total	**150**		10	2.2	ug/L			10/07/16 21:01	10

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-03-GW-10042016

Lab Sample ID: 500-118070-1

Date Collected: 10/04/16 08:10
Matrix: Water
Date Received: 10/04/16 16:50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*71 - 120*		*10/07/16 21:01*	*10*
Dibromofluoromethane	*96*		*70 - 120*		*10/07/16 21:01*	*10*
1,2-Dichloroethane-d4 (Surr)	*90*		*71 - 127*		*10/07/16 21:01*	*10*
Toluene-d8 (Surr)	*93*		*75 - 120*		*10/07/16 21:01*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**21**		7.4	2.3	ug/L		10/05/16 15:21	10/10/16 18:14	10
Acenaphthylene	**3.4**	**J**	7.4	2.0	ug/L		10/05/16 15:21	10/10/16 18:14	10
Acetophenone	<37		37	4.9	ug/L		10/05/16 15:21	10/10/16 18:14	10
Anthracene	**9.1**		7.4	2.5	ug/L		10/05/16 15:21	10/10/16 18:14	10
Benzo[a]anthracene	<1.5		1.5	0.42	ug/L		10/05/16 15:21	10/10/16 18:14	10
Benzo[a]pyrene	<1.5		1.5	0.73	ug/L		10/05/16 15:21	10/10/16 18:14	10
Benzo[b]fluoranthene	<1.5		1.5	0.59	ug/L		10/05/16 15:21	10/10/16 18:14	10
Benzo[g,h,i]perylene	<7.4		7.4	2.8	ug/L		10/05/16 15:21	10/10/16 18:14	10
Benzo[k]fluoranthene	<1.5		1.5	0.47	ug/L		10/05/16 15:21	10/10/16 18:14	10
Bis(2-chloroethoxy)methane	<15		15	2.1	ug/L		10/05/16 15:21	10/10/16 18:14	10
Bis(2-chloroethyl)ether	<15		15	2.2	ug/L		10/05/16 15:21	10/10/16 18:14	10
Bis(2-ethylhexyl) phthalate	<74		74	13	ug/L		10/05/16 15:21	10/10/16 18:14	10
4-Bromophenyl phenyl ether	<37		37	4.0	ug/L		10/05/16 15:21	10/10/16 18:14	10
Butyl benzyl phthalate	<15		15	3.5	ug/L		10/05/16 15:21	10/10/16 18:14	10
Carbazole	**150**		37	2.6	ug/L		10/05/16 15:21	10/10/16 18:14	10
4-Chloroaniline	<74		74	15	ug/L		10/05/16 15:21	10/10/16 18:14	10
4-Chloro-3-methylphenol	<74		74	17	ug/L		10/05/16 15:21	10/10/16 18:14	10
2-Chloronaphthalene	<15		15	1.7	ug/L		10/05/16 15:21	10/10/16 18:14	10
2-Chlorophenol	<37		37	4.1	ug/L		10/05/16 15:21	10/10/16 18:14	10
4-Chlorophenyl phenyl ether	<37		37	4.7	ug/L		10/05/16 15:21	10/10/16 18:14	10
Chrysene	<3.7		3.7	0.50	ug/L		10/05/16 15:21	10/10/16 18:14	10
Dibenz(a,h)anthracene	<2.2		2.2	0.37	ug/L		10/05/16 15:21	10/10/16 18:14	10
Dibenzofuran	**42**		15	1.9	ug/L		10/05/16 15:21	10/10/16 18:14	10
3,3'-Dichlorobenzidine	<37		37	13	ug/L		10/05/16 15:21	10/10/16 18:14	10
2,4-Dichlorophenol	<74		74	19	ug/L		10/05/16 15:21	10/10/16 18:14	10
Diethyl phthalate	<15		15	2.7	ug/L		10/05/16 15:21	10/10/16 18:14	10
2,4-Dimethylphenol	**74**		74	13	ug/L		10/05/16 15:21	10/10/16 18:14	10
Dimethyl phthalate	<15		15	2.3	ug/L		10/05/16 15:21	10/10/16 18:14	10
Di-n-butyl phthalate	<37		37	5.4	ug/L		10/05/16 15:21	10/10/16 18:14	10
4,6-Dinitro-2-methylphenol	<150		150	43	ug/L		10/05/16 15:21	10/10/16 18:14	10
2,4-Dinitrophenol	<150		150	63	ug/L		10/05/16 15:21	10/10/16 18:14	10
2,4-Dinitrotoluene	<7.4		7.4	1.8	ug/L		10/05/16 15:21	10/10/16 18:14	10
2,6-Dinitrotoluene	<7.4		7.4	0.54	ug/L		10/05/16 15:21	10/10/16 18:14	10
Di-n-octyl phthalate	<74		74	7.7	ug/L		10/05/16 15:21	10/10/16 18:14	10
Fluoranthene	**6.2**	**J**	7.4	3.3	ug/L		10/05/16 15:21	10/10/16 18:14	10
Fluorene	**62**		7.4	1.8	ug/L		10/05/16 15:21	10/10/16 18:14	10
Hexachlorobenzene	<3.7		3.7	0.58	ug/L		10/05/16 15:21	10/10/16 18:14	10
Hexachlorobutadiene	<37		37	3.8	ug/L		10/05/16 15:21	10/10/16 18:14	10
Hexachlorocyclopentadiene	<150	UJ	150	47	ug/L		10/05/16 15:21	10/10/16 18:14	10
Hexachloroethane	<37		37	4.4	ug/L		10/05/16 15:21	10/10/16 18:14	10
Indeno[1,2,3-cd]pyrene	<1.5		1.5	0.55	ug/L		10/05/16 15:21	10/10/16 18:14	10
Isophorone	<15		15	2.8	ug/L		10/05/16 15:21	10/10/16 18:14	10
2-Methylnaphthalene	**300**	~~B~~	15	0.48	ug/L		10/05/16 15:21	10/10/16 18:14	10

Client Sample ID: MW-03-GW-10042016

Lab Sample ID: 500-118070-1

Date Collected: 10/04/16 08:10

Matrix: Water

Date Received: 10/04/16 16:50

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	**21**		15	2.2	ug/L		10/05/16 15:21	10/10/16 18:14	10
3 & 4 Methylphenol	**12**	**J**	15	3.3	ug/L		10/05/16 15:21	10/10/16 18:14	10
2-Nitroaniline	<37		37	9.5	ug/L		10/05/16 15:21	10/10/16 18:14	10
3-Nitroaniline	<74		74	13	ug/L		10/05/16 15:21	10/10/16 18:14	10
4-Nitroaniline	<74		74	12	ug/L		10/05/16 15:21	10/10/16 18:14	10
Nitrobenzene	<7.4		7.4	3.3	ug/L		10/05/16 15:21	10/10/16 18:14	10
2-Nitrophenol	<74		74	18	ug/L		10/05/16 15:21	10/10/16 18:14	10
4-Nitrophenol	<150		150	55	ug/L		10/05/16 15:21	10/10/16 18:14	10
N-Nitrosodi-n-propylamine	<3.7		3.7	1.1	ug/L		10/05/16 15:21	10/10/16 18:14	10
N-Nitrosodiphenylamine	<7.4		7.4	2.7	ug/L		10/05/16 15:21	10/10/16 18:14	10
2,2'-oxybis[1-chloropropane]	<15		15	2.8	ug/L		10/05/16 15:21	10/10/16 18:14	10
Pentachlorophenol	<150	UJ	150	29	ug/L		10/05/16 15:21	10/10/16 18:14	10
Phenanthrene	**55**		7.4	2.2	ug/L		10/05/16 15:21	10/10/16 18:14	10
Phenol	<37		37	4.9	ug/L		10/05/16 15:21	10/10/16 18:14	10
Pyrene	**4.5**	**J**	7.4	3.1	ug/L		10/05/16 15:21	10/10/16 18:14	10
2,4,5-Trichlorophenol	<74		74	19	ug/L		10/05/16 15:21	10/10/16 18:14	10
2,4,6-Trichlorophenol	<37		37	5.3	ug/L		10/05/16 15:21	10/10/16 18:14	10
Benzaldehyde	<290	UJ	290	110	ug/L		10/05/16 15:21	10/10/16 18:14	10
Caprolactam	<74		74	11	ug/L		10/05/16 15:21	10/10/16 18:14	10
Atrazine	<37		37	4.6	ug/L		10/05/16 15:21	10/10/16 18:14	10
1,1'-Biphenyl	**26**	**J**	37	2.7	ug/L		10/05/16 15:21	10/10/16 18:14	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*111*		*30 - 123*	*10/05/16 15:21*	*10/10/16 18:14*	*10*
2-Fluorophenol (Surr)	*85*		*30 - 110*	*10/05/16 15:21*	*10/10/16 18:14*	*10*
Nitrobenzene-d5 (Surr)	*104*		*33 - 139*	*10/05/16 15:21*	*10/10/16 18:14*	*10*
Phenol-d5 (Surr)	*69*		*20 - 100*	*10/05/16 15:21*	*10/10/16 18:14*	*10*
Terphenyl-d14 (Surr)	*116*		*42 - 150*	*10/05/16 15:21*	*10/10/16 18:14*	*10*
2,4,6-Tribromophenol (Surr)	*127*		*30 - 150*	*10/05/16 15:21*	*10/10/16 18:14*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**2200**	~~B~~	37	11	ug/L		10/05/16 15:21	10/15/16 17:43	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*0*	*D*	*30 - 123*	*10/05/16 15:21*	*10/15/16 17:43*	*50*
2-Fluorophenol (Surr)	*0*	*D*	*30 - 110*	*10/05/16 15:21*	*10/15/16 17:43*	*50*
Nitrobenzene-d5 (Surr)	*0*	*D*	*33 - 139*	*10/05/16 15:21*	*10/15/16 17:43*	*50*
Phenol-d5 (Surr)	*0*	*D*	*20 - 100*	*10/05/16 15:21*	*10/15/16 17:43*	*50*
Terphenyl-d14 (Surr)	*0*	*D*	*42 - 150*	*10/05/16 15:21*	*10/15/16 17:43*	*50*
2,4,6-Tribromophenol (Surr)	*0*	*D*	*30 - 150*	*10/05/16 15:21*	*10/15/16 17:43*	*50*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		10/05/16 07:55	10/05/16 17:05	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/05/16 07:55	10/05/16 17:05	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		10/05/16 07:55	10/05/16 17:05	1
beta-BHC	<0.037		0.037	0.0094	ug/L		10/05/16 07:55	10/05/16 17:05	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/05/16 17:05	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/05/16 07:55	10/05/16 17:05	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-03-GW-10042016

Date Collected: 10/04/16 08:10
Date Received: 10/04/16 16:50

Lab Sample ID: 500-118070-1

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDT	<0.037		0.037	0.0029	ug/L		10/05/16 07:55	10/05/16 17:05	1
delta-BHC	<0.037		0.037	0.0095	ug/L		10/05/16 07:55	10/05/16 17:05	1
Dieldrin	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/05/16 17:05	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/05/16 07:55	10/05/16 17:05	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/05/16 07:55	10/05/16 17:05	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/05/16 07:55	10/05/16 17:05	1
Endrin	<0.037		0.037	0.013	ug/L		10/05/16 07:55	10/05/16 17:05	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		10/05/16 07:55	10/05/16 17:05	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/05/16 07:55	10/05/16 17:05	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		10/05/16 07:55	10/05/16 17:05	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		10/05/16 07:55	10/05/16 17:05	1
Heptachlor	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/05/16 17:05	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/05/16 07:55	10/05/16 17:05	1
Methoxychlor	<0.074		0.074	0.021	ug/L		10/05/16 07:55	10/05/16 17:05	1
Toxaphene	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 17:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*57*		*30 - 143*	*10/05/16 07:55*	*10/05/16 17:05*	*1*
Tetrachloro-m-xylene	*106*		*30 - 120*	*10/05/16 07:55*	*10/05/16 17:05*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		10/05/16 07:55	10/05/16 20:41	1
PCB-1221	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 20:41	1
PCB-1232	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 20:41	1
PCB-1242	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 20:41	1
PCB-1248	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 20:41	1
PCB-1254	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 20:41	1
PCB-1260	<0.37		0.37	0.064	ug/L		10/05/16 07:55	10/05/16 20:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*70*		*30 - 127*	*10/05/16 07:55*	*10/05/16 20:41*	*1*
DCB Decachlorobiphenyl	*71*		*30 - 150*	*10/05/16 07:55*	*10/05/16 20:41*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 08:58	10/13/16 02:19	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 08:58	10/13/16 02:19	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:19	1
Barium	**1.0**		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:19	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 08:58	10/13/16 02:19	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		10/11/16 08:58	10/13/16 02:19	1
Calcium	**76**		0.20	0.059	mg/L		10/11/16 08:58	10/13/16 02:19	1
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 08:58	10/13/16 02:19	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 08:58	10/13/16 02:19	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:19	1
Iron	**4.6**		0.20	0.10	mg/L		10/11/16 08:58	10/13/16 02:19	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 08:58	10/13/16 18:17	1
Magnesium	**84**		0.10	0.041	mg/L		10/11/16 08:58	10/13/16 02:19	1
Manganese	**0.14**		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:19	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-03-GW-10042016

Date Collected: 10/04/16 08:10
Date Received: 10/04/16 16:50

Lab Sample ID: 500-118070-1

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nickel	0.0051	J	0.010	0.0037	mg/L		10/11/16 08:58	10/13/16 02:19	1
Potassium	62		0.50	0.16	mg/L		10/11/16 08:58	10/13/16 02:19	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 08:58	10/13/16 02:19	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 08:58	10/13/16 02:19	1
Sodium	270	J	1.0	0.43	mg/L		10/11/16 08:58	10/13/16 02:19	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:19	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 08:58	10/13/16 02:19	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 08:58	10/13/16 02:19	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 08:58	10/13/16 02:24	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 08:58	10/13/16 02:24	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:24	1
Barium	0.96	J	0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:24	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 08:58	10/13/16 02:24	1
Cadmium	0.0013	J	0.0020	0.00094	mg/L		10/11/16 08:58	10/13/16 02:24	1
Calcium	73		0.20	0.059	mg/L		10/11/16 08:58	10/13/16 02:24	1
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 08:58	10/13/16 02:24	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 08:58	10/13/16 02:24	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:24	1
Iron	3.6		0.20	0.10	mg/L		10/11/16 08:58	10/13/16 02:24	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 08:58	10/13/16 18:28	1
Magnesium	82	J	0.10	0.041	mg/L		10/11/16 08:58	10/13/16 02:24	1
Manganese	0.13		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:24	1
Nickel	0.0049	J	0.010	0.0037	mg/L		10/11/16 08:58	10/13/16 02:24	1
Potassium	60	J	0.50	0.16	mg/L		10/11/16 08:58	10/13/16 02:24	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 08:58	10/13/16 02:24	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 08:58	10/13/16 02:24	1
Sodium	260	J	1.0	0.43	mg/L		10/11/16 08:58	10/13/16 02:24	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:24	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 08:58	10/13/16 02:24	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 08:58	10/13/16 02:24	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:36	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	0.31	J	1.0	0.18	mg/L			10/05/16 06:40	1
Sulfate	< 5.0 ~~3.6~~	~~J B~~ UB	5.0	1.5	mg/L			10/07/16 08:32	1
Total Organic Carbon - Duplicates	24	~~B~~	1.0	0.27	mg/L			10/07/16 02:34	1
Nitrogen, Nitrate	0.077	J	0.10	0.035	mg/L			10/10/16 19:05	1
Total Suspended Solids	8.5		5.0	2.5	mg/L			10/05/16 10:42	1
Ammonia	38		2.0	1.0	mg/L		10/12/16 11:30	10/13/16 09:40	10

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-03-GW-10042016

Lab Sample ID: 500-118070-1

Date Collected: 10/04/16 08:10
Matrix: Water
Date Received: 10/04/16 16:50

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/05/16 12:42	1
Nitrogen, Nitrate Nitrite	**0.077**	**J**	0.10	0.035	mg/L			10/13/16 23:54	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-04-GW-10042016

Lab Sample ID: 500-118070-2

Date Collected: 10/04/16 09:35
Matrix: Water
Date Received: 10/04/16 16:50

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			10/07/16 18:47	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/07/16 18:47	1
Bromoform	<1.0		1.0	0.48	ug/L			10/07/16 18:47	1
Bromomethane	<2.0		2.0	0.80	ug/L			10/07/16 18:47	1
Carbon disulfide	**33**		2.0	0.45	ug/L			10/07/16 18:47	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/07/16 18:47	1
Chlorobenzene	**0.82**	**J**	1.0	0.39	ug/L			10/07/16 18:47	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/07/16 18:47	1
Chloroform	<1.0		1.0	0.37	ug/L			10/07/16 18:47	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/07/16 18:47	1
cis-1,2-Dichloroethene	**7.3**		1.0	0.41	ug/L			10/07/16 18:47	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/07/16 18:47	1
Cyclohexane	**1.7**		1.0	0.49	ug/L			10/07/16 18:47	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/07/16 18:47	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			10/07/16 18:47	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/07/16 18:47	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			10/07/16 18:47	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/07/16 18:47	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			10/07/16 18:47	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/07/16 18:47	1
1,1-Dichloroethane	**24**		1.0	0.41	ug/L			10/07/16 18:47	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/07/16 18:47	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/07/16 18:47	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/07/16 18:47	1
Ethylbenzene	**7.2**		0.50	0.18	ug/L			10/07/16 18:47	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/07/16 18:47	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			10/07/16 18:47	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/07/16 18:47	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			10/07/16 18:47	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/07/16 18:47	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/07/16 18:47	1
methyl isobutyl ketone	**6.1**		5.0	2.2	ug/L			10/07/16 18:47	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/07/16 18:47	1
Styrene	<1.0		1.0	0.39	ug/L			10/07/16 18:47	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/07/16 18:47	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/07/16 18:47	1
Toluene	**21**		0.50	0.15	ug/L			10/07/16 18:47	1
trans-1,2-Dichloroethene	**1.0**		1.0	0.35	ug/L			10/07/16 18:47	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/07/16 18:47	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/07/16 18:47	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/07/16 18:47	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/07/16 18:47	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/07/16 18:47	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/07/16 18:47	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/07/16 18:47	1
Vinyl chloride	**8.5**		0.50	0.20	ug/L			10/07/16 18:47	1
Xylenes, Total	**5.9**		1.0	0.22	ug/L			10/07/16 18:47	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-04-GW-10042016

Date Collected: 10/04/16 09:35
Date Received: 10/04/16 16:50

Lab Sample ID: 500-118070-2

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*71 - 120*		*10/07/16 18:47*	*1*
Dibromofluoromethane	*96*		*70 - 120*		*10/07/16 18:47*	*1*
1,2-Dichloroethane-d4 (Surr)	*87*		*71 - 127*		*10/07/16 18:47*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*10/07/16 18:47*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**530**		5.0	1.5	ug/L			10/07/16 19:14	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*71 - 120*		*10/07/16 19:14*	*10*
Dibromofluoromethane	*95*		*70 - 120*		*10/07/16 19:14*	*10*
1,2-Dichloroethane-d4 (Surr)	*89*		*71 - 127*		*10/07/16 19:14*	*10*
Toluene-d8 (Surr)	*102*		*75 - 120*		*10/07/16 19:14*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<3.6		3.6	1.1	ug/L		10/05/16 15:21	10/15/16 18:09	5
Acenaphthylene	<3.6		3.6	0.98	ug/L		10/05/16 15:21	10/15/16 18:09	5
Acetophenone	<18		18	2.4	ug/L		10/05/16 15:21	10/15/16 18:09	5
Anthracene	<3.6		3.6	1.2	ug/L		10/05/16 15:21	10/15/16 18:09	5
Benzo[a]anthracene	<0.73		0.73	0.21	ug/L		10/05/16 15:21	10/15/16 18:09	5
Benzo[a]pyrene	<0.73		0.73	0.36	ug/L		10/05/16 15:21	10/15/16 18:09	5
Benzo[b]fluoranthene	<0.73		0.73	0.29	ug/L		10/05/16 15:21	10/15/16 18:09	5
Benzo[g,h,i]perylene	<3.6		3.6	1.4	ug/L		10/05/16 15:21	10/15/16 18:09	5
Benzo[k]fluoranthene	<0.73		0.73	0.23	ug/L		10/05/16 15:21	10/15/16 18:09	5
Bis(2-chloroethoxy)methane	<7.3		7.3	1.0	ug/L		10/05/16 15:21	10/15/16 18:09	5
Bis(2-chloroethyl)ether	<7.3		7.3	1.1	ug/L		10/05/16 15:21	10/15/16 18:09	5
Bis(2-ethylhexyl) phthalate	<36		36	6.2	ug/L		10/05/16 15:21	10/15/16 18:09	5
4-Bromophenyl phenyl ether	<18		18	2.0	ug/L		10/05/16 15:21	10/15/16 18:09	5
Butyl benzyl phthalate	<7.3		7.3	1.8	ug/L		10/05/16 15:21	10/15/16 18:09	5
Carbazole	<18		18	1.3	ug/L		10/05/16 15:21	10/15/16 18:09	5
4-Chloroaniline	<36		36	7.3	ug/L		10/05/16 15:21	10/15/16 18:09	5
4-Chloro-3-methylphenol	<36		36	8.4	ug/L		10/05/16 15:21	10/15/16 18:09	5
2-Chloronaphthalene	<7.3		7.3	0.86	ug/L		10/05/16 15:21	10/15/16 18:09	5
2-Chlorophenol	<18		18	2.0	ug/L		10/05/16 15:21	10/15/16 18:09	5
4-Chlorophenyl phenyl ether	<18		18	2.3	ug/L		10/05/16 15:21	10/15/16 18:09	5
Chrysene	<1.8		1.8	0.25	ug/L		10/05/16 15:21	10/15/16 18:09	5
Dibenz(a,h)anthracene	<1.1		1.1	0.19	ug/L		10/05/16 15:21	10/15/16 18:09	5
Dibenzofuran	<7.3		7.3	0.96	ug/L		10/05/16 15:21	10/15/16 18:09	5
3,3'-Dichlorobenzidine	<18		18	6.2	ug/L		10/05/16 15:21	10/15/16 18:09	5
2,4-Dichlorophenol	<36		36	9.5	ug/L		10/05/16 15:21	10/15/16 18:09	5
Diethyl phthalate	<7.3		7.3	1.3	ug/L		10/05/16 15:21	10/15/16 18:09	5
2,4-Dimethylphenol	**17**	**J**	36	6.6	ug/L		10/05/16 15:21	10/15/16 18:09	5
Dimethyl phthalate	<7.3		7.3	1.1	ug/L		10/05/16 15:21	10/15/16 18:09	5
Di-n-butyl phthalate	<18		18	2.7	ug/L		10/05/16 15:21	10/15/16 18:09	5
4,6-Dinitro-2-methylphenol	<73		73	22	ug/L		10/05/16 15:21	10/15/16 18:09	5
2,4-Dinitrophenol	<73		73	31	ug/L		10/05/16 15:21	10/15/16 18:09	5
2,4-Dinitrotoluene	<3.6		3.6	0.89	ug/L		10/05/16 15:21	10/15/16 18:09	5
2,6-Dinitrotoluene	<3.6		3.6	0.27	ug/L		10/05/16 15:21	10/15/16 18:09	5
Di-n-octyl phthalate	<36		36	3.8	ug/L		10/05/16 15:21	10/15/16 18:09	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-04-GW-10042016

Date Collected: 10/04/16 09:35
Date Received: 10/04/16 16:50

Lab Sample ID: 500-118070-2

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<3.6		3.6	1.7	ug/L		10/05/16 15:21	10/15/16 18:09	5
Fluorene	<3.6		3.6	0.89	ug/L		10/05/16 15:21	10/15/16 18:09	5
Hexachlorobenzene	<1.8		1.8	0.29	ug/L		10/05/16 15:21	10/15/16 18:09	5
Hexachlorobutadiene	<18		18	1.9	ug/L		10/05/16 15:21	10/15/16 18:09	5
Hexachlorocyclopentadiene	<73		73	23	ug/L		10/05/16 15:21	10/15/16 18:09	5
Hexachloroethane	<18		18	2.2	ug/L		10/05/16 15:21	10/15/16 18:09	5
Indeno[1,2,3-cd]pyrene	<0.73		0.73	0.27	ug/L		10/05/16 15:21	10/15/16 18:09	5
Isophorone	<7.3		7.3	1.4	ug/L		10/05/16 15:21	10/15/16 18:09	5
2-Methylnaphthalene	<7.3		7.3	0.24	ug/L		10/05/16 15:21	10/15/16 18:09	5
2-Methylphenol	**5.5**	**J**	7.3	1.1	ug/L		10/05/16 15:21	10/15/16 18:09	5
3 & 4 Methylphenol	**2.1**	**J**	7.3	1.6	ug/L		10/05/16 15:21	10/15/16 18:09	5
Naphthalene	<3.6		3.6	1.1	ug/L		10/05/16 15:21	10/15/16 18:09	5
2-Nitroaniline	<18		18	4.7	ug/L		10/05/16 15:21	10/15/16 18:09	5
3-Nitroaniline	<36		36	6.5	ug/L		10/05/16 15:21	10/15/16 18:09	5
4-Nitroaniline	<36		36	6.1	ug/L		10/05/16 15:21	10/15/16 18:09	5
Nitrobenzene	<3.6		3.6	1.6	ug/L		10/05/16 15:21	10/15/16 18:09	5
2-Nitrophenol	<36		36	9.1	ug/L		10/05/16 15:21	10/15/16 18:09	5
4-Nitrophenol	<73		73	27	ug/L		10/05/16 15:21	10/15/16 18:09	5
N-Nitrosodi-n-propylamine	<1.8		1.8	0.56	ug/L		10/05/16 15:21	10/15/16 18:09	5
N-Nitrosodiphenylamine	<3.6		3.6	1.3	ug/L		10/05/16 15:21	10/15/16 18:09	5
2,2'-oxybis[1-chloropropane]	<7.3	UJ	7.3	1.4	ug/L		10/05/16 15:21	10/15/16 18:09	5
Pentachlorophenol	<73		73	14	ug/L		10/05/16 15:21	10/15/16 18:09	5
Phenanthrene	<3.6		3.6	1.1	ug/L		10/05/16 15:21	10/15/16 18:09	5
Phenol	<18		18	2.4	ug/L		10/05/16 15:21	10/15/16 18:09	5
Pyrene	<3.6		3.6	1.6	ug/L		10/05/16 15:21	10/15/16 18:09	5
2,4,5-Trichlorophenol	<36		36	9.3	ug/L		10/05/16 15:21	10/15/16 18:09	5
2,4,6-Trichlorophenol	<18		18	2.6	ug/L		10/05/16 15:21	10/15/16 18:09	5
Benzaldehyde	<150	~~J~~ UJ	150	55	ug/L		10/05/16 15:21	10/15/16 18:09	5
Caprolactam	<36		36	5.4	ug/L		10/05/16 15:21	10/15/16 18:09	5
Atrazine	<18		18	2.3	ug/L		10/05/16 15:21	10/15/16 18:09	5
1,1'-Biphenyl	<18		18	1.3	ug/L		10/05/16 15:21	10/15/16 18:09	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*77*		*30 - 123*	*10/05/16 15:21*	*10/15/16 18:09*	*5*
2-Fluorophenol (Surr)	*60*		*30 - 110*	*10/05/16 15:21*	*10/15/16 18:09*	*5*
Nitrobenzene-d5 (Surr)	*69*		*33 - 139*	*10/05/16 15:21*	*10/15/16 18:09*	*5*
Phenol-d5 (Surr)	*47*		*20 - 100*	*10/05/16 15:21*	*10/15/16 18:09*	*5*
Terphenyl-d14 (Surr)	*99*		*42 - 150*	*10/05/16 15:21*	*10/15/16 18:09*	*5*
2,4,6-Tribromophenol (Surr)	*120*		*30 - 150*	*10/05/16 15:21*	*10/15/16 18:09*	*5*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		10/05/16 07:55	10/06/16 11:34	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/05/16 07:55	10/06/16 11:34	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		10/05/16 07:55	10/06/16 11:34	1
beta-BHC	<0.037		0.037	0.0094	ug/L		10/05/16 07:55	10/06/16 11:34	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/06/16 11:34	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/05/16 07:55	10/06/16 11:34	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		10/05/16 07:55	10/06/16 11:34	1
delta-BHC	<0.037		0.037	0.0095	ug/L		10/05/16 07:55	10/06/16 11:34	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-04-GW-10042016

Date Collected: 10/04/16 09:35
Date Received: 10/04/16 16:50

Lab Sample ID: 500-118070-2

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/06/16 11:34	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/05/16 07:55	10/06/16 11:34	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/05/16 07:55	10/06/16 11:34	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/05/16 07:55	10/06/16 11:34	1
Endrin	<0.037		0.037	0.013	ug/L		10/05/16 07:55	10/06/16 11:34	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		10/05/16 07:55	10/06/16 11:34	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/05/16 07:55	10/06/16 11:34	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		10/05/16 07:55	10/06/16 11:34	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		10/05/16 07:55	10/06/16 11:34	1
Heptachlor	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/06/16 11:34	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/05/16 07:55	10/06/16 11:34	1
Methoxychlor	<0.074		0.074	0.021	ug/L		10/05/16 07:55	10/06/16 11:34	1
Toxaphene	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/06/16 11:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*105*		*30 - 143*	*10/05/16 07:55*	*10/06/16 11:34*	*1*
Tetrachloro-m-xylene	*483*	*X*	*30 - 120*	*10/05/16 07:55*	*10/06/16 11:34*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		10/05/16 07:55	10/06/16 14:26	1
PCB-1221	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/06/16 14:26	1
PCB-1232	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/06/16 14:26	1
PCB-1242	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/06/16 14:26	1
PCB-1248	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/06/16 14:26	1
PCB-1254	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/06/16 14:26	1
PCB-1260	<0.37		0.37	0.064	ug/L		10/05/16 07:55	10/06/16 14:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*73*		*30 - 127*	*10/05/16 07:55*	*10/06/16 14:26*	*1*
DCB Decachlorobiphenyl	*86*		*30 - 150*	*10/05/16 07:55*	*10/06/16 14:26*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 08:58	10/13/16 02:29	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 08:58	10/13/16 02:29	1
Arsenic	**0.0084**	**J**	0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:29	1
Barium	**0.058**		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:29	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 08:58	10/13/16 02:29	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 08:58	10/13/16 02:29	1
Calcium	**100**		0.20	0.059	mg/L		10/11/16 08:58	10/13/16 02:29	1
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 08:58	10/13/16 02:29	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 08:58	10/13/16 02:29	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:29	1
Iron	<0.20		0.20	0.10	mg/L		10/11/16 08:58	10/13/16 02:29	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 08:58	10/13/16 18:35	1
Magnesium	**27**		0.10	0.041	mg/L		10/11/16 08:58	10/13/16 02:29	1
Manganese	**0.32**		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:29	1
Nickel	<0.010		0.010	0.0037	mg/L		10/11/16 08:58	10/13/16 02:29	1
Potassium	**15**		0.50	0.16	mg/L		10/11/16 08:58	10/13/16 02:29	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-04-GW-10042016

Date Collected: 10/04/16 09:35
Date Received: 10/04/16 16:50

Lab Sample ID: 500-118070-2

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 08:58	10/13/16 02:29	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 08:58	10/13/16 02:29	1
Sodium	**340**	J	1.0	0.43	mg/L		10/11/16 08:58	10/13/16 02:29	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:29	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 08:58	10/13/16 02:29	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 08:58	10/13/16 02:29	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 08:58	10/13/16 02:34	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 08:58	10/13/16 02:34	1
Arsenic	**0.010**		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:34	1
Barium	**0.061**	J	0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:34	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 08:58	10/13/16 02:34	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 08:58	10/13/16 02:34	1
Calcium	**110**		0.20	0.059	mg/L		10/11/16 08:58	10/13/16 02:34	1
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 08:58	10/13/16 02:34	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 08:58	10/13/16 02:34	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:34	1
Iron	<0.20		0.20	0.10	mg/L		10/11/16 08:58	10/13/16 02:34	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 08:58	10/13/16 18:39	1
Magnesium	**29**	J	0.10	0.041	mg/L		10/11/16 08:58	10/13/16 02:34	1
Manganese	**0.33**		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:34	1
Nickel	<0.010		0.010	0.0037	mg/L		10/11/16 08:58	10/13/16 02:34	1
Potassium	**16**	J	0.50	0.16	mg/L		10/11/16 08:58	10/13/16 02:34	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 08:58	10/13/16 02:34	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 08:58	10/13/16 02:34	1
Sodium	**360**	J	1.0	0.43	mg/L		10/11/16 08:58	10/13/16 02:34	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:34	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 08:58	10/13/16 02:34	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 08:58	10/13/16 02:34	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:39	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**7.8**		1.0	0.18	mg/L			10/05/16 06:44	1
Sulfate	**210**	~~B~~	50	15	mg/L			10/07/16 08:35	10
Total Organic Carbon - Duplicates	**26**		2.0	0.53	mg/L			10/11/16 02:02	2
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/10/16 19:05	1
Total Suspended Solids	<5.0		5.0	2.5	mg/L			10/05/16 10:43	1
Ammonia	**9.8**		0.40	0.20	mg/L		10/12/16 11:30	10/13/16 09:43	2
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/05/16 12:43	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/13/16 23:56	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-05-GW-10042016

Lab Sample ID: 500-118070-3

Date Collected: 10/04/16 11:10
Matrix: Water
Date Received: 10/04/16 16:50

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**8.0**		5.0	1.7	ug/L			10/07/16 19:40	1
Benzene	**0.27**	**J**	0.50	0.15	ug/L			10/07/16 19:40	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/07/16 19:40	1
Bromoform	<1.0		1.0	0.48	ug/L			10/07/16 19:40	1
Bromomethane	<2.0		2.0	0.80	ug/L			10/07/16 19:40	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/07/16 19:40	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/07/16 19:40	1
Chlorobenzene	**4.3**		1.0	0.39	ug/L			10/07/16 19:40	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/07/16 19:40	1
Chloroform	<1.0		1.0	0.37	ug/L			10/07/16 19:40	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/07/16 19:40	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			10/07/16 19:40	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/07/16 19:40	1
Cyclohexane	**1.7**		1.0	0.49	ug/L			10/07/16 19:40	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/07/16 19:40	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			10/07/16 19:40	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/07/16 19:40	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			10/07/16 19:40	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/07/16 19:40	1
1,4-Dichlorobenzene	**1.9**		1.0	0.36	ug/L			10/07/16 19:40	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/07/16 19:40	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/07/16 19:40	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/07/16 19:40	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/07/16 19:40	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/07/16 19:40	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			10/07/16 19:40	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/07/16 19:40	1
Isopropylbenzene	**35**		1.0	0.39	ug/L			10/07/16 19:40	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/07/16 19:40	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			10/07/16 19:40	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/07/16 19:40	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/07/16 19:40	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			10/07/16 19:40	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/07/16 19:40	1
Styrene	<1.0		1.0	0.39	ug/L			10/07/16 19:40	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/07/16 19:40	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/07/16 19:40	1
Toluene	**1.0**		0.50	0.15	ug/L			10/07/16 19:40	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/07/16 19:40	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/07/16 19:40	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/07/16 19:40	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/07/16 19:40	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/07/16 19:40	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/07/16 19:40	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/07/16 19:40	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/07/16 19:40	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			10/07/16 19:40	1
Xylenes, Total	**0.75**	**J**	1.0	0.22	ug/L			10/07/16 19:40	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-05-GW-10042016

Lab Sample ID: 500-118070-3

Date Collected: 10/04/16 11:10
Matrix: Water
Date Received: 10/04/16 16:50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*		*10/07/16 19:40*	*1*
Dibromofluoromethane	*93*		*70 - 120*		*10/07/16 19:40*	*1*
1,2-Dichloroethane-d4 (Surr)	*89*		*71 - 127*		*10/07/16 19:40*	*1*
Toluene-d8 (Surr)	*96*		*75 - 120*		*10/07/16 19:40*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.74		0.74	0.23	ug/L		10/05/16 15:21	10/15/16 18:35	1
Acenaphthylene	<0.74		0.74	0.20	ug/L		10/05/16 15:21	10/15/16 18:35	1
Acetophenone	<3.7		3.7	0.49	ug/L		10/05/16 15:21	10/15/16 18:35	1
Anthracene	<0.74		0.74	0.25	ug/L		10/05/16 15:21	10/15/16 18:35	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		10/05/16 15:21	10/15/16 18:35	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		10/05/16 15:21	10/15/16 18:35	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		10/05/16 15:21	10/15/16 18:35	1
Benzo[g,h,i]perylene	<0.74		0.74	0.28	ug/L		10/05/16 15:21	10/15/16 18:35	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		10/05/16 15:21	10/15/16 18:35	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		10/05/16 15:21	10/15/16 18:35	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		10/05/16 15:21	10/15/16 18:35	1
Bis(2-ethylhexyl) phthalate	<7.4		7.4	1.3	ug/L		10/05/16 15:21	10/15/16 18:35	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		10/05/16 15:21	10/15/16 18:35	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		10/05/16 15:21	10/15/16 18:35	1
Carbazole	<3.7		3.7	0.26	ug/L		10/05/16 15:21	10/15/16 18:35	1
4-Chloroaniline	<7.4		7.4	1.5	ug/L		10/05/16 15:21	10/15/16 18:35	1
4-Chloro-3-methylphenol	<7.4		7.4	1.7	ug/L		10/05/16 15:21	10/15/16 18:35	1
2-Chloronaphthalene	**0.18**	**J**	1.5	0.17	ug/L		10/05/16 15:21	10/15/16 18:35	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		10/05/16 15:21	10/15/16 18:35	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		10/05/16 15:21	10/15/16 18:35	1
Chrysene	<0.37		0.37	0.050	ug/L		10/05/16 15:21	10/15/16 18:35	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		10/05/16 15:21	10/15/16 18:35	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		10/05/16 15:21	10/15/16 18:35	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		10/05/16 15:21	10/15/16 18:35	1
2,4-Dichlorophenol	<7.4		7.4	1.9	ug/L		10/05/16 15:21	10/15/16 18:35	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		10/05/16 15:21	10/15/16 18:35	1
2,4-Dimethylphenol	<7.4		7.4	1.3	ug/L		10/05/16 15:21	10/15/16 18:35	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		10/05/16 15:21	10/15/16 18:35	1
Di-n-butyl phthalate	<3.7		3.7	0.54	ug/L		10/05/16 15:21	10/15/16 18:35	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		10/05/16 15:21	10/15/16 18:35	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		10/05/16 15:21	10/15/16 18:35	1
2,4-Dinitrotoluene	<0.74		0.74	0.18	ug/L		10/05/16 15:21	10/15/16 18:35	1
2,6-Dinitrotoluene	<0.74		0.74	0.054	ug/L		10/05/16 15:21	10/15/16 18:35	1
Di-n-octyl phthalate	<7.4		7.4	0.77	ug/L		10/05/16 15:21	10/15/16 18:35	1
Fluoranthene	<0.74		0.74	0.33	ug/L		10/05/16 15:21	10/15/16 18:35	1
Fluorene	<0.74		0.74	0.18	ug/L		10/05/16 15:21	10/15/16 18:35	1
Hexachlorobenzene	<0.37		0.37	0.059	ug/L		10/05/16 15:21	10/15/16 18:35	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		10/05/16 15:21	10/15/16 18:35	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		10/05/16 15:21	10/15/16 18:35	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		10/05/16 15:21	10/15/16 18:35	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		10/05/16 15:21	10/15/16 18:35	1
Isophorone	<1.5		1.5	0.28	ug/L		10/05/16 15:21	10/15/16 18:35	1
2-Methylnaphthalene	< 1.5 ~~0.36~~	~~J B~~ UB	1.5	0.048	ug/L		10/05/16 15:21	10/15/16 18:35	1

Client Sample ID: MW-05-GW-10042016

Lab Sample ID: 500-118070-3

Date Collected: 10/04/16 11:10

Matrix: Water

Date Received: 10/04/16 16:50

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.22	ug/L		10/05/16 15:21	10/15/16 18:35	1
3 & 4 Methylphenol	<1.5		1.5	0.33	ug/L		10/05/16 15:21	10/15/16 18:35	1
Naphthalene	<0.74		0.74	0.23	ug/L		10/05/16 15:21	10/15/16 18:35	1
2-Nitroaniline	<3.7		3.7	0.95	ug/L		10/05/16 15:21	10/15/16 18:35	1
3-Nitroaniline	<7.4		7.4	1.3	ug/L		10/05/16 15:21	10/15/16 18:35	1
4-Nitroaniline	<7.4		7.4	1.2	ug/L		10/05/16 15:21	10/15/16 18:35	1
Nitrobenzene	<0.74		0.74	0.33	ug/L		10/05/16 15:21	10/15/16 18:35	1
2-Nitrophenol	<7.4		7.4	1.8	ug/L		10/05/16 15:21	10/15/16 18:35	1
4-Nitrophenol	<15		15	5.5	ug/L		10/05/16 15:21	10/15/16 18:35	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		10/05/16 15:21	10/15/16 18:35	1
N-Nitrosodiphenylamine	<0.74		0.74	0.27	ug/L		10/05/16 15:21	10/15/16 18:35	1
2,2'-oxybis[1-chloropropane]	<1.5	UJ	1.5	0.28	ug/L		10/05/16 15:21	10/15/16 18:35	1
Pentachlorophenol	<15		15	2.9	ug/L		10/05/16 15:21	10/15/16 18:35	1
Phenanthrene	<0.74		0.74	0.22	ug/L		10/05/16 15:21	10/15/16 18:35	1
Phenol	<3.7		3.7	0.50	ug/L		10/05/16 15:21	10/15/16 18:35	1
Pyrene	<0.74		0.74	0.31	ug/L		10/05/16 15:21	10/15/16 18:35	1
2,4,5-Trichlorophenol	<7.4		7.4	1.9	ug/L		10/05/16 15:21	10/15/16 18:35	1
2,4,6-Trichlorophenol	<3.7		3.7	0.53	ug/L		10/05/16 15:21	10/15/16 18:35	1
Benzaldehyde	<29	UJ	29	11	ug/L		10/05/16 15:21	10/15/16 18:35	1
Caprolactam	<7.4		7.4	1.1	ug/L		10/05/16 15:21	10/15/16 18:35	1
Atrazine	<3.7		3.7	0.46	ug/L		10/05/16 15:21	10/15/16 18:35	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		10/05/16 15:21	10/15/16 18:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*64*		*30 - 123*	*10/05/16 15:21*	*10/15/16 18:35*	*1*
2-Fluorophenol (Surr)	*50*		*30 - 110*	*10/05/16 15:21*	*10/15/16 18:35*	*1*
Nitrobenzene-d5 (Surr)	*58*		*33 - 139*	*10/05/16 15:21*	*10/15/16 18:35*	*1*
Phenol-d5 (Surr)	*36*		*20 - 100*	*10/05/16 15:21*	*10/15/16 18:35*	*1*
Terphenyl-d14 (Surr)	*86*		*42 - 150*	*10/05/16 15:21*	*10/15/16 18:35*	*1*
2,4,6-Tribromophenol (Surr)	*109*		*30 - 150*	*10/05/16 15:21*	*10/15/16 18:35*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		10/05/16 07:55	10/06/16 11:54	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/05/16 07:55	10/06/16 11:54	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		10/05/16 07:55	10/06/16 11:54	1
beta-BHC	<0.037		0.037	0.0094	ug/L		10/05/16 07:55	10/06/16 11:54	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/06/16 11:54	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/05/16 07:55	10/06/16 11:54	1
4,4'-DDT	<0.037		0.037	0.0030	ug/L		10/05/16 07:55	10/06/16 11:54	1
delta-BHC	<0.037		0.037	0.0095	ug/L		10/05/16 07:55	10/06/16 11:54	1
Dieldrin	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/06/16 11:54	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/05/16 07:55	10/06/16 11:54	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/05/16 07:55	10/06/16 11:54	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/05/16 07:55	10/06/16 11:54	1
Endrin	<0.037		0.037	0.013	ug/L		10/05/16 07:55	10/06/16 11:54	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		10/05/16 07:55	10/06/16 11:54	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/05/16 07:55	10/06/16 11:54	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		10/05/16 07:55	10/06/16 11:54	1
gamma-Chlordane	<0.037		0.037	0.0067	ug/L		10/05/16 07:55	10/06/16 11:54	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-05-GW-10042016

Lab Sample ID: 500-118070-3

Date Collected: 10/04/16 11:10
Matrix: Water
Date Received: 10/04/16 16:50

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.012	ug/L		10/05/16 07:55	10/06/16 11:54	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/05/16 07:55	10/06/16 11:54	1
Methoxychlor	<0.074		0.074	0.021	ug/L		10/05/16 07:55	10/06/16 11:54	1
Toxaphene	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/06/16 11:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*54*		*30 - 143*	*10/05/16 07:55*	*10/06/16 11:54*	*1*
Tetrachloro-m-xylene	*101*		*30 - 120*	*10/05/16 07:55*	*10/06/16 11:54*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		10/05/16 07:55	10/05/16 21:12	1
PCB-1221	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 21:12	1
PCB-1232	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 21:12	1
PCB-1242	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 21:12	1
PCB-1248	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 21:12	1
PCB-1254	<0.37		0.37	0.18	ug/L		10/05/16 07:55	10/05/16 21:12	1
PCB-1260	<0.37		0.37	0.065	ug/L		10/05/16 07:55	10/05/16 21:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*66*		*30 - 127*	*10/05/16 07:55*	*10/05/16 21:12*	*1*
DCB Decachlorobiphenyl	*63*		*30 - 150*	*10/05/16 07:55*	*10/05/16 21:12*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.28**		0.20	0.062	mg/L		10/11/16 08:58	10/13/16 02:38	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 08:58	10/13/16 02:38	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:38	1
Barium	**0.89**		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:38	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 08:58	10/13/16 02:38	1
Cadmium	**0.0013**	J	0.0020	0.00094	mg/L		10/11/16 08:58	10/13/16 02:38	1
Calcium	**70**		0.20	0.059	mg/L		10/11/16 08:58	10/13/16 02:38	1
Chromium	**0.0032**	J	0.010	0.0024	mg/L		10/11/16 08:58	10/13/16 02:38	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 08:58	10/13/16 02:38	1
Copper	~~**0.0054**~~	~~J~~ R	~~0.010~~	~~0.0022~~	~~mg/L~~		10/11/16 08:58	10/13/16 02:38	1
Iron	**18**		0.20	0.10	mg/L		10/11/16 08:58	10/13/16 02:38	1
Lead	**0.013**		0.0050	0.0025	mg/L		10/11/16 08:58	10/13/16 18:45	1
Magnesium	**80**		0.10	0.041	mg/L		10/11/16 08:58	10/13/16 02:38	1
Manganese	**0.057**		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:38	1
Nickel	**0.0044**	J	0.010	0.0037	mg/L		10/11/16 08:58	10/13/16 02:38	1
Potassium	**43**		0.50	0.16	mg/L		10/11/16 08:58	10/13/16 02:38	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 08:58	10/13/16 02:38	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 08:58	10/13/16 02:38	1
Sodium	**150**	J	1.0	0.43	mg/L		10/11/16 08:58	10/13/16 02:38	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:38	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 08:58	10/13/16 02:38	1
Zinc	**0.044**		0.020	0.0090	mg/L		10/11/16 08:58	10/13/16 02:38	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 08:58	10/13/16 02:50	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-05-GW-10042016

Date Collected: 10/04/16 11:10
Date Received: 10/04/16 16:50

Lab Sample ID: 500-118070-3

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 08:58	10/13/16 02:50	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:50	1
Barium	**0.97**	J	0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:50	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 08:58	10/13/16 02:50	1
Cadmium	**0.0014**	J	0.0020	0.00094	mg/L		10/11/16 08:58	10/13/16 02:50	1
Calcium	**76**		0.20	0.059	mg/L		10/11/16 08:58	10/13/16 02:50	1
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 08:58	10/13/16 02:50	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 08:58	10/13/16 02:50	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 08:58	10/13/16 02:50	1
Iron	**18**		0.20	0.10	mg/L		10/11/16 08:58	10/13/16 02:50	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 08:58	10/13/16 18:48	1
Magnesium	**88**	J	0.10	0.041	mg/L		10/11/16 08:58	10/13/16 02:50	1
Manganese	**0.053**		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:50	1
Nickel	<0.010		0.010	0.0037	mg/L		10/11/16 08:58	10/13/16 02:50	1
Potassium	**47**	J	0.50	0.16	mg/L		10/11/16 08:58	10/13/16 02:50	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 08:58	10/13/16 02:50	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 08:58	10/13/16 02:50	1
Sodium	**160**	J	1.0	0.43	mg/L		10/11/16 08:58	10/13/16 02:50	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 08:58	10/13/16 02:50	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 08:58	10/13/16 02:50	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 08:58	10/13/16 02:50	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:42	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			10/05/16 06:48	1
Sulfate	< 5.0 ~~3.4~~	~~J B~~ UB	5.0	1.5	mg/L			10/07/16 08:36	1
Total Organic Carbon - Duplicates	**20**	~~B~~	1.0	0.27	mg/L			10/07/16 03:07	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/10/16 19:05	1
Total Suspended Solids	**24**		5.0	2.5	mg/L			10/05/16 10:45	1
Ammonia	**50**		5.0	2.5	mg/L		10/12/16 11:30	10/13/16 09:46	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/05/16 12:43	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/13/16 23:58	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-07-GW-10042016

Lab Sample ID: 500-118070-4

Date Collected: 10/04/16 12:50
Date Received: 10/04/16 16:50

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**30**		5.0	1.7	ug/L			10/07/16 20:07	1
Benzene	**11**		0.50	0.15	ug/L			10/07/16 20:07	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/07/16 20:07	1
Bromoform	<1.0		1.0	0.48	ug/L			10/07/16 20:07	1
Bromomethane	<2.0		2.0	0.80	ug/L			10/07/16 20:07	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/07/16 20:07	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/07/16 20:07	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			10/07/16 20:07	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/07/16 20:07	1
Chloroform	<1.0		1.0	0.37	ug/L			10/07/16 20:07	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/07/16 20:07	1
cis-1,2-Dichloroethene	**7.2**		1.0	0.41	ug/L			10/07/16 20:07	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/07/16 20:07	1
Cyclohexane	<1.0		1.0	0.49	ug/L			10/07/16 20:07	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/07/16 20:07	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			10/07/16 20:07	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/07/16 20:07	1
1,2-Dichlorobenzene	**5.0**		1.0	0.33	ug/L			10/07/16 20:07	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/07/16 20:07	1
1,4-Dichlorobenzene	**16**		1.0	0.36	ug/L			10/07/16 20:07	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/07/16 20:07	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/07/16 20:07	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/07/16 20:07	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/07/16 20:07	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/07/16 20:07	1
Ethylbenzene	**130**		0.50	0.18	ug/L			10/07/16 20:07	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/07/16 20:07	1
Isopropylbenzene	**8.6**		1.0	0.39	ug/L			10/07/16 20:07	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/07/16 20:07	1
Methylcyclohexane	**0.94**	**J**	1.0	0.32	ug/L			10/07/16 20:07	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/07/16 20:07	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/07/16 20:07	1
methyl isobutyl ketone	**69**		5.0	2.2	ug/L			10/07/16 20:07	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/07/16 20:07	1
Styrene	<1.0		1.0	0.39	ug/L			10/07/16 20:07	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/07/16 20:07	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/07/16 20:07	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/07/16 20:07	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/07/16 20:07	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/07/16 20:07	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/07/16 20:07	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/07/16 20:07	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/07/16 20:07	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/07/16 20:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/07/16 20:07	1
Vinyl chloride	**11**		0.50	0.20	ug/L			10/07/16 20:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*71 - 120*		*10/07/16 20:07*	*1*

Client Sample ID: MW-07-GW-10042016

Lab Sample ID: 500-118070-4

Date Collected: 10/04/16 12:50
Matrix: Water
Date Received: 10/04/16 16:50

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*95*		*70 - 120*		*10/07/16 20:07*	*1*
1,2-Dichloroethane-d4 (Surr)	*90*		*71 - 127*		*10/07/16 20:07*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*10/07/16 20:07*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**310**		5.0	1.5	ug/L			10/07/16 20:34	10
Xylenes, Total	**560**		10	2.2	ug/L			10/07/16 20:34	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*92*		*71 - 120*		*10/07/16 20:34*	*10*
Dibromofluoromethane	*97*		*70 - 120*		*10/07/16 20:34*	*10*
1,2-Dichloroethane-d4 (Surr)	*90*		*71 - 127*		*10/07/16 20:34*	*10*
Toluene-d8 (Surr)	*95*		*75 - 120*		*10/07/16 20:34*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<7.3		7.3	2.3	ug/L		10/05/16 15:21	10/10/16 19:42	10
Acenaphthylene	<7.3		7.3	2.0	ug/L		10/05/16 15:21	10/10/16 19:42	10
Acetophenone	**17**	**J**	37	4.9	ug/L		10/05/16 15:21	10/10/16 19:42	10
Anthracene	<7.3		7.3	2.4	ug/L		10/05/16 15:21	10/10/16 19:42	10
Benzo[a]anthracene	<1.5		1.5	0.41	ug/L		10/05/16 15:21	10/10/16 19:42	10
Benzo[a]pyrene	**1.1**	**J**	1.5	0.72	ug/L		10/05/16 15:21	10/10/16 19:42	10
Benzo[b]fluoranthene	**1.5**		1.5	0.59	ug/L		10/05/16 15:21	10/10/16 19:42	10
Benzo[g,h,i]perylene	<7.3		7.3	2.7	ug/L		10/05/16 15:21	10/10/16 19:42	10
Benzo[k]fluoranthene	**0.62**	**J**	1.5	0.47	ug/L		10/05/16 15:21	10/10/16 19:42	10
Bis(2-chloroethoxy)methane	<15		15	2.1	ug/L		10/05/16 15:21	10/10/16 19:42	10
Bis(2-chloroethyl)ether	<15		15	2.1	ug/L		10/05/16 15:21	10/10/16 19:42	10
Bis(2-ethylhexyl) phthalate	**210**		73	13	ug/L		10/05/16 15:21	10/10/16 19:42	10
4-Bromophenyl phenyl ether	<37		37	4.0	ug/L		10/05/16 15:21	10/10/16 19:42	10
Butyl benzyl phthalate	<15		15	3.5	ug/L		10/05/16 15:21	10/10/16 19:42	10
Carbazole	**4.2**	**J**	37	2.6	ug/L		10/05/16 15:21	10/10/16 19:42	10
4-Chloroaniline	<73		73	15	ug/L		10/05/16 15:21	10/10/16 19:42	10
4-Chloro-3-methylphenol	<73		73	17	ug/L		10/05/16 15:21	10/10/16 19:42	10
2-Chloronaphthalene	<15		15	1.7	ug/L		10/05/16 15:21	10/10/16 19:42	10
2-Chlorophenol	<37		37	4.1	ug/L		10/05/16 15:21	10/10/16 19:42	10
4-Chlorophenyl phenyl ether	<37		37	4.6	ug/L		10/05/16 15:21	10/10/16 19:42	10
Chrysene	**1.8**	**J**	3.7	0.50	ug/L		10/05/16 15:21	10/10/16 19:42	10
Dibenz(a,h)anthracene	<2.2		2.2	0.37	ug/L		10/05/16 15:21	10/10/16 19:42	10
Dibenzofuran	<15		15	1.9	ug/L		10/05/16 15:21	10/10/16 19:42	10
3,3'-Dichlorobenzidine	<37		37	13	ug/L		10/05/16 15:21	10/10/16 19:42	10
2,4-Dichlorophenol	<73		73	19	ug/L		10/05/16 15:21	10/10/16 19:42	10
Diethyl phthalate	<15		15	2.6	ug/L		10/05/16 15:21	10/10/16 19:42	10
2,4-Dimethylphenol	**320**		73	13	ug/L		10/05/16 15:21	10/10/16 19:42	10
Dimethyl phthalate	<15		15	2.3	ug/L		10/05/16 15:21	10/10/16 19:42	10
Di-n-butyl phthalate	<37		37	5.3	ug/L		10/05/16 15:21	10/10/16 19:42	10
4,6-Dinitro-2-methylphenol	<150		150	43	ug/L		10/05/16 15:21	10/10/16 19:42	10
2,4-Dinitrophenol	<150		150	63	ug/L		10/05/16 15:21	10/10/16 19:42	10
2,4-Dinitrotoluene	<7.3		7.3	1.8	ug/L		10/05/16 15:21	10/10/16 19:42	10
2,6-Dinitrotoluene	<7.3		7.3	0.54	ug/L		10/05/16 15:21	10/10/16 19:42	10

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-07-GW-10042016

Date Collected: 10/04/16 12:50
Date Received: 10/04/16 16:50

Lab Sample ID: 500-118070-4
Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	<73		73	7.7	ug/L		10/05/16 15:21	10/10/16 19:42	10
Fluoranthene	**5.4**	**J**	7.3	3.3	ug/L		10/05/16 15:21	10/10/16 19:42	10
Fluorene	<7.3		7.3	1.8	ug/L		10/05/16 15:21	10/10/16 19:42	10
Hexachlorobenzene	<3.7		3.7	0.58	ug/L		10/05/16 15:21	10/10/16 19:42	10
Hexachlorobutadiene	<37		37	3.8	ug/L		10/05/16 15:21	10/10/16 19:42	10
Hexachlorocyclopentadiene	<150	UJ	150	47	ug/L		10/05/16 15:21	10/10/16 19:42	10
Hexachloroethane	<37		37	4.4	ug/L		10/05/16 15:21	10/10/16 19:42	10
Indeno[1,2,3-cd]pyrene	<1.5		1.5	0.55	ug/L		10/05/16 15:21	10/10/16 19:42	10
Isophorone	<15		15	2.7	ug/L		10/05/16 15:21	10/10/16 19:42	10
2-Methylnaphthalene	**5.6**	**J ~~B~~**	15	0.48	ug/L		10/05/16 15:21	10/10/16 19:42	10
2-Methylphenol	**88**		15	2.2	ug/L		10/05/16 15:21	10/10/16 19:42	10
3 & 4 Methylphenol	**290**		15	3.3	ug/L		10/05/16 15:21	10/10/16 19:42	10
Naphthalene	**35**	**~~B~~**	7.3	2.3	ug/L		10/05/16 15:21	10/10/16 19:42	10
2-Nitroaniline	<37		37	9.4	ug/L		10/05/16 15:21	10/10/16 19:42	10
3-Nitroaniline	<73		73	13	ug/L		10/05/16 15:21	10/10/16 19:42	10
4-Nitroaniline	<73		73	12	ug/L		10/05/16 15:21	10/10/16 19:42	10
Nitrobenzene	<7.3		7.3	3.3	ug/L		10/05/16 15:21	10/10/16 19:42	10
2-Nitrophenol	<73		73	18	ug/L		10/05/16 15:21	10/10/16 19:42	10
4-Nitrophenol	<150		150	54	ug/L		10/05/16 15:21	10/10/16 19:42	10
N-Nitrosodi-n-propylamine	<3.7		3.7	1.1	ug/L		10/05/16 15:21	10/10/16 19:42	10
N-Nitrosodiphenylamine	**5.4**	**J**	7.3	2.7	ug/L		10/05/16 15:21	10/10/16 19:42	10
2,2'-oxybis[1-chloropropane]	<15		15	2.8	ug/L		10/05/16 15:21	10/10/16 19:42	10
Pentachlorophenol	<150	UJ	150	29	ug/L		10/05/16 15:21	10/10/16 19:42	10
Phenanthrene	**8.7**		7.3	2.2	ug/L		10/05/16 15:21	10/10/16 19:42	10
Phenol	<37		37	4.9	ug/L		10/05/16 15:21	10/10/16 19:42	10
Pyrene	**5.3**	**J**	7.3	3.1	ug/L		10/05/16 15:21	10/10/16 19:42	10
2,4,5-Trichlorophenol	<73		73	19	ug/L		10/05/16 15:21	10/10/16 19:42	10
2,4,6-Trichlorophenol	<37		37	5.2	ug/L		10/05/16 15:21	10/10/16 19:42	10
Benzaldehyde	<290	UJ	290	110	ug/L		10/05/16 15:21	10/10/16 19:42	10
Caprolactam	<73		73	11	ug/L		10/05/16 15:21	10/10/16 19:42	10
Atrazine	<37		37	4.6	ug/L		10/05/16 15:21	10/10/16 19:42	10
1,1'-Biphenyl	<37		37	2.7	ug/L		10/05/16 15:21	10/10/16 19:42	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*56*		*30 - 123*	*10/05/16 15:21*	*10/10/16 19:42*	*10*
2-Fluorophenol (Surr)	*79*		*30 - 110*	*10/05/16 15:21*	*10/10/16 19:42*	*10*
Nitrobenzene-d5 (Surr)	*80*		*33 - 139*	*10/05/16 15:21*	*10/10/16 19:42*	*10*
Phenol-d5 (Surr)	*66*		*20 - 100*	*10/05/16 15:21*	*10/10/16 19:42*	*10*
Terphenyl-d14 (Surr)	*80*		*42 - 150*	*10/05/16 15:21*	*10/10/16 19:42*	*10*
2,4,6-Tribromophenol (Surr)	*74*		*30 - 150*	*10/05/16 15:21*	*10/10/16 19:42*	*10*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.19	UJ	0.19	0.025	ug/L		10/05/16 07:55	10/06/16 12:13	5
alpha-BHC	<0.19		0.19	0.012	ug/L		10/05/16 07:55	10/06/16 12:13	5
alpha-Chlordane	<0.19		0.19	0.020	ug/L		10/05/16 07:55	10/06/16 12:13	5
beta-BHC	<0.19		0.19	0.047	ug/L		10/05/16 07:55	10/06/16 12:13	5
4,4'-DDD	<0.19		0.19	0.062	ug/L		10/05/16 07:55	10/06/16 12:13	5
4,4'-DDE	<0.19		0.19	0.018	ug/L		10/05/16 07:55	10/06/16 12:13	5
4,4'-DDT	<0.19		0.19	0.015	ug/L		10/05/16 07:55	10/06/16 12:13	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-07-GW-10042016

Date Collected: 10/04/16 12:50
Date Received: 10/04/16 16:50

Lab Sample ID: 500-118070-4

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
delta-BHC	<0.19	UJ	0.19	0.048	ug/L		10/05/16 07:55	10/06/16 12:13	5
Dieldrin	<0.19		0.19	0.060	ug/L		10/05/16 07:55	10/06/16 12:13	5
Endosulfan I	<0.19		0.19	0.019	ug/L		10/05/16 07:55	10/06/16 12:13	5
Endosulfan II	<0.19		0.19	0.013	ug/L		10/05/16 07:55	10/06/16 12:13	5
Endosulfan sulfate	<0.19		0.19	0.054	ug/L		10/05/16 07:55	10/06/16 12:13	5
Endrin	<0.19		0.19	0.066	ug/L		10/05/16 07:55	10/06/16 12:13	5
Endrin aldehyde	<0.19		0.19	0.038	ug/L		10/05/16 07:55	10/06/16 12:13	5
Endrin ketone	<0.19		0.19	0.079	ug/L		10/05/16 07:55	10/06/16 12:13	5
gamma-BHC (Lindane)	<0.19		0.19	0.026	ug/L		10/05/16 07:55	10/06/16 12:13	5
gamma-Chlordane	<0.19		0.19	0.034	ug/L		10/05/16 07:55	10/06/16 12:13	5
Heptachlor	<0.19		0.19	0.063	ug/L		10/05/16 07:55	10/06/16 12:13	5
Heptachlor epoxide	<0.19		0.19	0.064	ug/L		10/05/16 07:55	10/06/16 12:13	5
Methoxychlor	<0.37		0.37	0.11	ug/L		10/05/16 07:55	10/06/16 12:13	5
Toxaphene	<1.9		1.9	0.93	ug/L		10/05/16 07:55	10/06/16 12:13	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*24*	*X*	*30 - 143*	*10/05/16 07:55*	*10/06/16 12:13*	*5*
Tetrachloro-m-xylene	*129*	*X*	*30 - 120*	*10/05/16 07:55*	*10/06/16 12:13*	*5*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
~~PCB-1016~~	~~<0.37~~		~~0.37~~	~~0.061~~	~~ug/L~~		10/07/16 10:20	10/10/16 13:11	1
PCB-1016	<0.37		0.37	0.061	ug/L		10/07/16 10:20	10/10/16 13:11	1
~~PCB-1221~~	~~<0.37~~		~~0.37~~	~~0.18~~	~~ug/L~~		10/07/16 10:20	10/10/16 13:11	1
PCB-1221	<0.37		0.37	0.18	ug/L		10/07/16 10:20	10/10/16 13:11	1
~~PCB-1232~~	~~<0.37~~		~~0.37~~	~~0.18~~	~~ug/L~~		10/07/16 10:20	10/10/16 13:11	1
PCB-1232	<0.37		0.37	0.18	ug/L		10/07/16 10:20	10/10/16 13:11	1
~~**PCB-1242**~~	~~**2.7**~~		~~0.37~~	~~0.18~~	~~ug/L~~		10/07/16 10:20	10/10/16 13:11	1
PCB-1242	**3.0**		0.37	0.18	ug/L		10/07/16 10:20	10/10/16 13:11	1
~~**PCB-1248**~~	~~**2.5**~~		~~0.37~~	~~0.18~~	~~ug/L~~		10/07/16 10:20	10/10/16 13:11	1
PCB-1248	**3.5**		0.37	0.18	ug/L		10/07/16 10:20	10/10/16 13:11	1
~~**PCB-1254**~~	~~**1.6**~~		~~0.37~~	~~0.18~~	~~ug/L~~		10/07/16 10:20	10/10/16 13:11	1
PCB-1254	**2.4**		0.37	0.18	ug/L		10/07/16 10:20	10/10/16 13:11	1
~~PCB-1260~~	~~<0.37~~		~~0.37~~	~~0.064~~	~~ug/L~~		10/07/16 10:20	10/10/16 13:11	1
PCB-1260	<0.37		0.37	0.064	ug/L		10/07/16 10:20	10/10/16 13:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*15*	*X*	*30 - 127*	*10/07/16 10:20*	*10/10/16 13:11*	*1*
Tetrachloro-m-xylene	*19*	*X*	*30 - 127*	*10/07/16 10:20*	*10/10/16 13:11*	*1*
DCB Decachlorobiphenyl	*37*		*30 - 150*	*10/07/16 10:20*	*10/10/16 13:11*	*1*
DCB Decachlorobiphenyl	*55*		*30 - 150*	*10/07/16 10:20*	*10/10/16 13:11*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1.7**		1.0	0.31	mg/L		10/11/16 08:58	10/13/16 02:54	1
Antimony	<0.10		0.10	0.032	mg/L		10/11/16 08:58	10/13/16 02:54	1
Arsenic	**0.050**		0.050	0.017	mg/L		10/11/16 08:58	10/13/16 02:54	1
Barium	**0.63**		0.050	0.011	mg/L		10/11/16 08:58	10/13/16 02:54	1
Beryllium	<0.020		0.020	0.0043	mg/L		10/11/16 08:58	10/13/16 02:54	1
Cadmium	**0.0078**	**J**	0.010	0.0047	mg/L		10/11/16 08:58	10/13/16 02:54	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-07-GW-10042016

Date Collected: 10/04/16 12:50
Date Received: 10/04/16 16:50

Lab Sample ID: 500-118070-4

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	11		1.0	0.30	mg/L		10/11/16 08:58	10/13/16 02:54	1
Chromium	0.50		0.050	0.012	mg/L		10/11/16 08:58	10/13/16 02:54	1
Cobalt	0.040		0.025	0.0048	mg/L		10/11/16 08:58	10/13/16 02:54	1
Copper	~~0.082~~	R	~~0.050~~	~~0.011~~	~~mg/L~~		10/11/16 08:58	10/13/16 02:54	1
Iron	5.2		1.0	0.50	mg/L		10/11/16 08:58	10/13/16 02:54	1
Lead	0.71		0.025	0.013	mg/L		10/11/16 08:58	10/13/16 18:51	1
Magnesium	25		0.50	0.20	mg/L		10/11/16 08:58	10/13/16 02:54	1
Manganese	0.017	J	0.050	0.017	mg/L		10/11/16 08:58	10/13/16 02:54	1
Nickel	0.15		0.050	0.018	mg/L		10/11/16 08:58	10/13/16 02:54	1
Potassium	680		2.5	0.81	mg/L		10/11/16 08:58	10/13/16 02:54	1
Selenium	<0.050		0.050	0.026	mg/L		10/11/16 08:58	10/13/16 02:54	1
Silver	<0.025		0.025	0.0066	mg/L		10/11/16 08:58	10/13/16 02:54	1
Sodium	3400	~~V~~ J	5.0	2.2	mg/L		10/11/16 08:58	10/13/16 02:54	1
Thallium	<0.050		0.050	0.017	mg/L		10/11/16 08:58	10/13/16 02:54	1
Vanadium	0.081		0.025	0.0093	mg/L		10/11/16 08:58	10/13/16 02:54	1
Zinc	1.1		0.10	0.045	mg/L		10/11/16 08:58	10/13/16 02:54	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	1.4		1.0	0.31	mg/L		10/11/16 08:58	10/13/16 03:02	1
Antimony	<0.10		0.10	0.032	mg/L		10/11/16 08:58	10/13/16 03:02	1
Arsenic	0.038	J	0.050	0.017	mg/L		10/11/16 08:58	10/13/16 03:02	1
Barium	0.60	~~V~~ J	0.050	0.011	mg/L		10/11/16 08:58	10/13/16 03:02	1
Beryllium	<0.020		0.020	0.0043	mg/L		10/11/16 08:58	10/13/16 03:02	1
Cadmium	0.0061	J	0.010	0.0047	mg/L		10/11/16 08:58	10/13/16 03:02	1
Calcium	11		1.0	0.30	mg/L		10/11/16 08:58	10/13/16 03:02	1
Chromium	0.48		0.050	0.012	mg/L		10/11/16 08:58	10/13/16 03:02	1
Cobalt	0.040		0.025	0.0048	mg/L		10/11/16 08:58	10/13/16 03:02	1
Copper	~~0.048~~	~~J~~ R	~~0.050~~	~~0.011~~	~~mg/L~~		10/11/16 08:58	10/13/16 03:02	1
Iron	5.1		1.0	0.50	mg/L		10/11/16 08:58	10/13/16 03:02	1
Lead	0.32		0.025	0.013	mg/L		10/11/16 08:58	10/13/16 18:59	1
Magnesium	25	~~V~~ J	0.50	0.20	mg/L		10/11/16 08:58	10/13/16 03:02	1
Manganese	<0.050		0.050	0.017	mg/L		10/11/16 08:58	10/13/16 03:02	1
Nickel	0.16		0.050	0.018	mg/L		10/11/16 08:58	10/13/16 03:02	1
Potassium	700	~~V~~ J	2.5	0.81	mg/L		10/11/16 08:58	10/13/16 03:02	1
Selenium	<0.050		0.050	0.026	mg/L		10/11/16 08:58	10/13/16 03:02	1
Silver	<0.025		0.025	0.0066	mg/L		10/11/16 08:58	10/13/16 03:02	1
Sodium	3500	~~V~~ J	5.0	2.2	mg/L		10/11/16 08:58	10/13/16 03:02	1
Thallium	<0.050		0.050	0.017	mg/L		10/11/16 08:58	10/13/16 03:02	1
Vanadium	0.076		0.025	0.0093	mg/L		10/11/16 08:58	10/13/16 03:02	1
Zinc	0.65		0.10	0.045	mg/L		10/11/16 08:58	10/13/16 03:02	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.0011		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:44	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.00051		0.00020	0.00011	mg/L		10/07/16 13:30	10/08/16 09:46	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118070-1

Client Sample ID: MW-07-GW-10042016

Lab Sample ID: 500-118070-4

Date Collected: 10/04/16 12:50
Date Received: 10/04/16 16:50

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**9.1**		1.0	0.18	mg/L			10/05/16 06:52	1
Sulfate	<50		50	15	mg/L			10/07/16 08:39	10
Total Organic Carbon - Duplicates	**540**	~~B~~	20	5.3	mg/L			10/07/16 20:02	20
Nitrogen, Nitrate	**0.10**		0.10	0.035	mg/L			10/10/16 19:05	1
Total Suspended Solids	**7.5**		5.0	2.5	mg/L			10/05/16 10:46	1
Ammonia	**710**		40	20	mg/L		10/12/16 11:30	10/13/16 09:49	100
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/05/16 12:44	1
Nitrogen, Nitrate Nitrite	**0.10**		0.10	0.035	mg/L			10/14/16 00:00	1

TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Phone (708) 534-5200 Fax (708) 534-5211

20509

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

10/17/2016

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hargraves, Therese M	Carrier Tracking No(s):	COC No: 500-78836.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: therese.hargraves@testamericainc.com		Page: Page 1 of 1
Company: Pace Analytical Services, Inc.				Job #: 500-118070-2
Address: 220 William Pitt Way, ,	Due Date Requested: 10/14/2016			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-826-5245(Tel)	PO #:			
Email:	WO #:			
Project Name: Lake Calumet Cluster Site	Project #: 50011099			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-03-GW-10042016 (500-118070-1)	10/4/16	08:10 Central		Water			X	2	
MW-04-GW-10042016 (500-118070-2)	10/4/16	09:35 Central		Water			X	2	
MW-05-GW-10042016 (500-118070-3)	10/4/16	11:10 Central		Water			X	2	
MW-07-GW-10042016 (500-118070-4)	10/4/16	12:50 Central		Water			X	2	

Possible Hazard Identification
Unconfirmed 2-7°C

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:		
Relinquished by:	Date/Time: 10/05/16 1530	Company TA	Received by:	Date/Time: 10.6.16 1115	Company Pitzer
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20509 500-118070-2

Lab ID: 205090001 Date Received: 10/6/2016 11:15 Matrix: Water
Sample ID: MW-03-GW-10042016 Date Collected: 10/4/2016 08:10

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	16000	ug/l	0.50	0.027	1	10/12/2016 12:55	TD	n
Carbon Dioxide	30	mg/l	5.0	0.24	1	10/12/2016 12:55	TD	n
Oxygen	3.4	mg/l	0.50	0.13	1	10/12/2016 12:55	TD	n
Nitrogen	9.1	mg/l	2.0	0.24	1	10/12/2016 12:55	TD	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20509 500-118070-2

Lab ID: 205090002 Date Received: 10/6/2016 11:15 Matrix: Water
Sample ID: MW-04-GW-10042016 Date Collected: 10/4/2016 09:35

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	13000	ug/l	0.50	0.027	1	10/12/2016 13:07	TD	n
Carbon Dioxide	<5.0	mg/l	5.0	0.24	1	10/12/2016 13:07	TD	n
Oxygen	<0.50	mg/l	0.50	0.13	1	10/12/2016 13:07	TD	n
Nitrogen	8.6	mg/l	2.0	0.24	1	10/12/2016 13:07	TD	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20509 500-118070-2

Lab ID: 205090003 Date Received: 10/6/2016 11:15 Matrix: Water
Sample ID: MW-05-GW-10042016 Date Collected: 10/4/2016 11:10

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	10000	ug/l	0.50	0.027	1	10/12/2016 13:20	TD	n
Carbon Dioxide	270	mg/l	5.0	0.24	1	10/12/2016 13:20	TD	n
Oxygen	2.3	mg/l	0.50	0.13	1	10/12/2016 13:20	TD	n
Nitrogen	8.1	mg/l	2.0	0.24	1	10/12/2016 13:20	TD	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20509 500-118070-2

Lab ID: 205090004 Date Received: 10/6/2016 11:15 Matrix: Water
Sample ID: MW-07-GW-10042016 Date Collected: 10/4/2016 12:50

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	19000	ug/l	0.50	0.027	1	10/12/2016 13:32	TD	n
Carbon Dioxide	38	mg/l	5.0	0.24	1	10/12/2016 13:32	TD	n
Oxygen	1.1	mg/l	0.50	0.13	1	10/12/2016 13:32	TD	n
Nitrogen	6.6	mg/l	2.0	0.24	1	10/12/2016 13:32	TD	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

TestAmerica

THE LEADER IN ENVIRONMENTAL

2417 Bond Street, University Park, IL 60
Phone: 708.534.5200 Fax: 708.534

500-118151 COC

Chain of Custody Record

Lab Job #: 500-118151

Chain of Custody Number:

Page _____ of _____

Temperature °C of Cooler: 2.7/3.1/2.6

Report To (optional)
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 120 S. La Salle St Ste 850
Address: Chicago, IL 60603
Phone: 312-575-3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis.com

Bill To (optional)
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Client: Arcadis
Client Project #: CI001805.0001.00003
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: R. Thornhatter
Lab PM: Therese Margraves

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOCs, PCBs, Pesticides (8)	Total metals (3)	Dissolved metals (3)	Ammonia, NO_3, NO_2 (6)	Sulfide (5)	VOCs (1)	TOC (2)	TSS, SO_4, NO_2 (8)	Dissolved Gas (9)	Comments
1		MW-13-GW-10042016	10/4/16	1515	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	-Diss Metals
2		Dup-1 (10042016)	10/4/16	—	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	field filtered
3		MW-08-GW-10052016	10/5/16	1205	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
4		MW-09-GW-10052016	10/5/16	1335	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
5		MW-06-GW-10052016	10/5/16	0840	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	-MW-6 Highly
6		Dup-2 (10052016)	10/5/16	—	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	reactive with preservative
																for TOC & VOC vials
																unable to remove
																bubbles

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date: Standard

Sample Disposal
[ ] Return to Client [X] Disposal by Lab [ ] Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	Arcadis	10/5/16	1555	David Belen	TA	10/5/16	15:55
David Belen	TA	10/5/16	1635	[signature]	TA-CHI	10/6/16	0715

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

TAL-4124-500 (1209)

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-13-GW-10042016

Lab Sample ID: 500-118151-1

Date Collected: 10/04/16 15:15
Matrix: Water
Date Received: 10/05/16 16:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<50		50	17	ug/L			10/11/16 22:11	10
Benzene	**400**		5.0	1.5	ug/L			10/11/16 22:11	10
Bromodichloromethane	<10		10	3.7	ug/L			10/11/16 22:11	10
Bromoform	<10		10	4.8	ug/L			10/11/16 22:11	10
Bromomethane	<20	UJ	20	8.0	ug/L			10/11/16 22:11	10
Carbon disulfide	<20		20	4.5	ug/L			10/11/16 22:11	10
Carbon tetrachloride	<10		10	3.8	ug/L			10/11/16 22:11	10
Chlorobenzene	<10		10	3.9	ug/L			10/11/16 22:11	10
Chloroethane	<10		10	5.1	ug/L			10/11/16 22:11	10
Chloroform	<10		10	3.7	ug/L			10/11/16 22:11	10
Chloromethane	<10		10	3.2	ug/L			10/11/16 22:11	10
cis-1,2-Dichloroethene	**19**		10	4.1	ug/L			10/11/16 22:11	10
cis-1,3-Dichloropropene	<10		10	4.2	ug/L			10/11/16 22:11	10
Cyclohexane	<10		10	4.9	ug/L			10/11/16 22:11	10
Dibromochloromethane	<10		10	4.9	ug/L			10/11/16 22:11	10
1,2-Dibromo-3-Chloropropane	<50	UJ	50	20	ug/L			10/11/16 22:11	10
1,2-Dibromoethane	<10		10	3.9	ug/L			10/11/16 22:11	10
1,2-Dichlorobenzene	**12**		10	3.3	ug/L			10/11/16 22:11	10
1,3-Dichlorobenzene	<10		10	4.0	ug/L			10/11/16 22:11	10
1,4-Dichlorobenzene	<10		10	3.6	ug/L			10/11/16 22:11	10
Dichlorodifluoromethane	<20		20	6.7	ug/L			10/11/16 22:11	10
1,1-Dichloroethane	<10		10	4.1	ug/L			10/11/16 22:11	10
1,2-Dichloroethane	<10		10	3.9	ug/L			10/11/16 22:11	10
1,1-Dichloroethene	<10		10	3.9	ug/L			10/11/16 22:11	10
1,2-Dichloropropane	<10		10	4.3	ug/L			10/11/16 22:11	10
Ethylbenzene	**1000**		5.0	1.8	ug/L			10/11/16 22:11	10
2-Hexanone	<50		50	16	ug/L			10/11/16 22:11	10
Isopropylbenzene	**110**		10	3.9	ug/L			10/11/16 22:11	10
Methyl acetate	<50		50	20	ug/L			10/11/16 22:11	10
Methylcyclohexane	<10		10	3.2	ug/L			10/11/16 22:11	10
Methylene Chloride	<50		50	16	ug/L			10/11/16 22:11	10
Methyl Ethyl Ketone	<50		50	21	ug/L			10/11/16 22:11	10
methyl isobutyl ketone	<50		50	22	ug/L			10/11/16 22:11	10
Methyl tert-butyl ether	<10		10	3.9	ug/L			10/11/16 22:11	10
Styrene	<10		10	3.9	ug/L			10/11/16 22:11	10
1,1,2,2-Tetrachloroethane	<10		10	4.0	ug/L			10/11/16 22:11	10
Tetrachloroethene	<10		10	3.7	ug/L			10/11/16 22:11	10
Toluene	**1700**		5.0	1.5	ug/L			10/11/16 22:11	10
trans-1,2-Dichloroethene	<10		10	3.5	ug/L			10/11/16 22:11	10
trans-1,3-Dichloropropene	<10		10	3.6	ug/L			10/11/16 22:11	10
1,2,4-Trichlorobenzene	<10		10	3.4	ug/L			10/11/16 22:11	10
1,1,1-Trichloroethane	<10		10	3.8	ug/L			10/11/16 22:11	10
1,1,2-Trichloroethane	<10		10	3.5	ug/L			10/11/16 22:11	10
Trichloroethene	<5.0		5.0	1.6	ug/L			10/11/16 22:11	10
Trichlorofluoromethane	<10		10	4.3	ug/L			10/11/16 22:11	10
1,1,2-Trichloro-1,2,2-trifluoroethane	<10		10	4.6	ug/L			10/11/16 22:11	10
Vinyl chloride	<5.0		5.0	2.0	ug/L			10/11/16 22:11	10

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-13-GW-10042016

Date Collected: 10/04/16 15:15
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-1

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*71 - 120*		*10/11/16 22:11*	*10*
Dibromofluoromethane	*89*		*70 - 120*		*10/11/16 22:11*	*10*
1,2-Dichloroethane-d4 (Surr)	*85*		*71 - 127*		*10/11/16 22:11*	*10*
Toluene-d8 (Surr)	*102*		*75 - 120*		*10/11/16 22:11*	*10*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**7000**		100	22	ug/L			10/11/16 22:38	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*71 - 120*		*10/11/16 22:38*	*100*
Dibromofluoromethane	*92*		*70 - 120*		*10/11/16 22:38*	*100*
1,2-Dichloroethane-d4 (Surr)	*83*		*71 - 127*		*10/11/16 22:38*	*100*
Toluene-d8 (Surr)	*98*		*75 - 120*		*10/11/16 22:38*	*100*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<3.7		3.7	1.1	ug/L		10/06/16 16:12	10/07/16 15:28	5
Acenaphthylene	**2.2**	**J**	3.7	0.98	ug/L		10/06/16 16:12	10/07/16 15:28	5
Acetophenone	**26**		18	2.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
Anthracene	<3.7		3.7	1.2	ug/L		10/06/16 16:12	10/07/16 15:28	5
Benzo[a]anthracene	<0.73		0.73	0.21	ug/L		10/06/16 16:12	10/07/16 15:28	5
Benzo[a]pyrene	<0.73		0.73	0.36	ug/L		10/06/16 16:12	10/07/16 15:28	5
Benzo[b]fluoranthene	<0.73		0.73	0.29	ug/L		10/06/16 16:12	10/07/16 15:28	5
Benzo[g,h,i]perylene	<3.7		3.7	1.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
Benzo[k]fluoranthene	<0.73		0.73	0.23	ug/L		10/06/16 16:12	10/07/16 15:28	5
Bis(2-chloroethoxy)methane	<7.3		7.3	1.0	ug/L		10/06/16 16:12	10/07/16 15:28	5
Bis(2-chloroethyl)ether	<7.3		7.3	1.1	ug/L		10/06/16 16:12	10/07/16 15:28	5
Bis(2-ethylhexyl) phthalate	<37		37	6.3	ug/L		10/06/16 16:12	10/07/16 15:28	5
4-Bromophenyl phenyl ether	<18		18	2.0	ug/L		10/06/16 16:12	10/07/16 15:28	5
Butyl benzyl phthalate	<7.3		7.3	1.8	ug/L		10/06/16 16:12	10/07/16 15:28	5
Carbazole	<18		18	1.3	ug/L		10/06/16 16:12	10/07/16 15:28	5
4-Chloroaniline	<37	UJ	37	7.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
4-Chloro-3-methylphenol	<37		37	8.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
2-Chloronaphthalene	<7.3		7.3	0.86	ug/L		10/06/16 16:12	10/07/16 15:28	5
2-Chlorophenol	<18		18	2.0	ug/L		10/06/16 16:12	10/07/16 15:28	5
4-Chlorophenyl phenyl ether	<18		18	2.3	ug/L		10/06/16 16:12	10/07/16 15:28	5
Chrysene	<1.8		1.8	0.25	ug/L		10/06/16 16:12	10/07/16 15:28	5
Dibenz(a,h)anthracene	<1.1		1.1	0.19	ug/L		10/06/16 16:12	10/07/16 15:28	5
Dibenzofuran	<7.3		7.3	0.96	ug/L		10/06/16 16:12	10/07/16 15:28	5
3,3'-Dichlorobenzidine	<18		18	6.3	ug/L		10/06/16 16:12	10/07/16 15:28	5
2,4-Dichlorophenol	<37		37	9.5	ug/L		10/06/16 16:12	10/07/16 15:28	5
Diethyl phthalate	**12**		7.3	1.3	ug/L		10/06/16 16:12	10/07/16 15:28	5
2,4-Dimethylphenol	**22**	**J**	37	6.6	ug/L		10/06/16 16:12	10/07/16 15:28	5
Dimethyl phthalate	<7.3		7.3	1.1	ug/L		10/06/16 16:12	10/07/16 15:28	5
Di-n-butyl phthalate	**3.8**	**J**	18	2.7	ug/L		10/06/16 16:12	10/07/16 15:28	5
4,6-Dinitro-2-methylphenol	<73	UJ	73	22	ug/L		10/06/16 16:12	10/07/16 15:28	5
2,4-Dinitrophenol	<73	UJ	73	31	ug/L		10/06/16 16:12	10/07/16 15:28	5
2,4-Dinitrotoluene	<3.7		3.7	0.90	ug/L		10/06/16 16:12	10/07/16 15:28	5
2,6-Dinitrotoluene	<3.7		3.7	0.27	ug/L		10/06/16 16:12	10/07/16 15:28	5
Di-n-octyl phthalate	<37		37	3.8	ug/L		10/06/16 16:12	10/07/16 15:28	5

Client Sample ID: MW-13-GW-10042016

Lab Sample ID: 500-118151-1

Date Collected: 10/04/16 15:15

Matrix: Water

Date Received: 10/05/16 16:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<3.7		3.7	1.7	ug/L		10/06/16 16:12	10/07/16 15:28	5
Fluorene	**1.0**	**J**	3.7	0.89	ug/L		10/06/16 16:12	10/07/16 15:28	5
Hexachlorobenzene	<1.8		1.8	0.29	ug/L		10/06/16 16:12	10/07/16 15:28	5
Hexachlorobutadiene	<18		18	1.9	ug/L		10/06/16 16:12	10/07/16 15:28	5
Hexachlorocyclopentadiene	<73		73	23	ug/L		10/06/16 16:12	10/07/16 15:28	5
Hexachloroethane	<18		18	2.2	ug/L		10/06/16 16:12	10/07/16 15:28	5
Indeno[1,2,3-cd]pyrene	<0.73		0.73	0.27	ug/L		10/06/16 16:12	10/07/16 15:28	5
Isophorone	<7.3		7.3	1.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
2-Methylnaphthalene	**10**		7.3	0.24	ug/L		10/06/16 16:12	10/07/16 15:28	5
2-Methylphenol	**5.4**	**J**	7.3	1.1	ug/L		10/06/16 16:12	10/07/16 15:28	5
3 & 4 Methylphenol	**29**		7.3	1.6	ug/L		10/06/16 16:12	10/07/16 15:28	5
Naphthalene	**140**		3.7	1.1	ug/L		10/06/16 16:12	10/07/16 15:28	5
2-Nitroaniline	<18		18	4.7	ug/L		10/06/16 16:12	10/07/16 15:28	5
3-Nitroaniline	<37		37	6.5	ug/L		10/06/16 16:12	10/07/16 15:28	5
4-Nitroaniline	<37		37	6.1	ug/L		10/06/16 16:12	10/07/16 15:28	5
Nitrobenzene	<3.7		3.7	1.6	ug/L		10/06/16 16:12	10/07/16 15:28	5
2-Nitrophenol	<37		37	9.1	ug/L		10/06/16 16:12	10/07/16 15:28	5
4-Nitrophenol	<73		73	27	ug/L		10/06/16 16:12	10/07/16 15:28	5
N-Nitrosodi-n-propylamine	<1.8		1.8	0.56	ug/L		10/06/16 16:12	10/07/16 15:28	5
N-Nitrosodiphenylamine	**11**		3.7	1.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
2,2'-oxybis[1-chloropropane]	<7.3		7.3	1.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
Pentachlorophenol	<73		73	14	ug/L		10/06/16 16:12	10/07/16 15:28	5
Phenanthrene	<3.7		3.7	1.1	ug/L		10/06/16 16:12	10/07/16 15:28	5
Phenol	**17**	**J**	18	2.5	ug/L		10/06/16 16:12	10/07/16 15:28	5
Pyrene	<3.7		3.7	1.6	ug/L		10/06/16 16:12	10/07/16 15:28	5
2,4,5-Trichlorophenol	<37		37	9.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
2,4,6-Trichlorophenol	<18		18	2.6	ug/L		10/06/16 16:12	10/07/16 15:28	5
Benzaldehyde	<150	✗ UJ	150	55	ug/L		10/06/16 16:12	10/07/16 15:28	5
Caprolactam	<37		37	5.4	ug/L		10/06/16 16:12	10/07/16 15:28	5
Atrazine	<18		18	2.3	ug/L		10/06/16 16:12	10/07/16 15:28	5
1,1'-Biphenyl	**1.8**	**J**	18	1.3	ug/L		10/06/16 16:12	10/07/16 15:28	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*92*		*30 - 123*	*10/06/16 16:12*	*10/07/16 15:28*	*5*
2-Fluorophenol (Surr)	*61*		*30 - 110*	*10/06/16 16:12*	*10/07/16 15:28*	*5*
Nitrobenzene-d5 (Surr)	*79*		*33 - 139*	*10/06/16 16:12*	*10/07/16 15:28*	*5*
Phenol-d5 (Surr)	*62*		*20 - 100*	*10/06/16 16:12*	*10/07/16 15:28*	*5*
Terphenyl-d14 (Surr)	*114*		*42 - 150*	*10/06/16 16:12*	*10/07/16 15:28*	*5*
2,4,6-Tribromophenol (Surr)	*134*		*30 - 150*	*10/06/16 16:12*	*10/07/16 15:28*	*5*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0048	ug/L		10/06/16 07:53	10/10/16 12:12	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/06/16 07:53	10/10/16 12:12	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		10/06/16 07:53	10/10/16 12:12	1
beta-BHC	<0.037		0.037	0.0093	ug/L		10/06/16 07:53	10/10/16 12:12	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/10/16 12:12	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/06/16 07:53	10/10/16 12:12	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		10/06/16 07:53	10/10/16 12:12	1
delta-BHC	<0.037		0.037	0.0094	ug/L		10/06/16 07:53	10/10/16 12:12	1

Client Sample ID: MW-13-GW-10042016

Lab Sample ID: 500-118151-1

Date Collected: 10/04/16 15:15

Matrix: Water

Date Received: 10/05/16 16:35

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/10/16 12:12	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/06/16 07:53	10/10/16 12:12	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/06/16 07:53	10/10/16 12:12	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/06/16 07:53	10/10/16 12:12	1
Endrin	<0.037		0.037	0.013	ug/L		10/06/16 07:53	10/10/16 12:12	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		10/06/16 07:53	10/10/16 12:12	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/06/16 07:53	10/10/16 12:12	1
gamma-BHC (Lindane)	<0.037		0.037	0.0051	ug/L		10/06/16 07:53	10/10/16 12:12	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		10/06/16 07:53	10/10/16 12:12	1
Heptachlor	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/10/16 12:12	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/06/16 07:53	10/10/16 12:12	1
Methoxychlor	<0.073		0.073	0.021	ug/L		10/06/16 07:53	10/10/16 12:12	1
Toxaphene	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/10/16 12:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*64*		*30 - 143*	*10/06/16 07:53*	*10/10/16 12:12*	*1*
Tetrachloro-m-xylene	*633*	*X*	*30 - 120*	*10/06/16 07:53*	*10/10/16 12:12*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.061	ug/L		10/06/16 07:53	10/07/16 14:27	1
PCB-1221	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:27	1
PCB-1232	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:27	1
PCB-1242	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:27	1
PCB-1248	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:27	1
PCB-1254	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:27	1
PCB-1260	<0.37		0.37	0.064	ug/L		10/06/16 07:53	10/07/16 14:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*45*		*30 - 127*	*10/06/16 07:53*	*10/07/16 14:27*	*1*
DCB Decachlorobiphenyl	*51*		*30 - 150*	*10/06/16 07:53*	*10/07/16 14:27*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.11**	**J**	0.20	0.062	mg/L		10/11/16 15:30	10/14/16 03:49	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 03:49	1
Arsenic	**0.0034**	**J**	0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 03:49	1
Barium	**0.26**		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 03:49	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 03:49	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 03:49	1
Calcium	**84**		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 03:49	1
Chromium	**0.0059**	**J**	0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 03:49	1
Cobalt	**0.0021**	**J**	0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 03:49	1
Copper	**0.0029**	**J**	0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 03:49	1
Iron	**8.9**	~~^ B~~	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 03:49	1
Lead	**0.0036**	**J**	0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 03:49	1
Magnesium	**52**		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 17:28	1
Manganese	**0.38**		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 03:49	1
Nickel	**0.0079**	**J**	0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 03:49	1
Potassium	**74**		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 03:49	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-13-GW-10042016

Date Collected: 10/04/16 15:15
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-1

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 03:49	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 03:49	1
Sodium	**220**		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 03:49	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 03:49	1
Vanadium	**0.0031**	**J**	0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 03:49	1
Zinc	**0.011**	**J**	0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 03:49	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 15:30	10/14/16 04:00	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 04:00	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:00	1
Barium	**0.23**		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:00	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 04:00	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 04:00	1
Calcium	**96**		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 04:00	1
Chromium	**0.0038**	**J**	0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 04:00	1
Cobalt	**0.0015**	**J**	0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 04:00	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:00	1
Iron	**6.4**	~~^ B~~	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 04:00	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 04:00	1
Magnesium	**46**		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 17:33	1
Manganese	**0.34**		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:00	1
Nickel	**0.0072**	**J**	0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 04:00	1
Potassium	**67**		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 04:00	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 04:00	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 04:00	1
Sodium	**230**		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 04:00	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:00	1
Vanadium	**0.0036**	**J**	0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 04:00	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 04:00	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:18	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			10/10/16 00:41	1
Sulfate	**21**	~~B~~	5.0	1.5	mg/L			10/07/16 08:41	1
Total Organic Carbon - Duplicates	**53**	~~B~~	2.0	0.53	mg/L			10/07/16 20:18	2
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/16/16 19:52	1
Total Suspended Solids	**24**		5.0	2.5	mg/L			10/06/16 12:44	1
Ammonia	**79**	~~B~~	5.0	2.5	mg/L		10/12/16 19:17	10/12/16 23:03	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/06/16 13:26	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/14/16 00:11	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-1 (10042016)

Date Collected: 10/04/16 00:00
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-2

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<50		50	17	ug/L			10/11/16 23:04	10
Benzene	**370**		5.0	1.5	ug/L			10/11/16 23:04	10
Bromodichloromethane	<10		10	3.7	ug/L			10/11/16 23:04	10
Bromoform	<10		10	4.8	ug/L			10/11/16 23:04	10
Bromomethane	<20	UJ	20	8.0	ug/L			10/11/16 23:04	10
Carbon disulfide	<20		20	4.5	ug/L			10/11/16 23:04	10
Carbon tetrachloride	<10		10	3.8	ug/L			10/11/16 23:04	10
Chlorobenzene	<10		10	3.9	ug/L			10/11/16 23:04	10
Chloroethane	<10		10	5.1	ug/L			10/11/16 23:04	10
Chloroform	<10		10	3.7	ug/L			10/11/16 23:04	10
Chloromethane	<10		10	3.2	ug/L			10/11/16 23:04	10
cis-1,2-Dichloroethene	**16**		10	4.1	ug/L			10/11/16 23:04	10
cis-1,3-Dichloropropene	<10		10	4.2	ug/L			10/11/16 23:04	10
Cyclohexane	<10		10	4.9	ug/L			10/11/16 23:04	10
Dibromochloromethane	<10		10	4.9	ug/L			10/11/16 23:04	10
1,2-Dibromo-3-Chloropropane	<50	UJ	50	20	ug/L			10/11/16 23:04	10
1,2-Dibromoethane	<10		10	3.9	ug/L			10/11/16 23:04	10
1,2-Dichlorobenzene	**12**		10	3.3	ug/L			10/11/16 23:04	10
1,3-Dichlorobenzene	<10		10	4.0	ug/L			10/11/16 23:04	10
1,4-Dichlorobenzene	<10		10	3.6	ug/L			10/11/16 23:04	10
Dichlorodifluoromethane	<20		20	6.7	ug/L			10/11/16 23:04	10
1,1-Dichloroethane	**7.6**	**J**	10	4.1	ug/L			10/11/16 23:04	10
1,2-Dichloroethane	<10		10	3.9	ug/L			10/11/16 23:04	10
1,1-Dichloroethene	<10		10	3.9	ug/L			10/11/16 23:04	10
1,2-Dichloropropane	<10		10	4.3	ug/L			10/11/16 23:04	10
Ethylbenzene	**970**		5.0	1.8	ug/L			10/11/16 23:04	10
2-Hexanone	<50		50	16	ug/L			10/11/16 23:04	10
Isopropylbenzene	**110**		10	3.9	ug/L			10/11/16 23:04	10
Methyl acetate	<50		50	20	ug/L			10/11/16 23:04	10
Methylcyclohexane	<10		10	3.2	ug/L			10/11/16 23:04	10
Methylene Chloride	<50		50	16	ug/L			10/11/16 23:04	10
Methyl Ethyl Ketone	<50		50	21	ug/L			10/11/16 23:04	10
methyl isobutyl ketone	<50		50	22	ug/L			10/11/16 23:04	10
Methyl tert-butyl ether	<10		10	3.9	ug/L			10/11/16 23:04	10
Styrene	<10		10	3.9	ug/L			10/11/16 23:04	10
1,1,2,2-Tetrachloroethane	<10		10	4.0	ug/L			10/11/16 23:04	10
Tetrachloroethene	<10		10	3.7	ug/L			10/11/16 23:04	10
Toluene	**1500**		5.0	1.5	ug/L			10/11/16 23:04	10
trans-1,2-Dichloroethene	<10		10	3.5	ug/L			10/11/16 23:04	10
trans-1,3-Dichloropropene	<10		10	3.6	ug/L			10/11/16 23:04	10
1,2,4-Trichlorobenzene	<10		10	3.4	ug/L			10/11/16 23:04	10
1,1,1-Trichloroethane	<10		10	3.8	ug/L			10/11/16 23:04	10
1,1,2-Trichloroethane	<10		10	3.5	ug/L			10/11/16 23:04	10
Trichloroethene	<5.0		5.0	1.6	ug/L			10/11/16 23:04	10
Trichlorofluoromethane	<10		10	4.3	ug/L			10/11/16 23:04	10
1,1,2-Trichloro-1,2,2-trifluoroethane	<10		10	4.6	ug/L			10/11/16 23:04	10
Vinyl chloride	<5.0		5.0	2.0	ug/L			10/11/16 23:04	10

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-1 (10042016)

Date Collected: 10/04/16 00:00
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-2

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*71 - 120*		*10/11/16 23:04*	*10*
Dibromofluoromethane	*91*		*70 - 120*		*10/11/16 23:04*	*10*
1,2-Dichloroethane-d4 (Surr)	*85*		*71 - 127*		*10/11/16 23:04*	*10*
Toluene-d8 (Surr)	*97*		*75 - 120*		*10/11/16 23:04*	*10*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**7100**		100	22	ug/L			10/11/16 23:31	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*		*10/11/16 23:31*	*100*
Dibromofluoromethane	*91*		*70 - 120*		*10/11/16 23:31*	*100*
1,2-Dichloroethane-d4 (Surr)	*86*		*71 - 127*		*10/11/16 23:31*	*100*
Toluene-d8 (Surr)	*99*		*75 - 120*		*10/11/16 23:31*	*100*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<3.6		3.6	1.1	ug/L		10/06/16 16:12	10/07/16 15:57	5
Acenaphthylene	**1.7**	**J**	3.6	0.98	ug/L		10/06/16 16:12	10/07/16 15:57	5
Acetophenone	**20**		18	2.4	ug/L		10/06/16 16:12	10/07/16 15:57	5
Anthracene	<3.6		3.6	1.2	ug/L		10/06/16 16:12	10/07/16 15:57	5
Benzo[a]anthracene	**0.43**	**J**	0.73	0.21	ug/L		10/06/16 16:12	10/07/16 15:57	5
Benzo[a]pyrene	<0.73		0.73	0.36	ug/L		10/06/16 16:12	10/07/16 15:57	5
Benzo[b]fluoranthene	<0.73		0.73	0.29	ug/L		10/06/16 16:12	10/07/16 15:57	5
Benzo[g,h,i]perylene	<3.6		3.6	1.4	ug/L		10/06/16 16:12	10/07/16 15:57	5
Benzo[k]fluoranthene	<0.73		0.73	0.23	ug/L		10/06/16 16:12	10/07/16 15:57	5
Bis(2-chloroethoxy)methane	<7.3		7.3	1.0	ug/L		10/06/16 16:12	10/07/16 15:57	5
Bis(2-chloroethyl)ether	<7.3		7.3	1.1	ug/L		10/06/16 16:12	10/07/16 15:57	5
Bis(2-ethylhexyl) phthalate	<36		36	6.2	ug/L		10/06/16 16:12	10/07/16 15:57	5
4-Bromophenyl phenyl ether	<18		18	2.0	ug/L		10/06/16 16:12	10/07/16 15:57	5
Butyl benzyl phthalate	<7.3		7.3	1.8	ug/L		10/06/16 16:12	10/07/16 15:57	5
Carbazole	<18		18	1.3	ug/L		10/06/16 16:12	10/07/16 15:57	5
4-Chloroaniline	<36	UJ	36	7.3	ug/L		10/06/16 16:12	10/07/16 15:57	5
4-Chloro-3-methylphenol	<36		36	8.4	ug/L		10/06/16 16:12	10/07/16 15:57	5
2-Chloronaphthalene	<7.3		7.3	0.86	ug/L		10/06/16 16:12	10/07/16 15:57	5
2-Chlorophenol	<18		18	2.0	ug/L		10/06/16 16:12	10/07/16 15:57	5
4-Chlorophenyl phenyl ether	<18		18	2.3	ug/L		10/06/16 16:12	10/07/16 15:57	5
Chrysene	**0.35**	**J**	1.8	0.25	ug/L		10/06/16 16:12	10/07/16 15:57	5
Dibenz(a,h)anthracene	<1.1		1.1	0.19	ug/L		10/06/16 16:12	10/07/16 15:57	5
Dibenzofuran	<7.3		7.3	0.96	ug/L		10/06/16 16:12	10/07/16 15:57	5
3,3'-Dichlorobenzidine	<18		18	6.2	ug/L		10/06/16 16:12	10/07/16 15:57	5
2,4-Dichlorophenol	<36		36	9.5	ug/L		10/06/16 16:12	10/07/16 15:57	5
Diethyl phthalate	**8.9**		7.3	1.3	ug/L		10/06/16 16:12	10/07/16 15:57	5
2,4-Dimethylphenol	**16**	**J**	36	6.6	ug/L		10/06/16 16:12	10/07/16 15:57	5
Dimethyl phthalate	<7.3		7.3	1.1	ug/L		10/06/16 16:12	10/07/16 15:57	5
Di-n-butyl phthalate	**3.4**	**J**	18	2.7	ug/L		10/06/16 16:12	10/07/16 15:57	5
4,6-Dinitro-2-methylphenol	<73	UJ	73	22	ug/L		10/06/16 16:12	10/07/16 15:57	5
2,4-Dinitrophenol	<73	UJ	73	31	ug/L		10/06/16 16:12	10/07/16 15:57	5
2,4-Dinitrotoluene	<3.6		3.6	0.89	ug/L		10/06/16 16:12	10/07/16 15:57	5
2,6-Dinitrotoluene	<3.6		3.6	0.27	ug/L		10/06/16 16:12	10/07/16 15:57	5
Di-n-octyl phthalate	<36		36	3.8	ug/L		10/06/16 16:12	10/07/16 15:57	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-1 (10042016)

Date Collected: 10/04/16 00:00
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-2

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<3.6		3.6	1.7	ug/L		10/06/16 16:12	10/07/16 15:57	5
Fluorene	<3.6		3.6	0.89	ug/L		10/06/16 16:12	10/07/16 15:57	5
Hexachlorobenzene	<1.8		1.8	0.29	ug/L		10/06/16 16:12	10/07/16 15:57	5
Hexachlorobutadiene	<18		18	1.9	ug/L		10/06/16 16:12	10/07/16 15:57	5
Hexachlorocyclopentadiene	<73		73	23	ug/L		10/06/16 16:12	10/07/16 15:57	5
Hexachloroethane	<18		18	2.2	ug/L		10/06/16 16:12	10/07/16 15:57	5
Indeno[1,2,3-cd]pyrene	<0.73		0.73	0.27	ug/L		10/06/16 16:12	10/07/16 15:57	5
Isophorone	<7.3		7.3	1.4	ug/L		10/06/16 16:12	10/07/16 15:57	5
2-Methylnaphthalene	**8.1**		7.3	0.24	ug/L		10/06/16 16:12	10/07/16 15:57	5
2-Methylphenol	**4.8**	**J**	7.3	1.1	ug/L		10/06/16 16:12	10/07/16 15:57	5
3 & 4 Methylphenol	**22**		7.3	1.6	ug/L		10/06/16 16:12	10/07/16 15:57	5
Naphthalene	**110**		3.6	1.1	ug/L		10/06/16 16:12	10/07/16 15:57	5
2-Nitroaniline	<18		18	4.7	ug/L		10/06/16 16:12	10/07/16 15:57	5
3-Nitroaniline	<36		36	6.5	ug/L		10/06/16 16:12	10/07/16 15:57	5
4-Nitroaniline	<36		36	6.1	ug/L		10/06/16 16:12	10/07/16 15:57	5
Nitrobenzene	<3.6		3.6	1.6	ug/L		10/06/16 16:12	10/07/16 15:57	5
2-Nitrophenol	<36		36	9.1	ug/L		10/06/16 16:12	10/07/16 15:57	5
4-Nitrophenol	<73		73	27	ug/L		10/06/16 16:12	10/07/16 15:57	5
N-Nitrosodi-n-propylamine	<1.8		1.8	0.56	ug/L		10/06/16 16:12	10/07/16 15:57	5
N-Nitrosodiphenylamine	**7.7**		3.6	1.3	ug/L		10/06/16 16:12	10/07/16 15:57	5
2,2'-oxybis[1-chloropropane]	<7.3		7.3	1.4	ug/L		10/06/16 16:12	10/07/16 15:57	5
Pentachlorophenol	<73		73	14	ug/L		10/06/16 16:12	10/07/16 15:57	5
Phenanthrene	<3.6		3.6	1.1	ug/L		10/06/16 16:12	10/07/16 15:57	5
Phenol	**12**	**J**	18	2.4	ug/L		10/06/16 16:12	10/07/16 15:57	5
Pyrene	<3.6		3.6	1.6	ug/L		10/06/16 16:12	10/07/16 15:57	5
2,4,5-Trichlorophenol	<36		36	9.3	ug/L		10/06/16 16:12	10/07/16 15:57	5
2,4,6-Trichlorophenol	<18		18	2.6	ug/L		10/06/16 16:12	10/07/16 15:57	5
Benzaldehyde	<150	~~X~~ UJ	150	55	ug/L		10/06/16 16:12	10/07/16 15:57	5
Caprolactam	<36		36	5.4	ug/L		10/06/16 16:12	10/07/16 15:57	5
Atrazine	<18		18	2.3	ug/L		10/06/16 16:12	10/07/16 15:57	5
1,1'-Biphenyl	<18		18	1.3	ug/L		10/06/16 16:12	10/07/16 15:57	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*70*		*30 - 123*	*10/06/16 16:12*	*10/07/16 15:57*	*5*
2-Fluorophenol (Surr)	*49*		*30 - 110*	*10/06/16 16:12*	*10/07/16 15:57*	*5*
Nitrobenzene-d5 (Surr)	*59*		*33 - 139*	*10/06/16 16:12*	*10/07/16 15:57*	*5*
Phenol-d5 (Surr)	*47*		*20 - 100*	*10/06/16 16:12*	*10/07/16 15:57*	*5*
Terphenyl-d14 (Surr)	*81*		*42 - 150*	*10/06/16 16:12*	*10/07/16 15:57*	*5*
2,4,6-Tribromophenol (Surr)	*93*		*30 - 150*	*10/06/16 16:12*	*10/07/16 15:57*	*5*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		10/06/16 07:53	10/10/16 12:31	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/06/16 07:53	10/10/16 12:31	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		10/06/16 07:53	10/10/16 12:31	1
beta-BHC	<0.037		0.037	0.0094	ug/L		10/06/16 07:53	10/10/16 12:31	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/10/16 12:31	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/06/16 07:53	10/10/16 12:31	1
4,4'-DDT	<0.037		0.037	0.0030	ug/L		10/06/16 07:53	10/10/16 12:31	1
delta-BHC	<0.037		0.037	0.0095	ug/L		10/06/16 07:53	10/10/16 12:31	1

Client Sample ID: DUP-1 (10042016)

Date Collected: 10/04/16 00:00
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-2

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/10/16 12:31	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/06/16 07:53	10/10/16 12:31	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/06/16 07:53	10/10/16 12:31	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/06/16 07:53	10/10/16 12:31	1
Endrin	<0.037		0.037	0.013	ug/L		10/06/16 07:53	10/10/16 12:31	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		10/06/16 07:53	10/10/16 12:31	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/06/16 07:53	10/10/16 12:31	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		10/06/16 07:53	10/10/16 12:31	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		10/06/16 07:53	10/10/16 12:31	1
Heptachlor	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/10/16 12:31	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/06/16 07:53	10/10/16 12:31	1
Methoxychlor	<0.074		0.074	0.021	ug/L		10/06/16 07:53	10/10/16 12:31	1
Toxaphene	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/10/16 12:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*50*		*30 - 143*	*10/06/16 07:53*	*10/10/16 12:31*	*1*
Tetrachloro-m-xylene	*638*	*X*	*30 - 120*	*10/06/16 07:53*	*10/10/16 12:31*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		10/06/16 07:53	10/07/16 14:42	1
PCB-1221	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:42	1
PCB-1232	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:42	1
PCB-1242	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:42	1
PCB-1248	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:42	1
PCB-1254	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 14:42	1
PCB-1260	<0.37		0.37	0.065	ug/L		10/06/16 07:53	10/07/16 14:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*88*		*30 - 127*	*10/06/16 07:53*	*10/07/16 14:42*	*1*
DCB Decachlorobiphenyl	*45*		*30 - 150*	*10/06/16 07:53*	*10/07/16 14:42*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.11**	**J**	0.20	0.062	mg/L		10/11/16 15:30	10/14/16 04:05	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 04:05	1
Arsenic	**0.0047**	**J**	0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:05	1
Barium	**0.28**		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:05	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 04:05	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 04:05	1
Calcium	**85**		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 04:05	1
Chromium	**0.0052**	**J**	0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 04:05	1
Cobalt	**0.0023**	**J**	0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 04:05	1
Copper	**0.0040**	**J**	0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:05	1
Iron	**9.6**	~~^ B~~	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 04:05	1
Lead	**0.0077**		0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 04:05	1
Magnesium	**55**		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 17:37	1
Manganese	**0.40**		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:05	1
Nickel	**0.0069**	**J**	0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 04:05	1
Potassium	**77**		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 04:05	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-1 (10042016)

Date Collected: 10/04/16 00:00
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-2

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 04:05	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 04:05	1
Sodium	**230**		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 04:05	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:05	1
Vanadium	**0.0035**	J	0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 04:05	1
Zinc	**0.013**	J	0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 04:05	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.15**	J	0.20	0.062	mg/L		10/11/16 15:30	10/14/16 04:09	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 04:09	1
Arsenic	**0.0047**	J	0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:09	1
Barium	**0.25**		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:09	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 04:09	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 04:09	1
Calcium	**89**		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 04:09	1
Chromium	**0.0046**	J	0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 04:09	1
Cobalt	**0.0017**	J	0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 04:09	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:09	1
Iron	**7.6**	~~* B~~	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 04:09	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 04:09	1
Magnesium	**50**		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 17:42	1
Manganese	**0.36**		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:09	1
Nickel	**0.0063**	J	0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 04:09	1
Potassium	**71**		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 04:09	1
Selenium	< 0.010 ~~**0.0065**~~	~~J~~ UB	0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 04:09	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 04:09	1
Sodium	**230**		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 04:09	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:09	1
Vanadium	**0.0036**	J	0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 04:09	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 04:09	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:21	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**0.57**	J	1.0	0.18	mg/L			10/10/16 00:45	1
Sulfate	**19**	~~B~~	5.0	1.5	mg/L			10/07/16 08:42	1
Total Organic Carbon - Duplicates	**54**	~~B~~	2.0	0.53	mg/L			10/07/16 20:35	2
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/16/16 19:52	1
Total Suspended Solids	**25**		5.0	2.5	mg/L			10/06/16 12:45	1
Ammonia	**80**	~~B~~	5.0	2.5	mg/L		10/12/16 19:17	10/12/16 23:06	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/06/16 13:27	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/14/16 00:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-08-GW-10052016

Lab Sample ID: 500-118151-3

Date Collected: 10/05/16 12:05
Matrix: Water
Date Received: 10/05/16 16:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			10/11/16 23:58	1
Benzene	<0.50		0.50	0.15	ug/L			10/11/16 23:58	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/11/16 23:58	1
Bromoform	<1.0		1.0	0.48	ug/L			10/11/16 23:58	1
Bromomethane	<2.0	UJ	2.0	0.80	ug/L			10/11/16 23:58	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/11/16 23:58	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/11/16 23:58	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			10/11/16 23:58	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/11/16 23:58	1
Chloroform	<1.0		1.0	0.37	ug/L			10/11/16 23:58	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/11/16 23:58	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			10/11/16 23:58	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/11/16 23:58	1
Cyclohexane	<1.0		1.0	0.49	ug/L			10/11/16 23:58	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/11/16 23:58	1
1,2-Dibromo-3-Chloropropane	<5.0	UJ	5.0	2.0	ug/L			10/11/16 23:58	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/11/16 23:58	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			10/11/16 23:58	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/11/16 23:58	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			10/11/16 23:58	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/11/16 23:58	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/11/16 23:58	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/11/16 23:58	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/11/16 23:58	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/11/16 23:58	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			10/11/16 23:58	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/11/16 23:58	1
Isopropylbenzene	**0.40**	**J**	1.0	0.39	ug/L			10/11/16 23:58	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/11/16 23:58	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			10/11/16 23:58	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/11/16 23:58	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/11/16 23:58	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			10/11/16 23:58	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/11/16 23:58	1
Styrene	<1.0		1.0	0.39	ug/L			10/11/16 23:58	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/11/16 23:58	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/11/16 23:58	1
Toluene	<0.50		0.50	0.15	ug/L			10/11/16 23:58	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/11/16 23:58	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/11/16 23:58	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/11/16 23:58	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/11/16 23:58	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/11/16 23:58	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/11/16 23:58	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/11/16 23:58	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/11/16 23:58	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			10/11/16 23:58	1
Xylenes, Total	**0.82**	**J**	1.0	0.22	ug/L			10/11/16 23:58	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-08-GW-10052016

Date Collected: 10/05/16 12:05
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-3

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*71 - 120*		*10/11/16 23:58*	*1*
Dibromofluoromethane	*90*		*70 - 120*		*10/11/16 23:58*	*1*
1,2-Dichloroethane-d4 (Surr)	*83*		*71 - 127*		*10/11/16 23:58*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*10/11/16 23:58*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.74		0.74	0.23	ug/L		10/06/16 16:12	10/07/16 13:59	1
Acenaphthylene	<0.74		0.74	0.20	ug/L		10/06/16 16:12	10/07/16 13:59	1
Acetophenone	<3.7		3.7	0.49	ug/L		10/06/16 16:12	10/07/16 13:59	1
Anthracene	<0.74		0.74	0.25	ug/L		10/06/16 16:12	10/07/16 13:59	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		10/06/16 16:12	10/07/16 13:59	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		10/06/16 16:12	10/07/16 13:59	1
Benzo[b]fluoranthene	<0.15		0.15	0.060	ug/L		10/06/16 16:12	10/07/16 13:59	1
Benzo[g,h,i]perylene	<0.74		0.74	0.28	ug/L		10/06/16 16:12	10/07/16 13:59	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		10/06/16 16:12	10/07/16 13:59	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		10/06/16 16:12	10/07/16 13:59	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		10/06/16 16:12	10/07/16 13:59	1
Bis(2-ethylhexyl) phthalate	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 13:59	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		10/06/16 16:12	10/07/16 13:59	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		10/06/16 16:12	10/07/16 13:59	1
Carbazole	<3.7		3.7	0.26	ug/L		10/06/16 16:12	10/07/16 13:59	1
4-Chloroaniline	<7.4	UJ	7.4	1.5	ug/L		10/06/16 16:12	10/07/16 13:59	1
4-Chloro-3-methylphenol	<7.4		7.4	1.7	ug/L		10/06/16 16:12	10/07/16 13:59	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		10/06/16 16:12	10/07/16 13:59	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		10/06/16 16:12	10/07/16 13:59	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		10/06/16 16:12	10/07/16 13:59	1
Chrysene	<0.37		0.37	0.050	ug/L		10/06/16 16:12	10/07/16 13:59	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		10/06/16 16:12	10/07/16 13:59	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		10/06/16 16:12	10/07/16 13:59	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		10/06/16 16:12	10/07/16 13:59	1
2,4-Dichlorophenol	<7.4		7.4	1.9	ug/L		10/06/16 16:12	10/07/16 13:59	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		10/06/16 16:12	10/07/16 13:59	1
2,4-Dimethylphenol	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 13:59	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		10/06/16 16:12	10/07/16 13:59	1
Di-n-butyl phthalate	<3.7		3.7	0.54	ug/L		10/06/16 16:12	10/07/16 13:59	1
4,6-Dinitro-2-methylphenol	<15	UJ	15	4.4	ug/L		10/06/16 16:12	10/07/16 13:59	1
2,4-Dinitrophenol	<15	UJ	15	6.3	ug/L		10/06/16 16:12	10/07/16 13:59	1
2,4-Dinitrotoluene	<0.74		0.74	0.18	ug/L		10/06/16 16:12	10/07/16 13:59	1
2,6-Dinitrotoluene	<0.74		0.74	0.054	ug/L		10/06/16 16:12	10/07/16 13:59	1
Di-n-octyl phthalate	<7.4		7.4	0.77	ug/L		10/06/16 16:12	10/07/16 13:59	1
Fluoranthene	<0.74		0.74	0.33	ug/L		10/06/16 16:12	10/07/16 13:59	1
Fluorene	<0.74		0.74	0.18	ug/L		10/06/16 16:12	10/07/16 13:59	1
Hexachlorobenzene	<0.37		0.37	0.059	ug/L		10/06/16 16:12	10/07/16 13:59	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		10/06/16 16:12	10/07/16 13:59	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		10/06/16 16:12	10/07/16 13:59	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		10/06/16 16:12	10/07/16 13:59	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		10/06/16 16:12	10/07/16 13:59	1
Isophorone	<1.5		1.5	0.28	ug/L		10/06/16 16:12	10/07/16 13:59	1
2-Methylnaphthalene	**0.10**	**J**	1.5	0.048	ug/L		10/06/16 16:12	10/07/16 13:59	1

Client Sample ID: MW-08-GW-10052016

Lab Sample ID: 500-118151-3

Date Collected: 10/05/16 12:05

Matrix: Water

Date Received: 10/05/16 16:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.23	ug/L		10/06/16 16:12	10/07/16 13:59	1
3 & 4 Methylphenol	**0.39**	**J**	1.5	0.33	ug/L		10/06/16 16:12	10/07/16 13:59	1
Naphthalene	<0.74		0.74	0.23	ug/L		10/06/16 16:12	10/07/16 13:59	1
2-Nitroaniline	<3.7		3.7	0.95	ug/L		10/06/16 16:12	10/07/16 13:59	1
3-Nitroaniline	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 13:59	1
4-Nitroaniline	<7.4		7.4	1.2	ug/L		10/06/16 16:12	10/07/16 13:59	1
Nitrobenzene	<0.74		0.74	0.33	ug/L		10/06/16 16:12	10/07/16 13:59	1
2-Nitrophenol	<7.4		7.4	1.8	ug/L		10/06/16 16:12	10/07/16 13:59	1
4-Nitrophenol	<15		15	5.5	ug/L		10/06/16 16:12	10/07/16 13:59	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		10/06/16 16:12	10/07/16 13:59	1
N-Nitrosodiphenylamine	<0.74		0.74	0.27	ug/L		10/06/16 16:12	10/07/16 13:59	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		10/06/16 16:12	10/07/16 13:59	1
Pentachlorophenol	<15		15	2.9	ug/L		10/06/16 16:12	10/07/16 13:59	1
Phenanthrene	<0.74		0.74	0.22	ug/L		10/06/16 16:12	10/07/16 13:59	1
Phenol	<3.7		3.7	0.50	ug/L		10/06/16 16:12	10/07/16 13:59	1
Pyrene	<0.74		0.74	0.31	ug/L		10/06/16 16:12	10/07/16 13:59	1
2,4,5-Trichlorophenol	<7.4		7.4	1.9	ug/L		10/06/16 16:12	10/07/16 13:59	1
2,4,6-Trichlorophenol	<3.7		3.7	0.53	ug/L		10/06/16 16:12	10/07/16 13:59	1
Benzaldehyde	<30	~~J~~ UJ	30	11	ug/L		10/06/16 16:12	10/07/16 13:59	1
Caprolactam	<7.4		7.4	1.1	ug/L		10/06/16 16:12	10/07/16 13:59	1
Atrazine	<3.7		3.7	0.46	ug/L		10/06/16 16:12	10/07/16 13:59	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		10/06/16 16:12	10/07/16 13:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*67*		*30 - 123*	*10/06/16 16:12*	*10/07/16 13:59*	*1*
2-Fluorophenol (Surr)	*49*		*30 - 110*	*10/06/16 16:12*	*10/07/16 13:59*	*1*
Nitrobenzene-d5 (Surr)	*55*		*33 - 139*	*10/06/16 16:12*	*10/07/16 13:59*	*1*
Phenol-d5 (Surr)	*39*		*20 - 100*	*10/06/16 16:12*	*10/07/16 13:59*	*1*
Terphenyl-d14 (Surr)	*110*		*42 - 150*	*10/06/16 16:12*	*10/07/16 13:59*	*1*
2,4,6-Tribromophenol (Surr)	*125*		*30 - 150*	*10/06/16 16:12*	*10/07/16 13:59*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.036		0.036	0.0048	ug/L		10/06/16 07:53	10/06/16 16:13	1
alpha-BHC	<0.036		0.036	0.0024	ug/L		10/06/16 07:53	10/06/16 16:13	1
alpha-Chlordane	<0.036		0.036	0.0040	ug/L		10/06/16 07:53	10/06/16 16:13	1
beta-BHC	<0.036		0.036	0.0093	ug/L		10/06/16 07:53	10/06/16 16:13	1
4,4'-DDD	<0.036		0.036	0.012	ug/L		10/06/16 07:53	10/06/16 16:13	1
4,4'-DDE	<0.036		0.036	0.0035	ug/L		10/06/16 07:53	10/06/16 16:13	1
4,4'-DDT	<0.036		0.036	0.0029	ug/L		10/06/16 07:53	10/06/16 16:13	1
delta-BHC	<0.036		0.036	0.0094	ug/L		10/06/16 07:53	10/06/16 16:13	1
Dieldrin	<0.036		0.036	0.012	ug/L		10/06/16 07:53	10/06/16 16:13	1
Endosulfan I	<0.036		0.036	0.0037	ug/L		10/06/16 07:53	10/06/16 16:13	1
Endosulfan II	<0.036		0.036	0.0025	ug/L		10/06/16 07:53	10/06/16 16:13	1
Endosulfan sulfate	<0.036		0.036	0.011	ug/L		10/06/16 07:53	10/06/16 16:13	1
Endrin	<0.036		0.036	0.013	ug/L		10/06/16 07:53	10/06/16 16:13	1
Endrin aldehyde	<0.036		0.036	0.0074	ug/L		10/06/16 07:53	10/06/16 16:13	1
Endrin ketone	<0.036		0.036	0.015	ug/L		10/06/16 07:53	10/06/16 16:13	1
gamma-BHC (Lindane)	<0.036		0.036	0.0051	ug/L		10/06/16 07:53	10/06/16 16:13	1
gamma-Chlordane	<0.036		0.036	0.0065	ug/L		10/06/16 07:53	10/06/16 16:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-08-GW-10052016

Lab Sample ID: 500-118151-3

Date Collected: 10/05/16 12:05
Matrix: Water
Date Received: 10/05/16 16:35

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.036		0.036	0.012	ug/L		10/06/16 07:53	10/06/16 16:13	1
Heptachlor epoxide	<0.036		0.036	0.013	ug/L		10/06/16 07:53	10/06/16 16:13	1
Methoxychlor	<0.073		0.073	0.021	ug/L		10/06/16 07:53	10/06/16 16:13	1
Toxaphene	<0.36		0.36	0.18	ug/L		10/06/16 07:53	10/06/16 16:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*86*		*30 - 143*	*10/06/16 07:53*	*10/06/16 16:13*	*1*
Tetrachloro-m-xylene	*54*		*30 - 120*	*10/06/16 07:53*	*10/06/16 16:13*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.36		0.36	0.061	ug/L		10/06/16 07:53	10/07/16 14:58	1
PCB-1221	<0.36		0.36	0.18	ug/L		10/06/16 07:53	10/07/16 14:58	1
PCB-1232	<0.36		0.36	0.18	ug/L		10/06/16 07:53	10/07/16 14:58	1
PCB-1242	<0.36		0.36	0.18	ug/L		10/06/16 07:53	10/07/16 14:58	1
PCB-1248	<0.36		0.36	0.18	ug/L		10/06/16 07:53	10/07/16 14:58	1
PCB-1254	<0.36		0.36	0.18	ug/L		10/06/16 07:53	10/07/16 14:58	1
PCB-1260	<0.36		0.36	0.064	ug/L		10/06/16 07:53	10/07/16 14:58	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*64*		*30 - 127*	*10/06/16 07:53*	*10/07/16 14:58*	*1*
DCB Decachlorobiphenyl	*79*		*30 - 150*	*10/06/16 07:53*	*10/07/16 14:58*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.062**	**J**	0.20	0.062	mg/L		10/11/16 15:30	10/14/16 04:13	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 04:13	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:13	1
Barium	**0.56**		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:13	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 04:13	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 04:13	1
Calcium	**97**		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 04:13	1
Chromium	**0.0028**	**J**	0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 04:13	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 04:13	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:13	1
Iron	**8.4**	~~**^ B**~~	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 04:13	1
Lead	**0.0025**	**J**	0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 04:13	1
Magnesium	**72**		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 17:53	1
Manganese	**0.14**		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:13	1
Nickel	<0.010		0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 04:13	1
Potassium	**37**		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 04:13	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 04:13	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 04:13	1
Sodium	**210**		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 04:13	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:13	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 04:13	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 04:13	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 15:30	10/14/16 04:19	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-08-GW-10052016

Lab Sample ID: 500-118151-3

Date Collected: 10/05/16 12:05
Matrix: Water
Date Received: 10/05/16 16:35

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 04:19	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:19	1
Barium	**0.52**		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:19	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 04:19	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 04:19	1
Calcium	**92**		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 04:19	1
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 04:19	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 04:19	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:19	1
Iron	**7.8**	~~^ B~~	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 04:19	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 04:19	1
Magnesium	**68**		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 17:57	1
Manganese	**0.13**		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:19	1
Nickel	<0.010		0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 04:19	1
Potassium	**35**		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 04:19	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 04:19	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 04:19	1
Sodium	**200**		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 04:19	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:19	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 04:19	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 04:19	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:27	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			10/10/16 00:49	1
Sulfate	< 5.0 ~~3.0~~	~~J B~~ UB	5.0	1.5	mg/L			10/07/16 08:43	1
Total Organic Carbon - Duplicates	**17**	~~B~~	1.0	0.27	mg/L			10/07/16 04:12	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/16/16 19:52	1
Total Suspended Solids	**19**		5.0	2.5	mg/L			10/06/16 12:47	1
Ammonia	**39**	~~B~~	5.0	2.5	mg/L		10/12/16 19:17	10/12/16 23:14	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/06/16 13:27	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/14/16 00:15	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-09-GW-10052016

Lab Sample ID: 500-118151-4

Date Collected: 10/05/16 13:35
Matrix: Water
Date Received: 10/05/16 16:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			10/12/16 00:25	1
Benzene	**1.3**		0.50	0.15	ug/L			10/12/16 00:25	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/12/16 00:25	1
Bromoform	<1.0		1.0	0.48	ug/L			10/12/16 00:25	1
Bromomethane	<2.0	UJ	2.0	0.80	ug/L			10/12/16 00:25	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/12/16 00:25	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/12/16 00:25	1
Chlorobenzene	**13**		1.0	0.39	ug/L			10/12/16 00:25	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/12/16 00:25	1
Chloroform	<1.0		1.0	0.37	ug/L			10/12/16 00:25	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/12/16 00:25	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			10/12/16 00:25	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/12/16 00:25	1
Cyclohexane	**1.1**		1.0	0.49	ug/L			10/12/16 00:25	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/12/16 00:25	1
1,2-Dibromo-3-Chloropropane	<5.0	UJ	5.0	2.0	ug/L			10/12/16 00:25	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/12/16 00:25	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			10/12/16 00:25	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/12/16 00:25	1
1,4-Dichlorobenzene	**1.2**		1.0	0.36	ug/L			10/12/16 00:25	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/12/16 00:25	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/12/16 00:25	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/12/16 00:25	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/12/16 00:25	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/12/16 00:25	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			10/12/16 00:25	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/12/16 00:25	1
Isopropylbenzene	**2.5**		1.0	0.39	ug/L			10/12/16 00:25	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/12/16 00:25	1
Methylcyclohexane	**0.99**	**J**	1.0	0.32	ug/L			10/12/16 00:25	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/12/16 00:25	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/12/16 00:25	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			10/12/16 00:25	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/12/16 00:25	1
Styrene	<1.0		1.0	0.39	ug/L			10/12/16 00:25	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/12/16 00:25	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/12/16 00:25	1
Toluene	<0.50		0.50	0.15	ug/L			10/12/16 00:25	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/12/16 00:25	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/12/16 00:25	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/12/16 00:25	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/12/16 00:25	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/12/16 00:25	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/12/16 00:25	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/12/16 00:25	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/12/16 00:25	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			10/12/16 00:25	1
Xylenes, Total	**0.46**	**J**	1.0	0.22	ug/L			10/12/16 00:25	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-09-GW-10052016

Lab Sample ID: 500-118151-4

Date Collected: 10/05/16 13:35
Matrix: Water
Date Received: 10/05/16 16:35

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*71 - 120*		*10/12/16 00:25*	*1*
Dibromofluoromethane	*92*		*70 - 120*		*10/12/16 00:25*	*1*
1,2-Dichloroethane-d4 (Surr)	*86*		*71 - 127*		*10/12/16 00:25*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*10/12/16 00:25*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.88**		0.74	0.23	ug/L		10/06/16 16:12	10/07/16 14:29	1
Acenaphthylene	<0.74		0.74	0.20	ug/L		10/06/16 16:12	10/07/16 14:29	1
Acetophenone	<3.7		3.7	0.49	ug/L		10/06/16 16:12	10/07/16 14:29	1
Anthracene	<0.74		0.74	0.25	ug/L		10/06/16 16:12	10/07/16 14:29	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		10/06/16 16:12	10/07/16 14:29	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		10/06/16 16:12	10/07/16 14:29	1
Benzo[b]fluoranthene	<0.15		0.15	0.060	ug/L		10/06/16 16:12	10/07/16 14:29	1
Benzo[g,h,i]perylene	<0.74		0.74	0.28	ug/L		10/06/16 16:12	10/07/16 14:29	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		10/06/16 16:12	10/07/16 14:29	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		10/06/16 16:12	10/07/16 14:29	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		10/06/16 16:12	10/07/16 14:29	1
Bis(2-ethylhexyl) phthalate	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 14:29	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		10/06/16 16:12	10/07/16 14:29	1
Butyl benzyl phthalate	<1.5		1.5	0.36	ug/L		10/06/16 16:12	10/07/16 14:29	1
Carbazole	<3.7		3.7	0.26	ug/L		10/06/16 16:12	10/07/16 14:29	1
4-Chloroaniline	<7.4	UJ	7.4	1.5	ug/L		10/06/16 16:12	10/07/16 14:29	1
4-Chloro-3-methylphenol	<7.4		7.4	1.7	ug/L		10/06/16 16:12	10/07/16 14:29	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		10/06/16 16:12	10/07/16 14:29	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		10/06/16 16:12	10/07/16 14:29	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		10/06/16 16:12	10/07/16 14:29	1
Chrysene	<0.37		0.37	0.051	ug/L		10/06/16 16:12	10/07/16 14:29	1
Dibenz(a,h)anthracene	<0.22		0.22	0.038	ug/L		10/06/16 16:12	10/07/16 14:29	1
Dibenzofuran	**0.21**	**J**	1.5	0.19	ug/L		10/06/16 16:12	10/07/16 14:29	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		10/06/16 16:12	10/07/16 14:29	1
2,4-Dichlorophenol	<7.4		7.4	1.9	ug/L		10/06/16 16:12	10/07/16 14:29	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		10/06/16 16:12	10/07/16 14:29	1
2,4-Dimethylphenol	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 14:29	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		10/06/16 16:12	10/07/16 14:29	1
Di-n-butyl phthalate	<3.7		3.7	0.54	ug/L		10/06/16 16:12	10/07/16 14:29	1
4,6-Dinitro-2-methylphenol	<15	UJ	15	4.4	ug/L		10/06/16 16:12	10/07/16 14:29	1
2,4-Dinitrophenol	<15	UJ	15	6.4	ug/L		10/06/16 16:12	10/07/16 14:29	1
2,4-Dinitrotoluene	<0.74		0.74	0.18	ug/L		10/06/16 16:12	10/07/16 14:29	1
2,6-Dinitrotoluene	<0.74		0.74	0.055	ug/L		10/06/16 16:12	10/07/16 14:29	1
Di-n-octyl phthalate	<7.4		7.4	0.78	ug/L		10/06/16 16:12	10/07/16 14:29	1
Fluoranthene	<0.74		0.74	0.34	ug/L		10/06/16 16:12	10/07/16 14:29	1
Fluorene	**0.39**	**J**	0.74	0.18	ug/L		10/06/16 16:12	10/07/16 14:29	1
Hexachlorobenzene	<0.37		0.37	0.059	ug/L		10/06/16 16:12	10/07/16 14:29	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		10/06/16 16:12	10/07/16 14:29	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		10/06/16 16:12	10/07/16 14:29	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		10/06/16 16:12	10/07/16 14:29	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		10/06/16 16:12	10/07/16 14:29	1
Isophorone	<1.5		1.5	0.28	ug/L		10/06/16 16:12	10/07/16 14:29	1
2-Methylnaphthalene	**2.3**		1.5	0.048	ug/L		10/06/16 16:12	10/07/16 14:29	1

Client Sample ID: MW-09-GW-10052016

Lab Sample ID: 500-118151-4

Date Collected: 10/05/16 13:35

Matrix: Water

Date Received: 10/05/16 16:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.23	ug/L		10/06/16 16:12	10/07/16 14:29	1
3 & 4 Methylphenol	**1.5**		1.5	0.33	ug/L		10/06/16 16:12	10/07/16 14:29	1
Naphthalene	**0.30**	**J**	0.74	0.23	ug/L		10/06/16 16:12	10/07/16 14:29	1
2-Nitroaniline	<3.7		3.7	0.95	ug/L		10/06/16 16:12	10/07/16 14:29	1
3-Nitroaniline	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 14:29	1
4-Nitroaniline	<7.4		7.4	1.2	ug/L		10/06/16 16:12	10/07/16 14:29	1
Nitrobenzene	<0.74		0.74	0.33	ug/L		10/06/16 16:12	10/07/16 14:29	1
2-Nitrophenol	<7.4		7.4	1.9	ug/L		10/06/16 16:12	10/07/16 14:29	1
4-Nitrophenol	<15		15	5.5	ug/L		10/06/16 16:12	10/07/16 14:29	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		10/06/16 16:12	10/07/16 14:29	1
N-Nitrosodiphenylamine	**0.57**	**J**	0.74	0.27	ug/L		10/06/16 16:12	10/07/16 14:29	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		10/06/16 16:12	10/07/16 14:29	1
Pentachlorophenol	<15		15	2.9	ug/L		10/06/16 16:12	10/07/16 14:29	1
Phenanthrene	**0.37**	**J**	0.74	0.22	ug/L		10/06/16 16:12	10/07/16 14:29	1
Phenol	<3.7		3.7	0.50	ug/L		10/06/16 16:12	10/07/16 14:29	1
Pyrene	<0.74		0.74	0.32	ug/L		10/06/16 16:12	10/07/16 14:29	1
2,4,5-Trichlorophenol	<7.4		7.4	1.9	ug/L		10/06/16 16:12	10/07/16 14:29	1
2,4,6-Trichlorophenol	<3.7		3.7	0.53	ug/L		10/06/16 16:12	10/07/16 14:29	1
Benzaldehyde	<30	UJ	30	11	ug/L		10/06/16 16:12	10/07/16 14:29	1
Caprolactam	<7.4		7.4	1.1	ug/L		10/06/16 16:12	10/07/16 14:29	1
Atrazine	<3.7		3.7	0.46	ug/L		10/06/16 16:12	10/07/16 14:29	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		10/06/16 16:12	10/07/16 14:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*62*		*30 - 123*	*10/06/16 16:12*	*10/07/16 14:29*	*1*
2-Fluorophenol (Surr)	*51*		*30 - 110*	*10/06/16 16:12*	*10/07/16 14:29*	*1*
Nitrobenzene-d5 (Surr)	*56*		*33 - 139*	*10/06/16 16:12*	*10/07/16 14:29*	*1*
Phenol-d5 (Surr)	*39*		*20 - 100*	*10/06/16 16:12*	*10/07/16 14:29*	*1*
Terphenyl-d14 (Surr)	*97*		*42 - 150*	*10/06/16 16:12*	*10/07/16 14:29*	*1*
2,4,6-Tribromophenol (Surr)	*104*		*30 - 150*	*10/06/16 16:12*	*10/07/16 14:29*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		10/06/16 07:53	10/06/16 16:33	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/06/16 07:53	10/06/16 16:33	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		10/06/16 07:53	10/06/16 16:33	1
beta-BHC	<0.037		0.037	0.0094	ug/L		10/06/16 07:53	10/06/16 16:33	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/06/16 16:33	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/06/16 07:53	10/06/16 16:33	1
4,4'-DDT	<0.037		0.037	0.0030	ug/L		10/06/16 07:53	10/06/16 16:33	1
delta-BHC	<0.037		0.037	0.0095	ug/L		10/06/16 07:53	10/06/16 16:33	1
Dieldrin	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/06/16 16:33	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/06/16 07:53	10/06/16 16:33	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/06/16 07:53	10/06/16 16:33	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/06/16 07:53	10/06/16 16:33	1
Endrin	<0.037		0.037	0.013	ug/L		10/06/16 07:53	10/06/16 16:33	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		10/06/16 07:53	10/06/16 16:33	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/06/16 07:53	10/06/16 16:33	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		10/06/16 07:53	10/06/16 16:33	1
gamma-Chlordane	<0.037		0.037	0.0067	ug/L		10/06/16 07:53	10/06/16 16:33	1

Client Sample ID: MW-09-GW-10052016

Lab Sample ID: 500-118151-4

Date Collected: 10/05/16 13:35
Date Received: 10/05/16 16:35

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.012	ug/L		10/06/16 07:53	10/06/16 16:33	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/06/16 07:53	10/06/16 16:33	1
Methoxychlor	<0.074		0.074	0.021	ug/L		10/06/16 07:53	10/06/16 16:33	1
Toxaphene	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/06/16 16:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*58*		*30 - 143*	*10/06/16 07:53*	*10/06/16 16:33*	*1*
Tetrachloro-m-xylene	*69*		*30 - 120*	*10/06/16 07:53*	*10/06/16 16:33*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		10/06/16 07:53	10/07/16 15:13	1
PCB-1221	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 15:13	1
PCB-1232	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 15:13	1
PCB-1242	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 15:13	1
PCB-1248	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 15:13	1
PCB-1254	<0.37		0.37	0.18	ug/L		10/06/16 07:53	10/07/16 15:13	1
PCB-1260	<0.37		0.37	0.065	ug/L		10/06/16 07:53	10/07/16 15:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*84*		*30 - 127*	*10/06/16 07:53*	*10/07/16 15:13*	*1*
DCB Decachlorobiphenyl	*54*		*30 - 150*	*10/06/16 07:53*	*10/07/16 15:13*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 15:30	10/14/16 04:24	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 04:24	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:24	1
Barium	**0.77**		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:24	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 04:24	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 04:24	1
Calcium	**120**		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 04:24	1
Chromium	**0.0050**	**J**	0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 04:24	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 04:24	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:24	1
Iron	**24**	~~^ B~~	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 04:24	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 04:24	1
Magnesium	**79**		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 18:01	1
Manganese	**0.15**		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:24	1
Nickel	<0.010		0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 04:24	1
Potassium	**74**		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 04:24	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 04:24	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 04:24	1
Sodium	**190**		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 04:24	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:24	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 04:24	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 04:24	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 15:30	10/14/16 04:28	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-09-GW-10052016

Lab Sample ID: 500-118151-4

Date Collected: 10/05/16 13:35
Matrix: Water
Date Received: 10/05/16 16:35

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:30	10/14/16 04:28	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:28	1
Barium	**0.77**		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:28	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:30	10/14/16 04:28	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		10/11/16 15:30	10/14/16 04:28	1
Calcium	**120**		0.20	0.059	mg/L		10/11/16 15:30	10/14/16 04:28	1
Chromium	**0.0044**	J	0.010	0.0024	mg/L		10/11/16 15:30	10/14/16 04:28	1
Cobalt	**0.0010**	J	0.0050	0.00096	mg/L		10/11/16 15:30	10/14/16 04:28	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 15:30	10/14/16 04:28	1
Iron	**25**	~~A B~~	0.20	0.10	mg/L		10/11/16 15:30	10/14/16 04:28	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 15:30	10/14/16 04:28	1
Magnesium	**79**		0.10	0.041	mg/L		10/11/16 15:30	10/14/16 18:05	1
Manganese	**0.15**		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:28	1
Nickel	<0.010		0.010	0.0037	mg/L		10/11/16 15:30	10/14/16 04:28	1
Potassium	**74**		0.50	0.16	mg/L		10/11/16 15:30	10/14/16 04:28	1
Selenium	< 0.010 ~~**0.0058**~~	~~J~~ UB	0.010	0.0051	mg/L		10/11/16 15:30	10/14/16 04:28	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:30	10/14/16 04:28	1
Sodium	**190**		1.0	0.43	mg/L		10/11/16 15:30	10/14/16 04:28	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:30	10/14/16 04:28	1
Vanadium	**0.0019**	J	0.0050	0.0019	mg/L		10/11/16 15:30	10/14/16 04:28	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:30	10/14/16 04:28	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:30	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			10/10/16 00:53	1
Sulfate	< 5.0 ~~**2.1**~~	~~J B~~ UB	5.0	1.5	mg/L			10/12/16 07:51	1
Total Organic Carbon - Duplicates	**27**	~~F1 B~~ J	1.0	0.27	mg/L			10/07/16 04:28	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/16/16 19:52	1
Total Suspended Solids	**28**		5.0	2.5	mg/L			10/06/16 12:48	1
Ammonia	**78**	~~B~~	5.0	2.5	mg/L		10/12/16 19:17	10/12/16 23:17	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/06/16 13:27	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/14/16 00:18	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-06-GW-10052016

Lab Sample ID: 500-118151-5

Date Collected: 10/05/16 08:40
Matrix: Water
Date Received: 10/05/16 16:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**41**		5.0	1.7	ug/L			10/12/16 00:52	1
Benzene	**6.6**		0.50	0.15	ug/L			10/12/16 00:52	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/12/16 00:52	1
Bromoform	<1.0		1.0	0.48	ug/L			10/12/16 00:52	1
Bromomethane	<2.0	UJ	2.0	0.80	ug/L			10/12/16 00:52	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/12/16 00:52	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/12/16 00:52	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			10/12/16 00:52	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/12/16 00:52	1
Chloroform	<1.0		1.0	0.37	ug/L			10/12/16 00:52	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/12/16 00:52	1
cis-1,2-Dichloroethene	**5.3**		1.0	0.41	ug/L			10/12/16 00:52	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/12/16 00:52	1
Cyclohexane	<1.0		1.0	0.49	ug/L			10/12/16 00:52	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/12/16 00:52	1
1,2-Dibromo-3-Chloropropane	<5.0	UJ	5.0	2.0	ug/L			10/12/16 00:52	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/12/16 00:52	1
1,2-Dichlorobenzene	**2.6**		1.0	0.33	ug/L			10/12/16 00:52	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/12/16 00:52	1
1,4-Dichlorobenzene	**14**		1.0	0.36	ug/L			10/12/16 00:52	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/12/16 00:52	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/12/16 00:52	1
1,2-Dichloroethane	**1.3**		1.0	0.39	ug/L			10/12/16 00:52	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/12/16 00:52	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/12/16 00:52	1
Ethylbenzene	**63**		0.50	0.18	ug/L			10/12/16 00:52	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/12/16 00:52	1
Isopropylbenzene	**4.0**		1.0	0.39	ug/L			10/12/16 00:52	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/12/16 00:52	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			10/12/16 00:52	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/12/16 00:52	1
Methyl Ethyl Ketone	**19**		5.0	2.1	ug/L			10/12/16 00:52	1
methyl isobutyl ketone	**44**		5.0	2.2	ug/L			10/12/16 00:52	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/12/16 00:52	1
Styrene	<1.0		1.0	0.39	ug/L			10/12/16 00:52	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/12/16 00:52	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/12/16 00:52	1
Toluene	**160**		0.50	0.15	ug/L			10/12/16 00:52	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/12/16 00:52	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/12/16 00:52	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/12/16 00:52	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/12/16 00:52	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/12/16 00:52	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/12/16 00:52	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/12/16 00:52	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/12/16 00:52	1
Vinyl chloride	**4.4**		0.50	0.20	ug/L			10/12/16 00:52	1
Xylenes, Total	**240**		1.0	0.22	ug/L			10/12/16 00:52	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-06-GW-10052016

Date Collected: 10/05/16 08:40
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-5

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*		*10/12/16 00:52*	*1*
Dibromofluoromethane	*92*		*70 - 120*		*10/12/16 00:52*	*1*
1,2-Dichloroethane-d4 (Surr)	*86*		*71 - 127*		*10/12/16 00:52*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*10/12/16 00:52*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<7.4		7.4	2.3	ug/L		10/06/16 16:12	10/07/16 16:27	10
Acenaphthylene	<7.4		7.4	2.0	ug/L		10/06/16 16:12	10/07/16 16:27	10
Acetophenone	**7.2**	**J**	37	4.9	ug/L		10/06/16 16:12	10/07/16 16:27	10
Anthracene	<7.4		7.4	2.5	ug/L		10/06/16 16:12	10/07/16 16:27	10
Benzo[a]anthracene	<1.5		1.5	0.42	ug/L		10/06/16 16:12	10/07/16 16:27	10
Benzo[a]pyrene	<1.5	* UJ	1.5	0.73	ug/L		10/06/16 16:12	10/07/16 16:27	10
Benzo[b]fluoranthene	<1.5	* UJ	1.5	0.60	ug/L		10/06/16 16:12	10/07/16 16:27	10
Benzo[g,h,i]perylene	<7.4	* UJ	7.4	2.8	ug/L		10/06/16 16:12	10/07/16 16:27	10
Benzo[k]fluoranthene	<1.5	* UJ	1.5	0.47	ug/L		10/06/16 16:12	10/07/16 16:27	10
Bis(2-chloroethoxy)methane	<15		15	2.1	ug/L		10/06/16 16:12	10/07/16 16:27	10
Bis(2-chloroethyl)ether	<15		15	2.2	ug/L		10/06/16 16:12	10/07/16 16:27	10
Bis(2-ethylhexyl) phthalate	**120**		74	13	ug/L		10/06/16 16:12	10/07/16 16:27	10
4-Bromophenyl phenyl ether	<37		37	4.0	ug/L		10/06/16 16:12	10/07/16 16:27	10
Butyl benzyl phthalate	<15		15	3.5	ug/L		10/06/16 16:12	10/07/16 16:27	10
Carbazole	<37		37	2.6	ug/L		10/06/16 16:12	10/07/16 16:27	10
4-Chloroaniline	<74	* UJ	74	15	ug/L		10/06/16 16:12	10/07/16 16:27	10
4-Chloro-3-methylphenol	<74		74	17	ug/L		10/06/16 16:12	10/07/16 16:27	10
2-Chloronaphthalene	<15		15	1.7	ug/L		10/06/16 16:12	10/07/16 16:27	10
2-Chlorophenol	<37		37	4.1	ug/L		10/06/16 16:12	10/07/16 16:27	10
4-Chlorophenyl phenyl ether	<37		37	4.7	ug/L		10/06/16 16:12	10/07/16 16:27	10
Chrysene	<3.7		3.7	0.50	ug/L		10/06/16 16:12	10/07/16 16:27	10
Dibenz(a,h)anthracene	<2.2	* UJ	2.2	0.37	ug/L		10/06/16 16:12	10/07/16 16:27	10
Dibenzofuran	<15		15	1.9	ug/L		10/06/16 16:12	10/07/16 16:27	10
3,3'-Dichlorobenzidine	<37		37	13	ug/L		10/06/16 16:12	10/07/16 16:27	10
2,4-Dichlorophenol	<74		74	19	ug/L		10/06/16 16:12	10/07/16 16:27	10
Diethyl phthalate	<15		15	2.7	ug/L		10/06/16 16:12	10/07/16 16:27	10
2,4-Dimethylphenol	**79**		74	13	ug/L		10/06/16 16:12	10/07/16 16:27	10
Dimethyl phthalate	<15		15	2.3	ug/L		10/06/16 16:12	10/07/16 16:27	10
Di-n-butyl phthalate	<37		37	5.4	ug/L		10/06/16 16:12	10/07/16 16:27	10
4,6-Dinitro-2-methylphenol	<150	UJ	150	44	ug/L		10/06/16 16:12	10/07/16 16:27	10
2,4-Dinitrophenol	<150	UJ	150	63	ug/L		10/06/16 16:12	10/07/16 16:27	10
2,4-Dinitrotoluene	<7.4		7.4	1.8	ug/L		10/06/16 16:12	10/07/16 16:27	10
2,6-Dinitrotoluene	<7.4		7.4	0.54	ug/L		10/06/16 16:12	10/07/16 16:27	10
Di-n-octyl phthalate	<74		74	7.8	ug/L		10/06/16 16:12	10/07/16 16:27	10
Fluoranthene	<7.4		7.4	3.3	ug/L		10/06/16 16:12	10/07/16 16:27	10
Fluorene	<7.4		7.4	1.8	ug/L		10/06/16 16:12	10/07/16 16:27	10
Hexachlorobenzene	<3.7		3.7	0.59	ug/L		10/06/16 16:12	10/07/16 16:27	10
Hexachlorobutadiene	<37		37	3.8	ug/L		10/06/16 16:12	10/07/16 16:27	10
Hexachlorocyclopentadiene	<150		150	47	ug/L		10/06/16 16:12	10/07/16 16:27	10
Hexachloroethane	<37		37	4.4	ug/L		10/06/16 16:12	10/07/16 16:27	10
Indeno[1,2,3-cd]pyrene	<1.5	* UJ	1.5	0.55	ug/L		10/06/16 16:12	10/07/16 16:27	10
Isophorone	<15		15	2.8	ug/L		10/06/16 16:12	10/07/16 16:27	10
2-Methylnaphthalene	**2.2**	**J**	15	0.48	ug/L		10/06/16 16:12	10/07/16 16:27	10

Client Sample ID: MW-06-GW-10052016

Lab Sample ID: 500-118151-5

Date Collected: 10/05/16 08:40

Matrix: Water

Date Received: 10/05/16 16:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	**21**		15	2.3	ug/L		10/06/16 16:12	10/07/16 16:27	10
3 & 4 Methylphenol	**160**		15	3.3	ug/L		10/06/16 16:12	10/07/16 16:27	10
Naphthalene	**14**		7.4	2.3	ug/L		10/06/16 16:12	10/07/16 16:27	10
2-Nitroaniline	<37		37	9.5	ug/L		10/06/16 16:12	10/07/16 16:27	10
3-Nitroaniline	<74		74	13	ug/L		10/06/16 16:12	10/07/16 16:27	10
4-Nitroaniline	<74		74	12	ug/L		10/06/16 16:12	10/07/16 16:27	10
Nitrobenzene	<7.4		7.4	3.3	ug/L		10/06/16 16:12	10/07/16 16:27	10
2-Nitrophenol	<74		74	18	ug/L		10/06/16 16:12	10/07/16 16:27	10
4-Nitrophenol	<150		150	55	ug/L		10/06/16 16:12	10/07/16 16:27	10
N-Nitrosodi-n-propylamine	<3.7		3.7	1.1	ug/L		10/06/16 16:12	10/07/16 16:27	10
N-Nitrosodiphenylamine	**3.2**	**J**	7.4	2.7	ug/L		10/06/16 16:12	10/07/16 16:27	10
2,2'-oxybis[1-chloropropane]	<15		15	2.8	ug/L		10/06/16 16:12	10/07/16 16:27	10
Pentachlorophenol	<150		150	29	ug/L		10/06/16 16:12	10/07/16 16:27	10
Phenanthrene	<7.4		7.4	2.2	ug/L		10/06/16 16:12	10/07/16 16:27	10
Phenol	<37		37	5.0	ug/L		10/06/16 16:12	10/07/16 16:27	10
Pyrene	<7.4		7.4	3.1	ug/L		10/06/16 16:12	10/07/16 16:27	10
2,4,5-Trichlorophenol	<74		74	19	ug/L		10/06/16 16:12	10/07/16 16:27	10
2,4,6-Trichlorophenol	<37		37	5.3	ug/L		10/06/16 16:12	10/07/16 16:27	10
Benzaldehyde	<300	~~J~~ UJ	300	110	ug/L		10/06/16 16:12	10/07/16 16:27	10
Caprolactam	<74		74	11	ug/L		10/06/16 16:12	10/07/16 16:27	10
Atrazine	<37		37	4.6	ug/L		10/06/16 16:12	10/07/16 16:27	10
1,1'-Biphenyl	<37		37	2.7	ug/L		10/06/16 16:12	10/07/16 16:27	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*60*		*30 - 123*	*10/06/16 16:12*	*10/07/16 16:27*	*10*
2-Fluorophenol (Surr)	*74*		*30 - 110*	*10/06/16 16:12*	*10/07/16 16:27*	*10*
Nitrobenzene-d5 (Surr)	*68*		*33 - 139*	*10/06/16 16:12*	*10/07/16 16:27*	*10*
Phenol-d5 (Surr)	*69*		*20 - 100*	*10/06/16 16:12*	*10/07/16 16:27*	*10*
Terphenyl-d14 (Surr)	*131*		*42 - 150*	*10/06/16 16:12*	*10/07/16 16:27*	*10*
2,4,6-Tribromophenol (Surr)	*88*		*30 - 150*	*10/06/16 16:12*	*10/07/16 16:27*	*10*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.036		0.036	0.0048	ug/L		10/07/16 10:36	10/07/16 20:44	1
alpha-BHC	<0.036		0.036	0.0024	ug/L		10/07/16 10:36	10/07/16 20:44	1
alpha-Chlordane	<0.036		0.036	0.0040	ug/L		10/07/16 10:36	10/07/16 20:44	1
beta-BHC	<0.036		0.036	0.0093	ug/L		10/07/16 10:36	10/07/16 20:44	1
4,4'-DDD	<0.036		0.036	0.012	ug/L		10/07/16 10:36	10/07/16 20:44	1
4,4'-DDE	<0.036		0.036	0.0035	ug/L		10/07/16 10:36	10/07/16 20:44	1
4,4'-DDT	<0.036		0.036	0.0029	ug/L		10/07/16 10:36	10/07/16 20:44	1
delta-BHC	<0.036		0.036	0.0094	ug/L		10/07/16 10:36	10/07/16 20:44	1
Dieldrin	<0.036		0.036	0.012	ug/L		10/07/16 10:36	10/07/16 20:44	1
Endosulfan I	<0.036		0.036	0.0037	ug/L		10/07/16 10:36	10/07/16 20:44	1
Endosulfan II	<0.036		0.036	0.0026	ug/L		10/07/16 10:36	10/07/16 20:44	1
Endosulfan sulfate	<0.036		0.036	0.011	ug/L		10/07/16 10:36	10/07/16 20:44	1
Endrin	<0.036		0.036	0.013	ug/L		10/07/16 10:36	10/07/16 20:44	1
Endrin aldehyde	<0.036		0.036	0.0075	ug/L		10/07/16 10:36	10/07/16 20:44	1
Endrin ketone	<0.036		0.036	0.015	ug/L		10/07/16 10:36	10/07/16 20:44	1
gamma-BHC (Lindane)	<0.036		0.036	0.0051	ug/L		10/07/16 10:36	10/07/16 20:44	1
gamma-Chlordane	<0.036		0.036	0.0066	ug/L		10/07/16 10:36	10/07/16 20:44	1

Client Sample ID: MW-06-GW-10052016

Lab Sample ID: 500-118151-5

Date Collected: 10/05/16 08:40

Matrix: Water

Date Received: 10/05/16 16:35

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.036		0.036	0.012	ug/L		10/07/16 10:36	10/07/16 20:44	1
Heptachlor epoxide	<0.036		0.036	0.013	ug/L		10/07/16 10:36	10/07/16 20:44	1
Methoxychlor	<0.073		0.073	0.021	ug/L		10/07/16 10:36	10/07/16 20:44	1
Toxaphene	<0.36		0.36	0.18	ug/L		10/07/16 10:36	10/07/16 20:44	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*109*		*30 - 143*	*10/07/16 10:36*	*10/07/16 20:44*	*1*
Tetrachloro-m-xylene	*226*	*X*	*30 - 120*	*10/07/16 10:36*	*10/07/16 20:44*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.36		0.36	0.061	ug/L		10/07/16 10:36	10/17/16 12:19	1
PCB-1221	<0.36		0.36	0.18	ug/L		10/07/16 10:36	10/17/16 12:19	1
PCB-1232	<0.36		0.36	0.18	ug/L		10/07/16 10:36	10/17/16 12:19	1
PCB-1242	**5.3**		0.36	0.18	ug/L		10/07/16 10:36	10/17/16 12:19	1
PCB-1248	<0.36		0.36	0.18	ug/L		10/07/16 10:36	10/17/16 12:19	1
PCB-1254	<0.36		0.36	0.18	ug/L		10/07/16 10:36	10/17/16 12:19	1
PCB-1260	<0.36		0.36	0.064	ug/L		10/07/16 10:36	10/17/16 12:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*34*		*30 - 127*	*10/07/16 10:36*	*10/17/16 12:19*	*1*
DCB Decachlorobiphenyl	*14*	*X*	*30 - 150*	*10/07/16 10:36*	*10/17/16 12:19*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.55**	**J**	1.0	0.31	mg/L		10/11/16 15:30	10/14/16 04:31	1
Antimony	<0.10		0.10	0.032	mg/L		10/11/16 15:30	10/14/16 04:31	1
Arsenic	**0.030**	**J**	0.050	0.017	mg/L		10/11/16 15:30	10/14/16 04:31	1
Barium	**0.37**		0.050	0.011	mg/L		10/11/16 15:30	10/14/16 04:31	1
Beryllium	<0.020		0.020	0.0043	mg/L		10/11/16 15:30	10/14/16 04:31	1
Cadmium	<0.010		0.010	0.0047	mg/L		10/11/16 15:30	10/14/16 04:31	1
Calcium	**11**		1.0	0.30	mg/L		10/11/16 15:30	10/14/16 04:31	1
Chromium	**0.19**		0.050	0.012	mg/L		10/11/16 15:30	10/14/16 04:31	1
Cobalt	**0.036**		0.025	0.0048	mg/L		10/11/16 15:30	10/14/16 04:31	1
Copper	**0.016**	**J**	0.050	0.011	mg/L		10/11/16 15:30	10/14/16 04:31	1
Iron	**2.7**	~~^ B~~	1.0	0.50	mg/L		10/11/16 15:30	10/14/16 04:31	1
Lead	**0.22**		0.025	0.013	mg/L		10/11/16 15:30	10/14/16 04:31	1
Magnesium	**28**		0.50	0.20	mg/L		10/11/16 15:30	10/14/16 18:09	1
Manganese	<0.050		0.050	0.017	mg/L		10/11/16 15:30	10/14/16 04:31	1
Nickel	**0.14**		0.050	0.018	mg/L		10/11/16 15:30	10/14/16 04:31	1
Potassium	**650**		2.5	0.81	mg/L		10/11/16 15:30	10/14/16 04:31	1
Selenium	<0.050		0.050	0.026	mg/L		10/11/16 15:30	10/14/16 04:31	1
Silver	<0.025		0.025	0.0066	mg/L		10/11/16 15:30	10/14/16 04:31	1
Sodium	**3200**		5.0	2.2	mg/L		10/11/16 15:30	10/14/16 04:31	1
Thallium	<0.050		0.050	0.017	mg/L		10/11/16 15:30	10/14/16 04:31	1
Vanadium	**0.065**		0.025	0.0093	mg/L		10/11/16 15:30	10/14/16 04:31	1
Zinc	**0.20**		0.10	0.045	mg/L		10/11/16 15:30	10/14/16 04:31	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<1.0		1.0	0.31	mg/L		10/11/16 15:30	10/14/16 04:36	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: MW-06-GW-10052016

Lab Sample ID: 500-118151-5

Date Collected: 10/05/16 08:40
Matrix: Water
Date Received: 10/05/16 16:35

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.10		0.10	0.032	mg/L		10/11/16 15:30	10/14/16 04:36	1
Arsenic	**0.028**	**J**	0.050	0.017	mg/L		10/11/16 15:30	10/14/16 04:36	1
Barium	**0.35**		0.050	0.011	mg/L		10/11/16 15:30	10/14/16 04:36	1
Beryllium	<0.020		0.020	0.0043	mg/L		10/11/16 15:30	10/14/16 04:36	1
Cadmium	<0.010		0.010	0.0047	mg/L		10/11/16 15:30	10/14/16 04:36	1
Calcium	**11**		1.0	0.30	mg/L		10/11/16 15:30	10/14/16 04:36	1
Chromium	**0.18**		0.050	0.012	mg/L		10/11/16 15:30	10/14/16 04:36	1
Cobalt	**0.038**		0.025	0.0048	mg/L		10/11/16 15:30	10/14/16 04:36	1
Copper	<0.050		0.050	0.011	mg/L		10/11/16 15:30	10/14/16 04:36	1
Iron	**2.1**	~~^ B~~	1.0	0.50	mg/L		10/11/16 15:30	10/14/16 04:36	1
Lead	**0.029**		0.025	0.013	mg/L		10/11/16 15:30	10/14/16 04:36	1
Magnesium	**29**		0.50	0.20	mg/L		10/11/16 15:30	10/14/16 18:14	1
Manganese	<0.050		0.050	0.017	mg/L		10/11/16 15:30	10/14/16 04:36	1
Nickel	**0.15**		0.050	0.018	mg/L		10/11/16 15:30	10/14/16 04:36	1
Potassium	**690**		2.5	0.81	mg/L		10/11/16 15:30	10/14/16 04:36	1
Selenium	**0.039**	**J**	0.050	0.026	mg/L		10/11/16 15:30	10/14/16 04:36	1
Silver	<0.025		0.025	0.0066	mg/L		10/11/16 15:30	10/14/16 04:36	1
Sodium	**3300**		5.0	2.2	mg/L		10/11/16 15:30	10/14/16 04:36	1
Thallium	<0.050		0.050	0.017	mg/L		10/11/16 15:30	10/14/16 04:36	1
Vanadium	**0.053**		0.025	0.0093	mg/L		10/11/16 15:30	10/14/16 04:36	1
Zinc	**0.056**	**J**	0.10	0.045	mg/L		10/11/16 15:30	10/14/16 04:36	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00023**		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:33	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**8.0**		1.0	0.18	mg/L			10/10/16 00:58	1
Sulfate	**12**	**J** ~~B~~	25	7.4	mg/L			10/12/16 07:46	5
Total Organic Carbon - Duplicates	**530**	~~B~~	20	5.3	mg/L			10/07/16 20:51	20
Nitrogen, Nitrate	**0.053**	**J**	0.10	0.035	mg/L			10/16/16 19:52	1
Total Suspended Solids	**7.0**		5.0	2.5	mg/L			10/06/16 12:49	1
Ammonia	**790**		50	25	mg/L		10/12/16 19:17	10/13/16 16:08	250
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/06/16 13:28	1
Nitrogen, Nitrate Nitrite	**0.053**	**J**	0.10	0.035	mg/L			10/14/16 00:20	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-2 (10052016)

Lab Sample ID: 500-118151-6

Date Collected: 10/05/16 00:00
Matrix: Water
Date Received: 10/05/16 16:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**44**		5.0	1.7	ug/L			10/12/16 01:45	1
Benzene	**7.6**		0.50	0.15	ug/L			10/12/16 01:45	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/12/16 01:45	1
Bromoform	<1.0		1.0	0.48	ug/L			10/12/16 01:45	1
Bromomethane	<2.0	UJ	2.0	0.80	ug/L			10/12/16 01:45	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/12/16 01:45	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/12/16 01:45	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			10/12/16 01:45	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/12/16 01:45	1
Chloroform	<1.0		1.0	0.37	ug/L			10/12/16 01:45	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/12/16 01:45	1
cis-1,2-Dichloroethene	**5.5**		1.0	0.41	ug/L			10/12/16 01:45	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/12/16 01:45	1
Cyclohexane	<1.0		1.0	0.49	ug/L			10/12/16 01:45	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/12/16 01:45	1
1,2-Dibromo-3-Chloropropane	<5.0	UJ	5.0	2.0	ug/L			10/12/16 01:45	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/12/16 01:45	1
1,2-Dichlorobenzene	**3.2**		1.0	0.33	ug/L			10/12/16 01:45	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/12/16 01:45	1
1,4-Dichlorobenzene	**18**		1.0	0.36	ug/L			10/12/16 01:45	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/12/16 01:45	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/12/16 01:45	1
1,2-Dichloroethane	**1.3**		1.0	0.39	ug/L			10/12/16 01:45	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/12/16 01:45	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/12/16 01:45	1
Ethylbenzene	**78**		0.50	0.18	ug/L			10/12/16 01:45	1
2-Hexanone	<5.0		5.0	1.6	ug/L			10/12/16 01:45	1
Isopropylbenzene	**5.1**		1.0	0.39	ug/L			10/12/16 01:45	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/12/16 01:45	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			10/12/16 01:45	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/12/16 01:45	1
Methyl Ethyl Ketone	**20**		5.0	2.1	ug/L			10/12/16 01:45	1
methyl isobutyl ketone	**49**		5.0	2.2	ug/L			10/12/16 01:45	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/12/16 01:45	1
Styrene	<1.0		1.0	0.39	ug/L			10/12/16 01:45	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/12/16 01:45	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/12/16 01:45	1
Toluene	**200**		0.50	0.15	ug/L			10/12/16 01:45	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/12/16 01:45	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/12/16 01:45	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/12/16 01:45	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/12/16 01:45	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/12/16 01:45	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/12/16 01:45	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/12/16 01:45	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/12/16 01:45	1
Vinyl chloride	**5.3**		0.50	0.20	ug/L			10/12/16 01:45	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-2 (10052016)

Date Collected: 10/05/16 00:00
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-6

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		71 - 120		10/12/16 01:45	1
Dibromofluoromethane	91		70 - 120		10/12/16 01:45	1
1,2-Dichloroethane-d4 (Surr)	84		71 - 127		10/12/16 01:45	1
Toluene-d8 (Surr)	97		75 - 120		10/12/16 01:45	1

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**220**		10	2.2	ug/L			10/12/16 02:12	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		71 - 120		10/12/16 02:12	10
Dibromofluoromethane	89		70 - 120		10/12/16 02:12	10
1,2-Dichloroethane-d4 (Surr)	84		71 - 127		10/12/16 02:12	10
Toluene-d8 (Surr)	98		75 - 120		10/12/16 02:12	10

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<7.4		7.4	2.3	ug/L		10/06/16 16:12	10/07/16 16:56	10
Acenaphthylene	<7.4		7.4	2.0	ug/L		10/06/16 16:12	10/07/16 16:56	10
Acetophenone	**6.6**	J	37	4.9	ug/L		10/06/16 16:12	10/07/16 16:56	10
Anthracene	<7.4		7.4	2.5	ug/L		10/06/16 16:12	10/07/16 16:56	10
Benzo[a]anthracene	<1.5		1.5	0.42	ug/L		10/06/16 16:12	10/07/16 16:56	10
Benzo[a]pyrene	<1.5	* UJ	1.5	0.73	ug/L		10/06/16 16:12	10/07/16 16:56	10
Benzo[b]fluoranthene	<1.5	* UJ	1.5	0.60	ug/L		10/06/16 16:12	10/07/16 16:56	10
Benzo[g,h,i]perylene	<7.4	* UJ	7.4	2.8	ug/L		10/06/16 16:12	10/07/16 16:56	10
Benzo[k]fluoranthene	<1.5	* UJ	1.5	0.47	ug/L		10/06/16 16:12	10/07/16 16:56	10
Bis(2-chloroethoxy)methane	<15		15	2.1	ug/L		10/06/16 16:12	10/07/16 16:56	10
Bis(2-chloroethyl)ether	<15		15	2.2	ug/L		10/06/16 16:12	10/07/16 16:56	10
Bis(2-ethylhexyl) phthalate	**120**		74	13	ug/L		10/06/16 16:12	10/07/16 16:56	10
4-Bromophenyl phenyl ether	<37		37	4.0	ug/L		10/06/16 16:12	10/07/16 16:56	10
Butyl benzyl phthalate	<15		15	3.6	ug/L		10/06/16 16:12	10/07/16 16:56	10
Carbazole	<37		37	2.6	ug/L		10/06/16 16:12	10/07/16 16:56	10
4-Chloroaniline	<74	* UJ	74	15	ug/L		10/06/16 16:12	10/07/16 16:56	10
4-Chloro-3-methylphenol	<74		74	17	ug/L		10/06/16 16:12	10/07/16 16:56	10
2-Chloronaphthalene	<15		15	1.7	ug/L		10/06/16 16:12	10/07/16 16:56	10
2-Chlorophenol	<37		37	4.1	ug/L		10/06/16 16:12	10/07/16 16:56	10
4-Chlorophenyl phenyl ether	<37		37	4.7	ug/L		10/06/16 16:12	10/07/16 16:56	10
Chrysene	<3.7		3.7	0.50	ug/L		10/06/16 16:12	10/07/16 16:56	10
Dibenz(a,h)anthracene	<2.2	* UJ	2.2	0.38	ug/L		10/06/16 16:12	10/07/16 16:56	10
Dibenzofuran	<15		15	1.9	ug/L		10/06/16 16:12	10/07/16 16:56	10
3,3'-Dichlorobenzidine	<37		37	13	ug/L		10/06/16 16:12	10/07/16 16:56	10
2,4-Dichlorophenol	<74		74	19	ug/L		10/06/16 16:12	10/07/16 16:56	10
Diethyl phthalate	<15		15	2.7	ug/L		10/06/16 16:12	10/07/16 16:56	10
2,4-Dimethylphenol	**77**		74	13	ug/L		10/06/16 16:12	10/07/16 16:56	10
Dimethyl phthalate	<15		15	2.3	ug/L		10/06/16 16:12	10/07/16 16:56	10
Di-n-butyl phthalate	<37		37	5.4	ug/L		10/06/16 16:12	10/07/16 16:56	10
4,6-Dinitro-2-methylphenol	<150	UJ	150	44	ug/L		10/06/16 16:12	10/07/16 16:56	10
2,4-Dinitrophenol	<150	UJ	150	64	ug/L		10/06/16 16:12	10/07/16 16:56	10
2,4-Dinitrotoluene	<7.4		7.4	1.8	ug/L		10/06/16 16:12	10/07/16 16:56	10
2,6-Dinitrotoluene	<7.4		7.4	0.55	ug/L		10/06/16 16:12	10/07/16 16:56	10
Di-n-octyl phthalate	<74		74	7.8	ug/L		10/06/16 16:12	10/07/16 16:56	10

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-2 (10052016)

Date Collected: 10/05/16 00:00
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-6

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<7.4		7.4	3.4	ug/L		10/06/16 16:12	10/07/16 16:56	10
Fluorene	<7.4		7.4	1.8	ug/L		10/06/16 16:12	10/07/16 16:56	10
Hexachlorobenzene	<3.7		3.7	0.59	ug/L		10/06/16 16:12	10/07/16 16:56	10
Hexachlorobutadiene	<37		37	3.8	ug/L		10/06/16 16:12	10/07/16 16:56	10
Hexachlorocyclopentadiene	<150		150	47	ug/L		10/06/16 16:12	10/07/16 16:56	10
Hexachloroethane	<37		37	4.4	ug/L		10/06/16 16:12	10/07/16 16:56	10
Indeno[1,2,3-cd]pyrene	<1.5	UJ	1.5	0.55	ug/L		10/06/16 16:12	10/07/16 16:56	10
Isophorone	<15		15	2.8	ug/L		10/06/16 16:12	10/07/16 16:56	10
2-Methylnaphthalene	**2.1**	**J**	15	0.48	ug/L		10/06/16 16:12	10/07/16 16:56	10
2-Methylphenol	**17**		15	2.3	ug/L		10/06/16 16:12	10/07/16 16:56	10
3 & 4 Methylphenol	**150**		15	3.3	ug/L		10/06/16 16:12	10/07/16 16:56	10
Naphthalene	**13**		7.4	2.3	ug/L		10/06/16 16:12	10/07/16 16:56	10
2-Nitroaniline	<37		37	9.5	ug/L		10/06/16 16:12	10/07/16 16:56	10
3-Nitroaniline	<74		74	13	ug/L		10/06/16 16:12	10/07/16 16:56	10
4-Nitroaniline	<74		74	12	ug/L		10/06/16 16:12	10/07/16 16:56	10
Nitrobenzene	<7.4		7.4	3.3	ug/L		10/06/16 16:12	10/07/16 16:56	10
2-Nitrophenol	<74		74	19	ug/L		10/06/16 16:12	10/07/16 16:56	10
4-Nitrophenol	<150		150	55	ug/L		10/06/16 16:12	10/07/16 16:56	10
N-Nitrosodi-n-propylamine	<3.7		3.7	1.1	ug/L		10/06/16 16:12	10/07/16 16:56	10
N-Nitrosodiphenylamine	<7.4		7.4	2.7	ug/L		10/06/16 16:12	10/07/16 16:56	10
2,2'-oxybis[1-chloropropane]	<15		15	2.8	ug/L		10/06/16 16:12	10/07/16 16:56	10
Pentachlorophenol	<150		150	29	ug/L		10/06/16 16:12	10/07/16 16:56	10
Phenanthrene	<7.4		7.4	2.2	ug/L		10/06/16 16:12	10/07/16 16:56	10
Phenol	<37		37	5.0	ug/L		10/06/16 16:12	10/07/16 16:56	10
Pyrene	<7.4		7.4	3.2	ug/L		10/06/16 16:12	10/07/16 16:56	10
2,4,5-Trichlorophenol	<74		74	19	ug/L		10/06/16 16:12	10/07/16 16:56	10
2,4,6-Trichlorophenol	<37		37	5.3	ug/L		10/06/16 16:12	10/07/16 16:56	10
Benzaldehyde	<300	UJ	300	110	ug/L		10/06/16 16:12	10/07/16 16:56	10
Caprolactam	<74		74	11	ug/L		10/06/16 16:12	10/07/16 16:56	10
Atrazine	<37		37	4.6	ug/L		10/06/16 16:12	10/07/16 16:56	10
1,1'-Biphenyl	<37		37	2.7	ug/L		10/06/16 16:12	10/07/16 16:56	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*54*		*30 - 123*	*10/06/16 16:12*	*10/07/16 16:56*	*10*
2-Fluorophenol (Surr)	*62*		*30 - 110*	*10/06/16 16:12*	*10/07/16 16:56*	*10*
Nitrobenzene-d5 (Surr)	*45*		*33 - 139*	*10/06/16 16:12*	*10/07/16 16:56*	*10*
Phenol-d5 (Surr)	*63*		*20 - 100*	*10/06/16 16:12*	*10/07/16 16:56*	*10*
Terphenyl-d14 (Surr)	*116*		*42 - 150*	*10/06/16 16:12*	*10/07/16 16:56*	*10*
2,4,6-Tribromophenol (Surr)	*79*		*30 - 150*	*10/06/16 16:12*	*10/07/16 16:56*	*10*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037	UJ	0.037	0.0049	ug/L		10/07/16 10:36	10/07/16 21:22	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/07/16 10:36	10/07/16 21:22	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		10/07/16 10:36	10/07/16 21:22	1
beta-BHC	<0.037		0.037	0.0094	ug/L		10/07/16 10:36	10/07/16 21:22	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/07/16 10:36	10/07/16 21:22	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/07/16 10:36	10/07/16 21:22	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		10/07/16 10:36	10/07/16 21:22	1
delta-BHC	<0.037		0.037	0.0095	ug/L		10/07/16 10:36	10/07/16 21:22	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118151-1

Client Sample ID: DUP-2 (10052016)

Date Collected: 10/05/16 00:00
Date Received: 10/05/16 16:35

Lab Sample ID: 500-118151-6

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.037	UJ	0.037	0.012	ug/L		10/07/16 10:36	10/07/16 21:22	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/07/16 10:36	10/07/16 21:22	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/07/16 10:36	10/07/16 21:22	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/07/16 10:36	10/07/16 21:22	1
Endrin	<0.037		0.037	0.013	ug/L		10/07/16 10:36	10/07/16 21:22	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		10/07/16 10:36	10/07/16 21:22	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/07/16 10:36	10/07/16 21:22	1
gamma-BHC (Lindane)	<0.037		0.037	0.0051	ug/L		10/07/16 10:36	10/07/16 21:22	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		10/07/16 10:36	10/07/16 21:22	1
Heptachlor	<0.037		0.037	0.012	ug/L		10/07/16 10:36	10/07/16 21:22	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/07/16 10:36	10/07/16 21:22	1
Methoxychlor	<0.073		0.073	0.021	ug/L		10/07/16 10:36	10/07/16 21:22	1
Toxaphene	<0.37		0.37	0.18	ug/L		10/07/16 10:36	10/07/16 21:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*21*	*X*	*30 - 143*	*10/07/16 10:36*	*10/07/16 21:22*	*1*
Tetrachloro-m-xylene	*245*	*X*	*30 - 120*	*10/07/16 10:36*	*10/07/16 21:22*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		10/07/16 10:36	10/17/16 12:34	1
PCB-1221	<0.37		0.37	0.18	ug/L		10/07/16 10:36	10/17/16 12:34	1
PCB-1232	<0.37		0.37	0.18	ug/L		10/07/16 10:36	10/17/16 12:34	1
PCB-1242	**4.9**		0.37	0.18	ug/L		10/07/16 10:36	10/17/16 12:34	1
PCB-1248	<0.37		0.37	0.18	ug/L		10/07/16 10:36	10/17/16 12:34	1
PCB-1254	<0.37		0.37	0.18	ug/L		10/07/16 10:36	10/17/16 12:34	1
PCB-1260	<0.37		0.37	0.064	ug/L		10/07/16 10:36	10/17/16 12:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*30*		*30 - 127*	*10/07/16 10:36*	*10/17/16 12:34*	*1*
DCB Decachlorobiphenyl	*13*	*X*	*30 - 150*	*10/07/16 10:36*	*10/17/16 12:34*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.56**	**J**	1.0	0.31	mg/L		10/12/16 08:54	10/14/16 05:04	1
Antimony	<0.10		0.10	0.032	mg/L		10/12/16 08:54	10/14/16 05:04	1
Arsenic	**0.019**	**J**	0.050	0.017	mg/L		10/12/16 08:54	10/14/16 05:04	1
Barium	**0.40**		0.050	0.011	mg/L		10/12/16 08:54	10/14/16 05:04	1
Beryllium	<0.020		0.020	0.0043	mg/L		10/12/16 08:54	10/14/16 05:04	1
Cadmium	<0.010		0.010	0.0047	mg/L		10/12/16 08:54	10/14/16 05:04	1
Calcium	**12**		1.0	0.30	mg/L		10/12/16 08:54	10/14/16 05:04	1
Chromium	**0.20**		0.050	0.012	mg/L		10/12/16 08:54	10/14/16 05:04	1
Cobalt	**0.046**		0.025	0.0048	mg/L		10/12/16 08:54	10/14/16 05:04	1
Copper	**0.022**	**J**	0.050	0.011	mg/L		10/12/16 08:54	10/14/16 05:04	1
Iron	**2.6**		1.0	0.50	mg/L		10/12/16 08:54	10/14/16 05:04	1
Lead	**0.24**		0.025	0.013	mg/L		10/12/16 08:54	10/14/16 05:04	1
Magnesium	**30**		0.50	0.20	mg/L		10/12/16 08:54	10/14/16 05:04	1
Manganese	<0.050		0.050	0.017	mg/L		10/12/16 08:54	10/14/16 05:04	1
Nickel	**0.17**		0.050	0.018	mg/L		10/12/16 08:54	10/14/16 05:04	1
Potassium	**700**		2.5	0.81	mg/L		10/12/16 08:54	10/14/16 05:04	1

Client Sample ID: DUP-2 (10052016)

Lab Sample ID: 500-118151-6

Date Collected: 10/05/16 00:00
Matrix: Water
Date Received: 10/05/16 16:35

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.050		0.050	0.026	mg/L		10/12/16 08:54	10/14/16 05:04	1
Silver	<0.025		0.025	0.0066	mg/L		10/12/16 08:54	10/14/16 05:04	1
Sodium	**3500**		5.0	2.2	mg/L		10/12/16 08:54	10/14/16 05:04	1
Thallium	<0.050		0.050	0.017	mg/L		10/12/16 08:54	10/14/16 05:04	1
Vanadium	**0.064**		0.025	0.0093	mg/L		10/12/16 08:54	10/14/16 05:04	1
Zinc	**0.31**		0.10	0.045	mg/L		10/12/16 08:54	10/14/16 05:04	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<1.0		1.0	0.31	mg/L		10/12/16 08:54	10/14/16 05:09	1
Antimony	<0.10		0.10	0.032	mg/L		10/12/16 08:54	10/14/16 05:09	1
Arsenic	**0.022**	**J**	0.050	0.017	mg/L		10/12/16 08:54	10/14/16 05:09	1
Barium	**0.37**		0.050	0.011	mg/L		10/12/16 08:54	10/14/16 05:09	1
Beryllium	<0.020		0.020	0.0043	mg/L		10/12/16 08:54	10/14/16 05:09	1
Cadmium	<0.010		0.010	0.0047	mg/L		10/12/16 08:54	10/14/16 05:09	1
Calcium	**11**		1.0	0.30	mg/L		10/12/16 08:54	10/14/16 05:09	1
Chromium	**0.19**		0.050	0.012	mg/L		10/12/16 08:54	10/14/16 05:09	1
Cobalt	**0.046**		0.025	0.0048	mg/L		10/12/16 08:54	10/14/16 05:09	1
Copper	<0.050		0.050	0.011	mg/L		10/12/16 08:54	10/14/16 05:09	1
Iron	**2.4**		1.0	0.50	mg/L		10/12/16 08:54	10/14/16 05:09	1
Lead	<0.025		0.025	0.013	mg/L		10/12/16 08:54	10/14/16 05:09	1
Magnesium	**30**		0.50	0.20	mg/L		10/12/16 08:54	10/14/16 05:09	1
Manganese	<0.050		0.050	0.017	mg/L		10/12/16 08:54	10/14/16 05:09	1
Nickel	**0.17**		0.050	0.018	mg/L		10/12/16 08:54	10/14/16 05:09	1
Potassium	**710**		2.5	0.81	mg/L		10/12/16 08:54	10/14/16 05:09	1
Selenium	<0.050		0.050	0.026	mg/L		10/12/16 08:54	10/14/16 05:09	1
Silver	<0.025		0.025	0.0066	mg/L		10/12/16 08:54	10/14/16 05:09	1
Sodium	**3500**		5.0	2.2	mg/L		10/12/16 08:54	10/14/16 05:09	1
Thallium	<0.050		0.050	0.017	mg/L		10/12/16 08:54	10/14/16 05:09	1
Vanadium	**0.058**		0.025	0.0093	mg/L		10/12/16 08:54	10/14/16 05:09	1
Zinc	**0.051**	**J**	0.10	0.045	mg/L		10/12/16 08:54	10/14/16 05:09	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00018**	**J**	0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:36	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 10:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**8.6**		1.0	0.18	mg/L			10/10/16 01:02	1
Sulfate	<50		50	15	mg/L			10/12/16 07:49	10
Total Organic Carbon - Duplicates	**520**	~~**B**~~	20	5.3	mg/L			10/07/16 21:27	20
Nitrogen, Nitrate	**0.058**	**J**	0.10	0.035	mg/L			10/16/16 19:52	1
Total Suspended Solids	**7.5**		5.0	2.5	mg/L			10/06/16 12:50	1
Ammonia	**780**		50	25	mg/L		10/12/16 19:17	10/13/16 16:15	250
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/06/16 13:29	1
Nitrogen, Nitrate Nitrite	**0.058**	**J**	0.10	0.035	mg/L			10/14/16 00:22	1

TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Phone (708) 534-5200 Fax (708) 534-5211

20524

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hargraves, Therese M	Carrier Tracking No(s):	COC No: 500-78910.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: therese.hargraves@testamericainc.com		Page: Page 1 of 1
Company: Pace Analytical Services, Inc.				Job #: 500-118151-1
Address: 220 William Pitt Way, ,	Due Date Requested: 10/17/2016			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-826-5245(Tel)	PO #:			
Email:	WO #:			
Project Name: Lake Calumet Cluster Site	Project #: 50011099			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-13-GW-10042016 (500-118151-1)	10/4/16	15:15 Central		Water			X	2	
DUP-1 (10042016) (500-118151-2)	10/4/16	Central		Water			X	2	
MW-08-GW-10052016 (500-118151-3)	10/5/16	12:05 Central		Water			X	2	
MW-09-GW-10052016 (500-118151-4)	10/5/16	13:35 Central		Water			X	2	
MW-06-GW-10052016 (500-118151-5)	10/5/16	08:40 Central		Water			X	2	
DUP-2 (10052016) (500-118151-6)	10/5/16	Central		Water			X	2	

Possible Hazard Identification
Unconfirmed

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:		Time:		Method of Shipment:	
Relinquished by:	Date/Time: 10/06/16 1600	Company TA	Received by:		Date/Time: 10.7.16 1200	Company PACE
Relinquished by:	Date/Time:	Company	Received by:		Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:		Date/Time:	Company

Seals Intact: Custody Seal No.:

Cooler Temperature(s) °C and Other Remarks:

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20524 500-118151-1

Lab ID: **205240001** Date Received: 10/7/2016 12:00 Matrix: Water

Sample ID: **MW-13-GW-10042016** Date Collected: 10/4/2016 15:15

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**21000**	ug/l	0.50	0.027	1	10/17/2016 14:45	MM	n
Carbon Dioxide	**82**	mg/l	5.0	0.24	1	10/17/2016 14:45	MM	n
Oxygen	**2.7**	mg/l	0.50	0.13	1	10/17/2016 14:45	MM	n
Nitrogen	**10**	mg/l	2.0	0.24	1	10/17/2016 14:45	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20524 500-118151-1

Lab ID: **205240002** Date Received: 10/7/2016 12:00 Matrix: Water

Sample ID: **DUP-01(10042016)** Date Collected: 10/4/2016 00:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**20000**	ug/l	0.50	0.027	1	10/17/2016 14:58	MM	n
Carbon Dioxide	**82**	mg/l	5.0	0.24	1	10/17/2016 14:58	MM	n
Oxygen	**3.0**	mg/l	0.50	0.13	1	10/17/2016 14:58	MM	n
Nitrogen	**10**	mg/l	2.0	0.24	1	10/17/2016 14:58	MM	n

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20524 500-118151-1

Lab ID: **205240003** Date Received: 10/7/2016 12:00 Matrix: Water

Sample ID: **MW-08-GW-10052016** Date Collected: 10/5/2016 12:05

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**12000**	ug/l	0.50	0.027	1	10/17/2016 15:10	MM	n
Carbon Dioxide	**180**	mg/l	5.0	0.24	1	10/17/2016 15:10	MM	n
Oxygen	**3.5**	mg/l	0.50	0.13	1	10/17/2016 15:10	MM	n
Nitrogen	**11**	mg/l	2.0	0.24	1	10/17/2016 15:10	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20524 500-118151-1

Lab ID: **205240004** Date Received: 10/7/2016 12:00 Matrix: Water

Sample ID: **MW-09-GW-10052016** Date Collected: 10/5/2016 13:35

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**13000**	ug/l	0.50	0.027	1	10/17/2016 15:23	MM	n
Carbon Dioxide	**410**	mg/l	5.0	0.24	1	10/17/2016 15:23	MM	n
Oxygen	**3.0**	mg/l	0.50	0.13	1	10/17/2016 15:23	MM	n
Nitrogen	**13**	mg/l	2.0	0.24	1	10/17/2016 15:23	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20524 500-118151-1

Lab ID: **205240005** Date Received: 10/7/2016 12:00 Matrix: Water

Sample ID: **MW-06-GW-10052016** Date Collected: 10/5/2016 08:40

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**20000**	ug/l	1.8	0.094	3.5	10/17/2016 16:05	MM	d,n
Carbon Dioxide	**38**	mg/l	18	0.84	3.5	10/17/2016 16:05	MM	d,n
Oxygen	**1.9**	mg/l	1.8	0.46	3.5	10/17/2016 16:05	MM	d,n
Nitrogen	**10**	mg/l	7.0	0.83	3.5	10/17/2016 16:05	MM	d,n

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20524 500-118151-1

Lab ID: **205240006** Date Received: 10/7/2016 12:00 Matrix: Water

Sample ID: **DUP-2(10052016)** Date Collected: 10/5/2016 00:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**21000**	ug/l	1.8	0.094	3.5	10/17/2016 16:17	MM	d,n
Carbon Dioxide	**40**	mg/l	18	0.84	3.5	10/17/2016 16:17	MM	d,n
Oxygen	**2.3**	mg/l	1.8	0.46	3.5	10/17/2016 16:17	MM	d,n
Nitrogen	**10**	mg/l	7.0	0.83	3.5	10/17/2016 16:17	MM	d,n

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Chain of Custody Record

Lab Job #: 500-118189

Chain of Custody Number:

Page ____ of ____

Temperature °C of Cooler: 4.3

(optional)

Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 120 S. LaSalle St Ste 1350
Address: Chicago, IL 60603
Phone: 312-575-3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis.com

(optional)

Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Client: Arcadis
Client Project #: C1001805.0002.00005
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thurnhofer
Lab PM: Therese Hargraves

Preservative Key: 4° / to 4° / > 4° / > 4° / ol to 4°

500-118189 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOCs, PCBs, Pesticides	Total Metals	Dissolved Metals	Ammonia, NO3, NO2	Sulfide	VOCs	TPH	TSS, SO4, NO2	Dissolved Gases	Comments
1		MW-11-GW-10062016	10/6/16	0830	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	- Diss Metals
2		MW-10-GW-10052016	10/5/16	1705	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Field filtered
																- MW-11 & Sample
																receive with preservative
																in VOC vial. Unable
																to remove air bubbles
																- Diss Gas Samples,
																Not able to remove
																all headspace

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date: Standard

Sample Disposal
[ ] Return to Client [X] Disposal by Lab [ ] Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	Arcadis	10/6/16	1225	[signature]	TA-CHI	10/6/16	1225

Lab Courier
Shipped
Hand Delivered X

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
QL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

Ben
312-420-3651

TAL 4124 500 (1209)

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW11-GW-10062016

Lab Sample ID: 500-118189-1

Date Collected: 10/06/16 08:30
Matrix: Water
Date Received: 10/06/16 12:25

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0	UJ	5.0	1.7	ug/L			10/11/16 17:26	1
Benzene	**84**		0.50	0.15	ug/L			10/11/16 17:26	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/11/16 17:26	1
Bromoform	<1.0		1.0	0.48	ug/L			10/11/16 17:26	1
Bromomethane	<2.0	UJ	2.0	0.80	ug/L			10/11/16 17:26	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/11/16 17:26	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/11/16 17:26	1
Chlorobenzene	**8.9**		1.0	0.39	ug/L			10/11/16 17:26	1
Chloroethane	**4.4**		1.0	0.51	ug/L			10/11/16 17:26	1
Chloroform	<1.0		1.0	0.37	ug/L			10/11/16 17:26	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/11/16 17:26	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			10/11/16 17:26	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/11/16 17:26	1
Cyclohexane	**78**		1.0	0.49	ug/L			10/11/16 17:26	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/11/16 17:26	1
1,2-Dibromo-3-Chloropropane	<5.0	UJ	5.0	2.0	ug/L			10/11/16 17:26	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/11/16 17:26	1
1,2-Dichlorobenzene	**0.85**	J	1.0	0.33	ug/L			10/11/16 17:26	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/11/16 17:26	1
1,4-Dichlorobenzene	**2.6**		1.0	0.36	ug/L			10/11/16 17:26	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/11/16 17:26	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/11/16 17:26	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/11/16 17:26	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/11/16 17:26	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/11/16 17:26	1
Ethylbenzene	**2.6**		0.50	0.18	ug/L			10/11/16 17:26	1
2-Hexanone	<5.0	UJ	5.0	1.6	ug/L			10/11/16 17:26	1
Isopropylbenzene	**39**		1.0	0.39	ug/L			10/11/16 17:26	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/11/16 17:26	1
Methylcyclohexane	**76**		1.0	0.32	ug/L			10/11/16 17:26	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/11/16 17:26	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/11/16 17:26	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			10/11/16 17:26	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/11/16 17:26	1
Styrene	<1.0		1.0	0.39	ug/L			10/11/16 17:26	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/11/16 17:26	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/11/16 17:26	1
Toluene	**1.5**		0.50	0.15	ug/L			10/11/16 17:26	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/11/16 17:26	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/11/16 17:26	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/11/16 17:26	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/11/16 17:26	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/11/16 17:26	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/11/16 17:26	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/11/16 17:26	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/11/16 17:26	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			10/11/16 17:26	1
Xylenes, Total	**15**		1.0	0.22	ug/L			10/11/16 17:26	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW11-GW-10062016

Date Collected: 10/06/16 08:30
Date Received: 10/06/16 12:25

Lab Sample ID: 500-118189-1

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*		*10/11/16 17:26*	*1*
Dibromofluoromethane	*94*		*70 - 120*		*10/11/16 17:26*	*1*
1,2-Dichloroethane-d4 (Surr)	*84*		*71 - 127*		*10/11/16 17:26*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*10/11/16 17:26*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<3.7		3.7	1.1	ug/L		10/06/16 16:12	10/07/16 14:58	5
Acenaphthylene	<3.7		3.7	0.98	ug/L		10/06/16 16:12	10/07/16 14:58	5
Acetophenone	<18		18	2.4	ug/L		10/06/16 16:12	10/07/16 14:58	5
Anthracene	<3.7		3.7	1.2	ug/L		10/06/16 16:12	10/07/16 14:58	5
Benzo[a]anthracene	<0.74		0.74	0.21	ug/L		10/06/16 16:12	10/07/16 14:58	5
Benzo[a]pyrene	<0.74		0.74	0.36	ug/L		10/06/16 16:12	10/07/16 14:58	5
Benzo[b]fluoranthene	<0.74		0.74	0.30	ug/L		10/06/16 16:12	10/07/16 14:58	5
Benzo[g,h,i]perylene	<3.7		3.7	1.4	ug/L		10/06/16 16:12	10/07/16 14:58	5
Benzo[k]fluoranthene	<0.74		0.74	0.24	ug/L		10/06/16 16:12	10/07/16 14:58	5
Bis(2-chloroethoxy)methane	<7.4		7.4	1.0	ug/L		10/06/16 16:12	10/07/16 14:58	5
Bis(2-chloroethyl)ether	<7.4		7.4	1.1	ug/L		10/06/16 16:12	10/07/16 14:58	5
Bis(2-ethylhexyl) phthalate	<37		37	6.3	ug/L		10/06/16 16:12	10/07/16 14:58	5
4-Bromophenyl phenyl ether	<18		18	2.0	ug/L		10/06/16 16:12	10/07/16 14:58	5
Butyl benzyl phthalate	<7.4		7.4	1.8	ug/L		10/06/16 16:12	10/07/16 14:58	5
Carbazole	<18		18	1.3	ug/L		10/06/16 16:12	10/07/16 14:58	5
4-Chloroaniline	**8.2**	**J**	37	7.4	ug/L		10/06/16 16:12	10/07/16 14:58	5
4-Chloro-3-methylphenol	<37		37	8.5	ug/L		10/06/16 16:12	10/07/16 14:58	5
2-Chloronaphthalene	<7.4		7.4	0.86	ug/L		10/06/16 16:12	10/07/16 14:58	5
2-Chlorophenol	<18		18	2.1	ug/L		10/06/16 16:12	10/07/16 14:58	5
4-Chlorophenyl phenyl ether	<18		18	2.3	ug/L		10/06/16 16:12	10/07/16 14:58	5
Chrysene	<1.8		1.8	0.25	ug/L		10/06/16 16:12	10/07/16 14:58	5
Dibenz(a,h)anthracene	<1.1		1.1	0.19	ug/L		10/06/16 16:12	10/07/16 14:58	5
Dibenzofuran	<7.4		7.4	0.97	ug/L		10/06/16 16:12	10/07/16 14:58	5
3,3'-Dichlorobenzidine	<18		18	6.3	ug/L		10/06/16 16:12	10/07/16 14:58	5
2,4-Dichlorophenol	<37		37	9.6	ug/L		10/06/16 16:12	10/07/16 14:58	5
Diethyl phthalate	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 14:58	5
2,4-Dimethylphenol	<37		37	6.6	ug/L		10/06/16 16:12	10/07/16 14:58	5
Dimethyl phthalate	<7.4		7.4	1.2	ug/L		10/06/16 16:12	10/07/16 14:58	5
Di-n-butyl phthalate	<18		18	2.7	ug/L		10/06/16 16:12	10/07/16 14:58	5
4,6-Dinitro-2-methylphenol	<74	UJ	74	22	ug/L		10/06/16 16:12	10/07/16 14:58	5
2,4-Dinitrophenol	<74	UJ	74	32	ug/L		10/06/16 16:12	10/07/16 14:58	5
2,4-Dinitrotoluene	<3.7		3.7	0.90	ug/L		10/06/16 16:12	10/07/16 14:58	5
2,6-Dinitrotoluene	<3.7		3.7	0.27	ug/L		10/06/16 16:12	10/07/16 14:58	5
Di-n-octyl phthalate	<37		37	3.9	ug/L		10/06/16 16:12	10/07/16 14:58	5
Fluoranthene	<3.7		3.7	1.7	ug/L		10/06/16 16:12	10/07/16 14:58	5
Fluorene	<3.7		3.7	0.90	ug/L		10/06/16 16:12	10/07/16 14:58	5
Hexachlorobenzene	<1.8		1.8	0.29	ug/L		10/06/16 16:12	10/07/16 14:58	5
Hexachlorobutadiene	<18		18	1.9	ug/L		10/06/16 16:12	10/07/16 14:58	5
Hexachlorocyclopentadiene	<74		74	23	ug/L		10/06/16 16:12	10/07/16 14:58	5
Hexachloroethane	<18		18	2.2	ug/L		10/06/16 16:12	10/07/16 14:58	5
Indeno[1,2,3-cd]pyrene	<0.74		0.74	0.28	ug/L		10/06/16 16:12	10/07/16 14:58	5
Isophorone	<7.4		7.4	1.4	ug/L		10/06/16 16:12	10/07/16 14:58	5
2-Methylnaphthalene	**1.8**	**J**	7.4	0.24	ug/L		10/06/16 16:12	10/07/16 14:58	5

Client Sample ID: MW11-GW-10062016

Lab Sample ID: 500-118189-1

Date Collected: 10/06/16 08:30

Matrix: Water

Date Received: 10/06/16 12:25

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<7.4		7.4	1.1	ug/L		10/06/16 16:12	10/07/16 14:58	5
3 & 4 Methylphenol	**2.2**	**J**	7.4	1.7	ug/L		10/06/16 16:12	10/07/16 14:58	5
Naphthalene	**1.9**	**J**	3.7	1.1	ug/L		10/06/16 16:12	10/07/16 14:58	5
2-Nitroaniline	<18		18	4.7	ug/L		10/06/16 16:12	10/07/16 14:58	5
3-Nitroaniline	<37		37	6.6	ug/L		10/06/16 16:12	10/07/16 14:58	5
4-Nitroaniline	<37		37	6.1	ug/L		10/06/16 16:12	10/07/16 14:58	5
Nitrobenzene	<3.7		3.7	1.7	ug/L		10/06/16 16:12	10/07/16 14:58	5
2-Nitrophenol	<37		37	9.2	ug/L		10/06/16 16:12	10/07/16 14:58	5
4-Nitrophenol	<74		74	27	ug/L		10/06/16 16:12	10/07/16 14:58	5
N-Nitrosodi-n-propylamine	<1.8		1.8	0.57	ug/L		10/06/16 16:12	10/07/16 14:58	5
N-Nitrosodiphenylamine	**1.6**	**J**	3.7	1.4	ug/L		10/06/16 16:12	10/07/16 14:58	5
2,2'-oxybis[1-chloropropane]	<7.4		7.4	1.4	ug/L		10/06/16 16:12	10/07/16 14:58	5
Pentachlorophenol	<74		74	14	ug/L		10/06/16 16:12	10/07/16 14:58	5
Phenanthrene	<3.7		3.7	1.1	ug/L		10/06/16 16:12	10/07/16 14:58	5
Phenol	<18		18	2.5	ug/L		10/06/16 16:12	10/07/16 14:58	5
Pyrene	<3.7		3.7	1.6	ug/L		10/06/16 16:12	10/07/16 14:58	5
2,4,5-Trichlorophenol	<37		37	9.4	ug/L		10/06/16 16:12	10/07/16 14:58	5
2,4,6-Trichlorophenol	<18		18	2.6	ug/L		10/06/16 16:12	10/07/16 14:58	5
Benzaldehyde	<150	✗ UJ	150	56	ug/L		10/06/16 16:12	10/07/16 14:58	5
Caprolactam	<37		37	5.5	ug/L		10/06/16 16:12	10/07/16 14:58	5
Atrazine	<18		18	2.3	ug/L		10/06/16 16:12	10/07/16 14:58	5
1,1'-Biphenyl	<18		18	1.3	ug/L		10/06/16 16:12	10/07/16 14:58	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*80*		*30 - 123*	*10/06/16 16:12*	*10/07/16 14:58*	*5*
2-Fluorophenol (Surr)	*53*		*30 - 110*	*10/06/16 16:12*	*10/07/16 14:58*	*5*
Nitrobenzene-d5 (Surr)	*59*		*33 - 139*	*10/06/16 16:12*	*10/07/16 14:58*	*5*
Phenol-d5 (Surr)	*48*		*20 - 100*	*10/06/16 16:12*	*10/07/16 14:58*	*5*
Terphenyl-d14 (Surr)	*97*		*42 - 150*	*10/06/16 16:12*	*10/07/16 14:58*	*5*
2,4,6-Tribromophenol (Surr)	*119*		*30 - 150*	*10/06/16 16:12*	*10/07/16 14:58*	*5*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.036		0.036	0.0048	ug/L		10/07/16 10:20	10/07/16 20:06	1
alpha-BHC	<0.036		0.036	0.0024	ug/L		10/07/16 10:20	10/07/16 20:06	1
alpha-Chlordane	<0.036		0.036	0.0040	ug/L		10/07/16 10:20	10/07/16 20:06	1
beta-BHC	<0.036		0.036	0.0093	ug/L		10/07/16 10:20	10/07/16 20:06	1
4,4'-DDD	<0.036		0.036	0.012	ug/L		10/07/16 10:20	10/07/16 20:06	1
4,4'-DDE	<0.036		0.036	0.0035	ug/L		10/07/16 10:20	10/07/16 20:06	1
4,4'-DDT	<0.036		0.036	0.0029	ug/L		10/07/16 10:20	10/07/16 20:06	1
delta-BHC	<0.036		0.036	0.0094	ug/L		10/07/16 10:20	10/07/16 20:06	1
Dieldrin	<0.036		0.036	0.012	ug/L		10/07/16 10:20	10/07/16 20:06	1
Endosulfan I	<0.036		0.036	0.0037	ug/L		10/07/16 10:20	10/07/16 20:06	1
Endosulfan II	<0.036		0.036	0.0025	ug/L		10/07/16 10:20	10/07/16 20:06	1
Endosulfan sulfate	<0.036		0.036	0.011	ug/L		10/07/16 10:20	10/07/16 20:06	1
Endrin	<0.036		0.036	0.013	ug/L		10/07/16 10:20	10/07/16 20:06	1
Endrin aldehyde	<0.036		0.036	0.0075	ug/L		10/07/16 10:20	10/07/16 20:06	1
Endrin ketone	<0.036		0.036	0.015	ug/L		10/07/16 10:20	10/07/16 20:06	1
gamma-BHC (Lindane)	<0.036		0.036	0.0051	ug/L		10/07/16 10:20	10/07/16 20:06	1
gamma-Chlordane	<0.036		0.036	0.0066	ug/L		10/07/16 10:20	10/07/16 20:06	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW11-GW-10062016

Lab Sample ID: 500-118189-1

Date Collected: 10/06/16 08:30
Matrix: Water
Date Received: 10/06/16 12:25

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.036		0.036	0.012	ug/L		10/07/16 10:20	10/07/16 20:06	1
Heptachlor epoxide	<0.036		0.036	0.013	ug/L		10/07/16 10:20	10/07/16 20:06	1
Methoxychlor	<0.073		0.073	0.021	ug/L		10/07/16 10:20	10/07/16 20:06	1
Toxaphene	<0.36		0.36	0.18	ug/L		10/07/16 10:20	10/07/16 20:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*55*		*30 - 143*	*10/07/16 10:20*	*10/07/16 20:06*	*1*
Tetrachloro-m-xylene	*70*		*30 - 120*	*10/07/16 10:20*	*10/07/16 20:06*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.36		0.36	0.061	ug/L		10/07/16 10:20	10/10/16 13:26	1
PCB-1221	<0.36		0.36	0.18	ug/L		10/07/16 10:20	10/10/16 13:26	1
PCB-1232	<0.36		0.36	0.18	ug/L		10/07/16 10:20	10/10/16 13:26	1
PCB-1242	<0.36		0.36	0.18	ug/L		10/07/16 10:20	10/10/16 13:26	1
PCB-1248	<0.36		0.36	0.18	ug/L		10/07/16 10:20	10/10/16 13:26	1
PCB-1254	<0.36		0.36	0.18	ug/L		10/07/16 10:20	10/10/16 13:26	1
PCB-1260	<0.36		0.36	0.064	ug/L		10/07/16 10:20	10/10/16 13:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*76*		*30 - 127*	*10/07/16 10:20*	*10/10/16 13:26*	*1*
DCB Decachlorobiphenyl	*60*		*30 - 150*	*10/07/16 10:20*	*10/10/16 13:26*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.095**	**J**	0.20	0.062	mg/L		10/11/16 15:34	10/14/16 18:27	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:34	10/14/16 18:27	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:27	1
Barium	**0.75**		0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:27	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:34	10/14/16 18:27	1
Cadmium	**0.0015**	**J**	0.0020	0.00094	mg/L		10/11/16 15:34	10/14/16 18:27	1
Calcium	**120**		0.20	0.059	mg/L		10/11/16 15:34	10/14/16 18:27	1
Chromium	**0.0083**	**J**	0.010	0.0024	mg/L		10/11/16 15:34	10/14/16 18:27	1
Cobalt	**0.0017**	**J**	0.0050	0.00096	mg/L		10/11/16 15:34	10/14/16 18:27	1
Copper	**0.0053**	**J**	0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:27	1
Iron	**28**		0.20	0.10	mg/L		10/11/16 15:34	10/14/16 18:27	1
Lead	**0.0060**		0.0050	0.0025	mg/L		10/11/16 15:34	10/14/16 18:27	1
Magnesium	**110**		0.10	0.041	mg/L		10/11/16 15:34	10/14/16 18:27	1
Manganese	**0.21**		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:27	1
Nickel	**0.016**		0.010	0.0037	mg/L		10/11/16 15:34	10/14/16 18:27	1
Potassium	**100**		0.50	0.16	mg/L		10/11/16 15:34	10/14/16 18:27	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:34	10/14/16 18:27	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:34	10/14/16 18:27	1
Sodium	**320**		1.0	0.43	mg/L		10/11/16 15:34	10/14/16 18:27	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:27	1
Vanadium	**0.0055**		0.0050	0.0019	mg/L		10/11/16 15:34	10/14/16 18:27	1
Zinc	**0.018**	**J**	0.020	0.0090	mg/L		10/11/16 15:34	10/14/16 18:27	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 15:34	10/14/16 18:32	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW11-GW-10062016

Date Collected: 10/06/16 08:30
Date Received: 10/06/16 12:25

Lab Sample ID: 500-118189-1

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:34	10/14/16 18:32	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:32	1
Barium	**0.76**		0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:32	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:34	10/14/16 18:32	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		10/11/16 15:34	10/14/16 18:32	1
Calcium	**130**		0.20	0.059	mg/L		10/11/16 15:34	10/14/16 18:32	1
Chromium	**0.0075**	**J**	0.010	0.0024	mg/L		10/11/16 15:34	10/14/16 18:32	1
Cobalt	**0.0018**	**J**	0.0050	0.00096	mg/L		10/11/16 15:34	10/14/16 18:32	1
Copper	**0.0025**	**J**	0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:32	1
Iron	**28**		0.20	0.10	mg/L		10/11/16 15:34	10/14/16 18:32	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 15:34	10/14/16 18:32	1
Magnesium	**120**		0.10	0.041	mg/L		10/11/16 15:34	10/14/16 18:32	1
Manganese	**0.22**		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:32	1
Nickel	**0.016**		0.010	0.0037	mg/L		10/11/16 15:34	10/14/16 18:32	1
Potassium	**110**		0.50	0.16	mg/L		10/11/16 15:34	10/14/16 18:32	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:34	10/14/16 18:32	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:34	10/14/16 18:32	1
Sodium	**330**		1.0	0.43	mg/L		10/11/16 15:34	10/14/16 18:32	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:32	1
Vanadium	**0.0048**	**J**	0.0050	0.0019	mg/L		10/11/16 15:34	10/14/16 18:32	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:34	10/14/16 18:32	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 09:49	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 09:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			10/12/16 23:38	1
Sulfate	**< 6.7**	~~B~~ UB	~~5.0~~ 6.7	1.5	mg/L			10/14/16 06:12	1
Total Organic Carbon - Duplicates	**65**		5.0	1.3	mg/L			10/12/16 00:44	5
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/18/16 11:13	1
Total Suspended Solids	**68**		5.0	2.5	mg/L			10/07/16 13:31	1
Ammonia	**59**		4.0	2.0	mg/L		10/13/16 21:45	10/16/16 19:37	20
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/07/16 16:43	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/14/16 21:50	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW10-GW-10052016

Lab Sample ID: 500-118189-2

Date Collected: 10/05/16 17:05
Matrix: Water
Date Received: 10/06/16 12:25

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0	UJ	5.0	1.7	ug/L			10/11/16 16:59	1
Benzene	**0.54**		0.50	0.15	ug/L			10/11/16 16:59	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			10/11/16 16:59	1
Bromoform	<1.0		1.0	0.48	ug/L			10/11/16 16:59	1
Bromomethane	<2.0	UJ	2.0	0.80	ug/L			10/11/16 16:59	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			10/11/16 16:59	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			10/11/16 16:59	1
Chlorobenzene	**0.92**	**J**	1.0	0.39	ug/L			10/11/16 16:59	1
Chloroethane	<1.0		1.0	0.51	ug/L			10/11/16 16:59	1
Chloroform	<1.0		1.0	0.37	ug/L			10/11/16 16:59	1
Chloromethane	<1.0		1.0	0.32	ug/L			10/11/16 16:59	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			10/11/16 16:59	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			10/11/16 16:59	1
Cyclohexane	<1.0		1.0	0.49	ug/L			10/11/16 16:59	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			10/11/16 16:59	1
1,2-Dibromo-3-Chloropropane	<5.0	UJ	5.0	2.0	ug/L			10/11/16 16:59	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			10/11/16 16:59	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			10/11/16 16:59	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			10/11/16 16:59	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			10/11/16 16:59	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			10/11/16 16:59	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			10/11/16 16:59	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			10/11/16 16:59	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			10/11/16 16:59	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			10/11/16 16:59	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			10/11/16 16:59	1
2-Hexanone	<5.0	UJ	5.0	1.6	ug/L			10/11/16 16:59	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			10/11/16 16:59	1
Methyl acetate	<5.0		5.0	2.0	ug/L			10/11/16 16:59	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			10/11/16 16:59	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			10/11/16 16:59	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			10/11/16 16:59	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			10/11/16 16:59	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			10/11/16 16:59	1
Styrene	<1.0		1.0	0.39	ug/L			10/11/16 16:59	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			10/11/16 16:59	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			10/11/16 16:59	1
Toluene	<0.50		0.50	0.15	ug/L			10/11/16 16:59	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			10/11/16 16:59	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			10/11/16 16:59	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			10/11/16 16:59	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			10/11/16 16:59	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			10/11/16 16:59	1
Trichloroethene	<0.50		0.50	0.16	ug/L			10/11/16 16:59	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			10/11/16 16:59	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			10/11/16 16:59	1
Vinyl chloride	**0.42**	**J**	0.50	0.20	ug/L			10/11/16 16:59	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			10/11/16 16:59	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW10-GW-10052016

Date Collected: 10/05/16 17:05
Date Received: 10/06/16 12:25

Lab Sample ID: 500-118189-2

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*71 - 120*		*10/11/16 16:59*	*1*
Dibromofluoromethane	*92*		*70 - 120*		*10/11/16 16:59*	*1*
1,2-Dichloroethane-d4 (Surr)	*84*		*71 - 127*		*10/11/16 16:59*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*10/11/16 16:59*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.74		0.74	0.23	ug/L		10/06/16 16:12	10/07/16 13:30	1
Acenaphthylene	<0.74		0.74	0.20	ug/L		10/06/16 16:12	10/07/16 13:30	1
Acetophenone	<3.7		3.7	0.49	ug/L		10/06/16 16:12	10/07/16 13:30	1
Anthracene	<0.74		0.74	0.25	ug/L		10/06/16 16:12	10/07/16 13:30	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		10/06/16 16:12	10/07/16 13:30	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		10/06/16 16:12	10/07/16 13:30	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		10/06/16 16:12	10/07/16 13:30	1
Benzo[g,h,i]perylene	<0.74		0.74	0.28	ug/L		10/06/16 16:12	10/07/16 13:30	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		10/06/16 16:12	10/07/16 13:30	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		10/06/16 16:12	10/07/16 13:30	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		10/06/16 16:12	10/07/16 13:30	1
Bis(2-ethylhexyl) phthalate	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 13:30	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		10/06/16 16:12	10/07/16 13:30	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		10/06/16 16:12	10/07/16 13:30	1
Carbazole	<3.7		3.7	0.26	ug/L		10/06/16 16:12	10/07/16 13:30	1
4-Chloroaniline	<7.4	UJ	7.4	1.5	ug/L		10/06/16 16:12	10/07/16 13:30	1
4-Chloro-3-methylphenol	<7.4		7.4	1.7	ug/L		10/06/16 16:12	10/07/16 13:30	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		10/06/16 16:12	10/07/16 13:30	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		10/06/16 16:12	10/07/16 13:30	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		10/06/16 16:12	10/07/16 13:30	1
Chrysene	<0.37		0.37	0.050	ug/L		10/06/16 16:12	10/07/16 13:30	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		10/06/16 16:12	10/07/16 13:30	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		10/06/16 16:12	10/07/16 13:30	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		10/06/16 16:12	10/07/16 13:30	1
2,4-Dichlorophenol	<7.4		7.4	1.9	ug/L		10/06/16 16:12	10/07/16 13:30	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		10/06/16 16:12	10/07/16 13:30	1
2,4-Dimethylphenol	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 13:30	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		10/06/16 16:12	10/07/16 13:30	1
Di-n-butyl phthalate	<3.7		3.7	0.54	ug/L		10/06/16 16:12	10/07/16 13:30	1
4,6-Dinitro-2-methylphenol	<15	UJ	15	4.4	ug/L		10/06/16 16:12	10/07/16 13:30	1
2,4-Dinitrophenol	<15	UJ	15	6.3	ug/L		10/06/16 16:12	10/07/16 13:30	1
2,4-Dinitrotoluene	<0.74		0.74	0.18	ug/L		10/06/16 16:12	10/07/16 13:30	1
2,6-Dinitrotoluene	<0.74		0.74	0.054	ug/L		10/06/16 16:12	10/07/16 13:30	1
Di-n-octyl phthalate	<7.4		7.4	0.77	ug/L		10/06/16 16:12	10/07/16 13:30	1
Fluoranthene	<0.74		0.74	0.33	ug/L		10/06/16 16:12	10/07/16 13:30	1
Fluorene	<0.74		0.74	0.18	ug/L		10/06/16 16:12	10/07/16 13:30	1
Hexachlorobenzene	<0.37		0.37	0.059	ug/L		10/06/16 16:12	10/07/16 13:30	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		10/06/16 16:12	10/07/16 13:30	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		10/06/16 16:12	10/07/16 13:30	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		10/06/16 16:12	10/07/16 13:30	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		10/06/16 16:12	10/07/16 13:30	1
Isophorone	<1.5		1.5	0.28	ug/L		10/06/16 16:12	10/07/16 13:30	1
2-Methylnaphthalene	<1.5		1.5	0.048	ug/L		10/06/16 16:12	10/07/16 13:30	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW10-GW-10052016

Lab Sample ID: 500-118189-2

Date Collected: 10/05/16 17:05
Matrix: Water
Date Received: 10/06/16 12:25

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.22	ug/L		10/06/16 16:12	10/07/16 13:30	1
3 & 4 Methylphenol	**0.47**	**J**	1.5	0.33	ug/L		10/06/16 16:12	10/07/16 13:30	1
Naphthalene	<0.74		0.74	0.23	ug/L		10/06/16 16:12	10/07/16 13:30	1
2-Nitroaniline	<3.7		3.7	0.95	ug/L		10/06/16 16:12	10/07/16 13:30	1
3-Nitroaniline	<7.4		7.4	1.3	ug/L		10/06/16 16:12	10/07/16 13:30	1
4-Nitroaniline	<7.4		7.4	1.2	ug/L		10/06/16 16:12	10/07/16 13:30	1
Nitrobenzene	<0.74		0.74	0.33	ug/L		10/06/16 16:12	10/07/16 13:30	1
2-Nitrophenol	<7.4		7.4	1.8	ug/L		10/06/16 16:12	10/07/16 13:30	1
4-Nitrophenol	<15		15	5.5	ug/L		10/06/16 16:12	10/07/16 13:30	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		10/06/16 16:12	10/07/16 13:30	1
N-Nitrosodiphenylamine	**0.56**	**J**	0.74	0.27	ug/L		10/06/16 16:12	10/07/16 13:30	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		10/06/16 16:12	10/07/16 13:30	1
Pentachlorophenol	<15		15	2.9	ug/L		10/06/16 16:12	10/07/16 13:30	1
Phenanthrene	<0.74		0.74	0.22	ug/L		10/06/16 16:12	10/07/16 13:30	1
Phenol	<3.7		3.7	0.50	ug/L		10/06/16 16:12	10/07/16 13:30	1
Pyrene	<0.74		0.74	0.31	ug/L		10/06/16 16:12	10/07/16 13:30	1
2,4,5-Trichlorophenol	<7.4		7.4	1.9	ug/L		10/06/16 16:12	10/07/16 13:30	1
2,4,6-Trichlorophenol	<3.7		3.7	0.53	ug/L		10/06/16 16:12	10/07/16 13:30	1
Benzaldehyde	<29	UJ	29	11	ug/L		10/06/16 16:12	10/07/16 13:30	1
Caprolactam	<7.4		7.4	1.1	ug/L		10/06/16 16:12	10/07/16 13:30	1
Atrazine	<3.7		3.7	0.46	ug/L		10/06/16 16:12	10/07/16 13:30	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		10/06/16 16:12	10/07/16 13:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*83*		*30 - 123*	*10/06/16 16:12*	*10/07/16 13:30*	*1*
2-Fluorophenol (Surr)	*63*		*30 - 110*	*10/06/16 16:12*	*10/07/16 13:30*	*1*
Nitrobenzene-d5 (Surr)	*74*		*33 - 139*	*10/06/16 16:12*	*10/07/16 13:30*	*1*
Phenol-d5 (Surr)	*49*		*20 - 100*	*10/06/16 16:12*	*10/07/16 13:30*	*1*
Terphenyl-d14 (Surr)	*107*		*42 - 150*	*10/06/16 16:12*	*10/07/16 13:30*	*1*
2,4,6-Tribromophenol (Surr)	*128*		*30 - 150*	*10/06/16 16:12*	*10/07/16 13:30*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		10/07/16 10:20	10/07/16 20:25	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		10/07/16 10:20	10/07/16 20:25	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		10/07/16 10:20	10/07/16 20:25	1
beta-BHC	<0.037		0.037	0.0095	ug/L		10/07/16 10:20	10/07/16 20:25	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		10/07/16 10:20	10/07/16 20:25	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		10/07/16 10:20	10/07/16 20:25	1
4,4'-DDT	<0.037		0.037	0.0030	ug/L		10/07/16 10:20	10/07/16 20:25	1
delta-BHC	<0.037		0.037	0.0096	ug/L		10/07/16 10:20	10/07/16 20:25	1
Dieldrin	<0.037		0.037	0.012	ug/L		10/07/16 10:20	10/07/16 20:25	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		10/07/16 10:20	10/07/16 20:25	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		10/07/16 10:20	10/07/16 20:25	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		10/07/16 10:20	10/07/16 20:25	1
Endrin	<0.037		0.037	0.013	ug/L		10/07/16 10:20	10/07/16 20:25	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		10/07/16 10:20	10/07/16 20:25	1
Endrin ketone	<0.037		0.037	0.016	ug/L		10/07/16 10:20	10/07/16 20:25	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		10/07/16 10:20	10/07/16 20:25	1
gamma-Chlordane	<0.037		0.037	0.0067	ug/L		10/07/16 10:20	10/07/16 20:25	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW10-GW-10052016

Lab Sample ID: 500-118189-2

Date Collected: 10/05/16 17:05
Matrix: Water
Date Received: 10/06/16 12:25

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.013	ug/L		10/07/16 10:20	10/07/16 20:25	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		10/07/16 10:20	10/07/16 20:25	1
Methoxychlor	<0.074		0.074	0.021	ug/L		10/07/16 10:20	10/07/16 20:25	1
Toxaphene	<0.37		0.37	0.19	ug/L		10/07/16 10:20	10/07/16 20:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*82*		*30 - 143*	*10/07/16 10:20*	*10/07/16 20:25*	*1*
Tetrachloro-m-xylene	*66*		*30 - 120*	*10/07/16 10:20*	*10/07/16 20:25*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		10/07/16 10:20	10/10/16 13:42	1
PCB-1221	<0.37		0.37	0.19	ug/L		10/07/16 10:20	10/10/16 13:42	1
PCB-1232	<0.37		0.37	0.19	ug/L		10/07/16 10:20	10/10/16 13:42	1
PCB-1242	<0.37		0.37	0.19	ug/L		10/07/16 10:20	10/10/16 13:42	1
PCB-1248	<0.37		0.37	0.19	ug/L		10/07/16 10:20	10/10/16 13:42	1
PCB-1254	<0.37		0.37	0.19	ug/L		10/07/16 10:20	10/10/16 13:42	1
PCB-1260	<0.37		0.37	0.065	ug/L		10/07/16 10:20	10/10/16 13:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*105*		*30 - 127*	*10/07/16 10:20*	*10/10/16 13:42*	*1*
DCB Decachlorobiphenyl	*97*		*30 - 150*	*10/07/16 10:20*	*10/10/16 13:42*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 15:34	10/14/16 18:48	1
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:34	10/14/16 18:48	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:48	1
Barium	**0.44**		0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:48	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:34	10/14/16 18:48	1
Cadmium	**0.0010**	**J**	0.0020	0.00094	mg/L		10/11/16 15:34	10/14/16 18:48	1
Calcium	**120**		0.20	0.059	mg/L		10/11/16 15:34	10/14/16 18:48	1
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 15:34	10/14/16 18:48	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 15:34	10/14/16 18:48	1
Copper	**0.0034**	**J**	0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:48	1
Iron	**13**		0.20	0.10	mg/L		10/11/16 15:34	10/14/16 18:48	1
Lead	**0.0026**	**J**	0.0050	0.0025	mg/L		10/11/16 15:34	10/14/16 18:48	1
Magnesium	**58**		0.10	0.041	mg/L		10/11/16 15:34	10/14/16 18:48	1
Manganese	**0.58**		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:48	1
Nickel	**0.0038**	**J**	0.010	0.0037	mg/L		10/11/16 15:34	10/14/16 18:48	1
Potassium	**52**		0.50	0.16	mg/L		10/11/16 15:34	10/14/16 18:48	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:34	10/14/16 18:48	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:34	10/14/16 18:48	1
Sodium	**140**		1.0	0.43	mg/L		10/11/16 15:34	10/14/16 18:48	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:48	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 15:34	10/14/16 18:48	1
Zinc	**0.038**		0.020	0.0090	mg/L		10/11/16 15:34	10/14/16 18:48	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		10/11/16 15:34	10/14/16 18:52	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-1

Client Sample ID: MW10-GW-10052016

Lab Sample ID: 500-118189-2

Date Collected: 10/05/16 17:05
Matrix: Water
Date Received: 10/06/16 12:25

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		10/11/16 15:34	10/14/16 18:52	1
Arsenic	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:52	1
Barium	**0.45**		0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:52	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		10/11/16 15:34	10/14/16 18:52	1
Cadmium	**0.0010**	**J**	0.0020	0.00094	mg/L		10/11/16 15:34	10/14/16 18:52	1
Calcium	**130**		0.20	0.059	mg/L		10/11/16 15:34	10/14/16 18:52	1
Chromium	<0.010		0.010	0.0024	mg/L		10/11/16 15:34	10/14/16 18:52	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		10/11/16 15:34	10/14/16 18:52	1
Copper	<0.010		0.010	0.0022	mg/L		10/11/16 15:34	10/14/16 18:52	1
Iron	**13**		0.20	0.10	mg/L		10/11/16 15:34	10/14/16 18:52	1
Lead	<0.0050		0.0050	0.0025	mg/L		10/11/16 15:34	10/14/16 18:52	1
Magnesium	**61**		0.10	0.041	mg/L		10/11/16 15:34	10/14/16 18:52	1
Manganese	**0.61**		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:52	1
Nickel	**0.0039**	**J**	0.010	0.0037	mg/L		10/11/16 15:34	10/14/16 18:52	1
Potassium	**54**		0.50	0.16	mg/L		10/11/16 15:34	10/14/16 18:52	1
Selenium	<0.010		0.010	0.0051	mg/L		10/11/16 15:34	10/14/16 18:52	1
Silver	<0.0050		0.0050	0.0013	mg/L		10/11/16 15:34	10/14/16 18:52	1
Sodium	**150**		1.0	0.43	mg/L		10/11/16 15:34	10/14/16 18:52	1
Thallium	<0.010		0.010	0.0034	mg/L		10/11/16 15:34	10/14/16 18:52	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		10/11/16 15:34	10/14/16 18:52	1
Zinc	<0.020		0.020	0.0090	mg/L		10/11/16 15:34	10/14/16 18:52	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 09:52	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		10/12/16 16:15	10/13/16 09:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			10/12/16 23:42	1
Sulfate	**22**	~~**B**~~	5.0	1.5	mg/L			10/14/16 06:16	1
Total Organic Carbon - Duplicates	**20**	~~**B**~~	1.0	0.27	mg/L			10/08/16 01:11	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			10/18/16 11:13	1
Total Suspended Solids	**42**		5.0	2.5	mg/L			10/07/16 13:32	1
Ammonia	**19**	~~**B**~~	1.0	0.50	mg/L		10/13/16 21:45	10/14/16 00:48	5
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			10/07/16 16:43	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			10/14/16 21:52	1

TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Phone (708) 534-5200 Fax (708) 534-5211

20525

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

10/17/2016

Client Information (Sub Contract Lab)

Client Contact: Shipping/Receiving
Company: Pace Analytical Services, Inc.
Address: 220 William Pitt Way,
City: Pittsburgh
State, Zip: PA, 15238
Phone: 412-826-5245(Tel)
Email:
Project Name: Lake Calumet Cluster Site
Site:

Sampler:
Phone:
Due Date Requested: 10/18/2016
TAT Requested (days):
PO #:
WO #:
Project #: 50011099
SSOW#:

Lab PM: Hargraves, Therese M
E-Mail: therese.hargraves@testamericainc.com
Carrier Tracking No(s):
COC No: 500-78911.1
Page: Page 1 of 1
Job #: 500-118189-2

Analysis Requested

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW11-GW-10062016 (500-118189-1)	10/6/16	08:30 Central		Water			X	2	
MW10-GW-10052016 (500-118189-2)	10/5/16	17:05 Central		Water			X	2	

Preservation Codes:

A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDA
M - Hexane
N - None
O - AsNaO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4-5
Z - other (specify)

Other:

Possible Hazard Identification
Unconfirmed

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements:

Empty Kit Relinquished by: Date: Time: Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
[signature]	10/06/16 1600	TA	[signature]	10.7.16 1200	PAS
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks:

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20525 500-118189-2

Lab ID: 205250001 Date Received: 10/7/2016 12:00 Matrix: Water
Sample ID: MW11-GW-10062016 Date Collected: 10/6/2016 08:30

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	10000	ug/l	0.50	0.027	1	10/12/2016 14:22	TD	n
Carbon Dioxide	130	mg/l	5.0	0.24	1	10/12/2016 14:22	TD	n
Oxygen	1.1	mg/l	0.50	0.13	1	10/12/2016 14:22	TD	n
Nitrogen	5.1	mg/l	2.0	0.24	1	10/12/2016 14:22	TD	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20525 500-118189-2

Lab ID: 205250002 Date Received: 10/7/2016 12:00 Matrix: Water
Sample ID: MW10-GW-10052016 Date Collected: 10/5/2016 17:05

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	5200	ug/l	0.50	0.027	1	10/12/2016 14:34	TD	n
Carbon Dioxide	140	mg/l	5.0	0.24	1	10/12/2016 14:34	TD	n
Oxygen	3.1	mg/l	0.50	0.13	1	10/12/2016 14:34	TD	n
Nitrogen	13	mg/l	2.0	0.24	1	10/12/2016 14:34	TD	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-118189-2
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Therese Hargraves

Authorized for release by:
10/17/2016 11:27:36 AM

Therese Hargraves, Project Manager I
(708)534-5200
therese.hargraves@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Subcontract Data 4
Chain of Custody 16
Receipt Checklists 17

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-118189-2

Job ID: 500-118189-2

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-118189-2

Comments
No additional comments.

Receipt
The samples were received on 10/6/2016 12:25 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.3º C.

Subcontract non-Sister
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen: This method was subcontracted to Pace-Pittsburgh (Microseeps). The subcontract laboratory certification is different from that of the facility issuing the final report.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

October 14, 2016

Therese Hargraves
Test America Inc.
2417 Bond Street
University Park, IL 60484

RE: **500-118189-2**
Pace Workorder: 20525

Dear Therese Hargraves:

Enclosed are the analytical results for sample(s) received by the laboratory on Friday, October 07, 2016. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

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

Sincerely,

Ruth Welsh 10/14/2016
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email info@microseeps.com.

Total Number of Pages ____

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water and Solid & Hazardous Waste
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water; Solid and Chemical Materials
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water; Solid and Hazardous Waste
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 20525 500-118189-2

Lab ID	Sample ID	Matrix	Date Collected	Date Received
205250001	MW11-GW-10062016	Water	10/6/2016 08:30	10/7/2016 12:00
205250002	MW10-GW-10052016	Water	10/5/2016 17:05	10/7/2016 12:00

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20525 500-118189-2

Lab ID: 205250001 Date Received: 10/7/2016 12:00 Matrix: Water
Sample ID: MW11-GW-10062016 Date Collected: 10/6/2016 08:30

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	10000	ug/l	0.50	0.027	1	10/12/2016 14:22	TD	n
Carbon Dioxide	130	mg/l	5.0	0.24	1	10/12/2016 14:22	TD	n
Oxygen	1.1	mg/l	0.50	0.13	1	10/12/2016 14:22	TD	n
Nitrogen	5.1	mg/l	2.0	0.24	1	10/12/2016 14:22	TD	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 20525 500-118189-2

Lab ID: 205250002 Date Received: 10/7/2016 12:00 Matrix: Water
Sample ID: MW10-GW-10052016 Date Collected: 10/5/2016 17:05

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	5200	ug/l	0.50	0.027	1	10/12/2016 14:34	TD	n
Carbon Dioxide	140	mg/l	5.0	0.24	1	10/12/2016 14:34	TD	n
Oxygen	3.1	mg/l	0.50	0.13	1	10/12/2016 14:34	TD	n
Nitrogen	13	mg/l	2.0	0.24	1	10/12/2016 14:34	TD	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 20525 500-118189-2

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 20525 500-118189-2

QC Batch: DISG/5664 Analysis Method: AM20GAX
QC Batch Method: AM20GAX
Associated Lab Samples: 205250001, 205250002

METHOD BLANK: 44719

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n

METHOD BLANK: 44720

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Carbon Dioxide	mg/l	<5.0	5.0	n
Oxygen	mg/l	<0.50	0.50	n
Nitrogen	mg/l	<2.0	2.0	n

LABORATORY CONTROL SAMPLE & LCSD: 44721 44723

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Methane	ug/l	750	800	810	106	108	80-120	1.9	20	n

LABORATORY CONTROL SAMPLE & LCSD: 44722 44724

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Carbon Dioxide	mg/l	120	140	140	117	117	80-120	0	20	n
Oxygen	mg/l	11	12	10	105	91	80-120	14	20	n
Nitrogen	mg/l	140	120	120	90	87	80-120	3.4	20	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA QUALIFIERS

Workorder: 20525 500-118189-2

QUALITY CONTROL PARAMETER QUALIFIERS

n The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 20525 500-118189-2

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
205250001	MW11-GW-10062016			AM20GAX	DISG/5664
205250002	MW10-GW-10052016			AM20GAX	DISG/5664

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Phone (708) 534-5200 Fax (708) 534-5211

20525

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Hargraves, Therese M	Carrier Tracking No(s):	COC No: 500-78911.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: therese.hargraves@testamericainc.com		Page: Page 1 of 1
Company: Pace Analytical Services, Inc.				Job #: 500-118189-2
Address: 220 William Pitt Way,	Due Date Requested: 10/18/2016			
City: Pittsburgh	TAT Requested (days):			
State, Zip: PA, 15238				
Phone: 412-826-5245(Tel)	PO #:			
Email:	WO #:			
Project Name: Lake Calumet Cluster Site	Project #: 50011099			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUB (Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen)	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW11-GW-10062016 (500-118189-1)	10/6/16	08:30 Central		Water			X	2	
MW10-GW-10052016 (500-118189-2)	10/5/16	17:05 Central		Water			X	2	

Possible Hazard Identification
Unconfirmed

Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:		Method of Shipment:		
Relinquished by:	Date/Time: 10/06/16 1600	Company TA	Received by:	Date/Time: 10.7.16 1200	Company PAS	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company	
Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:			

Cooler Receipt Form

Client Name: TA Project: 500-118189-2 Lab Work Order: 20525

A. Shipping/Container Information (circle appropriate response)

Courier: (FedEx) UPS USPS Client Other:_____ Air bill Present: (Yes) No

Tracking Number: 651484278861

Custody Seal on Cooler/Box Present: (Yes) No Seals Intact: (Yes) No

Cooler/Box Packing Material: (Bubble Wrap) Absorbent Foam Other:_____

Type of Ice: (Wet) Blue None Ice Intact: (Yes) Melted

Cooler Temperature: 2°C Radiation Screened: Yes (No) Chain of Custody Present: (Yes) No

Comments:_____

B. Laboratory Assignment/Log-in (check appropriate response)

	YES	NO	N/A	Comment Reference non-Conformance
Chain of Custody properly filled out	✓			
Chain of Custody relinquished	✓			
Sampler Name & Signature on COC		✓		
Containers intact	✓			
Were samples in separate bags	✓			
Sample container labels match COC Sample name/date and time collected	✓			
Sufficient volume provided	✓			
PAES containers used	✓			
Are containers properly preserved for the requested testing? (as labeled)	✓			
If an unknown preservation state, were containers checked? Exception: VOA's coliform			✓	If yes, see pH form.
Was volume for dissolved testing field filtered, as noted on the COC? Was volume received in a preserved container?			✓	

Comments:_____

Cooler contents examined/received by: LO Date: 10.7.16

Project Manager Review: RW Date: 10-7-16

F-PAE-Q-009-rev.00, 20 Nov2014

Sample Tracking Record

Client Name: Test America

Client Project Number: 500-118189-2

Page ____ of ____

Bottle Type Circle or Highlight (Sample Receiving Only)	VOA	VFA	TIC	Hydrogen			
	G. Chem.	LLVFA	Soils				
	TOC/DOC	Cations	Diss. Gas				
	Sulfide	Anions	Vapor				

Sample Receiving only to mark above dotted line

Sample Numbers	Removed from Storage			Bottle	Returned or Placed in Storage		
	By	Date	Time	Type	By	Date	Time
205251-1-2				see above	LY	10.7.16	12.00
↓	TD	10-12-16	420	diss gas	TD	10-12-16	1500

Enter Bottle Type From List Above In Proper Column

F-PAE-Q-015-rev.00, 20 Nov2014

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Chain of Custody Record

Report To (optional)
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 120 S. LaSalle St Ste 1350
Address: Chicago, IL 60603
Phone: 312-575-3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis.com

Bill To (optional)
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Lab Job #: 500-118189
Chain of Custody Number:
Page ____ of ____
Temperature °C of Cooler: 4.3

Client: Arcadis
Client Project #: CI001805.0002.00005
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thurnhoffer
Lab PM: Therese Hargraves

Preservative Key: 4° to 4° 4° 4° to 4°
500-118189 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOCs, PCBs, Pesticides	Total Metals	Dissolved Metals	Ammonia, NO3, NO2	Sulfide	VOCs	TOC	TSS, SO4, NO2	Dissolved Gases	Comments
1		MW-11-GW-10062016	10/6/16	0830	1.8	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	- Diss Metals
2		MW-10-GW-10052016	10/5/16	1705	1.4	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Field filtered
																- MW-11 & Sample
																reactive with preservative
																in VOC vial. Unable
																to remove all bubbles
																- Diss Gas Samples,
																Not able to remove
																all headspace

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days ___ Other
Requested Due Date: Standard

Sample Disposal
[ ] Return to Client [X] Disposal by Lab [ ] Archive for ____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	Arcadis	10/6/16	1225	[signature]	TA-CHI	10/6/16	1225

Lab Courier:
Shipped:
Hand Delivered: X

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
QL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

Ben
312-420-3651

TAL-4124-500 (1209)
10/17/2016

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-118189-2

Login Number: 118189
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.3
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-123839-1
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Therese Hargraves

Authorized for release by:
2/27/2017 4:29:51 PM

Therese Hargraves, Project Manager I
(708)534-5200
therese.hargraves@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Detection Summary 4
Method Summary 7
Sample Summary 8
Client Sample Results 9
Definitions 29
QC Association 30
Surrogate Summary 35
QC Sample Results 37
Chronicle 57
Certification Summary 61
Chain of Custody 62
Receipt Checklists 63

Job ID: 500-123839-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-123839-1

Comments
No additional comments.

Receipt
The samples were received on 2/14/2017 4:40 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.5º C and 4.8º C.

The Dissolved Gases analyzed by Pace Labs will be reported in a separate -2 job.

GC/MS VOA
Method(s) 8260B: The following sample was collected in properly preserved vials for analysis of volatile organic compounds (VOCs). The pH however, was outside the required criteria when verified by the laboratory: MW-09-GW-02142017 (500-123839-2). The sample was analyzed within 7 days per EPA recommendation, therefore no further corrective action was needed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method(s) 8270D: LCSD 500-372103/3-A had seven analytes outside of control limits. The LCS was within limits. There were 13 RPD's outside of limits. This data has been reported and qualified.(LCS 500-372103/2-A) and (LCSD 500-372103/3-A)

Method(s) 8270D: CCVIS 500-372152/2 was outside the method criteria for Benzaldehyde, biased low. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte is considered estimated.(CCVIS 500-372152/2)

Method(s) 8270D: The following analyte has been identified, in the reference method and/or via historical data, to be a poor and/or erratic performer: Benzaldehyde. This analyte may have a %D>60% if the average %D of all the analytes in the initial calibration verification (ICV) is 30%. (ICV 500-367726/13)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
Method(s) 8081B: The following samples required a mercury clean-up, via EPA Method 3660A, to reduce matrix interferences caused by sulfur: MW-10-GW-02142017 (500-123839-1), MW-09-GW-02142017 (500-123839-2), MW-08-GW-02142017 (500-123839-3) and Dup-2-02142017 (500-123839-4). The reagent lot number used was: 153166.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method(s) 6010C: Dissolved metals results for the following sample is greater than the corresponding total metals results: MW-09-GW-02142017 (500-123839-2). The dissolved metals and total metals results have been confirmed by the analysis of the undigested sample.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Field Service / Mobile Lab
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-10-GW-02142017 — Lab Sample ID: 500-123839-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Bis(2-ethylhexyl) phthalate	1.3	J	7.3	1.2	ug/L	1		8270D	Total/NA
Barium	0.093		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0014	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	180		0.20	0.059	mg/L	1		6010C	Total/NA
Cobalt	0.0011	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.0088	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	12		0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	77		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.99		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.011		0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	34		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	64		1.0	0.43	mg/L	1		6010C	Total/NA
Zinc	0.074		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.093		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0011	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	180		0.20	0.059	mg/L	1		6010C	Dissolved
Copper	0.0052	J	0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	11		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	78		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	1.0		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.010		0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	35		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	65		1.0	0.43	mg/L	1		6010C	Dissolved
Zinc	0.073		0.020	0.0090	mg/L	1		6010C	Dissolved
Sulfate	530	B	100	29	mg/L	20		9038	Total/NA
Total Organic Carbon - Duplicates	12		1.0	0.27	mg/L	1		9060A	Total/NA
Nitrogen, Nitrate	1.3		0.10	0.035	mg/L	1		Nitrate by calc	Total/NA
Total Suspended Solids	30		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	1.7		0.20	0.10	mg/L	1		SM 4500 NH3 G	Total/NA
Nitrogen, Nitrite	0.016	J	0.020	0.0088	mg/L	1		SM 4500 NO2 B	Total/NA
Nitrogen, Nitrate Nitrite	1.3		0.10	0.035	mg/L	1		SM 4500 NO3 F	Total/NA

Client Sample ID: MW-09-GW-02142017 — Lab Sample ID: 500-123839-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.5		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	14		1.0	0.39	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	1.4		1.0	0.36	ug/L	1		8260B	Total/NA
Isopropylbenzene	3.0		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	1.2		1.0	0.32	ug/L	1		8260B	Total/NA
Acenaphthene	1.1		0.74	0.23	ug/L	1		8270D	Total/NA
Dibenzofuran	0.21	J	1.5	0.19	ug/L	1		8270D	Total/NA
Fluorene	0.42	J	0.74	0.18	ug/L	1		8270D	Total/NA
2-Methylnaphthalene	2.5		1.5	0.048	ug/L	1		8270D	Total/NA
Naphthalene	0.29	J	0.74	0.23	ug/L	1		8270D	Total/NA
Phenanthrene	0.37	J	0.74	0.22	ug/L	1		8270D	Total/NA
Barium	0.82		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	120		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0040	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Iron	26		0.20	0.10	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-09-GW-02142017 (Continued) — Lab Sample ID: 500-123839-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Magnesium	81		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.16		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.0046	J	0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	77		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	200		1.0	0.43	mg/L	1		6010C	Total/NA
Barium	0.83		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	120		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0030	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Iron	26		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	83		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.16		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0041	J	0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	78		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	200		1.0	0.43	mg/L	1		6010C	Dissolved
Sulfate	10	B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	26		1.0	0.27	mg/L	1		9060A	Total/NA
Total Suspended Solids	45		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	73		5.0	2.5	mg/L	25		SM 4500 NH3 G	Total/NA

Client Sample ID: MW-08-GW-02142017 — Lab Sample ID: 500-123839-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	5.7		5.0	1.7	ug/L	1		8260B	Total/NA
Barium	0.67		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.00094	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	120		0.20	0.059	mg/L	1		6010C	Total/NA
Copper	0.0022	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	11		0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	91		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.18		0.010	0.0034	mg/L	1		6010C	Total/NA
Potassium	36		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	240		1.0	0.43	mg/L	1		6010C	Total/NA
Barium	0.65		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	120		0.20	0.059	mg/L	1		6010C	Dissolved
Iron	11		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	87		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.18		0.010	0.0034	mg/L	1		6010C	Dissolved
Potassium	35		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	240		1.0	0.43	mg/L	1		6010C	Dissolved
Mercury	0.00012	J	0.00020	0.00011	mg/L	1		7470A	Dissolved
Sulfate	2.4	J B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	15		1.0	0.27	mg/L	1		9060A	Total/NA
Total Suspended Solids	24		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	36		2.0	1.0	mg/L	10		SM 4500 NH3 G	Total/NA

Client Sample ID: Dup-2-02142017 — Lab Sample ID: 500-123839-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
3 & 4 Methylphenol	0.33	J	1.5	0.33	ug/L	1		8270D	Total/NA
Barium	0.68		0.010	0.0022	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: Dup-2-02142017 (Continued) — Lab Sample ID: 500-123839-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cadmium	0.0011	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	120		0.20	0.059	mg/L	1		6010C	Total/NA
Iron	11		0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	92		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.19		0.010	0.0034	mg/L	1		6010C	Total/NA
Potassium	37		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	250		1.0	0.43	mg/L	1		6010C	Total/NA
Zinc	0.017	J	0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.65		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	120		0.20	0.059	mg/L	1		6010C	Dissolved
Iron	11		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	88		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.18		0.010	0.0034	mg/L	1		6010C	Dissolved
Potassium	35		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	240		1.0	0.43	mg/L	1		6010C	Dissolved
Sulfate	1.7	J B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	15		1.0	0.27	mg/L	1		9060A	Total/NA
Total Suspended Solids	26		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	37		2.0	1.0	mg/L	10		SM 4500 NH3 G	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CHI
8081B	Organochlorine Pesticides (GC)	SW846	TAL CHI
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL CHI
6010C	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	TAL CHI
9038	Sulfate, Turbidimetric	SW846	TAL CHI
9060A	Organic Carbon, Total (TOC)	SW846	TAL CHI
Nitrate by calc	Nitrogen, Nitrate-Nitrite	SM	TAL CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
SM 4500 NH3 G	Ammonia	SM	TAL CHI
SM 4500 NO2 B	Nitrogen, Nitrite	SM	TAL CHI
SM 4500 NO3 F	Nitrogen, Nitrate	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-123839-1	MW-10-GW-02142017	Water	02/14/17 08:00	02/14/17 16:40
500-123839-2	MW-09-GW-02142017	Water	02/14/17 09:40	02/14/17 16:40
500-123839-3	MW-08-GW-02142017	Water	02/14/17 11:30	02/14/17 16:40
500-123839-4	Dup-2-02142017	Water	02/14/17 00:00	02/14/17 16:40

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-10-GW-02142017

Lab Sample ID: 500-123839-1

Date Collected: 02/14/17 08:00
Matrix: Water
Date Received: 02/14/17 16:40

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			02/16/17 19:33	1
Benzene	<0.50		0.50	0.15	ug/L			02/16/17 19:33	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/16/17 19:33	1
Bromoform	<1.0		1.0	0.48	ug/L			02/16/17 19:33	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/16/17 19:33	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/16/17 19:33	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/16/17 19:33	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			02/16/17 19:33	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/16/17 19:33	1
Chloroform	<2.0		2.0	0.37	ug/L			02/16/17 19:33	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/16/17 19:33	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/16/17 19:33	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/16/17 19:33	1
Cyclohexane	<1.0		1.0	0.49	ug/L			02/16/17 19:33	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/16/17 19:33	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/16/17 19:33	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/16/17 19:33	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			02/16/17 19:33	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/16/17 19:33	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			02/16/17 19:33	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/16/17 19:33	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/16/17 19:33	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/16/17 19:33	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/16/17 19:33	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/16/17 19:33	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			02/16/17 19:33	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/16/17 19:33	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			02/16/17 19:33	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/16/17 19:33	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			02/16/17 19:33	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/16/17 19:33	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			02/16/17 19:33	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/16/17 19:33	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/16/17 19:33	1
Styrene	<1.0		1.0	0.39	ug/L			02/16/17 19:33	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/16/17 19:33	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/16/17 19:33	1
Toluene	<0.50		0.50	0.15	ug/L			02/16/17 19:33	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/16/17 19:33	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/16/17 19:33	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/16/17 19:33	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/16/17 19:33	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/16/17 19:33	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/16/17 19:33	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/16/17 19:33	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/16/17 19:33	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/16/17 19:33	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			02/16/17 19:33	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-10-GW-02142017

Lab Sample ID: 500-123839-1

Date Collected: 02/14/17 08:00
Matrix: Water
Date Received: 02/14/17 16:40

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*71 - 120*		*02/16/17 19:33*	*1*
Dibromofluoromethane	*94*		*70 - 120*		*02/16/17 19:33*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*71 - 127*		*02/16/17 19:33*	*1*
Toluene-d8 (Surr)	*99*		*75 - 120*		*02/16/17 19:33*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.73		0.73	0.23	ug/L		02/15/17 08:59	02/15/17 17:13	1
Acenaphthylene	<0.73		0.73	0.19	ug/L		02/15/17 08:59	02/15/17 17:13	1
Acetophenone	<3.6		3.6	0.48	ug/L		02/15/17 08:59	02/15/17 17:13	1
Anthracene	<0.73		0.73	0.24	ug/L		02/15/17 08:59	02/15/17 17:13	1
Benzo[a]anthracene	<0.15		0.15	0.041	ug/L		02/15/17 08:59	02/15/17 17:13	1
Benzo[a]pyrene	<0.15		0.15	0.072	ug/L		02/15/17 08:59	02/15/17 17:13	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		02/15/17 08:59	02/15/17 17:13	1
Benzo[g,h,i]perylene	<0.73		0.73	0.27	ug/L		02/15/17 08:59	02/15/17 17:13	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		02/15/17 08:59	02/15/17 17:13	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/15/17 08:59	02/15/17 17:13	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.21	ug/L		02/15/17 08:59	02/15/17 17:13	1
Bis(2-ethylhexyl) phthalate	**1.3**	**J**	7.3	1.2	ug/L		02/15/17 08:59	02/15/17 17:13	1
4-Bromophenyl phenyl ether	<3.6		3.6	0.39	ug/L		02/15/17 08:59	02/15/17 17:13	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/15/17 08:59	02/15/17 17:13	1
Carbazole	<3.6		3.6	0.26	ug/L		02/15/17 08:59	02/15/17 17:13	1
4-Chloroaniline	<7.3		7.3	1.5	ug/L		02/15/17 08:59	02/15/17 17:13	1
4-Chloro-3-methylphenol	<7.3		7.3	1.7	ug/L		02/15/17 08:59	02/15/17 17:13	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/15/17 08:59	02/15/17 17:13	1
2-Chlorophenol	<3.6	*	3.6	0.41	ug/L		02/15/17 08:59	02/15/17 17:13	1
4-Chlorophenyl phenyl ether	<3.6		3.6	0.46	ug/L		02/15/17 08:59	02/15/17 17:13	1
Chrysene	<0.15		0.15	0.050	ug/L		02/15/17 08:59	02/15/17 17:13	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		02/15/17 08:59	02/15/17 17:13	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		02/15/17 08:59	02/15/17 17:13	1
3,3'-Dichlorobenzidine	<3.6		3.6	1.2	ug/L		02/15/17 08:59	02/15/17 17:13	1
2,4-Dichlorophenol	<7.3	*	7.3	1.9	ug/L		02/15/17 08:59	02/15/17 17:13	1
Diethyl phthalate	<1.5		1.5	0.26	ug/L		02/15/17 08:59	02/15/17 17:13	1
2,4-Dimethylphenol	<7.3		7.3	1.3	ug/L		02/15/17 08:59	02/15/17 17:13	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/15/17 08:59	02/15/17 17:13	1
Di-n-butyl phthalate	<3.6		3.6	0.53	ug/L		02/15/17 08:59	02/15/17 17:13	1
4,6-Dinitro-2-methylphenol	<15	*	15	4.3	ug/L		02/15/17 08:59	02/15/17 17:13	1
2,4-Dinitrophenol	<15	*	15	6.3	ug/L		02/15/17 08:59	02/15/17 17:13	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		02/15/17 08:59	02/15/17 17:13	1
2,6-Dinitrotoluene	<0.73		0.73	0.054	ug/L		02/15/17 08:59	02/15/17 17:13	1
Di-n-octyl phthalate	<7.3		7.3	0.77	ug/L		02/15/17 08:59	02/15/17 17:13	1
Fluoranthene	<0.73		0.73	0.33	ug/L		02/15/17 08:59	02/15/17 17:13	1
Fluorene	<0.73		0.73	0.18	ug/L		02/15/17 08:59	02/15/17 17:13	1
Hexachlorobenzene	<0.36		0.36	0.058	ug/L		02/15/17 08:59	02/15/17 17:13	1
Hexachlorobutadiene	<3.6	*	3.6	0.38	ug/L		02/15/17 08:59	02/15/17 17:13	1
Hexachlorocyclopentadiene	<15		15	4.6	ug/L		02/15/17 08:59	02/15/17 17:13	1
Hexachloroethane	<3.6	*	3.6	0.44	ug/L		02/15/17 08:59	02/15/17 17:13	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.054	ug/L		02/15/17 08:59	02/15/17 17:13	1
Isophorone	<1.5		1.5	0.27	ug/L		02/15/17 08:59	02/15/17 17:13	1
2-Methylnaphthalene	<1.5		1.5	0.047	ug/L		02/15/17 08:59	02/15/17 17:13	1

Client Sample ID: MW-10-GW-02142017

Lab Sample ID: 500-123839-1

Date Collected: 02/14/17 08:00

Matrix: Water

Date Received: 02/14/17 16:40

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.22	ug/L		02/15/17 08:59	02/15/17 17:13	1
3 & 4 Methylphenol	<1.5		1.5	0.33	ug/L		02/15/17 08:59	02/15/17 17:13	1
Naphthalene	<0.73		0.73	0.23	ug/L		02/15/17 08:59	02/15/17 17:13	1
2-Nitroaniline	<3.6		3.6	0.94	ug/L		02/15/17 08:59	02/15/17 17:13	1
3-Nitroaniline	<7.3	*	7.3	1.3	ug/L		02/15/17 08:59	02/15/17 17:13	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		02/15/17 08:59	02/15/17 17:13	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		02/15/17 08:59	02/15/17 17:13	1
2-Nitrophenol	<7.3	*	7.3	1.8	ug/L		02/15/17 08:59	02/15/17 17:13	1
4-Nitrophenol	<15	*	15	5.4	ug/L		02/15/17 08:59	02/15/17 17:13	1
N-Nitrosodi-n-propylamine	<0.36		0.36	0.11	ug/L		02/15/17 08:59	02/15/17 17:13	1
N-Nitrosodiphenylamine	<0.73		0.73	0.27	ug/L		02/15/17 08:59	02/15/17 17:13	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/15/17 08:59	02/15/17 17:13	1
Pentachlorophenol	<15	*	15	2.9	ug/L		02/15/17 08:59	02/15/17 17:13	1
Phenanthrene	<0.73		0.73	0.22	ug/L		02/15/17 08:59	02/15/17 17:13	1
Phenol	<3.6	*	3.6	0.49	ug/L		02/15/17 08:59	02/15/17 17:13	1
Pyrene	<0.73		0.73	0.31	ug/L		02/15/17 08:59	02/15/17 17:13	1
2,4,5-Trichlorophenol	<7.3	*	7.3	1.9	ug/L		02/15/17 08:59	02/15/17 17:13	1
2,4,6-Trichlorophenol	<3.6	*	3.6	0.52	ug/L		02/15/17 08:59	02/15/17 17:13	1
Benzaldehyde	<29		29	11	ug/L		02/15/17 08:59	02/15/17 17:13	1
Caprolactam	<7.3		7.3	1.1	ug/L		02/15/17 08:59	02/15/17 17:13	1
Atrazine	<3.6		3.6	0.46	ug/L		02/15/17 08:59	02/15/17 17:13	1
1,1'-Biphenyl	<3.6		3.6	0.26	ug/L		02/15/17 08:59	02/15/17 17:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*82*		*30 - 123*	*02/15/17 08:59*	*02/15/17 17:13*	*1*
2-Fluorophenol (Surr)	*72*		*30 - 110*	*02/15/17 08:59*	*02/15/17 17:13*	*1*
Nitrobenzene-d5 (Surr)	*89*		*33 - 139*	*02/15/17 08:59*	*02/15/17 17:13*	*1*
Phenol-d5 (Surr)	*60*		*20 - 100*	*02/15/17 08:59*	*02/15/17 17:13*	*1*
Terphenyl-d14 (Surr)	*91*		*42 - 150*	*02/15/17 08:59*	*02/15/17 17:13*	*1*
2,4,6-Tribromophenol (Surr)	*97*		*30 - 150*	*02/15/17 08:59*	*02/15/17 17:13*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		02/15/17 07:39	02/21/17 12:13	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		02/15/17 07:39	02/21/17 12:13	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		02/15/17 07:39	02/21/17 12:13	1
beta-BHC	<0.037		0.037	0.0093	ug/L		02/15/17 07:39	02/21/17 12:13	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 12:13	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		02/15/17 07:39	02/21/17 12:13	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		02/15/17 07:39	02/21/17 12:13	1
delta-BHC	<0.037		0.037	0.0094	ug/L		02/15/17 07:39	02/21/17 12:13	1
Dieldrin	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 12:13	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		02/15/17 07:39	02/21/17 12:13	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		02/15/17 07:39	02/21/17 12:13	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		02/15/17 07:39	02/21/17 12:13	1
Endrin	<0.037		0.037	0.013	ug/L		02/15/17 07:39	02/21/17 12:13	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		02/15/17 07:39	02/21/17 12:13	1
Endrin ketone	<0.037		0.037	0.016	ug/L		02/15/17 07:39	02/21/17 12:13	1
gamma-BHC (Lindane)	<0.037		0.037	0.0051	ug/L		02/15/17 07:39	02/21/17 12:13	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		02/15/17 07:39	02/21/17 12:13	1

Client Sample ID: MW-10-GW-02142017

Lab Sample ID: 500-123839-1

Date Collected: 02/14/17 08:00

Matrix: Water

Date Received: 02/14/17 16:40

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 12:13	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		02/15/17 07:39	02/21/17 12:13	1
Methoxychlor	<0.073		0.073	0.021	ug/L		02/15/17 07:39	02/21/17 12:13	1
Toxaphene	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/21/17 12:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*74*		*30 - 143*	*02/15/17 07:39*	*02/21/17 12:13*	*1*
Tetrachloro-m-xylene	*56*		*30 - 120*	*02/15/17 07:39*	*02/21/17 12:13*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.061	ug/L		02/15/17 07:39	02/16/17 09:50	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 09:50	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 09:50	1
PCB-1242	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 09:50	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 09:50	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 09:50	1
PCB-1260	<0.37		0.37	0.064	ug/L		02/15/17 07:39	02/16/17 09:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*58*		*30 - 127*	*02/15/17 07:39*	*02/16/17 09:50*	*1*
DCB Decachlorobiphenyl	*55*		*30 - 150*	*02/15/17 07:39*	*02/16/17 09:50*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 11:47	1
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 11:47	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 11:47	1
Barium	**0.093**		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 11:47	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 11:47	1
Cadmium	**0.0014**	**J**	0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 11:47	1
Calcium	**180**		0.20	0.059	mg/L		02/15/17 08:20	02/20/17 11:47	1
Chromium	<0.010		0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 11:47	1
Cobalt	**0.0011**	**J**	0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 11:47	1
Copper	**0.0088**	**J**	0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 11:47	1
Iron	**12**		0.20	0.10	mg/L		02/15/17 08:20	02/20/17 11:47	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 11:47	1
Magnesium	**77**		0.10	0.041	mg/L		02/15/17 08:20	02/20/17 11:47	1
Manganese	**0.99**		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 11:47	1
Nickel	**0.011**		0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 11:47	1
Potassium	**34**		0.50	0.16	mg/L		02/15/17 08:20	02/20/17 11:47	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 11:47	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 11:47	1
Sodium	**64**		1.0	0.43	mg/L		02/15/17 08:20	02/20/17 11:47	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 11:47	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 11:47	1
Zinc	**0.074**		0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 11:47	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 11:50	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-10-GW-02142017

Lab Sample ID: 500-123839-1

Date Collected: 02/14/17 08:00
Matrix: Water
Date Received: 02/14/17 16:40

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 11:50	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 11:50	1
Barium	**0.093**		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 11:50	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 11:50	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 11:50	1
Calcium	**180**		0.20	0.059	mg/L		02/15/17 08:20	02/20/17 11:50	1
Chromium	<0.010		0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 11:50	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 11:50	1
Copper	**0.0052**	**J**	0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 11:50	1
Iron	**11**		0.20	0.10	mg/L		02/15/17 08:20	02/20/17 11:50	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 11:50	1
Magnesium	**78**		0.10	0.041	mg/L		02/15/17 08:20	02/20/17 11:50	1
Manganese	**1.0**		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 11:50	1
Nickel	**0.010**		0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 11:50	1
Potassium	**35**		0.50	0.16	mg/L		02/15/17 08:20	02/20/17 11:50	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 11:50	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 11:50	1
Sodium	**65**		1.0	0.43	mg/L		02/15/17 08:20	02/20/17 11:50	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 11:50	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 11:50	1
Zinc	**0.073**		0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 11:50	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:43	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 05:23	1
Sulfate	**530**	**B**	100	29	mg/L			02/15/17 06:52	20
Total Organic Carbon - Duplicates	**12**		1.0	0.27	mg/L			02/16/17 22:11	1
Nitrogen, Nitrate	**1.3**		0.10	0.035	mg/L			02/19/17 20:18	1
Total Suspended Solids	**30**		5.0	2.5	mg/L			02/15/17 11:22	1
Ammonia	**1.7**		0.20	0.10	mg/L		02/14/17 21:30	02/15/17 00:16	1
Nitrogen, Nitrite	**0.016**	**J**	0.020	0.0088	mg/L			02/15/17 14:18	1
Nitrogen, Nitrate Nitrite	**1.3**		0.10	0.035	mg/L			02/17/17 21:33	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-09-GW-02142017

Lab Sample ID: 500-123839-2

Date Collected: 02/14/17 09:40
Matrix: Water
Date Received: 02/14/17 16:40

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			02/16/17 20:00	1
Benzene	**1.5**		0.50	0.15	ug/L			02/16/17 20:00	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/16/17 20:00	1
Bromoform	<1.0		1.0	0.48	ug/L			02/16/17 20:00	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/16/17 20:00	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/16/17 20:00	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/16/17 20:00	1
Chlorobenzene	**14**		1.0	0.39	ug/L			02/16/17 20:00	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/16/17 20:00	1
Chloroform	<2.0		2.0	0.37	ug/L			02/16/17 20:00	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/16/17 20:00	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/16/17 20:00	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/16/17 20:00	1
Cyclohexane	<1.0		1.0	0.49	ug/L			02/16/17 20:00	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/16/17 20:00	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/16/17 20:00	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/16/17 20:00	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			02/16/17 20:00	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/16/17 20:00	1
1,4-Dichlorobenzene	**1.4**		1.0	0.36	ug/L			02/16/17 20:00	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/16/17 20:00	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/16/17 20:00	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/16/17 20:00	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/16/17 20:00	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/16/17 20:00	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			02/16/17 20:00	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/16/17 20:00	1
Isopropylbenzene	**3.0**		1.0	0.39	ug/L			02/16/17 20:00	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/16/17 20:00	1
Methylcyclohexane	**1.2**		1.0	0.32	ug/L			02/16/17 20:00	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/16/17 20:00	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			02/16/17 20:00	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/16/17 20:00	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/16/17 20:00	1
Styrene	<1.0		1.0	0.39	ug/L			02/16/17 20:00	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/16/17 20:00	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/16/17 20:00	1
Toluene	<0.50		0.50	0.15	ug/L			02/16/17 20:00	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/16/17 20:00	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/16/17 20:00	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/16/17 20:00	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/16/17 20:00	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/16/17 20:00	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/16/17 20:00	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/16/17 20:00	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/16/17 20:00	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/16/17 20:00	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			02/16/17 20:00	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-09-GW-02142017

Lab Sample ID: 500-123839-2

Date Collected: 02/14/17 09:40
Matrix: Water
Date Received: 02/14/17 16:40

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*71 - 120*		*02/16/17 20:00*	*1*
Dibromofluoromethane	*95*		*70 - 120*		*02/16/17 20:00*	*1*
1,2-Dichloroethane-d4 (Surr)	*109*		*71 - 127*		*02/16/17 20:00*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*02/16/17 20:00*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**1.1**		0.74	0.23	ug/L		02/15/17 08:59	02/15/17 17:40	1
Acenaphthylene	<0.74		0.74	0.20	ug/L		02/15/17 08:59	02/15/17 17:40	1
Acetophenone	<3.7		3.7	0.49	ug/L		02/15/17 08:59	02/15/17 17:40	1
Anthracene	<0.74		0.74	0.25	ug/L		02/15/17 08:59	02/15/17 17:40	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		02/15/17 08:59	02/15/17 17:40	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		02/15/17 08:59	02/15/17 17:40	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		02/15/17 08:59	02/15/17 17:40	1
Benzo[g,h,i]perylene	<0.74		0.74	0.28	ug/L		02/15/17 08:59	02/15/17 17:40	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		02/15/17 08:59	02/15/17 17:40	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/15/17 08:59	02/15/17 17:40	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		02/15/17 08:59	02/15/17 17:40	1
Bis(2-ethylhexyl) phthalate	<7.4		7.4	1.3	ug/L		02/15/17 08:59	02/15/17 17:40	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		02/15/17 08:59	02/15/17 17:40	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/15/17 08:59	02/15/17 17:40	1
Carbazole	<3.7		3.7	0.26	ug/L		02/15/17 08:59	02/15/17 17:40	1
4-Chloroaniline	<7.4		7.4	1.5	ug/L		02/15/17 08:59	02/15/17 17:40	1
4-Chloro-3-methylphenol	<7.4		7.4	1.7	ug/L		02/15/17 08:59	02/15/17 17:40	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/15/17 08:59	02/15/17 17:40	1
2-Chlorophenol	<3.7	*	3.7	0.41	ug/L		02/15/17 08:59	02/15/17 17:40	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		02/15/17 08:59	02/15/17 17:40	1
Chrysene	<0.15		0.15	0.050	ug/L		02/15/17 08:59	02/15/17 17:40	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		02/15/17 08:59	02/15/17 17:40	1
Dibenzofuran	**0.21**	**J**	1.5	0.19	ug/L		02/15/17 08:59	02/15/17 17:40	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		02/15/17 08:59	02/15/17 17:40	1
2,4-Dichlorophenol	<7.4	*	7.4	1.9	ug/L		02/15/17 08:59	02/15/17 17:40	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		02/15/17 08:59	02/15/17 17:40	1
2,4-Dimethylphenol	<7.4		7.4	1.3	ug/L		02/15/17 08:59	02/15/17 17:40	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/15/17 08:59	02/15/17 17:40	1
Di-n-butyl phthalate	<3.7		3.7	0.54	ug/L		02/15/17 08:59	02/15/17 17:40	1
4,6-Dinitro-2-methylphenol	<15	*	15	4.4	ug/L		02/15/17 08:59	02/15/17 17:40	1
2,4-Dinitrophenol	<15	*	15	6.3	ug/L		02/15/17 08:59	02/15/17 17:40	1
2,4-Dinitrotoluene	<0.74		0.74	0.18	ug/L		02/15/17 08:59	02/15/17 17:40	1
2,6-Dinitrotoluene	<0.74		0.74	0.054	ug/L		02/15/17 08:59	02/15/17 17:40	1
Di-n-octyl phthalate	<7.4		7.4	0.77	ug/L		02/15/17 08:59	02/15/17 17:40	1
Fluoranthene	<0.74		0.74	0.33	ug/L		02/15/17 08:59	02/15/17 17:40	1
Fluorene	**0.42**	**J**	0.74	0.18	ug/L		02/15/17 08:59	02/15/17 17:40	1
Hexachlorobenzene	<0.37		0.37	0.059	ug/L		02/15/17 08:59	02/15/17 17:40	1
Hexachlorobutadiene	<3.7	*	3.7	0.38	ug/L		02/15/17 08:59	02/15/17 17:40	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		02/15/17 08:59	02/15/17 17:40	1
Hexachloroethane	<3.7	*	3.7	0.44	ug/L		02/15/17 08:59	02/15/17 17:40	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		02/15/17 08:59	02/15/17 17:40	1
Isophorone	<1.5		1.5	0.28	ug/L		02/15/17 08:59	02/15/17 17:40	1
2-Methylnaphthalene	**2.5**		1.5	0.048	ug/L		02/15/17 08:59	02/15/17 17:40	1

Client Sample ID: MW-09-GW-02142017

Lab Sample ID: 500-123839-2

Date Collected: 02/14/17 09:40

Matrix: Water

Date Received: 02/14/17 16:40

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.23	ug/L		02/15/17 08:59	02/15/17 17:40	1
3 & 4 Methylphenol	<1.5		1.5	0.33	ug/L		02/15/17 08:59	02/15/17 17:40	1
Naphthalene	**0.29**	**J**	0.74	0.23	ug/L		02/15/17 08:59	02/15/17 17:40	1
2-Nitroaniline	<3.7		3.7	0.95	ug/L		02/15/17 08:59	02/15/17 17:40	1
3-Nitroaniline	<7.4	*	7.4	1.3	ug/L		02/15/17 08:59	02/15/17 17:40	1
4-Nitroaniline	<7.4		7.4	1.2	ug/L		02/15/17 08:59	02/15/17 17:40	1
Nitrobenzene	<0.74		0.74	0.33	ug/L		02/15/17 08:59	02/15/17 17:40	1
2-Nitrophenol	<7.4	*	7.4	1.8	ug/L		02/15/17 08:59	02/15/17 17:40	1
4-Nitrophenol	<15	*	15	5.5	ug/L		02/15/17 08:59	02/15/17 17:40	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		02/15/17 08:59	02/15/17 17:40	1
N-Nitrosodiphenylamine	<0.74		0.74	0.27	ug/L		02/15/17 08:59	02/15/17 17:40	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/15/17 08:59	02/15/17 17:40	1
Pentachlorophenol	<15	*	15	2.9	ug/L		02/15/17 08:59	02/15/17 17:40	1
Phenanthrene	**0.37**	**J**	0.74	0.22	ug/L		02/15/17 08:59	02/15/17 17:40	1
Phenol	<3.7	*	3.7	0.50	ug/L		02/15/17 08:59	02/15/17 17:40	1
Pyrene	<0.74		0.74	0.31	ug/L		02/15/17 08:59	02/15/17 17:40	1
2,4,5-Trichlorophenol	<7.4	*	7.4	1.9	ug/L		02/15/17 08:59	02/15/17 17:40	1
2,4,6-Trichlorophenol	<3.7	*	3.7	0.53	ug/L		02/15/17 08:59	02/15/17 17:40	1
Benzaldehyde	<30		30	11	ug/L		02/15/17 08:59	02/15/17 17:40	1
Caprolactam	<7.4		7.4	1.1	ug/L		02/15/17 08:59	02/15/17 17:40	1
Atrazine	<3.7		3.7	0.46	ug/L		02/15/17 08:59	02/15/17 17:40	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		02/15/17 08:59	02/15/17 17:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*61*		*30 - 123*	*02/15/17 08:59*	*02/15/17 17:40*	*1*
2-Fluorophenol (Surr)	*52*		*30 - 110*	*02/15/17 08:59*	*02/15/17 17:40*	*1*
Nitrobenzene-d5 (Surr)	*68*		*33 - 139*	*02/15/17 08:59*	*02/15/17 17:40*	*1*
Phenol-d5 (Surr)	*47*		*20 - 100*	*02/15/17 08:59*	*02/15/17 17:40*	*1*
Terphenyl-d14 (Surr)	*86*		*42 - 150*	*02/15/17 08:59*	*02/15/17 17:40*	*1*
2,4,6-Tribromophenol (Surr)	*88*		*30 - 150*	*02/15/17 08:59*	*02/15/17 17:40*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0048	ug/L		02/15/17 07:39	02/21/17 12:33	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		02/15/17 07:39	02/21/17 12:33	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		02/15/17 07:39	02/21/17 12:33	1
beta-BHC	<0.037		0.037	0.0093	ug/L		02/15/17 07:39	02/21/17 12:33	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 12:33	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		02/15/17 07:39	02/21/17 12:33	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		02/15/17 07:39	02/21/17 12:33	1
delta-BHC	<0.037		0.037	0.0094	ug/L		02/15/17 07:39	02/21/17 12:33	1
Dieldrin	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 12:33	1
Endosulfan I	<0.037		0.037	0.0037	ug/L		02/15/17 07:39	02/21/17 12:33	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		02/15/17 07:39	02/21/17 12:33	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		02/15/17 07:39	02/21/17 12:33	1
Endrin	<0.037		0.037	0.013	ug/L		02/15/17 07:39	02/21/17 12:33	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		02/15/17 07:39	02/21/17 12:33	1
Endrin ketone	<0.037		0.037	0.016	ug/L		02/15/17 07:39	02/21/17 12:33	1
gamma-BHC (Lindane)	<0.037		0.037	0.0051	ug/L		02/15/17 07:39	02/21/17 12:33	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		02/15/17 07:39	02/21/17 12:33	1

Client Sample ID: MW-09-GW-02142017

Lab Sample ID: 500-123839-2

Date Collected: 02/14/17 09:40

Matrix: Water

Date Received: 02/14/17 16:40

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 12:33	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		02/15/17 07:39	02/21/17 12:33	1
Methoxychlor	<0.073		0.073	0.021	ug/L		02/15/17 07:39	02/21/17 12:33	1
Toxaphene	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/21/17 12:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*66*		*30 - 143*	*02/15/17 07:39*	*02/21/17 12:33*	*1*
Tetrachloro-m-xylene	*46*		*30 - 120*	*02/15/17 07:39*	*02/21/17 12:33*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.061	ug/L		02/15/17 07:39	02/16/17 10:06	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:06	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:06	1
PCB-1242	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:06	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:06	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:06	1
PCB-1260	<0.37		0.37	0.064	ug/L		02/15/17 07:39	02/16/17 10:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*53*		*30 - 127*	*02/15/17 07:39*	*02/16/17 10:06*	*1*
DCB Decachlorobiphenyl	*57*		*30 - 150*	*02/15/17 07:39*	*02/16/17 10:06*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 12:00	1
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 12:00	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:00	1
Barium	**0.82**		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:00	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 12:00	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 12:00	1
Calcium	**120**		0.20	0.059	mg/L		02/15/17 08:20	02/20/17 12:00	1
Chromium	**0.0040**	**J**	0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 12:00	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 12:00	1
Copper	<0.010		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:00	1
Iron	**26**		0.20	0.10	mg/L		02/15/17 08:20	02/20/17 12:00	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 12:00	1
Magnesium	**81**		0.10	0.041	mg/L		02/15/17 08:20	02/20/17 12:00	1
Manganese	**0.16**		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:00	1
Nickel	**0.0046**	**J**	0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 12:00	1
Potassium	**77**		0.50	0.16	mg/L		02/15/17 08:20	02/20/17 12:00	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 12:00	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 12:00	1
Sodium	**200**		1.0	0.43	mg/L		02/15/17 08:20	02/20/17 12:00	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:00	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 12:00	1
Zinc	<0.020		0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 12:00	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 12:04	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-09-GW-02142017

Lab Sample ID: 500-123839-2

Date Collected: 02/14/17 09:40
Matrix: Water
Date Received: 02/14/17 16:40

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 12:04	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:04	1
Barium	**0.83**		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:04	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 12:04	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 12:04	1
Calcium	**120**		0.20	0.059	mg/L		02/15/17 08:20	02/20/17 12:04	1
Chromium	**0.0030**	**J**	0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 12:04	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 12:04	1
Copper	<0.010		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:04	1
Iron	**26**		0.20	0.10	mg/L		02/15/17 08:20	02/20/17 12:04	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 12:04	1
Magnesium	**83**		0.10	0.041	mg/L		02/15/17 08:20	02/20/17 12:04	1
Manganese	**0.16**		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:04	1
Nickel	**0.0041**	**J**	0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 12:04	1
Potassium	**78**		0.50	0.16	mg/L		02/15/17 08:20	02/20/17 12:04	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 12:04	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 12:04	1
Sodium	**200**		1.0	0.43	mg/L		02/15/17 08:20	02/20/17 12:04	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:04	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 12:04	1
Zinc	<0.020		0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 12:04	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:49	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 05:26	1
Sulfate	**10**	**B**	5.0	1.5	mg/L			02/15/17 06:53	1
Total Organic Carbon - Duplicates	**26**		1.0	0.27	mg/L			02/16/17 22:28	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:18	1
Total Suspended Solids	**45**		5.0	2.5	mg/L			02/15/17 11:24	1
Ammonia	**73**		5.0	2.5	mg/L		02/14/17 21:30	02/15/17 01:01	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/15/17 14:19	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/17/17 21:36	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-08-GW-02142017

Lab Sample ID: 500-123839-3

Date Collected: 02/14/17 11:30
Matrix: Water
Date Received: 02/14/17 16:40

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	5.7		5.0	1.7	ug/L			02/16/17 20:27	1
Benzene	<0.50		0.50	0.15	ug/L			02/16/17 20:27	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/16/17 20:27	1
Bromoform	<1.0		1.0	0.48	ug/L			02/16/17 20:27	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/16/17 20:27	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/16/17 20:27	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/16/17 20:27	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			02/16/17 20:27	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/16/17 20:27	1
Chloroform	<2.0		2.0	0.37	ug/L			02/16/17 20:27	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/16/17 20:27	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/16/17 20:27	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/16/17 20:27	1
Cyclohexane	<1.0		1.0	0.49	ug/L			02/16/17 20:27	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/16/17 20:27	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/16/17 20:27	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/16/17 20:27	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			02/16/17 20:27	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/16/17 20:27	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			02/16/17 20:27	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/16/17 20:27	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/16/17 20:27	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/16/17 20:27	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/16/17 20:27	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/16/17 20:27	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			02/16/17 20:27	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/16/17 20:27	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			02/16/17 20:27	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/16/17 20:27	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			02/16/17 20:27	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/16/17 20:27	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			02/16/17 20:27	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/16/17 20:27	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/16/17 20:27	1
Styrene	<1.0		1.0	0.39	ug/L			02/16/17 20:27	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/16/17 20:27	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/16/17 20:27	1
Toluene	<0.50		0.50	0.15	ug/L			02/16/17 20:27	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/16/17 20:27	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/16/17 20:27	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/16/17 20:27	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/16/17 20:27	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/16/17 20:27	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/16/17 20:27	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/16/17 20:27	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/16/17 20:27	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/16/17 20:27	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			02/16/17 20:27	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-08-GW-02142017

Lab Sample ID: 500-123839-3

Date Collected: 02/14/17 11:30
Matrix: Water
Date Received: 02/14/17 16:40

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*		*02/16/17 20:27*	*1*
Dibromofluoromethane	*95*		*70 - 120*		*02/16/17 20:27*	*1*
1,2-Dichloroethane-d4 (Surr)	*104*		*71 - 127*		*02/16/17 20:27*	*1*
Toluene-d8 (Surr)	*99*		*75 - 120*		*02/16/17 20:27*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.73		0.73	0.23	ug/L		02/15/17 08:59	02/15/17 18:07	1
Acenaphthylene	<0.73		0.73	0.20	ug/L		02/15/17 08:59	02/15/17 18:07	1
Acetophenone	<3.7		3.7	0.49	ug/L		02/15/17 08:59	02/15/17 18:07	1
Anthracene	<0.73		0.73	0.24	ug/L		02/15/17 08:59	02/15/17 18:07	1
Benzo[a]anthracene	<0.15		0.15	0.041	ug/L		02/15/17 08:59	02/15/17 18:07	1
Benzo[a]pyrene	<0.15		0.15	0.072	ug/L		02/15/17 08:59	02/15/17 18:07	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		02/15/17 08:59	02/15/17 18:07	1
Benzo[g,h,i]perylene	<0.73		0.73	0.27	ug/L		02/15/17 08:59	02/15/17 18:07	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		02/15/17 08:59	02/15/17 18:07	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/15/17 08:59	02/15/17 18:07	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.21	ug/L		02/15/17 08:59	02/15/17 18:07	1
Bis(2-ethylhexyl) phthalate	<7.3		7.3	1.3	ug/L		02/15/17 08:59	02/15/17 18:07	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		02/15/17 08:59	02/15/17 18:07	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/15/17 08:59	02/15/17 18:07	1
Carbazole	<3.7		3.7	0.26	ug/L		02/15/17 08:59	02/15/17 18:07	1
4-Chloroaniline	<7.3		7.3	1.5	ug/L		02/15/17 08:59	02/15/17 18:07	1
4-Chloro-3-methylphenol	<7.3		7.3	1.7	ug/L		02/15/17 08:59	02/15/17 18:07	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/15/17 08:59	02/15/17 18:07	1
2-Chlorophenol	<3.7	*	3.7	0.41	ug/L		02/15/17 08:59	02/15/17 18:07	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		02/15/17 08:59	02/15/17 18:07	1
Chrysene	<0.15		0.15	0.050	ug/L		02/15/17 08:59	02/15/17 18:07	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		02/15/17 08:59	02/15/17 18:07	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		02/15/17 08:59	02/15/17 18:07	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		02/15/17 08:59	02/15/17 18:07	1
2,4-Dichlorophenol	<7.3	*	7.3	1.9	ug/L		02/15/17 08:59	02/15/17 18:07	1
Diethyl phthalate	<1.5		1.5	0.26	ug/L		02/15/17 08:59	02/15/17 18:07	1
2,4-Dimethylphenol	<7.3		7.3	1.3	ug/L		02/15/17 08:59	02/15/17 18:07	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/15/17 08:59	02/15/17 18:07	1
Di-n-butyl phthalate	<3.7		3.7	0.53	ug/L		02/15/17 08:59	02/15/17 18:07	1
4,6-Dinitro-2-methylphenol	<15	*	15	4.3	ug/L		02/15/17 08:59	02/15/17 18:07	1
2,4-Dinitrophenol	<15	*	15	6.3	ug/L		02/15/17 08:59	02/15/17 18:07	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		02/15/17 08:59	02/15/17 18:07	1
2,6-Dinitrotoluene	<0.73		0.73	0.054	ug/L		02/15/17 08:59	02/15/17 18:07	1
Di-n-octyl phthalate	<7.3		7.3	0.77	ug/L		02/15/17 08:59	02/15/17 18:07	1
Fluoranthene	<0.73		0.73	0.33	ug/L		02/15/17 08:59	02/15/17 18:07	1
Fluorene	<0.73		0.73	0.18	ug/L		02/15/17 08:59	02/15/17 18:07	1
Hexachlorobenzene	<0.37		0.37	0.058	ug/L		02/15/17 08:59	02/15/17 18:07	1
Hexachlorobutadiene	<3.7	*	3.7	0.38	ug/L		02/15/17 08:59	02/15/17 18:07	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		02/15/17 08:59	02/15/17 18:07	1
Hexachloroethane	<3.7	*	3.7	0.44	ug/L		02/15/17 08:59	02/15/17 18:07	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		02/15/17 08:59	02/15/17 18:07	1
Isophorone	<1.5		1.5	0.27	ug/L		02/15/17 08:59	02/15/17 18:07	1
2-Methylnaphthalene	<1.5		1.5	0.048	ug/L		02/15/17 08:59	02/15/17 18:07	1

Client Sample ID: MW-08-GW-02142017

Lab Sample ID: 500-123839-3

Date Collected: 02/14/17 11:30

Matrix: Water

Date Received: 02/14/17 16:40

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.22	ug/L		02/15/17 08:59	02/15/17 18:07	1
3 & 4 Methylphenol	<1.5		1.5	0.33	ug/L		02/15/17 08:59	02/15/17 18:07	1
Naphthalene	<0.73		0.73	0.23	ug/L		02/15/17 08:59	02/15/17 18:07	1
2-Nitroaniline	<3.7		3.7	0.94	ug/L		02/15/17 08:59	02/15/17 18:07	1
3-Nitroaniline	<7.3	*	7.3	1.3	ug/L		02/15/17 08:59	02/15/17 18:07	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		02/15/17 08:59	02/15/17 18:07	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		02/15/17 08:59	02/15/17 18:07	1
2-Nitrophenol	<7.3	*	7.3	1.8	ug/L		02/15/17 08:59	02/15/17 18:07	1
4-Nitrophenol	<15	*	15	5.4	ug/L		02/15/17 08:59	02/15/17 18:07	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		02/15/17 08:59	02/15/17 18:07	1
N-Nitrosodiphenylamine	<0.73		0.73	0.27	ug/L		02/15/17 08:59	02/15/17 18:07	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/15/17 08:59	02/15/17 18:07	1
Pentachlorophenol	<15	*	15	2.9	ug/L		02/15/17 08:59	02/15/17 18:07	1
Phenanthrene	<0.73		0.73	0.22	ug/L		02/15/17 08:59	02/15/17 18:07	1
Phenol	<3.7	*	3.7	0.49	ug/L		02/15/17 08:59	02/15/17 18:07	1
Pyrene	<0.73		0.73	0.31	ug/L		02/15/17 08:59	02/15/17 18:07	1
2,4,5-Trichlorophenol	<7.3	*	7.3	1.9	ug/L		02/15/17 08:59	02/15/17 18:07	1
2,4,6-Trichlorophenol	<3.7	*	3.7	0.52	ug/L		02/15/17 08:59	02/15/17 18:07	1
Benzaldehyde	<29		29	11	ug/L		02/15/17 08:59	02/15/17 18:07	1
Caprolactam	<7.3		7.3	1.1	ug/L		02/15/17 08:59	02/15/17 18:07	1
Atrazine	<3.7		3.7	0.46	ug/L		02/15/17 08:59	02/15/17 18:07	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		02/15/17 08:59	02/15/17 18:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*59*		*30 - 123*	*02/15/17 08:59*	*02/15/17 18:07*	*1*
2-Fluorophenol (Surr)	*50*		*30 - 110*	*02/15/17 08:59*	*02/15/17 18:07*	*1*
Nitrobenzene-d5 (Surr)	*61*		*33 - 139*	*02/15/17 08:59*	*02/15/17 18:07*	*1*
Phenol-d5 (Surr)	*42*		*20 - 100*	*02/15/17 08:59*	*02/15/17 18:07*	*1*
Terphenyl-d14 (Surr)	*70*		*42 - 150*	*02/15/17 08:59*	*02/15/17 18:07*	*1*
2,4,6-Tribromophenol (Surr)	*79*		*30 - 150*	*02/15/17 08:59*	*02/15/17 18:07*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.036		0.036	0.0048	ug/L		02/15/17 07:39	02/21/17 12:52	1
alpha-BHC	<0.036		0.036	0.0024	ug/L		02/15/17 07:39	02/21/17 12:52	1
alpha-Chlordane	<0.036		0.036	0.0040	ug/L		02/15/17 07:39	02/21/17 12:52	1
beta-BHC	<0.036		0.036	0.0093	ug/L		02/15/17 07:39	02/21/17 12:52	1
4,4'-DDD	<0.036		0.036	0.012	ug/L		02/15/17 07:39	02/21/17 12:52	1
4,4'-DDE	<0.036		0.036	0.0035	ug/L		02/15/17 07:39	02/21/17 12:52	1
4,4'-DDT	<0.036		0.036	0.0029	ug/L		02/15/17 07:39	02/21/17 12:52	1
delta-BHC	<0.036		0.036	0.0094	ug/L		02/15/17 07:39	02/21/17 12:52	1
Dieldrin	<0.036		0.036	0.012	ug/L		02/15/17 07:39	02/21/17 12:52	1
Endosulfan I	<0.036		0.036	0.0037	ug/L		02/15/17 07:39	02/21/17 12:52	1
Endosulfan II	<0.036		0.036	0.0025	ug/L		02/15/17 07:39	02/21/17 12:52	1
Endosulfan sulfate	<0.036		0.036	0.011	ug/L		02/15/17 07:39	02/21/17 12:52	1
Endrin	<0.036		0.036	0.013	ug/L		02/15/17 07:39	02/21/17 12:52	1
Endrin aldehyde	<0.036		0.036	0.0075	ug/L		02/15/17 07:39	02/21/17 12:52	1
Endrin ketone	<0.036		0.036	0.015	ug/L		02/15/17 07:39	02/21/17 12:52	1
gamma-BHC (Lindane)	<0.036		0.036	0.0051	ug/L		02/15/17 07:39	02/21/17 12:52	1
gamma-Chlordane	<0.036		0.036	0.0066	ug/L		02/15/17 07:39	02/21/17 12:52	1

Client Sample ID: MW-08-GW-02142017

Lab Sample ID: 500-123839-3

Date Collected: 02/14/17 11:30

Matrix: Water

Date Received: 02/14/17 16:40

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.036		0.036	0.012	ug/L		02/15/17 07:39	02/21/17 12:52	1
Heptachlor epoxide	<0.036		0.036	0.013	ug/L		02/15/17 07:39	02/21/17 12:52	1
Methoxychlor	<0.073		0.073	0.021	ug/L		02/15/17 07:39	02/21/17 12:52	1
Toxaphene	<0.36		0.36	0.18	ug/L		02/15/17 07:39	02/21/17 12:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*81*		*30 - 143*	*02/15/17 07:39*	*02/21/17 12:52*	*1*
Tetrachloro-m-xylene	*45*		*30 - 120*	*02/15/17 07:39*	*02/21/17 12:52*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.36		0.36	0.061	ug/L		02/15/17 07:39	02/16/17 10:21	1
PCB-1221	<0.36		0.36	0.18	ug/L		02/15/17 07:39	02/16/17 10:21	1
PCB-1232	<0.36		0.36	0.18	ug/L		02/15/17 07:39	02/16/17 10:21	1
PCB-1242	<0.36		0.36	0.18	ug/L		02/15/17 07:39	02/16/17 10:21	1
PCB-1248	<0.36		0.36	0.18	ug/L		02/15/17 07:39	02/16/17 10:21	1
PCB-1254	<0.36		0.36	0.18	ug/L		02/15/17 07:39	02/16/17 10:21	1
PCB-1260	<0.36		0.36	0.064	ug/L		02/15/17 07:39	02/16/17 10:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*51*		*30 - 127*	*02/15/17 07:39*	*02/16/17 10:21*	*1*
DCB Decachlorobiphenyl	*74*		*30 - 150*	*02/15/17 07:39*	*02/16/17 10:21*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 12:09	1
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 12:09	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:09	1
Barium	**0.67**		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:09	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 12:09	1
Cadmium	**0.00094**	**J**	0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 12:09	1
Calcium	**120**		0.20	0.059	mg/L		02/15/17 08:20	02/20/17 12:09	1
Chromium	<0.010		0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 12:09	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 12:09	1
Copper	**0.0022**	**J**	0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:09	1
Iron	**11**		0.20	0.10	mg/L		02/15/17 08:20	02/20/17 12:09	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 12:09	1
Magnesium	**91**		0.10	0.041	mg/L		02/15/17 08:20	02/20/17 12:09	1
Manganese	**0.18**		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:09	1
Nickel	<0.010		0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 12:09	1
Potassium	**36**		0.50	0.16	mg/L		02/15/17 08:20	02/20/17 12:09	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 12:09	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 12:09	1
Sodium	**240**		1.0	0.43	mg/L		02/15/17 08:20	02/20/17 12:09	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:09	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 12:09	1
Zinc	<0.020		0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 12:09	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 12:16	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-08-GW-02142017

Lab Sample ID: 500-123839-3

Date Collected: 02/14/17 11:30
Matrix: Water
Date Received: 02/14/17 16:40

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 12:16	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:16	1
Barium	**0.65**		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:16	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 12:16	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 12:16	1
Calcium	**120**		0.20	0.059	mg/L		02/15/17 08:20	02/20/17 12:16	1
Chromium	<0.010		0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 12:16	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 12:16	1
Copper	<0.010		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:16	1
Iron	**11**		0.20	0.10	mg/L		02/15/17 08:20	02/20/17 12:16	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 12:16	1
Magnesium	**87**		0.10	0.041	mg/L		02/15/17 08:20	02/20/17 12:16	1
Manganese	**0.18**		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:16	1
Nickel	<0.010		0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 12:16	1
Potassium	**35**		0.50	0.16	mg/L		02/15/17 08:20	02/20/17 12:16	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 12:16	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 12:16	1
Sodium	**240**		1.0	0.43	mg/L		02/15/17 08:20	02/20/17 12:16	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:16	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 12:16	1
Zinc	<0.020		0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 12:16	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:52	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00012**	**J**	0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 05:28	1
Sulfate	**2.4**	**J B**	5.0	1.5	mg/L			02/15/17 07:02	1
Total Organic Carbon - Duplicates	**15**		1.0	0.27	mg/L			02/16/17 22:44	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:18	1
Total Suspended Solids	**24**		5.0	2.5	mg/L			02/15/17 11:26	1
Ammonia	**36**		2.0	1.0	mg/L		02/14/17 21:30	02/15/17 01:04	10
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/15/17 14:20	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/17/17 21:38	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: Dup-2-02142017

Date Collected: 02/14/17 00:00
Date Received: 02/14/17 16:40

Lab Sample ID: 500-123839-4

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			02/16/17 20:54	1
Benzene	<0.50		0.50	0.15	ug/L			02/16/17 20:54	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/16/17 20:54	1
Bromoform	<1.0		1.0	0.48	ug/L			02/16/17 20:54	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/16/17 20:54	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/16/17 20:54	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/16/17 20:54	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			02/16/17 20:54	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/16/17 20:54	1
Chloroform	<2.0		2.0	0.37	ug/L			02/16/17 20:54	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/16/17 20:54	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/16/17 20:54	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/16/17 20:54	1
Cyclohexane	<1.0		1.0	0.49	ug/L			02/16/17 20:54	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/16/17 20:54	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/16/17 20:54	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/16/17 20:54	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			02/16/17 20:54	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/16/17 20:54	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			02/16/17 20:54	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/16/17 20:54	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/16/17 20:54	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/16/17 20:54	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/16/17 20:54	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/16/17 20:54	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			02/16/17 20:54	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/16/17 20:54	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			02/16/17 20:54	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/16/17 20:54	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			02/16/17 20:54	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/16/17 20:54	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			02/16/17 20:54	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/16/17 20:54	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/16/17 20:54	1
Styrene	<1.0		1.0	0.39	ug/L			02/16/17 20:54	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/16/17 20:54	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/16/17 20:54	1
Toluene	<0.50		0.50	0.15	ug/L			02/16/17 20:54	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/16/17 20:54	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/16/17 20:54	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/16/17 20:54	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/16/17 20:54	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/16/17 20:54	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/16/17 20:54	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/16/17 20:54	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/16/17 20:54	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/16/17 20:54	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			02/16/17 20:54	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: Dup-2-02142017

Date Collected: 02/14/17 00:00
Date Received: 02/14/17 16:40

Lab Sample ID: 500-123839-4

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		71 - 120		02/16/17 20:54	1
Dibromofluoromethane	94		70 - 120		02/16/17 20:54	1
1,2-Dichloroethane-d4 (Surr)	107		71 - 127		02/16/17 20:54	1
Toluene-d8 (Surr)	100		75 - 120		02/16/17 20:54	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.73		0.73	0.23	ug/L		02/15/17 08:59	02/15/17 18:34	1
Acenaphthylene	<0.73		0.73	0.20	ug/L		02/15/17 08:59	02/15/17 18:34	1
Acetophenone	<3.7		3.7	0.49	ug/L		02/15/17 08:59	02/15/17 18:34	1
Anthracene	<0.73		0.73	0.24	ug/L		02/15/17 08:59	02/15/17 18:34	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		02/15/17 08:59	02/15/17 18:34	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		02/15/17 08:59	02/15/17 18:34	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		02/15/17 08:59	02/15/17 18:34	1
Benzo[g,h,i]perylene	<0.73		0.73	0.28	ug/L		02/15/17 08:59	02/15/17 18:34	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		02/15/17 08:59	02/15/17 18:34	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/15/17 08:59	02/15/17 18:34	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.21	ug/L		02/15/17 08:59	02/15/17 18:34	1
Bis(2-ethylhexyl) phthalate	<7.3		7.3	1.3	ug/L		02/15/17 08:59	02/15/17 18:34	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		02/15/17 08:59	02/15/17 18:34	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/15/17 08:59	02/15/17 18:34	1
Carbazole	<3.7		3.7	0.26	ug/L		02/15/17 08:59	02/15/17 18:34	1
4-Chloroaniline	<7.3		7.3	1.5	ug/L		02/15/17 08:59	02/15/17 18:34	1
4-Chloro-3-methylphenol	<7.3		7.3	1.7	ug/L		02/15/17 08:59	02/15/17 18:34	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/15/17 08:59	02/15/17 18:34	1
2-Chlorophenol	<3.7	*	3.7	0.41	ug/L		02/15/17 08:59	02/15/17 18:34	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		02/15/17 08:59	02/15/17 18:34	1
Chrysene	<0.15		0.15	0.050	ug/L		02/15/17 08:59	02/15/17 18:34	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		02/15/17 08:59	02/15/17 18:34	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		02/15/17 08:59	02/15/17 18:34	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		02/15/17 08:59	02/15/17 18:34	1
2,4-Dichlorophenol	<7.3	*	7.3	1.9	ug/L		02/15/17 08:59	02/15/17 18:34	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		02/15/17 08:59	02/15/17 18:34	1
2,4-Dimethylphenol	<7.3		7.3	1.3	ug/L		02/15/17 08:59	02/15/17 18:34	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/15/17 08:59	02/15/17 18:34	1
Di-n-butyl phthalate	<3.7		3.7	0.54	ug/L		02/15/17 08:59	02/15/17 18:34	1
4,6-Dinitro-2-methylphenol	<15	*	15	4.3	ug/L		02/15/17 08:59	02/15/17 18:34	1
2,4-Dinitrophenol	<15	*	15	6.3	ug/L		02/15/17 08:59	02/15/17 18:34	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		02/15/17 08:59	02/15/17 18:34	1
2,6-Dinitrotoluene	<0.73		0.73	0.054	ug/L		02/15/17 08:59	02/15/17 18:34	1
Di-n-octyl phthalate	<7.3		7.3	0.77	ug/L		02/15/17 08:59	02/15/17 18:34	1
Fluoranthene	<0.73		0.73	0.33	ug/L		02/15/17 08:59	02/15/17 18:34	1
Fluorene	<0.73		0.73	0.18	ug/L		02/15/17 08:59	02/15/17 18:34	1
Hexachlorobenzene	<0.37		0.37	0.058	ug/L		02/15/17 08:59	02/15/17 18:34	1
Hexachlorobutadiene	<3.7	*	3.7	0.38	ug/L		02/15/17 08:59	02/15/17 18:34	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		02/15/17 08:59	02/15/17 18:34	1
Hexachloroethane	<3.7	*	3.7	0.44	ug/L		02/15/17 08:59	02/15/17 18:34	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		02/15/17 08:59	02/15/17 18:34	1
Isophorone	<1.5		1.5	0.28	ug/L		02/15/17 08:59	02/15/17 18:34	1
2-Methylnaphthalene	<1.5		1.5	0.048	ug/L		02/15/17 08:59	02/15/17 18:34	1

Client Sample ID: Dup-2-02142017

Lab Sample ID: 500-123839-4

Date Collected: 02/14/17 00:00

Matrix: Water

Date Received: 02/14/17 16:40

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.22	ug/L		02/15/17 08:59	02/15/17 18:34	1
3 & 4 Methylphenol	**0.33**	**J**	1.5	0.33	ug/L		02/15/17 08:59	02/15/17 18:34	1
Naphthalene	<0.73		0.73	0.23	ug/L		02/15/17 08:59	02/15/17 18:34	1
2-Nitroaniline	<3.7		3.7	0.94	ug/L		02/15/17 08:59	02/15/17 18:34	1
3-Nitroaniline	<7.3	*	7.3	1.3	ug/L		02/15/17 08:59	02/15/17 18:34	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		02/15/17 08:59	02/15/17 18:34	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		02/15/17 08:59	02/15/17 18:34	1
2-Nitrophenol	<7.3	*	7.3	1.8	ug/L		02/15/17 08:59	02/15/17 18:34	1
4-Nitrophenol	<15	*	15	5.4	ug/L		02/15/17 08:59	02/15/17 18:34	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		02/15/17 08:59	02/15/17 18:34	1
N-Nitrosodiphenylamine	<0.73		0.73	0.27	ug/L		02/15/17 08:59	02/15/17 18:34	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/15/17 08:59	02/15/17 18:34	1
Pentachlorophenol	<15	*	15	2.9	ug/L		02/15/17 08:59	02/15/17 18:34	1
Phenanthrene	<0.73		0.73	0.22	ug/L		02/15/17 08:59	02/15/17 18:34	1
Phenol	<3.7	*	3.7	0.49	ug/L		02/15/17 08:59	02/15/17 18:34	1
Pyrene	<0.73		0.73	0.31	ug/L		02/15/17 08:59	02/15/17 18:34	1
2,4,5-Trichlorophenol	<7.3	*	7.3	1.9	ug/L		02/15/17 08:59	02/15/17 18:34	1
2,4,6-Trichlorophenol	<3.7	*	3.7	0.53	ug/L		02/15/17 08:59	02/15/17 18:34	1
Benzaldehyde	<29		29	11	ug/L		02/15/17 08:59	02/15/17 18:34	1
Caprolactam	<7.3		7.3	1.1	ug/L		02/15/17 08:59	02/15/17 18:34	1
Atrazine	<3.7		3.7	0.46	ug/L		02/15/17 08:59	02/15/17 18:34	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		02/15/17 08:59	02/15/17 18:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*54*		*30 - 123*	*02/15/17 08:59*	*02/15/17 18:34*	*1*
2-Fluorophenol (Surr)	*38*		*30 - 110*	*02/15/17 08:59*	*02/15/17 18:34*	*1*
Nitrobenzene-d5 (Surr)	*51*		*33 - 139*	*02/15/17 08:59*	*02/15/17 18:34*	*1*
Phenol-d5 (Surr)	*36*		*20 - 100*	*02/15/17 08:59*	*02/15/17 18:34*	*1*
Terphenyl-d14 (Surr)	*81*		*42 - 150*	*02/15/17 08:59*	*02/15/17 18:34*	*1*
2,4,6-Tribromophenol (Surr)	*85*		*30 - 150*	*02/15/17 08:59*	*02/15/17 18:34*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0048	ug/L		02/15/17 07:39	02/21/17 13:11	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		02/15/17 07:39	02/21/17 13:11	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		02/15/17 07:39	02/21/17 13:11	1
beta-BHC	<0.037		0.037	0.0093	ug/L		02/15/17 07:39	02/21/17 13:11	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 13:11	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		02/15/17 07:39	02/21/17 13:11	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		02/15/17 07:39	02/21/17 13:11	1
delta-BHC	<0.037		0.037	0.0094	ug/L		02/15/17 07:39	02/21/17 13:11	1
Dieldrin	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 13:11	1
Endosulfan I	<0.037		0.037	0.0037	ug/L		02/15/17 07:39	02/21/17 13:11	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		02/15/17 07:39	02/21/17 13:11	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		02/15/17 07:39	02/21/17 13:11	1
Endrin	<0.037		0.037	0.013	ug/L		02/15/17 07:39	02/21/17 13:11	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		02/15/17 07:39	02/21/17 13:11	1
Endrin ketone	<0.037		0.037	0.016	ug/L		02/15/17 07:39	02/21/17 13:11	1
gamma-BHC (Lindane)	<0.037		0.037	0.0051	ug/L		02/15/17 07:39	02/21/17 13:11	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		02/15/17 07:39	02/21/17 13:11	1

Client Sample ID: Dup-2-02142017

Lab Sample ID: 500-123839-4

Date Collected: 02/14/17 00:00

Matrix: Water

Date Received: 02/14/17 16:40

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 13:11	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		02/15/17 07:39	02/21/17 13:11	1
Methoxychlor	<0.073		0.073	0.021	ug/L		02/15/17 07:39	02/21/17 13:11	1
Toxaphene	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/21/17 13:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*80*		*30 - 143*	*02/15/17 07:39*	*02/21/17 13:11*	*1*
Tetrachloro-m-xylene	*37*		*30 - 120*	*02/15/17 07:39*	*02/21/17 13:11*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.061	ug/L		02/15/17 07:39	02/16/17 10:36	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:36	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:36	1
PCB-1242	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:36	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:36	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:36	1
PCB-1260	<0.37		0.37	0.064	ug/L		02/15/17 07:39	02/16/17 10:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*47*		*30 - 127*	*02/15/17 07:39*	*02/16/17 10:36*	*1*
DCB Decachlorobiphenyl	*79*		*30 - 150*	*02/15/17 07:39*	*02/16/17 10:36*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 12:20	1
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 12:20	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:20	1
Barium	**0.68**		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:20	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 12:20	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 12:20	1
Calcium	**120**		0.20	0.059	mg/L		02/15/17 08:20	02/20/17 12:20	1
Chromium	<0.010		0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 12:20	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 12:20	1
Copper	<0.010		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:20	1
Iron	**11**		0.20	0.10	mg/L		02/15/17 08:20	02/20/17 12:20	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 12:20	1
Magnesium	**92**		0.10	0.041	mg/L		02/15/17 08:20	02/20/17 12:20	1
Manganese	**0.19**		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:20	1
Nickel	<0.010		0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 12:20	1
Potassium	**37**		0.50	0.16	mg/L		02/15/17 08:20	02/20/17 12:20	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 12:20	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 12:20	1
Sodium	**250**		1.0	0.43	mg/L		02/15/17 08:20	02/20/17 12:20	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:20	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 12:20	1
Zinc	**0.017**	**J**	0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 12:20	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 12:24	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: Dup-2-02142017

Date Collected: 02/14/17 00:00
Date Received: 02/14/17 16:40

Lab Sample ID: 500-123839-4

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 12:24	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:24	1
Barium	**0.65**		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:24	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 12:24	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 12:24	1
Calcium	**120**		0.20	0.059	mg/L		02/15/17 08:20	02/20/17 12:24	1
Chromium	<0.010		0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 12:24	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 12:24	1
Copper	<0.010		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:24	1
Iron	**11**		0.20	0.10	mg/L		02/15/17 08:20	02/20/17 12:24	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 12:24	1
Magnesium	**88**		0.10	0.041	mg/L		02/15/17 08:20	02/20/17 12:24	1
Manganese	**0.18**		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:24	1
Nickel	<0.010		0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 12:24	1
Potassium	**35**		0.50	0.16	mg/L		02/15/17 08:20	02/20/17 12:24	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 12:24	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 12:24	1
Sodium	**240**		1.0	0.43	mg/L		02/15/17 08:20	02/20/17 12:24	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:24	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 12:24	1
Zinc	<0.020		0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 12:24	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:55	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 05:31	1
Sulfate	**1.7**	**J B**	5.0	1.5	mg/L			02/20/17 09:22	1
Total Organic Carbon - Duplicates	**15**		1.0	0.27	mg/L			02/16/17 23:01	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:18	1
Total Suspended Solids	**26**		5.0	2.5	mg/L			02/15/17 11:27	1
Ammonia	**37**		2.0	1.0	mg/L		02/14/17 21:30	02/15/17 01:07	10
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/15/17 14:20	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/17/17 21:40	1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
*	RPD of the LCS and LCSD exceeds the control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

GC/MS VOA

Analysis Batch: 372273

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Total/NA	Water	8260B	
500-123839-2	MW-09-GW-02142017	Total/NA	Water	8260B	
500-123839-3	MW-08-GW-02142017	Total/NA	Water	8260B	
500-123839-4	Dup-2-02142017	Total/NA	Water	8260B	
MB 500-372273/11	Method Blank	Total/NA	Water	8260B	
LCS 500-372273/10	Lab Control Sample	Total/NA	Water	8260B	
500-123839-4 MS	Dup-2-02142017	Total/NA	Water	8260B	
500-123839-4 MSD	Dup-2-02142017	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 372103

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Total/NA	Water	3510C	
500-123839-2	MW-09-GW-02142017	Total/NA	Water	3510C	
500-123839-3	MW-08-GW-02142017	Total/NA	Water	3510C	
500-123839-4	Dup-2-02142017	Total/NA	Water	3510C	
MB 500-372103/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-372103/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-372103/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 372152

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Total/NA	Water	8270D	372103
500-123839-2	MW-09-GW-02142017	Total/NA	Water	8270D	372103
500-123839-3	MW-08-GW-02142017	Total/NA	Water	8270D	372103
500-123839-4	Dup-2-02142017	Total/NA	Water	8270D	372103
MB 500-372103/1-A	Method Blank	Total/NA	Water	8270D	372103
LCS 500-372103/2-A	Lab Control Sample	Total/NA	Water	8270D	372103
LCSD 500-372103/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	372103

GC Semi VOA

Prep Batch: 372085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Total/NA	Water	3510C	
500-123839-2	MW-09-GW-02142017	Total/NA	Water	3510C	
500-123839-3	MW-08-GW-02142017	Total/NA	Water	3510C	
500-123839-4	Dup-2-02142017	Total/NA	Water	3510C	
MB 500-372085/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-372085/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 500-372085/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-372085/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
LCSD 500-372085/5-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 372289

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Total/NA	Water	8082A	372085
500-123839-2	MW-09-GW-02142017	Total/NA	Water	8082A	372085
500-123839-3	MW-08-GW-02142017	Total/NA	Water	8082A	372085

GC Semi VOA (Continued)

Analysis Batch: 372289 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-4	Dup-2-02142017	Total/NA	Water	8082A	372085
MB 500-372085/1-A	Method Blank	Total/NA	Water	8082A	372085
LCS 500-372085/4-A	Lab Control Sample	Total/NA	Water	8082A	372085
LCSD 500-372085/5-A	Lab Control Sample Dup	Total/NA	Water	8082A	372085

Analysis Batch: 372911

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Total/NA	Water	8081B	372085
500-123839-2	MW-09-GW-02142017	Total/NA	Water	8081B	372085
500-123839-3	MW-08-GW-02142017	Total/NA	Water	8081B	372085
500-123839-4	Dup-2-02142017	Total/NA	Water	8081B	372085
MB 500-372085/1-A	Method Blank	Total/NA	Water	8081B	372085
LCS 500-372085/2-A	Lab Control Sample	Total/NA	Water	8081B	372085
LCSD 500-372085/3-A	Lab Control Sample Dup	Total/NA	Water	8081B	372085

Metals

Prep Batch: 372096

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Dissolved	Water	3010A	
500-123839-1	MW-10-GW-02142017	Total/NA	Water	3010A	
500-123839-2	MW-09-GW-02142017	Dissolved	Water	3010A	
500-123839-2	MW-09-GW-02142017	Total/NA	Water	3010A	
500-123839-3	MW-08-GW-02142017	Dissolved	Water	3010A	
500-123839-3	MW-08-GW-02142017	Total/NA	Water	3010A	
500-123839-4	Dup-2-02142017	Dissolved	Water	3010A	
500-123839-4	Dup-2-02142017	Total/NA	Water	3010A	
MB 500-372096/1-A	Method Blank	Total/NA	Water	3010A	
LCS 500-372096/2-A	Lab Control Sample	Total/NA	Water	3010A	
500-123839-4 MS	Dup-2-02142017	Dissolved	Water	3010A	
500-123839-4 MSD	Dup-2-02142017	Dissolved	Water	3010A	
500-123839-4 DU	Dup-2-02142017	Dissolved	Water	3010A	

Prep Batch: 372119

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Dissolved	Water	7470A	
500-123839-1	MW-10-GW-02142017	Total/NA	Water	7470A	
500-123839-2	MW-09-GW-02142017	Dissolved	Water	7470A	
500-123839-2	MW-09-GW-02142017	Total/NA	Water	7470A	
500-123839-3	MW-08-GW-02142017	Dissolved	Water	7470A	
500-123839-3	MW-08-GW-02142017	Total/NA	Water	7470A	
500-123839-4	Dup-2-02142017	Dissolved	Water	7470A	
500-123839-4	Dup-2-02142017	Total/NA	Water	7470A	
MB 500-372119/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-372119/13-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 372337

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Dissolved	Water	7470A	372119
500-123839-1	MW-10-GW-02142017	Total/NA	Water	7470A	372119

Metals (Continued)

Analysis Batch: 372337 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-2	MW-09-GW-02142017	Dissolved	Water	7470A	372119
500-123839-2	MW-09-GW-02142017	Total/NA	Water	7470A	372119
500-123839-3	MW-08-GW-02142017	Dissolved	Water	7470A	372119
500-123839-3	MW-08-GW-02142017	Total/NA	Water	7470A	372119
500-123839-4	Dup-2-02142017	Dissolved	Water	7470A	372119
500-123839-4	Dup-2-02142017	Total/NA	Water	7470A	372119
MB 500-372119/12-A	Method Blank	Total/NA	Water	7470A	372119
LCS 500-372119/13-A	Lab Control Sample	Total/NA	Water	7470A	372119

Analysis Batch: 372788

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Dissolved	Water	6010C	372096
500-123839-1	MW-10-GW-02142017	Total/NA	Water	6010C	372096
500-123839-2	MW-09-GW-02142017	Dissolved	Water	6010C	372096
500-123839-2	MW-09-GW-02142017	Total/NA	Water	6010C	372096
500-123839-3	MW-08-GW-02142017	Dissolved	Water	6010C	372096
500-123839-3	MW-08-GW-02142017	Total/NA	Water	6010C	372096
500-123839-4	Dup-2-02142017	Dissolved	Water	6010C	372096
500-123839-4	Dup-2-02142017	Total/NA	Water	6010C	372096
MB 500-372096/1-A	Method Blank	Total/NA	Water	6010C	372096
LCS 500-372096/2-A	Lab Control Sample	Total/NA	Water	6010C	372096
500-123839-4 MS	Dup-2-02142017	Dissolved	Water	6010C	372096
500-123839-4 MSD	Dup-2-02142017	Dissolved	Water	6010C	372096
500-123839-4 DU	Dup-2-02142017	Dissolved	Water	6010C	372096

General Chemistry

Prep Batch: 372038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Total/NA	Water	SM 4500 NH3 B	
500-123839-2	MW-09-GW-02142017	Total/NA	Water	SM 4500 NH3 B	
500-123839-3	MW-08-GW-02142017	Total/NA	Water	SM 4500 NH3 B	
500-123839-4	Dup-2-02142017	Total/NA	Water	SM 4500 NH3 B	
MB 500-372038/9-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	
LCS 500-372038/10-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
500-123839-1 MS	MW-10-GW-02142017	Total/NA	Water	SM 4500 NH3 B	
500-123839-1 MSD	MW-10-GW-02142017	Total/NA	Water	SM 4500 NH3 B	

Analysis Batch: 372067

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Total/NA	Water	SM 4500 NH3 G	372038
500-123839-2	MW-09-GW-02142017	Total/NA	Water	SM 4500 NH3 G	372038
500-123839-3	MW-08-GW-02142017	Total/NA	Water	SM 4500 NH3 G	372038
500-123839-4	Dup-2-02142017	Total/NA	Water	SM 4500 NH3 G	372038
MB 500-372038/9-A	Method Blank	Total/NA	Water	SM 4500 NH3 G	372038
LCS 500-372038/10-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	372038
500-123839-1 MS	MW-10-GW-02142017	Total/NA	Water	SM 4500 NH3 G	372038
500-123839-1 MSD	MW-10-GW-02142017	Total/NA	Water	SM 4500 NH3 G	372038

General Chemistry (Continued)

Analysis Batch: 372084

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Total/NA	Water	9038	
500-123839-2	MW-09-GW-02142017	Total/NA	Water	9038	
500-123839-3	MW-08-GW-02142017	Total/NA	Water	9038	
MB 500-372084/3	Method Blank	Total/NA	Water	9038	
LCS 500-372084/4	Lab Control Sample	Total/NA	Water	9038	
500-123839-2 MS	MW-09-GW-02142017	Total/NA	Water	9038	
500-123839-2 MSD	MW-09-GW-02142017	Total/NA	Water	9038	
500-123839-3 MS	MW-08-GW-02142017	Total/NA	Water	9038	
500-123839-3 MSD	MW-08-GW-02142017	Total/NA	Water	9038	

Analysis Batch: 372140

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Total/NA	Water	SM 2540D	
500-123839-2	MW-09-GW-02142017	Total/NA	Water	SM 2540D	
500-123839-3	MW-08-GW-02142017	Total/NA	Water	SM 2540D	
500-123839-4	Dup-2-02142017	Total/NA	Water	SM 2540D	
MB 500-372140/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 500-372140/2	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 372329

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Total/NA	Water	SM 4500 NO2 B	
500-123839-2	MW-09-GW-02142017	Total/NA	Water	SM 4500 NO2 B	
500-123839-3	MW-08-GW-02142017	Total/NA	Water	SM 4500 NO2 B	
500-123839-4	Dup-2-02142017	Total/NA	Water	SM 4500 NO2 B	
MB 500-372329/3	Method Blank	Total/NA	Water	SM 4500 NO2 B	
LCS 500-372329/4	Lab Control Sample	Total/NA	Water	SM 4500 NO2 B	

Analysis Batch: 372593

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Total/NA	Water	9060A	
500-123839-2	MW-09-GW-02142017	Total/NA	Water	9060A	
500-123839-3	MW-08-GW-02142017	Total/NA	Water	9060A	
500-123839-4	Dup-2-02142017	Total/NA	Water	9060A	
MB 500-372593/4	Method Blank	Total/NA	Water	9060A	
LCS 500-372593/5	Lab Control Sample	Total/NA	Water	9060A	

Analysis Batch: 372664

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Total/NA	Water	SM 4500 NO3 F	
500-123839-2	MW-09-GW-02142017	Total/NA	Water	SM 4500 NO3 F	
500-123839-3	MW-08-GW-02142017	Total/NA	Water	SM 4500 NO3 F	
500-123839-4	Dup-2-02142017	Total/NA	Water	SM 4500 NO3 F	
MB 500-372664/4	Method Blank	Total/NA	Water	SM 4500 NO3 F	
LCS 500-372664/5	Lab Control Sample	Total/NA	Water	SM 4500 NO3 F	

Analysis Batch: 372666

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Total/NA	Water	Nitrate by calc	
500-123839-2	MW-09-GW-02142017	Total/NA	Water	Nitrate by calc	
500-123839-3	MW-08-GW-02142017	Total/NA	Water	Nitrate by calc	

General Chemistry (Continued)

Analysis Batch: 372666 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-4	Dup-2-02142017	Total/NA	Water	Nitrate by calc	

Analysis Batch: 372717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-4	Dup-2-02142017	Total/NA	Water	9038	
MB 500-372717/3	Method Blank	Total/NA	Water	9038	
LCS 500-372717/4	Lab Control Sample	Total/NA	Water	9038	
500-123839-4 MS	Dup-2-02142017	Total/NA	Water	9038	
500-123839-4 MSD	Dup-2-02142017	Total/NA	Water	9038	

Analysis Batch: 372854

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123839-1	MW-10-GW-02142017	Total/NA	Water	9034	
500-123839-2	MW-09-GW-02142017	Total/NA	Water	9034	
500-123839-3	MW-08-GW-02142017	Total/NA	Water	9034	
500-123839-4	Dup-2-02142017	Total/NA	Water	9034	
MB 500-372854/1	Method Blank	Total/NA	Water	9034	
LCS 500-372854/2	Lab Control Sample	Total/NA	Water	9034	

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	12DCE	TOL
Lab Sample ID	Client Sample ID	(71-120)	(70-120)	(71-127)	(75-120)
500-123839-1	MW-10-GW-02142017	99	94	107	99
500-123839-2	MW-09-GW-02142017	100	95	109	100
500-123839-3	MW-08-GW-02142017	97	95	104	99
500-123839-4	Dup-2-02142017	98	94	107	100
500-123839-4 MS	Dup-2-02142017	97	98	106	100
500-123839-4 MSD	Dup-2-02142017	97	96	106	99
LCS 500-372273/10	Lab Control Sample	97	92	98	102
MB 500-372273/11	Method Blank	100	95	104	101

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPH	TBP
Lab Sample ID	Client Sample ID	(30-123)	(30-110)	(33-139)	(20-100)	(42-150)	(30-150)
500-123839-1	MW-10-GW-02142017	82	72	89	60	91	97
500-123839-2	MW-09-GW-02142017	61	52	68	47	86	88
500-123839-3	MW-08-GW-02142017	59	50	61	42	70	79
500-123839-4	Dup-2-02142017	54	38	51	36	81	85
LCS 500-372103/2-A	Lab Control Sample	84	76	90	69	104	105
LCSD 500-372103/3-A	Lab Control Sample Dup	80	30	88	40	95	44
MB 500-372103/1-A	Method Blank	87	81	97	73	101	99

Surrogate Legend

FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPH = Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB2	TCX2
Lab Sample ID	Client Sample ID	(30-143)	(30-120)
500-123839-1	MW-10-GW-02142017	74	56
500-123839-2	MW-09-GW-02142017	66	46
500-123839-3	MW-08-GW-02142017	81	45
500-123839-4	Dup-2-02142017	80	37
LCS 500-372085/2-A	Lab Control Sample	105	51
LCSD 500-372085/3-A	Lab Control Sample Dup	111	43
MB 500-372085/1-A	Method Blank	96	40

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Surrogate Legend

DCB = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		TCX2	DCB2
Lab Sample ID	**Client Sample ID**	**(30-127)**	**(30-150)**
500-123839-1	MW-10-GW-02142017	58	55
500-123839-2	MW-09-GW-02142017	53	57
500-123839-3	MW-08-GW-02142017	51	74
500-123839-4	Dup-2-02142017	47	79
LCS 500-372085/4-A	Lab Control Sample	43	100
LCSD 500-372085/5-A	Lab Control Sample Dup	43	96
MB 500-372085/1-A	Method Blank	39	83

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-372273/11
Matrix: Water
Analysis Batch: 372273

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			02/16/17 14:27	1
Benzene	<0.50		0.50	0.15	ug/L			02/16/17 14:27	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/16/17 14:27	1
Bromoform	<1.0		1.0	0.48	ug/L			02/16/17 14:27	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/16/17 14:27	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/16/17 14:27	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/16/17 14:27	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			02/16/17 14:27	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/16/17 14:27	1
Chloroform	<2.0		2.0	0.37	ug/L			02/16/17 14:27	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/16/17 14:27	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/16/17 14:27	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/16/17 14:27	1
Cyclohexane	<1.0		1.0	0.49	ug/L			02/16/17 14:27	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/16/17 14:27	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/16/17 14:27	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/16/17 14:27	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			02/16/17 14:27	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/16/17 14:27	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			02/16/17 14:27	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/16/17 14:27	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/16/17 14:27	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/16/17 14:27	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/16/17 14:27	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/16/17 14:27	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			02/16/17 14:27	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/16/17 14:27	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			02/16/17 14:27	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/16/17 14:27	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			02/16/17 14:27	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/16/17 14:27	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			02/16/17 14:27	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/16/17 14:27	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/16/17 14:27	1
Styrene	<1.0		1.0	0.39	ug/L			02/16/17 14:27	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/16/17 14:27	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/16/17 14:27	1
Toluene	<0.50		0.50	0.15	ug/L			02/16/17 14:27	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/16/17 14:27	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/16/17 14:27	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/16/17 14:27	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/16/17 14:27	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/16/17 14:27	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/16/17 14:27	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/16/17 14:27	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/16/17 14:27	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/16/17 14:27	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			02/16/17 14:27	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		71 - 120		02/16/17 14:27	1
Dibromofluoromethane	95		70 - 120		02/16/17 14:27	1
1,2-Dichloroethane-d4 (Surr)	104		71 - 127		02/16/17 14:27	1
Toluene-d8 (Surr)	101		75 - 120		02/16/17 14:27	1

Lab Sample ID: LCS 500-372273/10
Matrix: Water
Analysis Batch: 372273

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	39.8		ug/L		80	37 - 141
Benzene	50.0	44.6		ug/L		89	70 - 125
Bromodichloromethane	50.0	44.2		ug/L		88	70 - 125
Bromoform	50.0	41.4		ug/L		83	54 - 128
Bromomethane	50.0	46.2		ug/L		92	40 - 150
Carbon disulfide	50.0	42.4		ug/L		85	68 - 125
Carbon tetrachloride	50.0	45.2		ug/L		90	70 - 125
Chlorobenzene	50.0	46.1		ug/L		92	70 - 125
Chloroethane	50.0	49.7		ug/L		99	60 - 139
Chloroform	50.0	44.6		ug/L		89	70 - 125
Chloromethane	50.0	51.8		ug/L		104	60 - 140
cis-1,2-Dichloroethene	50.0	43.2		ug/L		86	70 - 125
cis-1,3-Dichloropropene	50.0	46.6		ug/L		93	70 - 125
Cyclohexane	50.0	47.4		ug/L		95	56 - 149
Dibromochloromethane	50.0	45.3		ug/L		91	66 - 125
1,2-Dibromo-3-Chloropropane	50.0	43.1		ug/L		86	51 - 125
1,2-Dibromoethane	50.0	46.6		ug/L		93	70 - 125
1,2-Dichlorobenzene	50.0	46.5		ug/L		93	70 - 125
1,3-Dichlorobenzene	50.0	46.6		ug/L		93	70 - 125
1,4-Dichlorobenzene	50.0	46.3		ug/L		93	70 - 125
Dichlorodifluoromethane	50.0	54.9		ug/L		110	51 - 140
1,1-Dichloroethane	50.0	44.6		ug/L		89	70 - 125
1,2-Dichloroethane	50.0	45.9		ug/L		92	70 - 125
1,1-Dichloroethene	50.0	44.5		ug/L		89	70 - 125
1,2-Dichloropropane	50.0	45.6		ug/L		91	70 - 125
Ethylbenzene	50.0	48.6		ug/L		97	70 - 125
2-Hexanone	50.0	43.7		ug/L		87	49 - 139
Isopropylbenzene	50.0	47.5		ug/L		95	70 - 125
Methyl acetate	250	222		ug/L		89	60 - 148
Methylcyclohexane	50.0	47.1		ug/L		94	70 - 127
Methylene Chloride	50.0	43.2		ug/L		86	68 - 125
Methyl Ethyl Ketone	50.0	39.6		ug/L		79	52 - 142
methyl isobutyl ketone	50.0	44.8		ug/L		90	47 - 140
Methyl tert-butyl ether	50.0	44.4		ug/L		89	67 - 125
Styrene	50.0	45.9		ug/L		92	70 - 125
1,1,2,2-Tetrachloroethane	50.0	45.9		ug/L		92	68 - 125
Tetrachloroethene	50.0	47.8		ug/L		96	70 - 125
Toluene	50.0	47.5		ug/L		95	70 - 125
trans-1,2-Dichloroethene	50.0	44.0		ug/L		88	70 - 125
trans-1,3-Dichloropropene	50.0	45.2		ug/L		90	70 - 125
1,2,4-Trichlorobenzene	50.0	45.5		ug/L		91	64 - 126
1,1,1-Trichloroethane	50.0	44.8		ug/L		90	70 - 125
1,1,2-Trichloroethane	50.0	46.4		ug/L		93	70 - 125
Trichloroethene	50.0	44.7		ug/L		89	70 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-372273/10
Matrix: Water
Analysis Batch: 372273

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	53.8		ug/L		108	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	47.0		ug/L		94	57 - 141
Vinyl chloride	50.0	53.7		ug/L		107	70 - 126
Xylenes, Total	100	93.9		ug/L		94	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*
Dibromofluoromethane	*92*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*98*		*71 - 127*
Toluene-d8 (Surr)	*102*		*75 - 120*

Lab Sample ID: 500-123839-4 MS
Matrix: Water
Analysis Batch: 372273

Client Sample ID: Dup-2-02142017
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	<5.0		50.0	46.2		ug/L		92	37 - 141
Benzene	<0.50		50.0	50.2		ug/L		100	70 - 125
Bromodichloromethane	<1.0		50.0	51.7		ug/L		103	70 - 125
Bromoform	<1.0		50.0	48.4		ug/L		97	54 - 128
Bromomethane	<2.0		50.0	47.4		ug/L		95	40 - 150
Carbon disulfide	<2.0		50.0	45.7		ug/L		91	68 - 125
Carbon tetrachloride	<1.0		50.0	47.9		ug/L		96	70 - 125
Chlorobenzene	<1.0		50.0	51.7		ug/L		103	70 - 125
Chloroethane	<1.0		50.0	52.0		ug/L		104	60 - 139
Chloroform	<2.0		50.0	51.6		ug/L		103	70 - 125
Chloromethane	<1.0		50.0	50.6		ug/L		101	60 - 140
cis-1,2-Dichloroethene	<1.0		50.0	49.6		ug/L		99	70 - 125
cis-1,3-Dichloropropene	<1.0		50.0	52.4		ug/L		105	70 - 125
Cyclohexane	<1.0		50.0	50.6		ug/L		101	56 - 149
Dibromochloromethane	<1.0		50.0	51.7		ug/L		103	66 - 125
1,2-Dibromo-3-Chloropropane	<5.0		50.0	51.0		ug/L		102	51 - 125
1,2-Dibromoethane	<1.0		50.0	55.3		ug/L		111	70 - 125
1,2-Dichlorobenzene	<1.0		50.0	53.6		ug/L		107	70 - 125
1,3-Dichlorobenzene	<1.0		50.0	51.6		ug/L		103	70 - 125
1,4-Dichlorobenzene	<1.0		50.0	51.6		ug/L		103	70 - 125
Dichlorodifluoromethane	<2.0		50.0	53.9		ug/L		108	51 - 140
1,1-Dichloroethane	<1.0		50.0	50.5		ug/L		101	70 - 125
1,2-Dichloroethane	<1.0		50.0	54.7		ug/L		109	70 - 125
1,1-Dichloroethene	<1.0		50.0	48.3		ug/L		97	70 - 125
1,2-Dichloropropane	<1.0		50.0	52.7		ug/L		105	70 - 125
Ethylbenzene	<0.50		50.0	52.1		ug/L		104	70 - 125
2-Hexanone	<5.0		50.0	50.0		ug/L		100	49 - 139
Isopropylbenzene	<1.0		50.0	50.7		ug/L		101	70 - 125
Methyl acetate	<5.0		250	266		ug/L		106	60 - 148
Methylcyclohexane	<1.0		50.0	49.3		ug/L		99	70 - 127
Methylene Chloride	<5.0		50.0	51.6		ug/L		103	68 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-123839-4 MS
Matrix: Water
Analysis Batch: 372273

Client Sample ID: Dup-2-02142017
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl Ethyl Ketone	<5.0		50.0	45.1		ug/L		90	52 - 142
methyl isobutyl ketone	<5.0		50.0	51.5		ug/L		103	47 - 140
Methyl tert-butyl ether	<1.0		50.0	54.0		ug/L		108	67 - 125
Styrene	<1.0		50.0	51.9		ug/L		104	70 - 125
1,1,2,2-Tetrachloroethane	<1.0		50.0	54.3		ug/L		109	68 - 125
Tetrachloroethene	<1.0		50.0	50.7		ug/L		101	70 - 125
Toluene	<0.50		50.0	51.7		ug/L		103	70 - 125
trans-1,2-Dichloroethene	<1.0		50.0	48.6		ug/L		97	70 - 125
trans-1,3-Dichloropropene	<1.0		50.0	51.5		ug/L		103	70 - 125
1,2,4-Trichlorobenzene	<1.0		50.0	50.0		ug/L		100	64 - 126
1,1,1-Trichloroethane	<1.0		50.0	49.1		ug/L		98	70 - 125
1,1,2-Trichloroethane	<1.0		50.0	54.7		ug/L		109	70 - 125
Trichloroethene	<0.50		50.0	49.6		ug/L		99	70 - 125
Trichlorofluoromethane	<1.0		50.0	52.4		ug/L		105	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		50.0	50.1		ug/L		100	57 - 141
Vinyl chloride	<0.50		50.0	54.3		ug/L		109	70 - 126
Xylenes, Total	<1.0		100	103		ug/L		103	70 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*
Dibromofluoromethane	*98*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*106*		*71 - 127*
Toluene-d8 (Surr)	*100*		*75 - 120*

Lab Sample ID: 500-123839-4 MSD
Matrix: Water
Analysis Batch: 372273

Client Sample ID: Dup-2-02142017
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	<5.0		50.0	51.9		ug/L		104	37 - 141	12	20
Benzene	<0.50		50.0	49.6		ug/L		99	70 - 125	1	20
Bromodichloromethane	<1.0		50.0	52.0		ug/L		104	70 - 125	1	20
Bromoform	<1.0		50.0	50.6		ug/L		101	54 - 128	4	20
Bromomethane	<2.0		50.0	49.7		ug/L		99	40 - 150	5	20
Carbon disulfide	<2.0		50.0	45.0		ug/L		90	68 - 125	1	20
Carbon tetrachloride	<1.0		50.0	47.1		ug/L		94	70 - 125	2	20
Chlorobenzene	<1.0		50.0	50.7		ug/L		101	70 - 125	2	20
Chloroethane	<1.0		50.0	52.0		ug/L		104	60 - 139	0	20
Chloroform	<2.0		50.0	51.2		ug/L		102	70 - 125	1	20
Chloromethane	<1.0		50.0	51.9		ug/L		104	60 - 140	2	20
cis-1,2-Dichloroethene	<1.0		50.0	49.5		ug/L		99	70 - 125	0	20
cis-1,3-Dichloropropene	<1.0		50.0	52.6		ug/L		105	70 - 125	0	20
Cyclohexane	<1.0		50.0	49.7		ug/L		99	56 - 149	2	20
Dibromochloromethane	<1.0		50.0	52.3		ug/L		105	66 - 125	1	20
1,2-Dibromo-3-Chloropropane	<5.0		50.0	54.5		ug/L		109	51 - 125	7	20
1,2-Dibromoethane	<1.0		50.0	54.1		ug/L		108	70 - 125	2	20
1,2-Dichlorobenzene	<1.0		50.0	52.9		ug/L		106	70 - 125	1	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-123839-4 MSD
Matrix: Water
Analysis Batch: 372273

Client Sample ID: Dup-2-02142017
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3-Dichlorobenzene	<1.0		50.0	50.8		ug/L		102	70 - 125	2	20
1,4-Dichlorobenzene	<1.0		50.0	50.3		ug/L		101	70 - 125	3	20
Dichlorodifluoromethane	<2.0		50.0	53.8		ug/L		108	51 - 140	0	20
1,1-Dichloroethane	<1.0		50.0	50.2		ug/L		100	70 - 125	1	20
1,2-Dichloroethane	<1.0		50.0	54.7		ug/L		109	70 - 125	0	20
1,1-Dichloroethene	<1.0		50.0	47.3		ug/L		95	70 - 125	2	20
1,2-Dichloropropane	<1.0		50.0	52.6		ug/L		105	70 - 125	0	20
Ethylbenzene	<0.50		50.0	51.6		ug/L		103	70 - 125	1	20
2-Hexanone	<5.0		50.0	52.4		ug/L		105	49 - 139	5	20
Isopropylbenzene	<1.0		50.0	49.9		ug/L		100	70 - 125	2	20
Methyl acetate	<5.0		250	268		ug/L		107	60 - 148	1	20
Methylcyclohexane	<1.0		50.0	48.4		ug/L		97	70 - 127	2	20
Methylene Chloride	<5.0		50.0	51.3		ug/L		103	68 - 125	1	20
Methyl Ethyl Ketone	<5.0		50.0	48.8		ug/L		98	52 - 142	8	20
methyl isobutyl ketone	<5.0		50.0	54.6		ug/L		109	47 - 140	6	20
Methyl tert-butyl ether	<1.0		50.0	53.7		ug/L		107	67 - 125	1	20
Styrene	<1.0		50.0	51.5		ug/L		103	70 - 125	1	20
1,1,2,2-Tetrachloroethane	<1.0		50.0	55.3		ug/L		111	68 - 125	2	20
Tetrachloroethene	<1.0		50.0	49.7		ug/L		99	70 - 125	2	20
Toluene	<0.50		50.0	51.4		ug/L		103	70 - 125	1	20
trans-1,2-Dichloroethene	<1.0		50.0	47.9		ug/L		96	70 - 125	1	20
trans-1,3-Dichloropropene	<1.0		50.0	51.8		ug/L		104	70 - 125	1	20
1,2,4-Trichlorobenzene	<1.0		50.0	49.8		ug/L		100	64 - 126	0	20
1,1,1-Trichloroethane	<1.0		50.0	49.0		ug/L		98	70 - 125	0	20
1,1,2-Trichloroethane	<1.0		50.0	55.4		ug/L		111	70 - 125	1	20
Trichloroethene	<0.50		50.0	48.9		ug/L		98	70 - 125	1	20
Trichlorofluoromethane	<1.0		50.0	55.8		ug/L		112	60 - 126	6	20
1,1,2-Trichloro-1,2,2-trifluoroetha ne	<1.0		50.0	48.5		ug/L		97	57 - 141	3	20
Vinyl chloride	<0.50		50.0	56.8		ug/L		114	70 - 126	4	20
Xylenes, Total	<1.0		100	102		ug/L		102	70 - 125	1	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*
Dibromofluoromethane	*96*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*106*		*71 - 127*
Toluene-d8 (Surr)	*99*		*75 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-372103/1-A
Matrix: Water
Analysis Batch: 372152

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372103

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.80		0.80	0.25	ug/L		02/15/17 08:59	02/15/17 16:19	1
Acenaphthylene	<0.80		0.80	0.21	ug/L		02/15/17 08:59	02/15/17 16:19	1
Acetophenone	<4.0		4.0	0.53	ug/L		02/15/17 08:59	02/15/17 16:19	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-372103/1-A
Matrix: Water
Analysis Batch: 372152

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372103

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	<0.80		0.80	0.27	ug/L		02/15/17 08:59	02/15/17 16:19	1
Benzo[a]anthracene	<0.16		0.16	0.045	ug/L		02/15/17 08:59	02/15/17 16:19	1
Benzo[a]pyrene	<0.16		0.16	0.079	ug/L		02/15/17 08:59	02/15/17 16:19	1
Benzo[b]fluoranthene	<0.16		0.16	0.065	ug/L		02/15/17 08:59	02/15/17 16:19	1
Benzo[g,h,i]perylene	<0.80		0.80	0.30	ug/L		02/15/17 08:59	02/15/17 16:19	1
Benzo[k]fluoranthene	<0.16		0.16	0.051	ug/L		02/15/17 08:59	02/15/17 16:19	1
Bis(2-chloroethoxy)methane	<1.6		1.6	0.23	ug/L		02/15/17 08:59	02/15/17 16:19	1
Bis(2-chloroethyl)ether	<1.6		1.6	0.23	ug/L		02/15/17 08:59	02/15/17 16:19	1
Bis(2-ethylhexyl) phthalate	<8.0		8.0	1.4	ug/L		02/15/17 08:59	02/15/17 16:19	1
4-Bromophenyl phenyl ether	<4.0		4.0	0.43	ug/L		02/15/17 08:59	02/15/17 16:19	1
Butyl benzyl phthalate	<1.6		1.6	0.38	ug/L		02/15/17 08:59	02/15/17 16:19	1
Carbazole	<4.0		4.0	0.28	ug/L		02/15/17 08:59	02/15/17 16:19	1
4-Chloroaniline	<8.0		8.0	1.6	ug/L		02/15/17 08:59	02/15/17 16:19	1
4-Chloro-3-methylphenol	<8.0		8.0	1.8	ug/L		02/15/17 08:59	02/15/17 16:19	1
2-Chloronaphthalene	<1.6		1.6	0.19	ug/L		02/15/17 08:59	02/15/17 16:19	1
2-Chlorophenol	<4.0		4.0	0.45	ug/L		02/15/17 08:59	02/15/17 16:19	1
4-Chlorophenyl phenyl ether	<4.0		4.0	0.51	ug/L		02/15/17 08:59	02/15/17 16:19	1
Chrysene	<0.16		0.16	0.055	ug/L		02/15/17 08:59	02/15/17 16:19	1
Dibenz(a,h)anthracene	<0.24		0.24	0.041	ug/L		02/15/17 08:59	02/15/17 16:19	1
Dibenzofuran	<1.6		1.6	0.21	ug/L		02/15/17 08:59	02/15/17 16:19	1
3,3'-Dichlorobenzidine	<4.0		4.0	1.4	ug/L		02/15/17 08:59	02/15/17 16:19	1
2,4-Dichlorophenol	<8.0		8.0	2.1	ug/L		02/15/17 08:59	02/15/17 16:19	1
Diethyl phthalate	<1.6		1.6	0.29	ug/L		02/15/17 08:59	02/15/17 16:19	1
2,4-Dimethylphenol	<8.0		8.0	1.4	ug/L		02/15/17 08:59	02/15/17 16:19	1
Dimethyl phthalate	<1.6		1.6	0.25	ug/L		02/15/17 08:59	02/15/17 16:19	1
Di-n-butyl phthalate	<4.0		4.0	0.58	ug/L		02/15/17 08:59	02/15/17 16:19	1
4,6-Dinitro-2-methylphenol	<16		16	4.7	ug/L		02/15/17 08:59	02/15/17 16:19	1
2,4-Dinitrophenol	<16		16	6.9	ug/L		02/15/17 08:59	02/15/17 16:19	1
2,4-Dinitrotoluene	<0.80		0.80	0.20	ug/L		02/15/17 08:59	02/15/17 16:19	1
2,6-Dinitrotoluene	<0.80		0.80	0.059	ug/L		02/15/17 08:59	02/15/17 16:19	1
Di-n-octyl phthalate	<8.0		8.0	0.84	ug/L		02/15/17 08:59	02/15/17 16:19	1
Fluoranthene	<0.80		0.80	0.36	ug/L		02/15/17 08:59	02/15/17 16:19	1
Fluorene	<0.80		0.80	0.20	ug/L		02/15/17 08:59	02/15/17 16:19	1
Hexachlorobenzene	<0.40		0.40	0.064	ug/L		02/15/17 08:59	02/15/17 16:19	1
Hexachlorobutadiene	<4.0		4.0	0.41	ug/L		02/15/17 08:59	02/15/17 16:19	1
Hexachlorocyclopentadiene	<16		16	5.1	ug/L		02/15/17 08:59	02/15/17 16:19	1
Hexachloroethane	<4.0		4.0	0.48	ug/L		02/15/17 08:59	02/15/17 16:19	1
Indeno[1,2,3-cd]pyrene	<0.16		0.16	0.060	ug/L		02/15/17 08:59	02/15/17 16:19	1
Isophorone	<1.6		1.6	0.30	ug/L		02/15/17 08:59	02/15/17 16:19	1
2-Methylnaphthalene	<1.6		1.6	0.052	ug/L		02/15/17 08:59	02/15/17 16:19	1
2-Methylphenol	<1.6		1.6	0.24	ug/L		02/15/17 08:59	02/15/17 16:19	1
3 & 4 Methylphenol	<1.6		1.6	0.36	ug/L		02/15/17 08:59	02/15/17 16:19	1
Naphthalene	<0.80		0.80	0.25	ug/L		02/15/17 08:59	02/15/17 16:19	1
2-Nitroaniline	<4.0		4.0	1.0	ug/L		02/15/17 08:59	02/15/17 16:19	1
3-Nitroaniline	<8.0		8.0	1.4	ug/L		02/15/17 08:59	02/15/17 16:19	1
4-Nitroaniline	<8.0		8.0	1.3	ug/L		02/15/17 08:59	02/15/17 16:19	1
Nitrobenzene	<0.80		0.80	0.36	ug/L		02/15/17 08:59	02/15/17 16:19	1
2-Nitrophenol	<8.0		8.0	2.0	ug/L		02/15/17 08:59	02/15/17 16:19	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-372103/1-A
Matrix: Water
Analysis Batch: 372152

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372103

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Nitrophenol	<16		16	5.9	ug/L		02/15/17 08:59	02/15/17 16:19	1
N-Nitrosodi-n-propylamine	<0.40		0.40	0.12	ug/L		02/15/17 08:59	02/15/17 16:19	1
N-Nitrosodiphenylamine	<0.80		0.80	0.30	ug/L		02/15/17 08:59	02/15/17 16:19	1
2,2'-oxybis[1-chloropropane]	<1.6		1.6	0.30	ug/L		02/15/17 08:59	02/15/17 16:19	1
Pentachlorophenol	<16		16	3.2	ug/L		02/15/17 08:59	02/15/17 16:19	1
Phenanthrene	<0.80		0.80	0.24	ug/L		02/15/17 08:59	02/15/17 16:19	1
Phenol	<4.0		4.0	0.54	ug/L		02/15/17 08:59	02/15/17 16:19	1
Pyrene	<0.80		0.80	0.34	ug/L		02/15/17 08:59	02/15/17 16:19	1
2,4,5-Trichlorophenol	<8.0		8.0	2.1	ug/L		02/15/17 08:59	02/15/17 16:19	1
2,4,6-Trichlorophenol	<4.0		4.0	0.57	ug/L		02/15/17 08:59	02/15/17 16:19	1
Benzaldehyde	<32	^	32	12	ug/L		02/15/17 08:59	02/15/17 16:19	1
Caprolactam	<8.0		8.0	1.2	ug/L		02/15/17 08:59	02/15/17 16:19	1
Atrazine	<4.0		4.0	0.50	ug/L		02/15/17 08:59	02/15/17 16:19	1
1,1'-Biphenyl	<4.0		4.0	0.29	ug/L		02/15/17 08:59	02/15/17 16:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*87*		*30 - 123*	*02/15/17 08:59*	*02/15/17 16:19*	*1*
2-Fluorophenol (Surr)	*81*		*30 - 110*	*02/15/17 08:59*	*02/15/17 16:19*	*1*
Nitrobenzene-d5 (Surr)	*97*		*33 - 139*	*02/15/17 08:59*	*02/15/17 16:19*	*1*
Phenol-d5 (Surr)	*73*		*20 - 100*	*02/15/17 08:59*	*02/15/17 16:19*	*1*
Terphenyl-d14 (Surr)	*101*		*42 - 150*	*02/15/17 08:59*	*02/15/17 16:19*	*1*
2,4,6-Tribromophenol (Surr)	*99*		*30 - 150*	*02/15/17 08:59*	*02/15/17 16:19*	*1*

Lab Sample ID: LCS 500-372103/2-A
Matrix: Water
Analysis Batch: 372152

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372103

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	32.0	27.4		ug/L		86	41 - 112
Acenaphthylene	32.0	26.9		ug/L		84	48 - 110
Acetophenone	32.0	26.5		ug/L		83	54 - 116
Anthracene	32.0	27.7		ug/L		87	65 - 118
Benzo[a]anthracene	32.0	30.2		ug/L		94	69 - 121
Benzo[a]pyrene	32.0	32.5		ug/L		102	69 - 130
Benzo[b]fluoranthene	32.0	31.4		ug/L		98	66 - 133
Benzo[g,h,i]perylene	32.0	35.0		ug/L		109	47 - 145
Benzo[k]fluoranthene	32.0	31.2		ug/L		97	64 - 134
Bis(2-chloroethoxy)methane	32.0	26.4		ug/L		83	55 - 115
Bis(2-chloroethyl)ether	32.0	23.8		ug/L		74	46 - 110
Bis(2-ethylhexyl) phthalate	32.0	31.9		ug/L		100	60 - 132
4-Bromophenyl phenyl ether	32.0	27.1		ug/L		85	60 - 124
Butyl benzyl phthalate	32.0	32.7		ug/L		102	63 - 127
Carbazole	32.0	30.8		ug/L		96	71 - 132
4-Chloroaniline	32.0	31.2		ug/L		97	15 - 125
4-Chloro-3-methylphenol	32.0	27.4		ug/L		86	63 - 120
2-Chloronaphthalene	32.0	25.4		ug/L		79	38 - 110
2-Chlorophenol	32.0	25.9		ug/L		81	49 - 110
4-Chlorophenyl phenyl ether	32.0	28.8		ug/L		90	55 - 115

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-372103/2-A
Matrix: Water
Analysis Batch: 372152

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372103

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chrysene	32.0	27.9		ug/L		87	70 - 126
Dibenz(a,h)anthracene	32.0	35.9		ug/L		112	59 - 145
Dibenzofuran	32.0	28.4		ug/L		89	54 - 111
3,3'-Dichlorobenzidine	32.0	33.5		ug/L		105	57 - 145
2,4-Dichlorophenol	32.0	25.2		ug/L		79	53 - 123
Diethyl phthalate	32.0	33.6		ug/L		105	64 - 126
2,4-Dimethylphenol	32.0	25.9		ug/L		81	42 - 115
Dimethyl phthalate	32.0	30.7		ug/L		96	66 - 120
Di-n-butyl phthalate	32.0	30.4		ug/L		95	67 - 125
4,6-Dinitro-2-methylphenol	64.0	57.9		ug/L		90	34 - 152
2,4-Dinitrophenol	64.0	63.1		ug/L		99	20 - 140
2,4-Dinitrotoluene	32.0	31.4		ug/L		98	67 - 131
2,6-Dinitrotoluene	32.0	31.2		ug/L		98	66 - 125
Di-n-octyl phthalate	32.0	32.2		ug/L		101	63 - 133
Fluoranthene	32.0	28.2		ug/L		88	68 - 127
Fluorene	32.0	28.4		ug/L		89	54 - 113
Hexachlorobenzene	32.0	26.4		ug/L		83	63 - 127
Hexachlorobutadiene	32.0	12.5		ug/L		39	20 - 110
Hexachlorocyclopentadiene	32.0	16.5		ug/L		51	10 - 110
Hexachloroethane	32.0	13.2		ug/L		41	20 - 110
Indeno[1,2,3-cd]pyrene	32.0	35.1		ug/L		110	52 - 150
Isophorone	32.0	24.2		ug/L		76	55 - 120
2-Methylnaphthalene	32.0	18.9		ug/L		59	32 - 110
2-Methylphenol	32.0	28.3		ug/L		89	49 - 113
3 & 4 Methylphenol	32.0	26.0		ug/L		81	49 - 114
Naphthalene	32.0	17.8		ug/L		56	32 - 110
2-Nitroaniline	32.0	33.7		ug/L		105	61 - 126
3-Nitroaniline	32.0	29.6		ug/L		93	42 - 134
4-Nitroaniline	32.0	32.6		ug/L		102	40 - 142
Nitrobenzene	32.0	25.7		ug/L		80	49 - 116
2-Nitrophenol	32.0	25.2		ug/L		79	51 - 120
4-Nitrophenol	64.0	53.6		ug/L		84	21 - 110
N-Nitrosodi-n-propylamine	32.0	29.3		ug/L		91	52 - 122
N-Nitrosodiphenylamine	32.0	28.1		ug/L		88	63 - 117
2,2'-oxybis[1-chloropropane]	32.0	25.4		ug/L		79	34 - 110
Pentachlorophenol	64.0	57.2		ug/L		89	29 - 138
Phenanthrene	32.0	27.6		ug/L		86	63 - 121
Phenol	32.0	18.5		ug/L		58	33 - 100
Pyrene	32.0	29.9		ug/L		93	65 - 122
2,4,5-Trichlorophenol	32.0	32.4		ug/L		101	63 - 121
2,4,6-Trichlorophenol	32.0	31.1		ug/L		97	61 - 120
Caprolactam	32.0	14.3		ug/L		45	25 - 100
Atrazine	32.0	23.5		ug/L		73	57 - 128
1,1'-Biphenyl	32.0	26.6		ug/L		83	42 - 110

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*84*		*30 - 123*
2-Fluorophenol (Surr)	*76*		*30 - 110*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-372103/2-A
Matrix: Water
Analysis Batch: 372152

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372103

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Nitrobenzene-d5 (Surr)	*90*		*33 - 139*
Phenol-d5 (Surr)	*69*		*20 - 100*
Terphenyl-d14 (Surr)	*104*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*105*		*30 - 150*

Lab Sample ID: LCSD 500-372103/3-A
Matrix: Water
Analysis Batch: 372152

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 372103

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	32.0	27.0		ug/L		84	41 - 112	1	20
Acenaphthylene	32.0	27.0		ug/L		84	48 - 110	0	20
Acetophenone	32.0	25.6		ug/L		80	54 - 116	3	20
Anthracene	32.0	26.5		ug/L		83	65 - 118	5	20
Benzo[a]anthracene	32.0	26.7		ug/L		83	69 - 121	12	20
Benzo[a]pyrene	32.0	29.8		ug/L		93	69 - 130	9	20
Benzo[b]fluoranthene	32.0	29.5		ug/L		92	66 - 133	6	20
Benzo[g,h,i]perylene	32.0	32.1		ug/L		100	47 - 145	9	20
Benzo[k]fluoranthene	32.0	27.5		ug/L		86	64 - 134	13	20
Bis(2-chloroethoxy)methane	32.0	25.8		ug/L		80	55 - 115	3	20
Bis(2-chloroethyl)ether	32.0	23.4		ug/L		73	46 - 110	2	20
Bis(2-ethylhexyl) phthalate	32.0	29.3		ug/L		91	60 - 132	8	20
4-Bromophenyl phenyl ether	32.0	25.9		ug/L		81	60 - 124	4	20
Butyl benzyl phthalate	32.0	29.9		ug/L		93	63 - 127	9	20
Carbazole	32.0	30.2		ug/L		94	71 - 132	2	20
4-Chloroaniline	32.0	31.6		ug/L		99	15 - 125	1	20
4-Chloro-3-methylphenol	32.0	23.3		ug/L		73	63 - 120	16	20
2-Chloronaphthalene	32.0	25.9		ug/L		81	38 - 110	2	20
2-Chlorophenol	32.0	13.0	*	ug/L		41	49 - 110	66	20
4-Chlorophenyl phenyl ether	32.0	27.7		ug/L		87	55 - 115	4	20
Chrysene	32.0	26.0		ug/L		81	70 - 126	7	20
Dibenz(a,h)anthracene	32.0	32.9		ug/L		103	59 - 145	9	20
Dibenzofuran	32.0	28.1		ug/L		88	54 - 111	1	20
3,3'-Dichlorobenzidine	32.0	30.1		ug/L		94	57 - 145	11	20
2,4-Dichlorophenol	32.0	12.5	*	ug/L		39	53 - 123	67	20
Diethyl phthalate	32.0	32.3		ug/L		101	64 - 126	4	20
2,4-Dimethylphenol	32.0	24.9		ug/L		78	42 - 115	4	20
Dimethyl phthalate	32.0	29.5		ug/L		92	66 - 120	4	20
Di-n-butyl phthalate	32.0	28.7		ug/L		90	67 - 125	6	20
4,6-Dinitro-2-methylphenol	64.0	20.2	*	ug/L		32	34 - 152	97	20
2,4-Dinitrophenol	64.0	18.6	*	ug/L		29	20 - 140	109	20
2,4-Dinitrotoluene	32.0	30.1		ug/L		94	67 - 131	4	20
2,6-Dinitrotoluene	32.0	30.1		ug/L		94	66 - 125	4	20
Di-n-octyl phthalate	32.0	30.3		ug/L		95	63 - 133	6	20
Fluoranthene	32.0	26.7		ug/L		83	68 - 127	6	20
Fluorene	32.0	27.3		ug/L		85	54 - 113	4	20
Hexachlorobenzene	32.0	24.9		ug/L		78	63 - 127	6	20
Hexachlorobutadiene	32.0	15.6	*	ug/L		49	20 - 110	22	20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 500-372103/3-A
Matrix: Water
Analysis Batch: 372152

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 372103

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hexachlorocyclopentadiene	32.0	17.9		ug/L		56	10 - 110	9	20
Hexachloroethane	32.0	16.5	*	ug/L		51	20 - 110	22	20
Indeno[1,2,3-cd]pyrene	32.0	32.3		ug/L		101	52 - 150	8	20
Isophorone	32.0	23.3		ug/L		73	55 - 120	4	20
2-Methylnaphthalene	32.0	20.3		ug/L		63	32 - 110	7	20
2-Methylphenol	32.0	25.1		ug/L		78	49 - 113	12	20
3 & 4 Methylphenol	32.0	21.5		ug/L		67	49 - 114	19	20
Naphthalene	32.0	19.6		ug/L		61	32 - 110	9	20
2-Nitroaniline	32.0	32.5		ug/L		102	61 - 126	4	20
3-Nitroaniline	32.0	36.9	*	ug/L		115	42 - 134	22	20
4-Nitroaniline	32.0	34.9		ug/L		109	40 - 142	7	20
Nitrobenzene	32.0	25.1		ug/L		78	49 - 116	2	20
2-Nitrophenol	32.0	11.0	*	ug/L		34	51 - 120	78	20
4-Nitrophenol	64.0	17.1	*	ug/L		27	21 - 110	103	20
N-Nitrosodi-n-propylamine	32.0	28.3		ug/L		89	52 - 122	3	20
N-Nitrosodiphenylamine	32.0	27.4		ug/L		86	63 - 117	3	20
2,2'-oxybis[1-chloropropane]	32.0	25.5		ug/L		80	34 - 110	1	20
Pentachlorophenol	64.0	15.2	J *	ug/L		24	29 - 138	116	20
Phenanthrene	32.0	26.3		ug/L		82	63 - 121	5	20
Phenol	32.0	12.4	*	ug/L		39	33 - 100	39	20
Pyrene	32.0	27.6		ug/L		86	65 - 122	8	20
2,4,5-Trichlorophenol	32.0	12.3	*	ug/L		38	63 - 121	90	20
2,4,6-Trichlorophenol	32.0	11.5	*	ug/L		36	61 - 120	92	20
Caprolactam	32.0	13.6		ug/L		43	25 - 100	5	20
Atrazine	32.0	22.8		ug/L		71	57 - 128	3	20
1,1'-Biphenyl	32.0	27.1		ug/L		85	42 - 110	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl	*80*		*30 - 123*
2-Fluorophenol (Surr)	*30*		*30 - 110*
Nitrobenzene-d5 (Surr)	*88*		*33 - 139*
Phenol-d5 (Surr)	*40*		*20 - 100*
Terphenyl-d14 (Surr)	*95*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*44*		*30 - 150*

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 500-372085/1-A
Matrix: Water
Analysis Batch: 372911

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372085

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.040		0.040	0.0053	ug/L		02/15/17 07:39	02/21/17 11:16	1
alpha-BHC	<0.040		0.040	0.0026	ug/L		02/15/17 07:39	02/21/17 11:16	1
alpha-Chlordane	<0.040		0.040	0.0044	ug/L		02/15/17 07:39	02/21/17 11:16	1
beta-BHC	<0.040		0.040	0.010	ug/L		02/15/17 07:39	02/21/17 11:16	1
4,4'-DDD	<0.040		0.040	0.013	ug/L		02/15/17 07:39	02/21/17 11:16	1
4,4'-DDE	<0.040		0.040	0.0038	ug/L		02/15/17 07:39	02/21/17 11:16	1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: MB 500-372085/1-A
Matrix: Water
Analysis Batch: 372911

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372085

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDT	<0.040		0.040	0.0032	ug/L		02/15/17 07:39	02/21/17 11:16	1
delta-BHC	<0.040		0.040	0.010	ug/L		02/15/17 07:39	02/21/17 11:16	1
Dieldrin	<0.040		0.040	0.013	ug/L		02/15/17 07:39	02/21/17 11:16	1
Endosulfan I	<0.040		0.040	0.0041	ug/L		02/15/17 07:39	02/21/17 11:16	1
Endosulfan II	<0.040		0.040	0.0028	ug/L		02/15/17 07:39	02/21/17 11:16	1
Endosulfan sulfate	<0.040		0.040	0.012	ug/L		02/15/17 07:39	02/21/17 11:16	1
Endrin	<0.040		0.040	0.014	ug/L		02/15/17 07:39	02/21/17 11:16	1
Endrin aldehyde	<0.040		0.040	0.0082	ug/L		02/15/17 07:39	02/21/17 11:16	1
Endrin ketone	<0.040		0.040	0.017	ug/L		02/15/17 07:39	02/21/17 11:16	1
gamma-BHC (Lindane)	<0.040		0.040	0.0056	ug/L		02/15/17 07:39	02/21/17 11:16	1
gamma-Chlordane	<0.040		0.040	0.0072	ug/L		02/15/17 07:39	02/21/17 11:16	1
Heptachlor	<0.040		0.040	0.014	ug/L		02/15/17 07:39	02/21/17 11:16	1
Heptachlor epoxide	<0.040		0.040	0.014	ug/L		02/15/17 07:39	02/21/17 11:16	1
Methoxychlor	<0.080		0.080	0.023	ug/L		02/15/17 07:39	02/21/17 11:16	1
Toxaphene	<0.40		0.40	0.20	ug/L		02/15/17 07:39	02/21/17 11:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*96*		*30 - 143*	*02/15/17 07:39*	*02/21/17 11:16*	*1*
Tetrachloro-m-xylene	*40*		*30 - 120*	*02/15/17 07:39*	*02/21/17 11:16*	*1*

Lab Sample ID: LCS 500-372085/2-A
Matrix: Water
Analysis Batch: 372911

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372085

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.320	0.219		ug/L		68	40 - 130
alpha-BHC	0.320	0.293		ug/L		92	70 - 130
alpha-Chlordane	0.320	0.298		ug/L		93	70 - 130
beta-BHC	0.320	0.335		ug/L		105	70 - 130
4,4'-DDD	0.320	0.346		ug/L		108	70 - 130
4,4'-DDE	0.320	0.279		ug/L		87	56 - 130
4,4'-DDT	0.320	0.362		ug/L		113	50 - 137
delta-BHC	0.320	0.312		ug/L		98	70 - 130
Dieldrin	0.320	0.328		ug/L		102	70 - 130
Endosulfan I	0.320	0.167		ug/L		52	40 - 130
Endosulfan II	0.320	0.201		ug/L		63	49 - 130
Endosulfan sulfate	0.320	0.362		ug/L		113	70 - 130
Endrin	0.320	0.353		ug/L		110	69 - 130
Endrin aldehyde	0.320	0.320		ug/L		100	63 - 130
Endrin ketone	0.320	0.378		ug/L		118	54 - 141
gamma-BHC (Lindane)	0.320	0.315		ug/L		98	70 - 130
gamma-Chlordane	0.320	0.299		ug/L		93	63 - 130
Heptachlor	0.320	0.279		ug/L		87	40 - 130
Heptachlor epoxide	0.320	0.351		ug/L		110	70 - 130
Methoxychlor	0.320	0.413		ug/L		129	47 - 153

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 500-372085/2-A
Matrix: Water
Analysis Batch: 372911

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372085

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*105*		*30 - 143*
Tetrachloro-m-xylene	*51*		*30 - 120*

Lab Sample ID: LCSD 500-372085/3-A
Matrix: Water
Analysis Batch: 372911

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 372085

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	0.320	0.197		ug/L		62	40 - 130	10	20
alpha-BHC	0.320	0.287		ug/L		90	70 - 130	2	20
alpha-Chlordane	0.320	0.288		ug/L		90	70 - 130	3	20
beta-BHC	0.320	0.295		ug/L		92	70 - 130	13	20
4,4'-DDD	0.320	0.332		ug/L		104	70 - 130	4	20
4,4'-DDE	0.320	0.281		ug/L		88	56 - 130	1	20
4,4'-DDT	0.320	0.351		ug/L		110	50 - 137	3	20
delta-BHC	0.320	0.314		ug/L		98	70 - 130	0	20
Dieldrin	0.320	0.327		ug/L		102	70 - 130	0	20
Endosulfan I	0.320	0.153		ug/L		48	40 - 130	9	20
Endosulfan II	0.320	0.203		ug/L		64	49 - 130	1	20
Endosulfan sulfate	0.320	0.356		ug/L		111	70 - 130	1	20
Endrin	0.320	0.345		ug/L		108	69 - 130	2	20
Endrin aldehyde	0.320	0.323		ug/L		101	63 - 130	1	20
Endrin ketone	0.320	0.373		ug/L		116	54 - 141	1	20
gamma-BHC (Lindane)	0.320	0.308		ug/L		96	70 - 130	2	20
gamma-Chlordane	0.320	0.300		ug/L		94	63 - 130	0	20
Heptachlor	0.320	0.260		ug/L		81	40 - 130	7	20
Heptachlor epoxide	0.320	0.351		ug/L		110	70 - 130	0	20
Methoxychlor	0.320	0.388		ug/L		121	47 - 153	6	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*111*		*30 - 143*
Tetrachloro-m-xylene	*43*		*30 - 120*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 500-372085/1-A
Matrix: Water
Analysis Batch: 372289

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372085

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.40		0.40	0.067	ug/L		02/15/17 07:39	02/16/17 08:33	1
PCB-1221	<0.40		0.40	0.20	ug/L		02/15/17 07:39	02/16/17 08:33	1
PCB-1232	<0.40		0.40	0.20	ug/L		02/15/17 07:39	02/16/17 08:33	1
PCB-1242	<0.40		0.40	0.20	ug/L		02/15/17 07:39	02/16/17 08:33	1
PCB-1248	<0.40		0.40	0.20	ug/L		02/15/17 07:39	02/16/17 08:33	1
PCB-1254	<0.40		0.40	0.20	ug/L		02/15/17 07:39	02/16/17 08:33	1
PCB-1260	<0.40		0.40	0.070	ug/L		02/15/17 07:39	02/16/17 08:33	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: MB 500-372085/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372289 — **Prep Batch: 372085**

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*39*		*30 - 127*	*02/15/17 07:39*	*02/16/17 08:33*	*1*
DCB Decachlorobiphenyl	*83*		*30 - 150*	*02/15/17 07:39*	*02/16/17 08:33*	*1*

Lab Sample ID: LCS 500-372085/4-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372289 — **Prep Batch: 372085**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	4.00	3.32		ug/L		83	58 - 121
PCB-1260	4.00	3.09		ug/L		77	62 - 137

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*43*		*30 - 127*
DCB Decachlorobiphenyl	*100*		*30 - 150*

Lab Sample ID: LCSD 500-372085/5-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372289 — **Prep Batch: 372085**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	4.00	3.03		ug/L		76	58 - 121	9	20
PCB-1260	4.00	2.97		ug/L		74	62 - 137	4	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*43*		*30 - 127*
DCB Decachlorobiphenyl	*96*		*30 - 150*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 500-372096/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372788 — **Prep Batch: 372096**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 11:40	1
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 11:40	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 11:40	1
Barium	<0.010		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 11:40	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 11:40	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 11:40	1
Calcium	<0.20		0.20	0.059	mg/L		02/15/17 08:20	02/20/17 11:40	1
Chromium	<0.010		0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 11:40	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 11:40	1
Copper	<0.010		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 11:40	1
Iron	<0.20		0.20	0.10	mg/L		02/15/17 08:20	02/20/17 11:40	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 11:40	1
Magnesium	<0.10		0.10	0.041	mg/L		02/15/17 08:20	02/20/17 11:40	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 500-372096/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372788 — **Prep Batch: 372096**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 11:40	1
Nickel	<0.010		0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 11:40	1
Potassium	<0.50		0.50	0.16	mg/L		02/15/17 08:20	02/20/17 11:40	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 11:40	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 11:40	1
Sodium	<1.0		1.0	0.43	mg/L		02/15/17 08:20	02/20/17 11:40	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 11:40	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 11:40	1
Zinc	<0.020		0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 11:40	1

Lab Sample ID: LCS 500-372096/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372788 — **Prep Batch: 372096**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	2.03		mg/L		101	80 - 120
Antimony	0.500	0.500		mg/L		100	80 - 120
Arsenic	0.100	0.0982		mg/L		98	80 - 120
Barium	2.00	2.02		mg/L		101	80 - 120
Beryllium	0.0500	0.0488		mg/L		98	80 - 120
Cadmium	0.0500	0.0492		mg/L		98	80 - 120
Calcium	10.0	9.90		mg/L		99	80 - 120
Chromium	0.200	0.200		mg/L		100	80 - 120
Cobalt	0.500	0.500		mg/L		100	80 - 120
Copper	0.250	0.251		mg/L		100	80 - 120
Iron	1.00	1.11		mg/L		111	80 - 120
Lead	0.100	0.0955		mg/L		96	80 - 120
Magnesium	10.0	9.46		mg/L		95	80 - 120
Manganese	0.500	0.491		mg/L		98	80 - 120
Nickel	0.500	0.499		mg/L		100	80 - 120
Potassium	10.0	9.91		mg/L		99	80 - 120
Selenium	0.100	0.0940		mg/L		94	80 - 120
Silver	0.0500	0.0480		mg/L		96	80 - 120
Sodium	10.0	10.0		mg/L		100	80 - 120
Thallium	0.100	0.0975		mg/L		98	80 - 120
Vanadium	0.500	0.507		mg/L		101	80 - 120
Zinc	0.500	0.485		mg/L		97	80 - 120

Lab Sample ID: 500-123839-4 MS — **Client Sample ID: Dup-2-02142017**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 372788 — **Prep Batch: 372096**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	<0.20		2.00	2.13		mg/L		106	75 - 125
Antimony	<0.020		0.500	0.527		mg/L		105	75 - 125
Arsenic	<0.010		0.100	0.105		mg/L		105	75 - 125
Barium	0.65		2.00	2.72		mg/L		104	75 - 125
Beryllium	<0.0040		0.0500	0.0506		mg/L		101	75 - 125
Cadmium	<0.0020		0.0500	0.0521		mg/L		104	75 - 125

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 500-123839-4 MS — **Client Sample ID: Dup-2-02142017**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 372788 — **Prep Batch: 372096**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Calcium	120		10.0	134	4	mg/L		132	75 - 125
Chromium	<0.010		0.200	0.197		mg/L		99	75 - 125
Cobalt	<0.0050		0.500	0.517		mg/L		103	75 - 125
Copper	<0.010		0.250	0.264		mg/L		106	75 - 125
Iron	11		1.00	12.2	4	mg/L		138	75 - 125
Lead	<0.0050		0.100	0.0938		mg/L		94	75 - 125
Magnesium	88		10.0	101	4	mg/L		130	75 - 125
Manganese	0.18		0.500	0.676		mg/L		99	75 - 125
Nickel	<0.010		0.500	0.515		mg/L		103	75 - 125
Potassium	35		10.0	46.7		mg/L		116	75 - 125
Selenium	<0.010		0.100	0.0982		mg/L		98	75 - 125
Silver	<0.0050		0.0500	0.0505		mg/L		101	75 - 125
Sodium	240		10.0	255	4	mg/L		160	75 - 125
Thallium	<0.010		0.100	0.0945		mg/L		94	75 - 125
Vanadium	<0.0050		0.500	0.513		mg/L		103	75 - 125
Zinc	<0.020		0.500	0.510		mg/L		102	75 - 125

Lab Sample ID: 500-123839-4 MSD — **Client Sample ID: Dup-2-02142017**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 372788 — **Prep Batch: 372096**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	<0.20		2.00	2.11		mg/L		106	75 - 125	1	20
Antimony	<0.020		0.500	0.527		mg/L		105	75 - 125	0	20
Arsenic	<0.010		0.100	0.105		mg/L		105	75 - 125	1	20
Barium	0.65		2.00	2.67		mg/L		101	75 - 125	2	20
Beryllium	<0.0040		0.0500	0.0505		mg/L		101	75 - 125	0	20
Cadmium	<0.0020		0.0500	0.0522		mg/L		104	75 - 125	0	20
Calcium	120		10.0	128	4	mg/L		70	75 - 125	5	20
Chromium	<0.010		0.200	0.194		mg/L		97	75 - 125	1	20
Cobalt	<0.0050		0.500	0.522		mg/L		104	75 - 125	1	20
Copper	<0.010		0.250	0.262		mg/L		105	75 - 125	1	20
Iron	11		1.00	11.7	4	mg/L		83	75 - 125	5	20
Lead	<0.0050		0.100	0.0960		mg/L		96	75 - 125	2	20
Magnesium	88		10.0	96.8	4	mg/L		84	75 - 125	5	20
Manganese	0.18		0.500	0.660		mg/L		95	75 - 125	2	20
Nickel	<0.010		0.500	0.521		mg/L		104	75 - 125	1	20
Potassium	35		10.0	45.0		mg/L		98	75 - 125	4	20
Selenium	<0.010		0.100	0.0999		mg/L		100	75 - 125	2	20
Silver	<0.0050		0.0500	0.0504		mg/L		101	75 - 125	0	20
Sodium	240		10.0	244	4	mg/L		50	75 - 125	4	20
Thallium	<0.010		0.100	0.0961		mg/L		96	75 - 125	2	20
Vanadium	<0.0050		0.500	0.509		mg/L		102	75 - 125	1	20
Zinc	<0.020		0.500	0.513		mg/L		103	75 - 125	1	20

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 500-123839-4 DU — **Client Sample ID: Dup-2-02142017**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 372788 — **Prep Batch: 372096**

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Aluminum	<0.20			<0.20		mg/L				NC	20
Antimony	<0.020			<0.020		mg/L				NC	20
Arsenic	<0.010			<0.010		mg/L				NC	20
Barium	0.65			0.656		mg/L				1	20
Beryllium	<0.0040			<0.0040		mg/L				NC	20
Cadmium	<0.0020			0.00112	J	mg/L				NC	20
Calcium	120			121		mg/L				0.6	20
Chromium	<0.010			<0.010		mg/L				NC	20
Cobalt	<0.0050			<0.0050		mg/L				NC	20
Copper	<0.010			<0.010		mg/L				NC	20
Iron	11			10.9		mg/L				0.6	20
Lead	<0.0050			<0.0050		mg/L				NC	20
Magnesium	88			89.1		mg/L				0.8	20
Manganese	0.18			0.185		mg/L				0.7	20
Nickel	<0.010			<0.010		mg/L				NC	20
Potassium	35			35.5		mg/L				1	20
Selenium	<0.010			<0.010		mg/L				NC	20
Silver	<0.0050			<0.0050		mg/L				NC	20
Sodium	240			242		mg/L				1	20
Thallium	<0.010			<0.010		mg/L				NC	20
Vanadium	<0.0050			<0.0050		mg/L				NC	20
Zinc	<0.020			<0.020		mg/L				NC	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-372119/12-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372337 — **Prep Batch: 372119**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:27	1

Lab Sample ID: LCS 500-372119/13-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372337 — **Prep Batch: 372119**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			0.00200	0.00216		mg/L		108	80 - 120		

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 500-372854/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372854

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 05:18	1

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric) (Continued)

Lab Sample ID: LCS 500-372854/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372854

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	6.91	6.75		mg/L		98	80 - 120

Method: 9038 - Sulfate, Turbidimetric

Lab Sample ID: MB 500-372084/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372084

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2.18	J	5.0	1.5	mg/L			02/15/17 06:50	1

Lab Sample ID: LCS 500-372084/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372084

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	19.1		mg/L		96	80 - 120

Lab Sample ID: 500-123839-2 MS — **Client Sample ID: MW-09-GW-02142017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372084

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	10	B	20.0	29.5		mg/L		98	75 - 125

Lab Sample ID: 500-123839-2 MSD — **Client Sample ID: MW-09-GW-02142017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372084

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	10	B	20.0	30.0		mg/L		100	75 - 125	2	20

Lab Sample ID: 500-123839-3 MS — **Client Sample ID: MW-08-GW-02142017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372084

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	2.4	J B	20.0	21.6		mg/L		96	75 - 125

Lab Sample ID: 500-123839-3 MSD — **Client Sample ID: MW-08-GW-02142017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372084

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	2.4	J B	20.0	21.6		mg/L		96	75 - 125	0	20

Method: 9038 - Sulfate, Turbidimetric (Continued)

Lab Sample ID: MB 500-372717/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372717

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2.06	J	5.0	1.5	mg/L			02/20/17 09:06	1

Lab Sample ID: LCS 500-372717/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372717

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	20.2		mg/L		101	80 - 120

Lab Sample ID: 500-123839-4 MS — **Client Sample ID: Dup-2-02142017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372717

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	1.7	J B	20.0	19.0		mg/L		86	75 - 125

Lab Sample ID: 500-123839-4 MSD — **Client Sample ID: Dup-2-02142017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372717

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	1.7	J B	20.0	21.5		mg/L		99	75 - 125	12	20

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 500-372593/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372593

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	<1.0		1.0	0.27	mg/L			02/16/17 18:31	1

Lab Sample ID: LCS 500-372593/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372593

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	10.0	10.5		mg/L		105	80 - 120
TOC Result 1	10.0	10.4		mg/L		104	80 - 120
TOC Result 2	10.0	10.6		mg/L		106	80 - 120

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 500-372140/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372140

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.0		5.0	2.5	mg/L			02/15/17 11:10	1

Lab Sample ID: LCS 500-372140/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372140

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	200	185		mg/L		93	80 - 120

Method: SM 4500 NH3 G - Ammonia

Lab Sample ID: MB 500-372038/9-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372067 — **Prep Batch: 372038**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.20		0.20	0.10	mg/L		02/14/17 21:30	02/15/17 00:05	1

Lab Sample ID: LCS 500-372038/10-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372067 — **Prep Batch: 372038**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.50	2.36		mg/L		94	80 - 120

Lab Sample ID: 500-123839-1 MS — **Client Sample ID: MW-10-GW-02142017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372067 — **Prep Batch: 372038**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	1.7		2.50	4.15		mg/L		98	75 - 125

Lab Sample ID: 500-123839-1 MSD — **Client Sample ID: MW-10-GW-02142017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372067 — **Prep Batch: 372038**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	1.7		2.50	4.11		mg/L		97	75 - 125	1	20

Method: SM 4500 NO2 B - Nitrogen, Nitrite

Lab Sample ID: MB 500-372329/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372329

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/15/17 14:15	1

Method: SM 4500 NO2 B - Nitrogen, Nitrite (Continued)

Lab Sample ID: LCS 500-372329/4
Matrix: Water
Analysis Batch: 372329

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrite	0.100	0.103		mg/L		103	80 - 120

Method: SM 4500 NO3 F - Nitrogen, Nitrate

Lab Sample ID: MB 500-372664/4
Matrix: Water
Analysis Batch: 372664

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/17/17 21:08	1

Lab Sample ID: LCS 500-372664/5
Matrix: Water
Analysis Batch: 372664

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrate Nitrite	1.00	0.971		mg/L		97	80 - 120

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-10-GW-02142017

Lab Sample ID: 500-123839-1

Date Collected: 02/14/17 08:00
Matrix: Water
Date Received: 02/14/17 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	372273	02/16/17 19:33	PMF	TAL CHI
Total/NA	Prep	3510C			372103	02/15/17 08:59	LMC	TAL CHI
Total/NA	Analysis	8270D		1	372152	02/15/17 17:13	AJD	TAL CHI
Total/NA	Prep	3510C			372085	02/15/17 07:39	LMC	TAL CHI
Total/NA	Analysis	8081B		1	372911	02/21/17 12:13	PJG	TAL CHI
Total/NA	Prep	3510C			372085	02/15/17 07:39	LMC	TAL CHI
Total/NA	Analysis	8082A		1	372289	02/16/17 09:50	BJH	TAL CHI
Dissolved	Prep	3010A			372096	02/15/17 08:20	JEF	TAL CHI
Dissolved	Analysis	6010C		1	372788	02/20/17 11:50	PJ1	TAL CHI
Total/NA	Prep	3010A			372096	02/15/17 08:20	JEF	TAL CHI
Total/NA	Analysis	6010C		1	372788	02/20/17 11:47	PJ1	TAL CHI
Dissolved	Prep	7470A			372119	02/15/17 13:00	MJD	TAL CHI
Dissolved	Analysis	7470A		1	372337	02/16/17 08:48	MJD	TAL CHI
Total/NA	Prep	7470A			372119	02/15/17 13:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	372337	02/16/17 08:43	MJD	TAL CHI
Total/NA	Analysis	9034		1	372854		CLB	TAL CHI
					(Start)	02/21/17 05:23		
					(End)	02/21/17 05:26		
Total/NA	Analysis	9038		20	372084		CLB	TAL CHI
					(Start)	02/15/17 06:52		
					(End)	02/15/17 06:53		
Total/NA	Analysis	9060A		1	372593	02/16/17 22:11	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	372666	02/19/17 20:18	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	372140		SMO	TAL CHI
					(Start)	02/15/17 11:22		
					(End)	02/15/17 11:24		
Total/NA	Prep	SM 4500 NH3 B			372038	02/14/17 21:30	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		1	372067	02/15/17 00:16	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	372329		VIP	TAL CHI
					(Start)	02/15/17 14:18		
					(End)	02/15/17 14:19		
Total/NA	Analysis	SM 4500 NO3 F		1	372664	02/17/17 21:33	HMW	TAL CHI

Client Sample ID: MW-09-GW-02142017

Lab Sample ID: 500-123839-2

Date Collected: 02/14/17 09:40
Matrix: Water
Date Received: 02/14/17 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	372273	02/16/17 20:00	PMF	TAL CHI
Total/NA	Prep	3510C			372103	02/15/17 08:59	LMC	TAL CHI
Total/NA	Analysis	8270D		1	372152	02/15/17 17:40	AJD	TAL CHI
Total/NA	Prep	3510C			372085	02/15/17 07:39	LMC	TAL CHI
Total/NA	Analysis	8081B		1	372911	02/21/17 12:33	PJG	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-09-GW-02142017

Lab Sample ID: 500-123839-2
Date Collected: 02/14/17 09:40
Matrix: Water
Date Received: 02/14/17 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			372085	02/15/17 07:39	LMC	TAL CHI
Total/NA	Analysis	8082A		1	372289	02/16/17 10:06	BJH	TAL CHI
Dissolved	Prep	3010A			372096	02/15/17 08:20	JEF	TAL CHI
Dissolved	Analysis	6010C		1	372788	02/20/17 12:04	PJ1	TAL CHI
Total/NA	Prep	3010A			372096	02/15/17 08:20	JEF	TAL CHI
Total/NA	Analysis	6010C		1	372788	02/20/17 12:00	PJ1	TAL CHI
Dissolved	Prep	7470A			372119	02/15/17 13:00	MJD	TAL CHI
Dissolved	Analysis	7470A		1	372337	02/16/17 08:50	MJD	TAL CHI
Total/NA	Prep	7470A			372119	02/15/17 13:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	372337	02/16/17 08:49	MJD	TAL CHI
Total/NA	Analysis	9034		1	372854		CLB	TAL CHI
					(Start)	02/21/17 05:26		
					(End)	02/21/17 05:28		
Total/NA	Analysis	9038		1	372084		CLB	TAL CHI
					(Start)	02/15/17 06:53		
					(End)	02/15/17 06:54		
Total/NA	Analysis	9060A		1	372593	02/16/17 22:28	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	372666	02/19/17 20:18	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	372140		SMO	TAL CHI
					(Start)	02/15/17 11:24		
					(End)	02/15/17 11:26		
Total/NA	Prep	SM 4500 NH3 B			372038	02/14/17 21:30	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		25	372067	02/15/17 01:01	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	372329		VIP	TAL CHI
					(Start)	02/15/17 14:19		
					(End)	02/15/17 14:19		
Total/NA	Analysis	SM 4500 NO3 F		1	372664	02/17/17 21:36	HMW	TAL CHI

Client Sample ID: MW-08-GW-02142017

Lab Sample ID: 500-123839-3
Date Collected: 02/14/17 11:30
Matrix: Water
Date Received: 02/14/17 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	372273	02/16/17 20:27	PMF	TAL CHI
Total/NA	Prep	3510C			372103	02/15/17 08:59	LMC	TAL CHI
Total/NA	Analysis	8270D		1	372152	02/15/17 18:07	AJD	TAL CHI
Total/NA	Prep	3510C			372085	02/15/17 07:39	LMC	TAL CHI
Total/NA	Analysis	8081B		1	372911	02/21/17 12:52	PJG	TAL CHI
Total/NA	Prep	3510C			372085	02/15/17 07:39	LMC	TAL CHI
Total/NA	Analysis	8082A		1	372289	02/16/17 10:21	BJH	TAL CHI
Dissolved	Prep	3010A			372096	02/15/17 08:20	JEF	TAL CHI
Dissolved	Analysis	6010C		1	372788	02/20/17 12:16	PJ1	TAL CHI
Total/NA	Prep	3010A			372096	02/15/17 08:20	JEF	TAL CHI
Total/NA	Analysis	6010C		1	372788	02/20/17 12:09	PJ1	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	7470A			372119	02/15/17 13:00	MJD	TAL CHI
Dissolved	Analysis	7470A		1	372337	02/16/17 08:53	MJD	TAL CHI
Total/NA	Prep	7470A			372119	02/15/17 13:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	372337	02/16/17 08:52	MJD	TAL CHI
Total/NA	Analysis	9034		1	372854		CLB	TAL CHI
					(Start)	02/21/17 05:28		
					(End)	02/21/17 05:31		
Total/NA	Analysis	9038		1	372084		CLB	TAL CHI
					(Start)	02/15/17 07:02		
					(End)	02/15/17 07:03		
Total/NA	Analysis	9060A		1	372593	02/16/17 22:44	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	372666	02/19/17 20:18	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	372140		SMO	TAL CHI
					(Start)	02/15/17 11:26		
					(End)	02/15/17 11:27		
Total/NA	Prep	SM 4500 NH3 B			372038	02/14/17 21:30	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		10	372067	02/15/17 01:04	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	372329		VIP	TAL CHI
					(Start)	02/15/17 14:20		
					(End)	02/15/17 14:20		
Total/NA	Analysis	SM 4500 NO3 F		1	372664	02/17/17 21:38	HMW	TAL CHI

Client Sample ID: Dup-2-02142017

Lab Sample ID: 500-123839-4

Date Collected: 02/14/17 00:00

Matrix: Water

Date Received: 02/14/17 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	372273	02/16/17 20:54	PMF	TAL CHI
Total/NA	Prep	3510C			372103	02/15/17 08:59	LMC	TAL CHI
Total/NA	Analysis	8270D		1	372152	02/15/17 18:34	AJD	TAL CHI
Total/NA	Prep	3510C			372085	02/15/17 07:39	LMC	TAL CHI
Total/NA	Analysis	8081B		1	372911	02/21/17 13:11	PJG	TAL CHI
Total/NA	Prep	3510C			372085	02/15/17 07:39	LMC	TAL CHI
Total/NA	Analysis	8082A		1	372289	02/16/17 10:36	BJH	TAL CHI
Dissolved	Prep	3010A			372096	02/15/17 08:20	JEF	TAL CHI
Dissolved	Analysis	6010C		1	372788	02/20/17 12:24	PJ1	TAL CHI
Total/NA	Prep	3010A			372096	02/15/17 08:20	JEF	TAL CHI
Total/NA	Analysis	6010C		1	372788	02/20/17 12:20	PJ1	TAL CHI
Dissolved	Prep	7470A			372119	02/15/17 13:00	MJD	TAL CHI
Dissolved	Analysis	7470A		1	372337	02/16/17 08:56	MJD	TAL CHI
Total/NA	Prep	7470A			372119	02/15/17 13:00	MJD	TAL CHI
Total/NA	Analysis	7470A		1	372337	02/16/17 08:55	MJD	TAL CHI
Total/NA	Analysis	9034		1	372854		CLB	TAL CHI
					(Start)	02/21/17 05:31		
					(End)	02/21/17 05:34		
Total/NA	Analysis	9038		1	372717		CLB	TAL CHI
					(Start)	02/20/17 09:22		
					(End)	02/20/17 09:23		

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: Dup-2-02142017

Date Collected: 02/14/17 00:00
Date Received: 02/14/17 16:40

Lab Sample ID: 500-123839-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060A		1	372593	02/16/17 23:01	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	372666	02/19/17 20:18	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	372140		SMO	TAL CHI
					(Start)	02/15/17 11:27		
					(End)	02/15/17 11:29		
Total/NA	Prep	SM 4500 NH3 B			372038	02/14/17 21:30	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		10	372067	02/15/17 01:07	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	372329		VIP	TAL CHI
					(Start)	02/15/17 14:20		
					(End)	02/15/17 14:21		
Total/NA	Analysis	SM 4500 NO3 F		1	372664	02/17/17 21:40	HMW	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Laboratory: TestAmerica Chicago

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	100201	04-30-17 *

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	Cyclohexane
8260B		Water	Methyl acetate
8260B		Water	Methylcyclohexane
8270D	3510C	Water	1,1'-Biphenyl
8270D	3510C	Water	Atrazine
8270D	3510C	Water	Benzaldehyde
8270D	3510C	Water	Caprolactam

* Certification renewal pending - certification considered valid.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

(optional)
Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 200 S. Michigan Ave
Address: Ste 2000
Phone: 312-575-3700
Fax: \
E-Mail: Jack.Kratzmeyer@arcadis.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-123839
Chain of Custody Number:
Page ____ of ____
Temperature °C of Cooler: 48, 0.5

Client: Arcadis
Client Project #: CI001805.0002.0005
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thurnhoffer
Lab PM: Therese Hargraves

Preservative Key: 500-123839 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOCs, PCBs, Pesticides (8)	Total metals (3)	Dissolved metals (3)	Ammonia, NO3/NO2 (6)	Sulfide (5)	TOC (2)	TSS, SO4, NO2 (8)	VOC (1)	Dissolved Gases (9)	Comments
1		MW-10-GW-02142017	2/14	0800	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Dissolved
2		MW-09-GW-02142017	2/14	0940	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Metals
3		MW-08-GW-02142017	2/14	1130	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	field filtered
4		Dup-2-02142017	2/14	—	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Ben Thurnhoffer	Arcadis	2-14-2017	1600	[signature]	TA 2/14/17	2/14/17	1600
[signature]	TA	2/14/17	1640	[signature]	TACHI	02/14/17	1640

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

2/27/2017
TAL-4124-500 (1209)

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-123839-1

Login Number: 123839
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.5, 4.8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-123839-2
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Therese Hargraves

Authorized for release by:
2/28/2017 10:26:18 AM

Therese Hargraves, Project Manager I
(708)534-5200
therese.hargraves@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Subcontract Data 4
Chain of Custody 15
Receipt Checklists 16

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-2

Job ID: 500-123839-2

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-123839-2

Comments
No additional comments.

Receipt
The samples were received on 2/14/2017 4:40 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.5º C and 4.8º C.

Subcontract non-Sister
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen: This method was subcontracted to Pace-Pittsburgh (Microseeps). The subcontract laboratory certification is different from that of the facility issuing the final report.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

February 27, 2017

Therese Hargraves
Test America Inc.
2417 Bond Street
University Park, IL 60484

RE: **500-123839-2**

Pace Workorder: 21740

Dear Therese Hargraves:

Enclosed are the analytical results for sample(s) received by the laboratory on Thursday, February 16, 2017. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

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

Sincerely,

Ruth Welsh 02/27/2017
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email PAESfeedback@pacelabs.com.

Total Number of Pages ____

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water and Solid & Hazardous Waste
Accreditor:	West Virginia Department of Environmental Protection, Division of Water and Waste Management
Accreditation ID:	395
Scope:	Non-Potable Water
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water; Solid and Chemical Materials
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water; Solid and Hazardous Waste
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 21740 500-123839-2

Lab ID	Sample ID	Matrix	Date Collected	Date Received
217400001	MW-10-GW-02142017	Water	2/14/2017 08:00	2/16/2017 14:15
217400002	MW-09-GW-02142017	Water	2/14/2017 09:40	2/16/2017 14:15
217400003	MW-08-GW-02142017	Water	2/14/2017 11:30	2/16/2017 14:15
217400004	DUP-2-02142017	Water	2/14/2017 00:00	2/16/2017 14:15

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21740 500-123839-2

Lab ID: **217400001** Date Received: 2/16/2017 14:15 Matrix: Water

Sample ID: **MW-10-GW-02142017** Date Collected: 2/14/2017 08:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**32**	ug/l	0.50	0.027	1	2/24/2017 12:53	MM	n
Carbon Dioxide	**46**	mg/l	5.0	0.24	1	2/24/2017 12:53	MM	n
Oxygen	**3.8**	mg/l	0.50	0.13	1	2/24/2017 12:53	MM	n
Nitrogen	**24**	mg/l	2.0	0.24	1	2/24/2017 12:53	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21740 500-123839-2

Lab ID: **217400002** Date Received: 2/16/2017 14:15 Matrix: Water

Sample ID: **MW-09-GW-02142017** Date Collected: 2/14/2017 09:40

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**13000**	ug/l	0.50	0.027	1	2/24/2017 13:08	MM	n
Carbon Dioxide	**450**	mg/l	5.0	0.24	1	2/24/2017 13:08	MM	n
Oxygen	**1.8**	mg/l	0.50	0.13	1	2/24/2017 13:08	MM	n
Nitrogen	**9.4**	mg/l	2.0	0.24	1	2/24/2017 13:08	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21740 500-123839-2

Lab ID: **217400003** Date Received: 2/16/2017 14:15 Matrix: Water

Sample ID: **MW-08-GW-02142017** Date Collected: 2/14/2017 11:30

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**15000**	ug/l	0.50	0.027	1	2/24/2017 13:22	MM	n
Carbon Dioxide	**220**	mg/l	5.0	0.24	1	2/24/2017 13:22	MM	n
Oxygen	**2.5**	mg/l	0.50	0.13	1	2/24/2017 13:22	MM	n
Nitrogen	**8.8**	mg/l	2.0	0.24	1	2/24/2017 13:22	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21740 500-123839-2

Lab ID: **217400004** Date Received: 2/16/2017 14:15 Matrix: Water

Sample ID: **DUP-2-02142017** Date Collected: 2/14/2017 00:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**15000**	ug/l	0.50	0.027	1	2/24/2017 13:35	MM	n
Carbon Dioxide	**230**	mg/l	5.0	0.24	1	2/24/2017 13:35	MM	n
Oxygen	**2.9**	mg/l	0.50	0.13	1	2/24/2017 13:35	MM	n
Nitrogen	**10**	mg/l	2.0	0.24	1	2/24/2017 13:35	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 21740 500-123839-2

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 21740 500-123839-2

QC Batch: DISG/5933 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 217400001, 217400002, 217400003, 217400004

METHOD BLANK: 47179

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n

METHOD BLANK: 47180

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Carbon Dioxide	mg/l	<5.0	5.0	n
Oxygen	mg/l	<0.50	0.50	n
Nitrogen	mg/l	<2.0	2.0	n

LABORATORY CONTROL SAMPLE & LCSD: 47181 47183

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Methane	ug/l	750	780	760	104	101	80-120	2.9	20	n

LABORATORY CONTROL SAMPLE & LCSD: 47182 47184

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Carbon Dioxide	mg/l	120	130	130	112	115	80-120	2.6	20	n
Oxygen	mg/l	11	11	11	95	93	80-120	2.1	20	n
Nitrogen	mg/l	140	120	120	85	84	80-120	1.2	20	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA QUALIFIERS

Workorder: 21740 500-123839-2

QUALITY CONTROL PARAMETER QUALIFIERS

n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 21740 500-123839-2

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
217400001	MW-10-GW-02142017			AM20GAX	DISG/5933
217400002	MW-09-GW-02142017			AM20GAX	DISG/5933
217400003	MW-08-GW-02142017			AM20GAX	DISG/5933
217400004	DUP-2-02142017			AM20GAX	DISG/5933

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

(optional)
Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 200 S. Michigan Ave
Address: Ste 2000
Phone: 312-575-3700
Fax: \
E-Mail: Jack.Kratzmeyer@arcadis.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-123839
Chain of Custody Number:
Page ____ of ____
Temperature °C of Cooler: 48, 0.5

Client: Arcadis
Client Project #: CI001805.0002.0005
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thurnhoffer
Lab PM: Therese Hargraves

Preservative Key: 4° 500-123839 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOCs, PCBs, Pesticides (8)	Total metals (3)	Dissolved Metals (3)	Ammonia, NO3/NO2 (6)	Sulfide (5)	TOC (2)	TSS, SO4, NO2 (8)	VOC (1)	Dissolved Gases (9)	Comments
1		MW-10-GW-02142017	2/14	0800	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Dissolved
2		MW-09-GW-02142017	2/14	0940	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Metals
3		MW-08-GW-02142017	2/14	1130	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	field filtered
4		Dup-2-02142017	2/14	—	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Ben Thurnhoffer	Arcadis	2-14-2017	1600	[signature]	TA 2/14/17	2/14/17	1600
[signature]	TA	2/14/17	1640	[signature]	TACHI	02/14/17	1640

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

2/28/2017
TAL-1124-500 (1209)

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-123839-2

Login Number: 123839
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.5, 4.8
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-123929-1
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Therese Hargraves

Authorized for release by:
2/28/2017 4:34:29 PM

Therese Hargraves, Project Manager I
(708)534-5200
therese.hargraves@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Detection Summary 5
Method Summary 11
Sample Summary 12
Client Sample Results 13
Definitions 35
QC Association 37
Surrogate Summary 42
QC Sample Results 44
Chronicle 63
Certification Summary 67
Chain of Custody 68
Receipt Checklists 69

Job ID: 500-123929-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-123929-1

Comments
No additional comments.

Receipt
The samples were received on 2/15/2017 4:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.8º C and 4.1º C.

Receipt Exceptions

'MW-03-GW-02152017' was on COC. but not sent in with samples. Contacted client and they let us know that they were unable to finish the set so will send in tomorrow with other samples

GC/MS VOA
Method(s) 8260B: The following sample were collected in properly preserved vials for analysis of volatile organic compounds (VOCs). The pH however was outside the required criteria when verified by the laboratory: MW-07-GW-02142017 (500-123929-1) and MW-06-GW-02152017 (500-123929-2). The sample was analyzed within 7 days per EPA recommendation therefore no further corrective action was needed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method(s) 8270D: CCVIS 500-372962/2 was outside the method criteria for the following analytes: Carbazole (high) and Hexachlorocyclopentadiene (low). A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte is considered estimated.(CCVIS 500-372962/2)

Method(s) 8270D: Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. The laboratory's SOP allows for 3 analytes to recover outside criteria for this method when utilizing this list of analytes. The LCSD associated with batch 500-372692 had 1 analyte outside control limits: Carbazole. The LCS was within control limits for all analytes. These results have been reported and qualified.(LCS 500-372692/2-A) and (LCSD 500-372692/3-A)

Method(s) 8270D: The following samples contained one base surrogate outside acceptance limits: MW-06-GW-02152017 (500-123929-2). The laboratory's SOP allows one acid and one base surrogate to be outside acceptance limits; therefore, re-extraction was not performed. These results have been reported and qualified.

Method(s) 8270D: Internal standard (ISTD6) responses were outside of acceptance limits for the following samples: MW-07-GW-02142017 (500-123929-1) and MW-06-GW-02152017 (500-123929-2). The samples show evidence of matrix interference. The samples were further diluted for 2 analytes. In these dilutions, the ISTD's were within control limits. The samples that had detects for analytes associated with ISTD6 would be considered estimated.

Method(s) 8270D: The following analyte has been identified, in the reference method and/or via historical data, to be a poor and/or erratic performer: Benzaldehyde. This analyte may have a %D>60% if the average %D of all the analytes in the initial calibration verification (ICV) is 30%. (ICV 500-369784/13)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
Method(s) 8081B: Due to sample matrix effect on the internal standard (ISTD), a dilution was required for the following sample: MW-07-GW-02142017 (500-123929-1).

Method(s) 8081B: Surrogate DCB Decachlorobiphenyl and Tetrachloro-m-xylene recovery for the following sample was outside control limits: MW-07-GW-02142017 (500-123929-1). Re-extraction (past hold time) and re-analysis was performed with DCB still outside control

Job ID: 500-123929-1 (Continued)

Laboratory: TestAmerica Chicago (Continued)

limits. Both sets of data have been reported.

Method(s) 8081B: Surrogate Tetrachloro-m-xylene or DCB Decachlorobiphenyl recovery for the following samples was outside control limits: MW-06-GW-02152017 (500-123929-2) and MW-04-GW-02152017 (500-123929-4). Evidence of matrix interference is present; therefore, re-extraction and re-analysis was not performed.

Method(s) 8081B: The following samples required a mercury clean-up, via EPA Method 3660A, to reduce matrix interferences caused by sulfur: MW-07-GW-02142017 (500-123929-1), MW-06-GW-02152017 (500-123929-2), MW-05-GW-02152017 (500-123929-3) and MW-04-GW-02152017 (500-123929-4). The reagent lot number used was: 153166.

Method(s) 8082A: Surrogate Tetrachloro-m-xylene and DCB Decachlorobiphenyl recovery for the following sample was outside control limits: MW-07-GW-02142017 (500-123929-1). Re-extraction (past hold time) and re-analysis was performed with concurring results. The original analysis has been reported.

Method(s) 8082A: The %RPD between the primary and confirmation column exceeded 40% for PCB-1254 for the following sample: MW-07-GW-02142017 (500-123929-1). The lower value has been reported and qualified in accordance with the laboratory's SOP.

Method(s) 8082A: Surrogate DCB Decachlorobiphenyl recovery for the following sample was outside control limits: MW-06-GW-02152017 (500-123929-2). Evidence of matrix interference is present; therefore, re-extraction and re-analysis was not performed.

Method(s) 8082A: The following samples required a mercury clean-up, via EPA Method 3660A, to reduce matrix interferences caused by sulfur: MW-07-GW-02142017 (500-123929-1), MW-06-GW-02152017 (500-123929-2), MW-05-GW-02152017 (500-123929-3) and MW-04-GW-02152017 (500-123929-4). The reagent lot number used was: 153166.

Method(s) 8082A: The %RPD of the laboratory control sample (LCS) and laboratory control standard duplicate (LCSD) for preparation batch 500-372295 recovered outside control limits for the following analytes: PCB-1260 on the primary column.

Method(s) 8082A: The continuing calibration verification (CCV) associated with batch 500-373439 recovered above the upper control limit for surrogate DCB Decachlorobiphenyl on the ZB-Clp-Pest 2 column. No further action was taken. The following samples are impacted: MW-07-GW-02142017 (500-123929-1), MW-06-GW-02152017 (500-123929-2), MW-05-GW-02152017 (500-123929-3) and MW-04-GW-02152017 (500-123929-4).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method(s) 6010C: Dissolved metals results for the following sample is greater than the corresponding total metals results: MW-04-GW-02152017 (500-123929-4). The dissolved metals and total metals results have been confirmed by the analysis of the undigested sample.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Field Service / Mobile Lab
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
Method(s) 9038: Please note that the following Sulfate samples have been diluted and color blank correction applied due to the matrix of the samples and have been reported with elevated reporting limits: MW-07-GW-02142017 (500-123929-1) and MW-06-GW-02152017 (500-123929-2).

Method(s) 9060A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for TOC batch 372805 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-07-GW-02142017 — Lab Sample ID: 500-123929-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	27		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	14		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	0.86	J	1.0	0.39	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	4.1		1.0	0.41	ug/L	1		8260B	Total/NA
Cyclohexane	0.55	J	1.0	0.49	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	5.9		1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	14		1.0	0.36	ug/L	1		8260B	Total/NA
Isopropylbenzene	11		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	0.98	J	1.0	0.32	ug/L	1		8260B	Total/NA
Methyl Ethyl Ketone	8.1		5.0	2.1	ug/L	1		8260B	Total/NA
methyl isobutyl ketone	45		5.0	2.2	ug/L	1		8260B	Total/NA
Vinyl chloride	8.4		0.50	0.20	ug/L	1		8260B	Total/NA
Ethylbenzene - DL	180		5.0	1.8	ug/L	10		8260B	Total/NA
Toluene - DL	380		5.0	1.5	ug/L	10		8260B	Total/NA
Xylenes, Total - DL	910		10	2.2	ug/L	10		8260B	Total/NA
Acenaphthene	4.3		0.73	0.22	ug/L	1		8270D	Total/NA
Anthracene	2.6		0.73	0.24	ug/L	1		8270D	Total/NA
Benzo[a]anthracene	1.5		0.15	0.041	ug/L	1		8270D	Total/NA
Benzo[b]fluoranthene	1.3	*	0.15	0.059	ug/L	1		8270D	Total/NA
Benzo[k]fluoranthene	0.56	*	0.15	0.046	ug/L	1		8270D	Total/NA
4-Chloro-3-methylphenol	41		7.3	1.7	ug/L	1		8270D	Total/NA
Chrysene	1.6		0.15	0.049	ug/L	1		8270D	Total/NA
Fluorene	3.1		0.73	0.18	ug/L	1		8270D	Total/NA
2-Methylnaphthalene	5.0		1.5	0.047	ug/L	1		8270D	Total/NA
2-Methylphenol	49		1.5	0.22	ug/L	1		8270D	Total/NA
3 & 4 Methylphenol	9.5		1.5	0.33	ug/L	1		8270D	Total/NA
Naphthalene	33		0.73	0.22	ug/L	1		8270D	Total/NA
Phenanthrene	10		0.73	0.22	ug/L	1		8270D	Total/NA
Pyrene	10		0.73	0.31	ug/L	1		8270D	Total/NA
Benzaldehyde	40	^	29	11	ug/L	1		8270D	Total/NA
1,1'-Biphenyl	2.2	J	3.6	0.26	ug/L	1		8270D	Total/NA
Bis(2-ethylhexyl) phthalate - DL	170		73	12	ug/L	10		8270D	Total/NA
2,4-Dimethylphenol - DL	340		73	13	ug/L	10		8270D	Total/NA
PCB-1242	2.3		0.37	0.18	ug/L	1		8082A	Total/NA
PCB-1242	3.1		0.37	0.18	ug/L	1		8082A	Total/NA
PCB-1254	1.6		0.37	0.18	ug/L	1		8082A	Total/NA
PCB-1254	2.7		0.37	0.18	ug/L	1		8082A	Total/NA
Aluminum	1.3		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.013	J	0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.039		0.010	0.0034	mg/L	1		6010C	Total/NA
Barium	0.51		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0052		0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	9.6		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.36		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.039		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.057		0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	3.9		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.50		0.0050	0.0025	mg/L	1		6010C	Total/NA
Magnesium	25		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.015		0.010	0.0034	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-07-GW-02142017 (Continued) — Lab Sample ID: 500-123929-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nickel	0.14		0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	570		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.0093	J	0.010	0.0051	mg/L	1		6010C	Total/NA
Sodium	3500		10	4.3	mg/L	10		6010C	Total/NA
Vanadium	0.055		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.67		0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	0.77		0.20	0.062	mg/L	1		6010C	Dissolved
Antimony	0.0085	J	0.020	0.0064	mg/L	1		6010C	Dissolved
Arsenic	0.032		0.010	0.0034	mg/L	1		6010C	Dissolved
Barium	0.46		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0027		0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	9.1		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.33		0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.038		0.0050	0.00096	mg/L	1		6010C	Dissolved
Copper	0.026		0.010	0.0022	mg/L	1		6010C	Dissolved
Iron	3.4		0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.18		0.0050	0.0025	mg/L	1		6010C	Dissolved
Magnesium	25		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.013		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.13		0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	570		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0070	J	0.010	0.0051	mg/L	1		6010C	Dissolved
Sodium	3600		10	4.3	mg/L	10		6010C	Dissolved
Vanadium	0.048		0.0050	0.0019	mg/L	1		6010C	Dissolved
Zinc	0.32		0.020	0.0090	mg/L	1		6010C	Dissolved
Mercury	0.00086		0.00020	0.00011	mg/L	1		7470A	Total/NA
Mercury	0.00036		0.00020	0.00011	mg/L	1		7470A	Dissolved
Sulfide	8.0		1.0	0.18	mg/L	1		9034	Total/NA
Total Organic Carbon - Duplicates	540	B	40	11	mg/L	40		9060A	Total/NA
Nitrogen, Nitrate	0.059	J	0.10	0.035	mg/L	1		Nitrate by calc	Total/NA
Total Suspended Solids	13		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	740		40	20	mg/L	10		SM 4500 NH3 G	Total/NA
Nitrogen, Nitrate Nitrite	0.059	J	0.10	0.035	mg/L	1		SM 4500 NO3 F	Total/NA

Client Sample ID: MW-06-GW-02152017 — Lab Sample ID: 500-123929-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	43		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	6.6		0.50	0.15	ug/L	1		8260B	Total/NA
Carbon disulfide	1.6	J	2.0	0.45	ug/L	1		8260B	Total/NA
Chlorobenzene	0.62	J	1.0	0.39	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	3.6		1.0	0.41	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	2.3		1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	13		1.0	0.36	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	0.45	J	1.0	0.41	ug/L	1		8260B	Total/NA
Ethylbenzene	55		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	4.0		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	0.76	J	1.0	0.32	ug/L	1		8260B	Total/NA
Methyl Ethyl Ketone	14		5.0	2.1	ug/L	1		8260B	Total/NA
methyl isobutyl ketone	25		5.0	2.2	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-06-GW-02152017 (Continued) — Lab Sample ID: 500-123929-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Toluene	130		0.50	0.15	ug/L	1		8260B	Total/NA
Vinyl chloride	3.4		0.50	0.20	ug/L	1		8260B	Total/NA
Xylenes, Total	230		1.0	0.22	ug/L	1		8260B	Total/NA
Acenaphthene	0.50	J	0.73	0.23	ug/L	1		8270D	Total/NA
Anthracene	0.30	J	0.73	0.24	ug/L	1		8270D	Total/NA
Bis(2-ethylhexyl) phthalate	41		7.3	1.3	ug/L	1		8270D	Total/NA
4-Chloro-3-methylphenol	12		7.3	1.7	ug/L	1		8270D	Total/NA
2-Chloronaphthalene	3.1		1.5	0.17	ug/L	1		8270D	Total/NA
Di-n-butyl phthalate	1.4	J	3.7	0.53	ug/L	1		8270D	Total/NA
Fluoranthene	0.43	J	0.73	0.33	ug/L	1		8270D	Total/NA
Fluorene	0.39	J	0.73	0.18	ug/L	1		8270D	Total/NA
2-Methylnaphthalene	2.0		1.5	0.048	ug/L	1		8270D	Total/NA
2-Methylphenol	18		1.5	0.22	ug/L	1		8270D	Total/NA
3 & 4 Methylphenol	5.0		1.5	0.33	ug/L	1		8270D	Total/NA
Naphthalene	23		0.73	0.23	ug/L	1		8270D	Total/NA
Phenanthrene	1.0		0.73	0.22	ug/L	1		8270D	Total/NA
Pyrene	0.59	J	0.73	0.31	ug/L	1		8270D	Total/NA
Benzaldehyde	20	J ^	29	11	ug/L	1		8270D	Total/NA
1,1'-Biphenyl	1.5	J	3.7	0.27	ug/L	1		8270D	Total/NA
2,4-Dimethylphenol - DL	93		37	6.6	ug/L	5		8270D	Total/NA
PCB-1242	2.1		0.37	0.18	ug/L	1		8082A	Total/NA
PCB-1242	2.6		0.37	0.18	ug/L	1		8082A	Total/NA
Aluminum	0.29		0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.021		0.010	0.0034	mg/L	1		6010C	Total/NA
Barium	0.26		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0015	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	15		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.11		0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.025		0.0050	0.00096	mg/L	1		6010C	Total/NA
Copper	0.0096	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	0.98		0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.11		0.0050	0.0025	mg/L	1		6010C	Total/NA
Magnesium	31		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.0079	J	0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.10		0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	520		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.0081	J	0.010	0.0051	mg/L	1		6010C	Total/NA
Sodium	3300		10	4.3	mg/L	10		6010C	Total/NA
Vanadium	0.032		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.11		0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	0.14	J	0.20	0.062	mg/L	1		6010C	Dissolved
Arsenic	0.020		0.010	0.0034	mg/L	1		6010C	Dissolved
Barium	0.26		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	15		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.10		0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.025		0.0050	0.00096	mg/L	1		6010C	Dissolved
Iron	0.59		0.20	0.10	mg/L	1		6010C	Dissolved
Lead	0.0080		0.0050	0.0025	mg/L	1		6010C	Dissolved
Magnesium	31		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.0071	J	0.010	0.0034	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-06-GW-02152017 (Continued) — Lab Sample ID: 500-123929-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nickel	0.10		0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	520		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	3500		10	4.3	mg/L	10		6010C	Dissolved
Vanadium	0.029		0.0050	0.0019	mg/L	1		6010C	Dissolved
Zinc	0.023		0.020	0.0090	mg/L	1		6010C	Dissolved
Sulfide	7.2		1.0	0.18	mg/L	1		9034	Total/NA
Sulfate	21	B	10	2.9	mg/L	2		9038	Total/NA
Total Organic Carbon - Duplicates	310	B	20	5.3	mg/L	20		9060A	Total/NA
Total Suspended Solids	4.0	J	5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	530		40	20	mg/L	10		SM 4500 NH3 G	Total/NA

Client Sample ID: MW-05-GW-02152017 — Lab Sample ID: 500-123929-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	8.5		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	0.24	J	0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	2.9		1.0	0.39	ug/L	1		8260B	Total/NA
Cyclohexane	2.2		1.0	0.49	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	1.4		1.0	0.36	ug/L	1		8260B	Total/NA
Isopropylbenzene	36		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	0.55	J	1.0	0.32	ug/L	1		8260B	Total/NA
Xylenes, Total	0.90	J	1.0	0.22	ug/L	1		8260B	Total/NA
Acenaphthene	0.32	J	0.75	0.23	ug/L	1		8270D	Total/NA
Fluorene	0.20	J	0.75	0.18	ug/L	1		8270D	Total/NA
2-Methylnaphthalene	0.40	J	1.5	0.049	ug/L	1		8270D	Total/NA
N-Nitrosodiphenylamine	0.98		0.75	0.28	ug/L	1		8270D	Total/NA
Barium	0.86		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	76		0.20	0.059	mg/L	1		6010C	Total/NA
Iron	20		0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	90		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.053		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.0046	J	0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	43		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	150		1.0	0.43	mg/L	1		6010C	Total/NA
Zinc	0.0093	J	0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.83		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	73		0.20	0.059	mg/L	1		6010C	Dissolved
Iron	19		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	88		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.051		0.010	0.0034	mg/L	1		6010C	Dissolved
Potassium	42		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	150		1.0	0.43	mg/L	1		6010C	Dissolved
Sulfate	2.9	J B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	18	B	1.0	0.27	mg/L	1		9060A	Total/NA
Total Suspended Solids	56		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	50		4.0	2.0	mg/L	20		SM 4500 NH3 G	Total/NA

Client Sample ID: MW-04-GW-02152017 — Lab Sample ID: 500-123929-4

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-04-GW-02152017 (Continued) — Lab Sample ID: 500-123929-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	31		5.0	1.7	ug/L	1		8260B	Total/NA
Carbon disulfide	2.2		2.0	0.45	ug/L	1		8260B	Total/NA
Chlorobenzene	2.0		1.0	0.39	ug/L	1		8260B	Total/NA
Chloroform	0.65	J	2.0	0.37	ug/L	1		8260B	Total/NA
cis-1,2-Dichloroethene	11		1.0	0.41	ug/L	1		8260B	Total/NA
Cyclohexane	1.9		1.0	0.49	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	0.56	J	1.0	0.33	ug/L	1		8260B	Total/NA
1,1-Dichloroethane	18		1.0	0.41	ug/L	1		8260B	Total/NA
1,2-Dichloroethane	58		1.0	0.39	ug/L	1		8260B	Total/NA
1,2-Dichloropropane	1.7		1.0	0.43	ug/L	1		8260B	Total/NA
Ethylbenzene	13		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	0.92	J	1.0	0.39	ug/L	1		8260B	Total/NA
Methylene Chloride	6.9		5.0	1.6	ug/L	1		8260B	Total/NA
Methyl Ethyl Ketone	9.7		5.0	2.1	ug/L	1		8260B	Total/NA
methyl isobutyl ketone	20		5.0	2.2	ug/L	1		8260B	Total/NA
Toluene	28		0.50	0.15	ug/L	1		8260B	Total/NA
trans-1,2-Dichloroethene	1.1		1.0	0.35	ug/L	1		8260B	Total/NA
Trichloroethene	2.4		0.50	0.16	ug/L	1		8260B	Total/NA
Vinyl chloride	3.8		0.50	0.20	ug/L	1		8260B	Total/NA
Xylenes, Total	17		1.0	0.22	ug/L	1		8260B	Total/NA
Benzene - DL	530		5.0	1.5	ug/L	10		8260B	Total/NA
Acetophenone	3.0	J	3.7	0.49	ug/L	1		8270D	Total/NA
2,4-Dimethylphenol	31		7.3	1.3	ug/L	1		8270D	Total/NA
2-Methylphenol	7.7		1.5	0.22	ug/L	1		8270D	Total/NA
3 & 4 Methylphenol	11		1.5	0.33	ug/L	1		8270D	Total/NA
Phenol	13		3.7	0.49	ug/L	1		8270D	Total/NA
Aluminum	0.094	J	0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.0073	J	0.010	0.0034	mg/L	1		6010C	Total/NA
Barium	0.033		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	160		0.20	0.059	mg/L	1		6010C	Total/NA
Iron	2.5		0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	43		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	1.2		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.0066	J	0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	14		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	380		1.0	0.43	mg/L	1		6010C	Total/NA
Aluminum	0.064	J	0.20	0.062	mg/L	1		6010C	Dissolved
Arsenic	0.0094	J	0.010	0.0034	mg/L	1		6010C	Dissolved
Barium	0.036		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	180	V	0.20	0.059	mg/L	1		6010C	Dissolved
Iron	2.7		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	48	V	0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	1.3	V	0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0056	J	0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	16	V	0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	420	V	1.0	0.43	mg/L	1		6010C	Dissolved
Sulfide	1.0		1.0	0.18	mg/L	1		9034	Total/NA
Sulfate	530	B	100	29	mg/L	20		9038	Total/NA
Total Organic Carbon - Duplicates	15	B F1	1.0	0.27	mg/L	1		9060A	Total/NA
Total Suspended Solids	7.5		5.0	2.5	mg/L	1		SM 2540D	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-04-GW-02152017 (Continued) — Lab Sample ID: 500-123929-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ammonia	7.7		0.40	0.20	mg/L	2		SM 4500 NH3 G	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CHI
8081B	Organochlorine Pesticides (GC)	SW846	TAL CHI
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL CHI
6010C	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	TAL CHI
9038	Sulfate, Turbidimetric	SW846	TAL CHI
9060A	Organic Carbon, Total (TOC)	SW846	TAL CHI
Nitrate by calc	Nitrogen, Nitrate-Nitrite	SM	TAL CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
SM 4500 NH3 G	Ammonia	SM	TAL CHI
SM 4500 NO2 B	Nitrogen, Nitrite	SM	TAL CHI
SM 4500 NO3 F	Nitrogen, Nitrate	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-123929-1	MW-07-GW-02142017	Water	02/14/17 15:25	02/15/17 16:47
500-123929-2	MW-06-GW-02152017	Water	02/15/17 08:00	02/15/17 16:47
500-123929-3	MW-05-GW-02152017	Water	02/15/17 09:40	02/15/17 16:47
500-123929-4	MW-04-GW-02152017	Water	02/15/17 11:35	02/15/17 16:47

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-07-GW-02142017

Lab Sample ID: 500-123929-1

Date Collected: 02/14/17 15:25
Matrix: Water
Date Received: 02/15/17 16:47

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**27**		5.0	1.7	ug/L			02/21/17 01:55	1
Benzene	**14**		0.50	0.15	ug/L			02/21/17 01:55	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/21/17 01:55	1
Bromoform	<1.0		1.0	0.48	ug/L			02/21/17 01:55	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/21/17 01:55	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/21/17 01:55	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/21/17 01:55	1
Chlorobenzene	**0.86**	**J**	1.0	0.39	ug/L			02/21/17 01:55	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/21/17 01:55	1
Chloroform	<2.0		2.0	0.37	ug/L			02/21/17 01:55	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/21/17 01:55	1
cis-1,2-Dichloroethene	**4.1**		1.0	0.41	ug/L			02/21/17 01:55	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/21/17 01:55	1
Cyclohexane	**0.55**	**J**	1.0	0.49	ug/L			02/21/17 01:55	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/21/17 01:55	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/21/17 01:55	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/21/17 01:55	1
1,2-Dichlorobenzene	**5.9**		1.0	0.33	ug/L			02/21/17 01:55	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/21/17 01:55	1
1,4-Dichlorobenzene	**14**		1.0	0.36	ug/L			02/21/17 01:55	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/21/17 01:55	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/21/17 01:55	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/21/17 01:55	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/21/17 01:55	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/21/17 01:55	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/21/17 01:55	1
Isopropylbenzene	**11**		1.0	0.39	ug/L			02/21/17 01:55	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/21/17 01:55	1
Methylcyclohexane	**0.98**	**J**	1.0	0.32	ug/L			02/21/17 01:55	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/21/17 01:55	1
Methyl Ethyl Ketone	**8.1**		5.0	2.1	ug/L			02/21/17 01:55	1
methyl isobutyl ketone	**45**		5.0	2.2	ug/L			02/21/17 01:55	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/21/17 01:55	1
Styrene	<1.0		1.0	0.39	ug/L			02/21/17 01:55	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/21/17 01:55	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/21/17 01:55	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/21/17 01:55	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/21/17 01:55	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/21/17 01:55	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/21/17 01:55	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/21/17 01:55	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/21/17 01:55	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/21/17 01:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/21/17 01:55	1
Vinyl chloride	**8.4**		0.50	0.20	ug/L			02/21/17 01:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*		*02/21/17 01:55*	*1*
Dibromofluoromethane	*96*		*70 - 120*		*02/21/17 01:55*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-07-GW-02142017

Lab Sample ID: 500-123929-1

Date Collected: 02/14/17 15:25
Matrix: Water
Date Received: 02/15/17 16:47

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*71 - 127*		*02/21/17 01:55*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*02/21/17 01:55*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**180**		5.0	1.8	ug/L			02/21/17 02:20	10
Toluene	**380**		5.0	1.5	ug/L			02/21/17 02:20	10
Xylenes, Total	**910**		10	2.2	ug/L			02/21/17 02:20	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*71 - 120*		*02/21/17 02:20*	*10*
Dibromofluoromethane	*98*		*70 - 120*		*02/21/17 02:20*	*10*
1,2-Dichloroethane-d4 (Surr)	*112*		*71 - 127*		*02/21/17 02:20*	*10*
Toluene-d8 (Surr)	*95*		*75 - 120*		*02/21/17 02:20*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**4.3**		0.73	0.22	ug/L		02/20/17 07:25	02/21/17 23:26	1
Acenaphthylene	<0.73		0.73	0.19	ug/L		02/20/17 07:25	02/21/17 23:26	1
Acetophenone	<3.6		3.6	0.48	ug/L		02/20/17 07:25	02/21/17 23:26	1
Anthracene	**2.6**		0.73	0.24	ug/L		02/20/17 07:25	02/21/17 23:26	1
Benzo[a]anthracene	**1.5**		0.15	0.041	ug/L		02/20/17 07:25	02/21/17 23:26	1
Benzo[a]pyrene	<0.15	*	0.15	0.072	ug/L		02/20/17 07:25	02/21/17 23:26	1
Benzo[b]fluoranthene	**1.3**	*	0.15	0.059	ug/L		02/20/17 07:25	02/21/17 23:26	1
Benzo[g,h,i]perylene	<0.73	*	0.73	0.27	ug/L		02/20/17 07:25	02/21/17 23:26	1
Benzo[k]fluoranthene	**0.56**	*	0.15	0.046	ug/L		02/20/17 07:25	02/21/17 23:26	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/21/17 23:26	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/21/17 23:26	1
4-Bromophenyl phenyl ether	<3.6		3.6	0.39	ug/L		02/20/17 07:25	02/21/17 23:26	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/20/17 07:25	02/21/17 23:26	1
Carbazole	<3.6	*	3.6	0.26	ug/L		02/20/17 07:25	02/21/17 23:26	1
4-Chloroaniline	<7.3		7.3	1.5	ug/L		02/20/17 07:25	02/21/17 23:26	1
4-Chloro-3-methylphenol	**41**		7.3	1.7	ug/L		02/20/17 07:25	02/21/17 23:26	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/20/17 07:25	02/21/17 23:26	1
2-Chlorophenol	<3.6		3.6	0.41	ug/L		02/20/17 07:25	02/21/17 23:26	1
4-Chlorophenyl phenyl ether	<3.6		3.6	0.46	ug/L		02/20/17 07:25	02/21/17 23:26	1
Chrysene	**1.6**		0.15	0.049	ug/L		02/20/17 07:25	02/21/17 23:26	1
Dibenz(a,h)anthracene	<0.22	*	0.22	0.037	ug/L		02/20/17 07:25	02/21/17 23:26	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		02/20/17 07:25	02/21/17 23:26	1
3,3'-Dichlorobenzidine	<3.6		3.6	1.2	ug/L		02/20/17 07:25	02/21/17 23:26	1
2,4-Dichlorophenol	<7.3		7.3	1.9	ug/L		02/20/17 07:25	02/21/17 23:26	1
Diethyl phthalate	<1.5		1.5	0.26	ug/L		02/20/17 07:25	02/21/17 23:26	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/20/17 07:25	02/21/17 23:26	1
Di-n-butyl phthalate	<3.6		3.6	0.53	ug/L		02/20/17 07:25	02/21/17 23:26	1
4,6-Dinitro-2-methylphenol	<15		15	4.3	ug/L		02/20/17 07:25	02/21/17 23:26	1
2,4-Dinitrophenol	<15		15	6.2	ug/L		02/20/17 07:25	02/21/17 23:26	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		02/20/17 07:25	02/21/17 23:26	1
2,6-Dinitrotoluene	<0.73		0.73	0.054	ug/L		02/20/17 07:25	02/21/17 23:26	1
Di-n-octyl phthalate	<7.3		7.3	0.76	ug/L		02/20/17 07:25	02/21/17 23:26	1
Fluoranthene	<0.73		0.73	0.33	ug/L		02/20/17 07:25	02/21/17 23:26	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-07-GW-02142017

Date Collected: 02/14/17 15:25
Date Received: 02/15/17 16:47

Lab Sample ID: 500-123929-1

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	**3.1**		0.73	0.18	ug/L		02/20/17 07:25	02/21/17 23:26	1
Hexachlorobenzene	<0.36		0.36	0.058	ug/L		02/20/17 07:25	02/21/17 23:26	1
Hexachlorobutadiene	<3.6		3.6	0.37	ug/L		02/20/17 07:25	02/21/17 23:26	1
Hexachlorocyclopentadiene	<15		15	4.6	ug/L		02/20/17 07:25	02/21/17 23:26	1
Hexachloroethane	<3.6		3.6	0.43	ug/L		02/20/17 07:25	02/21/17 23:26	1
Indeno[1,2,3-cd]pyrene	<0.15	*	0.15	0.054	ug/L		02/20/17 07:25	02/21/17 23:26	1
Isophorone	<1.5		1.5	0.27	ug/L		02/20/17 07:25	02/21/17 23:26	1
2-Methylnaphthalene	**5.0**		1.5	0.047	ug/L		02/20/17 07:25	02/21/17 23:26	1
2-Methylphenol	**49**		1.5	0.22	ug/L		02/20/17 07:25	02/21/17 23:26	1
3 & 4 Methylphenol	**9.5**		1.5	0.33	ug/L		02/20/17 07:25	02/21/17 23:26	1
Naphthalene	**33**		0.73	0.22	ug/L		02/20/17 07:25	02/21/17 23:26	1
2-Nitroaniline	<3.6		3.6	0.94	ug/L		02/20/17 07:25	02/21/17 23:26	1
3-Nitroaniline	<7.3		7.3	1.3	ug/L		02/20/17 07:25	02/21/17 23:26	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		02/20/17 07:25	02/21/17 23:26	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		02/20/17 07:25	02/21/17 23:26	1
2-Nitrophenol	<7.3		7.3	1.8	ug/L		02/20/17 07:25	02/21/17 23:26	1
4-Nitrophenol	<15		15	5.4	ug/L		02/20/17 07:25	02/21/17 23:26	1
N-Nitrosodi-n-propylamine	<0.36		0.36	0.11	ug/L		02/20/17 07:25	02/21/17 23:26	1
N-Nitrosodiphenylamine	<0.73		0.73	0.27	ug/L		02/20/17 07:25	02/21/17 23:26	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/21/17 23:26	1
Pentachlorophenol	<15		15	2.9	ug/L		02/20/17 07:25	02/21/17 23:26	1
Phenanthrene	**10**		0.73	0.22	ug/L		02/20/17 07:25	02/21/17 23:26	1
Phenol	<3.6		3.6	0.49	ug/L		02/20/17 07:25	02/21/17 23:26	1
Pyrene	**10**		0.73	0.31	ug/L		02/20/17 07:25	02/21/17 23:26	1
2,4,5-Trichlorophenol	<7.3		7.3	1.9	ug/L		02/20/17 07:25	02/21/17 23:26	1
2,4,6-Trichlorophenol	<3.6		3.6	0.52	ug/L		02/20/17 07:25	02/21/17 23:26	1
Benzaldehyde	**40**	**^**	29	11	ug/L		02/20/17 07:25	02/21/17 23:26	1
Caprolactam	<7.3		7.3	1.1	ug/L		02/20/17 07:25	02/21/17 23:26	1
Atrazine	<3.6		3.6	0.45	ug/L		02/20/17 07:25	02/21/17 23:26	1
1,1'-Biphenyl	**2.2**	**J**	3.6	0.26	ug/L		02/20/17 07:25	02/21/17 23:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*66*		*30 - 123*	*02/20/17 07:25*	*02/21/17 23:26*	*1*
2-Fluorophenol (Surr)	*61*		*30 - 110*	*02/20/17 07:25*	*02/21/17 23:26*	*1*
Nitrobenzene-d5 (Surr)	*43*		*33 - 139*	*02/20/17 07:25*	*02/21/17 23:26*	*1*
Phenol-d5 (Surr)	*73*		*20 - 100*	*02/20/17 07:25*	*02/21/17 23:26*	*1*
Terphenyl-d14 (Surr)	*131*		*42 - 150*	*02/20/17 07:25*	*02/21/17 23:26*	*1*
2,4,6-Tribromophenol (Surr)	*119*		*30 - 150*	*02/20/17 07:25*	*02/21/17 23:26*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	**170**		73	12	ug/L		02/20/17 07:25	02/22/17 18:29	10
2,4-Dimethylphenol	**340**		73	13	ug/L		02/20/17 07:25	02/22/17 18:29	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*42*		*30 - 123*	*02/20/17 07:25*	*02/22/17 18:29*	*10*
2-Fluorophenol (Surr)	*81*		*30 - 110*	*02/20/17 07:25*	*02/22/17 18:29*	*10*
Nitrobenzene-d5 (Surr)	*59*		*33 - 139*	*02/20/17 07:25*	*02/22/17 18:29*	*10*
Phenol-d5 (Surr)	*88*		*20 - 100*	*02/20/17 07:25*	*02/22/17 18:29*	*10*
Terphenyl-d14 (Surr)	*79*		*42 - 150*	*02/20/17 07:25*	*02/22/17 18:29*	*10*

Client Sample ID: MW-07-GW-02142017

Lab Sample ID: 500-123929-1

Date Collected: 02/14/17 15:25

Matrix: Water

Date Received: 02/15/17 16:47

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*61*		*30 - 150*	*02/20/17 07:25*	*02/22/17 18:29*	*10*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.18		0.18	0.024	ug/L		02/16/17 09:00	02/21/17 16:04	5
alpha-BHC	<0.18		0.18	0.012	ug/L		02/16/17 09:00	02/21/17 16:04	5
alpha-Chlordane	<0.18		0.18	0.020	ug/L		02/16/17 09:00	02/21/17 16:04	5
beta-BHC	<0.18		0.18	0.047	ug/L		02/16/17 09:00	02/21/17 16:04	5
4,4'-DDD	<0.18		0.18	0.061	ug/L		02/16/17 09:00	02/21/17 16:04	5
4,4'-DDE	<0.18		0.18	0.017	ug/L		02/16/17 09:00	02/21/17 16:04	5
4,4'-DDT	<0.18		0.18	0.015	ug/L		02/16/17 09:00	02/21/17 16:04	5
delta-BHC	<0.18		0.18	0.047	ug/L		02/16/17 09:00	02/21/17 16:04	5
Dieldrin	<0.18		0.18	0.059	ug/L		02/16/17 09:00	02/21/17 16:04	5
Endosulfan I	<0.18		0.18	0.019	ug/L		02/16/17 09:00	02/21/17 16:04	5
Endosulfan II	<0.18		0.18	0.013	ug/L		02/16/17 09:00	02/21/17 16:04	5
Endosulfan sulfate	<0.18		0.18	0.054	ug/L		02/16/17 09:00	02/21/17 16:04	5
Endrin	<0.18		0.18	0.065	ug/L		02/16/17 09:00	02/21/17 16:04	5
Endrin aldehyde	<0.18		0.18	0.038	ug/L		02/16/17 09:00	02/21/17 16:04	5
Endrin ketone	<0.18		0.18	0.078	ug/L		02/16/17 09:00	02/21/17 16:04	5
gamma-BHC (Lindane)	<0.18		0.18	0.026	ug/L		02/16/17 09:00	02/21/17 16:04	5
gamma-Chlordane	<0.18		0.18	0.033	ug/L		02/16/17 09:00	02/21/17 16:04	5
Heptachlor	<0.18		0.18	0.062	ug/L		02/16/17 09:00	02/21/17 16:04	5
Heptachlor epoxide	<0.18		0.18	0.063	ug/L		02/16/17 09:00	02/21/17 16:04	5
Methoxychlor	<0.37		0.37	0.11	ug/L		02/16/17 09:00	02/21/17 16:04	5
Toxaphene	<1.8		1.8	0.92	ug/L		02/16/17 09:00	02/21/17 16:04	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*7*	*X*	*30 - 143*	*02/16/17 09:00*	*02/21/17 16:04*	*5*
Tetrachloro-m-xylene	*16*	*X*	*30 - 120*	*02/16/17 09:00*	*02/21/17 16:04*	*5*

Method: 8081B - Organochlorine Pesticides (GC) - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.18	H	0.18	0.025	ug/L		02/22/17 17:59	02/23/17 13:12	5
alpha-BHC	<0.18	H	0.18	0.012	ug/L		02/22/17 17:59	02/23/17 13:12	5
alpha-Chlordane	<0.18	H	0.18	0.020	ug/L		02/22/17 17:59	02/23/17 13:12	5
beta-BHC	<0.18	H	0.18	0.047	ug/L		02/22/17 17:59	02/23/17 13:12	5
4,4'-DDD	<0.18	H	0.18	0.061	ug/L		02/22/17 17:59	02/23/17 13:12	5
4,4'-DDE	<0.18	H	0.18	0.018	ug/L		02/22/17 17:59	02/23/17 13:12	5
4,4'-DDT	<0.18	H	0.18	0.015	ug/L		02/22/17 17:59	02/23/17 13:12	5
delta-BHC	<0.18	H	0.18	0.048	ug/L		02/22/17 17:59	02/23/17 13:12	5
Dieldrin	<0.18	H	0.18	0.060	ug/L		02/22/17 17:59	02/23/17 13:12	5
Endosulfan I	<0.18	H	0.18	0.019	ug/L		02/22/17 17:59	02/23/17 13:12	5
Endosulfan II	<0.18	H	0.18	0.013	ug/L		02/22/17 17:59	02/23/17 13:12	5
Endosulfan sulfate	<0.18	H	0.18	0.054	ug/L		02/22/17 17:59	02/23/17 13:12	5
Endrin	<0.18	H	0.18	0.066	ug/L		02/22/17 17:59	02/23/17 13:12	5
Endrin aldehyde	<0.18	H	0.18	0.038	ug/L		02/22/17 17:59	02/23/17 13:12	5
Endrin ketone	<0.18	H	0.18	0.079	ug/L		02/22/17 17:59	02/23/17 13:12	5
gamma-BHC (Lindane)	<0.18	H	0.18	0.026	ug/L		02/22/17 17:59	02/23/17 13:12	5
gamma-Chlordane	<0.18	H	0.18	0.033	ug/L		02/22/17 17:59	02/23/17 13:12	5
Heptachlor	<0.18	H	0.18	0.062	ug/L		02/22/17 17:59	02/23/17 13:12	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-07-GW-02142017

Lab Sample ID: 500-123929-1

Date Collected: 02/14/17 15:25
Matrix: Water
Date Received: 02/15/17 16:47

Method: 8081B - Organochlorine Pesticides (GC) - RE (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor epoxide	<0.18	H	0.18	0.064	ug/L		02/22/17 17:59	02/23/17 13:12	5
Methoxychlor	<0.37	H	0.37	0.11	ug/L		02/22/17 17:59	02/23/17 13:12	5
Toxaphene	<1.8	H	1.8	0.92	ug/L		02/22/17 17:59	02/23/17 13:12	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*10*	*X*	*30 - 143*	*02/22/17 17:59*	*02/23/17 13:12*	*5*
Tetrachloro-m-xylene	*34*		*30 - 120*	*02/22/17 17:59*	*02/23/17 13:12*	*5*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1016	<0.37		0.37	0.062	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1242	**2.3**		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1242	**3.1**		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1254	**1.6**		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1254	**2.7**		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1260	<0.37		0.37	0.064	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1260	<0.37	*	0.37	0.064	ug/L		02/16/17 09:00	02/24/17 12:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*15*	*X*	*30 - 127*	*02/16/17 09:00*	*02/24/17 12:55*	*1*
Tetrachloro-m-xylene	*19*	*X*	*30 - 127*	*02/16/17 09:00*	*02/24/17 12:55*	*1*
DCB Decachlorobiphenyl	*10*	*X*	*30 - 150*	*02/16/17 09:00*	*02/24/17 12:55*	*1*
DCB Decachlorobiphenyl	*14*	*X*	*30 - 150*	*02/16/17 09:00*	*02/24/17 12:55*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1.3**		0.20	0.062	mg/L		02/16/17 07:48	02/20/17 19:04	1
Antimony	**0.013**	**J**	0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 19:04	1
Arsenic	**0.039**		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:04	1
Barium	**0.51**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:04	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 19:04	1
Cadmium	**0.0052**		0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 19:04	1
Calcium	**9.6**		0.20	0.059	mg/L		02/16/17 07:48	02/20/17 19:04	1
Chromium	**0.36**		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 19:04	1
Cobalt	**0.039**		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 19:04	1
Copper	**0.057**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:04	1
Iron	**3.9**		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 19:04	1
Lead	**0.50**		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 19:04	1
Magnesium	**25**		0.10	0.041	mg/L		02/16/17 07:48	02/20/17 19:04	1
Manganese	**0.015**		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:04	1
Nickel	**0.14**		0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 19:04	1
Potassium	**570**		0.50	0.16	mg/L		02/16/17 07:48	02/20/17 19:04	1
Selenium	**0.0093**	**J**	0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 19:04	1

Client Sample ID: MW-07-GW-02142017

Lab Sample ID: 500-123929-1

Date Collected: 02/14/17 15:25

Matrix: Water

Date Received: 02/15/17 16:47

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 19:04	1
Sodium	**3500**		10	4.3	mg/L		02/16/17 07:48	02/21/17 13:03	10
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:04	1
Vanadium	**0.055**		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 19:04	1
Zinc	**0.67**		0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 19:04	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.77**		0.20	0.062	mg/L		02/16/17 07:48	02/20/17 19:08	1
Antimony	**0.0085**	**J**	0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 19:08	1
Arsenic	**0.032**		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:08	1
Barium	**0.46**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:08	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 19:08	1
Cadmium	**0.0027**		0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 19:08	1
Calcium	**9.1**		0.20	0.059	mg/L		02/16/17 07:48	02/20/17 19:08	1
Chromium	**0.33**		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 19:08	1
Cobalt	**0.038**		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 19:08	1
Copper	**0.026**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:08	1
Iron	**3.4**		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 19:08	1
Lead	**0.18**		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 19:08	1
Magnesium	**25**		0.10	0.041	mg/L		02/16/17 07:48	02/20/17 19:08	1
Manganese	**0.013**		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:08	1
Nickel	**0.13**		0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 19:08	1
Potassium	**570**		0.50	0.16	mg/L		02/16/17 07:48	02/20/17 19:08	1
Selenium	**0.0070**	**J**	0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 19:08	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 19:08	1
Sodium	**3600**		10	4.3	mg/L		02/16/17 07:48	02/21/17 13:08	10
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:08	1
Vanadium	**0.048**		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 19:08	1
Zinc	**0.32**		0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 19:08	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00086**		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 09:23	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00036**		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 09:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**8.0**		1.0	0.18	mg/L			02/21/17 07:26	1
Sulfate	<50		50	15	mg/L			02/20/17 09:17	10
Total Organic Carbon - Duplicates	**540**	**B**	40	11	mg/L			02/20/17 00:59	40
Nitrogen, Nitrate	**0.059**	**J**	0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**13**		5.0	2.5	mg/L			02/16/17 10:19	1
Ammonia	**740**		40	20	mg/L		02/16/17 18:50	02/16/17 23:54	10
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/16/17 10:28	1
Nitrogen, Nitrate Nitrite	**0.059**	**J**	0.10	0.035	mg/L			02/17/17 21:48	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-06-GW-02152017

Lab Sample ID: 500-123929-2

Date Collected: 02/15/17 08:00
Matrix: Water
Date Received: 02/15/17 16:47

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**43**		5.0	1.7	ug/L			02/21/17 02:45	1
Benzene	**6.6**		0.50	0.15	ug/L			02/21/17 02:45	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/21/17 02:45	1
Bromoform	<1.0		1.0	0.48	ug/L			02/21/17 02:45	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/21/17 02:45	1
Carbon disulfide	**1.6**	**J**	2.0	0.45	ug/L			02/21/17 02:45	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/21/17 02:45	1
Chlorobenzene	**0.62**	**J**	1.0	0.39	ug/L			02/21/17 02:45	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/21/17 02:45	1
Chloroform	<2.0		2.0	0.37	ug/L			02/21/17 02:45	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/21/17 02:45	1
cis-1,2-Dichloroethene	**3.6**		1.0	0.41	ug/L			02/21/17 02:45	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/21/17 02:45	1
Cyclohexane	<1.0		1.0	0.49	ug/L			02/21/17 02:45	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/21/17 02:45	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/21/17 02:45	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/21/17 02:45	1
1,2-Dichlorobenzene	**2.3**		1.0	0.33	ug/L			02/21/17 02:45	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/21/17 02:45	1
1,4-Dichlorobenzene	**13**		1.0	0.36	ug/L			02/21/17 02:45	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/21/17 02:45	1
1,1-Dichloroethane	**0.45**	**J**	1.0	0.41	ug/L			02/21/17 02:45	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/21/17 02:45	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/21/17 02:45	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/21/17 02:45	1
Ethylbenzene	**55**		0.50	0.18	ug/L			02/21/17 02:45	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/21/17 02:45	1
Isopropylbenzene	**4.0**		1.0	0.39	ug/L			02/21/17 02:45	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/21/17 02:45	1
Methylcyclohexane	**0.76**	**J**	1.0	0.32	ug/L			02/21/17 02:45	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/21/17 02:45	1
Methyl Ethyl Ketone	**14**		5.0	2.1	ug/L			02/21/17 02:45	1
methyl isobutyl ketone	**25**		5.0	2.2	ug/L			02/21/17 02:45	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/21/17 02:45	1
Styrene	<1.0		1.0	0.39	ug/L			02/21/17 02:45	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/21/17 02:45	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/21/17 02:45	1
Toluene	**130**		0.50	0.15	ug/L			02/21/17 02:45	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/21/17 02:45	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/21/17 02:45	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/21/17 02:45	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/21/17 02:45	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/21/17 02:45	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/21/17 02:45	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/21/17 02:45	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/21/17 02:45	1
Vinyl chloride	**3.4**		0.50	0.20	ug/L			02/21/17 02:45	1
Xylenes, Total	**230**		1.0	0.22	ug/L			02/21/17 02:45	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-06-GW-02152017

Lab Sample ID: 500-123929-2

Date Collected: 02/15/17 08:00
Matrix: Water
Date Received: 02/15/17 16:47

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*		*02/21/17 02:45*	*1*
Dibromofluoromethane	*100*		*70 - 120*		*02/21/17 02:45*	*1*
1,2-Dichloroethane-d4 (Surr)	*113*		*71 - 127*		*02/21/17 02:45*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*02/21/17 02:45*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.50**	**J**	0.73	0.23	ug/L		02/20/17 07:25	02/21/17 23:55	1
Acenaphthylene	<0.73		0.73	0.20	ug/L		02/20/17 07:25	02/21/17 23:55	1
Acetophenone	<3.7		3.7	0.49	ug/L		02/20/17 07:25	02/21/17 23:55	1
Anthracene	**0.30**	**J**	0.73	0.24	ug/L		02/20/17 07:25	02/21/17 23:55	1
Benzo[a]anthracene	<0.15		0.15	0.041	ug/L		02/20/17 07:25	02/21/17 23:55	1
Benzo[a]pyrene	<0.15	*	0.15	0.072	ug/L		02/20/17 07:25	02/21/17 23:55	1
Benzo[b]fluoranthene	<0.15	*	0.15	0.059	ug/L		02/20/17 07:25	02/21/17 23:55	1
Benzo[g,h,i]perylene	<0.73	*	0.73	0.27	ug/L		02/20/17 07:25	02/21/17 23:55	1
Benzo[k]fluoranthene	<0.15	*	0.15	0.047	ug/L		02/20/17 07:25	02/21/17 23:55	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/21/17 23:55	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/21/17 23:55	1
Bis(2-ethylhexyl) phthalate	**41**		7.3	1.3	ug/L		02/20/17 07:25	02/21/17 23:55	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		02/20/17 07:25	02/21/17 23:55	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/20/17 07:25	02/21/17 23:55	1
Carbazole	<3.7	*	3.7	0.26	ug/L		02/20/17 07:25	02/21/17 23:55	1
4-Chloroaniline	<7.3		7.3	1.5	ug/L		02/20/17 07:25	02/21/17 23:55	1
4-Chloro-3-methylphenol	**12**		7.3	1.7	ug/L		02/20/17 07:25	02/21/17 23:55	1
2-Chloronaphthalene	**3.1**		1.5	0.17	ug/L		02/20/17 07:25	02/21/17 23:55	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		02/20/17 07:25	02/21/17 23:55	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		02/20/17 07:25	02/21/17 23:55	1
Chrysene	<0.15		0.15	0.050	ug/L		02/20/17 07:25	02/21/17 23:55	1
Dibenz(a,h)anthracene	<0.22	*	0.22	0.037	ug/L		02/20/17 07:25	02/21/17 23:55	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		02/20/17 07:25	02/21/17 23:55	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		02/20/17 07:25	02/21/17 23:55	1
2,4-Dichlorophenol	<7.3		7.3	1.9	ug/L		02/20/17 07:25	02/21/17 23:55	1
Diethyl phthalate	<1.5		1.5	0.26	ug/L		02/20/17 07:25	02/21/17 23:55	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/20/17 07:25	02/21/17 23:55	1
Di-n-butyl phthalate	**1.4**	**J**	3.7	0.53	ug/L		02/20/17 07:25	02/21/17 23:55	1
4,6-Dinitro-2-methylphenol	<15		15	4.3	ug/L		02/20/17 07:25	02/21/17 23:55	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		02/20/17 07:25	02/21/17 23:55	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		02/20/17 07:25	02/21/17 23:55	1
2,6-Dinitrotoluene	<0.73		0.73	0.054	ug/L		02/20/17 07:25	02/21/17 23:55	1
Di-n-octyl phthalate	<7.3		7.3	0.77	ug/L		02/20/17 07:25	02/21/17 23:55	1
Fluoranthene	**0.43**	**J**	0.73	0.33	ug/L		02/20/17 07:25	02/21/17 23:55	1
Fluorene	**0.39**	**J**	0.73	0.18	ug/L		02/20/17 07:25	02/21/17 23:55	1
Hexachlorobenzene	<0.37		0.37	0.058	ug/L		02/20/17 07:25	02/21/17 23:55	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		02/20/17 07:25	02/21/17 23:55	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		02/20/17 07:25	02/21/17 23:55	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		02/20/17 07:25	02/21/17 23:55	1
Indeno[1,2,3-cd]pyrene	<0.15	*	0.15	0.055	ug/L		02/20/17 07:25	02/21/17 23:55	1
Isophorone	<1.5		1.5	0.27	ug/L		02/20/17 07:25	02/21/17 23:55	1
2-Methylnaphthalene	**2.0**		1.5	0.048	ug/L		02/20/17 07:25	02/21/17 23:55	1
2-Methylphenol	**18**		1.5	0.22	ug/L		02/20/17 07:25	02/21/17 23:55	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-06-GW-02152017

Lab Sample ID: 500-123929-2

Date Collected: 02/15/17 08:00
Matrix: Water
Date Received: 02/15/17 16:47

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3 & 4 Methylphenol	**5.0**		1.5	0.33	ug/L		02/20/17 07:25	02/21/17 23:55	1
Naphthalene	**23**		0.73	0.23	ug/L		02/20/17 07:25	02/21/17 23:55	1
2-Nitroaniline	<3.7		3.7	0.94	ug/L		02/20/17 07:25	02/21/17 23:55	1
3-Nitroaniline	<7.3		7.3	1.3	ug/L		02/20/17 07:25	02/21/17 23:55	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		02/20/17 07:25	02/21/17 23:55	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		02/20/17 07:25	02/21/17 23:55	1
2-Nitrophenol	<7.3		7.3	1.8	ug/L		02/20/17 07:25	02/21/17 23:55	1
4-Nitrophenol	<15		15	5.4	ug/L		02/20/17 07:25	02/21/17 23:55	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		02/20/17 07:25	02/21/17 23:55	1
N-Nitrosodiphenylamine	<0.73		0.73	0.27	ug/L		02/20/17 07:25	02/21/17 23:55	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/21/17 23:55	1
Pentachlorophenol	<15		15	2.9	ug/L		02/20/17 07:25	02/21/17 23:55	1
Phenanthrene	**1.0**		0.73	0.22	ug/L		02/20/17 07:25	02/21/17 23:55	1
Phenol	<3.7		3.7	0.49	ug/L		02/20/17 07:25	02/21/17 23:55	1
Pyrene	**0.59**	**J**	0.73	0.31	ug/L		02/20/17 07:25	02/21/17 23:55	1
2,4,5-Trichlorophenol	<7.3		7.3	1.9	ug/L		02/20/17 07:25	02/21/17 23:55	1
2,4,6-Trichlorophenol	<3.7		3.7	0.52	ug/L		02/20/17 07:25	02/21/17 23:55	1
Benzaldehyde	**20**	**J ^**	29	11	ug/L		02/20/17 07:25	02/21/17 23:55	1
Caprolactam	<7.3		7.3	1.1	ug/L		02/20/17 07:25	02/21/17 23:55	1
Atrazine	<3.7		3.7	0.46	ug/L		02/20/17 07:25	02/21/17 23:55	1
1,1'-Biphenyl	**1.5**	**J**	3.7	0.27	ug/L		02/20/17 07:25	02/21/17 23:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*55*		*30 - 123*	*02/20/17 07:25*	*02/21/17 23:55*	*1*
2-Fluorophenol (Surr)	*64*		*30 - 110*	*02/20/17 07:25*	*02/21/17 23:55*	*1*
Nitrobenzene-d5 (Surr)	*32*	*X*	*33 - 139*	*02/20/17 07:25*	*02/21/17 23:55*	*1*
Phenol-d5 (Surr)	*69*		*20 - 100*	*02/20/17 07:25*	*02/21/17 23:55*	*1*
Terphenyl-d14 (Surr)	*100*		*42 - 150*	*02/20/17 07:25*	*02/21/17 23:55*	*1*
2,4,6-Tribromophenol (Surr)	*96*		*30 - 150*	*02/20/17 07:25*	*02/21/17 23:55*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dimethylphenol	**93**		37	6.6	ug/L		02/20/17 07:25	02/22/17 18:58	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*43*		*30 - 123*	*02/20/17 07:25*	*02/22/17 18:58*	*5*
2-Fluorophenol (Surr)	*68*		*30 - 110*	*02/20/17 07:25*	*02/22/17 18:58*	*5*
Nitrobenzene-d5 (Surr)	*47*		*33 - 139*	*02/20/17 07:25*	*02/22/17 18:58*	*5*
Phenol-d5 (Surr)	*74*		*20 - 100*	*02/20/17 07:25*	*02/22/17 18:58*	*5*
Terphenyl-d14 (Surr)	*92*		*42 - 150*	*02/20/17 07:25*	*02/22/17 18:58*	*5*
2,4,6-Tribromophenol (Surr)	*69*		*30 - 150*	*02/20/17 07:25*	*02/22/17 18:58*	*5*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		02/16/17 09:00	02/21/17 15:06	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		02/16/17 09:00	02/21/17 15:06	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		02/16/17 09:00	02/21/17 15:06	1
beta-BHC	<0.037		0.037	0.0094	ug/L		02/16/17 09:00	02/21/17 15:06	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:06	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		02/16/17 09:00	02/21/17 15:06	1

Client Sample ID: MW-06-GW-02152017

Lab Sample ID: 500-123929-2

Date Collected: 02/15/17 08:00

Matrix: Water

Date Received: 02/15/17 16:47

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDT	<0.037		0.037	0.0029	ug/L		02/16/17 09:00	02/21/17 15:06	1
delta-BHC	<0.037		0.037	0.0095	ug/L		02/16/17 09:00	02/21/17 15:06	1
Dieldrin	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:06	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		02/16/17 09:00	02/21/17 15:06	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		02/16/17 09:00	02/21/17 15:06	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		02/16/17 09:00	02/21/17 15:06	1
Endrin	<0.037		0.037	0.013	ug/L		02/16/17 09:00	02/21/17 15:06	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		02/16/17 09:00	02/21/17 15:06	1
Endrin ketone	<0.037		0.037	0.016	ug/L		02/16/17 09:00	02/21/17 15:06	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		02/16/17 09:00	02/21/17 15:06	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		02/16/17 09:00	02/21/17 15:06	1
Heptachlor	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:06	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		02/16/17 09:00	02/21/17 15:06	1
Methoxychlor	<0.074		0.074	0.021	ug/L		02/16/17 09:00	02/21/17 15:06	1
Toxaphene	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/21/17 15:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*26*	*X*	*30 - 143*	*02/16/17 09:00*	*02/21/17 15:06*	*1*
Tetrachloro-m-xylene	*58*		*30 - 120*	*02/16/17 09:00*	*02/21/17 15:06*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1016	<0.37		0.37	0.062	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1242	**2.1**		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1242	**2.6**		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1260	<0.37		0.37	0.064	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1260	<0.37	*	0.37	0.064	ug/L		02/16/17 09:00	02/24/17 13:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*35*		*30 - 127*	*02/16/17 09:00*	*02/24/17 13:10*	*1*
Tetrachloro-m-xylene	*42*		*30 - 127*	*02/16/17 09:00*	*02/24/17 13:10*	*1*
DCB Decachlorobiphenyl	*18*	*X*	*30 - 150*	*02/16/17 09:00*	*02/24/17 13:10*	*1*
DCB Decachlorobiphenyl	*26*	*X*	*30 - 150*	*02/16/17 09:00*	*02/24/17 13:10*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.29**		0.20	0.062	mg/L		02/16/17 07:48	02/20/17 19:13	1
Antimony	<0.020		0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 19:13	1
Arsenic	**0.021**		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:13	1
Barium	**0.26**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:13	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 19:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-06-GW-02152017

Lab Sample ID: 500-123929-2
Date Collected: 02/15/17 08:00
Matrix: Water
Date Received: 02/15/17 16:47

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.0015	J	0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 19:13	1
Calcium	15		0.20	0.059	mg/L		02/16/17 07:48	02/20/17 19:13	1
Chromium	0.11		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 19:13	1
Cobalt	0.025		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 19:13	1
Copper	0.0096	J	0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:13	1
Iron	0.98		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 19:13	1
Lead	0.11		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 19:13	1
Magnesium	31		0.10	0.041	mg/L		02/16/17 07:48	02/20/17 19:13	1
Manganese	0.0079	J	0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:13	1
Nickel	0.10		0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 19:13	1
Potassium	520		0.50	0.16	mg/L		02/16/17 07:48	02/20/17 19:13	1
Selenium	0.0081	J	0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 19:13	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 19:13	1
Sodium	3300		10	4.3	mg/L		02/16/17 07:48	02/21/17 13:12	10
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:13	1
Vanadium	0.032		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 19:13	1
Zinc	0.11		0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 19:13	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.14	J	0.20	0.062	mg/L		02/16/17 07:48	02/20/17 19:18	1
Antimony	<0.020		0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 19:18	1
Arsenic	0.020		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:18	1
Barium	0.26		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:18	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 19:18	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 19:18	1
Calcium	15		0.20	0.059	mg/L		02/16/17 07:48	02/20/17 19:18	1
Chromium	0.10		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 19:18	1
Cobalt	0.025		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 19:18	1
Copper	<0.010		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:18	1
Iron	0.59		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 19:18	1
Lead	0.0080		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 19:18	1
Magnesium	31		0.10	0.041	mg/L		02/16/17 07:48	02/20/17 19:18	1
Manganese	0.0071	J	0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:18	1
Nickel	0.10		0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 19:18	1
Potassium	520		0.50	0.16	mg/L		02/16/17 07:48	02/20/17 19:18	1
Selenium	<0.010		0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 19:18	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 19:18	1
Sodium	3500		10	4.3	mg/L		02/16/17 07:48	02/21/17 13:17	10
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:18	1
Vanadium	0.029		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 19:18	1
Zinc	0.023		0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 19:18	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 09:26	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 09:27	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-06-GW-02152017

Lab Sample ID: 500-123929-2

Date Collected: 02/15/17 08:00

Matrix: Water

Date Received: 02/15/17 16:47

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**7.2**		1.0	0.18	mg/L			02/21/17 07:29	1
Sulfate	**21**	**B**	10	2.9	mg/L			02/20/17 09:18	2
Total Organic Carbon - Duplicates	**310**	**B**	20	5.3	mg/L			02/20/17 01:16	20
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**4.0**	**J**	5.0	2.5	mg/L			02/16/17 10:20	1
Ammonia	**530**		40	20	mg/L		02/16/17 18:50	02/16/17 23:57	10
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/16/17 10:28	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/17/17 21:49	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-05-GW-02152017

Lab Sample ID: 500-123929-3

Date Collected: 02/15/17 09:40
Matrix: Water
Date Received: 02/15/17 16:47

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**8.5**		5.0	1.7	ug/L			02/21/17 03:10	1
Benzene	**0.24**	**J**	0.50	0.15	ug/L			02/21/17 03:10	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/21/17 03:10	1
Bromoform	<1.0		1.0	0.48	ug/L			02/21/17 03:10	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/21/17 03:10	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/21/17 03:10	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/21/17 03:10	1
Chlorobenzene	**2.9**		1.0	0.39	ug/L			02/21/17 03:10	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/21/17 03:10	1
Chloroform	<2.0		2.0	0.37	ug/L			02/21/17 03:10	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/21/17 03:10	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/21/17 03:10	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/21/17 03:10	1
Cyclohexane	**2.2**		1.0	0.49	ug/L			02/21/17 03:10	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/21/17 03:10	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/21/17 03:10	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/21/17 03:10	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			02/21/17 03:10	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/21/17 03:10	1
1,4-Dichlorobenzene	**1.4**		1.0	0.36	ug/L			02/21/17 03:10	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/21/17 03:10	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/21/17 03:10	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/21/17 03:10	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/21/17 03:10	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/21/17 03:10	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			02/21/17 03:10	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/21/17 03:10	1
Isopropylbenzene	**36**		1.0	0.39	ug/L			02/21/17 03:10	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/21/17 03:10	1
Methylcyclohexane	**0.55**	**J**	1.0	0.32	ug/L			02/21/17 03:10	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/21/17 03:10	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			02/21/17 03:10	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/21/17 03:10	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/21/17 03:10	1
Styrene	<1.0		1.0	0.39	ug/L			02/21/17 03:10	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/21/17 03:10	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/21/17 03:10	1
Toluene	<0.50		0.50	0.15	ug/L			02/21/17 03:10	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/21/17 03:10	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/21/17 03:10	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/21/17 03:10	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/21/17 03:10	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/21/17 03:10	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/21/17 03:10	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/21/17 03:10	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/21/17 03:10	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/21/17 03:10	1
Xylenes, Total	**0.90**	**J**	1.0	0.22	ug/L			02/21/17 03:10	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-05-GW-02152017

Lab Sample ID: 500-123929-3

Date Collected: 02/15/17 09:40
Matrix: Water
Date Received: 02/15/17 16:47

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*71 - 120*		*02/21/17 03:10*	*1*
Dibromofluoromethane	*97*		*70 - 120*		*02/21/17 03:10*	*1*
1,2-Dichloroethane-d4 (Surr)	*112*		*71 - 127*		*02/21/17 03:10*	*1*
Toluene-d8 (Surr)	*96*		*75 - 120*		*02/21/17 03:10*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.32**	**J**	0.75	0.23	ug/L		02/20/17 07:25	02/22/17 00:24	1
Acenaphthylene	<0.75		0.75	0.20	ug/L		02/20/17 07:25	02/22/17 00:24	1
Acetophenone	<3.8		3.8	0.50	ug/L		02/20/17 07:25	02/22/17 00:24	1
Anthracene	<0.75		0.75	0.25	ug/L		02/20/17 07:25	02/22/17 00:24	1
Benzo[a]anthracene	<0.15		0.15	0.043	ug/L		02/20/17 07:25	02/22/17 00:24	1
Benzo[a]pyrene	<0.15		0.15	0.074	ug/L		02/20/17 07:25	02/22/17 00:24	1
Benzo[b]fluoranthene	<0.15		0.15	0.061	ug/L		02/20/17 07:25	02/22/17 00:24	1
Benzo[g,h,i]perylene	<0.75		0.75	0.28	ug/L		02/20/17 07:25	02/22/17 00:24	1
Benzo[k]fluoranthene	<0.15		0.15	0.048	ug/L		02/20/17 07:25	02/22/17 00:24	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/22/17 00:24	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		02/20/17 07:25	02/22/17 00:24	1
Bis(2-ethylhexyl) phthalate	<7.5		7.5	1.3	ug/L		02/20/17 07:25	02/22/17 00:24	1
4-Bromophenyl phenyl ether	<3.8		3.8	0.41	ug/L		02/20/17 07:25	02/22/17 00:24	1
Butyl benzyl phthalate	<1.5		1.5	0.36	ug/L		02/20/17 07:25	02/22/17 00:24	1
Carbazole	<3.8	*	3.8	0.27	ug/L		02/20/17 07:25	02/22/17 00:24	1
4-Chloroaniline	<7.5		7.5	1.5	ug/L		02/20/17 07:25	02/22/17 00:24	1
4-Chloro-3-methylphenol	<7.5		7.5	1.7	ug/L		02/20/17 07:25	02/22/17 00:24	1
2-Chloronaphthalene	<1.5		1.5	0.18	ug/L		02/20/17 07:25	02/22/17 00:24	1
2-Chlorophenol	<3.8		3.8	0.42	ug/L		02/20/17 07:25	02/22/17 00:24	1
4-Chlorophenyl phenyl ether	<3.8		3.8	0.48	ug/L		02/20/17 07:25	02/22/17 00:24	1
Chrysene	<0.15		0.15	0.051	ug/L		02/20/17 07:25	02/22/17 00:24	1
Dibenz(a,h)anthracene	<0.23		0.23	0.038	ug/L		02/20/17 07:25	02/22/17 00:24	1
Dibenzofuran	<1.5		1.5	0.20	ug/L		02/20/17 07:25	02/22/17 00:24	1
3,3'-Dichlorobenzidine	<3.8		3.8	1.3	ug/L		02/20/17 07:25	02/22/17 00:24	1
2,4-Dichlorophenol	<7.5		7.5	2.0	ug/L		02/20/17 07:25	02/22/17 00:24	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		02/20/17 07:25	02/22/17 00:24	1
2,4-Dimethylphenol	<7.5		7.5	1.4	ug/L		02/20/17 07:25	02/22/17 00:24	1
Dimethyl phthalate	<1.5		1.5	0.24	ug/L		02/20/17 07:25	02/22/17 00:24	1
Di-n-butyl phthalate	<3.8		3.8	0.55	ug/L		02/20/17 07:25	02/22/17 00:24	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		02/20/17 07:25	02/22/17 00:24	1
2,4-Dinitrophenol	<15		15	6.5	ug/L		02/20/17 07:25	02/22/17 00:24	1
2,4-Dinitrotoluene	<0.75		0.75	0.18	ug/L		02/20/17 07:25	02/22/17 00:24	1
2,6-Dinitrotoluene	<0.75		0.75	0.055	ug/L		02/20/17 07:25	02/22/17 00:24	1
Di-n-octyl phthalate	<7.5		7.5	0.79	ug/L		02/20/17 07:25	02/22/17 00:24	1
Fluoranthene	<0.75		0.75	0.34	ug/L		02/20/17 07:25	02/22/17 00:24	1
Fluorene	**0.20**	**J**	0.75	0.18	ug/L		02/20/17 07:25	02/22/17 00:24	1
Hexachlorobenzene	<0.38		0.38	0.060	ug/L		02/20/17 07:25	02/22/17 00:24	1
Hexachlorobutadiene	<3.8		3.8	0.39	ug/L		02/20/17 07:25	02/22/17 00:24	1
Hexachlorocyclopentadiene	<15		15	4.8	ug/L		02/20/17 07:25	02/22/17 00:24	1
Hexachloroethane	<3.8		3.8	0.45	ug/L		02/20/17 07:25	02/22/17 00:24	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.056	ug/L		02/20/17 07:25	02/22/17 00:24	1
Isophorone	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/22/17 00:24	1
2-Methylnaphthalene	**0.40**	**J**	1.5	0.049	ug/L		02/20/17 07:25	02/22/17 00:24	1

Client Sample ID: MW-05-GW-02152017

Lab Sample ID: 500-123929-3

Date Collected: 02/15/17 09:40

Matrix: Water

Date Received: 02/15/17 16:47

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.23	ug/L		02/20/17 07:25	02/22/17 00:24	1
3 & 4 Methylphenol	<1.5		1.5	0.34	ug/L		02/20/17 07:25	02/22/17 00:24	1
Naphthalene	<0.75		0.75	0.23	ug/L		02/20/17 07:25	02/22/17 00:24	1
2-Nitroaniline	<3.8		3.8	0.97	ug/L		02/20/17 07:25	02/22/17 00:24	1
3-Nitroaniline	<7.5		7.5	1.3	ug/L		02/20/17 07:25	02/22/17 00:24	1
4-Nitroaniline	<7.5		7.5	1.3	ug/L		02/20/17 07:25	02/22/17 00:24	1
Nitrobenzene	<0.75		0.75	0.34	ug/L		02/20/17 07:25	02/22/17 00:24	1
2-Nitrophenol	<7.5		7.5	1.9	ug/L		02/20/17 07:25	02/22/17 00:24	1
4-Nitrophenol	<15		15	5.6	ug/L		02/20/17 07:25	02/22/17 00:24	1
N-Nitrosodi-n-propylamine	<0.38		0.38	0.12	ug/L		02/20/17 07:25	02/22/17 00:24	1
N-Nitrosodiphenylamine	**0.98**		0.75	0.28	ug/L		02/20/17 07:25	02/22/17 00:24	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.29	ug/L		02/20/17 07:25	02/22/17 00:24	1
Pentachlorophenol	<15		15	3.0	ug/L		02/20/17 07:25	02/22/17 00:24	1
Phenanthrene	<0.75		0.75	0.23	ug/L		02/20/17 07:25	02/22/17 00:24	1
Phenol	<3.8		3.8	0.50	ug/L		02/20/17 07:25	02/22/17 00:24	1
Pyrene	<0.75		0.75	0.32	ug/L		02/20/17 07:25	02/22/17 00:24	1
2,4,5-Trichlorophenol	<7.5		7.5	1.9	ug/L		02/20/17 07:25	02/22/17 00:24	1
2,4,6-Trichlorophenol	<3.8		3.8	0.54	ug/L		02/20/17 07:25	02/22/17 00:24	1
Benzaldehyde	<30	^	30	11	ug/L		02/20/17 07:25	02/22/17 00:24	1
Caprolactam	<7.5		7.5	1.1	ug/L		02/20/17 07:25	02/22/17 00:24	1
Atrazine	<3.8		3.8	0.47	ug/L		02/20/17 07:25	02/22/17 00:24	1
1,1'-Biphenyl	<3.8		3.8	0.27	ug/L		02/20/17 07:25	02/22/17 00:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*62*		*30 - 123*	*02/20/17 07:25*	*02/22/17 00:24*	*1*
2-Fluorophenol (Surr)	*65*		*30 - 110*	*02/20/17 07:25*	*02/22/17 00:24*	*1*
Nitrobenzene-d5 (Surr)	*63*		*33 - 139*	*02/20/17 07:25*	*02/22/17 00:24*	*1*
Phenol-d5 (Surr)	*52*		*20 - 100*	*02/20/17 07:25*	*02/22/17 00:24*	*1*
Terphenyl-d14 (Surr)	*96*		*42 - 150*	*02/20/17 07:25*	*02/22/17 00:24*	*1*
2,4,6-Tribromophenol (Surr)	*99*		*30 - 150*	*02/20/17 07:25*	*02/22/17 00:24*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		02/16/17 09:00	02/21/17 15:26	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		02/16/17 09:00	02/21/17 15:26	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		02/16/17 09:00	02/21/17 15:26	1
beta-BHC	<0.037		0.037	0.0093	ug/L		02/16/17 09:00	02/21/17 15:26	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:26	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		02/16/17 09:00	02/21/17 15:26	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		02/16/17 09:00	02/21/17 15:26	1
delta-BHC	<0.037		0.037	0.0094	ug/L		02/16/17 09:00	02/21/17 15:26	1
Dieldrin	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:26	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		02/16/17 09:00	02/21/17 15:26	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		02/16/17 09:00	02/21/17 15:26	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		02/16/17 09:00	02/21/17 15:26	1
Endrin	<0.037		0.037	0.013	ug/L		02/16/17 09:00	02/21/17 15:26	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		02/16/17 09:00	02/21/17 15:26	1
Endrin ketone	<0.037		0.037	0.016	ug/L		02/16/17 09:00	02/21/17 15:26	1
gamma-BHC (Lindane)	<0.037		0.037	0.0051	ug/L		02/16/17 09:00	02/21/17 15:26	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		02/16/17 09:00	02/21/17 15:26	1

Client Sample ID: MW-05-GW-02152017

Lab Sample ID: 500-123929-3

Date Collected: 02/15/17 09:40

Matrix: Water

Date Received: 02/15/17 16:47

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:26	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		02/16/17 09:00	02/21/17 15:26	1
Methoxychlor	<0.073		0.073	0.021	ug/L		02/16/17 09:00	02/21/17 15:26	1
Toxaphene	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/21/17 15:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*70*		*30 - 143*	*02/16/17 09:00*	*02/21/17 15:26*	*1*
Tetrachloro-m-xylene	*41*		*30 - 120*	*02/16/17 09:00*	*02/21/17 15:26*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.061	ug/L		02/16/17 09:00	02/24/17 13:26	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:26	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:26	1
PCB-1242	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:26	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:26	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:26	1
PCB-1260	<0.37	*	0.37	0.064	ug/L		02/16/17 09:00	02/24/17 13:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*63*		*30 - 127*	*02/16/17 09:00*	*02/24/17 13:26*	*1*
DCB Decachlorobiphenyl	*90*		*30 - 150*	*02/16/17 09:00*	*02/24/17 13:26*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/16/17 07:48	02/20/17 19:22	1
Antimony	<0.020		0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 19:22	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:22	1
Barium	**0.86**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:22	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 19:22	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 19:22	1
Calcium	**76**		0.20	0.059	mg/L		02/16/17 07:48	02/20/17 19:22	1
Chromium	<0.010		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 19:22	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 19:22	1
Copper	<0.010		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:22	1
Iron	**20**		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 19:22	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 19:22	1
Magnesium	**90**		0.10	0.041	mg/L		02/16/17 07:48	02/20/17 19:22	1
Manganese	**0.053**		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:22	1
Nickel	**0.0046**	**J**	0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 19:22	1
Potassium	**43**		0.50	0.16	mg/L		02/16/17 07:48	02/20/17 19:22	1
Selenium	<0.010		0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 19:22	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 19:22	1
Sodium	**150**		1.0	0.43	mg/L		02/16/17 07:48	02/20/17 19:22	1
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:22	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 19:22	1
Zinc	**0.0093**	**J**	0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 19:22	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/16/17 07:48	02/20/17 19:26	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-05-GW-02152017

Lab Sample ID: 500-123929-3

Date Collected: 02/15/17 09:40
Matrix: Water
Date Received: 02/15/17 16:47

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 19:26	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:26	1
Barium	**0.83**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:26	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 19:26	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 19:26	1
Calcium	**73**		0.20	0.059	mg/L		02/16/17 07:48	02/20/17 19:26	1
Chromium	<0.010		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 19:26	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 19:26	1
Copper	<0.010		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:26	1
Iron	**19**		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 19:26	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 19:26	1
Magnesium	**88**		0.10	0.041	mg/L		02/16/17 07:48	02/20/17 19:26	1
Manganese	**0.051**		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:26	1
Nickel	<0.010		0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 19:26	1
Potassium	**42**		0.50	0.16	mg/L		02/16/17 07:48	02/20/17 19:26	1
Selenium	<0.010		0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 19:26	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 19:26	1
Sodium	**150**		1.0	0.43	mg/L		02/16/17 07:48	02/20/17 19:26	1
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:26	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 19:26	1
Zinc	<0.020		0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 19:26	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 09:29	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 09:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 07:32	1
Sulfate	**2.9**	**J B**	5.0	1.5	mg/L			02/23/17 03:32	1
Total Organic Carbon - Duplicates	**18**	**B**	1.0	0.27	mg/L			02/20/17 01:33	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**56**		5.0	2.5	mg/L			02/16/17 10:22	1
Ammonia	**50**		4.0	2.0	mg/L		02/16/17 18:50	02/16/17 22:40	20
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/16/17 10:29	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/17/17 21:50	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-04-GW-02152017

Lab Sample ID: 500-123929-4

Date Collected: 02/15/17 11:35
Matrix: Water
Date Received: 02/15/17 16:47

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**31**		5.0	1.7	ug/L			02/21/17 03:35	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/21/17 03:35	1
Bromoform	<1.0		1.0	0.48	ug/L			02/21/17 03:35	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/21/17 03:35	1
Carbon disulfide	**2.2**		2.0	0.45	ug/L			02/21/17 03:35	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/21/17 03:35	1
Chlorobenzene	**2.0**		1.0	0.39	ug/L			02/21/17 03:35	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/21/17 03:35	1
Chloroform	**0.65**	**J**	2.0	0.37	ug/L			02/21/17 03:35	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/21/17 03:35	1
cis-1,2-Dichloroethene	**11**		1.0	0.41	ug/L			02/21/17 03:35	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/21/17 03:35	1
Cyclohexane	**1.9**		1.0	0.49	ug/L			02/21/17 03:35	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/21/17 03:35	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/21/17 03:35	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/21/17 03:35	1
1,2-Dichlorobenzene	**0.56**	**J**	1.0	0.33	ug/L			02/21/17 03:35	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/21/17 03:35	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			02/21/17 03:35	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/21/17 03:35	1
1,1-Dichloroethane	**18**		1.0	0.41	ug/L			02/21/17 03:35	1
1,2-Dichloroethane	**58**		1.0	0.39	ug/L			02/21/17 03:35	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/21/17 03:35	1
1,2-Dichloropropane	**1.7**		1.0	0.43	ug/L			02/21/17 03:35	1
Ethylbenzene	**13**		0.50	0.18	ug/L			02/21/17 03:35	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/21/17 03:35	1
Isopropylbenzene	**0.92**	**J**	1.0	0.39	ug/L			02/21/17 03:35	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/21/17 03:35	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			02/21/17 03:35	1
Methylene Chloride	**6.9**		5.0	1.6	ug/L			02/21/17 03:35	1
Methyl Ethyl Ketone	**9.7**		5.0	2.1	ug/L			02/21/17 03:35	1
methyl isobutyl ketone	**20**		5.0	2.2	ug/L			02/21/17 03:35	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/21/17 03:35	1
Styrene	<1.0		1.0	0.39	ug/L			02/21/17 03:35	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/21/17 03:35	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/21/17 03:35	1
Toluene	**28**		0.50	0.15	ug/L			02/21/17 03:35	1
trans-1,2-Dichloroethene	**1.1**		1.0	0.35	ug/L			02/21/17 03:35	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/21/17 03:35	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/21/17 03:35	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/21/17 03:35	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/21/17 03:35	1
Trichloroethene	**2.4**		0.50	0.16	ug/L			02/21/17 03:35	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/21/17 03:35	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/21/17 03:35	1
Vinyl chloride	**3.8**		0.50	0.20	ug/L			02/21/17 03:35	1
Xylenes, Total	**17**		1.0	0.22	ug/L			02/21/17 03:35	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-04-GW-02152017

Date Collected: 02/15/17 11:35
Date Received: 02/15/17 16:47

Lab Sample ID: 500-123929-4

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*71 - 120*		*02/21/17 03:35*	*1*
Dibromofluoromethane	*97*		*70 - 120*		*02/21/17 03:35*	*1*
1,2-Dichloroethane-d4 (Surr)	*110*		*71 - 127*		*02/21/17 03:35*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*02/21/17 03:35*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**530**		5.0	1.5	ug/L			02/21/17 04:00	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*71 - 120*		*02/21/17 04:00*	*10*
Dibromofluoromethane	*96*		*70 - 120*		*02/21/17 04:00*	*10*
1,2-Dichloroethane-d4 (Surr)	*115*		*71 - 127*		*02/21/17 04:00*	*10*
Toluene-d8 (Surr)	*96*		*75 - 120*		*02/21/17 04:00*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.73		0.73	0.23	ug/L		02/20/17 07:25	02/22/17 00:53	1
Acenaphthylene	<0.73		0.73	0.20	ug/L		02/20/17 07:25	02/22/17 00:53	1
Acetophenone	**3.0**	**J**	3.7	0.49	ug/L		02/20/17 07:25	02/22/17 00:53	1
Anthracene	<0.73		0.73	0.24	ug/L		02/20/17 07:25	02/22/17 00:53	1
Benzo[a]anthracene	<0.15		0.15	0.041	ug/L		02/20/17 07:25	02/22/17 00:53	1
Benzo[a]pyrene	<0.15		0.15	0.072	ug/L		02/20/17 07:25	02/22/17 00:53	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		02/20/17 07:25	02/22/17 00:53	1
Benzo[g,h,i]perylene	<0.73		0.73	0.27	ug/L		02/20/17 07:25	02/22/17 00:53	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		02/20/17 07:25	02/22/17 00:53	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/22/17 00:53	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/22/17 00:53	1
Bis(2-ethylhexyl) phthalate	<7.3		7.3	1.3	ug/L		02/20/17 07:25	02/22/17 00:53	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		02/20/17 07:25	02/22/17 00:53	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/20/17 07:25	02/22/17 00:53	1
Carbazole	<3.7	*	3.7	0.26	ug/L		02/20/17 07:25	02/22/17 00:53	1
4-Chloroaniline	<7.3		7.3	1.5	ug/L		02/20/17 07:25	02/22/17 00:53	1
4-Chloro-3-methylphenol	<7.3		7.3	1.7	ug/L		02/20/17 07:25	02/22/17 00:53	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/20/17 07:25	02/22/17 00:53	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		02/20/17 07:25	02/22/17 00:53	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.46	ug/L		02/20/17 07:25	02/22/17 00:53	1
Chrysene	<0.15		0.15	0.050	ug/L		02/20/17 07:25	02/22/17 00:53	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		02/20/17 07:25	02/22/17 00:53	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		02/20/17 07:25	02/22/17 00:53	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		02/20/17 07:25	02/22/17 00:53	1
2,4-Dichlorophenol	<7.3		7.3	1.9	ug/L		02/20/17 07:25	02/22/17 00:53	1
Diethyl phthalate	<1.5		1.5	0.26	ug/L		02/20/17 07:25	02/22/17 00:53	1
2,4-Dimethylphenol	**31**		7.3	1.3	ug/L		02/20/17 07:25	02/22/17 00:53	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/20/17 07:25	02/22/17 00:53	1
Di-n-butyl phthalate	<3.7		3.7	0.53	ug/L		02/20/17 07:25	02/22/17 00:53	1
4,6-Dinitro-2-methylphenol	<15		15	4.3	ug/L		02/20/17 07:25	02/22/17 00:53	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		02/20/17 07:25	02/22/17 00:53	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		02/20/17 07:25	02/22/17 00:53	1
2,6-Dinitrotoluene	<0.73		0.73	0.054	ug/L		02/20/17 07:25	02/22/17 00:53	1
Di-n-octyl phthalate	<7.3		7.3	0.77	ug/L		02/20/17 07:25	02/22/17 00:53	1

Client Sample ID: MW-04-GW-02152017

Lab Sample ID: 500-123929-4

Date Collected: 02/15/17 11:35

Matrix: Water

Date Received: 02/15/17 16:47

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.73		0.73	0.33	ug/L		02/20/17 07:25	02/22/17 00:53	1
Fluorene	<0.73		0.73	0.18	ug/L		02/20/17 07:25	02/22/17 00:53	1
Hexachlorobenzene	<0.37		0.37	0.058	ug/L		02/20/17 07:25	02/22/17 00:53	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		02/20/17 07:25	02/22/17 00:53	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		02/20/17 07:25	02/22/17 00:53	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		02/20/17 07:25	02/22/17 00:53	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		02/20/17 07:25	02/22/17 00:53	1
Isophorone	<1.5		1.5	0.27	ug/L		02/20/17 07:25	02/22/17 00:53	1
2-Methylnaphthalene	<1.5		1.5	0.048	ug/L		02/20/17 07:25	02/22/17 00:53	1
2-Methylphenol	**7.7**		1.5	0.22	ug/L		02/20/17 07:25	02/22/17 00:53	1
3 & 4 Methylphenol	**11**		1.5	0.33	ug/L		02/20/17 07:25	02/22/17 00:53	1
Naphthalene	<0.73		0.73	0.23	ug/L		02/20/17 07:25	02/22/17 00:53	1
2-Nitroaniline	<3.7		3.7	0.94	ug/L		02/20/17 07:25	02/22/17 00:53	1
3-Nitroaniline	<7.3		7.3	1.3	ug/L		02/20/17 07:25	02/22/17 00:53	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		02/20/17 07:25	02/22/17 00:53	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		02/20/17 07:25	02/22/17 00:53	1
2-Nitrophenol	<7.3		7.3	1.8	ug/L		02/20/17 07:25	02/22/17 00:53	1
4-Nitrophenol	<15		15	5.4	ug/L		02/20/17 07:25	02/22/17 00:53	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		02/20/17 07:25	02/22/17 00:53	1
N-Nitrosodiphenylamine	<0.73		0.73	0.27	ug/L		02/20/17 07:25	02/22/17 00:53	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/22/17 00:53	1
Pentachlorophenol	<15		15	2.9	ug/L		02/20/17 07:25	02/22/17 00:53	1
Phenanthrene	<0.73		0.73	0.22	ug/L		02/20/17 07:25	02/22/17 00:53	1
Phenol	**13**		3.7	0.49	ug/L		02/20/17 07:25	02/22/17 00:53	1
Pyrene	<0.73		0.73	0.31	ug/L		02/20/17 07:25	02/22/17 00:53	1
2,4,5-Trichlorophenol	<7.3		7.3	1.9	ug/L		02/20/17 07:25	02/22/17 00:53	1
2,4,6-Trichlorophenol	<3.7		3.7	0.52	ug/L		02/20/17 07:25	02/22/17 00:53	1
Benzaldehyde	<29	^	29	11	ug/L		02/20/17 07:25	02/22/17 00:53	1
Caprolactam	<7.3		7.3	1.1	ug/L		02/20/17 07:25	02/22/17 00:53	1
Atrazine	<3.7		3.7	0.46	ug/L		02/20/17 07:25	02/22/17 00:53	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		02/20/17 07:25	02/22/17 00:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*39*		*30 - 123*	*02/20/17 07:25*	*02/22/17 00:53*	*1*
2-Fluorophenol (Surr)	*65*		*30 - 110*	*02/20/17 07:25*	*02/22/17 00:53*	*1*
Nitrobenzene-d5 (Surr)	*55*		*33 - 139*	*02/20/17 07:25*	*02/22/17 00:53*	*1*
Phenol-d5 (Surr)	*54*		*20 - 100*	*02/20/17 07:25*	*02/22/17 00:53*	*1*
Terphenyl-d14 (Surr)	*86*		*42 - 150*	*02/20/17 07:25*	*02/22/17 00:53*	*1*
2,4,6-Tribromophenol (Surr)	*68*		*30 - 150*	*02/20/17 07:25*	*02/22/17 00:53*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		02/16/17 09:00	02/21/17 15:45	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		02/16/17 09:00	02/21/17 15:45	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		02/16/17 09:00	02/21/17 15:45	1
beta-BHC	<0.037		0.037	0.0094	ug/L		02/16/17 09:00	02/21/17 15:45	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:45	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		02/16/17 09:00	02/21/17 15:45	1
4,4'-DDT	<0.037		0.037	0.0030	ug/L		02/16/17 09:00	02/21/17 15:45	1
delta-BHC	<0.037		0.037	0.0095	ug/L		02/16/17 09:00	02/21/17 15:45	1

Client Sample ID: MW-04-GW-02152017

Lab Sample ID: 500-123929-4

Date Collected: 02/15/17 11:35

Matrix: Water

Date Received: 02/15/17 16:47

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:45	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		02/16/17 09:00	02/21/17 15:45	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		02/16/17 09:00	02/21/17 15:45	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		02/16/17 09:00	02/21/17 15:45	1
Endrin	<0.037		0.037	0.013	ug/L		02/16/17 09:00	02/21/17 15:45	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		02/16/17 09:00	02/21/17 15:45	1
Endrin ketone	<0.037		0.037	0.016	ug/L		02/16/17 09:00	02/21/17 15:45	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		02/16/17 09:00	02/21/17 15:45	1
gamma-Chlordane	<0.037		0.037	0.0067	ug/L		02/16/17 09:00	02/21/17 15:45	1
Heptachlor	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:45	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		02/16/17 09:00	02/21/17 15:45	1
Methoxychlor	<0.074		0.074	0.021	ug/L		02/16/17 09:00	02/21/17 15:45	1
Toxaphene	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/21/17 15:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*53*		*30 - 143*	*02/16/17 09:00*	*02/21/17 15:45*	*1*
Tetrachloro-m-xylene	*28*	*X*	*30 - 120*	*02/16/17 09:00*	*02/21/17 15:45*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		02/16/17 09:00	02/24/17 13:41	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:41	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:41	1
PCB-1242	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:41	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:41	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:41	1
PCB-1260	<0.37	*	0.37	0.065	ug/L		02/16/17 09:00	02/24/17 13:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*60*		*30 - 127*	*02/16/17 09:00*	*02/24/17 13:41*	*1*
DCB Decachlorobiphenyl	*89*		*30 - 150*	*02/16/17 09:00*	*02/24/17 13:41*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.094**	**J**	0.20	0.062	mg/L		02/16/17 07:48	02/20/17 19:29	1
Antimony	<0.020		0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 19:29	1
Arsenic	**0.0073**	**J**	0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:29	1
Barium	**0.033**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:29	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 19:29	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 19:29	1
Calcium	**160**		0.20	0.059	mg/L		02/16/17 07:48	02/20/17 19:29	1
Chromium	<0.010		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 19:29	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 19:29	1
Copper	<0.010		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:29	1
Iron	**2.5**		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 19:29	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 19:29	1
Magnesium	**43**		0.10	0.041	mg/L		02/16/17 07:48	02/20/17 19:29	1
Manganese	**1.2**		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:29	1
Nickel	**0.0066**	**J**	0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 19:29	1
Potassium	**14**		0.50	0.16	mg/L		02/16/17 07:48	02/20/17 19:29	1

Client Sample ID: MW-04-GW-02152017

Lab Sample ID: 500-123929-4

Date Collected: 02/15/17 11:35

Matrix: Water

Date Received: 02/15/17 16:47

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.010		0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 19:29	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 19:29	1
Sodium	**380**		1.0	0.43	mg/L		02/16/17 07:48	02/20/17 19:29	1
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:29	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 19:29	1
Zinc	<0.020		0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 19:29	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.064**	**J**	0.20	0.062	mg/L		02/16/17 07:48	02/20/17 19:34	1
Antimony	<0.020		0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 19:34	1
Arsenic	**0.0094**	**J**	0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:34	1
Barium	**0.036**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:34	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 19:34	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 19:34	1
Calcium	**180**	**V**	0.20	0.059	mg/L		02/16/17 07:48	02/20/17 19:34	1
Chromium	<0.010		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 19:34	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 19:34	1
Copper	<0.010		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:34	1
Iron	**2.7**		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 19:34	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 19:34	1
Magnesium	**48**	**V**	0.10	0.041	mg/L		02/16/17 07:48	02/20/17 19:34	1
Manganese	**1.3**	**V**	0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:34	1
Nickel	**0.0056**	**J**	0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 19:34	1
Potassium	**16**	**V**	0.50	0.16	mg/L		02/16/17 07:48	02/20/17 19:34	1
Selenium	<0.010	F1	0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 19:34	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 19:34	1
Sodium	**420**	**V**	1.0	0.43	mg/L		02/16/17 07:48	02/20/17 19:34	1
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:34	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 19:34	1
Zinc	<0.020		0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 19:34	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 09:31	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 09:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**1.0**		1.0	0.18	mg/L			02/21/17 07:34	1
Sulfate	**530**	**B**	100	29	mg/L			02/20/17 09:26	20
Total Organic Carbon - Duplicates	**15**	**B F1**	1.0	0.27	mg/L			02/20/17 01:49	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**7.5**		5.0	2.5	mg/L			02/16/17 10:23	1
Ammonia	**7.7**		0.40	0.20	mg/L		02/16/17 18:50	02/17/17 00:00	2
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/16/17 10:29	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/17/17 21:53	1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
*	ISTD response or retention time outside acceptable limits
*	LCS or LCSD is outside acceptance limits.
X	Surrogate is outside control limits

GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits
H	Sample was prepped or analyzed beyond the specified holding time
*	RPD of the LCS and LCSD exceeds the control limits

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
V	Serial Dilution exceeds the control limits
F1	MS and/or MSD Recovery is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
F1	MS and/or MSD Recovery is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

GC/MS VOA

Analysis Batch: 372769

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Total/NA	Water	8260B	
500-123929-1 - DL	MW-07-GW-02142017	Total/NA	Water	8260B	
500-123929-2	MW-06-GW-02152017	Total/NA	Water	8260B	
500-123929-3	MW-05-GW-02152017	Total/NA	Water	8260B	
500-123929-4	MW-04-GW-02152017	Total/NA	Water	8260B	
500-123929-4 - DL	MW-04-GW-02152017	Total/NA	Water	8260B	
MB 500-372769/6	Method Blank	Total/NA	Water	8260B	
LCS 500-372769/4	Lab Control Sample	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 372692

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Total/NA	Water	3510C	
500-123929-1 - DL	MW-07-GW-02142017	Total/NA	Water	3510C	
500-123929-2 - DL	MW-06-GW-02152017	Total/NA	Water	3510C	
500-123929-2	MW-06-GW-02152017	Total/NA	Water	3510C	
500-123929-3	MW-05-GW-02152017	Total/NA	Water	3510C	
500-123929-4	MW-04-GW-02152017	Total/NA	Water	3510C	
MB 500-372692/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-372692/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-372692/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 372962

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Total/NA	Water	8270D	372692
500-123929-2	MW-06-GW-02152017	Total/NA	Water	8270D	372692
500-123929-3	MW-05-GW-02152017	Total/NA	Water	8270D	372692
500-123929-4	MW-04-GW-02152017	Total/NA	Water	8270D	372692
MB 500-372692/1-A	Method Blank	Total/NA	Water	8270D	372692
LCS 500-372692/2-A	Lab Control Sample	Total/NA	Water	8270D	372692
LCSD 500-372692/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	372692

Analysis Batch: 373040

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1 - DL	MW-07-GW-02142017	Total/NA	Water	8270D	372692
500-123929-2 - DL	MW-06-GW-02152017	Total/NA	Water	8270D	372692

GC Semi VOA

Prep Batch: 372295

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Total/NA	Water	3510C	
500-123929-2	MW-06-GW-02152017	Total/NA	Water	3510C	
500-123929-3	MW-05-GW-02152017	Total/NA	Water	3510C	
500-123929-4	MW-04-GW-02152017	Total/NA	Water	3510C	
MB 500-372295/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-372295/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 500-372295/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-372295/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

GC Semi VOA (Continued)

Prep Batch: 372295 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 500-372295/5-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 372911

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Total/NA	Water	8081B	372295
500-123929-2	MW-06-GW-02152017	Total/NA	Water	8081B	372295
500-123929-3	MW-05-GW-02152017	Total/NA	Water	8081B	372295
500-123929-4	MW-04-GW-02152017	Total/NA	Water	8081B	372295
MB 500-372295/1-A	Method Blank	Total/NA	Water	8081B	372295
LCS 500-372295/2-A	Lab Control Sample	Total/NA	Water	8081B	372295
LCSD 500-372295/3-A	Lab Control Sample Dup	Total/NA	Water	8081B	372295

Prep Batch: 373161

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1 - RE	MW-07-GW-02142017	Total/NA	Water	3510C	
MB 500-373161/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-373161/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-373161/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 373230

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1 - RE	MW-07-GW-02142017	Total/NA	Water	8081B	373161
MB 500-373161/1-A	Method Blank	Total/NA	Water	8081B	373161
LCS 500-373161/2-A	Lab Control Sample	Total/NA	Water	8081B	373161
LCSD 500-373161/3-A	Lab Control Sample Dup	Total/NA	Water	8081B	373161

Analysis Batch: 373439

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Total/NA	Water	8082A	372295
500-123929-2	MW-06-GW-02152017	Total/NA	Water	8082A	372295
500-123929-3	MW-05-GW-02152017	Total/NA	Water	8082A	372295
500-123929-4	MW-04-GW-02152017	Total/NA	Water	8082A	372295
MB 500-372295/1-A	Method Blank	Total/NA	Water	8082A	372295
LCS 500-372295/4-A	Lab Control Sample	Total/NA	Water	8082A	372295
LCSD 500-372295/5-A	Lab Control Sample Dup	Total/NA	Water	8082A	372295

Metals

Prep Batch: 372283

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Dissolved	Water	3010A	
500-123929-1	MW-07-GW-02142017	Total/NA	Water	3010A	
500-123929-2	MW-06-GW-02152017	Dissolved	Water	3010A	
500-123929-2	MW-06-GW-02152017	Total/NA	Water	3010A	
500-123929-3	MW-05-GW-02152017	Dissolved	Water	3010A	
500-123929-3	MW-05-GW-02152017	Total/NA	Water	3010A	
500-123929-4	MW-04-GW-02152017	Dissolved	Water	3010A	
500-123929-4	MW-04-GW-02152017	Total/NA	Water	3010A	
MB 500-372283/1-A	Method Blank	Total/NA	Water	3010A	
LCS 500-372283/2-A	Lab Control Sample	Total/NA	Water	3010A	

Metals (Continued)

Prep Batch: 372283 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-4 MS	MW-04-GW-02152017	Dissolved	Water	3010A	
500-123929-4 MSD	MW-04-GW-02152017	Dissolved	Water	3010A	
500-123929-4 DU	MW-04-GW-02152017	Dissolved	Water	3010A	

Prep Batch: 372328

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Dissolved	Water	7470A	
500-123929-1	MW-07-GW-02142017	Total/NA	Water	7470A	
500-123929-2	MW-06-GW-02152017	Dissolved	Water	7470A	
500-123929-2	MW-06-GW-02152017	Total/NA	Water	7470A	
500-123929-3	MW-05-GW-02152017	Dissolved	Water	7470A	
500-123929-3	MW-05-GW-02152017	Total/NA	Water	7470A	
500-123929-4	MW-04-GW-02152017	Dissolved	Water	7470A	
500-123929-4	MW-04-GW-02152017	Total/NA	Water	7470A	
MB 500-372328/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-372328/13-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 372530

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Dissolved	Water	7470A	372328
500-123929-1	MW-07-GW-02142017	Total/NA	Water	7470A	372328
500-123929-2	MW-06-GW-02152017	Dissolved	Water	7470A	372328
500-123929-2	MW-06-GW-02152017	Total/NA	Water	7470A	372328
500-123929-3	MW-05-GW-02152017	Dissolved	Water	7470A	372328
500-123929-3	MW-05-GW-02152017	Total/NA	Water	7470A	372328
500-123929-4	MW-04-GW-02152017	Dissolved	Water	7470A	372328
500-123929-4	MW-04-GW-02152017	Total/NA	Water	7470A	372328
MB 500-372328/12-A	Method Blank	Total/NA	Water	7470A	372328
LCS 500-372328/13-A	Lab Control Sample	Total/NA	Water	7470A	372328

Analysis Batch: 372869

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Dissolved	Water	6010C	372283
500-123929-1	MW-07-GW-02142017	Total/NA	Water	6010C	372283
500-123929-2	MW-06-GW-02152017	Dissolved	Water	6010C	372283
500-123929-2	MW-06-GW-02152017	Total/NA	Water	6010C	372283
500-123929-3	MW-05-GW-02152017	Dissolved	Water	6010C	372283
500-123929-3	MW-05-GW-02152017	Total/NA	Water	6010C	372283
500-123929-4	MW-04-GW-02152017	Dissolved	Water	6010C	372283
500-123929-4	MW-04-GW-02152017	Total/NA	Water	6010C	372283
MB 500-372283/1-A	Method Blank	Total/NA	Water	6010C	372283
LCS 500-372283/2-A	Lab Control Sample	Total/NA	Water	6010C	372283
500-123929-4 MS	MW-04-GW-02152017	Dissolved	Water	6010C	372283
500-123929-4 MSD	MW-04-GW-02152017	Dissolved	Water	6010C	372283
500-123929-4 DU	MW-04-GW-02152017	Dissolved	Water	6010C	372283

Analysis Batch: 372957

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Dissolved	Water	6010C	372283
500-123929-1	MW-07-GW-02142017	Total/NA	Water	6010C	372283
500-123929-2	MW-06-GW-02152017	Dissolved	Water	6010C	372283

Metals (Continued)

Analysis Batch: 372957 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-2	MW-06-GW-02152017	Total/NA	Water	6010C	372283

General Chemistry

Analysis Batch: 372324

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Total/NA	Water	SM 2540D	
500-123929-2	MW-06-GW-02152017	Total/NA	Water	SM 2540D	
500-123929-3	MW-05-GW-02152017	Total/NA	Water	SM 2540D	
500-123929-4	MW-04-GW-02152017	Total/NA	Water	SM 2540D	
MB 500-372324/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 500-372324/2	Lab Control Sample	Total/NA	Water	SM 2540D	

Analysis Batch: 372326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Total/NA	Water	SM 4500 NO2 B	
500-123929-2	MW-06-GW-02152017	Total/NA	Water	SM 4500 NO2 B	
500-123929-3	MW-05-GW-02152017	Total/NA	Water	SM 4500 NO2 B	
500-123929-4	MW-04-GW-02152017	Total/NA	Water	SM 4500 NO2 B	
MB 500-372326/3	Method Blank	Total/NA	Water	SM 4500 NO2 B	
LCS 500-372326/4	Lab Control Sample	Total/NA	Water	SM 4500 NO2 B	

Prep Batch: 372417

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Total/NA	Water	SM 4500 NH3 B	
500-123929-2	MW-06-GW-02152017	Total/NA	Water	SM 4500 NH3 B	
500-123929-3	MW-05-GW-02152017	Total/NA	Water	SM 4500 NH3 B	
500-123929-4	MW-04-GW-02152017	Total/NA	Water	SM 4500 NH3 B	
MB 500-372417/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	
LCS 500-372417/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	

Analysis Batch: 372445

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Total/NA	Water	SM 4500 NH3 G	372417
500-123929-2	MW-06-GW-02152017	Total/NA	Water	SM 4500 NH3 G	372417
500-123929-3	MW-05-GW-02152017	Total/NA	Water	SM 4500 NH3 G	372417
500-123929-4	MW-04-GW-02152017	Total/NA	Water	SM 4500 NH3 G	372417
MB 500-372417/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 G	372417
LCS 500-372417/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	372417

Analysis Batch: 372664

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Total/NA	Water	SM 4500 NO3 F	
500-123929-2	MW-06-GW-02152017	Total/NA	Water	SM 4500 NO3 F	
500-123929-3	MW-05-GW-02152017	Total/NA	Water	SM 4500 NO3 F	
500-123929-4	MW-04-GW-02152017	Total/NA	Water	SM 4500 NO3 F	
MB 500-372664/4	Method Blank	Total/NA	Water	SM 4500 NO3 F	
LCS 500-372664/5	Lab Control Sample	Total/NA	Water	SM 4500 NO3 F	

General Chemistry (Continued)

Analysis Batch: 372666

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Total/NA	Water	Nitrate by calc	
500-123929-2	MW-06-GW-02152017	Total/NA	Water	Nitrate by calc	
500-123929-3	MW-05-GW-02152017	Total/NA	Water	Nitrate by calc	
500-123929-4	MW-04-GW-02152017	Total/NA	Water	Nitrate by calc	

Analysis Batch: 372717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Total/NA	Water	9038	
500-123929-2	MW-06-GW-02152017	Total/NA	Water	9038	
500-123929-4	MW-04-GW-02152017	Total/NA	Water	9038	
MB 500-372717/3	Method Blank	Total/NA	Water	9038	
LCS 500-372717/4	Lab Control Sample	Total/NA	Water	9038	

Analysis Batch: 372805

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Total/NA	Water	9060A	
500-123929-2	MW-06-GW-02152017	Total/NA	Water	9060A	
500-123929-3	MW-05-GW-02152017	Total/NA	Water	9060A	
500-123929-4	MW-04-GW-02152017	Total/NA	Water	9060A	
MB 500-372805/4	Method Blank	Total/NA	Water	9060A	
LCS 500-372805/5	Lab Control Sample	Total/NA	Water	9060A	
500-123929-4 MS	MW-04-GW-02152017	Total/NA	Water	9060A	
500-123929-4 MSD	MW-04-GW-02152017	Total/NA	Water	9060A	

Analysis Batch: 372856

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-1	MW-07-GW-02142017	Total/NA	Water	9034	
500-123929-2	MW-06-GW-02152017	Total/NA	Water	9034	
500-123929-3	MW-05-GW-02152017	Total/NA	Water	9034	
500-123929-4	MW-04-GW-02152017	Total/NA	Water	9034	
MB 500-372856/1	Method Blank	Total/NA	Water	9034	
LCS 500-372856/2	Lab Control Sample	Total/NA	Water	9034	

Analysis Batch: 373190

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123929-3	MW-05-GW-02152017	Total/NA	Water	9038	
MB 500-373190/3	Method Blank	Total/NA	Water	9038	
LCS 500-373190/4	Lab Control Sample	Total/NA	Water	9038	
500-123929-3 MS	MW-05-GW-02152017	Total/NA	Water	9038	
500-123929-3 MSD	MW-05-GW-02152017	Total/NA	Water	9038	

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	12DCE	TOL
Lab Sample ID	Client Sample ID	(71-120)	(70-120)	(71-127)	(75-120)
500-123929-1	MW-07-GW-02142017	96	96	110	98
500-123929-1 - DL	MW-07-GW-02142017	100	98	112	95
500-123929-2	MW-06-GW-02152017	97	100	113	97
500-123929-3	MW-05-GW-02152017	103	97	112	96
500-123929-4	MW-04-GW-02152017	101	97	110	97
500-123929-4 - DL	MW-04-GW-02152017	100	96	115	96
LCS 500-372769/4	Lab Control Sample	95	103	115	97
MB 500-372769/6	Method Blank	102	98	115	95

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPH	TBP
Lab Sample ID	Client Sample ID	(30-123)	(30-110)	(33-139)	(20-100)	(42-150)	(30-150)
500-123929-1	MW-07-GW-02142017	66	61	43	73	131	119
500-123929-1 - DL	MW-07-GW-02142017	42	81	59	88	79	61
500-123929-2	MW-06-GW-02152017	55	64	32 X	69	100	96
500-123929-2 - DL	MW-06-GW-02152017	43	68	47	74	92	69
500-123929-3	MW-05-GW-02152017	62	65	63	52	96	99
500-123929-4	MW-04-GW-02152017	39	65	55	54	86	68
LCS 500-372692/2-A	Lab Control Sample	77	70	75	56	87	88
LCSD 500-372692/3-A	Lab Control Sample Dup	83	78	84	61	105	101
MB 500-372692/1-A	Method Blank	79	69	78	57	100	72

Surrogate Legend

FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)
PHL = Phenol-d5 (Surr)
TPH = Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB2	TCX2
Lab Sample ID	Client Sample ID	(30-143)	(30-120)
500-123929-1	MW-07-GW-02142017	7 X	16 X
500-123929-1 - RE	MW-07-GW-02142017	10 X	34
500-123929-2	MW-06-GW-02152017	26 X	58
500-123929-3	MW-05-GW-02152017	70	41
500-123929-4	MW-04-GW-02152017	53	28 X

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB2	TCX2
Lab Sample ID	Client Sample ID	(30-143)	(30-120)
LCS 500-372295/2-A	Lab Control Sample	102	52
LCS 500-373161/2-A	Lab Control Sample	106	74
LCSD 500-372295/3-A	Lab Control Sample Dup	106	48
LCSD 500-373161/3-A	Lab Control Sample Dup	106	73
MB 500-372295/1-A	Method Blank	84	52
MB 500-373161/1-A	Method Blank	114	78

Surrogate Legend

DCB = DCB Decachlorobiphenyl

TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		TCX1	TCX2	DCB1	DCB2
Lab Sample ID	Client Sample ID	(30-127)	(30-127)	(30-150)	(30-150)
500-123929-1	MW-07-GW-02142017	15 X	19 X	10 X	14 X
500-123929-2	MW-06-GW-02152017	35	42	18 X	26 X
500-123929-3	MW-05-GW-02152017		63		90
500-123929-4	MW-04-GW-02152017		60		89
LCS 500-372295/4-A	Lab Control Sample	57	55	84	108
LCSD 500-372295/5-A	Lab Control Sample Dup	56	54	94	124
MB 500-372295/1-A	Method Blank	60	59	75	97

Surrogate Legend

TCX = Tetrachloro-m-xylene

DCB = DCB Decachlorobiphenyl

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-372769/6
Matrix: Water
Analysis Batch: 372769

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			02/20/17 20:49	1
Benzene	<0.50		0.50	0.15	ug/L			02/20/17 20:49	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/20/17 20:49	1
Bromoform	<1.0		1.0	0.48	ug/L			02/20/17 20:49	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/20/17 20:49	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/20/17 20:49	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/20/17 20:49	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			02/20/17 20:49	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/20/17 20:49	1
Chloroform	<2.0		2.0	0.37	ug/L			02/20/17 20:49	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/20/17 20:49	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/20/17 20:49	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/20/17 20:49	1
Cyclohexane	<1.0		1.0	0.49	ug/L			02/20/17 20:49	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/20/17 20:49	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/20/17 20:49	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/20/17 20:49	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			02/20/17 20:49	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/20/17 20:49	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			02/20/17 20:49	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/20/17 20:49	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/20/17 20:49	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/20/17 20:49	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/20/17 20:49	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/20/17 20:49	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			02/20/17 20:49	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/20/17 20:49	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			02/20/17 20:49	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/20/17 20:49	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			02/20/17 20:49	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/20/17 20:49	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			02/20/17 20:49	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/20/17 20:49	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/20/17 20:49	1
Styrene	<1.0		1.0	0.39	ug/L			02/20/17 20:49	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/20/17 20:49	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/20/17 20:49	1
Toluene	<0.50		0.50	0.15	ug/L			02/20/17 20:49	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/20/17 20:49	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/20/17 20:49	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/20/17 20:49	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/20/17 20:49	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/20/17 20:49	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/20/17 20:49	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/20/17 20:49	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/20/17 20:49	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/20/17 20:49	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			02/20/17 20:49	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		71 - 120		02/20/17 20:49	1
Dibromofluoromethane	98		70 - 120		02/20/17 20:49	1
1,2-Dichloroethane-d4 (Surr)	115		71 - 127		02/20/17 20:49	1
Toluene-d8 (Surr)	95		75 - 120		02/20/17 20:49	1

Lab Sample ID: LCS 500-372769/4
Matrix: Water
Analysis Batch: 372769

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	46.8		ug/L		94	37 - 141
Benzene	50.0	48.1		ug/L		96	70 - 125
Bromodichloromethane	50.0	49.5		ug/L		99	70 - 125
Bromoform	50.0	48.4		ug/L		97	54 - 128
Bromomethane	50.0	58.4		ug/L		117	40 - 150
Carbon disulfide	50.0	44.3		ug/L		89	68 - 125
Carbon tetrachloride	50.0	49.9		ug/L		100	70 - 125
Chlorobenzene	50.0	49.5		ug/L		99	70 - 125
Chloroethane	50.0	53.4		ug/L		107	60 - 139
Chloroform	50.0	49.0		ug/L		98	70 - 125
Chloromethane	50.0	50.9		ug/L		102	60 - 140
cis-1,2-Dichloroethene	50.0	47.8		ug/L		96	70 - 125
cis-1,3-Dichloropropene	50.0	49.0		ug/L		98	70 - 125
Cyclohexane	50.0	51.1		ug/L		102	56 - 149
Dibromochloromethane	50.0	50.4		ug/L		101	66 - 125
1,2-Dibromo-3-Chloropropane	50.0	48.7		ug/L		97	51 - 125
1,2-Dibromoethane	50.0	51.8		ug/L		104	70 - 125
1,2-Dichlorobenzene	50.0	50.2		ug/L		100	70 - 125
1,3-Dichlorobenzene	50.0	48.5		ug/L		97	70 - 125
1,4-Dichlorobenzene	50.0	48.2		ug/L		96	70 - 125
Dichlorodifluoromethane	50.0	47.7		ug/L		95	51 - 140
1,1-Dichloroethane	50.0	51.2		ug/L		102	70 - 125
1,2-Dichloroethane	50.0	56.8		ug/L		114	70 - 125
1,1-Dichloroethene	50.0	47.8		ug/L		96	70 - 125
1,2-Dichloropropane	50.0	51.5		ug/L		103	70 - 125
Ethylbenzene	50.0	47.5		ug/L		95	70 - 125
2-Hexanone	50.0	50.1		ug/L		100	49 - 139
Isopropylbenzene	50.0	47.1		ug/L		94	70 - 125
Methyl acetate	250	278		ug/L		111	60 - 148
Methylcyclohexane	50.0	49.1		ug/L		98	70 - 127
Methylene Chloride	50.0	48.9		ug/L		98	68 - 125
Methyl Ethyl Ketone	50.0	49.3		ug/L		99	52 - 142
methyl isobutyl ketone	50.0	51.2		ug/L		102	47 - 140
Methyl tert-butyl ether	50.0	52.7		ug/L		105	67 - 125
Styrene	50.0	49.6		ug/L		99	70 - 125
1,1,2,2-Tetrachloroethane	50.0	50.6		ug/L		101	68 - 125
Tetrachloroethene	50.0	49.7		ug/L		99	70 - 125
Toluene	50.0	49.3		ug/L		99	70 - 125
trans-1,2-Dichloroethene	50.0	46.0		ug/L		92	70 - 125
trans-1,3-Dichloropropene	50.0	49.2		ug/L		98	70 - 125
1,2,4-Trichlorobenzene	50.0	52.9		ug/L		106	64 - 126
1,1,1-Trichloroethane	50.0	49.4		ug/L		99	70 - 125
1,1,2-Trichloroethane	50.0	51.6		ug/L		103	70 - 125
Trichloroethene	50.0	50.5		ug/L		101	70 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-372769/4
Matrix: Water
Analysis Batch: 372769

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	53.5		ug/L		107	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	50.3		ug/L		101	57 - 141
Vinyl chloride	50.0	56.1		ug/L		112	70 - 126
Xylenes, Total	100	95.5		ug/L		96	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*71 - 120*
Dibromofluoromethane	*103*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*115*		*71 - 127*
Toluene-d8 (Surr)	*97*		*75 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-372692/1-A
Matrix: Water
Analysis Batch: 372962

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372692

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.80		0.80	0.25	ug/L		02/20/17 07:25	02/21/17 20:59	1
Acenaphthylene	<0.80		0.80	0.21	ug/L		02/20/17 07:25	02/21/17 20:59	1
Acetophenone	<4.0		4.0	0.53	ug/L		02/20/17 07:25	02/21/17 20:59	1
Anthracene	<0.80		0.80	0.27	ug/L		02/20/17 07:25	02/21/17 20:59	1
Benzo[a]anthracene	<0.16		0.16	0.045	ug/L		02/20/17 07:25	02/21/17 20:59	1
Benzo[a]pyrene	<0.16		0.16	0.079	ug/L		02/20/17 07:25	02/21/17 20:59	1
Benzo[b]fluoranthene	<0.16		0.16	0.065	ug/L		02/20/17 07:25	02/21/17 20:59	1
Benzo[g,h,i]perylene	<0.80		0.80	0.30	ug/L		02/20/17 07:25	02/21/17 20:59	1
Benzo[k]fluoranthene	<0.16		0.16	0.051	ug/L		02/20/17 07:25	02/21/17 20:59	1
Bis(2-chloroethoxy)methane	<1.6		1.6	0.23	ug/L		02/20/17 07:25	02/21/17 20:59	1
Bis(2-chloroethyl)ether	<1.6		1.6	0.23	ug/L		02/20/17 07:25	02/21/17 20:59	1
Bis(2-ethylhexyl) phthalate	<8.0		8.0	1.4	ug/L		02/20/17 07:25	02/21/17 20:59	1
4-Bromophenyl phenyl ether	<4.0		4.0	0.43	ug/L		02/20/17 07:25	02/21/17 20:59	1
Butyl benzyl phthalate	<1.6		1.6	0.38	ug/L		02/20/17 07:25	02/21/17 20:59	1
Carbazole	<4.0		4.0	0.28	ug/L		02/20/17 07:25	02/21/17 20:59	1
4-Chloroaniline	<8.0		8.0	1.6	ug/L		02/20/17 07:25	02/21/17 20:59	1
4-Chloro-3-methylphenol	<8.0		8.0	1.8	ug/L		02/20/17 07:25	02/21/17 20:59	1
2-Chloronaphthalene	<1.6		1.6	0.19	ug/L		02/20/17 07:25	02/21/17 20:59	1
2-Chlorophenol	<4.0		4.0	0.45	ug/L		02/20/17 07:25	02/21/17 20:59	1
4-Chlorophenyl phenyl ether	<4.0		4.0	0.51	ug/L		02/20/17 07:25	02/21/17 20:59	1
Chrysene	<0.16		0.16	0.055	ug/L		02/20/17 07:25	02/21/17 20:59	1
Dibenz(a,h)anthracene	<0.24		0.24	0.041	ug/L		02/20/17 07:25	02/21/17 20:59	1
Dibenzofuran	<1.6		1.6	0.21	ug/L		02/20/17 07:25	02/21/17 20:59	1
3,3'-Dichlorobenzidine	<4.0		4.0	1.4	ug/L		02/20/17 07:25	02/21/17 20:59	1
2,4-Dichlorophenol	<8.0		8.0	2.1	ug/L		02/20/17 07:25	02/21/17 20:59	1
Diethyl phthalate	<1.6		1.6	0.29	ug/L		02/20/17 07:25	02/21/17 20:59	1
2,4-Dimethylphenol	<8.0		8.0	1.4	ug/L		02/20/17 07:25	02/21/17 20:59	1
Dimethyl phthalate	<1.6		1.6	0.25	ug/L		02/20/17 07:25	02/21/17 20:59	1
Di-n-butyl phthalate	<4.0		4.0	0.58	ug/L		02/20/17 07:25	02/21/17 20:59	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-372692/1-A
Matrix: Water
Analysis Batch: 372962

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372692

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,6-Dinitro-2-methylphenol	<16		16	4.7	ug/L		02/20/17 07:25	02/21/17 20:59	1
2,4-Dinitrophenol	<16		16	6.9	ug/L		02/20/17 07:25	02/21/17 20:59	1
2,4-Dinitrotoluene	<0.80		0.80	0.20	ug/L		02/20/17 07:25	02/21/17 20:59	1
2,6-Dinitrotoluene	<0.80		0.80	0.059	ug/L		02/20/17 07:25	02/21/17 20:59	1
Di-n-octyl phthalate	<8.0		8.0	0.84	ug/L		02/20/17 07:25	02/21/17 20:59	1
Fluoranthene	<0.80		0.80	0.36	ug/L		02/20/17 07:25	02/21/17 20:59	1
Fluorene	<0.80		0.80	0.20	ug/L		02/20/17 07:25	02/21/17 20:59	1
Hexachlorobenzene	<0.40		0.40	0.064	ug/L		02/20/17 07:25	02/21/17 20:59	1
Hexachlorobutadiene	<4.0		4.0	0.41	ug/L		02/20/17 07:25	02/21/17 20:59	1
Hexachlorocyclopentadiene	<16		16	5.1	ug/L		02/20/17 07:25	02/21/17 20:59	1
Hexachloroethane	<4.0		4.0	0.48	ug/L		02/20/17 07:25	02/21/17 20:59	1
Indeno[1,2,3-cd]pyrene	<0.16		0.16	0.060	ug/L		02/20/17 07:25	02/21/17 20:59	1
Isophorone	<1.6		1.6	0.30	ug/L		02/20/17 07:25	02/21/17 20:59	1
2-Methylnaphthalene	<1.6		1.6	0.052	ug/L		02/20/17 07:25	02/21/17 20:59	1
2-Methylphenol	<1.6		1.6	0.24	ug/L		02/20/17 07:25	02/21/17 20:59	1
3 & 4 Methylphenol	<1.6		1.6	0.36	ug/L		02/20/17 07:25	02/21/17 20:59	1
Naphthalene	<0.80		0.80	0.25	ug/L		02/20/17 07:25	02/21/17 20:59	1
2-Nitroaniline	<4.0		4.0	1.0	ug/L		02/20/17 07:25	02/21/17 20:59	1
3-Nitroaniline	<8.0		8.0	1.4	ug/L		02/20/17 07:25	02/21/17 20:59	1
4-Nitroaniline	<8.0		8.0	1.3	ug/L		02/20/17 07:25	02/21/17 20:59	1
Nitrobenzene	<0.80		0.80	0.36	ug/L		02/20/17 07:25	02/21/17 20:59	1
2-Nitrophenol	<8.0		8.0	2.0	ug/L		02/20/17 07:25	02/21/17 20:59	1
4-Nitrophenol	<16		16	5.9	ug/L		02/20/17 07:25	02/21/17 20:59	1
N-Nitrosodi-n-propylamine	<0.40		0.40	0.12	ug/L		02/20/17 07:25	02/21/17 20:59	1
N-Nitrosodiphenylamine	<0.80		0.80	0.30	ug/L		02/20/17 07:25	02/21/17 20:59	1
2,2'-oxybis[1-chloropropane]	<1.6		1.6	0.30	ug/L		02/20/17 07:25	02/21/17 20:59	1
Pentachlorophenol	<16		16	3.2	ug/L		02/20/17 07:25	02/21/17 20:59	1
Phenanthrene	<0.80		0.80	0.24	ug/L		02/20/17 07:25	02/21/17 20:59	1
Phenol	<4.0		4.0	0.54	ug/L		02/20/17 07:25	02/21/17 20:59	1
Pyrene	<0.80		0.80	0.34	ug/L		02/20/17 07:25	02/21/17 20:59	1
2,4,5-Trichlorophenol	<8.0		8.0	2.1	ug/L		02/20/17 07:25	02/21/17 20:59	1
2,4,6-Trichlorophenol	<4.0		4.0	0.57	ug/L		02/20/17 07:25	02/21/17 20:59	1
Benzaldehyde	<32	^	32	12	ug/L		02/20/17 07:25	02/21/17 20:59	1
Caprolactam	<8.0		8.0	1.2	ug/L		02/20/17 07:25	02/21/17 20:59	1
Atrazine	<4.0		4.0	0.50	ug/L		02/20/17 07:25	02/21/17 20:59	1
1,1'-Biphenyl	<4.0		4.0	0.29	ug/L		02/20/17 07:25	02/21/17 20:59	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*79*		*30 - 123*	*02/20/17 07:25*	*02/21/17 20:59*	*1*
2-Fluorophenol (Surr)	*69*		*30 - 110*	*02/20/17 07:25*	*02/21/17 20:59*	*1*
Nitrobenzene-d5 (Surr)	*78*		*33 - 139*	*02/20/17 07:25*	*02/21/17 20:59*	*1*
Phenol-d5 (Surr)	*57*		*20 - 100*	*02/20/17 07:25*	*02/21/17 20:59*	*1*
Terphenyl-d14 (Surr)	*100*		*42 - 150*	*02/20/17 07:25*	*02/21/17 20:59*	*1*
2,4,6-Tribromophenol (Surr)	*72*		*30 - 150*	*02/20/17 07:25*	*02/21/17 20:59*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-372692/2-A
Matrix: Water
Analysis Batch: 372962

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372692

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	36.0	27.7		ug/L		77	41 - 112
Acenaphthylene	36.0	28.2		ug/L		78	48 - 110
Acetophenone	36.0	25.9		ug/L		72	54 - 116
Anthracene	36.0	27.9		ug/L		78	65 - 118
Benzo[a]anthracene	36.0	29.7		ug/L		83	69 - 121
Benzo[a]pyrene	36.0	31.4		ug/L		87	69 - 130
Benzo[b]fluoranthene	36.0	33.6		ug/L		93	66 - 133
Benzo[g,h,i]perylene	36.0	31.0		ug/L		86	47 - 145
Benzo[k]fluoranthene	36.0	32.7		ug/L		91	64 - 134
Bis(2-chloroethoxy)methane	36.0	27.4		ug/L		76	55 - 115
Bis(2-chloroethyl)ether	36.0	27.1		ug/L		75	46 - 110
Bis(2-ethylhexyl) phthalate	36.0	33.3		ug/L		93	60 - 132
4-Bromophenyl phenyl ether	36.0	26.8		ug/L		74	60 - 124
Butyl benzyl phthalate	36.0	31.0		ug/L		86	63 - 127
Carbazole	36.0	46.5		ug/L		129	71 - 132
4-Chloroaniline	36.0	26.7		ug/L		74	15 - 125
4-Chloro-3-methylphenol	36.0	28.5		ug/L		79	63 - 120
2-Chloronaphthalene	36.0	26.9		ug/L		75	38 - 110
2-Chlorophenol	36.0	25.8		ug/L		72	49 - 110
4-Chlorophenyl phenyl ether	36.0	27.2		ug/L		76	55 - 115
Chrysene	36.0	29.2		ug/L		81	70 - 126
Dibenz(a,h)anthracene	36.0	30.7		ug/L		85	59 - 145
Dibenzofuran	36.0	27.7		ug/L		77	54 - 111
3,3'-Dichlorobenzidine	36.0	39.2		ug/L		109	57 - 145
2,4-Dichlorophenol	36.0	27.2		ug/L		76	53 - 123
Diethyl phthalate	36.0	30.1		ug/L		84	64 - 126
2,4-Dimethylphenol	36.0	22.5		ug/L		62	42 - 115
Dimethyl phthalate	36.0	31.3		ug/L		87	66 - 120
Di-n-butyl phthalate	36.0	30.6		ug/L		85	67 - 125
4,6-Dinitro-2-methylphenol	72.0	63.9		ug/L		89	34 - 152
2,4-Dinitrophenol	72.0	62.6		ug/L		87	20 - 140
2,4-Dinitrotoluene	36.0	31.7		ug/L		88	67 - 131
2,6-Dinitrotoluene	36.0	32.1		ug/L		89	66 - 125
Di-n-octyl phthalate	36.0	33.7		ug/L		94	63 - 133
Fluoranthene	36.0	28.8		ug/L		80	68 - 127
Fluorene	36.0	27.5		ug/L		76	54 - 113
Hexachlorobenzene	36.0	26.3		ug/L		73	63 - 127
Hexachlorobutadiene	36.0	17.4		ug/L		48	20 - 110
Hexachlorocyclopentadiene	36.0	14.9	J	ug/L		42	10 - 110
Hexachloroethane	36.0	18.7		ug/L		52	20 - 110
Indeno[1,2,3-cd]pyrene	36.0	30.1		ug/L		84	52 - 150
Isophorone	36.0	26.9		ug/L		75	55 - 120
2-Methylnaphthalene	36.0	23.3		ug/L		65	32 - 110
2-Methylphenol	36.0	25.3		ug/L		70	49 - 113
3 & 4 Methylphenol	36.0	25.2		ug/L		70	49 - 114
Naphthalene	36.0	23.3		ug/L		65	32 - 110
2-Nitroaniline	36.0	31.1		ug/L		86	61 - 126
3-Nitroaniline	36.0	34.1		ug/L		95	42 - 134

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-372692/2-A
Matrix: Water
Analysis Batch: 372962

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372692

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
4-Nitroaniline	36.0	43.4		ug/L		121	40 - 142
Nitrobenzene	36.0	26.3		ug/L		73	49 - 116
2-Nitrophenol	36.0	28.3		ug/L		79	51 - 120
4-Nitrophenol	72.0	39.2		ug/L		54	21 - 110
N-Nitrosodi-n-propylamine	36.0	25.8		ug/L		72	52 - 122
N-Nitrosodiphenylamine	36.0	29.9		ug/L		83	63 - 117
2,2'-oxybis[1-chloropropane]	36.0	23.1		ug/L		64	34 - 110
Pentachlorophenol	72.0	49.0		ug/L		68	29 - 138
Phenanthrene	36.0	28.2		ug/L		78	63 - 121
Phenol	36.0	21.6		ug/L		60	33 - 100
Pyrene	36.0	28.5		ug/L		79	65 - 122
2,4,5-Trichlorophenol	36.0	30.0		ug/L		83	63 - 121
2,4,6-Trichlorophenol	36.0	30.4		ug/L		84	61 - 120
Caprolactam	36.0	17.8		ug/L		49	25 - 100
Atrazine	36.0	29.7		ug/L		82	57 - 128
1,1'-Biphenyl	36.0	28.0		ug/L		78	42 - 110

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*77*		*30 - 123*
2-Fluorophenol (Surr)	*70*		*30 - 110*
Nitrobenzene-d5 (Surr)	*75*		*33 - 139*
Phenol-d5 (Surr)	*56*		*20 - 100*
Terphenyl-d14 (Surr)	*87*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*88*		*30 - 150*

Lab Sample ID: LCSD 500-372692/3-A
Matrix: Water
Analysis Batch: 372962

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 372692

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	32.0	28.2		ug/L		88	41 - 112	2	20
Acenaphthylene	32.0	28.2		ug/L		88	48 - 110	0	20
Acetophenone	32.0	26.0		ug/L		81	54 - 116	1	20
Anthracene	32.0	28.8		ug/L		90	65 - 118	3	20
Benzo[a]anthracene	32.0	31.0		ug/L		97	69 - 121	4	20
Benzo[a]pyrene	32.0	32.3		ug/L		101	69 - 130	3	20
Benzo[b]fluoranthene	32.0	35.0		ug/L		109	66 - 133	4	20
Benzo[g,h,i]perylene	32.0	30.7		ug/L		96	47 - 145	1	20
Benzo[k]fluoranthene	32.0	32.9		ug/L		103	64 - 134	1	20
Bis(2-chloroethoxy)methane	32.0	27.9		ug/L		87	55 - 115	2	20
Bis(2-chloroethyl)ether	32.0	27.3		ug/L		85	46 - 110	1	20
Bis(2-ethylhexyl) phthalate	32.0	34.7		ug/L		108	60 - 132	4	20
4-Bromophenyl phenyl ether	32.0	29.0		ug/L		91	60 - 124	8	20
Butyl benzyl phthalate	32.0	34.2		ug/L		107	63 - 127	10	20
Carbazole	32.0	46.8	*	ug/L		146	71 - 132	1	20
4-Chloroaniline	32.0	27.2		ug/L		85	15 - 125	2	20
4-Chloro-3-methylphenol	32.0	29.1		ug/L		91	63 - 120	2	20
2-Chloronaphthalene	32.0	26.7		ug/L		83	38 - 110	1	20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 500-372692/3-A
Matrix: Water
Analysis Batch: 372962

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 372692

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2-Chlorophenol	32.0	25.8		ug/L		81	49 - 110	0	20
4-Chlorophenyl phenyl ether	32.0	28.8		ug/L		90	55 - 115	5	20
Chrysene	32.0	30.8		ug/L		96	70 - 126	5	20
Dibenz(a,h)anthracene	32.0	31.4		ug/L		98	59 - 145	2	20
Dibenzofuran	32.0	28.7		ug/L		90	54 - 111	3	20
3,3'-Dichlorobenzidine	32.0	40.9		ug/L		128	57 - 145	4	20
2,4-Dichlorophenol	32.0	27.4		ug/L		86	53 - 123	1	20
Diethyl phthalate	32.0	30.1		ug/L		94	64 - 126	0	20
2,4-Dimethylphenol	32.0	21.6		ug/L		67	42 - 115	4	20
Dimethyl phthalate	32.0	30.5		ug/L		95	66 - 120	3	20
Di-n-butyl phthalate	32.0	30.8		ug/L		96	67 - 125	1	20
4,6-Dinitro-2-methylphenol	64.0	66.9		ug/L		105	34 - 152	5	20
2,4-Dinitrophenol	64.0	64.3		ug/L		101	20 - 140	3	20
2,4-Dinitrotoluene	32.0	32.5		ug/L		102	67 - 131	3	20
2,6-Dinitrotoluene	32.0	31.5		ug/L		99	66 - 125	2	20
Di-n-octyl phthalate	32.0	32.5		ug/L		102	63 - 133	3	20
Fluoranthene	32.0	29.4		ug/L		92	68 - 127	2	20
Fluorene	32.0	28.5		ug/L		89	54 - 113	3	20
Hexachlorobenzene	32.0	27.9		ug/L		87	63 - 127	6	20
Hexachlorobutadiene	32.0	19.6		ug/L		61	20 - 110	12	20
Hexachlorocyclopentadiene	32.0	15.0	J	ug/L		47	10 - 110	0	20
Hexachloroethane	32.0	20.4		ug/L		64	20 - 110	9	20
Indeno[1,2,3-cd]pyrene	32.0	31.2		ug/L		98	52 - 150	4	20
Isophorone	32.0	27.6		ug/L		86	55 - 120	3	20
2-Methylnaphthalene	32.0	25.0		ug/L		78	32 - 110	7	20
2-Methylphenol	32.0	25.1		ug/L		79	49 - 113	1	20
3 & 4 Methylphenol	32.0	25.1		ug/L		79	49 - 114	0	20
Naphthalene	32.0	24.4		ug/L		76	32 - 110	5	20
2-Nitroaniline	32.0	30.3		ug/L		95	61 - 126	3	20
3-Nitroaniline	32.0	36.4		ug/L		114	42 - 134	7	20
4-Nitroaniline	32.0	44.1		ug/L		138	40 - 142	2	20
Nitrobenzene	32.0	26.2		ug/L		82	49 - 116	0	20
2-Nitrophenol	32.0	29.6		ug/L		92	51 - 120	4	20
4-Nitrophenol	64.0	37.9		ug/L		59	21 - 110	3	20
N-Nitrosodi-n-propylamine	32.0	25.7		ug/L		80	52 - 122	0	20
N-Nitrosodiphenylamine	32.0	30.7		ug/L		96	63 - 117	3	20
2,2'-oxybis[1-chloropropane]	32.0	22.9		ug/L		72	34 - 110	1	20
Pentachlorophenol	64.0	52.6		ug/L		82	29 - 138	7	20
Phenanthrene	32.0	28.8		ug/L		90	63 - 121	2	20
Phenol	32.0	21.4		ug/L		67	33 - 100	1	20
Pyrene	32.0	31.2		ug/L		98	65 - 122	9	20
2,4,5-Trichlorophenol	32.0	29.1		ug/L		91	63 - 121	3	20
2,4,6-Trichlorophenol	32.0	29.5		ug/L		92	61 - 120	3	20
Caprolactam	32.0	17.9		ug/L		56	25 - 100	1	20
Atrazine	32.0	31.1		ug/L		97	57 - 128	5	20
1,1'-Biphenyl	32.0	27.6		ug/L		86	42 - 110	2	20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 500-372692/3-A
Matrix: Water
Analysis Batch: 372962

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 372692

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl	*83*		*30 - 123*
2-Fluorophenol (Surr)	*78*		*30 - 110*
Nitrobenzene-d5 (Surr)	*84*		*33 - 139*
Phenol-d5 (Surr)	*61*		*20 - 100*
Terphenyl-d14 (Surr)	*105*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*101*		*30 - 150*

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 500-372295/1-A
Matrix: Water
Analysis Batch: 372911

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372295

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.040		0.040	0.0053	ug/L		02/16/17 09:00	02/21/17 13:50	1
alpha-BHC	<0.040		0.040	0.0026	ug/L		02/16/17 09:00	02/21/17 13:50	1
alpha-Chlordane	<0.040		0.040	0.0044	ug/L		02/16/17 09:00	02/21/17 13:50	1
beta-BHC	<0.040		0.040	0.010	ug/L		02/16/17 09:00	02/21/17 13:50	1
4,4'-DDD	<0.040		0.040	0.013	ug/L		02/16/17 09:00	02/21/17 13:50	1
4,4'-DDE	<0.040		0.040	0.0038	ug/L		02/16/17 09:00	02/21/17 13:50	1
4,4'-DDT	<0.040		0.040	0.0032	ug/L		02/16/17 09:00	02/21/17 13:50	1
delta-BHC	<0.040		0.040	0.010	ug/L		02/16/17 09:00	02/21/17 13:50	1
Dieldrin	<0.040		0.040	0.013	ug/L		02/16/17 09:00	02/21/17 13:50	1
Endosulfan I	<0.040		0.040	0.0041	ug/L		02/16/17 09:00	02/21/17 13:50	1
Endosulfan II	<0.040		0.040	0.0028	ug/L		02/16/17 09:00	02/21/17 13:50	1
Endosulfan sulfate	<0.040		0.040	0.012	ug/L		02/16/17 09:00	02/21/17 13:50	1
Endrin	<0.040		0.040	0.014	ug/L		02/16/17 09:00	02/21/17 13:50	1
Endrin aldehyde	<0.040		0.040	0.0082	ug/L		02/16/17 09:00	02/21/17 13:50	1
Endrin ketone	<0.040		0.040	0.017	ug/L		02/16/17 09:00	02/21/17 13:50	1
gamma-BHC (Lindane)	<0.040		0.040	0.0056	ug/L		02/16/17 09:00	02/21/17 13:50	1
gamma-Chlordane	<0.040		0.040	0.0072	ug/L		02/16/17 09:00	02/21/17 13:50	1
Heptachlor	<0.040		0.040	0.014	ug/L		02/16/17 09:00	02/21/17 13:50	1
Heptachlor epoxide	<0.040		0.040	0.014	ug/L		02/16/17 09:00	02/21/17 13:50	1
Methoxychlor	<0.080		0.080	0.023	ug/L		02/16/17 09:00	02/21/17 13:50	1
Toxaphene	<0.40		0.40	0.20	ug/L		02/16/17 09:00	02/21/17 13:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*84*		*30 - 143*	*02/16/17 09:00*	*02/21/17 13:50*	*1*
Tetrachloro-m-xylene	*52*		*30 - 120*	*02/16/17 09:00*	*02/21/17 13:50*	*1*

Lab Sample ID: LCS 500-372295/2-A
Matrix: Water
Analysis Batch: 372911

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372295

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.320	0.225		ug/L		70	40 - 130
alpha-BHC	0.320	0.299		ug/L		93	70 - 130

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 500-372295/2-A
Matrix: Water
Analysis Batch: 372911

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372295

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
alpha-Chlordane	0.320	0.292		ug/L		91	70 - 130
beta-BHC	0.320	0.299		ug/L		93	70 - 130
4,4'-DDD	0.320	0.339		ug/L		106	70 - 130
4,4'-DDE	0.320	0.294		ug/L		92	56 - 130
4,4'-DDT	0.320	0.353		ug/L		110	50 - 137
delta-BHC	0.320	0.314		ug/L		98	70 - 130
Dieldrin	0.320	0.331		ug/L		103	70 - 130
Endosulfan I	0.320	0.154		ug/L		48	40 - 130
Endosulfan II	0.320	0.211		ug/L		66	49 - 130
Endosulfan sulfate	0.320	0.353		ug/L		110	70 - 130
Endrin	0.320	0.340		ug/L		106	69 - 130
Endrin aldehyde	0.320	0.255		ug/L		80	63 - 130
Endrin ketone	0.320	0.369		ug/L		115	54 - 141
gamma-BHC (Lindane)	0.320	0.316		ug/L		99	70 - 130
gamma-Chlordane	0.320	0.318		ug/L		99	63 - 130
Heptachlor	0.320	0.273		ug/L		85	40 - 130
Heptachlor epoxide	0.320	0.400		ug/L		125	70 - 130
Methoxychlor	0.320	0.390		ug/L		122	47 - 153

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*102*		*30 - 143*
Tetrachloro-m-xylene	*52*		*30 - 120*

Lab Sample ID: LCSD 500-372295/3-A
Matrix: Water
Analysis Batch: 372911

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 372295

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	0.320	0.198		ug/L		62	40 - 130	13	20
alpha-BHC	0.320	0.293		ug/L		91	70 - 130	2	20
alpha-Chlordane	0.320	0.286		ug/L		89	70 - 130	2	20
beta-BHC	0.320	0.296		ug/L		93	70 - 130	1	20
4,4'-DDD	0.320	0.339		ug/L		106	70 - 130	0	20
4,4'-DDE	0.320	0.275		ug/L		86	56 - 130	6	20
4,4'-DDT	0.320	0.348		ug/L		109	50 - 137	1	20
delta-BHC	0.320	0.314		ug/L		98	70 - 130	0	20
Dieldrin	0.320	0.322		ug/L		101	70 - 130	3	20
Endosulfan I	0.320	0.153		ug/L		48	40 - 130	1	20
Endosulfan II	0.320	0.205		ug/L		64	49 - 130	3	20
Endosulfan sulfate	0.320	0.356		ug/L		111	70 - 130	1	20
Endrin	0.320	0.357		ug/L		111	69 - 130	5	20
Endrin aldehyde	0.320	0.251		ug/L		78	63 - 130	1	20
Endrin ketone	0.320	0.375		ug/L		117	54 - 141	2	20
gamma-BHC (Lindane)	0.320	0.313		ug/L		98	70 - 130	1	20
gamma-Chlordane	0.320	0.285		ug/L		89	63 - 130	11	20
Heptachlor	0.320	0.258		ug/L		80	40 - 130	6	20
Heptachlor epoxide	0.320	0.348		ug/L		109	70 - 130	14	20
Methoxychlor	0.320	0.387		ug/L		121	47 - 153	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
DCB Decachlorobiphenyl	106		30 - 143
Tetrachloro-m-xylene	48		30 - 120

Lab Sample ID: MB 500-373161/1-A
Matrix: Water
Analysis Batch: 373230

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 373161

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.040		0.040	0.0053	ug/L		02/22/17 17:59	02/23/17 11:55	1
alpha-BHC	<0.040		0.040	0.0026	ug/L		02/22/17 17:59	02/23/17 11:55	1
alpha-Chlordane	<0.040		0.040	0.0044	ug/L		02/22/17 17:59	02/23/17 11:55	1
beta-BHC	<0.040		0.040	0.010	ug/L		02/22/17 17:59	02/23/17 11:55	1
4,4'-DDD	<0.040		0.040	0.013	ug/L		02/22/17 17:59	02/23/17 11:55	1
4,4'-DDE	<0.040		0.040	0.0038	ug/L		02/22/17 17:59	02/23/17 11:55	1
4,4'-DDT	<0.040		0.040	0.0032	ug/L		02/22/17 17:59	02/23/17 11:55	1
delta-BHC	<0.040		0.040	0.010	ug/L		02/22/17 17:59	02/23/17 11:55	1
Dieldrin	<0.040		0.040	0.013	ug/L		02/22/17 17:59	02/23/17 11:55	1
Endosulfan I	<0.040		0.040	0.0041	ug/L		02/22/17 17:59	02/23/17 11:55	1
Endosulfan II	<0.040		0.040	0.0028	ug/L		02/22/17 17:59	02/23/17 11:55	1
Endosulfan sulfate	<0.040		0.040	0.012	ug/L		02/22/17 17:59	02/23/17 11:55	1
Endrin	<0.040		0.040	0.014	ug/L		02/22/17 17:59	02/23/17 11:55	1
Endrin aldehyde	<0.040		0.040	0.0082	ug/L		02/22/17 17:59	02/23/17 11:55	1
Endrin ketone	<0.040		0.040	0.017	ug/L		02/22/17 17:59	02/23/17 11:55	1
gamma-BHC (Lindane)	<0.040		0.040	0.0056	ug/L		02/22/17 17:59	02/23/17 11:55	1
gamma-Chlordane	<0.040		0.040	0.0072	ug/L		02/22/17 17:59	02/23/17 11:55	1
Heptachlor	<0.040		0.040	0.014	ug/L		02/22/17 17:59	02/23/17 11:55	1
Heptachlor epoxide	<0.040		0.040	0.014	ug/L		02/22/17 17:59	02/23/17 11:55	1
Methoxychlor	<0.080		0.080	0.023	ug/L		02/22/17 17:59	02/23/17 11:55	1
Toxaphene	<0.40		0.40	0.20	ug/L		02/22/17 17:59	02/23/17 11:55	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	114		30 - 143	02/22/17 17:59	02/23/17 11:55	1
Tetrachloro-m-xylene	78		30 - 120	02/22/17 17:59	02/23/17 11:55	1

Lab Sample ID: LCS 500-373161/2-A
Matrix: Water
Analysis Batch: 373230

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 373161

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.320	0.279		ug/L		87	40 - 130
alpha-BHC	0.320	0.310		ug/L		97	70 - 130
alpha-Chlordane	0.320	0.316		ug/L		99	70 - 130
beta-BHC	0.320	0.312		ug/L		98	70 - 130
4,4'-DDD	0.320	0.355		ug/L		111	70 - 130
4,4'-DDE	0.320	0.303		ug/L		95	56 - 130
4,4'-DDT	0.320	0.344		ug/L		108	50 - 137
delta-BHC	0.320	0.315		ug/L		99	70 - 130
Dieldrin	0.320	0.338		ug/L		106	70 - 130
Endosulfan I	0.320	0.159		ug/L		50	40 - 130
Endosulfan II	0.320	0.212		ug/L		66	49 - 130
Endosulfan sulfate	0.320	0.369		ug/L		115	70 - 130
Endrin	0.320	0.362		ug/L		113	69 - 130
Endrin aldehyde	0.320	0.275		ug/L		86	63 - 130

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 500-373161/2-A
Matrix: Water
Analysis Batch: 373230

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 373161

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Endrin ketone	0.320	0.389		ug/L		121	54 - 141
gamma-BHC (Lindane)	0.320	0.327		ug/L		102	70 - 130
gamma-Chlordane	0.320	0.323		ug/L		101	63 - 130
Heptachlor	0.320	0.333		ug/L		104	40 - 130
Heptachlor epoxide	0.320	0.361		ug/L		113	70 - 130
Methoxychlor	0.320	0.389		ug/L		122	47 - 153

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*106*		*30 - 143*
Tetrachloro-m-xylene	*74*		*30 - 120*

Lab Sample ID: LCSD 500-373161/3-A
Matrix: Water
Analysis Batch: 373230

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 373161

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	0.320	0.267		ug/L		83	40 - 130	5	20
alpha-BHC	0.320	0.298		ug/L		93	70 - 130	4	20
alpha-Chlordane	0.320	0.305		ug/L		95	70 - 130	4	20
beta-BHC	0.320	0.306		ug/L		96	70 - 130	2	20
4,4'-DDD	0.320	0.339		ug/L		106	70 - 130	5	20
4,4'-DDE	0.320	0.296		ug/L		92	56 - 130	3	20
4,4'-DDT	0.320	0.329		ug/L		103	50 - 137	4	20
delta-BHC	0.320	0.310		ug/L		97	70 - 130	2	20
Dieldrin	0.320	0.331		ug/L		103	70 - 130	2	20
Endosulfan I	0.320	0.157		ug/L		49	40 - 130	2	20
Endosulfan II	0.320	0.205		ug/L		64	49 - 130	3	20
Endosulfan sulfate	0.320	0.368		ug/L		115	70 - 130	0	20
Endrin	0.320	0.343		ug/L		107	69 - 130	6	20
Endrin aldehyde	0.320	0.320		ug/L		100	63 - 130	15	20
Endrin ketone	0.320	0.378		ug/L		118	54 - 141	3	20
gamma-BHC (Lindane)	0.320	0.317		ug/L		99	70 - 130	3	20
gamma-Chlordane	0.320	0.314		ug/L		98	63 - 130	3	20
Heptachlor	0.320	0.324		ug/L		101	40 - 130	3	20
Heptachlor epoxide	0.320	0.347		ug/L		109	70 - 130	4	20
Methoxychlor	0.320	0.410		ug/L		128	47 - 153	5	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*106*		*30 - 143*
Tetrachloro-m-xylene	*73*		*30 - 120*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 500-372295/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373439 — **Prep Batch: 372295**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.40		0.40	0.067	ug/L		02/16/17 09:00	02/24/17 12:09	1
PCB-1016	<0.40		0.40	0.067	ug/L		02/16/17 09:00	02/24/17 12:09	1
PCB-1221	<0.40		0.40	0.20	ug/L		02/16/17 09:00	02/24/17 12:09	1
PCB-1221	<0.40		0.40	0.20	ug/L		02/16/17 09:00	02/24/17 12:09	1
PCB-1232	<0.40		0.40	0.20	ug/L		02/16/17 09:00	02/24/17 12:09	1
PCB-1232	<0.40		0.40	0.20	ug/L		02/16/17 09:00	02/24/17 12:09	1
PCB-1242	<0.40		0.40	0.20	ug/L		02/16/17 09:00	02/24/17 12:09	1
PCB-1242	<0.40		0.40	0.20	ug/L		02/16/17 09:00	02/24/17 12:09	1
PCB-1248	<0.40		0.40	0.20	ug/L		02/16/17 09:00	02/24/17 12:09	1
PCB-1248	<0.40		0.40	0.20	ug/L		02/16/17 09:00	02/24/17 12:09	1
PCB-1254	<0.40		0.40	0.20	ug/L		02/16/17 09:00	02/24/17 12:09	1
PCB-1254	<0.40		0.40	0.20	ug/L		02/16/17 09:00	02/24/17 12:09	1
PCB-1260	<0.40		0.40	0.070	ug/L		02/16/17 09:00	02/24/17 12:09	1
PCB-1260	<0.40		0.40	0.070	ug/L		02/16/17 09:00	02/24/17 12:09	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*60*		*30 - 127*	*02/16/17 09:00*	*02/24/17 12:09*	*1*
Tetrachloro-m-xylene	*59*		*30 - 127*	*02/16/17 09:00*	*02/24/17 12:09*	*1*
DCB Decachlorobiphenyl	*75*		*30 - 150*	*02/16/17 09:00*	*02/24/17 12:09*	*1*
DCB Decachlorobiphenyl	*97*		*30 - 150*	*02/16/17 09:00*	*02/24/17 12:09*	*1*

Lab Sample ID: LCS 500-372295/4-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373439 — **Prep Batch: 372295**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	4.00	3.24		ug/L		81	58 - 121
PCB-1016	4.00	3.33		ug/L		83	58 - 121
PCB-1260	4.00	4.03		ug/L		101	62 - 137
PCB-1260	4.00	4.40		ug/L		110	62 - 137

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*57*		*30 - 127*
Tetrachloro-m-xylene	*55*		*30 - 127*
DCB Decachlorobiphenyl	*84*		*30 - 150*
DCB Decachlorobiphenyl	*108*		*30 - 150*

Lab Sample ID: LCSD 500-372295/5-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373439 — **Prep Batch: 372295**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	4.00	3.32		ug/L		83	58 - 121	2	20
PCB-1016	4.00	3.38		ug/L		85	58 - 121	1	20
PCB-1260	4.00	3.53		ug/L		88	62 - 137	13	20
PCB-1260	4.00	3.58	*	ug/L		90	62 - 137	21	20

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: LCSD 500-372295/5-A
Matrix: Water
Analysis Batch: 373439

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 372295

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*56*		*30 - 127*
Tetrachloro-m-xylene	*54*		*30 - 127*
DCB Decachlorobiphenyl	*94*		*30 - 150*
DCB Decachlorobiphenyl	*124*		*30 - 150*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 500-372283/1-A
Matrix: Water
Analysis Batch: 372869

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372283

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/16/17 07:48	02/20/17 18:28	1
Antimony	<0.020		0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 18:28	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 18:28	1
Barium	<0.010		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 18:28	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 18:28	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 18:28	1
Calcium	<0.20		0.20	0.059	mg/L		02/16/17 07:48	02/20/17 18:28	1
Chromium	<0.010		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 18:28	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 18:28	1
Copper	<0.010		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 18:28	1
Iron	<0.20		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 18:28	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 18:28	1
Magnesium	<0.10		0.10	0.041	mg/L		02/16/17 07:48	02/20/17 18:28	1
Manganese	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 18:28	1
Nickel	<0.010		0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 18:28	1
Potassium	<0.50		0.50	0.16	mg/L		02/16/17 07:48	02/20/17 18:28	1
Selenium	<0.010		0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 18:28	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 18:28	1
Sodium	<1.0		1.0	0.43	mg/L		02/16/17 07:48	02/20/17 18:28	1
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 18:28	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 18:28	1
Zinc	<0.020		0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 18:28	1

Lab Sample ID: LCS 500-372283/2-A
Matrix: Water
Analysis Batch: 372869

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372283

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	2.07		mg/L		104	80 - 120
Antimony	0.500	0.500		mg/L		100	80 - 120
Arsenic	0.100	0.0993		mg/L		99	80 - 120
Barium	2.00	2.09		mg/L		105	80 - 120
Beryllium	0.0500	0.0503		mg/L		101	80 - 120
Cadmium	0.0500	0.0495		mg/L		99	80 - 120
Calcium	10.0	10.3		mg/L		103	80 - 120
Chromium	0.200	0.205		mg/L		102	80 - 120

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 500-372283/2-A
Matrix: Water
Analysis Batch: 372869

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372283

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cobalt	0.500	0.508		mg/L		102	80 - 120
Copper	0.250	0.254		mg/L		102	80 - 120
Iron	1.00	1.06		mg/L		106	80 - 120
Lead	0.100	0.0960		mg/L		96	80 - 120
Magnesium	10.0	9.83		mg/L		98	80 - 120
Manganese	0.500	0.509		mg/L		102	80 - 120
Nickel	0.500	0.505		mg/L		101	80 - 120
Potassium	10.0	10.6		mg/L		106	80 - 120
Selenium	0.100	0.0958		mg/L		96	80 - 120
Silver	0.0500	0.0499		mg/L		100	80 - 120
Sodium	10.0	10.7		mg/L		107	80 - 120
Thallium	0.100	0.0965		mg/L		97	80 - 120
Vanadium	0.500	0.516		mg/L		103	80 - 120
Zinc	0.500	0.499		mg/L		100	80 - 120

Lab Sample ID: 500-123929-4 MS
Matrix: Water
Analysis Batch: 372869

Client Sample ID: MW-04-GW-02152017
Prep Type: Dissolved
Prep Batch: 372283

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	0.064	J	2.00	2.24		mg/L		109	75 - 125
Antimony	<0.020		0.500	0.531		mg/L		106	75 - 125
Arsenic	0.0094	J	0.100	0.118		mg/L		108	75 - 125
Barium	0.036		2.00	2.16		mg/L		106	75 - 125
Beryllium	<0.0040		0.0500	0.0523		mg/L		105	75 - 125
Cadmium	<0.0020		0.0500	0.0529		mg/L		106	75 - 125
Calcium	180	V	10.0	187	4	mg/L		41	75 - 125
Chromium	<0.010		0.200	0.200		mg/L		100	75 - 125
Cobalt	<0.0050		0.500	0.529		mg/L		106	75 - 125
Copper	<0.010		0.250	0.268		mg/L		107	75 - 125
Iron	2.7		1.00	3.64		mg/L		98	75 - 125
Lead	<0.0050		0.100	0.0984		mg/L		98	75 - 125
Magnesium	48	V	10.0	56.5	4	mg/L		87	75 - 125
Manganese	1.3	V	0.500	1.80		mg/L		91	75 - 125
Nickel	0.0056	J	0.500	0.525		mg/L		104	75 - 125
Potassium	16	V	10.0	26.1		mg/L		103	75 - 125
Selenium	<0.010	F1	0.100	0.0745		mg/L		75	75 - 125
Silver	<0.0050		0.0500	0.0548		mg/L		110	75 - 125
Sodium	420	V	10.0	414	4	mg/L		-36	75 - 125
Thallium	<0.010		0.100	0.0922		mg/L		92	75 - 125
Vanadium	<0.0050		0.500	0.534		mg/L		107	75 - 125
Zinc	<0.020		0.500	0.528		mg/L		106	75 - 125

Lab Sample ID: 500-123929-4 MSD
Matrix: Water
Analysis Batch: 372869

Client Sample ID: MW-04-GW-02152017
Prep Type: Dissolved
Prep Batch: 372283

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aluminum	0.064	J	2.00	2.22		mg/L		108	75 - 125	1	20

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 500-123929-4 MSD — **Client Sample ID: MW-04-GW-02152017**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 372869 — **Prep Batch: 372283**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Antimony	<0.020		0.500	0.533		mg/L		107	75 - 125	0	20
Arsenic	0.0094	J	0.100	0.118		mg/L		108	75 - 125	0	20
Barium	0.036		2.00	2.16		mg/L		106	75 - 125	0	20
Beryllium	<0.0040		0.0500	0.0525		mg/L		105	75 - 125	0	20
Cadmium	<0.0020		0.0500	0.0530		mg/L		106	75 - 125	0	20
Calcium	180	V	10.0	186	4	mg/L		27	75 - 125	1	20
Chromium	<0.010		0.200	0.202		mg/L		101	75 - 125	1	20
Cobalt	<0.0050		0.500	0.533		mg/L		107	75 - 125	1	20
Copper	<0.010		0.250	0.269		mg/L		108	75 - 125	0	20
Iron	2.7		1.00	3.60		mg/L		94	75 - 125	1	20
Lead	<0.0050		0.100	0.100		mg/L		100	75 - 125	2	20
Magnesium	48	V	10.0	56.1	4	mg/L		83	75 - 125	1	20
Manganese	1.3	V	0.500	1.79		mg/L		89	75 - 125	1	20
Nickel	0.0056	J	0.500	0.529		mg/L		105	75 - 125	1	20
Potassium	16	V	10.0	26.0		mg/L		101	75 - 125	1	20
Selenium	<0.010	F1	0.100	0.0706	F1	mg/L		71	75 - 125	5	20
Silver	<0.0050		0.0500	0.0557		mg/L		111	75 - 125	2	20
Sodium	420	V	10.0	416	4	mg/L		-20	75 - 125	0	20
Thallium	<0.010		0.100	0.0922		mg/L		92	75 - 125	0	20
Vanadium	<0.0050		0.500	0.540		mg/L		108	75 - 125	1	20
Zinc	<0.020		0.500	0.532		mg/L		106	75 - 125	1	20

Lab Sample ID: 500-123929-4 DU — **Client Sample ID: MW-04-GW-02152017**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 372869 — **Prep Batch: 372283**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Aluminum	0.064	J	<0.20		mg/L		NC	20
Antimony	<0.020		<0.020		mg/L		NC	20
Arsenic	0.0094	J	0.00900	J	mg/L		4	20
Barium	0.036		0.0374		mg/L		3	20
Beryllium	<0.0040		<0.0040		mg/L		NC	20
Cadmium	<0.0020		<0.0020		mg/L		NC	20
Calcium	180	V	186		mg/L		2	20
Chromium	<0.010		<0.010		mg/L		NC	20
Cobalt	<0.0050		<0.0050		mg/L		NC	20
Copper	<0.010		<0.010		mg/L		NC	20
Iron	2.7		2.70		mg/L		2	20
Lead	<0.0050		<0.0050		mg/L		NC	20
Magnesium	48	V	48.8		mg/L		2	20
Manganese	1.3	V	1.37		mg/L		2	20
Nickel	0.0056	J	0.00551	J	mg/L		2	20
Potassium	16	V	16.1		mg/L		2	20
Selenium	<0.010	F1	<0.010		mg/L		NC	20
Silver	<0.0050		<0.0050		mg/L		NC	20
Sodium	420	V	427		mg/L		2	20
Thallium	<0.010		<0.010		mg/L		NC	20
Vanadium	<0.0050		<0.0050		mg/L		NC	20

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 500-123929-4 DU — **Client Sample ID: MW-04-GW-02152017**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 372869 — **Prep Batch: 372283**

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Zinc	<0.020			<0.020		mg/L				NC	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-372328/12-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372530 — **Prep Batch: 372328**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 08:56	1

Lab Sample ID: LCS 500-372328/13-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372530 — **Prep Batch: 372328**

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			0.00200	0.00211		mg/L		105	80 - 120		

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 500-372856/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372856

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 07:01	1

Lab Sample ID: LCS 500-372856/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372856

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfide			6.91	6.81		mg/L		99	80 - 120		

Method: 9038 - Sulfate, Turbidimetric

Lab Sample ID: MB 500-372717/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372717

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	2.06	J	5.0	1.5	mg/L			02/20/17 09:06	1

Lab Sample ID: LCS 500-372717/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372717

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate			20.0	20.2		mg/L		101	80 - 120		

Lab Sample ID: MB 500-373190/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373190

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	3.04	J	5.0	1.5	mg/L			02/23/17 03:27	1

Lab Sample ID: LCS 500-373190/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373190

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	18.7		mg/L		93	80 - 120

Lab Sample ID: 500-123929-3 MS — **Client Sample ID: MW-05-GW-02152017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373190

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	2.9	J B	20.0	23.4		mg/L		103	75 - 125

Lab Sample ID: 500-123929-3 MSD — **Client Sample ID: MW-05-GW-02152017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373190

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	2.9	J B	20.0	25.1		mg/L		111	75 - 125	7	20

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 500-372805/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372805

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	0.287	J	1.0	0.27	mg/L			02/20/17 00:10	1

Lab Sample ID: LCS 500-372805/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372805

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	10.0	11.1		mg/L		111	80 - 120
TOC Result 1	10.0	11.0		mg/L		110	80 - 120
TOC Result 2	10.0	11.1		mg/L		111	80 - 120

Lab Sample ID: 500-123929-4 MS — **Client Sample ID: MW-04-GW-02152017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372805

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	15	B F1	10.0	21.5	F1	mg/L		62	75 - 125
TOC Result 1	15	B F1	10.0	21.5	F1	mg/L		68	75 - 125
TOC Result 2	16	F1	10.0	21.5	F1	mg/L		57	75 - 125

Method: 9060A - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: 500-123929-4 MSD — **Client Sample ID: MW-04-GW-02152017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372805

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates	15	B F1	10.0	21.2	F1	mg/L		60	75 - 125	1	20
TOC Result 1	15	B F1	10.0	21.2	F1	mg/L		65	75 - 125	1	20
TOC Result 2	16	F1	10.0	21.2	F1	mg/L		55	75 - 125	1	20

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 500-372324/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372324

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.0		5.0	2.5	mg/L			02/16/17 09:50	1

Lab Sample ID: LCS 500-372324/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372324

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	200	185		mg/L		93	80 - 120

Method: SM 4500 NH3 G - Ammonia

Lab Sample ID: MB 500-372417/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372445 — **Prep Batch: 372417**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.20		0.20	0.10	mg/L		02/16/17 18:50	02/16/17 22:06	1

Lab Sample ID: LCS 500-372417/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372445 — **Prep Batch: 372417**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.50	2.44		mg/L		98	80 - 120

Method: SM 4500 NO2 B - Nitrogen, Nitrite

Lab Sample ID: MB 500-372326/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372326

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/16/17 10:25	1

Method: SM 4500 NO2 B - Nitrogen, Nitrite (Continued)

Lab Sample ID: LCS 500-372326/4
Matrix: Water
Analysis Batch: 372326

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrite	0.100	0.107		mg/L		107	80 - 120

Method: SM 4500 NO3 F - Nitrogen, Nitrate

Lab Sample ID: MB 500-372664/4
Matrix: Water
Analysis Batch: 372664

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/17/17 21:08	1

Lab Sample ID: LCS 500-372664/5
Matrix: Water
Analysis Batch: 372664

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrate Nitrite	1.00	0.971		mg/L		97	80 - 120

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-07-GW-02142017

Date Collected: 02/14/17 15:25
Date Received: 02/15/17 16:47

Lab Sample ID: 500-123929-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	372769	02/21/17 01:55	PMF	TAL CHI
Total/NA	Analysis	8260B	DL	10	372769	02/21/17 02:20	PMF	TAL CHI
Total/NA	Prep	3510C			372692	02/20/17 07:25	JJH	TAL CHI
Total/NA	Analysis	8270D		1	372962	02/21/17 23:26	GES	TAL CHI
Total/NA	Prep	3510C	DL		372692	02/20/17 07:25	JJH	TAL CHI
Total/NA	Analysis	8270D	DL	10	373040	02/22/17 18:29	AJD	TAL CHI
Total/NA	Prep	3510C			372295	02/16/17 09:00	LMC	TAL CHI
Total/NA	Analysis	8081B		5	372911	02/21/17 16:04	PJG	TAL CHI
Total/NA	Prep	3510C	RE		373161	02/22/17 17:59	JP1	TAL CHI
Total/NA	Analysis	8081B	RE	5	373230	02/23/17 13:12	PJG	TAL CHI
Total/NA	Prep	3510C			372295	02/16/17 09:00	LMC	TAL CHI
Total/NA	Analysis	8082A		1	373439	02/24/17 12:55	PJG	TAL CHI
Dissolved	Prep	3010A			372283	02/16/17 07:48	JEF	TAL CHI
Dissolved	Analysis	6010C		1	372869	02/20/17 19:08	PJ1	TAL CHI
Dissolved	Prep	3010A			372283	02/16/17 07:48	JEF	TAL CHI
Dissolved	Analysis	6010C		10	372957	02/21/17 13:08	PJ1	TAL CHI
Total/NA	Prep	3010A			372283	02/16/17 07:48	JEF	TAL CHI
Total/NA	Analysis	6010C		1	372869	02/20/17 19:04	PJ1	TAL CHI
Total/NA	Prep	3010A			372283	02/16/17 07:48	JEF	TAL CHI
Total/NA	Analysis	6010C		10	372957	02/21/17 13:03	PJ1	TAL CHI
Dissolved	Prep	7470A			372328	02/16/17 12:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	372530	02/17/17 09:24	MJD	TAL CHI
Total/NA	Prep	7470A			372328	02/16/17 12:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	372530	02/17/17 09:23	MJD	TAL CHI
Total/NA	Analysis	9034		1	372856		CLB	TAL CHI
					(Start)	02/21/17 07:26		
					(End)	02/21/17 07:29		
Total/NA	Analysis	9038		10	372717		CLB	TAL CHI
					(Start)	02/20/17 09:17		
					(End)	02/20/17 09:18		
Total/NA	Analysis	9060A		40	372805	02/20/17 00:59	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	372666	02/19/17 20:20	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	372324		SMO	TAL CHI
					(Start)	02/16/17 10:19		
					(End)	02/16/17 10:20		
Total/NA	Prep	SM 4500 NH3 B			372417	02/16/17 18:50	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		10	372445	02/16/17 23:54	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	372326		VIP	TAL CHI
					(Start)	02/16/17 10:28		
					(End)	02/16/17 10:28		
Total/NA	Analysis	SM 4500 NO3 F		1	372664	02/17/17 21:48	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-06-GW-02152017

Lab Sample ID: 500-123929-2

Date Collected: 02/15/17 08:00

Matrix: Water

Date Received: 02/15/17 16:47

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	372769	02/21/17 02:45	PMF	TAL CHI
Total/NA	Prep	3510C			372692	02/20/17 07:25	JJH	TAL CHI
Total/NA	Analysis	8270D		1	372962	02/21/17 23:55	GES	TAL CHI
Total/NA	Prep	3510C	DL		372692	02/20/17 07:25	JJH	TAL CHI
Total/NA	Analysis	8270D	DL	5	373040	02/22/17 18:58	AJD	TAL CHI
Total/NA	Prep	3510C			372295	02/16/17 09:00	LMC	TAL CHI
Total/NA	Analysis	8081B		1	372911	02/21/17 15:06	PJG	TAL CHI
Total/NA	Prep	3510C			372295	02/16/17 09:00	LMC	TAL CHI
Total/NA	Analysis	8082A		1	373439	02/24/17 13:10	PJG	TAL CHI
Dissolved	Prep	3010A			372283	02/16/17 07:48	JEF	TAL CHI
Dissolved	Analysis	6010C		1	372869	02/20/17 19:18	PJ1	TAL CHI
Dissolved	Prep	3010A			372283	02/16/17 07:48	JEF	TAL CHI
Dissolved	Analysis	6010C		10	372957	02/21/17 13:17	PJ1	TAL CHI
Total/NA	Prep	3010A			372283	02/16/17 07:48	JEF	TAL CHI
Total/NA	Analysis	6010C		1	372869	02/20/17 19:13	PJ1	TAL CHI
Total/NA	Prep	3010A			372283	02/16/17 07:48	JEF	TAL CHI
Total/NA	Analysis	6010C		10	372957	02/21/17 13:12	PJ1	TAL CHI
Dissolved	Prep	7470A			372328	02/16/17 12:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	372530	02/17/17 09:27	MJD	TAL CHI
Total/NA	Prep	7470A			372328	02/16/17 12:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	372530	02/17/17 09:26	MJD	TAL CHI
Total/NA	Analysis	9034		1	372856		CLB	TAL CHI
					(Start)	02/21/17 07:29		
					(End)	02/21/17 07:32		
Total/NA	Analysis	9038		2	372717		CLB	TAL CHI
					(Start)	02/20/17 09:18		
					(End)	02/20/17 09:19		
Total/NA	Analysis	9060A		20	372805	02/20/17 01:16	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	372666	02/19/17 20:20	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	372324		SMO	TAL CHI
					(Start)	02/16/17 10:20		
					(End)	02/16/17 10:22		
Total/NA	Prep	SM 4500 NH3 B			372417	02/16/17 18:50	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		10	372445	02/16/17 23:57	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	372326		VIP	TAL CHI
					(Start)	02/16/17 10:28		
					(End)	02/16/17 10:28		
Total/NA	Analysis	SM 4500 NO3 F		1	372664	02/17/17 21:49	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-05-GW-02152017

Lab Sample ID: 500-123929-3

Date Collected: 02/15/17 09:40
Matrix: Water
Date Received: 02/15/17 16:47

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	372769	02/21/17 03:10	PMF	TAL CHI
Total/NA	Prep	3510C			372692	02/20/17 07:25	JJH	TAL CHI
Total/NA	Analysis	8270D		1	372962	02/22/17 00:24	GES	TAL CHI
Total/NA	Prep	3510C			372295	02/16/17 09:00	LMC	TAL CHI
Total/NA	Analysis	8081B		1	372911	02/21/17 15:26	PJG	TAL CHI
Total/NA	Prep	3510C			372295	02/16/17 09:00	LMC	TAL CHI
Total/NA	Analysis	8082A		1	373439	02/24/17 13:26	PJG	TAL CHI
Dissolved	Prep	3010A			372283	02/16/17 07:48	JEF	TAL CHI
Dissolved	Analysis	6010C		1	372869	02/20/17 19:26	PJ1	TAL CHI
Total/NA	Prep	3010A			372283	02/16/17 07:48	JEF	TAL CHI
Total/NA	Analysis	6010C		1	372869	02/20/17 19:22	PJ1	TAL CHI
Dissolved	Prep	7470A			372328	02/16/17 12:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	372530	02/17/17 09:30	MJD	TAL CHI
Total/NA	Prep	7470A			372328	02/16/17 12:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	372530	02/17/17 09:29	MJD	TAL CHI
Total/NA	Analysis	9034		1	372856		CLB	TAL CHI
					(Start)	02/21/17 07:32		
					(End)	02/21/17 07:34		
Total/NA	Analysis	9038		1	373190		CLB	TAL CHI
					(Start)	02/23/17 03:32		
					(End)	02/23/17 03:33		
Total/NA	Analysis	9060A		1	372805	02/20/17 01:33	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	372666	02/19/17 20:20	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	372324		SMO	TAL CHI
					(Start)	02/16/17 10:22		
					(End)	02/16/17 10:23		
Total/NA	Prep	SM 4500 NH3 B			372417	02/16/17 18:50	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		20	372445	02/16/17 22:40	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	372326		VIP	TAL CHI
					(Start)	02/16/17 10:29		
					(End)	02/16/17 10:29		
Total/NA	Analysis	SM 4500 NO3 F		1	372664	02/17/17 21:50	HMW	TAL CHI

Client Sample ID: MW-04-GW-02152017

Lab Sample ID: 500-123929-4

Date Collected: 02/15/17 11:35
Matrix: Water
Date Received: 02/15/17 16:47

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	372769	02/21/17 03:35	PMF	TAL CHI
Total/NA	Analysis	8260B	DL	10	372769	02/21/17 04:00	PMF	TAL CHI
Total/NA	Prep	3510C			372692	02/20/17 07:25	JJH	TAL CHI
Total/NA	Analysis	8270D		1	372962	02/22/17 00:53	GES	TAL CHI
Total/NA	Prep	3510C			372295	02/16/17 09:00	LMC	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-04-GW-02152017

Lab Sample ID: 500-123929-4

Date Collected: 02/15/17 11:35

Matrix: Water

Date Received: 02/15/17 16:47

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8081B		1	372911	02/21/17 15:45	PJG	TAL CHI
Total/NA	Prep	3510C			372295	02/16/17 09:00	LMC	TAL CHI
Total/NA	Analysis	8082A		1	373439	02/24/17 13:41	PJG	TAL CHI
Dissolved	Prep	3010A			372283	02/16/17 07:48	JEF	TAL CHI
Dissolved	Analysis	6010C		1	372869	02/20/17 19:34	PJ1	TAL CHI
Total/NA	Prep	3010A			372283	02/16/17 07:48	JEF	TAL CHI
Total/NA	Analysis	6010C		1	372869	02/20/17 19:29	PJ1	TAL CHI
Dissolved	Prep	7470A			372328	02/16/17 12:45	MJD	TAL CHI
Dissolved	Analysis	7470A		1	372530	02/17/17 09:33	MJD	TAL CHI
Total/NA	Prep	7470A			372328	02/16/17 12:45	MJD	TAL CHI
Total/NA	Analysis	7470A		1	372530	02/17/17 09:31	MJD	TAL CHI
Total/NA	Analysis	9034		1	372856		CLB	TAL CHI
					(Start)	02/21/17 07:34		
					(End)	02/21/17 07:37		
Total/NA	Analysis	9038		20	372717		CLB	TAL CHI
					(Start)	02/20/17 09:26		
					(End)	02/20/17 09:27		
Total/NA	Analysis	9060A		1	372805	02/20/17 01:49	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	372666	02/19/17 20:20	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	372324		SMO	TAL CHI
					(Start)	02/16/17 10:23		
					(End)	02/16/17 10:25		
Total/NA	Prep	SM 4500 NH3 B			372417	02/16/17 18:50	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		2	372445	02/17/17 00:00	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	372326		VIP	TAL CHI
					(Start)	02/16/17 10:29		
					(End)	02/16/17 10:30		
Total/NA	Analysis	SM 4500 NO3 F		1	372664	02/17/17 21:53	HMW	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Laboratory: TestAmerica Chicago

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	100201	04-30-17 *

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	Cyclohexane
8260B		Water	Methyl acetate
8260B		Water	Methylcyclohexane
8270D	3510C	Water	1,1'-Biphenyl
8270D	3510C	Water	Atrazine
8270D	3510C	Water	Benzaldehyde
8270D	3510C	Water	Caprolactam

* Certification renewal pending - certification considered valid.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

(optional)
Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 200 S. Michigan Ave
Address: Ste 2000
Phone: 312-579-3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-123929
Chain of Custody Number:
Page ____ of ____
Temperature °C of Cooler: 4.1, 2.8

Client: Arcadis
Client Project #: CI001805.0002.00005
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thurnhoffer
Lab PM: Therese Hargraves

Preservative Key: 1. HCL, Cool to 4°; 500-123929 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOCs, PCB Pesticide	Total Metals	Dissolved Metals	Ammonia NO3/NO2	Sulfide	TOC	TSS, SO4 NO2	VOC	Dissolved Gases	Comments
							8	3	3	6	5	2	8	1	9	
1		MW-07-GW-02142017	2-14	1525	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Dissolved Metal
2		MW-06-GW-02152017	2-15	0800	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Samples were
3		MW-05-GW-02152017	2-15	0940	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	field filtered
4		MW-04-GW-02152017	2-15	1135	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
~~—~~		~~MW-03-GW-02152017~~	~~2-15~~	~~1320~~	~~18~~	~~W~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	MW-07, 06, 05
															AS	TOC & VOC
															02/15/17	preservative very
																reactive, some
																bubbles present

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Ben Thurnhoffer	Arcadis	2-15-2017	1552	[signature]	TA	2/15/17	1552
[signature]	TA	2/15/17	1630	[signature]	TACHI	02/15/17	1630

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments: "MW-03-GW-02152017" wasn't sent in with other samples will send tomorrow. AS 02/15/17

2/28/2017
TAL-4124-500 (1209)

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-123929-1

Login Number: 123929
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-123929-2
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Therese Hargraves

Authorized for release by:
2/28/2017 10:30:13 AM

Therese Hargraves, Project Manager I
(708)534-5200
therese.hargraves@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Subcontract Data 4
Chain of Custody 15
Receipt Checklists 16

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-2

Job ID: 500-123929-2

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-123929-2

Comments
No additional comments.

Receipt
The samples were received on 2/15/2017 4:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 2.8º C and 4.1º C.

Receipt Exceptions

'MW-03-GW-02152017' was on COC. but not sent in with samples. Contacted client and they let us know that they were unable to finish the set so will send in tomorrow with other samples

Subcontract non-Sister
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen: This method was subcontracted to Pace-Pittsburgh (Microseeps). The subcontract laboratory certification is different from that of the facility issuing the final report.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

February 27, 2017

Therese Hargraves
Test America Inc.
2417 Bond Street
University Park, IL 60484

RE: **500-123929-2**

Pace Workorder: 21749

Dear Therese Hargraves:

Enclosed are the analytical results for sample(s) received by the laboratory on Friday, February 17, 2017. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

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

Sincerely,

Ruth Welsh 02/27/2017
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email PAESfeedback@pacelabs.com.

Total Number of Pages ____

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water and Solid & Hazardous Waste
Accreditor:	West Virginia Department of Environmental Protection, Division of Water and Waste Management
Accreditation ID:	395
Scope:	Non-Potable Water
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water; Solid and Chemical Materials
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water; Solid and Hazardous Waste
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 21749 500-123929-2

Lab ID	Sample ID	Matrix	Date Collected	Date Received
217490001	MW-07-GW-02142017	Water	2/14/2017 15:25	2/17/2017 10:40
217490002	MW-06-GW-02152017	Water	2/15/2017 08:00	2/17/2017 10:40
217490003	MW-05-GW-02152017	Water	2/15/2017 09:40	2/17/2017 10:40
217490004	MW-04-GW-02152017	Water	2/15/2017 11:35	2/17/2017 10:40

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21749 500-123929-2

Lab ID: **217490001** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-07-GW-02142017** Date Collected: 2/14/2017 15:25

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**21000**	ug/l	0.50	0.027	1	2/24/2017 15:13	MM	n
Carbon Dioxide	**62**	mg/l	5.0	0.24	1	2/24/2017 15:13	MM	n
Oxygen	**1.3**	mg/l	0.50	0.13	1	2/24/2017 15:13	MM	n
Nitrogen	**9.2**	mg/l	2.0	0.24	1	2/24/2017 15:13	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21749 500-123929-2

Lab ID: **217490002** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-06-GW-02152017** Date Collected: 2/15/2017 08:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**21000**	ug/l	0.50	0.027	1	2/24/2017 15:26	MM	n
Carbon Dioxide	**17**	mg/l	5.0	0.24	1	2/24/2017 15:26	MM	n
Oxygen	**1.8**	mg/l	0.50	0.13	1	2/24/2017 15:26	MM	n
Nitrogen	**11**	mg/l	2.0	0.24	1	2/24/2017 15:26	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21749 500-123929-2

Lab ID: **217490003** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-05-GW-02152017** Date Collected: 2/15/2017 09:40

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**19000**	ug/l	0.50	0.027	1	2/24/2017 15:39	MM	n
Carbon Dioxide	**320**	mg/l	5.0	0.24	1	2/24/2017 15:39	MM	n
Oxygen	**1.5**	mg/l	0.50	0.13	1	2/24/2017 15:39	MM	n
Nitrogen	**6.9**	mg/l	2.0	0.24	1	2/24/2017 15:39	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21749 500-123929-2

Lab ID: **217490004** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-04-GW-02152017** Date Collected: 2/15/2017 11:35

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**17000**	ug/l	0.50	0.027	1	2/24/2017 15:52	MM	n
Carbon Dioxide	**200**	mg/l	5.0	0.24	1	2/24/2017 15:52	MM	n
Oxygen	**3.2**	mg/l	0.50	0.13	1	2/24/2017 15:52	MM	n
Nitrogen	**10**	mg/l	2.0	0.24	1	2/24/2017 15:52	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 21749 500-123929-2

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 21749 500-123929-2

QC Batch: DISG/5933 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 217490001, 217490002, 217490003, 217490004

METHOD BLANK: 47179

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n

METHOD BLANK: 47180

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Carbon Dioxide	mg/l	<5.0	5.0	n
Oxygen	mg/l	<0.50	0.50	n
Nitrogen	mg/l	<2.0	2.0	n

LABORATORY CONTROL SAMPLE & LCSD: 47181 47183

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Methane	ug/l	750	780	760	104	101	80-120	2.9	20	n

LABORATORY CONTROL SAMPLE & LCSD: 47182 47184

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Carbon Dioxide	mg/l	120	130	130	112	115	80-120	2.6	20	n
Oxygen	mg/l	11	11	11	95	93	80-120	2.1	20	n
Nitrogen	mg/l	140	120	120	85	84	80-120	1.2	20	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA QUALIFIERS

Workorder: 21749 500-123929-2

QUALITY CONTROL PARAMETER QUALIFIERS

n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 21749 500-123929-2

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
217490001	MW-07-GW-02142017			AM20GAX	DISG/5933
217490002	MW-06-GW-02152017			AM20GAX	DISG/5933
217490003	MW-05-GW-02152017			AM20GAX	DISG/5933
217490004	MW-04-GW-02152017			AM20GAX	DISG/5933

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Chain of Custody Record

Lab Job #: 500-123929

Chain of Custody Number:

Page ____ of ____

Temperature °C of Cooler: 4.1, 2.8

(optional)
Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 200 S. Michigan Ave
Address: Ste 2000
Phone: 312-579-3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Client: Arcadis
Client Project #: CID01805.0002.00005
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thurnhoffer
Lab PM: Therese Hargraves

Preservative Key
1. HCL, Cool to 4°
500-123929 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOCs, PCB Pesticide	Total Metals	Dissolved Metals	Ammonia NO3/NO2	Sulfide	TOC	TSS, SO4 NO2	VOC	Dissolved Gases	Comments
							8	3	3	6	5	2	8	1	9	
1		MW-07-GW-02142017	2-14	1525	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Dissolved Metal
2		MW-06-GW-02152017	2-15	0800	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Samples were
3		MW-05-GW-02152017	2-15	0940	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	field filtered
4		MW-04-GW-02152017	2-15	1135	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
~~—~~		~~MW-03-GW-02152017~~	~~2-15~~	~~1320~~	~~18~~	~~W~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	MW-07, 06, 05
															AS	TOC & VOC
															02/15/17	preservative very
																reactive, some
																bubbles present

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Ben Thurnhoffer	Arcadis	2-15-2017	1552	[signature]	TA	2/15/17	1552
[signature]	TA	2/15/17	1630	[signature]	TACHI	02/15/17	1630

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:
"MW-03-GW-02152017" wasn't sent in with other samples will send tomorrow. AS 02/15/17

2/28/2017
TAL-4124-500 (1209)

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-123929-2

Login Number: 123929
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Refer to Job Narrative for details.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-123998-1
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Therese Hargraves

Authorized for release by:
3/3/2017 9:16:25 AM

Therese Hargraves, Project Manager I
(708)534-5200
therese.hargraves@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Detection Summary 5
Method Summary 12
Sample Summary 13
Client Sample Results 14
Definitions 46
QC Association 47
Surrogate Summary 54
QC Sample Results 56
Chronicle 82
Certification Summary 88
Chain of Custody 89
Receipt Checklists 90

Job ID: 500-123998-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-123998-1

Comments
No additional comments.

Receipt
The samples were received on 2/16/2017 3:35 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were -0.9º C, 1.7º C and 2.8º C.

GC/MS VOA
Method(s) 8260B: The following samples were collected in properly preserved vials for analysis of volatile organic compounds (VOCs). The pH however, was outside the required criteria when verified by the laboratory: MW-01-GW-02162017 (500-123998-3) and DUP-1-02162017 (500-123998-6). The sample was analyzed within 7 days per EPA recommendation, therefore no further corrective action was needed.

Method(s) 8260B: The following sample was diluted due to the abundance of target and/or non-target analytes: MW-03-GW-02152017 (500-123998-1) and MW-13-GW-02162017 (500-123998-4). Elevated reporting limits (RLs) are provided.

Method(s) 8260B: One surrogate recovery for the following sample was outside control limits: DUP-1-02162017 (500-123998-6). Evidence of matrix interference is present (basic pH); therefore, re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method(s) 8270D: The following analyte has been identified, in the reference method and/or via historical data, to be a poor and/or erratic performer: Benzaldehyde. This analyte may have a %D>60% if the average %D of all the analytes in the initial calibration verification (ICV) is 30%. (ICV 500-367726/13)

Method(s) 8270D: CCVIS 500-372962/2 was outside the method criteria for the following analytes: Carbazole (high) and Hexachlorocyclopentadiene (low). A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte is considered estimated.(CCVIS 500-372962/2)

Method(s) 8270D: Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. The laboratory's SOP allows for 3 analytes to recover outside criteria for this method when utilizing this list of analytes. The LCS associated with batch 500-373020 had 1 analyte outside control limits: 4-Bromophenyl phenyl ether. These results have been reported and qualified. (LCS 500-373020/2-A)

Method(s) 8270D: The following sample contained one acid surrogate outside acceptance limits: MW-13-GW-02162017 (500-123998-4). The laboratory's SOP allows one acid and one base/neutral surrogate to be outside acceptance limits; therefore, re-extraction was not performed. These results have been reported and qualified.

Method(s) 8270D: Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. The laboratory's SOP allows for 3 analytes to recover outside criteria for this method when utilizing this list of analytes. The LCSD associated with batch 500-373345 had 1 analyte outside control limits: Carbazole. The LCS was in control. These results have been reported and qualified. (LCSD 500-373345/3-A)

Method(s) 8270D: The following sample required a dilution due to the nature of the sample matrix: MW-03-GW-02152017 (500-123998-1). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method(s) 8270D: Internal standard (ISTD6) response for the following sample was outside of acceptance limits: MW-13-GW-02162017 (500-123998-4). The sample was not re-analyzed due to no detects for analytes associated with ISTD6.

Job ID: 500-123998-1 (Continued)

Laboratory: TestAmerica Chicago (Continued)

Method(s) 8270D: Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. The laboratory's SOP allows for 3 analytes to recover outside criteria for this method when utilizing this list of analytes. The LCSD associated with batch 500-373692 had 1 analyte outside control limits: Carbazole. The LCS was in control. These results have been reported and qualified.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
Method(s) 8081B: The following samples required a mercury clean-up, via EPA Method 3660A, to reduce matrix interferences caused by sulfur: MW-03-GW-02152017 (500-123998-1), MW-02-GW-02152017 (500-123998-2), MW-01-GW-02162017 (500-123998-3), MW-13-GW-02162017 (500-123998-4), MW-11-GW-02162017 (500-123998-5) and DUP-1-02162017 (500-123998-6). The reagent lot number used was: 153166.

Method(s) 8082A: The following samples required a mercury clean-up, via EPA Method 3660A, to reduce matrix interferences caused by sulfur: MW-01-GW-02162017 (500-123998-3), MW-13-GW-02162017 (500-123998-4) and DUP-1-02162017 (500-123998-6). The reagent lot number used was: 153166.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
Method(s) 6010C: The low-level CCV at line 8 in 6010C batch 500-373200 was above the method acceptance limits of 70-130% recovery for Iron. The samples MW-03-GW-02152017 (500-123998-1) and MW-02-GW-02152017 (500-123998-2) were bracketed. The low-level standard concentration was insignificant compared with the reported sample results and the sample results were unaffected by the bias at that level. The mid-range bracketing the data were all within the 90-110% recovery limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Field Service / Mobile Lab
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-03-GW-02152017 — Lab Sample ID: 500-123998-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	57		2.5	0.73	ug/L	5		8260B	Total/NA
Chlorobenzene	2.7	J	5.0	1.9	ug/L	5		8260B	Total/NA
Ethylbenzene	13		2.5	0.92	ug/L	5		8260B	Total/NA
Toluene	29		2.5	0.76	ug/L	5		8260B	Total/NA
Xylenes, Total	63		5.0	1.1	ug/L	5		8260B	Total/NA
Acenaphthene	20		0.75	0.23	ug/L	1		8270D	Total/NA
Acenaphthylene	1.9		0.75	0.20	ug/L	1		8270D	Total/NA
Anthracene	7.6		0.75	0.25	ug/L	1		8270D	Total/NA
Benzo[a]anthracene	0.39		0.15	0.043	ug/L	1		8270D	Total/NA
Benzo[a]pyrene	0.23		0.15	0.074	ug/L	1		8270D	Total/NA
Benzo[b]fluoranthene	0.19		0.15	0.061	ug/L	1		8270D	Total/NA
Chrysene	0.36		0.15	0.051	ug/L	1		8270D	Total/NA
Dibenzofuran	27		1.5	0.20	ug/L	1		8270D	Total/NA
2,4-Dimethylphenol	17		7.5	1.4	ug/L	1		8270D	Total/NA
Fluoranthene	5.8		0.75	0.34	ug/L	1		8270D	Total/NA
Fluorene	43		0.75	0.18	ug/L	1		8270D	Total/NA
2-Methylphenol	2.2		1.5	0.23	ug/L	1		8270D	Total/NA
3 & 4 Methylphenol	1.6		1.5	0.34	ug/L	1		8270D	Total/NA
Phenanthrene	36		0.75	0.23	ug/L	1		8270D	Total/NA
Pyrene	4.1		0.75	0.32	ug/L	1		8270D	Total/NA
1,1'-Biphenyl	15		3.8	0.27	ug/L	1		8270D	Total/NA
Carbazole - DL	71	*	38	2.7	ug/L	10		8270D	Total/NA
2-Methylnaphthalene - DL	150		15	0.49	ug/L	10		8270D	Total/NA
Naphthalene - DL2	870		38	12	ug/L	50		8270D	Total/NA
Barium	1.1		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0011	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	94		0.20	0.059	mg/L	1		6010C	Total/NA
Iron	4.0	^ B	0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	94		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.10		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.0062	J	0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	69		0.50	0.16	mg/L	1		6010C	Total/NA
Selenium	0.0055	J	0.010	0.0051	mg/L	1		6010C	Total/NA
Sodium	300		1.0	0.43	mg/L	1		6010C	Total/NA
Barium	0.95		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0011	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	86		0.20	0.059	mg/L	1		6010C	Dissolved
Iron	3.3	^ B	0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	84		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.091		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0049	J	0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	62		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	270		1.0	0.43	mg/L	1		6010C	Dissolved
Sulfate	5.0	B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	22		1.0	0.27	mg/L	1		9060A	Total/NA
Total Suspended Solids	11		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	41		2.0	1.0	mg/L	10		SM 4500 NH3 G	Total/NA

Client Sample ID: MW-02-GW-02152017 — Lab Sample ID: 500-123998-2

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-02-GW-02152017 (Continued) — Lab Sample ID: 500-123998-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	6.3		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	14		0.50	0.15	ug/L	1		8260B	Total/NA
Chloroethane	4.5		1.0	0.51	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	6.2		1.0	0.33	ug/L	1		8260B	Total/NA
1,3-Dichlorobenzene	4.1		1.0	0.40	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	11		1.0	0.36	ug/L	1		8260B	Total/NA
Ethylbenzene	1.4		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	4.9		1.0	0.39	ug/L	1		8260B	Total/NA
Toluene	0.84		0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	3.9		1.0	0.22	ug/L	1		8260B	Total/NA
Chlorobenzene - DL	480		10	3.9	ug/L	10		8260B	Total/NA
Acenaphthene	1.0		0.75	0.23	ug/L	1		8270D	Total/NA
Bis(2-chloroethyl)ether	1.4	J	1.5	0.22	ug/L	1		8270D	Total/NA
2-Chlorophenol	4.9		3.8	0.42	ug/L	1		8270D	Total/NA
Fluorene	0.67	J	0.75	0.18	ug/L	1		8270D	Total/NA
N-Nitrosodiphenylamine	7.1		0.75	0.28	ug/L	1		8270D	Total/NA
Phenanthrene	0.32	J	0.75	0.23	ug/L	1		8270D	Total/NA
2-Methylnaphthalene - DL	100		7.5	0.24	ug/L	5		8270D	Total/NA
Naphthalene - DL	73		3.8	1.2	ug/L	5		8270D	Total/NA
Barium	0.34		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	98		0.20	0.059	mg/L	1		6010C	Total/NA
Iron	34	^ B	0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	49		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.21		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.0045	J	0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	34		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	160		1.0	0.43	mg/L	1		6010C	Total/NA
Zinc	0.050		0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.36		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	110		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0032	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Iron	36	^ B	0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	54		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.23		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.0043	J	0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	37		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0069	J	0.010	0.0051	mg/L	1		6010C	Dissolved
Sodium	180		1.0	0.43	mg/L	1		6010C	Dissolved
Sulfide	0.38	J	1.0	0.18	mg/L	1		9034	Total/NA
Sulfate	3.0	J B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	19		1.0	0.27	mg/L	1		9060A	Total/NA
Total Suspended Solids	63		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	46		2.0	1.0	mg/L	10		SM 4500 NH3 G	Total/NA

Client Sample ID: MW-01-GW-02162017 — Lab Sample ID: 500-123998-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	55		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	30		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	5.8		1.0	0.39	ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-01-GW-02162017 (Continued) — Lab Sample ID: 500-123998-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cyclohexane	1.6		1.0	0.49	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	1.8		1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	3.6		1.0	0.36	ug/L	1		8260B	Total/NA
Ethylbenzene	24		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	14		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	1.8		1.0	0.32	ug/L	1		8260B	Total/NA
Methyl Ethyl Ketone	46		5.0	2.1	ug/L	1		8260B	Total/NA
methyl isobutyl ketone	99		5.0	2.2	ug/L	1		8260B	Total/NA
Toluene	11		0.50	0.15	ug/L	1		8260B	Total/NA
Vinyl chloride	0.48	J	0.50	0.20	ug/L	1		8260B	Total/NA
Xylenes, Total	23		1.0	0.22	ug/L	1		8260B	Total/NA
Acenaphthene	8.1		0.77	0.24	ug/L	1		8270D	Total/NA
Acetophenone	2.0	J	3.8	0.51	ug/L	1		8270D	Total/NA
Anthracene	0.26	J	0.77	0.26	ug/L	1		8270D	Total/NA
Carbazole	6.4	*	3.8	0.27	ug/L	1		8270D	Total/NA
4-Chloroaniline	13		7.7	1.5	ug/L	1		8270D	Total/NA
Dibenzofuran	1.4	J	1.5	0.20	ug/L	1		8270D	Total/NA
2,4-Dimethylphenol	6.7	J	7.7	1.4	ug/L	1		8270D	Total/NA
Fluorene	2.6		0.77	0.19	ug/L	1		8270D	Total/NA
2-Methylnaphthalene	5.5		1.5	0.050	ug/L	1		8270D	Total/NA
2-Methylphenol	1.5		1.5	0.23	ug/L	1		8270D	Total/NA
3 & 4 Methylphenol	6.6		1.5	0.34	ug/L	1		8270D	Total/NA
Phenanthrene	1.3		0.77	0.23	ug/L	1		8270D	Total/NA
Naphthalene - DL	130		3.8	1.2	ug/L	5		8270D	Total/NA
Phenol - DL	72		19	2.6	ug/L	5		8270D	Total/NA
Aluminum	0.34		0.20	0.062	mg/L	1		6010C	Total/NA
Antimony	0.0068	J	0.020	0.0064	mg/L	1		6010C	Total/NA
Arsenic	0.0038	J	0.010	0.0034	mg/L	1		6010C	Total/NA
Barium	0.46		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	510		0.20	0.059	mg/L	1		6010C	Total/NA
Lead	0.0027	J	0.0050	0.0025	mg/L	1		6010C	Total/NA
Magnesium	1.7		0.10	0.041	mg/L	1		6010C	Total/NA
Nickel	0.016		0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	51		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	210		1.0	0.43	mg/L	1		6010C	Total/NA
Zinc	0.012	J	0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	0.21		0.20	0.062	mg/L	1		6010C	Dissolved
Arsenic	0.0046	J	0.010	0.0034	mg/L	1		6010C	Dissolved
Barium	0.45		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	510		0.20	0.059	mg/L	1		6010C	Dissolved
Nickel	0.016		0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	50		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	210		1.0	0.43	mg/L	1		6010C	Dissolved
Sulfide	0.98	J	1.0	0.18	mg/L	1		9034	Total/NA
Sulfate	24	B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	31		1.0	0.27	mg/L	1		9060A	Total/NA
Total Suspended Solids	29		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	49		4.0	2.0	mg/L	20		SM 4500 NH3 G	Total/NA

Client Sample ID: MW-13-GW-02162017 — Lab Sample ID: 500-123998-4

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-13-GW-02162017 (Continued) — Lab Sample ID: 500-123998-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	410		5.0	1.5	ug/L	10		8260B	Total/NA
cis-1,2-Dichloroethene	37		10	4.1	ug/L	10		8260B	Total/NA
1,2-Dichlorobenzene	18		10	3.3	ug/L	10		8260B	Total/NA
Ethylbenzene	1300		5.0	1.8	ug/L	10		8260B	Total/NA
Isopropylbenzene	100		10	3.9	ug/L	10		8260B	Total/NA
Vinyl chloride	11		5.0	2.0	ug/L	10		8260B	Total/NA
Toluene - DL	2600		50	15	ug/L	100		8260B	Total/NA
Xylenes, Total - DL	8400		100	22	ug/L	100		8260B	Total/NA
Acenaphthene	0.86		0.74	0.23	ug/L	1		8270D	Total/NA
Acenaphthylene	2.3		0.74	0.20	ug/L	1		8270D	Total/NA
Acetophenone	32		3.7	0.49	ug/L	1		8270D	Total/NA
Anthracene	0.29	J	0.74	0.25	ug/L	1		8270D	Total/NA
Bis(2-ethylhexyl) phthalate	2.9	J	7.4	1.3	ug/L	1		8270D	Total/NA
Butyl benzyl phthalate	1.3	J	1.5	0.35	ug/L	1		8270D	Total/NA
Diethyl phthalate	11		1.5	0.27	ug/L	1		8270D	Total/NA
2,4-Dimethylphenol	42		7.4	1.3	ug/L	1		8270D	Total/NA
Di-n-butyl phthalate	3.9		3.7	0.54	ug/L	1		8270D	Total/NA
Fluorene	1.2		0.74	0.18	ug/L	1		8270D	Total/NA
2-Methylnaphthalene	11		1.5	0.048	ug/L	1		8270D	Total/NA
3 & 4 Methylphenol	40		1.5	0.33	ug/L	1		8270D	Total/NA
N-Nitrosodiphenylamine	11		0.74	0.27	ug/L	1		8270D	Total/NA
Phenanthrene	0.86		0.74	0.22	ug/L	1		8270D	Total/NA
Phenol	39		3.7	0.50	ug/L	1		8270D	Total/NA
2,4,6-Trichlorophenol	1.3	J	3.7	0.53	ug/L	1		8270D	Total/NA
1,1'-Biphenyl	2.0	J	3.7	0.27	ug/L	1		8270D	Total/NA
Naphthalene - DL	190		7.4	2.3	ug/L	10		8270D	Total/NA
Arsenic	0.0074	J	0.010	0.0034	mg/L	1		6010C	Total/NA
Barium	0.25		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	100		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0032	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0018	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Iron	4.8		0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	47		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.24		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.014		0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	67		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	230		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0028	J	0.0050	0.0019	mg/L	1		6010C	Total/NA
Arsenic	0.0070	J	0.010	0.0034	mg/L	1		6010C	Dissolved
Barium	0.25		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	100		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0027	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.0020	J	0.0050	0.00096	mg/L	1		6010C	Dissolved
Iron	4.3		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	48		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.24		0.010	0.0034	mg/L	1		6010C	Dissolved
Nickel	0.014		0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	69		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0063	J	0.010	0.0051	mg/L	1		6010C	Dissolved
Sodium	240		1.0	0.43	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-13-GW-02162017 (Continued) — Lab Sample ID: 500-123998-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vanadium	0.0025	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Sulfide	3.4		1.0	0.18	mg/L	1		9034	Total/NA
Sulfate	100	B	25	7.4	mg/L	5		9038	Total/NA
Total Organic Carbon - Duplicates	61	B	2.0	0.53	mg/L	2		9060A	Total/NA
Total Suspended Solids	20		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	57		4.0	2.0	mg/L	20		SM 4500 NH3 G	Total/NA

Client Sample ID: MW-11-GW-02162017 — Lab Sample ID: 500-123998-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	81		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	11		1.0	0.39	ug/L	1		8260B	Total/NA
Cyclohexane	110		1.0	0.49	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	1.2		1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	3.8		1.0	0.36	ug/L	1		8260B	Total/NA
Ethylbenzene	3.1		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	61		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	170		1.0	0.32	ug/L	1		8260B	Total/NA
Toluene	0.82		0.50	0.15	ug/L	1		8260B	Total/NA
Xylenes, Total	17		1.0	0.22	ug/L	1		8260B	Total/NA
Acenaphthene	0.23	J	0.73	0.23	ug/L	1		8270D	Total/NA
Diethyl phthalate	0.64	J	1.5	0.27	ug/L	1		8270D	Total/NA
Di-n-butyl phthalate	0.69	J	3.7	0.54	ug/L	1		8270D	Total/NA
2-Methylnaphthalene	3.7		1.5	0.048	ug/L	1		8270D	Total/NA
3 & 4 Methylphenol	3.2		1.5	0.33	ug/L	1		8270D	Total/NA
Naphthalene	2.4		0.73	0.23	ug/L	1		8270D	Total/NA
N-Nitrosodiphenylamine	1.7		0.73	0.27	ug/L	1		8270D	Total/NA
Phenol	0.73	J	3.7	0.49	ug/L	1		8270D	Total/NA
1,1'-Biphenyl	0.99	J	3.7	0.27	ug/L	1		8270D	Total/NA
Barium	0.79		0.010	0.0022	mg/L	1		6010C	Total/NA
Cadmium	0.0011	J	0.0020	0.00094	mg/L	1		6010C	Total/NA
Calcium	130		0.20	0.059	mg/L	1		6010C	Total/NA
Chromium	0.0073	J	0.010	0.0024	mg/L	1		6010C	Total/NA
Cobalt	0.0018	J	0.0050	0.00096	mg/L	1		6010C	Total/NA
Iron	29		0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	120		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.22		0.010	0.0034	mg/L	1		6010C	Total/NA
Nickel	0.020		0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	110		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	380		1.0	0.43	mg/L	1		6010C	Total/NA
Vanadium	0.0050		0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.011	J	0.020	0.0090	mg/L	1		6010C	Total/NA
Barium	0.79		0.010	0.0022	mg/L	1		6010C	Dissolved
Cadmium	0.0010	J	0.0020	0.00094	mg/L	1		6010C	Dissolved
Calcium	130		0.20	0.059	mg/L	1		6010C	Dissolved
Chromium	0.0076	J	0.010	0.0024	mg/L	1		6010C	Dissolved
Cobalt	0.0017	J	0.0050	0.00096	mg/L	1		6010C	Dissolved
Iron	28		0.20	0.10	mg/L	1		6010C	Dissolved
Magnesium	120		0.10	0.041	mg/L	1		6010C	Dissolved
Manganese	0.22		0.010	0.0034	mg/L	1		6010C	Dissolved

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-11-GW-02162017 (Continued) — Lab Sample ID: 500-123998-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nickel	0.019		0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	120		0.50	0.16	mg/L	1		6010C	Dissolved
Selenium	0.0068	J	0.010	0.0051	mg/L	1		6010C	Dissolved
Sodium	390		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0042	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Sulfate	7.2	B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	36		1.0	0.27	mg/L	1		9060A	Total/NA
Total Suspended Solids	100		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	59		5.0	2.5	mg/L	25		SM 4500 NH3 G	Total/NA

Client Sample ID: DUP-1-02162017 — Lab Sample ID: 500-123998-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	59		5.0	1.7	ug/L	1		8260B	Total/NA
Benzene	30		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	5.7		1.0	0.39	ug/L	1		8260B	Total/NA
Cyclohexane	1.5		1.0	0.49	ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	1.7		1.0	0.33	ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	3.6		1.0	0.36	ug/L	1		8260B	Total/NA
Ethylbenzene	25		0.50	0.18	ug/L	1		8260B	Total/NA
Isopropylbenzene	13		1.0	0.39	ug/L	1		8260B	Total/NA
Methylcyclohexane	1.9		1.0	0.32	ug/L	1		8260B	Total/NA
Methyl Ethyl Ketone	45		5.0	2.1	ug/L	1		8260B	Total/NA
methyl isobutyl ketone	99		5.0	2.2	ug/L	1		8260B	Total/NA
Toluene	11		0.50	0.15	ug/L	1		8260B	Total/NA
Vinyl chloride	0.45	J	0.50	0.20	ug/L	1		8260B	Total/NA
Xylenes, Total	24		1.0	0.22	ug/L	1		8260B	Total/NA
Acenaphthene	8.1		0.74	0.23	ug/L	1		8270D	Total/NA
Acetophenone	1.4	J	3.7	0.49	ug/L	1		8270D	Total/NA
Carbazole	4.3	*	3.7	0.26	ug/L	1		8270D	Total/NA
Dibenzofuran	1.3	J	1.5	0.19	ug/L	1		8270D	Total/NA
2,4-Dimethylphenol	5.5	J	7.4	1.3	ug/L	1		8270D	Total/NA
Di-n-butyl phthalate	0.75	J	3.7	0.54	ug/L	1		8270D	Total/NA
Fluorene	2.4		0.74	0.18	ug/L	1		8270D	Total/NA
2-Methylnaphthalene	4.3		1.5	0.048	ug/L	1		8270D	Total/NA
2-Methylphenol	1.4	J	1.5	0.23	ug/L	1		8270D	Total/NA
3 & 4 Methylphenol	6.3		1.5	0.33	ug/L	1		8270D	Total/NA
Phenanthrene	1.2		0.74	0.22	ug/L	1		8270D	Total/NA
Naphthalene - DL	120		3.7	1.1	ug/L	5		8270D	Total/NA
Phenol - DL	96		18	2.5	ug/L	5		8270D	Total/NA
Aluminum	0.33		0.20	0.062	mg/L	1		6010C	Total/NA
Arsenic	0.0066	J	0.010	0.0034	mg/L	1		6010C	Total/NA
Barium	0.45		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	500		0.20	0.059	mg/L	1		6010C	Total/NA
Iron	0.12	J	0.20	0.10	mg/L	1		6010C	Total/NA
Lead	0.0025	J	0.0050	0.0025	mg/L	1		6010C	Total/NA
Magnesium	1.7		0.10	0.041	mg/L	1		6010C	Total/NA
Nickel	0.015		0.010	0.0037	mg/L	1		6010C	Total/NA
Potassium	50		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	210		1.0	0.43	mg/L	1		6010C	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: DUP-1-02162017 (Continued) — Lab Sample ID: 500-123998-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vanadium	0.0020	J	0.0050	0.0019	mg/L	1		6010C	Total/NA
Zinc	0.010	J	0.020	0.0090	mg/L	1		6010C	Total/NA
Aluminum	0.22		0.20	0.062	mg/L	1		6010C	Dissolved
Arsenic	0.0048	J	0.010	0.0034	mg/L	1		6010C	Dissolved
Barium	0.47		0.010	0.0022	mg/L	1		6010C	Dissolved
Calcium	530		0.20	0.059	mg/L	1		6010C	Dissolved
Magnesium	0.043	J	0.10	0.041	mg/L	1		6010C	Dissolved
Nickel	0.016		0.010	0.0037	mg/L	1		6010C	Dissolved
Potassium	52		0.50	0.16	mg/L	1		6010C	Dissolved
Sodium	220		1.0	0.43	mg/L	1		6010C	Dissolved
Vanadium	0.0021	J	0.0050	0.0019	mg/L	1		6010C	Dissolved
Sulfide	3.5		1.0	0.18	mg/L	1		9034	Total/NA
Sulfate	22	B	5.0	1.5	mg/L	1		9038	Total/NA
Total Organic Carbon - Duplicates	30		1.0	0.27	mg/L	1		9060A	Total/NA
Total Suspended Solids	24		5.0	2.5	mg/L	1		SM 2540D	Total/NA
Ammonia	49		4.0	2.0	mg/L	20		SM 4500 NH3 G	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CHI
8081B	Organochlorine Pesticides (GC)	SW846	TAL CHI
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL CHI
6010C	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	TAL CHI
9038	Sulfate, Turbidimetric	SW846	TAL CHI
9060A	Organic Carbon, Total (TOC)	SW846	TAL CHI
Nitrate by calc	Nitrogen, Nitrate-Nitrite	SM	TAL CHI
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL CHI
SM 4500 NH3 G	Ammonia	SM	TAL CHI
SM 4500 NO2 B	Nitrogen, Nitrite	SM	TAL CHI
SM 4500 NO3 F	Nitrogen, Nitrate	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-123998-1	MW-03-GW-02152017	Water	02/15/17 13:20	02/16/17 15:35
500-123998-2	MW-02-GW-02152017	Water	02/15/17 16:05	02/16/17 15:35
500-123998-3	MW-01-GW-02162017	Water	02/16/17 07:55	02/16/17 15:35
500-123998-4	MW-13-GW-02162017	Water	02/16/17 10:35	02/16/17 15:35
500-123998-5	MW-11-GW-02162017	Water	02/16/17 13:00	02/16/17 15:35
500-123998-6	DUP-1-02162017	Water	02/16/17 00:00	02/16/17 15:35

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-03-GW-02152017

Lab Sample ID: 500-123998-1

Date Collected: 02/15/17 13:20
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<25		25	8.7	ug/L			02/23/17 18:27	5
Benzene	**57**		2.5	0.73	ug/L			02/23/17 18:27	5
Bromodichloromethane	<5.0		5.0	1.9	ug/L			02/23/17 18:27	5
Bromoform	<5.0		5.0	2.4	ug/L			02/23/17 18:27	5
Bromomethane	<10		10	4.0	ug/L			02/23/17 18:27	5
Carbon disulfide	<10		10	2.2	ug/L			02/23/17 18:27	5
Carbon tetrachloride	<5.0		5.0	1.9	ug/L			02/23/17 18:27	5
Chlorobenzene	**2.7**	**J**	5.0	1.9	ug/L			02/23/17 18:27	5
Chloroethane	<5.0		5.0	2.5	ug/L			02/23/17 18:27	5
Chloroform	<10		10	1.9	ug/L			02/23/17 18:27	5
Chloromethane	<5.0		5.0	1.6	ug/L			02/23/17 18:27	5
cis-1,2-Dichloroethene	<5.0		5.0	2.0	ug/L			02/23/17 18:27	5
cis-1,3-Dichloropropene	<5.0		5.0	2.1	ug/L			02/23/17 18:27	5
Cyclohexane	<5.0		5.0	2.4	ug/L			02/23/17 18:27	5
Dibromochloromethane	<5.0		5.0	2.4	ug/L			02/23/17 18:27	5
1,2-Dibromo-3-Chloropropane	<25		25	10	ug/L			02/23/17 18:27	5
1,2-Dibromoethane	<5.0		5.0	1.9	ug/L			02/23/17 18:27	5
1,2-Dichlorobenzene	<5.0		5.0	1.7	ug/L			02/23/17 18:27	5
1,3-Dichlorobenzene	<5.0		5.0	2.0	ug/L			02/23/17 18:27	5
1,4-Dichlorobenzene	<5.0		5.0	1.8	ug/L			02/23/17 18:27	5
Dichlorodifluoromethane	<10		10	3.4	ug/L			02/23/17 18:27	5
1,1-Dichloroethane	<5.0		5.0	2.1	ug/L			02/23/17 18:27	5
1,2-Dichloroethane	<5.0		5.0	2.0	ug/L			02/23/17 18:27	5
1,1-Dichloroethene	<5.0		5.0	2.0	ug/L			02/23/17 18:27	5
1,2-Dichloropropane	<5.0		5.0	2.1	ug/L			02/23/17 18:27	5
Ethylbenzene	**13**		2.5	0.92	ug/L			02/23/17 18:27	5
2-Hexanone	<25		25	7.8	ug/L			02/23/17 18:27	5
Isopropylbenzene	<5.0		5.0	1.9	ug/L			02/23/17 18:27	5
Methyl acetate	<25		25	10	ug/L			02/23/17 18:27	5
Methylcyclohexane	<5.0		5.0	1.6	ug/L			02/23/17 18:27	5
Methylene Chloride	<25		25	8.2	ug/L			02/23/17 18:27	5
Methyl Ethyl Ketone	<25		25	11	ug/L			02/23/17 18:27	5
methyl isobutyl ketone	<25		25	11	ug/L			02/23/17 18:27	5
Methyl tert-butyl ether	<5.0		5.0	2.0	ug/L			02/23/17 18:27	5
Styrene	<5.0		5.0	1.9	ug/L			02/23/17 18:27	5
1,1,2,2-Tetrachloroethane	<5.0		5.0	2.0	ug/L			02/23/17 18:27	5
Tetrachloroethene	<5.0		5.0	1.9	ug/L			02/23/17 18:27	5
Toluene	**29**		2.5	0.76	ug/L			02/23/17 18:27	5
trans-1,2-Dichloroethene	<5.0		5.0	1.7	ug/L			02/23/17 18:27	5
trans-1,3-Dichloropropene	<5.0		5.0	1.8	ug/L			02/23/17 18:27	5
1,2,4-Trichlorobenzene	<5.0		5.0	1.7	ug/L			02/23/17 18:27	5
1,1,1-Trichloroethane	<5.0		5.0	1.9	ug/L			02/23/17 18:27	5
1,1,2-Trichloroethane	<5.0		5.0	1.8	ug/L			02/23/17 18:27	5
Trichloroethene	<2.5		2.5	0.82	ug/L			02/23/17 18:27	5
Trichlorofluoromethane	<5.0		5.0	2.1	ug/L			02/23/17 18:27	5
1,1,2-Trichloro-1,2,2-trifluoroethane	<5.0		5.0	2.3	ug/L			02/23/17 18:27	5
Vinyl chloride	<2.5		2.5	1.0	ug/L			02/23/17 18:27	5
Xylenes, Total	**63**		5.0	1.1	ug/L			02/23/17 18:27	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-03-GW-02152017

Lab Sample ID: 500-123998-1

Date Collected: 02/15/17 13:20
Matrix: Water
Date Received: 02/16/17 15:35

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*71 - 120*		*02/23/17 18:27*	*5*
Dibromofluoromethane	*93*		*70 - 120*		*02/23/17 18:27*	*5*
1,2-Dichloroethane-d4 (Surr)	*100*		*71 - 127*		*02/23/17 18:27*	*5*
Toluene-d8 (Surr)	*99*		*75 - 120*		*02/23/17 18:27*	*5*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**20**		0.75	0.23	ug/L		02/20/17 07:25	02/22/17 01:52	1
Acenaphthylene	**1.9**		0.75	0.20	ug/L		02/20/17 07:25	02/22/17 01:52	1
Acetophenone	<3.8		3.8	0.50	ug/L		02/20/17 07:25	02/22/17 01:52	1
Anthracene	**7.6**		0.75	0.25	ug/L		02/20/17 07:25	02/22/17 01:52	1
Benzo[a]anthracene	**0.39**		0.15	0.043	ug/L		02/20/17 07:25	02/22/17 01:52	1
Benzo[a]pyrene	**0.23**		0.15	0.074	ug/L		02/20/17 07:25	02/22/17 01:52	1
Benzo[b]fluoranthene	**0.19**		0.15	0.061	ug/L		02/20/17 07:25	02/22/17 01:52	1
Benzo[g,h,i]perylene	<0.75		0.75	0.28	ug/L		02/20/17 07:25	02/22/17 01:52	1
Benzo[k]fluoranthene	<0.15		0.15	0.048	ug/L		02/20/17 07:25	02/22/17 01:52	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/22/17 01:52	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		02/20/17 07:25	02/22/17 01:52	1
Bis(2-ethylhexyl) phthalate	<7.5		7.5	1.3	ug/L		02/20/17 07:25	02/22/17 01:52	1
4-Bromophenyl phenyl ether	<3.8		3.8	0.41	ug/L		02/20/17 07:25	02/22/17 01:52	1
Butyl benzyl phthalate	<1.5		1.5	0.36	ug/L		02/20/17 07:25	02/22/17 01:52	1
4-Chloroaniline	<7.5		7.5	1.5	ug/L		02/20/17 07:25	02/22/17 01:52	1
4-Chloro-3-methylphenol	<7.5		7.5	1.7	ug/L		02/20/17 07:25	02/22/17 01:52	1
2-Chloronaphthalene	<1.5		1.5	0.18	ug/L		02/20/17 07:25	02/22/17 01:52	1
2-Chlorophenol	<3.8		3.8	0.42	ug/L		02/20/17 07:25	02/22/17 01:52	1
4-Chlorophenyl phenyl ether	<3.8		3.8	0.48	ug/L		02/20/17 07:25	02/22/17 01:52	1
Chrysene	**0.36**		0.15	0.051	ug/L		02/20/17 07:25	02/22/17 01:52	1
Dibenz(a,h)anthracene	<0.23		0.23	0.038	ug/L		02/20/17 07:25	02/22/17 01:52	1
Dibenzofuran	**27**		1.5	0.20	ug/L		02/20/17 07:25	02/22/17 01:52	1
3,3'-Dichlorobenzidine	<3.8		3.8	1.3	ug/L		02/20/17 07:25	02/22/17 01:52	1
2,4-Dichlorophenol	<7.5		7.5	2.0	ug/L		02/20/17 07:25	02/22/17 01:52	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		02/20/17 07:25	02/22/17 01:52	1
2,4-Dimethylphenol	**17**		7.5	1.4	ug/L		02/20/17 07:25	02/22/17 01:52	1
Dimethyl phthalate	<1.5		1.5	0.24	ug/L		02/20/17 07:25	02/22/17 01:52	1
Di-n-butyl phthalate	<3.8		3.8	0.55	ug/L		02/20/17 07:25	02/22/17 01:52	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		02/20/17 07:25	02/22/17 01:52	1
2,4-Dinitrophenol	<15		15	6.5	ug/L		02/20/17 07:25	02/22/17 01:52	1
2,4-Dinitrotoluene	<0.75		0.75	0.18	ug/L		02/20/17 07:25	02/22/17 01:52	1
2,6-Dinitrotoluene	<0.75		0.75	0.055	ug/L		02/20/17 07:25	02/22/17 01:52	1
Di-n-octyl phthalate	<7.5		7.5	0.79	ug/L		02/20/17 07:25	02/22/17 01:52	1
Fluoranthene	**5.8**		0.75	0.34	ug/L		02/20/17 07:25	02/22/17 01:52	1
Fluorene	**43**		0.75	0.18	ug/L		02/20/17 07:25	02/22/17 01:52	1
Hexachlorobenzene	<0.38		0.38	0.060	ug/L		02/20/17 07:25	02/22/17 01:52	1
Hexachlorobutadiene	<3.8		3.8	0.39	ug/L		02/20/17 07:25	02/22/17 01:52	1
Hexachlorocyclopentadiene	<15		15	4.8	ug/L		02/20/17 07:25	02/22/17 01:52	1
Hexachloroethane	<3.8		3.8	0.45	ug/L		02/20/17 07:25	02/22/17 01:52	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.056	ug/L		02/20/17 07:25	02/22/17 01:52	1
Isophorone	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/22/17 01:52	1
2-Methylphenol	**2.2**		1.5	0.23	ug/L		02/20/17 07:25	02/22/17 01:52	1
3 & 4 Methylphenol	**1.6**		1.5	0.34	ug/L		02/20/17 07:25	02/22/17 01:52	1

Client Sample ID: MW-03-GW-02152017

Lab Sample ID: 500-123998-1

Date Collected: 02/15/17 13:20

Matrix: Water

Date Received: 02/16/17 15:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Nitroaniline	<3.8		3.8	0.97	ug/L		02/20/17 07:25	02/22/17 01:52	1
3-Nitroaniline	<7.5		7.5	1.3	ug/L		02/20/17 07:25	02/22/17 01:52	1
4-Nitroaniline	<7.5		7.5	1.2	ug/L		02/20/17 07:25	02/22/17 01:52	1
Nitrobenzene	<0.75		0.75	0.34	ug/L		02/20/17 07:25	02/22/17 01:52	1
2-Nitrophenol	<7.5		7.5	1.9	ug/L		02/20/17 07:25	02/22/17 01:52	1
4-Nitrophenol	<15		15	5.6	ug/L		02/20/17 07:25	02/22/17 01:52	1
N-Nitrosodi-n-propylamine	<0.38		0.38	0.12	ug/L		02/20/17 07:25	02/22/17 01:52	1
N-Nitrosodiphenylamine	<0.75		0.75	0.28	ug/L		02/20/17 07:25	02/22/17 01:52	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.29	ug/L		02/20/17 07:25	02/22/17 01:52	1
Pentachlorophenol	<15		15	3.0	ug/L		02/20/17 07:25	02/22/17 01:52	1
Phenanthrene	**36**		0.75	0.23	ug/L		02/20/17 07:25	02/22/17 01:52	1
Phenol	<3.8		3.8	0.50	ug/L		02/20/17 07:25	02/22/17 01:52	1
Pyrene	**4.1**		0.75	0.32	ug/L		02/20/17 07:25	02/22/17 01:52	1
2,4,5-Trichlorophenol	<7.5		7.5	1.9	ug/L		02/20/17 07:25	02/22/17 01:52	1
2,4,6-Trichlorophenol	<3.8		3.8	0.54	ug/L		02/20/17 07:25	02/22/17 01:52	1
Benzaldehyde	<30		30	11	ug/L		02/20/17 07:25	02/22/17 01:52	1
Caprolactam	<7.5		7.5	1.1	ug/L		02/20/17 07:25	02/22/17 01:52	1
Atrazine	<3.8		3.8	0.47	ug/L		02/20/17 07:25	02/22/17 01:52	1
1,1'-Biphenyl	**15**		3.8	0.27	ug/L		02/20/17 07:25	02/22/17 01:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*59*		*30 - 123*	*02/20/17 07:25*	*02/22/17 01:52*	*1*
2-Fluorophenol (Surr)	*66*		*30 - 110*	*02/20/17 07:25*	*02/22/17 01:52*	*1*
Nitrobenzene-d5 (Surr)	*70*		*33 - 139*	*02/20/17 07:25*	*02/22/17 01:52*	*1*
Phenol-d5 (Surr)	*50*		*20 - 100*	*02/20/17 07:25*	*02/22/17 01:52*	*1*
Terphenyl-d14 (Surr)	*96*		*42 - 150*	*02/20/17 07:25*	*02/22/17 01:52*	*1*
2,4,6-Tribromophenol (Surr)	*96*		*30 - 150*	*02/20/17 07:25*	*02/22/17 01:52*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbazole	**71**	*	38	2.7	ug/L		02/20/17 07:25	02/23/17 02:43	10
2-Methylnaphthalene	**150**		15	0.49	ug/L		02/20/17 07:25	02/23/17 02:43	10

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**870**		38	12	ug/L		02/20/17 07:25	02/24/17 15:27	50

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.038		0.038	0.0051	ug/L		02/17/17 21:00	02/20/17 23:16	1
alpha-BHC	<0.038		0.038	0.0025	ug/L		02/17/17 21:00	02/20/17 23:16	1
alpha-Chlordane	<0.038		0.038	0.0042	ug/L		02/17/17 21:00	02/20/17 23:16	1
beta-BHC	<0.038		0.038	0.0098	ug/L		02/17/17 21:00	02/20/17 23:16	1
4,4'-DDD	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/20/17 23:16	1
4,4'-DDE	<0.038		0.038	0.0036	ug/L		02/17/17 21:00	02/20/17 23:16	1
4,4'-DDT	<0.038		0.038	0.0031	ug/L		02/17/17 21:00	02/20/17 23:16	1
delta-BHC	<0.038		0.038	0.0099	ug/L		02/17/17 21:00	02/20/17 23:16	1
Dieldrin	<0.038		0.038	0.012	ug/L		02/17/17 21:00	02/20/17 23:16	1
Endosulfan I	<0.038		0.038	0.0039	ug/L		02/17/17 21:00	02/20/17 23:16	1
Endosulfan II	<0.038		0.038	0.0027	ug/L		02/17/17 21:00	02/20/17 23:16	1

Client Sample ID: MW-03-GW-02152017

Lab Sample ID: 500-123998-1

Date Collected: 02/15/17 13:20

Matrix: Water

Date Received: 02/16/17 15:35

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endosulfan sulfate	<0.038		0.038	0.011	ug/L		02/17/17 21:00	02/20/17 23:16	1
Endrin	<0.038		0.038	0.014	ug/L		02/17/17 21:00	02/20/17 23:16	1
Endrin aldehyde	<0.038		0.038	0.0079	ug/L		02/17/17 21:00	02/20/17 23:16	1
Endrin ketone	<0.038		0.038	0.016	ug/L		02/17/17 21:00	02/20/17 23:16	1
gamma-BHC (Lindane)	<0.038		0.038	0.0054	ug/L		02/17/17 21:00	02/20/17 23:16	1
gamma-Chlordane	<0.038		0.038	0.0069	ug/L		02/17/17 21:00	02/20/17 23:16	1
Heptachlor	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/20/17 23:16	1
Heptachlor epoxide	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/20/17 23:16	1
Methoxychlor	<0.077		0.077	0.022	ug/L		02/17/17 21:00	02/20/17 23:16	1
Toxaphene	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 23:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*76*		*30 - 143*	*02/17/17 21:00*	*02/20/17 23:16*	*1*
Tetrachloro-m-xylene	*105*		*30 - 120*	*02/17/17 21:00*	*02/20/17 23:16*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.38		0.38	0.064	ug/L		02/17/17 21:00	02/20/17 14:02	1
PCB-1221	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:02	1
PCB-1232	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:02	1
PCB-1242	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:02	1
PCB-1248	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:02	1
PCB-1254	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:02	1
PCB-1260	<0.38		0.38	0.067	ug/L		02/17/17 21:00	02/20/17 14:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*53*		*30 - 127*	*02/17/17 21:00*	*02/20/17 14:02*	*1*
DCB Decachlorobiphenyl	*62*		*30 - 150*	*02/17/17 21:00*	*02/20/17 14:02*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/22/17 18:40	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 20:35	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:35	1
Barium	**1.1**		0.010	0.0022	mg/L		02/17/17 08:13	02/22/17 18:40	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/22/17 18:40	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 20:35	1
Calcium	**94**		0.20	0.059	mg/L		02/17/17 08:13	02/22/17 18:40	1
Chromium	<0.010		0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 20:35	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 20:35	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 20:35	1
Iron	**4.0**	**^ B**	0.20	0.10	mg/L		02/17/17 08:13	02/22/17 18:40	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 20:35	1
Magnesium	**94**		0.10	0.041	mg/L		02/17/17 08:13	02/22/17 18:40	1
Manganese	**0.10**		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:35	1
Nickel	**0.0062**	**J**	0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 20:35	1
Potassium	**69**		0.50	0.16	mg/L		02/17/17 08:13	02/22/17 18:40	1
Selenium	**0.0055**	**J**	0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 20:35	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 20:35	1
Sodium	**300**		1.0	0.43	mg/L		02/17/17 08:13	02/22/17 18:40	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-03-GW-02152017

Date Collected: 02/15/17 13:20
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-1

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:35	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 20:35	1
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 20:35	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/22/17 18:44	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 20:39	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:39	1
Barium	**0.95**		0.010	0.0022	mg/L		02/17/17 08:13	02/22/17 18:44	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/22/17 18:44	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 20:39	1
Calcium	**86**		0.20	0.059	mg/L		02/17/17 08:13	02/22/17 18:44	1
Chromium	<0.010		0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 20:39	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 20:39	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 20:39	1
Iron	**3.3**	**^ B**	0.20	0.10	mg/L		02/17/17 08:13	02/22/17 18:44	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 20:39	1
Magnesium	**84**		0.10	0.041	mg/L		02/17/17 08:13	02/22/17 18:44	1
Manganese	**0.091**		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:39	1
Nickel	**0.0049**	**J**	0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 20:39	1
Potassium	**62**		0.50	0.16	mg/L		02/17/17 08:13	02/22/17 18:44	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 20:39	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 20:39	1
Sodium	**270**		1.0	0.43	mg/L		02/17/17 08:13	02/22/17 18:44	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:39	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 20:39	1
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 20:39	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:36	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 07:37	1
Sulfate	**5.0**	**B**	5.0	1.5	mg/L			03/02/17 07:08	1
Total Organic Carbon - Duplicates	**22**		1.0	0.27	mg/L			02/17/17 00:38	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**11**		5.0	2.5	mg/L			02/17/17 13:08	1
Ammonia	**41**		2.0	1.0	mg/L		02/17/17 19:00	02/17/17 22:11	10
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/17/17 12:44	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/18/17 00:09	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-02-GW-02152017

Lab Sample ID: 500-123998-2

Date Collected: 02/15/17 16:05
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**6.3**		5.0	1.7	ug/L			02/23/17 17:07	1
Benzene	**14**		0.50	0.15	ug/L			02/23/17 17:07	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/23/17 17:07	1
Bromoform	<1.0		1.0	0.48	ug/L			02/23/17 17:07	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/23/17 17:07	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/23/17 17:07	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/23/17 17:07	1
Chloroethane	**4.5**		1.0	0.51	ug/L			02/23/17 17:07	1
Chloroform	<2.0		2.0	0.37	ug/L			02/23/17 17:07	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/23/17 17:07	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/23/17 17:07	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/23/17 17:07	1
Cyclohexane	<1.0		1.0	0.49	ug/L			02/23/17 17:07	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/23/17 17:07	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/23/17 17:07	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/23/17 17:07	1
1,2-Dichlorobenzene	**6.2**		1.0	0.33	ug/L			02/23/17 17:07	1
1,3-Dichlorobenzene	**4.1**		1.0	0.40	ug/L			02/23/17 17:07	1
1,4-Dichlorobenzene	**11**		1.0	0.36	ug/L			02/23/17 17:07	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/23/17 17:07	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/23/17 17:07	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/23/17 17:07	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/23/17 17:07	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/23/17 17:07	1
Ethylbenzene	**1.4**		0.50	0.18	ug/L			02/23/17 17:07	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/23/17 17:07	1
Isopropylbenzene	**4.9**		1.0	0.39	ug/L			02/23/17 17:07	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/23/17 17:07	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			02/23/17 17:07	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/23/17 17:07	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			02/23/17 17:07	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/23/17 17:07	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/23/17 17:07	1
Styrene	<1.0		1.0	0.39	ug/L			02/23/17 17:07	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/23/17 17:07	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/23/17 17:07	1
Toluene	**0.84**		0.50	0.15	ug/L			02/23/17 17:07	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/23/17 17:07	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/23/17 17:07	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/23/17 17:07	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/23/17 17:07	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/23/17 17:07	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/23/17 17:07	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/23/17 17:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/23/17 17:07	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/23/17 17:07	1
Xylenes, Total	**3.9**		1.0	0.22	ug/L			02/23/17 17:07	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-02-GW-02152017

Date Collected: 02/15/17 16:05
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-2

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*		*02/23/17 17:07*	*1*
Dibromofluoromethane	*93*		*70 - 120*		*02/23/17 17:07*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*71 - 127*		*02/23/17 17:07*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*02/23/17 17:07*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	**480**		10	3.9	ug/L			02/23/17 17:34	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*		*02/23/17 17:34*	*10*
Dibromofluoromethane	*95*		*70 - 120*		*02/23/17 17:34*	*10*
1,2-Dichloroethane-d4 (Surr)	*103*		*71 - 127*		*02/23/17 17:34*	*10*
Toluene-d8 (Surr)	*99*		*75 - 120*		*02/23/17 17:34*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**1.0**		0.75	0.23	ug/L		02/20/17 07:25	02/22/17 02:21	1
Acenaphthylene	<0.75		0.75	0.20	ug/L		02/20/17 07:25	02/22/17 02:21	1
Acetophenone	<3.8		3.8	0.50	ug/L		02/20/17 07:25	02/22/17 02:21	1
Anthracene	<0.75		0.75	0.25	ug/L		02/20/17 07:25	02/22/17 02:21	1
Benzo[a]anthracene	<0.15		0.15	0.043	ug/L		02/20/17 07:25	02/22/17 02:21	1
Benzo[a]pyrene	<0.15		0.15	0.074	ug/L		02/20/17 07:25	02/22/17 02:21	1
Benzo[b]fluoranthene	<0.15		0.15	0.061	ug/L		02/20/17 07:25	02/22/17 02:21	1
Benzo[g,h,i]perylene	<0.75		0.75	0.28	ug/L		02/20/17 07:25	02/22/17 02:21	1
Benzo[k]fluoranthene	<0.15		0.15	0.048	ug/L		02/20/17 07:25	02/22/17 02:21	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/22/17 02:21	1
Bis(2-chloroethyl)ether	**1.4**	**J**	1.5	0.22	ug/L		02/20/17 07:25	02/22/17 02:21	1
Bis(2-ethylhexyl) phthalate	<7.5		7.5	1.3	ug/L		02/20/17 07:25	02/22/17 02:21	1
4-Bromophenyl phenyl ether	<3.8		3.8	0.41	ug/L		02/20/17 07:25	02/22/17 02:21	1
Butyl benzyl phthalate	<1.5		1.5	0.36	ug/L		02/20/17 07:25	02/22/17 02:21	1
Carbazole	<3.8	*	3.8	0.27	ug/L		02/20/17 07:25	02/22/17 02:21	1
4-Chloroaniline	<7.5		7.5	1.5	ug/L		02/20/17 07:25	02/22/17 02:21	1
4-Chloro-3-methylphenol	<7.5		7.5	1.7	ug/L		02/20/17 07:25	02/22/17 02:21	1
2-Chloronaphthalene	<1.5		1.5	0.18	ug/L		02/20/17 07:25	02/22/17 02:21	1
2-Chlorophenol	**4.9**		3.8	0.42	ug/L		02/20/17 07:25	02/22/17 02:21	1
4-Chlorophenyl phenyl ether	<3.8		3.8	0.48	ug/L		02/20/17 07:25	02/22/17 02:21	1
Chrysene	<0.15		0.15	0.051	ug/L		02/20/17 07:25	02/22/17 02:21	1
Dibenz(a,h)anthracene	<0.23		0.23	0.038	ug/L		02/20/17 07:25	02/22/17 02:21	1
Dibenzofuran	<1.5		1.5	0.20	ug/L		02/20/17 07:25	02/22/17 02:21	1
3,3'-Dichlorobenzidine	<3.8		3.8	1.3	ug/L		02/20/17 07:25	02/22/17 02:21	1
2,4-Dichlorophenol	<7.5		7.5	2.0	ug/L		02/20/17 07:25	02/22/17 02:21	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		02/20/17 07:25	02/22/17 02:21	1
2,4-Dimethylphenol	<7.5		7.5	1.4	ug/L		02/20/17 07:25	02/22/17 02:21	1
Dimethyl phthalate	<1.5		1.5	0.24	ug/L		02/20/17 07:25	02/22/17 02:21	1
Di-n-butyl phthalate	<3.8		3.8	0.55	ug/L		02/20/17 07:25	02/22/17 02:21	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		02/20/17 07:25	02/22/17 02:21	1
2,4-Dinitrophenol	<15		15	6.5	ug/L		02/20/17 07:25	02/22/17 02:21	1
2,4-Dinitrotoluene	<0.75		0.75	0.18	ug/L		02/20/17 07:25	02/22/17 02:21	1
2,6-Dinitrotoluene	<0.75		0.75	0.055	ug/L		02/20/17 07:25	02/22/17 02:21	1
Di-n-octyl phthalate	<7.5		7.5	0.79	ug/L		02/20/17 07:25	02/22/17 02:21	1

Client Sample ID: MW-02-GW-02152017

Lab Sample ID: 500-123998-2

Date Collected: 02/15/17 16:05

Matrix: Water

Date Received: 02/16/17 15:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.75		0.75	0.34	ug/L		02/20/17 07:25	02/22/17 02:21	1
Fluorene	**0.67**	**J**	0.75	0.18	ug/L		02/20/17 07:25	02/22/17 02:21	1
Hexachlorobenzene	<0.38		0.38	0.060	ug/L		02/20/17 07:25	02/22/17 02:21	1
Hexachlorobutadiene	<3.8		3.8	0.39	ug/L		02/20/17 07:25	02/22/17 02:21	1
Hexachlorocyclopentadiene	<15		15	4.8	ug/L		02/20/17 07:25	02/22/17 02:21	1
Hexachloroethane	<3.8		3.8	0.45	ug/L		02/20/17 07:25	02/22/17 02:21	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.056	ug/L		02/20/17 07:25	02/22/17 02:21	1
Isophorone	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/22/17 02:21	1
2-Methylphenol	<1.5		1.5	0.23	ug/L		02/20/17 07:25	02/22/17 02:21	1
3 & 4 Methylphenol	<1.5		1.5	0.34	ug/L		02/20/17 07:25	02/22/17 02:21	1
2-Nitroaniline	<3.8		3.8	0.97	ug/L		02/20/17 07:25	02/22/17 02:21	1
3-Nitroaniline	<7.5		7.5	1.3	ug/L		02/20/17 07:25	02/22/17 02:21	1
4-Nitroaniline	<7.5		7.5	1.3	ug/L		02/20/17 07:25	02/22/17 02:21	1
Nitrobenzene	<0.75		0.75	0.34	ug/L		02/20/17 07:25	02/22/17 02:21	1
2-Nitrophenol	<7.5		7.5	1.9	ug/L		02/20/17 07:25	02/22/17 02:21	1
4-Nitrophenol	<15		15	5.6	ug/L		02/20/17 07:25	02/22/17 02:21	1
N-Nitrosodi-n-propylamine	<0.38		0.38	0.12	ug/L		02/20/17 07:25	02/22/17 02:21	1
N-Nitrosodiphenylamine	**7.1**		0.75	0.28	ug/L		02/20/17 07:25	02/22/17 02:21	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.29	ug/L		02/20/17 07:25	02/22/17 02:21	1
Pentachlorophenol	<15		15	3.0	ug/L		02/20/17 07:25	02/22/17 02:21	1
Phenanthrene	**0.32**	**J**	0.75	0.23	ug/L		02/20/17 07:25	02/22/17 02:21	1
Phenol	<3.8		3.8	0.50	ug/L		02/20/17 07:25	02/22/17 02:21	1
Pyrene	<0.75		0.75	0.32	ug/L		02/20/17 07:25	02/22/17 02:21	1
2,4,5-Trichlorophenol	<7.5		7.5	1.9	ug/L		02/20/17 07:25	02/22/17 02:21	1
2,4,6-Trichlorophenol	<3.8		3.8	0.54	ug/L		02/20/17 07:25	02/22/17 02:21	1
Benzaldehyde	<30		30	11	ug/L		02/20/17 07:25	02/22/17 02:21	1
Caprolactam	<7.5		7.5	1.1	ug/L		02/20/17 07:25	02/22/17 02:21	1
Atrazine	<3.8		3.8	0.47	ug/L		02/20/17 07:25	02/22/17 02:21	1
1,1'-Biphenyl	<3.8		3.8	0.27	ug/L		02/20/17 07:25	02/22/17 02:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*62*		*30 - 123*	*02/20/17 07:25*	*02/22/17 02:21*	*1*
2-Fluorophenol (Surr)	*63*		*30 - 110*	*02/20/17 07:25*	*02/22/17 02:21*	*1*
Nitrobenzene-d5 (Surr)	*62*		*33 - 139*	*02/20/17 07:25*	*02/22/17 02:21*	*1*
Phenol-d5 (Surr)	*54*		*20 - 100*	*02/20/17 07:25*	*02/22/17 02:21*	*1*
Terphenyl-d14 (Surr)	*99*		*42 - 150*	*02/20/17 07:25*	*02/22/17 02:21*	*1*
2,4,6-Tribromophenol (Surr)	*99*		*30 - 150*	*02/20/17 07:25*	*02/22/17 02:21*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**100**		7.5	0.24	ug/L		02/20/17 07:25	02/23/17 03:10	5
Naphthalene	**73**		3.8	1.2	ug/L		02/20/17 07:25	02/23/17 03:10	5

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.038		0.038	0.0051	ug/L		02/17/17 21:00	02/20/17 23:35	1
alpha-BHC	<0.038		0.038	0.0025	ug/L		02/17/17 21:00	02/20/17 23:35	1
alpha-Chlordane	<0.038		0.038	0.0042	ug/L		02/17/17 21:00	02/20/17 23:35	1
beta-BHC	<0.038		0.038	0.0098	ug/L		02/17/17 21:00	02/20/17 23:35	1
4,4'-DDD	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/20/17 23:35	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-02-GW-02152017

Date Collected: 02/15/17 16:05
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-2

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDE	<0.038		0.038	0.0037	ug/L		02/17/17 21:00	02/20/17 23:35	1
4,4'-DDT	<0.038		0.038	0.0031	ug/L		02/17/17 21:00	02/20/17 23:35	1
delta-BHC	<0.038		0.038	0.0099	ug/L		02/17/17 21:00	02/20/17 23:35	1
Dieldrin	<0.038		0.038	0.012	ug/L		02/17/17 21:00	02/20/17 23:35	1
Endosulfan I	<0.038		0.038	0.0039	ug/L		02/17/17 21:00	02/20/17 23:35	1
Endosulfan II	<0.038		0.038	0.0027	ug/L		02/17/17 21:00	02/20/17 23:35	1
Endosulfan sulfate	<0.038		0.038	0.011	ug/L		02/17/17 21:00	02/20/17 23:35	1
Endrin	<0.038		0.038	0.014	ug/L		02/17/17 21:00	02/20/17 23:35	1
Endrin aldehyde	<0.038		0.038	0.0079	ug/L		02/17/17 21:00	02/20/17 23:35	1
Endrin ketone	<0.038		0.038	0.016	ug/L		02/17/17 21:00	02/20/17 23:35	1
gamma-BHC (Lindane)	<0.038		0.038	0.0054	ug/L		02/17/17 21:00	02/20/17 23:35	1
gamma-Chlordane	<0.038		0.038	0.0069	ug/L		02/17/17 21:00	02/20/17 23:35	1
Heptachlor	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/20/17 23:35	1
Heptachlor epoxide	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/20/17 23:35	1
Methoxychlor	<0.077		0.077	0.022	ug/L		02/17/17 21:00	02/20/17 23:35	1
Toxaphene	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 23:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*73*		*30 - 143*	*02/17/17 21:00*	*02/20/17 23:35*	*1*
Tetrachloro-m-xylene	*117*		*30 - 120*	*02/17/17 21:00*	*02/20/17 23:35*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.38		0.38	0.064	ug/L		02/17/17 21:00	02/20/17 14:18	1
PCB-1221	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:18	1
PCB-1232	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:18	1
PCB-1242	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:18	1
PCB-1248	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:18	1
PCB-1254	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:18	1
PCB-1260	<0.38		0.38	0.067	ug/L		02/17/17 21:00	02/20/17 14:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*79*		*30 - 127*	*02/17/17 21:00*	*02/20/17 14:18*	*1*
DCB Decachlorobiphenyl	*72*		*30 - 150*	*02/17/17 21:00*	*02/20/17 14:18*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/22/17 18:49	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 20:44	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:44	1
Barium	**0.34**		0.010	0.0022	mg/L		02/17/17 08:13	02/22/17 18:49	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/22/17 18:49	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 20:44	1
Calcium	**98**		0.20	0.059	mg/L		02/17/17 08:13	02/22/17 18:49	1
Chromium	<0.010		0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 20:44	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 20:44	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 20:44	1
Iron	**34**	**^ B**	0.20	0.10	mg/L		02/17/17 08:13	02/22/17 18:49	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 20:44	1
Magnesium	**49**		0.10	0.041	mg/L		02/17/17 08:13	02/22/17 18:49	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-02-GW-02152017

Date Collected: 02/15/17 16:05
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-2

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	**0.21**		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:44	1
Nickel	**0.0045**	**J**	0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 20:44	1
Potassium	**34**		0.50	0.16	mg/L		02/17/17 08:13	02/22/17 18:49	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 20:44	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 20:44	1
Sodium	**160**		1.0	0.43	mg/L		02/17/17 08:13	02/22/17 18:49	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:44	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 20:44	1
Zinc	**0.050**		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 20:44	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/22/17 18:52	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 20:48	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:48	1
Barium	**0.36**		0.010	0.0022	mg/L		02/17/17 08:13	02/22/17 18:52	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/22/17 18:52	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 20:48	1
Calcium	**110**		0.20	0.059	mg/L		02/17/17 08:13	02/22/17 18:52	1
Chromium	**0.0032**	**J**	0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 20:48	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 20:48	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 20:48	1
Iron	**36**	**^ B**	0.20	0.10	mg/L		02/17/17 08:13	02/22/17 18:52	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 20:48	1
Magnesium	**54**		0.10	0.041	mg/L		02/17/17 08:13	02/22/17 18:52	1
Manganese	**0.23**		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:48	1
Nickel	**0.0043**	**J**	0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 20:48	1
Potassium	**37**		0.50	0.16	mg/L		02/17/17 08:13	02/22/17 18:52	1
Selenium	**0.0069**	**J**	0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 20:48	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 20:48	1
Sodium	**180**		1.0	0.43	mg/L		02/17/17 08:13	02/22/17 18:52	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:48	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 20:48	1
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 20:48	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:44	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**0.38**	**J**	1.0	0.18	mg/L			02/21/17 07:39	1
Sulfate	**3.0**	**J B**	5.0	1.5	mg/L			03/02/17 07:09	1
Total Organic Carbon - Duplicates	**19**		1.0	0.27	mg/L			02/17/17 00:54	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**63**		5.0	2.5	mg/L			02/17/17 13:12	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-02-GW-02152017

Lab Sample ID: 500-123998-2

Date Collected: 02/15/17 16:05
Matrix: Water
Date Received: 02/16/17 15:35

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**46**		2.0	1.0	mg/L		02/17/17 19:00	02/17/17 22:14	10
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/17/17 12:44	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/18/17 00:11	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-01-GW-02162017

Lab Sample ID: 500-123998-3

Date Collected: 02/16/17 07:55
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**55**		5.0	1.7	ug/L			02/23/17 04:42	1
Benzene	**30**		0.50	0.15	ug/L			02/23/17 04:42	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/23/17 04:42	1
Bromoform	<1.0		1.0	0.48	ug/L			02/23/17 04:42	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/23/17 04:42	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/23/17 04:42	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/23/17 04:42	1
Chlorobenzene	**5.8**		1.0	0.39	ug/L			02/23/17 04:42	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/23/17 04:42	1
Chloroform	<2.0		2.0	0.37	ug/L			02/23/17 04:42	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/23/17 04:42	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/23/17 04:42	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/23/17 04:42	1
Cyclohexane	**1.6**		1.0	0.49	ug/L			02/23/17 04:42	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/23/17 04:42	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/23/17 04:42	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/23/17 04:42	1
1,2-Dichlorobenzene	**1.8**		1.0	0.33	ug/L			02/23/17 04:42	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/23/17 04:42	1
1,4-Dichlorobenzene	**3.6**		1.0	0.36	ug/L			02/23/17 04:42	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/23/17 04:42	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/23/17 04:42	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/23/17 04:42	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/23/17 04:42	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/23/17 04:42	1
Ethylbenzene	**24**		0.50	0.18	ug/L			02/23/17 04:42	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/23/17 04:42	1
Isopropylbenzene	**14**		1.0	0.39	ug/L			02/23/17 04:42	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/23/17 04:42	1
Methylcyclohexane	**1.8**		1.0	0.32	ug/L			02/23/17 04:42	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/23/17 04:42	1
Methyl Ethyl Ketone	**46**		5.0	2.1	ug/L			02/23/17 04:42	1
methyl isobutyl ketone	**99**		5.0	2.2	ug/L			02/23/17 04:42	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/23/17 04:42	1
Styrene	<1.0		1.0	0.39	ug/L			02/23/17 04:42	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/23/17 04:42	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/23/17 04:42	1
Toluene	**11**		0.50	0.15	ug/L			02/23/17 04:42	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/23/17 04:42	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/23/17 04:42	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/23/17 04:42	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/23/17 04:42	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/23/17 04:42	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/23/17 04:42	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/23/17 04:42	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/23/17 04:42	1
Vinyl chloride	**0.48**	**J**	0.50	0.20	ug/L			02/23/17 04:42	1
Xylenes, Total	**23**		1.0	0.22	ug/L			02/23/17 04:42	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-01-GW-02162017

Lab Sample ID: 500-123998-3

Date Collected: 02/16/17 07:55
Matrix: Water
Date Received: 02/16/17 15:35

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*71 - 120*		*02/23/17 04:42*	*1*
Dibromofluoromethane	*92*		*70 - 120*		*02/23/17 04:42*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*71 - 127*		*02/23/17 04:42*	*1*
Toluene-d8 (Surr)	*101*		*75 - 120*		*02/23/17 04:42*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**8.1**		0.77	0.24	ug/L		02/23/17 22:30	02/24/17 14:30	1
Acenaphthylene	<0.77		0.77	0.20	ug/L		02/23/17 22:30	02/24/17 14:30	1
Acetophenone	**2.0**	**J**	3.8	0.51	ug/L		02/23/17 22:30	02/24/17 14:30	1
Anthracene	**0.26**	**J**	0.77	0.26	ug/L		02/23/17 22:30	02/24/17 14:30	1
Benzo[a]anthracene	<0.15		0.15	0.043	ug/L		02/23/17 22:30	02/24/17 14:30	1
Benzo[a]pyrene	<0.15		0.15	0.076	ug/L		02/23/17 22:30	02/24/17 14:30	1
Benzo[b]fluoranthene	<0.15		0.15	0.062	ug/L		02/23/17 22:30	02/24/17 14:30	1
Benzo[g,h,i]perylene	<0.77		0.77	0.29	ug/L		02/23/17 22:30	02/24/17 14:30	1
Benzo[k]fluoranthene	<0.15		0.15	0.049	ug/L		02/23/17 22:30	02/24/17 14:30	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.22	ug/L		02/23/17 22:30	02/24/17 14:30	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		02/23/17 22:30	02/24/17 14:30	1
Bis(2-ethylhexyl) phthalate	<7.7		7.7	1.3	ug/L		02/23/17 22:30	02/24/17 14:30	1
4-Bromophenyl phenyl ether	<3.8		3.8	0.41	ug/L		02/23/17 22:30	02/24/17 14:30	1
Butyl benzyl phthalate	<1.5		1.5	0.37	ug/L		02/23/17 22:30	02/24/17 14:30	1
Carbazole	**6.4**	*****	3.8	0.27	ug/L		02/23/17 22:30	02/24/17 14:30	1
4-Chloroaniline	**13**		7.7	1.5	ug/L		02/23/17 22:30	02/24/17 14:30	1
4-Chloro-3-methylphenol	<7.7		7.7	1.8	ug/L		02/23/17 22:30	02/24/17 14:30	1
2-Chloronaphthalene	<1.5		1.5	0.18	ug/L		02/23/17 22:30	02/24/17 14:30	1
2-Chlorophenol	<3.8		3.8	0.43	ug/L		02/23/17 22:30	02/24/17 14:30	1
4-Chlorophenyl phenyl ether	<3.8		3.8	0.49	ug/L		02/23/17 22:30	02/24/17 14:30	1
Chrysene	<0.15		0.15	0.052	ug/L		02/23/17 22:30	02/24/17 14:30	1
Dibenz(a,h)anthracene	<0.23		0.23	0.039	ug/L		02/23/17 22:30	02/24/17 14:30	1
Dibenzofuran	**1.4**	**J**	1.5	0.20	ug/L		02/23/17 22:30	02/24/17 14:30	1
3,3'-Dichlorobenzidine	<3.8		3.8	1.3	ug/L		02/23/17 22:30	02/24/17 14:30	1
2,4-Dichlorophenol	<7.7		7.7	2.0	ug/L		02/23/17 22:30	02/24/17 14:30	1
Diethyl phthalate	<1.5		1.5	0.28	ug/L		02/23/17 22:30	02/24/17 14:30	1
2,4-Dimethylphenol	**6.7**	**J**	7.7	1.4	ug/L		02/23/17 22:30	02/24/17 14:30	1
Dimethyl phthalate	<1.5		1.5	0.24	ug/L		02/23/17 22:30	02/24/17 14:30	1
Di-n-butyl phthalate	<3.8		3.8	0.56	ug/L		02/23/17 22:30	02/24/17 14:30	1
4,6-Dinitro-2-methylphenol	<15		15	4.5	ug/L		02/23/17 22:30	02/24/17 14:30	1
2,4-Dinitrophenol	<15		15	6.6	ug/L		02/23/17 22:30	02/24/17 14:30	1
2,4-Dinitrotoluene	<0.77		0.77	0.19	ug/L		02/23/17 22:30	02/24/17 14:30	1
2,6-Dinitrotoluene	<0.77		0.77	0.056	ug/L		02/23/17 22:30	02/24/17 14:30	1
Di-n-octyl phthalate	<7.7		7.7	0.80	ug/L		02/23/17 22:30	02/24/17 14:30	1
Fluoranthene	<0.77		0.77	0.35	ug/L		02/23/17 22:30	02/24/17 14:30	1
Fluorene	**2.6**		0.77	0.19	ug/L		02/23/17 22:30	02/24/17 14:30	1
Hexachlorobenzene	<0.38		0.38	0.061	ug/L		02/23/17 22:30	02/24/17 14:30	1
Hexachlorobutadiene	<3.8		3.8	0.39	ug/L		02/23/17 22:30	02/24/17 14:30	1
Hexachlorocyclopentadiene	<15		15	4.9	ug/L		02/23/17 22:30	02/24/17 14:30	1
Hexachloroethane	<3.8		3.8	0.46	ug/L		02/23/17 22:30	02/24/17 14:30	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.057	ug/L		02/23/17 22:30	02/24/17 14:30	1
Isophorone	<1.5		1.5	0.29	ug/L		02/23/17 22:30	02/24/17 14:30	1
2-Methylnaphthalene	**5.5**		1.5	0.050	ug/L		02/23/17 22:30	02/24/17 14:30	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-01-GW-02162017

Lab Sample ID: 500-123998-3

Date Collected: 02/16/17 07:55
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	**1.5**		1.5	0.23	ug/L		02/23/17 22:30	02/24/17 14:30	1
3 & 4 Methylphenol	**6.6**		1.5	0.34	ug/L		02/23/17 22:30	02/24/17 14:30	1
2-Nitroaniline	<3.8		3.8	0.99	ug/L		02/23/17 22:30	02/24/17 14:30	1
3-Nitroaniline	<7.7		7.7	1.4	ug/L		02/23/17 22:30	02/24/17 14:30	1
4-Nitroaniline	<7.7		7.7	1.3	ug/L		02/23/17 22:30	02/24/17 14:30	1
Nitrobenzene	<0.77		0.77	0.34	ug/L		02/23/17 22:30	02/24/17 14:30	1
2-Nitrophenol	<7.7		7.7	1.9	ug/L		02/23/17 22:30	02/24/17 14:30	1
4-Nitrophenol	<15		15	5.7	ug/L		02/23/17 22:30	02/24/17 14:30	1
N-Nitrosodi-n-propylamine	<0.38		0.38	0.12	ug/L		02/23/17 22:30	02/24/17 14:30	1
N-Nitrosodiphenylamine	<0.77		0.77	0.28	ug/L		02/23/17 22:30	02/24/17 14:30	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.29	ug/L		02/23/17 22:30	02/24/17 14:30	1
Pentachlorophenol	<15		15	3.0	ug/L		02/23/17 22:30	02/24/17 14:30	1
Phenanthrene	**1.3**		0.77	0.23	ug/L		02/23/17 22:30	02/24/17 14:30	1
Pyrene	<0.77		0.77	0.33	ug/L		02/23/17 22:30	02/24/17 14:30	1
2,4,5-Trichlorophenol	<7.7		7.7	2.0	ug/L		02/23/17 22:30	02/24/17 14:30	1
2,4,6-Trichlorophenol	<3.8		3.8	0.55	ug/L		02/23/17 22:30	02/24/17 14:30	1
Benzaldehyde	<31	^	31	12	ug/L		02/23/17 22:30	02/24/17 14:30	1
Caprolactam	<7.7		7.7	1.1	ug/L		02/23/17 22:30	02/24/17 14:30	1
Atrazine	<3.8		3.8	0.48	ug/L		02/23/17 22:30	02/24/17 14:30	1
1,1'-Biphenyl	<3.8		3.8	0.28	ug/L		02/23/17 22:30	02/24/17 14:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*71*		*30 - 123*	*02/23/17 22:30*	*02/24/17 14:30*	*1*
2-Fluorophenol (Surr)	*58*		*30 - 110*	*02/23/17 22:30*	*02/24/17 14:30*	*1*
Nitrobenzene-d5 (Surr)	*67*		*33 - 139*	*02/23/17 22:30*	*02/24/17 14:30*	*1*
Phenol-d5 (Surr)	*41*		*20 - 100*	*02/23/17 22:30*	*02/24/17 14:30*	*1*
Terphenyl-d14 (Surr)	*96*		*42 - 150*	*02/23/17 22:30*	*02/24/17 14:30*	*1*
2,4,6-Tribromophenol (Surr)	*105*		*30 - 150*	*02/23/17 22:30*	*02/24/17 14:30*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**130**		3.8	1.2	ug/L		02/23/17 22:30	02/24/17 14:58	5
Phenol	**72**		19	2.6	ug/L		02/23/17 22:30	02/24/17 14:58	5

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		02/17/17 21:00	02/20/17 23:54	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		02/17/17 21:00	02/20/17 23:54	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		02/17/17 21:00	02/20/17 23:54	1
beta-BHC	<0.037		0.037	0.0094	ug/L		02/17/17 21:00	02/20/17 23:54	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		02/17/17 21:00	02/20/17 23:54	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		02/17/17 21:00	02/20/17 23:54	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		02/17/17 21:00	02/20/17 23:54	1
delta-BHC	<0.037		0.037	0.0094	ug/L		02/17/17 21:00	02/20/17 23:54	1
Dieldrin	<0.037		0.037	0.012	ug/L		02/17/17 21:00	02/20/17 23:54	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		02/17/17 21:00	02/20/17 23:54	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		02/17/17 21:00	02/20/17 23:54	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		02/17/17 21:00	02/20/17 23:54	1
Endrin	<0.037		0.037	0.013	ug/L		02/17/17 21:00	02/20/17 23:54	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		02/17/17 21:00	02/20/17 23:54	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-01-GW-02162017

Lab Sample ID: 500-123998-3

Date Collected: 02/16/17 07:55
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endrin ketone	<0.037		0.037	0.016	ug/L		02/17/17 21:00	02/20/17 23:54	1
gamma-BHC (Lindane)	<0.037		0.037	0.0051	ug/L		02/17/17 21:00	02/20/17 23:54	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		02/17/17 21:00	02/20/17 23:54	1
Heptachlor	<0.037		0.037	0.012	ug/L		02/17/17 21:00	02/20/17 23:54	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		02/17/17 21:00	02/20/17 23:54	1
Methoxychlor	<0.073		0.073	0.021	ug/L		02/17/17 21:00	02/20/17 23:54	1
Toxaphene	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 23:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*79*		*30 - 143*	*02/17/17 21:00*	*02/20/17 23:54*	*1*
Tetrachloro-m-xylene	*73*		*30 - 120*	*02/17/17 21:00*	*02/20/17 23:54*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.061	ug/L		02/17/17 21:00	02/20/17 14:33	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 14:33	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 14:33	1
PCB-1242	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 14:33	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 14:33	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 14:33	1
PCB-1260	<0.37		0.37	0.064	ug/L		02/17/17 21:00	02/20/17 14:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*70*		*30 - 127*	*02/17/17 21:00*	*02/20/17 14:33*	*1*
DCB Decachlorobiphenyl	*65*		*30 - 150*	*02/17/17 21:00*	*02/20/17 14:33*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.34**		0.20	0.062	mg/L		02/17/17 08:13	02/21/17 20:57	1
Antimony	**0.0068**	**J**	0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 20:57	1
Arsenic	**0.0038**	**J**	0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:57	1
Barium	**0.46**		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 20:57	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/21/17 20:57	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 20:57	1
Calcium	**510**		0.20	0.059	mg/L		02/17/17 08:13	02/21/17 20:57	1
Chromium	<0.010		0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 20:57	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 20:57	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 20:57	1
Iron	<0.20		0.20	0.10	mg/L		02/17/17 08:13	02/21/17 20:57	1
Lead	**0.0027**	**J**	0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 20:57	1
Magnesium	**1.7**		0.10	0.041	mg/L		02/17/17 08:13	02/21/17 20:57	1
Manganese	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:57	1
Nickel	**0.016**		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 20:57	1
Potassium	**51**		0.50	0.16	mg/L		02/17/17 08:13	02/21/17 20:57	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 20:57	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 20:57	1
Sodium	**210**		1.0	0.43	mg/L		02/17/17 08:13	02/21/17 20:57	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:57	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 20:57	1
Zinc	**0.012**	**J**	0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 20:57	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-01-GW-02162017

Lab Sample ID: 500-123998-3

Date Collected: 02/16/17 07:55
Matrix: Water
Date Received: 02/16/17 15:35

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.21**		0.20	0.062	mg/L		02/17/17 08:13	02/21/17 21:01	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 21:01	1
Arsenic	**0.0046**	**J**	0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:01	1
Barium	**0.45**		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:01	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/21/17 21:01	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 21:01	1
Calcium	**510**		0.20	0.059	mg/L		02/17/17 08:13	02/21/17 21:01	1
Chromium	<0.010		0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 21:01	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 21:01	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:01	1
Iron	<0.20		0.20	0.10	mg/L		02/17/17 08:13	02/21/17 21:01	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 21:01	1
Magnesium	<0.10		0.10	0.041	mg/L		02/17/17 08:13	02/21/17 21:01	1
Manganese	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:01	1
Nickel	**0.016**		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 21:01	1
Potassium	**50**		0.50	0.16	mg/L		02/17/17 08:13	02/21/17 21:01	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 21:01	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 21:01	1
Sodium	**210**		1.0	0.43	mg/L		02/17/17 08:13	02/21/17 21:01	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:01	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 21:01	1
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 21:01	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:47	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**0.98**	**J**	1.0	0.18	mg/L			02/21/17 07:42	1
Sulfate	**24**	**B**	5.0	1.5	mg/L			03/02/17 07:12	1
Total Organic Carbon - Duplicates	**31**		1.0	0.27	mg/L			02/17/17 01:11	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**29**		5.0	2.5	mg/L			02/17/17 13:14	1
Ammonia	**49**		4.0	2.0	mg/L		02/17/17 19:00	02/17/17 22:17	20
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/17/17 12:45	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/18/17 00:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-13-GW-02162017

Lab Sample ID: 500-123998-4

Date Collected: 02/16/17 10:35
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<50		50	17	ug/L			02/23/17 05:09	10
Benzene	**410**		5.0	1.5	ug/L			02/23/17 05:09	10
Bromodichloromethane	<10		10	3.7	ug/L			02/23/17 05:09	10
Bromoform	<10		10	4.8	ug/L			02/23/17 05:09	10
Bromomethane	<20		20	8.0	ug/L			02/23/17 05:09	10
Carbon disulfide	<20		20	4.5	ug/L			02/23/17 05:09	10
Carbon tetrachloride	<10		10	3.8	ug/L			02/23/17 05:09	10
Chlorobenzene	<10		10	3.9	ug/L			02/23/17 05:09	10
Chloroethane	<10		10	5.1	ug/L			02/23/17 05:09	10
Chloroform	<20		20	3.7	ug/L			02/23/17 05:09	10
Chloromethane	<10		10	3.2	ug/L			02/23/17 05:09	10
cis-1,2-Dichloroethene	**37**		10	4.1	ug/L			02/23/17 05:09	10
cis-1,3-Dichloropropene	<10		10	4.2	ug/L			02/23/17 05:09	10
Cyclohexane	<10		10	4.9	ug/L			02/23/17 05:09	10
Dibromochloromethane	<10		10	4.9	ug/L			02/23/17 05:09	10
1,2-Dibromo-3-Chloropropane	<50		50	20	ug/L			02/23/17 05:09	10
1,2-Dibromoethane	<10		10	3.9	ug/L			02/23/17 05:09	10
1,2-Dichlorobenzene	**18**		10	3.3	ug/L			02/23/17 05:09	10
1,3-Dichlorobenzene	<10		10	4.0	ug/L			02/23/17 05:09	10
1,4-Dichlorobenzene	<10		10	3.6	ug/L			02/23/17 05:09	10
Dichlorodifluoromethane	<20		20	6.7	ug/L			02/23/17 05:09	10
1,1-Dichloroethane	<10		10	4.1	ug/L			02/23/17 05:09	10
1,2-Dichloroethane	<10		10	3.9	ug/L			02/23/17 05:09	10
1,1-Dichloroethene	<10		10	3.9	ug/L			02/23/17 05:09	10
1,2-Dichloropropane	<10		10	4.3	ug/L			02/23/17 05:09	10
Ethylbenzene	**1300**		5.0	1.8	ug/L			02/23/17 05:09	10
2-Hexanone	<50		50	16	ug/L			02/23/17 05:09	10
Isopropylbenzene	**100**		10	3.9	ug/L			02/23/17 05:09	10
Methyl acetate	<50		50	20	ug/L			02/23/17 05:09	10
Methylcyclohexane	<10		10	3.2	ug/L			02/23/17 05:09	10
Methylene Chloride	<50		50	16	ug/L			02/23/17 05:09	10
Methyl Ethyl Ketone	<50		50	21	ug/L			02/23/17 05:09	10
methyl isobutyl ketone	<50		50	22	ug/L			02/23/17 05:09	10
Methyl tert-butyl ether	<10		10	3.9	ug/L			02/23/17 05:09	10
Styrene	<10		10	3.9	ug/L			02/23/17 05:09	10
1,1,2,2-Tetrachloroethane	<10		10	4.0	ug/L			02/23/17 05:09	10
Tetrachloroethene	<10		10	3.7	ug/L			02/23/17 05:09	10
trans-1,2-Dichloroethene	<10		10	3.5	ug/L			02/23/17 05:09	10
trans-1,3-Dichloropropene	<10		10	3.6	ug/L			02/23/17 05:09	10
1,2,4-Trichlorobenzene	<10		10	3.4	ug/L			02/23/17 05:09	10
1,1,1-Trichloroethane	<10		10	3.8	ug/L			02/23/17 05:09	10
1,1,2-Trichloroethane	<10		10	3.5	ug/L			02/23/17 05:09	10
Trichloroethene	<5.0		5.0	1.6	ug/L			02/23/17 05:09	10
Trichlorofluoromethane	<10		10	4.3	ug/L			02/23/17 05:09	10
1,1,2-Trichloro-1,2,2-trifluoroethane	<10		10	4.6	ug/L			02/23/17 05:09	10
Vinyl chloride	**11**		5.0	2.0	ug/L			02/23/17 05:09	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*71 - 120*		*02/23/17 05:09*	*10*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-13-GW-02162017

Lab Sample ID: 500-123998-4

Date Collected: 02/16/17 10:35
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane	93		70 - 120		02/23/17 05:09	10
1,2-Dichloroethane-d4 (Surr)	100		71 - 127		02/23/17 05:09	10
Toluene-d8 (Surr)	101		75 - 120		02/23/17 05:09	10

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**2600**		50	15	ug/L			02/23/17 05:36	100
Xylenes, Total	**8400**		100	22	ug/L			02/23/17 05:36	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		71 - 120		02/23/17 05:36	100
Dibromofluoromethane	91		70 - 120		02/23/17 05:36	100
1,2-Dichloroethane-d4 (Surr)	99		71 - 127		02/23/17 05:36	100
Toluene-d8 (Surr)	100		75 - 120		02/23/17 05:36	100

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.86**		0.74	0.23	ug/L		02/22/17 12:03	02/23/17 00:54	1
Acenaphthylene	**2.3**		0.74	0.20	ug/L		02/22/17 12:03	02/23/17 00:54	1
Acetophenone	**32**		3.7	0.49	ug/L		02/22/17 12:03	02/23/17 00:54	1
Anthracene	**0.29**	**J**	0.74	0.25	ug/L		02/22/17 12:03	02/23/17 00:54	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		02/22/17 12:03	02/23/17 00:54	1
Benzo[a]pyrene	<0.15	*	0.15	0.073	ug/L		02/22/17 12:03	02/23/17 00:54	1
Benzo[b]fluoranthene	<0.15	*	0.15	0.060	ug/L		02/22/17 12:03	02/23/17 00:54	1
Benzo[g,h,i]perylene	<0.74	*	0.74	0.28	ug/L		02/22/17 12:03	02/23/17 00:54	1
Benzo[k]fluoranthene	<0.15	*	0.15	0.047	ug/L		02/22/17 12:03	02/23/17 00:54	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/22/17 12:03	02/23/17 00:54	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		02/22/17 12:03	02/23/17 00:54	1
Bis(2-ethylhexyl) phthalate	**2.9**	**J**	7.4	1.3	ug/L		02/22/17 12:03	02/23/17 00:54	1
4-Bromophenyl phenyl ether	<3.7	*	3.7	0.40	ug/L		02/22/17 12:03	02/23/17 00:54	1
Butyl benzyl phthalate	**1.3**	**J**	1.5	0.35	ug/L		02/22/17 12:03	02/23/17 00:54	1
Carbazole	<3.7		3.7	0.26	ug/L		02/22/17 12:03	02/23/17 00:54	1
4-Chloroaniline	<7.4		7.4	1.5	ug/L		02/22/17 12:03	02/23/17 00:54	1
4-Chloro-3-methylphenol	<7.4		7.4	1.7	ug/L		02/22/17 12:03	02/23/17 00:54	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/22/17 12:03	02/23/17 00:54	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		02/22/17 12:03	02/23/17 00:54	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		02/22/17 12:03	02/23/17 00:54	1
Chrysene	<0.15		0.15	0.050	ug/L		02/22/17 12:03	02/23/17 00:54	1
Dibenz(a,h)anthracene	<0.22	*	0.22	0.037	ug/L		02/22/17 12:03	02/23/17 00:54	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		02/22/17 12:03	02/23/17 00:54	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		02/22/17 12:03	02/23/17 00:54	1
2,4-Dichlorophenol	<7.4		7.4	1.9	ug/L		02/22/17 12:03	02/23/17 00:54	1
Diethyl phthalate	**11**		1.5	0.27	ug/L		02/22/17 12:03	02/23/17 00:54	1
2,4-Dimethylphenol	**42**		7.4	1.3	ug/L		02/22/17 12:03	02/23/17 00:54	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/22/17 12:03	02/23/17 00:54	1
Di-n-butyl phthalate	**3.9**		3.7	0.54	ug/L		02/22/17 12:03	02/23/17 00:54	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		02/22/17 12:03	02/23/17 00:54	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		02/22/17 12:03	02/23/17 00:54	1
2,4-Dinitrotoluene	<0.74		0.74	0.18	ug/L		02/22/17 12:03	02/23/17 00:54	1
2,6-Dinitrotoluene	<0.74		0.74	0.054	ug/L		02/22/17 12:03	02/23/17 00:54	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-13-GW-02162017

Lab Sample ID: 500-123998-4

Date Collected: 02/16/17 10:35
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	<7.4		7.4	0.77	ug/L		02/22/17 12:03	02/23/17 00:54	1
Fluoranthene	<0.74		0.74	0.33	ug/L		02/22/17 12:03	02/23/17 00:54	1
Fluorene	**1.2**		0.74	0.18	ug/L		02/22/17 12:03	02/23/17 00:54	1
Hexachlorobenzene	<0.37		0.37	0.059	ug/L		02/22/17 12:03	02/23/17 00:54	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		02/22/17 12:03	02/23/17 00:54	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		02/22/17 12:03	02/23/17 00:54	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		02/22/17 12:03	02/23/17 00:54	1
Indeno[1,2,3-cd]pyrene	<0.15	*	0.15	0.055	ug/L		02/22/17 12:03	02/23/17 00:54	1
Isophorone	<1.5		1.5	0.28	ug/L		02/22/17 12:03	02/23/17 00:54	1
2-Methylnaphthalene	**11**		1.5	0.048	ug/L		02/22/17 12:03	02/23/17 00:54	1
2-Methylphenol	<1.5		1.5	0.23	ug/L		02/22/17 12:03	02/23/17 00:54	1
3 & 4 Methylphenol	**40**		1.5	0.33	ug/L		02/22/17 12:03	02/23/17 00:54	1
2-Nitroaniline	<3.7		3.7	0.95	ug/L		02/22/17 12:03	02/23/17 00:54	1
3-Nitroaniline	<7.4		7.4	1.3	ug/L		02/22/17 12:03	02/23/17 00:54	1
4-Nitroaniline	<7.4		7.4	1.2	ug/L		02/22/17 12:03	02/23/17 00:54	1
Nitrobenzene	<0.74		0.74	0.33	ug/L		02/22/17 12:03	02/23/17 00:54	1
2-Nitrophenol	<7.4		7.4	1.8	ug/L		02/22/17 12:03	02/23/17 00:54	1
4-Nitrophenol	<15		15	5.5	ug/L		02/22/17 12:03	02/23/17 00:54	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		02/22/17 12:03	02/23/17 00:54	1
N-Nitrosodiphenylamine	**11**		0.74	0.27	ug/L		02/22/17 12:03	02/23/17 00:54	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/22/17 12:03	02/23/17 00:54	1
Pentachlorophenol	<15		15	2.9	ug/L		02/22/17 12:03	02/23/17 00:54	1
Phenanthrene	**0.86**		0.74	0.22	ug/L		02/22/17 12:03	02/23/17 00:54	1
Phenol	**39**		3.7	0.50	ug/L		02/22/17 12:03	02/23/17 00:54	1
Pyrene	<0.74		0.74	0.31	ug/L		02/22/17 12:03	02/23/17 00:54	1
2,4,5-Trichlorophenol	<7.4		7.4	1.9	ug/L		02/22/17 12:03	02/23/17 00:54	1
2,4,6-Trichlorophenol	**1.3**	**J**	3.7	0.53	ug/L		02/22/17 12:03	02/23/17 00:54	1
Benzaldehyde	<30	^	30	11	ug/L		02/22/17 12:03	02/23/17 00:54	1
Caprolactam	<7.4		7.4	1.1	ug/L		02/22/17 12:03	02/23/17 00:54	1
Atrazine	<3.7		3.7	0.46	ug/L		02/22/17 12:03	02/23/17 00:54	1
1,1'-Biphenyl	**2.0**	**J**	3.7	0.27	ug/L		02/22/17 12:03	02/23/17 00:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*68*		*30 - 123*	*02/22/17 12:03*	*02/23/17 00:54*	*1*
2-Fluorophenol (Surr)	*21*	*X*	*30 - 110*	*02/22/17 12:03*	*02/23/17 00:54*	*1*
Nitrobenzene-d5 (Surr)	*69*		*33 - 139*	*02/22/17 12:03*	*02/23/17 00:54*	*1*
Phenol-d5 (Surr)	*46*		*20 - 100*	*02/22/17 12:03*	*02/23/17 00:54*	*1*
Terphenyl-d14 (Surr)	*82*		*42 - 150*	*02/22/17 12:03*	*02/23/17 00:54*	*1*
2,4,6-Tribromophenol (Surr)	*95*		*30 - 150*	*02/22/17 12:03*	*02/23/17 00:54*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**190**		7.4	2.3	ug/L		02/22/17 12:03	02/23/17 01:21	10

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.038		0.038	0.0051	ug/L		02/17/17 21:00	02/21/17 00:13	1
alpha-BHC	<0.038		0.038	0.0025	ug/L		02/17/17 21:00	02/21/17 00:13	1
alpha-Chlordane	<0.038		0.038	0.0042	ug/L		02/17/17 21:00	02/21/17 00:13	1
beta-BHC	<0.038		0.038	0.0097	ug/L		02/17/17 21:00	02/21/17 00:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-13-GW-02162017

Date Collected: 02/16/17 10:35
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-4

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/21/17 00:13	1
4,4'-DDE	<0.038		0.038	0.0036	ug/L		02/17/17 21:00	02/21/17 00:13	1
4,4'-DDT	<0.038		0.038	0.0031	ug/L		02/17/17 21:00	02/21/17 00:13	1
delta-BHC	<0.038		0.038	0.0098	ug/L		02/17/17 21:00	02/21/17 00:13	1
Dieldrin	<0.038		0.038	0.012	ug/L		02/17/17 21:00	02/21/17 00:13	1
Endosulfan I	<0.038		0.038	0.0039	ug/L		02/17/17 21:00	02/21/17 00:13	1
Endosulfan II	<0.038		0.038	0.0027	ug/L		02/17/17 21:00	02/21/17 00:13	1
Endosulfan sulfate	<0.038		0.038	0.011	ug/L		02/17/17 21:00	02/21/17 00:13	1
Endrin	<0.038		0.038	0.014	ug/L		02/17/17 21:00	02/21/17 00:13	1
Endrin aldehyde	<0.038		0.038	0.0078	ug/L		02/17/17 21:00	02/21/17 00:13	1
Endrin ketone	<0.038		0.038	0.016	ug/L		02/17/17 21:00	02/21/17 00:13	1
gamma-BHC (Lindane)	<0.038		0.038	0.0053	ug/L		02/17/17 21:00	02/21/17 00:13	1
gamma-Chlordane	<0.038		0.038	0.0069	ug/L		02/17/17 21:00	02/21/17 00:13	1
Heptachlor	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/21/17 00:13	1
Heptachlor epoxide	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/21/17 00:13	1
Methoxychlor	<0.076		0.076	0.022	ug/L		02/17/17 21:00	02/21/17 00:13	1
Toxaphene	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/21/17 00:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*47*		*30 - 143*	*02/17/17 21:00*	*02/21/17 00:13*	*1*
Tetrachloro-m-xylene	*40*		*30 - 120*	*02/17/17 21:00*	*02/21/17 00:13*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.38		0.38	0.064	ug/L		02/17/17 21:00	02/20/17 14:48	1
PCB-1221	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:48	1
PCB-1232	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:48	1
PCB-1242	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:48	1
PCB-1248	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:48	1
PCB-1254	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:48	1
PCB-1260	<0.38		0.38	0.067	ug/L		02/17/17 21:00	02/20/17 14:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*105*		*30 - 127*	*02/17/17 21:00*	*02/20/17 14:48*	*1*
DCB Decachlorobiphenyl	*58*		*30 - 150*	*02/17/17 21:00*	*02/20/17 14:48*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/21/17 21:07	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 21:07	1
Arsenic	**0.0074**	**J**	0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:07	1
Barium	**0.25**		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:07	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/21/17 21:07	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 21:07	1
Calcium	**100**		0.20	0.059	mg/L		02/17/17 08:13	02/21/17 21:07	1
Chromium	**0.0032**	**J**	0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 21:07	1
Cobalt	**0.0018**	**J**	0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 21:07	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:07	1
Iron	**4.8**		0.20	0.10	mg/L		02/17/17 08:13	02/21/17 21:07	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 21:07	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-13-GW-02162017

Date Collected: 02/16/17 10:35
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-4
Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	47		0.10	0.041	mg/L		02/17/17 08:13	02/21/17 21:07	1
Manganese	0.24		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:07	1
Nickel	0.014		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 21:07	1
Potassium	67		0.50	0.16	mg/L		02/17/17 08:13	02/21/17 21:07	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 21:07	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 21:07	1
Sodium	230		1.0	0.43	mg/L		02/17/17 08:13	02/21/17 21:07	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:07	1
Vanadium	0.0028	J	0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 21:07	1
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 21:07	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/21/17 21:13	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 21:13	1
Arsenic	0.0070	J	0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:13	1
Barium	0.25		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:13	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/21/17 21:13	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 21:13	1
Calcium	100		0.20	0.059	mg/L		02/17/17 08:13	02/21/17 21:13	1
Chromium	0.0027	J	0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 21:13	1
Cobalt	0.0020	J	0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 21:13	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:13	1
Iron	4.3		0.20	0.10	mg/L		02/17/17 08:13	02/21/17 21:13	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 21:13	1
Magnesium	48		0.10	0.041	mg/L		02/17/17 08:13	02/21/17 21:13	1
Manganese	0.24		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:13	1
Nickel	0.014		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 21:13	1
Potassium	69		0.50	0.16	mg/L		02/17/17 08:13	02/21/17 21:13	1
Selenium	0.0063	J	0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 21:13	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 21:13	1
Sodium	240		1.0	0.43	mg/L		02/17/17 08:13	02/21/17 21:13	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:13	1
Vanadium	0.0025	J	0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 21:13	1
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 21:13	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:53	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	3.4		1.0	0.18	mg/L			02/21/17 07:44	1
Sulfate	100	B	25	7.4	mg/L			03/02/17 07:13	5
Total Organic Carbon - Duplicates	61	B	2.0	0.53	mg/L			02/21/17 00:31	2
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-13-GW-02162017

Lab Sample ID: 500-123998-4

Date Collected: 02/16/17 10:35
Matrix: Water
Date Received: 02/16/17 15:35

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	**20**		5.0	2.5	mg/L			02/17/17 13:15	1
Ammonia	**57**		4.0	2.0	mg/L		02/17/17 19:00	02/17/17 22:25	20
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/17/17 12:45	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/18/17 00:16	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-11-GW-02162017

Lab Sample ID: 500-123998-5

Date Collected: 02/16/17 13:00
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			02/23/17 18:00	1
Benzene	**81**		0.50	0.15	ug/L			02/23/17 18:00	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/23/17 18:00	1
Bromoform	<1.0		1.0	0.48	ug/L			02/23/17 18:00	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/23/17 18:00	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/23/17 18:00	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/23/17 18:00	1
Chlorobenzene	**11**		1.0	0.39	ug/L			02/23/17 18:00	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/23/17 18:00	1
Chloroform	<2.0		2.0	0.37	ug/L			02/23/17 18:00	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/23/17 18:00	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/23/17 18:00	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/23/17 18:00	1
Cyclohexane	**110**		1.0	0.49	ug/L			02/23/17 18:00	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/23/17 18:00	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/23/17 18:00	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/23/17 18:00	1
1,2-Dichlorobenzene	**1.2**		1.0	0.33	ug/L			02/23/17 18:00	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/23/17 18:00	1
1,4-Dichlorobenzene	**3.8**		1.0	0.36	ug/L			02/23/17 18:00	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/23/17 18:00	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/23/17 18:00	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/23/17 18:00	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/23/17 18:00	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/23/17 18:00	1
Ethylbenzene	**3.1**		0.50	0.18	ug/L			02/23/17 18:00	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/23/17 18:00	1
Isopropylbenzene	**61**		1.0	0.39	ug/L			02/23/17 18:00	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/23/17 18:00	1
Methylcyclohexane	**170**		1.0	0.32	ug/L			02/23/17 18:00	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/23/17 18:00	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			02/23/17 18:00	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/23/17 18:00	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/23/17 18:00	1
Styrene	<1.0		1.0	0.39	ug/L			02/23/17 18:00	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/23/17 18:00	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/23/17 18:00	1
Toluene	**0.82**		0.50	0.15	ug/L			02/23/17 18:00	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/23/17 18:00	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/23/17 18:00	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/23/17 18:00	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/23/17 18:00	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/23/17 18:00	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/23/17 18:00	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/23/17 18:00	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/23/17 18:00	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/23/17 18:00	1
Xylenes, Total	**17**		1.0	0.22	ug/L			02/23/17 18:00	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-11-GW-02162017

Lab Sample ID: 500-123998-5

Date Collected: 02/16/17 13:00
Matrix: Water
Date Received: 02/16/17 15:35

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*71 - 120*		*02/23/17 18:00*	*1*
Dibromofluoromethane	*94*		*70 - 120*		*02/23/17 18:00*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*71 - 127*		*02/23/17 18:00*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*02/23/17 18:00*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.23**	**J**	0.73	0.23	ug/L		02/20/17 07:25	02/23/17 01:49	1
Acenaphthylene	<0.73		0.73	0.20	ug/L		02/20/17 07:25	02/23/17 01:49	1
Acetophenone	<3.7		3.7	0.49	ug/L		02/20/17 07:25	02/23/17 01:49	1
Anthracene	<0.73		0.73	0.25	ug/L		02/20/17 07:25	02/23/17 01:49	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		02/20/17 07:25	02/23/17 01:49	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		02/20/17 07:25	02/23/17 01:49	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		02/20/17 07:25	02/23/17 01:49	1
Benzo[g,h,i]perylene	<0.73		0.73	0.28	ug/L		02/20/17 07:25	02/23/17 01:49	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		02/20/17 07:25	02/23/17 01:49	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/23/17 01:49	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/23/17 01:49	1
Bis(2-ethylhexyl) phthalate	<7.3		7.3	1.3	ug/L		02/20/17 07:25	02/23/17 01:49	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		02/20/17 07:25	02/23/17 01:49	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/20/17 07:25	02/23/17 01:49	1
Carbazole	<3.7	*	3.7	0.26	ug/L		02/20/17 07:25	02/23/17 01:49	1
4-Chloroaniline	<7.3		7.3	1.5	ug/L		02/20/17 07:25	02/23/17 01:49	1
4-Chloro-3-methylphenol	<7.3		7.3	1.7	ug/L		02/20/17 07:25	02/23/17 01:49	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/20/17 07:25	02/23/17 01:49	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		02/20/17 07:25	02/23/17 01:49	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		02/20/17 07:25	02/23/17 01:49	1
Chrysene	<0.15		0.15	0.050	ug/L		02/20/17 07:25	02/23/17 01:49	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		02/20/17 07:25	02/23/17 01:49	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		02/20/17 07:25	02/23/17 01:49	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		02/20/17 07:25	02/23/17 01:49	1
2,4-Dichlorophenol	<7.3		7.3	1.9	ug/L		02/20/17 07:25	02/23/17 01:49	1
Diethyl phthalate	**0.64**	**J**	1.5	0.27	ug/L		02/20/17 07:25	02/23/17 01:49	1
2,4-Dimethylphenol	<7.3		7.3	1.3	ug/L		02/20/17 07:25	02/23/17 01:49	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/20/17 07:25	02/23/17 01:49	1
Di-n-butyl phthalate	**0.69**	**J**	3.7	0.54	ug/L		02/20/17 07:25	02/23/17 01:49	1
4,6-Dinitro-2-methylphenol	<15		15	4.3	ug/L		02/20/17 07:25	02/23/17 01:49	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		02/20/17 07:25	02/23/17 01:49	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		02/20/17 07:25	02/23/17 01:49	1
2,6-Dinitrotoluene	<0.73		0.73	0.054	ug/L		02/20/17 07:25	02/23/17 01:49	1
Di-n-octyl phthalate	<7.3		7.3	0.77	ug/L		02/20/17 07:25	02/23/17 01:49	1
Fluoranthene	<0.73		0.73	0.33	ug/L		02/20/17 07:25	02/23/17 01:49	1
Fluorene	<0.73		0.73	0.18	ug/L		02/20/17 07:25	02/23/17 01:49	1
Hexachlorobenzene	<0.37		0.37	0.058	ug/L		02/20/17 07:25	02/23/17 01:49	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		02/20/17 07:25	02/23/17 01:49	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		02/20/17 07:25	02/23/17 01:49	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		02/20/17 07:25	02/23/17 01:49	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		02/20/17 07:25	02/23/17 01:49	1
Isophorone	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/23/17 01:49	1
2-Methylnaphthalene	**3.7**		1.5	0.048	ug/L		02/20/17 07:25	02/23/17 01:49	1

Client Sample ID: MW-11-GW-02162017

Lab Sample ID: 500-123998-5

Date Collected: 02/16/17 13:00

Matrix: Water

Date Received: 02/16/17 15:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.22	ug/L		02/20/17 07:25	02/23/17 01:49	1
3 & 4 Methylphenol	**3.2**		1.5	0.33	ug/L		02/20/17 07:25	02/23/17 01:49	1
Naphthalene	**2.4**		0.73	0.23	ug/L		02/20/17 07:25	02/23/17 01:49	1
2-Nitroaniline	<3.7		3.7	0.95	ug/L		02/20/17 07:25	02/23/17 01:49	1
3-Nitroaniline	<7.3		7.3	1.3	ug/L		02/20/17 07:25	02/23/17 01:49	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		02/20/17 07:25	02/23/17 01:49	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		02/20/17 07:25	02/23/17 01:49	1
2-Nitrophenol	<7.3		7.3	1.8	ug/L		02/20/17 07:25	02/23/17 01:49	1
4-Nitrophenol	<15		15	5.5	ug/L		02/20/17 07:25	02/23/17 01:49	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		02/20/17 07:25	02/23/17 01:49	1
N-Nitrosodiphenylamine	**1.7**		0.73	0.27	ug/L		02/20/17 07:25	02/23/17 01:49	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/23/17 01:49	1
Pentachlorophenol	<15		15	2.9	ug/L		02/20/17 07:25	02/23/17 01:49	1
Phenanthrene	<0.73		0.73	0.22	ug/L		02/20/17 07:25	02/23/17 01:49	1
Phenol	**0.73**	**J**	3.7	0.49	ug/L		02/20/17 07:25	02/23/17 01:49	1
Pyrene	<0.73		0.73	0.31	ug/L		02/20/17 07:25	02/23/17 01:49	1
2,4,5-Trichlorophenol	<7.3		7.3	1.9	ug/L		02/20/17 07:25	02/23/17 01:49	1
2,4,6-Trichlorophenol	<3.7		3.7	0.53	ug/L		02/20/17 07:25	02/23/17 01:49	1
Benzaldehyde	<29	^	29	11	ug/L		02/20/17 07:25	02/23/17 01:49	1
Caprolactam	<7.3		7.3	1.1	ug/L		02/20/17 07:25	02/23/17 01:49	1
Atrazine	<3.7		3.7	0.46	ug/L		02/20/17 07:25	02/23/17 01:49	1
1,1'-Biphenyl	**0.99**	**J**	3.7	0.27	ug/L		02/20/17 07:25	02/23/17 01:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*41*		*30 - 123*	*02/20/17 07:25*	*02/23/17 01:49*	*1*
2-Fluorophenol (Surr)	*51*		*30 - 110*	*02/20/17 07:25*	*02/23/17 01:49*	*1*
Nitrobenzene-d5 (Surr)	*59*		*33 - 139*	*02/20/17 07:25*	*02/23/17 01:49*	*1*
Phenol-d5 (Surr)	*46*		*20 - 100*	*02/20/17 07:25*	*02/23/17 01:49*	*1*
Terphenyl-d14 (Surr)	*63*		*42 - 150*	*02/20/17 07:25*	*02/23/17 01:49*	*1*
2,4,6-Tribromophenol (Surr)	*60*		*30 - 150*	*02/20/17 07:25*	*02/23/17 01:49*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		02/17/17 21:00	02/21/17 00:33	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		02/17/17 21:00	02/21/17 00:33	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		02/17/17 21:00	02/21/17 00:33	1
beta-BHC	<0.037		0.037	0.0094	ug/L		02/17/17 21:00	02/21/17 00:33	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		02/17/17 21:00	02/21/17 00:33	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		02/17/17 21:00	02/21/17 00:33	1
4,4'-DDT	<0.037		0.037	0.0030	ug/L		02/17/17 21:00	02/21/17 00:33	1
delta-BHC	<0.037		0.037	0.0095	ug/L		02/17/17 21:00	02/21/17 00:33	1
Dieldrin	<0.037		0.037	0.012	ug/L		02/17/17 21:00	02/21/17 00:33	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		02/17/17 21:00	02/21/17 00:33	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		02/17/17 21:00	02/21/17 00:33	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		02/17/17 21:00	02/21/17 00:33	1
Endrin	<0.037		0.037	0.013	ug/L		02/17/17 21:00	02/21/17 00:33	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		02/17/17 21:00	02/21/17 00:33	1
Endrin ketone	<0.037		0.037	0.016	ug/L		02/17/17 21:00	02/21/17 00:33	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		02/17/17 21:00	02/21/17 00:33	1
gamma-Chlordane	<0.037		0.037	0.0067	ug/L		02/17/17 21:00	02/21/17 00:33	1

Client Sample ID: MW-11-GW-02162017

Lab Sample ID: 500-123998-5

Date Collected: 02/16/17 13:00
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.012	ug/L		02/17/17 21:00	02/21/17 00:33	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		02/17/17 21:00	02/21/17 00:33	1
Methoxychlor	<0.074		0.074	0.021	ug/L		02/17/17 21:00	02/21/17 00:33	1
Toxaphene	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/21/17 00:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*60*		*30 - 143*	*02/17/17 21:00*	*02/21/17 00:33*	*1*
Tetrachloro-m-xylene	*67*		*30 - 120*	*02/17/17 21:00*	*02/21/17 00:33*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		02/17/17 21:00	02/20/17 15:04	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 15:04	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 15:04	1
PCB-1242	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 15:04	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 15:04	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 15:04	1
PCB-1260	<0.37		0.37	0.065	ug/L		02/17/17 21:00	02/20/17 15:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*87*		*30 - 127*	*02/17/17 21:00*	*02/20/17 15:04*	*1*
DCB Decachlorobiphenyl	*46*		*30 - 150*	*02/17/17 21:00*	*02/20/17 15:04*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/21/17 21:19	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 21:19	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:19	1
Barium	**0.79**		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:19	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/21/17 21:19	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 21:19	1
Calcium	**130**		0.20	0.059	mg/L		02/17/17 08:13	02/21/17 21:19	1
Chromium	**0.0073**	**J**	0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 21:19	1
Cobalt	**0.0018**	**J**	0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 21:19	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:19	1
Iron	**29**		0.20	0.10	mg/L		02/17/17 08:13	02/21/17 21:19	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 21:19	1
Magnesium	**120**		0.10	0.041	mg/L		02/17/17 08:13	02/21/17 21:19	1
Manganese	**0.22**		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:19	1
Nickel	**0.020**		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 21:19	1
Potassium	**110**		0.50	0.16	mg/L		02/17/17 08:13	02/21/17 21:19	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 21:19	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 21:19	1
Sodium	**380**		1.0	0.43	mg/L		02/17/17 08:13	02/21/17 21:19	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:19	1
Vanadium	**0.0050**		0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 21:19	1
Zinc	**0.011**	**J**	0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 21:19	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/21/17 21:26	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-11-GW-02162017

Lab Sample ID: 500-123998-5

Date Collected: 02/16/17 13:00
Matrix: Water
Date Received: 02/16/17 15:35

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 21:26	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:26	1
Barium	**0.79**		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:26	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/21/17 21:26	1
Cadmium	**0.0010**	**J**	0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 21:26	1
Calcium	**130**		0.20	0.059	mg/L		02/17/17 08:13	02/21/17 21:26	1
Chromium	**0.0076**	**J**	0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 21:26	1
Cobalt	**0.0017**	**J**	0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 21:26	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:26	1
Iron	**28**		0.20	0.10	mg/L		02/17/17 08:13	02/21/17 21:26	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 21:26	1
Magnesium	**120**		0.10	0.041	mg/L		02/17/17 08:13	02/21/17 21:26	1
Manganese	**0.22**		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:26	1
Nickel	**0.019**		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 21:26	1
Potassium	**120**		0.50	0.16	mg/L		02/17/17 08:13	02/21/17 21:26	1
Selenium	**0.0068**	**J**	0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 21:26	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 21:26	1
Sodium	**390**		1.0	0.43	mg/L		02/17/17 08:13	02/21/17 21:26	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:26	1
Vanadium	**0.0042**	**J**	0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 21:26	1
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 21:26	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:55	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 07:47	1
Sulfate	**7.2**	**B**	5.0	1.5	mg/L			03/02/17 07:14	1
Total Organic Carbon - Duplicates	**36**		1.0	0.27	mg/L			02/17/17 01:44	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**100**		5.0	2.5	mg/L			02/17/17 13:16	1
Ammonia	**59**		5.0	2.5	mg/L		02/17/17 19:00	02/17/17 22:28	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/17/17 12:45	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/18/17 00:16	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: DUP-1-02162017

Date Collected: 02/16/17 00:00
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-6

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**59**		5.0	1.7	ug/L			02/23/17 06:03	1
Benzene	**30**		0.50	0.15	ug/L			02/23/17 06:03	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/23/17 06:03	1
Bromoform	<1.0		1.0	0.48	ug/L			02/23/17 06:03	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/23/17 06:03	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/23/17 06:03	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/23/17 06:03	1
Chlorobenzene	**5.7**		1.0	0.39	ug/L			02/23/17 06:03	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/23/17 06:03	1
Chloroform	<2.0		2.0	0.37	ug/L			02/23/17 06:03	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/23/17 06:03	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/23/17 06:03	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/23/17 06:03	1
Cyclohexane	**1.5**		1.0	0.49	ug/L			02/23/17 06:03	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/23/17 06:03	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/23/17 06:03	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/23/17 06:03	1
1,2-Dichlorobenzene	**1.7**		1.0	0.33	ug/L			02/23/17 06:03	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/23/17 06:03	1
1,4-Dichlorobenzene	**3.6**		1.0	0.36	ug/L			02/23/17 06:03	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/23/17 06:03	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/23/17 06:03	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/23/17 06:03	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/23/17 06:03	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/23/17 06:03	1
Ethylbenzene	**25**		0.50	0.18	ug/L			02/23/17 06:03	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/23/17 06:03	1
Isopropylbenzene	**13**		1.0	0.39	ug/L			02/23/17 06:03	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/23/17 06:03	1
Methylcyclohexane	**1.9**		1.0	0.32	ug/L			02/23/17 06:03	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/23/17 06:03	1
Methyl Ethyl Ketone	**45**		5.0	2.1	ug/L			02/23/17 06:03	1
methyl isobutyl ketone	**99**		5.0	2.2	ug/L			02/23/17 06:03	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/23/17 06:03	1
Styrene	<1.0		1.0	0.39	ug/L			02/23/17 06:03	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/23/17 06:03	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/23/17 06:03	1
Toluene	**11**		0.50	0.15	ug/L			02/23/17 06:03	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/23/17 06:03	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/23/17 06:03	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/23/17 06:03	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/23/17 06:03	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/23/17 06:03	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/23/17 06:03	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/23/17 06:03	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/23/17 06:03	1
Vinyl chloride	**0.45**	**J**	0.50	0.20	ug/L			02/23/17 06:03	1
Xylenes, Total	**24**		1.0	0.22	ug/L			02/23/17 06:03	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: DUP-1-02162017

Date Collected: 02/16/17 00:00
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-6

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*		*02/23/17 06:03*	*1*
Dibromofluoromethane	*9*	*X*	*70 - 120*		*02/23/17 06:03*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*71 - 127*		*02/23/17 06:03*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*02/23/17 06:03*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**8.1**		0.74	0.23	ug/L		02/20/17 07:25	02/23/17 02:16	1
Acenaphthylene	<0.74		0.74	0.20	ug/L		02/20/17 07:25	02/23/17 02:16	1
Acetophenone	**1.4**	**J**	3.7	0.49	ug/L		02/20/17 07:25	02/23/17 02:16	1
Anthracene	<0.74		0.74	0.25	ug/L		02/20/17 07:25	02/23/17 02:16	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		02/20/17 07:25	02/23/17 02:16	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		02/20/17 07:25	02/23/17 02:16	1
Benzo[b]fluoranthene	<0.15		0.15	0.060	ug/L		02/20/17 07:25	02/23/17 02:16	1
Benzo[g,h,i]perylene	<0.74		0.74	0.28	ug/L		02/20/17 07:25	02/23/17 02:16	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		02/20/17 07:25	02/23/17 02:16	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/23/17 02:16	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		02/20/17 07:25	02/23/17 02:16	1
Bis(2-ethylhexyl) phthalate	<7.4		7.4	1.3	ug/L		02/20/17 07:25	02/23/17 02:16	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		02/20/17 07:25	02/23/17 02:16	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/20/17 07:25	02/23/17 02:16	1
Carbazole	**4.3**	*****	3.7	0.26	ug/L		02/20/17 07:25	02/23/17 02:16	1
4-Chloroaniline	<7.4		7.4	1.5	ug/L		02/20/17 07:25	02/23/17 02:16	1
4-Chloro-3-methylphenol	<7.4		7.4	1.7	ug/L		02/20/17 07:25	02/23/17 02:16	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/20/17 07:25	02/23/17 02:16	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		02/20/17 07:25	02/23/17 02:16	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		02/20/17 07:25	02/23/17 02:16	1
Chrysene	<0.15		0.15	0.050	ug/L		02/20/17 07:25	02/23/17 02:16	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		02/20/17 07:25	02/23/17 02:16	1
Dibenzofuran	**1.3**	**J**	1.5	0.19	ug/L		02/20/17 07:25	02/23/17 02:16	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		02/20/17 07:25	02/23/17 02:16	1
2,4-Dichlorophenol	<7.4		7.4	1.9	ug/L		02/20/17 07:25	02/23/17 02:16	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		02/20/17 07:25	02/23/17 02:16	1
2,4-Dimethylphenol	**5.5**	**J**	7.4	1.3	ug/L		02/20/17 07:25	02/23/17 02:16	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/20/17 07:25	02/23/17 02:16	1
Di-n-butyl phthalate	**0.75**	**J**	3.7	0.54	ug/L		02/20/17 07:25	02/23/17 02:16	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		02/20/17 07:25	02/23/17 02:16	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		02/20/17 07:25	02/23/17 02:16	1
2,4-Dinitrotoluene	<0.74		0.74	0.18	ug/L		02/20/17 07:25	02/23/17 02:16	1
2,6-Dinitrotoluene	<0.74		0.74	0.054	ug/L		02/20/17 07:25	02/23/17 02:16	1
Di-n-octyl phthalate	<7.4		7.4	0.77	ug/L		02/20/17 07:25	02/23/17 02:16	1
Fluoranthene	<0.74		0.74	0.33	ug/L		02/20/17 07:25	02/23/17 02:16	1
Fluorene	**2.4**		0.74	0.18	ug/L		02/20/17 07:25	02/23/17 02:16	1
Hexachlorobenzene	<0.37		0.37	0.059	ug/L		02/20/17 07:25	02/23/17 02:16	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		02/20/17 07:25	02/23/17 02:16	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		02/20/17 07:25	02/23/17 02:16	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		02/20/17 07:25	02/23/17 02:16	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		02/20/17 07:25	02/23/17 02:16	1
Isophorone	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/23/17 02:16	1
2-Methylnaphthalene	**4.3**		1.5	0.048	ug/L		02/20/17 07:25	02/23/17 02:16	1

Client Sample ID: DUP-1-02162017

Lab Sample ID: 500-123998-6

Date Collected: 02/16/17 00:00

Matrix: Water

Date Received: 02/16/17 15:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	**1.4**	**J**	1.5	0.23	ug/L		02/20/17 07:25	02/23/17 02:16	1
3 & 4 Methylphenol	**6.3**		1.5	0.33	ug/L		02/20/17 07:25	02/23/17 02:16	1
2-Nitroaniline	<3.7		3.7	0.95	ug/L		02/20/17 07:25	02/23/17 02:16	1
3-Nitroaniline	<7.4		7.4	1.3	ug/L		02/20/17 07:25	02/23/17 02:16	1
4-Nitroaniline	<7.4		7.4	1.2	ug/L		02/20/17 07:25	02/23/17 02:16	1
Nitrobenzene	<0.74		0.74	0.33	ug/L		02/20/17 07:25	02/23/17 02:16	1
2-Nitrophenol	<7.4		7.4	1.8	ug/L		02/20/17 07:25	02/23/17 02:16	1
4-Nitrophenol	<15		15	5.5	ug/L		02/20/17 07:25	02/23/17 02:16	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		02/20/17 07:25	02/23/17 02:16	1
N-Nitrosodiphenylamine	<0.74		0.74	0.27	ug/L		02/20/17 07:25	02/23/17 02:16	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/23/17 02:16	1
Pentachlorophenol	<15		15	2.9	ug/L		02/20/17 07:25	02/23/17 02:16	1
Phenanthrene	**1.2**		0.74	0.22	ug/L		02/20/17 07:25	02/23/17 02:16	1
Pyrene	<0.74		0.74	0.31	ug/L		02/20/17 07:25	02/23/17 02:16	1
2,4,5-Trichlorophenol	<7.4		7.4	1.9	ug/L		02/20/17 07:25	02/23/17 02:16	1
2,4,6-Trichlorophenol	<3.7		3.7	0.53	ug/L		02/20/17 07:25	02/23/17 02:16	1
Benzaldehyde	<30	^	30	11	ug/L		02/20/17 07:25	02/23/17 02:16	1
Caprolactam	<7.4		7.4	1.1	ug/L		02/20/17 07:25	02/23/17 02:16	1
Atrazine	<3.7		3.7	0.46	ug/L		02/20/17 07:25	02/23/17 02:16	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		02/20/17 07:25	02/23/17 02:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*37*		*30 - 123*	*02/20/17 07:25*	*02/23/17 02:16*	*1*
2-Fluorophenol (Surr)	*41*		*30 - 110*	*02/20/17 07:25*	*02/23/17 02:16*	*1*
Nitrobenzene-d5 (Surr)	*33*		*33 - 139*	*02/20/17 07:25*	*02/23/17 02:16*	*1*
Phenol-d5 (Surr)	*40*		*20 - 100*	*02/20/17 07:25*	*02/23/17 02:16*	*1*
Terphenyl-d14 (Surr)	*71*		*42 - 150*	*02/20/17 07:25*	*02/23/17 02:16*	*1*
2,4,6-Tribromophenol (Surr)	*78*		*30 - 150*	*02/20/17 07:25*	*02/23/17 02:16*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**120**		3.7	1.1	ug/L		02/20/17 07:25	02/24/17 15:56	5
Phenol	**96**		18	2.5	ug/L		02/20/17 07:25	02/24/17 15:56	5

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.038		0.038	0.0050	ug/L		02/17/17 21:00	02/21/17 00:52	1
alpha-BHC	<0.038		0.038	0.0024	ug/L		02/17/17 21:00	02/21/17 00:52	1
alpha-Chlordane	<0.038		0.038	0.0041	ug/L		02/17/17 21:00	02/21/17 00:52	1
beta-BHC	<0.038		0.038	0.0096	ug/L		02/17/17 21:00	02/21/17 00:52	1
4,4'-DDD	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/21/17 00:52	1
4,4'-DDE	<0.038		0.038	0.0036	ug/L		02/17/17 21:00	02/21/17 00:52	1
4,4'-DDT	<0.038		0.038	0.0030	ug/L		02/17/17 21:00	02/21/17 00:52	1
delta-BHC	<0.038		0.038	0.0097	ug/L		02/17/17 21:00	02/21/17 00:52	1
Dieldrin	<0.038		0.038	0.012	ug/L		02/17/17 21:00	02/21/17 00:52	1
Endosulfan I	<0.038		0.038	0.0039	ug/L		02/17/17 21:00	02/21/17 00:52	1
Endosulfan II	<0.038		0.038	0.0026	ug/L		02/17/17 21:00	02/21/17 00:52	1
Endosulfan sulfate	<0.038		0.038	0.011	ug/L		02/17/17 21:00	02/21/17 00:52	1
Endrin	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/21/17 00:52	1
Endrin aldehyde	<0.038		0.038	0.0077	ug/L		02/17/17 21:00	02/21/17 00:52	1

Client Sample ID: DUP-1-02162017

Lab Sample ID: 500-123998-6

Date Collected: 02/16/17 00:00

Matrix: Water

Date Received: 02/16/17 15:35

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endrin ketone	<0.038		0.038	0.016	ug/L		02/17/17 21:00	02/21/17 00:52	1
gamma-BHC (Lindane)	<0.038		0.038	0.0053	ug/L		02/17/17 21:00	02/21/17 00:52	1
gamma-Chlordane	<0.038		0.038	0.0068	ug/L		02/17/17 21:00	02/21/17 00:52	1
Heptachlor	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/21/17 00:52	1
Heptachlor epoxide	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/21/17 00:52	1
Methoxychlor	<0.075		0.075	0.022	ug/L		02/17/17 21:00	02/21/17 00:52	1
Toxaphene	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/21/17 00:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*79*		*30 - 143*	*02/17/17 21:00*	*02/21/17 00:52*	*1*
Tetrachloro-m-xylene	*66*		*30 - 120*	*02/17/17 21:00*	*02/21/17 00:52*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.38		0.38	0.063	ug/L		02/17/17 21:00	02/20/17 15:19	1
PCB-1221	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 15:19	1
PCB-1232	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 15:19	1
PCB-1242	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 15:19	1
PCB-1248	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 15:19	1
PCB-1254	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 15:19	1
PCB-1260	<0.38		0.38	0.066	ug/L		02/17/17 21:00	02/20/17 15:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*66*		*30 - 127*	*02/17/17 21:00*	*02/20/17 15:19*	*1*
DCB Decachlorobiphenyl	*70*		*30 - 150*	*02/17/17 21:00*	*02/20/17 15:19*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.33**		0.20	0.062	mg/L		02/17/17 08:13	02/21/17 21:31	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 21:31	1
Arsenic	**0.0066**	**J**	0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:31	1
Barium	**0.45**		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:31	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/21/17 21:31	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 21:31	1
Calcium	**500**		0.20	0.059	mg/L		02/17/17 08:13	02/21/17 21:31	1
Chromium	<0.010		0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 21:31	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 21:31	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:31	1
Iron	**0.12**	**J**	0.20	0.10	mg/L		02/17/17 08:13	02/21/17 21:31	1
Lead	**0.0025**	**J**	0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 21:31	1
Magnesium	**1.7**		0.10	0.041	mg/L		02/17/17 08:13	02/21/17 21:31	1
Manganese	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:31	1
Nickel	**0.015**		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 21:31	1
Potassium	**50**		0.50	0.16	mg/L		02/17/17 08:13	02/21/17 21:31	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 21:31	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 21:31	1
Sodium	**210**		1.0	0.43	mg/L		02/17/17 08:13	02/21/17 21:31	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:31	1
Vanadium	**0.0020**	**J**	0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 21:31	1
Zinc	**0.010**	**J**	0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 21:31	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: DUP-1-02162017

Date Collected: 02/16/17 00:00
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-6

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.22**		0.20	0.062	mg/L		02/17/17 08:13	02/21/17 21:35	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 21:35	1
Arsenic	**0.0048**	**J**	0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:35	1
Barium	**0.47**		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:35	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/21/17 21:35	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 21:35	1
Calcium	**530**		0.20	0.059	mg/L		02/17/17 08:13	02/21/17 21:35	1
Chromium	<0.010		0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 21:35	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 21:35	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:35	1
Iron	<0.20		0.20	0.10	mg/L		02/17/17 08:13	02/21/17 21:35	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 21:35	1
Magnesium	**0.043**	**J**	0.10	0.041	mg/L		02/17/17 08:13	02/21/17 21:35	1
Manganese	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:35	1
Nickel	**0.016**		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 21:35	1
Potassium	**52**		0.50	0.16	mg/L		02/17/17 08:13	02/21/17 21:35	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 21:35	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 21:35	1
Sodium	**220**		1.0	0.43	mg/L		02/17/17 08:13	02/21/17 21:35	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:35	1
Vanadium	**0.0021**	**J**	0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 21:35	1
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 21:35	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:58	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 11:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**3.5**		1.0	0.18	mg/L			02/21/17 07:50	1
Sulfate	**22**	**B**	5.0	1.5	mg/L			03/02/17 07:15	1
Total Organic Carbon - Duplicates	**30**		1.0	0.27	mg/L			02/17/17 02:00	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**24**		5.0	2.5	mg/L			02/17/17 13:18	1
Ammonia	**49**		4.0	2.0	mg/L		02/17/17 19:00	02/17/17 23:33	20
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/17/17 12:46	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/18/17 00:19	1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate is outside control limits

GC/MS Semi VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
X	Surrogate is outside control limits
*	ISTD response or retention time outside acceptable limits

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
B	Compound was found in the blank and sample.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

GC/MS VOA

Analysis Batch: 373092

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-3	MW-01-GW-02162017	Total/NA	Water	8260B	
500-123998-4	MW-13-GW-02162017	Total/NA	Water	8260B	
500-123998-4 - DL	MW-13-GW-02162017	Total/NA	Water	8260B	
500-123998-6	DUP-1-02162017	Total/NA	Water	8260B	
MB 500-373092/6	Method Blank	Total/NA	Water	8260B	
LCS 500-373092/4	Lab Control Sample	Total/NA	Water	8260B	

Analysis Batch: 373192

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Total/NA	Water	8260B	
500-123998-2	MW-02-GW-02152017	Total/NA	Water	8260B	
500-123998-2 - DL	MW-02-GW-02152017	Total/NA	Water	8260B	
500-123998-5	MW-11-GW-02162017	Total/NA	Water	8260B	
MB 500-373192/6	Method Blank	Total/NA	Water	8260B	
LCS 500-373192/4	Lab Control Sample	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 372692

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1 - DL	MW-03-GW-02152017	Total/NA	Water	3510C	
500-123998-1 - DL2	MW-03-GW-02152017	Total/NA	Water	3510C	
500-123998-1	MW-03-GW-02152017	Total/NA	Water	3510C	
500-123998-2 - DL	MW-02-GW-02152017	Total/NA	Water	3510C	
500-123998-2	MW-02-GW-02152017	Total/NA	Water	3510C	
500-123998-5	MW-11-GW-02162017	Total/NA	Water	3510C	
500-123998-6	DUP-1-02162017	Total/NA	Water	3510C	
500-123998-6 - DL	DUP-1-02162017	Total/NA	Water	3510C	
MB 500-372692/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-372692/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-372692/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 372962

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Total/NA	Water	8270D	372692
500-123998-2	MW-02-GW-02152017	Total/NA	Water	8270D	372692
MB 500-372692/1-A	Method Blank	Total/NA	Water	8270D	372692
LCS 500-372692/2-A	Lab Control Sample	Total/NA	Water	8270D	372692
LCSD 500-372692/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	372692

Prep Batch: 373020

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-4	MW-13-GW-02162017	Total/NA	Water	3510C	
500-123998-4 - DL	MW-13-GW-02162017	Total/NA	Water	3510C	
MB 500-373020/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-373020/2-A	Lab Control Sample	Total/NA	Water	3510C	

Analysis Batch: 373146

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1 - DL	MW-03-GW-02152017	Total/NA	Water	8270D	372692

GC/MS Semi VOA (Continued)

Analysis Batch: 373146 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-2 - DL	MW-02-GW-02152017	Total/NA	Water	8270D	372692
500-123998-4	MW-13-GW-02162017	Total/NA	Water	8270D	373020
500-123998-4 - DL	MW-13-GW-02162017	Total/NA	Water	8270D	373020
500-123998-5	MW-11-GW-02162017	Total/NA	Water	8270D	372692
500-123998-6	DUP-1-02162017	Total/NA	Water	8270D	372692
MB 500-373020/1-A	Method Blank	Total/NA	Water	8270D	373020
LCS 500-373020/2-A	Lab Control Sample	Total/NA	Water	8270D	373020

Prep Batch: 373345

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-3 - DL	MW-01-GW-02162017	Total/NA	Water	3510C	
500-123998-3	MW-01-GW-02162017	Total/NA	Water	3510C	
MB 500-373345/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-373345/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-373345/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 373397

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1 - DL2	MW-03-GW-02152017	Total/NA	Water	8270D	372692
500-123998-3	MW-01-GW-02162017	Total/NA	Water	8270D	373345
500-123998-3 - DL	MW-01-GW-02162017	Total/NA	Water	8270D	373345
500-123998-6 - DL	DUP-1-02162017	Total/NA	Water	8270D	372692
MB 500-373345/1-A	Method Blank	Total/NA	Water	8270D	373345
LCS 500-373345/2-A	Lab Control Sample	Total/NA	Water	8270D	373345
LCSD 500-373345/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	373345

GC Semi VOA

Prep Batch: 372591

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Total/NA	Water	3510C	
500-123998-2	MW-02-GW-02152017	Total/NA	Water	3510C	
500-123998-3	MW-01-GW-02162017	Total/NA	Water	3510C	
500-123998-4	MW-13-GW-02162017	Total/NA	Water	3510C	
500-123998-5	MW-11-GW-02162017	Total/NA	Water	3510C	
500-123998-6	DUP-1-02162017	Total/NA	Water	3510C	
MB 500-372591/1-A	Method Blank	Total/NA	Water	3510C	
LCS 500-372591/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 500-372591/4-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 500-372591/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
LCSD 500-372591/5-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 372765

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Total/NA	Water	8082A	372591
500-123998-2	MW-02-GW-02152017	Total/NA	Water	8082A	372591
500-123998-3	MW-01-GW-02162017	Total/NA	Water	8082A	372591
500-123998-4	MW-13-GW-02162017	Total/NA	Water	8082A	372591
500-123998-5	MW-11-GW-02162017	Total/NA	Water	8082A	372591
500-123998-6	DUP-1-02162017	Total/NA	Water	8082A	372591

GC Semi VOA (Continued)

Analysis Batch: 372765 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-372591/1-A	Method Blank	Total/NA	Water	8082A	372591
LCS 500-372591/4-A	Lab Control Sample	Total/NA	Water	8082A	372591
LCSD 500-372591/5-A	Lab Control Sample Dup	Total/NA	Water	8082A	372591

Analysis Batch: 372801

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Total/NA	Water	8081B	372591
500-123998-2	MW-02-GW-02152017	Total/NA	Water	8081B	372591
500-123998-3	MW-01-GW-02162017	Total/NA	Water	8081B	372591
500-123998-4	MW-13-GW-02162017	Total/NA	Water	8081B	372591
500-123998-5	MW-11-GW-02162017	Total/NA	Water	8081B	372591
500-123998-6	DUP-1-02162017	Total/NA	Water	8081B	372591
MB 500-372591/1-A	Method Blank	Total/NA	Water	8081B	372591
LCS 500-372591/2-A	Lab Control Sample	Total/NA	Water	8081B	372591
LCSD 500-372591/3-A	Lab Control Sample Dup	Total/NA	Water	8081B	372591

Metals

Prep Batch: 372467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Dissolved	Water	3010A	
500-123998-1	MW-03-GW-02152017	Total/NA	Water	3010A	
500-123998-2	MW-02-GW-02152017	Dissolved	Water	3010A	
500-123998-2	MW-02-GW-02152017	Total/NA	Water	3010A	
500-123998-3	MW-01-GW-02162017	Dissolved	Water	3010A	
500-123998-3	MW-01-GW-02162017	Total/NA	Water	3010A	
500-123998-4	MW-13-GW-02162017	Dissolved	Water	3010A	
500-123998-4	MW-13-GW-02162017	Total/NA	Water	3010A	
500-123998-5	MW-11-GW-02162017	Dissolved	Water	3010A	
500-123998-5	MW-11-GW-02162017	Total/NA	Water	3010A	
500-123998-6	DUP-1-02162017	Dissolved	Water	3010A	
500-123998-6	DUP-1-02162017	Total/NA	Water	3010A	
MB 500-372467/1-A	Method Blank	Total/NA	Water	3010A	
LCS 500-372467/2-A	Lab Control Sample	Total/NA	Water	3010A	

Prep Batch: 372526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Dissolved	Water	7470A	
500-123998-1	MW-03-GW-02152017	Total/NA	Water	7470A	
500-123998-2	MW-02-GW-02152017	Dissolved	Water	7470A	
500-123998-2	MW-02-GW-02152017	Total/NA	Water	7470A	
500-123998-3	MW-01-GW-02162017	Dissolved	Water	7470A	
500-123998-3	MW-01-GW-02162017	Total/NA	Water	7470A	
500-123998-4	MW-13-GW-02162017	Dissolved	Water	7470A	
500-123998-4	MW-13-GW-02162017	Total/NA	Water	7470A	
500-123998-5	MW-11-GW-02162017	Dissolved	Water	7470A	
500-123998-5	MW-11-GW-02162017	Total/NA	Water	7470A	
500-123998-6	DUP-1-02162017	Dissolved	Water	7470A	
500-123998-6	DUP-1-02162017	Total/NA	Water	7470A	
MB 500-372526/12-A	Method Blank	Total/NA	Water	7470A	

Metals (Continued)

Prep Batch: 372526 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 500-372526/13-A	Lab Control Sample	Total/NA	Water	7470A	
500-123998-1 MS	MW-03-GW-02152017	Total/NA	Water	7470A	
500-123998-1 MSD	MW-03-GW-02152017	Total/NA	Water	7470A	
500-123998-1 DU	MW-03-GW-02152017	Total/NA	Water	7470A	

Analysis Batch: 372785

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Dissolved	Water	7470A	372526
500-123998-1	MW-03-GW-02152017	Total/NA	Water	7470A	372526
500-123998-2	MW-02-GW-02152017	Dissolved	Water	7470A	372526
500-123998-2	MW-02-GW-02152017	Total/NA	Water	7470A	372526
500-123998-3	MW-01-GW-02162017	Dissolved	Water	7470A	372526
500-123998-3	MW-01-GW-02162017	Total/NA	Water	7470A	372526
500-123998-4	MW-13-GW-02162017	Dissolved	Water	7470A	372526
500-123998-4	MW-13-GW-02162017	Total/NA	Water	7470A	372526
500-123998-5	MW-11-GW-02162017	Dissolved	Water	7470A	372526
500-123998-5	MW-11-GW-02162017	Total/NA	Water	7470A	372526
500-123998-6	DUP-1-02162017	Dissolved	Water	7470A	372526
500-123998-6	DUP-1-02162017	Total/NA	Water	7470A	372526
MB 500-372526/12-A	Method Blank	Total/NA	Water	7470A	372526
LCS 500-372526/13-A	Lab Control Sample	Total/NA	Water	7470A	372526
500-123998-1 MS	MW-03-GW-02152017	Total/NA	Water	7470A	372526
500-123998-1 MSD	MW-03-GW-02152017	Total/NA	Water	7470A	372526
500-123998-1 DU	MW-03-GW-02152017	Total/NA	Water	7470A	372526

Analysis Batch: 373052

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Dissolved	Water	6010C	372467
500-123998-1	MW-03-GW-02152017	Total/NA	Water	6010C	372467
500-123998-2	MW-02-GW-02152017	Dissolved	Water	6010C	372467
500-123998-2	MW-02-GW-02152017	Total/NA	Water	6010C	372467
500-123998-3	MW-01-GW-02162017	Dissolved	Water	6010C	372467
500-123998-3	MW-01-GW-02162017	Total/NA	Water	6010C	372467
500-123998-4	MW-13-GW-02162017	Dissolved	Water	6010C	372467
500-123998-4	MW-13-GW-02162017	Total/NA	Water	6010C	372467
500-123998-5	MW-11-GW-02162017	Dissolved	Water	6010C	372467
500-123998-5	MW-11-GW-02162017	Total/NA	Water	6010C	372467
500-123998-6	DUP-1-02162017	Dissolved	Water	6010C	372467
500-123998-6	DUP-1-02162017	Total/NA	Water	6010C	372467
MB 500-372467/1-A	Method Blank	Total/NA	Water	6010C	372467
LCS 500-372467/2-A	Lab Control Sample	Total/NA	Water	6010C	372467

Analysis Batch: 373200

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Dissolved	Water	6010C	372467
500-123998-1	MW-03-GW-02152017	Total/NA	Water	6010C	372467
500-123998-2	MW-02-GW-02152017	Dissolved	Water	6010C	372467
500-123998-2	MW-02-GW-02152017	Total/NA	Water	6010C	372467
MB 500-372467/1-A	Method Blank	Total/NA	Water	6010C	372467
LCS 500-372467/2-A	Lab Control Sample	Total/NA	Water	6010C	372467

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

General Chemistry

Analysis Batch: 372536

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Total/NA	Water	SM 4500 NO2 B	
500-123998-2	MW-02-GW-02152017	Total/NA	Water	SM 4500 NO2 B	
500-123998-3	MW-01-GW-02162017	Total/NA	Water	SM 4500 NO2 B	
500-123998-4	MW-13-GW-02162017	Total/NA	Water	SM 4500 NO2 B	
500-123998-5	MW-11-GW-02162017	Total/NA	Water	SM 4500 NO2 B	
500-123998-6	DUP-1-02162017	Total/NA	Water	SM 4500 NO2 B	
MB 500-372536/3	Method Blank	Total/NA	Water	SM 4500 NO2 B	
LCS 500-372536/4	Lab Control Sample	Total/NA	Water	SM 4500 NO2 B	

Analysis Batch: 372543

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Total/NA	Water	SM 2540D	
500-123998-2	MW-02-GW-02152017	Total/NA	Water	SM 2540D	
500-123998-3	MW-01-GW-02162017	Total/NA	Water	SM 2540D	
500-123998-4	MW-13-GW-02162017	Total/NA	Water	SM 2540D	
500-123998-5	MW-11-GW-02162017	Total/NA	Water	SM 2540D	
500-123998-6	DUP-1-02162017	Total/NA	Water	SM 2540D	
MB 500-372543/1	Method Blank	Total/NA	Water	SM 2540D	
LCS 500-372543/2	Lab Control Sample	Total/NA	Water	SM 2540D	
500-123998-1 MS	MW-03-GW-02152017	Total/NA	Water	SM 2540D	
500-123998-1 DU	MW-03-GW-02152017	Total/NA	Water	SM 2540D	

Prep Batch: 372578

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Total/NA	Water	SM 4500 NH3 B	
500-123998-2	MW-02-GW-02152017	Total/NA	Water	SM 4500 NH3 B	
500-123998-3	MW-01-GW-02162017	Total/NA	Water	SM 4500 NH3 B	
500-123998-4	MW-13-GW-02162017	Total/NA	Water	SM 4500 NH3 B	
500-123998-5	MW-11-GW-02162017	Total/NA	Water	SM 4500 NH3 B	
500-123998-6	DUP-1-02162017	Total/NA	Water	SM 4500 NH3 B	
MB 500-372578/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	
LCS 500-372578/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	

Analysis Batch: 372593

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Total/NA	Water	9060A	
500-123998-2	MW-02-GW-02152017	Total/NA	Water	9060A	
500-123998-3	MW-01-GW-02162017	Total/NA	Water	9060A	
500-123998-5	MW-11-GW-02162017	Total/NA	Water	9060A	
500-123998-6	DUP-1-02162017	Total/NA	Water	9060A	
MB 500-372593/4	Method Blank	Total/NA	Water	9060A	
LCS 500-372593/5	Lab Control Sample	Total/NA	Water	9060A	

Analysis Batch: 372597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Total/NA	Water	SM 4500 NH3 G	372578
500-123998-2	MW-02-GW-02152017	Total/NA	Water	SM 4500 NH3 G	372578
500-123998-3	MW-01-GW-02162017	Total/NA	Water	SM 4500 NH3 G	372578
500-123998-4	MW-13-GW-02162017	Total/NA	Water	SM 4500 NH3 G	372578
500-123998-5	MW-11-GW-02162017	Total/NA	Water	SM 4500 NH3 G	372578
500-123998-6	DUP-1-02162017	Total/NA	Water	SM 4500 NH3 G	372578

General Chemistry (Continued)

Analysis Batch: 372597 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-372578/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 G	372578
LCS 500-372578/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	372578

Analysis Batch: 372665

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Total/NA	Water	SM 4500 NO3 F	
500-123998-2	MW-02-GW-02152017	Total/NA	Water	SM 4500 NO3 F	
500-123998-3	MW-01-GW-02162017	Total/NA	Water	SM 4500 NO3 F	
500-123998-4	MW-13-GW-02162017	Total/NA	Water	SM 4500 NO3 F	
500-123998-5	MW-11-GW-02162017	Total/NA	Water	SM 4500 NO3 F	
500-123998-6	DUP-1-02162017	Total/NA	Water	SM 4500 NO3 F	
MB 500-372665/4	Method Blank	Total/NA	Water	SM 4500 NO3 F	
LCS 500-372665/5	Lab Control Sample	Total/NA	Water	SM 4500 NO3 F	

Analysis Batch: 372666

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Total/NA	Water	Nitrate by calc	
500-123998-2	MW-02-GW-02152017	Total/NA	Water	Nitrate by calc	
500-123998-3	MW-01-GW-02162017	Total/NA	Water	Nitrate by calc	
500-123998-4	MW-13-GW-02162017	Total/NA	Water	Nitrate by calc	
500-123998-5	MW-11-GW-02162017	Total/NA	Water	Nitrate by calc	
500-123998-6	DUP-1-02162017	Total/NA	Water	Nitrate by calc	

Analysis Batch: 372856

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Total/NA	Water	9034	
500-123998-2	MW-02-GW-02152017	Total/NA	Water	9034	
500-123998-3	MW-01-GW-02162017	Total/NA	Water	9034	
500-123998-4	MW-13-GW-02162017	Total/NA	Water	9034	
500-123998-5	MW-11-GW-02162017	Total/NA	Water	9034	
500-123998-6	DUP-1-02162017	Total/NA	Water	9034	
MB 500-372856/1	Method Blank	Total/NA	Water	9034	
LCS 500-372856/2	Lab Control Sample	Total/NA	Water	9034	

Analysis Batch: 372960

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-4	MW-13-GW-02162017	Total/NA	Water	9060A	
MB 500-372960/4	Method Blank	Total/NA	Water	9060A	
LCS 500-372960/5	Lab Control Sample	Total/NA	Water	9060A	

Analysis Batch: 374123

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-1	MW-03-GW-02152017	Total/NA	Water	9038	
500-123998-2	MW-02-GW-02152017	Total/NA	Water	9038	
500-123998-3	MW-01-GW-02162017	Total/NA	Water	9038	
500-123998-4	MW-13-GW-02162017	Total/NA	Water	9038	
500-123998-5	MW-11-GW-02162017	Total/NA	Water	9038	
500-123998-6	DUP-1-02162017	Total/NA	Water	9038	
MB 500-374123/3	Method Blank	Total/NA	Water	9038	
LCS 500-374123/4	Lab Control Sample	Total/NA	Water	9038	
500-123998-2 MS	MW-02-GW-02152017	Total/NA	Water	9038	

General Chemistry (Continued)

Analysis Batch: 374123 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-123998-2 MSD	MW-02-GW-02152017	Total/NA	Water	9038	

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	12DCE	TOL
Lab Sample ID	Client Sample ID	(71-120)	(70-120)	(71-127)	(75-120)
500-123998-1	MW-03-GW-02152017	95	93	100	99
500-123998-2	MW-02-GW-02152017	96	93	101	98
500-123998-2 - DL	MW-02-GW-02152017	96	95	103	99
500-123998-3	MW-01-GW-02162017	100	92	99	101
500-123998-4	MW-13-GW-02162017	99	93	100	101
500-123998-4 - DL	MW-13-GW-02162017	97	91	99	100
500-123998-5	MW-11-GW-02162017	95	94	101	98
500-123998-6	DUP-1-02162017	97	9 X	100	100
LCS 500-373092/4	Lab Control Sample	95	97	100	99
LCS 500-373192/4	Lab Control Sample	93	93	96	101
MB 500-373092/6	Method Blank	97	95	100	98
MB 500-373192/6	Method Blank	96	92	99	101

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		FBP	2FP	NBZ	PHL	TPH	TBP
Lab Sample ID	Client Sample ID	(30-123)	(30-110)	(33-139)	(20-100)	(42-150)	(30-150)
500-123998-1	MW-03-GW-02152017	59	66	70	50	96	96
500-123998-1 - DL	MW-03-GW-02152017	76	76	81	61	108	116
500-123998-1 - DL2	MW-03-GW-02152017	0 D	0 D	0 D	0 D	0 D	0 D
500-123998-2	MW-02-GW-02152017	62	63	62	54	99	99
500-123998-2 - DL	MW-02-GW-02152017	79	72	85	65	109	119
500-123998-3	MW-01-GW-02162017	71	58	67	41	96	105
500-123998-3 - DL	MW-01-GW-02162017	90	64	79	45	114	110
500-123998-4	MW-13-GW-02162017	68	21 X	69	46	82	95
500-123998-4 - DL	MW-13-GW-02162017	89	72	85	53	96	116
500-123998-5	MW-11-GW-02162017	41	51	59	46	63	60
500-123998-6	DUP-1-02162017	37	41	33	40	71	78
500-123998-6 - DL	DUP-1-02162017	43	52	35	45	87	84
LCS 500-372692/2-A	Lab Control Sample	77	70	75	56	87	88
LCS 500-373020/2-A	Lab Control Sample	61	59	69	54	85	83
LCS 500-373345/2-A	Lab Control Sample	91	77	94	54	112	112
LCSD 500-372692/3-A	Lab Control Sample Dup	83	78	84	61	105	101
LCSD 500-373345/3-A	Lab Control Sample Dup	84	79	90	57	108	101
MB 500-372692/1-A	Method Blank	79	69	78	57	100	72
MB 500-373020/1-A	Method Blank	65	66	78	59	94	75
MB 500-373345/1-A	Method Blank	81	63	85	45	102	86

Surrogate Legend

FBP = 2-Fluorobiphenyl
2FP = 2-Fluorophenol (Surr)
NBZ = Nitrobenzene-d5 (Surr)

PHL = Phenol-d5 (Surr)
TPH = Terphenyl-d14 (Surr)
TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		DCB2	TCX2
Lab Sample ID	Client Sample ID	(30-143)	(30-120)
500-123998-1	MW-03-GW-02152017	76	105
500-123998-2	MW-02-GW-02152017	73	117
500-123998-3	MW-01-GW-02162017	79	73
500-123998-4	MW-13-GW-02162017	47	40
500-123998-5	MW-11-GW-02162017	60	67
500-123998-6	DUP-1-02162017	79	66
LCS 500-372591/2-A	Lab Control Sample	96	60
LCSD 500-372591/3-A	Lab Control Sample Dup	105	67
MB 500-372591/1-A	Method Blank	112	78

Surrogate Legend

DCB = DCB Decachlorobiphenyl
TCX = Tetrachloro-m-xylene

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)	
		TCX1	DCB1
Lab Sample ID	Client Sample ID	(30-127)	(30-150)
500-123998-1	MW-03-GW-02152017	53	62
500-123998-2	MW-02-GW-02152017	79	72
500-123998-3	MW-01-GW-02162017	70	65
500-123998-4	MW-13-GW-02162017	105	58
500-123998-5	MW-11-GW-02162017	87	46
500-123998-6	DUP-1-02162017	66	70
LCS 500-372591/4-A	Lab Control Sample	80	95
LCSD 500-372591/5-A	Lab Control Sample Dup	86	95
MB 500-372591/1-A	Method Blank	94	102

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-373092/6
Matrix: Water
Analysis Batch: 373092

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			02/22/17 22:53	1
Benzene	<0.50		0.50	0.15	ug/L			02/22/17 22:53	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/22/17 22:53	1
Bromoform	<1.0		1.0	0.48	ug/L			02/22/17 22:53	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/22/17 22:53	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/22/17 22:53	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/22/17 22:53	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			02/22/17 22:53	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/22/17 22:53	1
Chloroform	<2.0		2.0	0.37	ug/L			02/22/17 22:53	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/22/17 22:53	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/22/17 22:53	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/22/17 22:53	1
Cyclohexane	<1.0		1.0	0.49	ug/L			02/22/17 22:53	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/22/17 22:53	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/22/17 22:53	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/22/17 22:53	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			02/22/17 22:53	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/22/17 22:53	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			02/22/17 22:53	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/22/17 22:53	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/22/17 22:53	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/22/17 22:53	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/22/17 22:53	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/22/17 22:53	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			02/22/17 22:53	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/22/17 22:53	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			02/22/17 22:53	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/22/17 22:53	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			02/22/17 22:53	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/22/17 22:53	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			02/22/17 22:53	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/22/17 22:53	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/22/17 22:53	1
Styrene	<1.0		1.0	0.39	ug/L			02/22/17 22:53	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/22/17 22:53	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/22/17 22:53	1
Toluene	<0.50		0.50	0.15	ug/L			02/22/17 22:53	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/22/17 22:53	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/22/17 22:53	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/22/17 22:53	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/22/17 22:53	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/22/17 22:53	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/22/17 22:53	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/22/17 22:53	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/22/17 22:53	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/22/17 22:53	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			02/22/17 22:53	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		71 - 120		02/22/17 22:53	1
Dibromofluoromethane	95		70 - 120		02/22/17 22:53	1
1,2-Dichloroethane-d4 (Surr)	100		71 - 127		02/22/17 22:53	1
Toluene-d8 (Surr)	98		75 - 120		02/22/17 22:53	1

Lab Sample ID: LCS 500-373092/4
Matrix: Water
Analysis Batch: 373092

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	39.1		ug/L		78	37 - 141
Benzene	50.0	41.1		ug/L		82	70 - 125
Bromodichloromethane	50.0	41.9		ug/L		84	70 - 125
Bromoform	50.0	40.0		ug/L		80	54 - 128
Bromomethane	50.0	36.5		ug/L		73	40 - 150
Carbon disulfide	50.0	37.8		ug/L		76	68 - 125
Carbon tetrachloride	50.0	39.4		ug/L		79	70 - 125
Chlorobenzene	50.0	42.6		ug/L		85	70 - 125
Chloroethane	50.0	35.2		ug/L		70	60 - 139
Chloroform	50.0	41.4		ug/L		83	70 - 125
Chloromethane	50.0	38.6		ug/L		77	60 - 140
cis-1,2-Dichloroethene	50.0	41.3		ug/L		83	70 - 125
cis-1,3-Dichloropropene	50.0	42.5		ug/L		85	70 - 125
Cyclohexane	50.0	40.7		ug/L		81	56 - 149
Dibromochloromethane	50.0	42.6		ug/L		85	66 - 125
1,2-Dibromo-3-Chloropropane	50.0	40.2		ug/L		80	51 - 125
1,2-Dibromoethane	50.0	44.8		ug/L		90	70 - 125
1,2-Dichlorobenzene	50.0	44.1		ug/L		88	70 - 125
1,3-Dichlorobenzene	50.0	43.3		ug/L		87	70 - 125
1,4-Dichlorobenzene	50.0	42.7		ug/L		85	70 - 125
Dichlorodifluoromethane	50.0	33.4		ug/L		67	51 - 140
1,1-Dichloroethane	50.0	40.4		ug/L		81	70 - 125
1,2-Dichloroethane	50.0	42.9		ug/L		86	70 - 125
1,1-Dichloroethene	50.0	39.3		ug/L		79	70 - 125
1,2-Dichloropropane	50.0	41.4		ug/L		83	70 - 125
Ethylbenzene	50.0	43.5		ug/L		87	70 - 125
2-Hexanone	50.0	42.8		ug/L		86	49 - 139
Isopropylbenzene	50.0	42.6		ug/L		85	70 - 125
Methyl acetate	250	215		ug/L		86	60 - 148
Methylcyclohexane	50.0	40.1		ug/L		80	70 - 127
Methylene Chloride	50.0	41.4		ug/L		83	68 - 125
Methyl Ethyl Ketone	50.0	37.9		ug/L		76	52 - 142
methyl isobutyl ketone	50.0	43.2		ug/L		86	47 - 140
Methyl tert-butyl ether	50.0	42.3		ug/L		85	67 - 125
Styrene	50.0	42.7		ug/L		85	70 - 125
1,1,2,2-Tetrachloroethane	50.0	43.7		ug/L		87	68 - 125
Tetrachloroethene	50.0	42.8		ug/L		86	70 - 125
Toluene	50.0	42.9		ug/L		86	70 - 125
trans-1,2-Dichloroethene	50.0	40.3		ug/L		81	70 - 125
trans-1,3-Dichloropropene	50.0	41.2		ug/L		82	70 - 125
1,2,4-Trichlorobenzene	50.0	41.5		ug/L		83	64 - 126
1,1,1-Trichloroethane	50.0	40.7		ug/L		81	70 - 125
1,1,2-Trichloroethane	50.0	44.1		ug/L		88	70 - 125
Trichloroethene	50.0	40.6		ug/L		81	70 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-373092/4
Matrix: Water
Analysis Batch: 373092

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	43.3		ug/L		87	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	40.6		ug/L		81	57 - 141
Vinyl chloride	50.0	41.0		ug/L		82	70 - 126
Xylenes, Total	100	84.6		ug/L		85	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*71 - 120*
Dibromofluoromethane	*97*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*100*		*71 - 127*
Toluene-d8 (Surr)	*99*		*75 - 120*

Lab Sample ID: MB 500-373192/6
Matrix: Water
Analysis Batch: 373192

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			02/23/17 10:24	1
Benzene	<0.50		0.50	0.15	ug/L			02/23/17 10:24	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/23/17 10:24	1
Bromoform	<1.0		1.0	0.48	ug/L			02/23/17 10:24	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/23/17 10:24	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/23/17 10:24	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/23/17 10:24	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			02/23/17 10:24	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/23/17 10:24	1
Chloroform	<2.0		2.0	0.37	ug/L			02/23/17 10:24	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/23/17 10:24	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/23/17 10:24	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/23/17 10:24	1
Cyclohexane	<1.0		1.0	0.49	ug/L			02/23/17 10:24	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/23/17 10:24	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/23/17 10:24	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/23/17 10:24	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			02/23/17 10:24	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/23/17 10:24	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			02/23/17 10:24	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/23/17 10:24	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/23/17 10:24	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/23/17 10:24	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/23/17 10:24	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/23/17 10:24	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			02/23/17 10:24	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/23/17 10:24	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			02/23/17 10:24	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/23/17 10:24	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			02/23/17 10:24	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/23/17 10:24	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-373192/6
Matrix: Water
Analysis Batch: 373192

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			02/23/17 10:24	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/23/17 10:24	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/23/17 10:24	1
Styrene	<1.0		1.0	0.39	ug/L			02/23/17 10:24	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/23/17 10:24	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/23/17 10:24	1
Toluene	<0.50		0.50	0.15	ug/L			02/23/17 10:24	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/23/17 10:24	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/23/17 10:24	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/23/17 10:24	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/23/17 10:24	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/23/17 10:24	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/23/17 10:24	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/23/17 10:24	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/23/17 10:24	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/23/17 10:24	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			02/23/17 10:24	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*		*02/23/17 10:24*	*1*
Dibromofluoromethane	*92*		*70 - 120*		*02/23/17 10:24*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*71 - 127*		*02/23/17 10:24*	*1*
Toluene-d8 (Surr)	*101*		*75 - 120*		*02/23/17 10:24*	*1*

Lab Sample ID: LCS 500-373192/4
Matrix: Water
Analysis Batch: 373192

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	34.4		ug/L		69	37 - 141
Benzene	50.0	44.7		ug/L		89	70 - 125
Bromodichloromethane	50.0	43.5		ug/L		87	70 - 125
Bromoform	50.0	41.0		ug/L		82	54 - 128
Bromomethane	50.0	43.7		ug/L		87	40 - 150
Carbon disulfide	50.0	42.8		ug/L		86	68 - 125
Carbon tetrachloride	50.0	44.7		ug/L		89	70 - 125
Chlorobenzene	50.0	46.0		ug/L		92	70 - 125
Chloroethane	50.0	47.6		ug/L		95	60 - 139
Chloroform	50.0	44.7		ug/L		89	70 - 125
Chloromethane	50.0	52.1		ug/L		104	60 - 140
cis-1,2-Dichloroethene	50.0	44.4		ug/L		89	70 - 125
cis-1,3-Dichloropropene	50.0	45.1		ug/L		90	70 - 125
Cyclohexane	50.0	47.6		ug/L		95	56 - 149
Dibromochloromethane	50.0	45.1		ug/L		90	66 - 125
1,2-Dibromo-3-Chloropropane	50.0	39.1		ug/L		78	51 - 125
1,2-Dibromoethane	50.0	46.1		ug/L		92	70 - 125
1,2-Dichlorobenzene	50.0	45.7		ug/L		91	70 - 125
1,3-Dichlorobenzene	50.0	46.0		ug/L		92	70 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-373192/4
Matrix: Water
Analysis Batch: 373192

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,4-Dichlorobenzene	50.0	45.4		ug/L		91	70 - 125
Dichlorodifluoromethane	50.0	49.0		ug/L		98	51 - 140
1,1-Dichloroethane	50.0	44.4		ug/L		89	70 - 125
1,2-Dichloroethane	50.0	44.7		ug/L		89	70 - 125
1,1-Dichloroethene	50.0	46.2		ug/L		92	70 - 125
1,2-Dichloropropane	50.0	44.7		ug/L		89	70 - 125
Ethylbenzene	50.0	49.3		ug/L		99	70 - 125
2-Hexanone	50.0	43.9		ug/L		88	49 - 139
Isopropylbenzene	50.0	47.2		ug/L		94	70 - 125
Methyl acetate	250	216		ug/L		86	60 - 148
Methylcyclohexane	50.0	47.3		ug/L		95	70 - 127
Methylene Chloride	50.0	44.0		ug/L		88	68 - 125
Methyl Ethyl Ketone	50.0	37.7		ug/L		75	52 - 142
methyl isobutyl ketone	50.0	45.4		ug/L		91	47 - 140
Methyl tert-butyl ether	50.0	43.9		ug/L		88	67 - 125
Styrene	50.0	46.5		ug/L		93	70 - 125
1,1,2,2-Tetrachloroethane	50.0	44.6		ug/L		89	68 - 125
Tetrachloroethene	50.0	49.8		ug/L		100	70 - 125
Toluene	50.0	47.8		ug/L		96	70 - 125
trans-1,2-Dichloroethene	50.0	44.9		ug/L		90	70 - 125
trans-1,3-Dichloropropene	50.0	43.5		ug/L		87	70 - 125
1,2,4-Trichlorobenzene	50.0	39.8		ug/L		80	64 - 126
1,1,1-Trichloroethane	50.0	44.4		ug/L		89	70 - 125
1,1,2-Trichloroethane	50.0	47.0		ug/L		94	70 - 125
Trichloroethene	50.0	45.8		ug/L		92	70 - 125
Trichlorofluoromethane	50.0	53.8		ug/L		108	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroetha ne	50.0	47.9		ug/L		96	57 - 141
Vinyl chloride	50.0	52.9		ug/L		106	70 - 126
Xylenes, Total	100	94.0		ug/L		94	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*71 - 120*
Dibromofluoromethane	*93*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*96*		*71 - 127*
Toluene-d8 (Surr)	*101*		*75 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-372692/1-A
Matrix: Water
Analysis Batch: 372962

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372692

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.80		0.80	0.25	ug/L		02/20/17 07:25	02/21/17 20:59	1
Acenaphthylene	<0.80		0.80	0.21	ug/L		02/20/17 07:25	02/21/17 20:59	1
Acetophenone	<4.0		4.0	0.53	ug/L		02/20/17 07:25	02/21/17 20:59	1
Anthracene	<0.80		0.80	0.27	ug/L		02/20/17 07:25	02/21/17 20:59	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-372692/1-A
Matrix: Water
Analysis Batch: 372962

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372692

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[a]anthracene	<0.16		0.16	0.045	ug/L		02/20/17 07:25	02/21/17 20:59	1
Benzo[a]pyrene	<0.16		0.16	0.079	ug/L		02/20/17 07:25	02/21/17 20:59	1
Benzo[b]fluoranthene	<0.16		0.16	0.065	ug/L		02/20/17 07:25	02/21/17 20:59	1
Benzo[g,h,i]perylene	<0.80		0.80	0.30	ug/L		02/20/17 07:25	02/21/17 20:59	1
Benzo[k]fluoranthene	<0.16		0.16	0.051	ug/L		02/20/17 07:25	02/21/17 20:59	1
Bis(2-chloroethoxy)methane	<1.6		1.6	0.23	ug/L		02/20/17 07:25	02/21/17 20:59	1
Bis(2-chloroethyl)ether	<1.6		1.6	0.23	ug/L		02/20/17 07:25	02/21/17 20:59	1
Bis(2-ethylhexyl) phthalate	<8.0		8.0	1.4	ug/L		02/20/17 07:25	02/21/17 20:59	1
4-Bromophenyl phenyl ether	<4.0		4.0	0.43	ug/L		02/20/17 07:25	02/21/17 20:59	1
Butyl benzyl phthalate	<1.6		1.6	0.38	ug/L		02/20/17 07:25	02/21/17 20:59	1
Carbazole	<4.0		4.0	0.28	ug/L		02/20/17 07:25	02/21/17 20:59	1
4-Chloroaniline	<8.0		8.0	1.6	ug/L		02/20/17 07:25	02/21/17 20:59	1
4-Chloro-3-methylphenol	<8.0		8.0	1.8	ug/L		02/20/17 07:25	02/21/17 20:59	1
2-Chloronaphthalene	<1.6		1.6	0.19	ug/L		02/20/17 07:25	02/21/17 20:59	1
2-Chlorophenol	<4.0		4.0	0.45	ug/L		02/20/17 07:25	02/21/17 20:59	1
4-Chlorophenyl phenyl ether	<4.0		4.0	0.51	ug/L		02/20/17 07:25	02/21/17 20:59	1
Chrysene	<0.16		0.16	0.055	ug/L		02/20/17 07:25	02/21/17 20:59	1
Dibenz(a,h)anthracene	<0.24		0.24	0.041	ug/L		02/20/17 07:25	02/21/17 20:59	1
Dibenzofuran	<1.6		1.6	0.21	ug/L		02/20/17 07:25	02/21/17 20:59	1
3,3'-Dichlorobenzidine	<4.0		4.0	1.4	ug/L		02/20/17 07:25	02/21/17 20:59	1
2,4-Dichlorophenol	<8.0		8.0	2.1	ug/L		02/20/17 07:25	02/21/17 20:59	1
Diethyl phthalate	<1.6		1.6	0.29	ug/L		02/20/17 07:25	02/21/17 20:59	1
2,4-Dimethylphenol	<8.0		8.0	1.4	ug/L		02/20/17 07:25	02/21/17 20:59	1
Dimethyl phthalate	<1.6		1.6	0.25	ug/L		02/20/17 07:25	02/21/17 20:59	1
Di-n-butyl phthalate	<4.0		4.0	0.58	ug/L		02/20/17 07:25	02/21/17 20:59	1
4,6-Dinitro-2-methylphenol	<16		16	4.7	ug/L		02/20/17 07:25	02/21/17 20:59	1
2,4-Dinitrophenol	<16		16	6.9	ug/L		02/20/17 07:25	02/21/17 20:59	1
2,4-Dinitrotoluene	<0.80		0.80	0.20	ug/L		02/20/17 07:25	02/21/17 20:59	1
2,6-Dinitrotoluene	<0.80		0.80	0.059	ug/L		02/20/17 07:25	02/21/17 20:59	1
Di-n-octyl phthalate	<8.0		8.0	0.84	ug/L		02/20/17 07:25	02/21/17 20:59	1
Fluoranthene	<0.80		0.80	0.36	ug/L		02/20/17 07:25	02/21/17 20:59	1
Fluorene	<0.80		0.80	0.20	ug/L		02/20/17 07:25	02/21/17 20:59	1
Hexachlorobenzene	<0.40		0.40	0.064	ug/L		02/20/17 07:25	02/21/17 20:59	1
Hexachlorobutadiene	<4.0		4.0	0.41	ug/L		02/20/17 07:25	02/21/17 20:59	1
Hexachlorocyclopentadiene	<16		16	5.1	ug/L		02/20/17 07:25	02/21/17 20:59	1
Hexachloroethane	<4.0		4.0	0.48	ug/L		02/20/17 07:25	02/21/17 20:59	1
Indeno[1,2,3-cd]pyrene	<0.16		0.16	0.060	ug/L		02/20/17 07:25	02/21/17 20:59	1
Isophorone	<1.6		1.6	0.30	ug/L		02/20/17 07:25	02/21/17 20:59	1
2-Methylnaphthalene	<1.6		1.6	0.052	ug/L		02/20/17 07:25	02/21/17 20:59	1
2-Methylphenol	<1.6		1.6	0.24	ug/L		02/20/17 07:25	02/21/17 20:59	1
3 & 4 Methylphenol	<1.6		1.6	0.36	ug/L		02/20/17 07:25	02/21/17 20:59	1
Naphthalene	<0.80		0.80	0.25	ug/L		02/20/17 07:25	02/21/17 20:59	1
2-Nitroaniline	<4.0		4.0	1.0	ug/L		02/20/17 07:25	02/21/17 20:59	1
3-Nitroaniline	<8.0		8.0	1.4	ug/L		02/20/17 07:25	02/21/17 20:59	1
4-Nitroaniline	<8.0		8.0	1.3	ug/L		02/20/17 07:25	02/21/17 20:59	1
Nitrobenzene	<0.80		0.80	0.36	ug/L		02/20/17 07:25	02/21/17 20:59	1
2-Nitrophenol	<8.0		8.0	2.0	ug/L		02/20/17 07:25	02/21/17 20:59	1
4-Nitrophenol	<16		16	5.9	ug/L		02/20/17 07:25	02/21/17 20:59	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-372692/1-A
Matrix: Water
Analysis Batch: 372962

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372692

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
N-Nitrosodi-n-propylamine	<0.40		0.40	0.12	ug/L		02/20/17 07:25	02/21/17 20:59	1
N-Nitrosodiphenylamine	<0.80		0.80	0.30	ug/L		02/20/17 07:25	02/21/17 20:59	1
2,2'-oxybis[1-chloropropane]	<1.6		1.6	0.30	ug/L		02/20/17 07:25	02/21/17 20:59	1
Pentachlorophenol	<16		16	3.2	ug/L		02/20/17 07:25	02/21/17 20:59	1
Phenanthrene	<0.80		0.80	0.24	ug/L		02/20/17 07:25	02/21/17 20:59	1
Phenol	<4.0		4.0	0.54	ug/L		02/20/17 07:25	02/21/17 20:59	1
Pyrene	<0.80		0.80	0.34	ug/L		02/20/17 07:25	02/21/17 20:59	1
2,4,5-Trichlorophenol	<8.0		8.0	2.1	ug/L		02/20/17 07:25	02/21/17 20:59	1
2,4,6-Trichlorophenol	<4.0		4.0	0.57	ug/L		02/20/17 07:25	02/21/17 20:59	1
Benzaldehyde	<32	^	32	12	ug/L		02/20/17 07:25	02/21/17 20:59	1
Caprolactam	<8.0		8.0	1.2	ug/L		02/20/17 07:25	02/21/17 20:59	1
Atrazine	<4.0		4.0	0.50	ug/L		02/20/17 07:25	02/21/17 20:59	1
1,1'-Biphenyl	<4.0		4.0	0.29	ug/L		02/20/17 07:25	02/21/17 20:59	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*79*		*30 - 123*	*02/20/17 07:25*	*02/21/17 20:59*	*1*
2-Fluorophenol (Surr)	*69*		*30 - 110*	*02/20/17 07:25*	*02/21/17 20:59*	*1*
Nitrobenzene-d5 (Surr)	*78*		*33 - 139*	*02/20/17 07:25*	*02/21/17 20:59*	*1*
Phenol-d5 (Surr)	*57*		*20 - 100*	*02/20/17 07:25*	*02/21/17 20:59*	*1*
Terphenyl-d14 (Surr)	*100*		*42 - 150*	*02/20/17 07:25*	*02/21/17 20:59*	*1*
2,4,6-Tribromophenol (Surr)	*72*		*30 - 150*	*02/20/17 07:25*	*02/21/17 20:59*	*1*

Lab Sample ID: LCS 500-372692/2-A
Matrix: Water
Analysis Batch: 372962

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372692

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	36.0	27.7		ug/L		77	41 - 112
Acenaphthylene	36.0	28.2		ug/L		78	48 - 110
Acetophenone	36.0	25.9		ug/L		72	54 - 116
Anthracene	36.0	27.9		ug/L		78	65 - 118
Benzo[a]anthracene	36.0	29.7		ug/L		83	69 - 121
Benzo[a]pyrene	36.0	31.4		ug/L		87	69 - 130
Benzo[b]fluoranthene	36.0	33.6		ug/L		93	66 - 133
Benzo[g,h,i]perylene	36.0	31.0		ug/L		86	47 - 145
Benzo[k]fluoranthene	36.0	32.7		ug/L		91	64 - 134
Bis(2-chloroethoxy)methane	36.0	27.4		ug/L		76	55 - 115
Bis(2-chloroethyl)ether	36.0	27.1		ug/L		75	46 - 110
Bis(2-ethylhexyl) phthalate	36.0	33.3		ug/L		93	60 - 132
4-Bromophenyl phenyl ether	36.0	26.8		ug/L		74	60 - 124
Butyl benzyl phthalate	36.0	31.0		ug/L		86	63 - 127
Carbazole	36.0	46.5		ug/L		129	71 - 132
4-Chloroaniline	36.0	26.7		ug/L		74	15 - 125
4-Chloro-3-methylphenol	36.0	28.5		ug/L		79	63 - 120
2-Chloronaphthalene	36.0	26.9		ug/L		75	38 - 110
2-Chlorophenol	36.0	25.8		ug/L		72	49 - 110
4-Chlorophenyl phenyl ether	36.0	27.2		ug/L		76	55 - 115
Chrysene	36.0	29.2		ug/L		81	70 - 126

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-372692/2-A
Matrix: Water
Analysis Batch: 372962

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372692

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dibenz(a,h)anthracene	36.0	30.7		ug/L		85	59 - 145
Dibenzofuran	36.0	27.7		ug/L		77	54 - 111
3,3'-Dichlorobenzidine	36.0	39.2		ug/L		109	57 - 145
2,4-Dichlorophenol	36.0	27.2		ug/L		76	53 - 123
Diethyl phthalate	36.0	30.1		ug/L		84	64 - 126
2,4-Dimethylphenol	36.0	22.5		ug/L		62	42 - 115
Dimethyl phthalate	36.0	31.3		ug/L		87	66 - 120
Di-n-butyl phthalate	36.0	30.6		ug/L		85	67 - 125
4,6-Dinitro-2-methylphenol	72.0	63.9		ug/L		89	34 - 152
2,4-Dinitrophenol	72.0	62.6		ug/L		87	20 - 140
2,4-Dinitrotoluene	36.0	31.7		ug/L		88	67 - 131
2,6-Dinitrotoluene	36.0	32.1		ug/L		89	66 - 125
Di-n-octyl phthalate	36.0	33.7		ug/L		94	63 - 133
Fluoranthene	36.0	28.8		ug/L		80	68 - 127
Fluorene	36.0	27.5		ug/L		76	54 - 113
Hexachlorobenzene	36.0	26.3		ug/L		73	63 - 127
Hexachlorobutadiene	36.0	17.4		ug/L		48	20 - 110
Hexachlorocyclopentadiene	36.0	14.9	J	ug/L		42	10 - 110
Hexachloroethane	36.0	18.7		ug/L		52	20 - 110
Indeno[1,2,3-cd]pyrene	36.0	30.1		ug/L		84	52 - 150
Isophorone	36.0	26.9		ug/L		75	55 - 120
2-Methylnaphthalene	36.0	23.3		ug/L		65	32 - 110
2-Methylphenol	36.0	25.3		ug/L		70	49 - 113
3 & 4 Methylphenol	36.0	25.2		ug/L		70	49 - 114
Naphthalene	36.0	23.3		ug/L		65	32 - 110
2-Nitroaniline	36.0	31.1		ug/L		86	61 - 126
3-Nitroaniline	36.0	34.1		ug/L		95	42 - 134
4-Nitroaniline	36.0	43.4		ug/L		121	40 - 142
Nitrobenzene	36.0	26.3		ug/L		73	49 - 116
2-Nitrophenol	36.0	28.3		ug/L		79	51 - 120
4-Nitrophenol	72.0	39.2		ug/L		54	21 - 110
N-Nitrosodi-n-propylamine	36.0	25.8		ug/L		72	52 - 122
N-Nitrosodiphenylamine	36.0	29.9		ug/L		83	63 - 117
2,2'-oxybis[1-chloropropane]	36.0	23.1		ug/L		64	34 - 110
Pentachlorophenol	72.0	49.0		ug/L		68	29 - 138
Phenanthrene	36.0	28.2		ug/L		78	63 - 121
Phenol	36.0	21.6		ug/L		60	33 - 100
Pyrene	36.0	28.5		ug/L		79	65 - 122
2,4,5-Trichlorophenol	36.0	30.0		ug/L		83	63 - 121
2,4,6-Trichlorophenol	36.0	30.4		ug/L		84	61 - 120
Caprolactam	36.0	17.8		ug/L		49	25 - 100
Atrazine	36.0	29.7		ug/L		82	57 - 128
1,1'-Biphenyl	36.0	28.0		ug/L		78	42 - 110

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*77*		*30 - 123*
2-Fluorophenol (Surr)	*70*		*30 - 110*
Nitrobenzene-d5 (Surr)	*75*		*33 - 139*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-372692/2-A
Matrix: Water
Analysis Batch: 372962

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372692

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Phenol-d5 (Surr)	*56*		*20 - 100*
Terphenyl-d14 (Surr)	*87*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*88*		*30 - 150*

Lab Sample ID: LCSD 500-372692/3-A
Matrix: Water
Analysis Batch: 372962

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 372692

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	32.0	28.2		ug/L		88	41 - 112	2	20
Acenaphthylene	32.0	28.2		ug/L		88	48 - 110	0	20
Acetophenone	32.0	26.0		ug/L		81	54 - 116	1	20
Anthracene	32.0	28.8		ug/L		90	65 - 118	3	20
Benzo[a]anthracene	32.0	31.0		ug/L		97	69 - 121	4	20
Benzo[a]pyrene	32.0	32.3		ug/L		101	69 - 130	3	20
Benzo[b]fluoranthene	32.0	35.0		ug/L		109	66 - 133	4	20
Benzo[g,h,i]perylene	32.0	30.7		ug/L		96	47 - 145	1	20
Benzo[k]fluoranthene	32.0	32.9		ug/L		103	64 - 134	1	20
Bis(2-chloroethoxy)methane	32.0	27.9		ug/L		87	55 - 115	2	20
Bis(2-chloroethyl)ether	32.0	27.3		ug/L		85	46 - 110	1	20
Bis(2-ethylhexyl) phthalate	32.0	34.7		ug/L		108	60 - 132	4	20
4-Bromophenyl phenyl ether	32.0	29.0		ug/L		91	60 - 124	8	20
Butyl benzyl phthalate	32.0	34.2		ug/L		107	63 - 127	10	20
Carbazole	32.0	46.8	*	ug/L		146	71 - 132	1	20
4-Chloroaniline	32.0	27.2		ug/L		85	15 - 125	2	20
4-Chloro-3-methylphenol	32.0	29.1		ug/L		91	63 - 120	2	20
2-Chloronaphthalene	32.0	26.7		ug/L		83	38 - 110	1	20
2-Chlorophenol	32.0	25.8		ug/L		81	49 - 110	0	20
4-Chlorophenyl phenyl ether	32.0	28.8		ug/L		90	55 - 115	5	20
Chrysene	32.0	30.8		ug/L		96	70 - 126	5	20
Dibenz(a,h)anthracene	32.0	31.4		ug/L		98	59 - 145	2	20
Dibenzofuran	32.0	28.7		ug/L		90	54 - 111	3	20
3,3'-Dichlorobenzidine	32.0	40.9		ug/L		128	57 - 145	4	20
2,4-Dichlorophenol	32.0	27.4		ug/L		86	53 - 123	1	20
Diethyl phthalate	32.0	30.1		ug/L		94	64 - 126	0	20
2,4-Dimethylphenol	32.0	21.6		ug/L		67	42 - 115	4	20
Dimethyl phthalate	32.0	30.5		ug/L		95	66 - 120	3	20
Di-n-butyl phthalate	32.0	30.8		ug/L		96	67 - 125	1	20
4,6-Dinitro-2-methylphenol	64.0	66.9		ug/L		105	34 - 152	5	20
2,4-Dinitrophenol	64.0	64.3		ug/L		101	20 - 140	3	20
2,4-Dinitrotoluene	32.0	32.5		ug/L		102	67 - 131	3	20
2,6-Dinitrotoluene	32.0	31.5		ug/L		99	66 - 125	2	20
Di-n-octyl phthalate	32.0	32.5		ug/L		102	63 - 133	3	20
Fluoranthene	32.0	29.4		ug/L		92	68 - 127	2	20
Fluorene	32.0	28.5		ug/L		89	54 - 113	3	20
Hexachlorobenzene	32.0	27.9		ug/L		87	63 - 127	6	20
Hexachlorobutadiene	32.0	19.6		ug/L		61	20 - 110	12	20
Hexachlorocyclopentadiene	32.0	15.0	J	ug/L		47	10 - 110	0	20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 500-372692/3-A
Matrix: Water
Analysis Batch: 372962

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 372692

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hexachloroethane	32.0	20.4		ug/L		64	20 - 110	9	20
Indeno[1,2,3-cd]pyrene	32.0	31.2		ug/L		98	52 - 150	4	20
Isophorone	32.0	27.6		ug/L		86	55 - 120	3	20
2-Methylnaphthalene	32.0	25.0		ug/L		78	32 - 110	7	20
2-Methylphenol	32.0	25.1		ug/L		79	49 - 113	1	20
3 & 4 Methylphenol	32.0	25.1		ug/L		79	49 - 114	0	20
Naphthalene	32.0	24.4		ug/L		76	32 - 110	5	20
2-Nitroaniline	32.0	30.3		ug/L		95	61 - 126	3	20
3-Nitroaniline	32.0	36.4		ug/L		114	42 - 134	7	20
4-Nitroaniline	32.0	44.1		ug/L		138	40 - 142	2	20
Nitrobenzene	32.0	26.2		ug/L		82	49 - 116	0	20
2-Nitrophenol	32.0	29.6		ug/L		92	51 - 120	4	20
4-Nitrophenol	64.0	37.9		ug/L		59	21 - 110	3	20
N-Nitrosodi-n-propylamine	32.0	25.7		ug/L		80	52 - 122	0	20
N-Nitrosodiphenylamine	32.0	30.7		ug/L		96	63 - 117	3	20
2,2'-oxybis[1-chloropropane]	32.0	22.9		ug/L		72	34 - 110	1	20
Pentachlorophenol	64.0	52.6		ug/L		82	29 - 138	7	20
Phenanthrene	32.0	28.8		ug/L		90	63 - 121	2	20
Phenol	32.0	21.4		ug/L		67	33 - 100	1	20
Pyrene	32.0	31.2		ug/L		98	65 - 122	9	20
2,4,5-Trichlorophenol	32.0	29.1		ug/L		91	63 - 121	3	20
2,4,6-Trichlorophenol	32.0	29.5		ug/L		92	61 - 120	3	20
Caprolactam	32.0	17.9		ug/L		56	25 - 100	1	20
Atrazine	32.0	31.1		ug/L		97	57 - 128	5	20
1,1'-Biphenyl	32.0	27.6		ug/L		86	42 - 110	2	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl	*83*		*30 - 123*
2-Fluorophenol (Surr)	*78*		*30 - 110*
Nitrobenzene-d5 (Surr)	*84*		*33 - 139*
Phenol-d5 (Surr)	*61*		*20 - 100*
Terphenyl-d14 (Surr)	*105*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*101*		*30 - 150*

Lab Sample ID: MB 500-373020/1-A
Matrix: Water
Analysis Batch: 373146

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 373020

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.80		0.80	0.25	ug/L		02/22/17 07:09	02/22/17 19:27	1
Acenaphthylene	<0.80		0.80	0.21	ug/L		02/22/17 07:09	02/22/17 19:27	1
Acetophenone	<4.0		4.0	0.53	ug/L		02/22/17 07:09	02/22/17 19:27	1
Anthracene	<0.80		0.80	0.27	ug/L		02/22/17 07:09	02/22/17 19:27	1
Benzo[a]anthracene	<0.16		0.16	0.045	ug/L		02/22/17 07:09	02/22/17 19:27	1
Benzo[a]pyrene	<0.16		0.16	0.079	ug/L		02/22/17 07:09	02/22/17 19:27	1
Benzo[b]fluoranthene	<0.16		0.16	0.065	ug/L		02/22/17 07:09	02/22/17 19:27	1
Benzo[g,h,i]perylene	<0.80		0.80	0.30	ug/L		02/22/17 07:09	02/22/17 19:27	1
Benzo[k]fluoranthene	<0.16		0.16	0.051	ug/L		02/22/17 07:09	02/22/17 19:27	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-373020/1-A
Matrix: Water
Analysis Batch: 373146

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 373020

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-chloroethoxy)methane	<1.6		1.6	0.23	ug/L		02/22/17 07:09	02/22/17 19:27	1
Bis(2-chloroethyl)ether	<1.6		1.6	0.23	ug/L		02/22/17 07:09	02/22/17 19:27	1
Bis(2-ethylhexyl) phthalate	<8.0		8.0	1.4	ug/L		02/22/17 07:09	02/22/17 19:27	1
4-Bromophenyl phenyl ether	<4.0		4.0	0.43	ug/L		02/22/17 07:09	02/22/17 19:27	1
Butyl benzyl phthalate	<1.6		1.6	0.38	ug/L		02/22/17 07:09	02/22/17 19:27	1
Carbazole	<4.0		4.0	0.28	ug/L		02/22/17 07:09	02/22/17 19:27	1
4-Chloroaniline	<8.0		8.0	1.6	ug/L		02/22/17 07:09	02/22/17 19:27	1
4-Chloro-3-methylphenol	<8.0		8.0	1.8	ug/L		02/22/17 07:09	02/22/17 19:27	1
2-Chloronaphthalene	<1.6		1.6	0.19	ug/L		02/22/17 07:09	02/22/17 19:27	1
2-Chlorophenol	<4.0		4.0	0.45	ug/L		02/22/17 07:09	02/22/17 19:27	1
4-Chlorophenyl phenyl ether	<4.0		4.0	0.51	ug/L		02/22/17 07:09	02/22/17 19:27	1
Chrysene	<0.16		0.16	0.055	ug/L		02/22/17 07:09	02/22/17 19:27	1
Dibenz(a,h)anthracene	<0.24		0.24	0.041	ug/L		02/22/17 07:09	02/22/17 19:27	1
Dibenzofuran	<1.6		1.6	0.21	ug/L		02/22/17 07:09	02/22/17 19:27	1
3,3'-Dichlorobenzidine	<4.0		4.0	1.4	ug/L		02/22/17 07:09	02/22/17 19:27	1
2,4-Dichlorophenol	<8.0		8.0	2.1	ug/L		02/22/17 07:09	02/22/17 19:27	1
Diethyl phthalate	<1.6		1.6	0.29	ug/L		02/22/17 07:09	02/22/17 19:27	1
2,4-Dimethylphenol	<8.0		8.0	1.4	ug/L		02/22/17 07:09	02/22/17 19:27	1
Dimethyl phthalate	<1.6		1.6	0.25	ug/L		02/22/17 07:09	02/22/17 19:27	1
Di-n-butyl phthalate	<4.0		4.0	0.58	ug/L		02/22/17 07:09	02/22/17 19:27	1
4,6-Dinitro-2-methylphenol	<16		16	4.7	ug/L		02/22/17 07:09	02/22/17 19:27	1
2,4-Dinitrophenol	<16		16	6.9	ug/L		02/22/17 07:09	02/22/17 19:27	1
2,4-Dinitrotoluene	<0.80		0.80	0.20	ug/L		02/22/17 07:09	02/22/17 19:27	1
2,6-Dinitrotoluene	<0.80		0.80	0.059	ug/L		02/22/17 07:09	02/22/17 19:27	1
Di-n-octyl phthalate	<8.0		8.0	0.84	ug/L		02/22/17 07:09	02/22/17 19:27	1
Fluoranthene	<0.80		0.80	0.36	ug/L		02/22/17 07:09	02/22/17 19:27	1
Fluorene	<0.80		0.80	0.20	ug/L		02/22/17 07:09	02/22/17 19:27	1
Hexachlorobenzene	<0.40		0.40	0.064	ug/L		02/22/17 07:09	02/22/17 19:27	1
Hexachlorobutadiene	<4.0		4.0	0.41	ug/L		02/22/17 07:09	02/22/17 19:27	1
Hexachlorocyclopentadiene	<16		16	5.1	ug/L		02/22/17 07:09	02/22/17 19:27	1
Hexachloroethane	<4.0		4.0	0.48	ug/L		02/22/17 07:09	02/22/17 19:27	1
Indeno[1,2,3-cd]pyrene	<0.16		0.16	0.060	ug/L		02/22/17 07:09	02/22/17 19:27	1
Isophorone	<1.6		1.6	0.30	ug/L		02/22/17 07:09	02/22/17 19:27	1
2-Methylnaphthalene	<1.6		1.6	0.052	ug/L		02/22/17 07:09	02/22/17 19:27	1
2-Methylphenol	<1.6		1.6	0.24	ug/L		02/22/17 07:09	02/22/17 19:27	1
3 & 4 Methylphenol	<1.6		1.6	0.36	ug/L		02/22/17 07:09	02/22/17 19:27	1
Naphthalene	<0.80		0.80	0.25	ug/L		02/22/17 07:09	02/22/17 19:27	1
2-Nitroaniline	<4.0		4.0	1.0	ug/L		02/22/17 07:09	02/22/17 19:27	1
3-Nitroaniline	<8.0		8.0	1.4	ug/L		02/22/17 07:09	02/22/17 19:27	1
4-Nitroaniline	<8.0		8.0	1.3	ug/L		02/22/17 07:09	02/22/17 19:27	1
Nitrobenzene	<0.80		0.80	0.36	ug/L		02/22/17 07:09	02/22/17 19:27	1
2-Nitrophenol	<8.0		8.0	2.0	ug/L		02/22/17 07:09	02/22/17 19:27	1
4-Nitrophenol	<16		16	5.9	ug/L		02/22/17 07:09	02/22/17 19:27	1
N-Nitrosodi-n-propylamine	<0.40		0.40	0.12	ug/L		02/22/17 07:09	02/22/17 19:27	1
N-Nitrosodiphenylamine	<0.80		0.80	0.30	ug/L		02/22/17 07:09	02/22/17 19:27	1
2,2'-oxybis[1-chloropropane]	<1.6		1.6	0.30	ug/L		02/22/17 07:09	02/22/17 19:27	1
Pentachlorophenol	<16		16	3.2	ug/L		02/22/17 07:09	02/22/17 19:27	1
Phenanthrene	<0.80		0.80	0.24	ug/L		02/22/17 07:09	02/22/17 19:27	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-373020/1-A
Matrix: Water
Analysis Batch: 373146

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 373020

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenol	<4.0		4.0	0.54	ug/L		02/22/17 07:09	02/22/17 19:27	1
Pyrene	<0.80		0.80	0.34	ug/L		02/22/17 07:09	02/22/17 19:27	1
2,4,5-Trichlorophenol	<8.0		8.0	2.1	ug/L		02/22/17 07:09	02/22/17 19:27	1
2,4,6-Trichlorophenol	<4.0		4.0	0.57	ug/L		02/22/17 07:09	02/22/17 19:27	1
Benzaldehyde	<32	^	32	12	ug/L		02/22/17 07:09	02/22/17 19:27	1
Caprolactam	<8.0		8.0	1.2	ug/L		02/22/17 07:09	02/22/17 19:27	1
Atrazine	<4.0		4.0	0.50	ug/L		02/22/17 07:09	02/22/17 19:27	1
1,1'-Biphenyl	<4.0		4.0	0.29	ug/L		02/22/17 07:09	02/22/17 19:27	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*65*		*30 - 123*	*02/22/17 07:09*	*02/22/17 19:27*	*1*
2-Fluorophenol (Surr)	*66*		*30 - 110*	*02/22/17 07:09*	*02/22/17 19:27*	*1*
Nitrobenzene-d5 (Surr)	*78*		*33 - 139*	*02/22/17 07:09*	*02/22/17 19:27*	*1*
Phenol-d5 (Surr)	*59*		*20 - 100*	*02/22/17 07:09*	*02/22/17 19:27*	*1*
Terphenyl-d14 (Surr)	*94*		*42 - 150*	*02/22/17 07:09*	*02/22/17 19:27*	*1*
2,4,6-Tribromophenol (Surr)	*75*		*30 - 150*	*02/22/17 07:09*	*02/22/17 19:27*	*1*

Lab Sample ID: LCS 500-373020/2-A
Matrix: Water
Analysis Batch: 373146

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 373020

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	32.0	16.1		ug/L		50	41 - 112
Acenaphthylene	32.0	17.7		ug/L		55	48 - 110
Acetophenone	32.0	20.6		ug/L		65	54 - 116
Anthracene	32.0	23.5		ug/L		73	65 - 118
Benzo[a]anthracene	32.0	25.0		ug/L		78	69 - 121
Benzo[a]pyrene	32.0	27.5		ug/L		86	69 - 130
Benzo[b]fluoranthene	32.0	24.8		ug/L		77	66 - 133
Benzo[g,h,i]perylene	32.0	29.4		ug/L		92	47 - 145
Benzo[k]fluoranthene	32.0	27.9		ug/L		87	64 - 134
Bis(2-chloroethoxy)methane	32.0	20.0		ug/L		62	55 - 115
Bis(2-chloroethyl)ether	32.0	18.0		ug/L		56	46 - 110
Bis(2-ethylhexyl) phthalate	32.0	27.0		ug/L		84	60 - 132
4-Bromophenyl phenyl ether	32.0	18.8	*	ug/L		59	60 - 124
Butyl benzyl phthalate	32.0	27.4		ug/L		86	63 - 127
Carbazole	32.0	25.7		ug/L		80	71 - 132
4-Chloroaniline	32.0	22.5		ug/L		70	15 - 125
4-Chloro-3-methylphenol	32.0	21.9		ug/L		68	63 - 120
2-Chloronaphthalene	32.0	14.3		ug/L		45	38 - 110
2-Chlorophenol	32.0	20.1		ug/L		63	49 - 110
4-Chlorophenyl phenyl ether	32.0	17.5		ug/L		55	55 - 115
Chrysene	32.0	24.1		ug/L		75	70 - 126
Dibenz(a,h)anthracene	32.0	30.7		ug/L		96	59 - 145
Dibenzofuran	32.0	17.9		ug/L		56	54 - 111
3,3'-Dichlorobenzidine	32.0	28.6		ug/L		89	57 - 145
2,4-Dichlorophenol	32.0	19.4		ug/L		61	53 - 123
Diethyl phthalate	32.0	28.2		ug/L		88	64 - 126

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-373020/2-A
Matrix: Water
Analysis Batch: 373146

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 373020

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4-Dimethylphenol	32.0	19.4		ug/L		61	42 - 115
Dimethyl phthalate	32.0	24.8		ug/L		78	66 - 120
Di-n-butyl phthalate	32.0	25.4		ug/L		79	67 - 125
4,6-Dinitro-2-methylphenol	64.0	45.9		ug/L		72	34 - 152
2,4-Dinitrophenol	64.0	49.3		ug/L		77	20 - 140
2,4-Dinitrotoluene	32.0	27.1		ug/L		85	67 - 131
2,6-Dinitrotoluene	32.0	25.2		ug/L		79	66 - 125
Di-n-octyl phthalate	32.0	26.5		ug/L		83	63 - 133
Fluoranthene	32.0	24.1		ug/L		75	68 - 127
Fluorene	32.0	19.1		ug/L		60	54 - 113
Hexachlorobenzene	32.0	21.2		ug/L		66	63 - 127
Hexachlorobutadiene	32.0	8.75		ug/L		27	20 - 110
Hexachlorocyclopentadiene	32.0	10.3	J	ug/L		32	10 - 110
Hexachloroethane	32.0	9.22		ug/L		29	20 - 110
Indeno[1,2,3-cd]pyrene	32.0	29.7		ug/L		93	52 - 150
Isophorone	32.0	19.7		ug/L		62	55 - 120
2-Methylnaphthalene	32.0	11.2		ug/L		35	32 - 110
2-Methylphenol	32.0	22.2		ug/L		69	49 - 113
3 & 4 Methylphenol	32.0	20.4		ug/L		64	49 - 114
Naphthalene	32.0	11.8		ug/L		37	32 - 110
2-Nitroaniline	32.0	27.5		ug/L		86	61 - 126
3-Nitroaniline	32.0	23.7		ug/L		74	42 - 134
4-Nitroaniline	32.0	30.1		ug/L		94	40 - 142
Nitrobenzene	32.0	19.2		ug/L		60	49 - 116
2-Nitrophenol	32.0	18.9		ug/L		59	51 - 120
4-Nitrophenol	64.0	40.2		ug/L		63	21 - 110
N-Nitrosodi-n-propylamine	32.0	22.7		ug/L		71	52 - 122
N-Nitrosodiphenylamine	32.0	23.5		ug/L		74	63 - 117
2,2'-oxybis[1-chloropropane]	32.0	17.6		ug/L		55	34 - 110
Pentachlorophenol	64.0	19.5		ug/L		30	29 - 138
Phenanthrene	32.0	22.4		ug/L		70	63 - 121
Phenol	32.0	14.2		ug/L		44	33 - 100
Pyrene	32.0	26.5		ug/L		83	65 - 122
2,4,5-Trichlorophenol	32.0	25.7		ug/L		80	63 - 121
2,4,6-Trichlorophenol	32.0	24.6		ug/L		77	61 - 120
Caprolactam	32.0	14.7		ug/L		46	25 - 100
Atrazine	32.0	24.1		ug/L		75	57 - 128
1,1'-Biphenyl	32.0	14.8		ug/L		46	42 - 110

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*61*		*30 - 123*
2-Fluorophenol (Surr)	*59*		*30 - 110*
Nitrobenzene-d5 (Surr)	*69*		*33 - 139*
Phenol-d5 (Surr)	*54*		*20 - 100*
Terphenyl-d14 (Surr)	*85*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*83*		*30 - 150*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-373345/1-A
Matrix: Water
Analysis Batch: 373397

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 373345

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.80		0.80	0.25	ug/L		02/23/17 22:30	02/24/17 14:01	1
Acenaphthylene	<0.80		0.80	0.21	ug/L		02/23/17 22:30	02/24/17 14:01	1
Acetophenone	<4.0		4.0	0.53	ug/L		02/23/17 22:30	02/24/17 14:01	1
Anthracene	<0.80		0.80	0.27	ug/L		02/23/17 22:30	02/24/17 14:01	1
Benzo[a]anthracene	<0.16		0.16	0.045	ug/L		02/23/17 22:30	02/24/17 14:01	1
Benzo[a]pyrene	<0.16		0.16	0.079	ug/L		02/23/17 22:30	02/24/17 14:01	1
Benzo[b]fluoranthene	<0.16		0.16	0.065	ug/L		02/23/17 22:30	02/24/17 14:01	1
Benzo[g,h,i]perylene	<0.80		0.80	0.30	ug/L		02/23/17 22:30	02/24/17 14:01	1
Benzo[k]fluoranthene	<0.16		0.16	0.051	ug/L		02/23/17 22:30	02/24/17 14:01	1
Bis(2-chloroethoxy)methane	<1.6		1.6	0.23	ug/L		02/23/17 22:30	02/24/17 14:01	1
Bis(2-chloroethyl)ether	<1.6		1.6	0.23	ug/L		02/23/17 22:30	02/24/17 14:01	1
Bis(2-ethylhexyl) phthalate	<8.0		8.0	1.4	ug/L		02/23/17 22:30	02/24/17 14:01	1
4-Bromophenyl phenyl ether	<4.0		4.0	0.43	ug/L		02/23/17 22:30	02/24/17 14:01	1
Butyl benzyl phthalate	<1.6		1.6	0.38	ug/L		02/23/17 22:30	02/24/17 14:01	1
Carbazole	<4.0		4.0	0.28	ug/L		02/23/17 22:30	02/24/17 14:01	1
4-Chloroaniline	<8.0		8.0	1.6	ug/L		02/23/17 22:30	02/24/17 14:01	1
4-Chloro-3-methylphenol	<8.0		8.0	1.8	ug/L		02/23/17 22:30	02/24/17 14:01	1
2-Chloronaphthalene	<1.6		1.6	0.19	ug/L		02/23/17 22:30	02/24/17 14:01	1
2-Chlorophenol	<4.0		4.0	0.45	ug/L		02/23/17 22:30	02/24/17 14:01	1
4-Chlorophenyl phenyl ether	<4.0		4.0	0.51	ug/L		02/23/17 22:30	02/24/17 14:01	1
Chrysene	<0.16		0.16	0.055	ug/L		02/23/17 22:30	02/24/17 14:01	1
Dibenz(a,h)anthracene	<0.24		0.24	0.041	ug/L		02/23/17 22:30	02/24/17 14:01	1
Dibenzofuran	<1.6		1.6	0.21	ug/L		02/23/17 22:30	02/24/17 14:01	1
3,3'-Dichlorobenzidine	<4.0		4.0	1.4	ug/L		02/23/17 22:30	02/24/17 14:01	1
2,4-Dichlorophenol	<8.0		8.0	2.1	ug/L		02/23/17 22:30	02/24/17 14:01	1
Diethyl phthalate	<1.6		1.6	0.29	ug/L		02/23/17 22:30	02/24/17 14:01	1
2,4-Dimethylphenol	<8.0		8.0	1.4	ug/L		02/23/17 22:30	02/24/17 14:01	1
Dimethyl phthalate	<1.6		1.6	0.25	ug/L		02/23/17 22:30	02/24/17 14:01	1
Di-n-butyl phthalate	<4.0		4.0	0.58	ug/L		02/23/17 22:30	02/24/17 14:01	1
4,6-Dinitro-2-methylphenol	<16		16	4.7	ug/L		02/23/17 22:30	02/24/17 14:01	1
2,4-Dinitrophenol	<16		16	6.9	ug/L		02/23/17 22:30	02/24/17 14:01	1
2,4-Dinitrotoluene	<0.80		0.80	0.20	ug/L		02/23/17 22:30	02/24/17 14:01	1
2,6-Dinitrotoluene	<0.80		0.80	0.059	ug/L		02/23/17 22:30	02/24/17 14:01	1
Di-n-octyl phthalate	<8.0		8.0	0.84	ug/L		02/23/17 22:30	02/24/17 14:01	1
Fluoranthene	<0.80		0.80	0.36	ug/L		02/23/17 22:30	02/24/17 14:01	1
Fluorene	<0.80		0.80	0.20	ug/L		02/23/17 22:30	02/24/17 14:01	1
Hexachlorobenzene	<0.40		0.40	0.064	ug/L		02/23/17 22:30	02/24/17 14:01	1
Hexachlorobutadiene	<4.0		4.0	0.41	ug/L		02/23/17 22:30	02/24/17 14:01	1
Hexachlorocyclopentadiene	<16		16	5.1	ug/L		02/23/17 22:30	02/24/17 14:01	1
Hexachloroethane	<4.0		4.0	0.48	ug/L		02/23/17 22:30	02/24/17 14:01	1
Indeno[1,2,3-cd]pyrene	<0.16		0.16	0.060	ug/L		02/23/17 22:30	02/24/17 14:01	1
Isophorone	<1.6		1.6	0.30	ug/L		02/23/17 22:30	02/24/17 14:01	1
2-Methylnaphthalene	<1.6		1.6	0.052	ug/L		02/23/17 22:30	02/24/17 14:01	1
2-Methylphenol	<1.6		1.6	0.24	ug/L		02/23/17 22:30	02/24/17 14:01	1
3 & 4 Methylphenol	<1.6		1.6	0.36	ug/L		02/23/17 22:30	02/24/17 14:01	1
Naphthalene	<0.80		0.80	0.25	ug/L		02/23/17 22:30	02/24/17 14:01	1
2-Nitroaniline	<4.0		4.0	1.0	ug/L		02/23/17 22:30	02/24/17 14:01	1
3-Nitroaniline	<8.0		8.0	1.4	ug/L		02/23/17 22:30	02/24/17 14:01	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-373345/1-A
Matrix: Water
Analysis Batch: 373397

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 373345

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Nitroaniline	<8.0		8.0	1.3	ug/L		02/23/17 22:30	02/24/17 14:01	1
Nitrobenzene	<0.80		0.80	0.36	ug/L		02/23/17 22:30	02/24/17 14:01	1
2-Nitrophenol	<8.0		8.0	2.0	ug/L		02/23/17 22:30	02/24/17 14:01	1
4-Nitrophenol	<16		16	5.9	ug/L		02/23/17 22:30	02/24/17 14:01	1
N-Nitrosodi-n-propylamine	<0.40		0.40	0.12	ug/L		02/23/17 22:30	02/24/17 14:01	1
N-Nitrosodiphenylamine	<0.80		0.80	0.30	ug/L		02/23/17 22:30	02/24/17 14:01	1
2,2'-oxybis[1-chloropropane]	<1.6		1.6	0.30	ug/L		02/23/17 22:30	02/24/17 14:01	1
Pentachlorophenol	<16		16	3.2	ug/L		02/23/17 22:30	02/24/17 14:01	1
Phenanthrene	<0.80		0.80	0.24	ug/L		02/23/17 22:30	02/24/17 14:01	1
Phenol	<4.0		4.0	0.54	ug/L		02/23/17 22:30	02/24/17 14:01	1
Pyrene	<0.80		0.80	0.34	ug/L		02/23/17 22:30	02/24/17 14:01	1
2,4,5-Trichlorophenol	<8.0		8.0	2.1	ug/L		02/23/17 22:30	02/24/17 14:01	1
2,4,6-Trichlorophenol	<4.0		4.0	0.57	ug/L		02/23/17 22:30	02/24/17 14:01	1
Benzaldehyde	<32	^	32	12	ug/L		02/23/17 22:30	02/24/17 14:01	1
Caprolactam	<8.0		8.0	1.2	ug/L		02/23/17 22:30	02/24/17 14:01	1
Atrazine	<4.0		4.0	0.50	ug/L		02/23/17 22:30	02/24/17 14:01	1
1,1'-Biphenyl	<4.0		4.0	0.29	ug/L		02/23/17 22:30	02/24/17 14:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*81*		*30 - 123*	*02/23/17 22:30*	*02/24/17 14:01*	*1*
2-Fluorophenol (Surr)	*63*		*30 - 110*	*02/23/17 22:30*	*02/24/17 14:01*	*1*
Nitrobenzene-d5 (Surr)	*85*		*33 - 139*	*02/23/17 22:30*	*02/24/17 14:01*	*1*
Phenol-d5 (Surr)	*45*		*20 - 100*	*02/23/17 22:30*	*02/24/17 14:01*	*1*
Terphenyl-d14 (Surr)	*102*		*42 - 150*	*02/23/17 22:30*	*02/24/17 14:01*	*1*
2,4,6-Tribromophenol (Surr)	*86*		*30 - 150*	*02/23/17 22:30*	*02/24/17 14:01*	*1*

Lab Sample ID: LCS 500-373345/2-A
Matrix: Water
Analysis Batch: 373397

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 373345

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	32.0	29.8		ug/L		93	41 - 112
Acenaphthylene	32.0	28.6		ug/L		89	48 - 110
Acetophenone	32.0	27.8		ug/L		87	54 - 116
Anthracene	32.0	28.4		ug/L		89	65 - 118
Benzo[a]anthracene	32.0	30.1		ug/L		94	69 - 121
Benzo[a]pyrene	32.0	32.7		ug/L		102	69 - 130
Benzo[b]fluoranthene	32.0	34.5		ug/L		108	66 - 133
Benzo[g,h,i]perylene	32.0	32.8		ug/L		103	47 - 145
Benzo[k]fluoranthene	32.0	32.7		ug/L		102	64 - 134
Bis(2-chloroethoxy)methane	32.0	30.4		ug/L		95	55 - 115
Bis(2-chloroethyl)ether	32.0	29.3		ug/L		91	46 - 110
Bis(2-ethylhexyl) phthalate	32.0	32.8		ug/L		102	60 - 132
4-Bromophenyl phenyl ether	32.0	28.0		ug/L		88	60 - 124
Butyl benzyl phthalate	32.0	33.7		ug/L		105	63 - 127
Carbazole	32.0	42.4		ug/L		132	71 - 132
4-Chloroaniline	32.0	28.0		ug/L		87	15 - 125
4-Chloro-3-methylphenol	32.0	30.6		ug/L		96	63 - 120

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-373345/2-A
Matrix: Water
Analysis Batch: 373397

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 373345

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Chloronaphthalene	32.0	26.2		ug/L		82	38 - 110
2-Chlorophenol	32.0	27.1		ug/L		85	49 - 110
4-Chlorophenyl phenyl ether	32.0	28.7		ug/L		90	55 - 115
Chrysene	32.0	30.5		ug/L		95	70 - 126
Dibenz(a,h)anthracene	32.0	31.3		ug/L		98	59 - 145
Dibenzofuran	32.0	29.1		ug/L		91	54 - 111
3,3'-Dichlorobenzidine	32.0	38.2		ug/L		119	57 - 145
2,4-Dichlorophenol	32.0	30.2		ug/L		94	53 - 123
Diethyl phthalate	32.0	29.5		ug/L		92	64 - 126
2,4-Dimethylphenol	32.0	28.5		ug/L		89	42 - 115
Dimethyl phthalate	32.0	31.8		ug/L		99	66 - 120
Di-n-butyl phthalate	32.0	30.1		ug/L		94	67 - 125
4,6-Dinitro-2-methylphenol	64.0	64.9		ug/L		101	34 - 152
2,4-Dinitrophenol	64.0	69.6		ug/L		109	20 - 140
2,4-Dinitrotoluene	32.0	34.2		ug/L		107	67 - 131
2,6-Dinitrotoluene	32.0	32.5		ug/L		102	66 - 125
Di-n-octyl phthalate	32.0	33.2		ug/L		104	63 - 133
Fluoranthene	32.0	29.1		ug/L		91	68 - 127
Fluorene	32.0	29.4		ug/L		92	54 - 113
Hexachlorobenzene	32.0	26.9		ug/L		84	63 - 127
Hexachlorobutadiene	32.0	19.3		ug/L		60	20 - 110
Hexachlorocyclopentadiene	32.0	15.1	J	ug/L		47	10 - 110
Hexachloroethane	32.0	20.8		ug/L		65	20 - 110
Indeno[1,2,3-cd]pyrene	32.0	31.8		ug/L		99	52 - 150
Isophorone	32.0	30.5		ug/L		95	55 - 120
2-Methylnaphthalene	32.0	25.1		ug/L		78	32 - 110
2-Methylphenol	32.0	26.7		ug/L		83	49 - 113
3 & 4 Methylphenol	32.0	24.0		ug/L		75	49 - 114
Naphthalene	32.0	24.9		ug/L		78	32 - 110
2-Nitroaniline	32.0	32.6		ug/L		102	61 - 126
3-Nitroaniline	32.0	33.3		ug/L		104	42 - 134
4-Nitroaniline	32.0	35.2		ug/L		110	40 - 142
Nitrobenzene	32.0	28.7		ug/L		90	49 - 116
2-Nitrophenol	32.0	32.6		ug/L		102	51 - 120
4-Nitrophenol	64.0	28.4		ug/L		44	21 - 110
N-Nitrosodi-n-propylamine	32.0	27.4		ug/L		86	52 - 122
N-Nitrosodiphenylamine	32.0	29.4		ug/L		92	63 - 117
2,2'-oxybis[1-chloropropane]	32.0	27.3		ug/L		85	34 - 110
Pentachlorophenol	64.0	48.3		ug/L		76	29 - 138
Phenanthrene	32.0	28.5		ug/L		89	63 - 121
Phenol	32.0	15.8		ug/L		49	33 - 100
Pyrene	32.0	30.9		ug/L		97	65 - 122
2,4,5-Trichlorophenol	32.0	30.3		ug/L		95	63 - 121
2,4,6-Trichlorophenol	32.0	29.8		ug/L		93	61 - 120
Caprolactam	32.0	16.3		ug/L		51	25 - 100
Atrazine	32.0	30.7		ug/L		96	57 - 128
1,1'-Biphenyl	32.0	27.3		ug/L		85	42 - 110

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-373345/2-A
Matrix: Water
Analysis Batch: 373397

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 373345

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*91*		*30 - 123*
2-Fluorophenol (Surr)	*77*		*30 - 110*
Nitrobenzene-d5 (Surr)	*94*		*33 - 139*
Phenol-d5 (Surr)	*54*		*20 - 100*
Terphenyl-d14 (Surr)	*112*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*112*		*30 - 150*

Lab Sample ID: LCSD 500-373345/3-A
Matrix: Water
Analysis Batch: 373397

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 373345

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	32.0	30.8		ug/L		96	41 - 112	3	20
Acenaphthylene	32.0	29.5		ug/L		92	48 - 110	3	20
Acetophenone	32.0	29.1		ug/L		91	54 - 116	5	20
Anthracene	32.0	29.7		ug/L		93	65 - 118	5	20
Benzo[a]anthracene	32.0	30.9		ug/L		97	69 - 121	3	20
Benzo[a]pyrene	32.0	33.8		ug/L		106	69 - 130	3	20
Benzo[b]fluoranthene	32.0	36.8		ug/L		115	66 - 133	7	20
Benzo[g,h,i]perylene	32.0	34.4		ug/L		107	47 - 145	5	20
Benzo[k]fluoranthene	32.0	35.1		ug/L		110	64 - 134	7	20
Bis(2-chloroethoxy)methane	32.0	31.0		ug/L		97	55 - 115	2	20
Bis(2-chloroethyl)ether	32.0	30.7		ug/L		96	46 - 110	5	20
Bis(2-ethylhexyl) phthalate	32.0	35.0		ug/L		109	60 - 132	6	20
4-Bromophenyl phenyl ether	32.0	28.5		ug/L		89	60 - 124	2	20
Butyl benzyl phthalate	32.0	36.1		ug/L		113	63 - 127	7	20
Carbazole	32.0	44.0	*	ug/L		138	71 - 132	4	20
4-Chloroaniline	32.0	29.0		ug/L		91	15 - 125	4	20
4-Chloro-3-methylphenol	32.0	31.6		ug/L		99	63 - 120	3	20
2-Chloronaphthalene	32.0	27.0		ug/L		85	38 - 110	3	20
2-Chlorophenol	32.0	28.2		ug/L		88	49 - 110	4	20
4-Chlorophenyl phenyl ether	32.0	29.3		ug/L		92	55 - 115	2	20
Chrysene	32.0	31.6		ug/L		99	70 - 126	4	20
Dibenz(a,h)anthracene	32.0	32.6		ug/L		102	59 - 145	4	20
Dibenzofuran	32.0	29.9		ug/L		94	54 - 111	3	20
3,3'-Dichlorobenzidine	32.0	37.2		ug/L		116	57 - 145	3	20
2,4-Dichlorophenol	32.0	30.6		ug/L		96	53 - 123	1	20
Diethyl phthalate	32.0	30.7		ug/L		96	64 - 126	4	20
2,4-Dimethylphenol	32.0	29.1		ug/L		91	42 - 115	2	20
Dimethyl phthalate	32.0	31.9		ug/L		100	66 - 120	0	20
Di-n-butyl phthalate	32.0	31.6		ug/L		99	67 - 125	5	20
4,6-Dinitro-2-methylphenol	64.0	67.5		ug/L		105	34 - 152	4	20
2,4-Dinitrophenol	64.0	70.6		ug/L		110	20 - 140	1	20
2,4-Dinitrotoluene	32.0	35.1		ug/L		110	67 - 131	2	20
2,6-Dinitrotoluene	32.0	33.3		ug/L		104	66 - 125	2	20
Di-n-octyl phthalate	32.0	34.2		ug/L		107	63 - 133	3	20
Fluoranthene	32.0	29.7		ug/L		93	68 - 127	2	20
Fluorene	32.0	30.3		ug/L		95	54 - 113	3	20

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 500-373345/3-A
Matrix: Water
Analysis Batch: 373397

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 373345

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Hexachlorobenzene	32.0	27.1		ug/L		85	63 - 127	1	20
Hexachlorobutadiene	32.0	18.9		ug/L		59	20 - 110	2	20
Hexachlorocyclopentadiene	32.0	15.5	J	ug/L		48	10 - 110	2	20
Hexachloroethane	32.0	19.8		ug/L		62	20 - 110	5	20
Indeno[1,2,3-cd]pyrene	32.0	32.8		ug/L		102	52 - 150	3	20
Isophorone	32.0	31.0		ug/L		97	55 - 120	1	20
2-Methylnaphthalene	32.0	25.5		ug/L		80	32 - 110	2	20
2-Methylphenol	32.0	28.4		ug/L		89	49 - 113	6	20
3 & 4 Methylphenol	32.0	25.5		ug/L		80	49 - 114	6	20
Naphthalene	32.0	24.8		ug/L		78	32 - 110	0	20
2-Nitroaniline	32.0	33.7		ug/L		105	61 - 126	3	20
3-Nitroaniline	32.0	34.6		ug/L		108	42 - 134	4	20
4-Nitroaniline	32.0	37.2		ug/L		116	40 - 142	5	20
Nitrobenzene	32.0	29.7		ug/L		93	49 - 116	3	20
2-Nitrophenol	32.0	33.0		ug/L		103	51 - 120	1	20
4-Nitrophenol	64.0	32.6		ug/L		51	21 - 110	14	20
N-Nitrosodi-n-propylamine	32.0	28.6		ug/L		89	52 - 122	4	20
N-Nitrosodiphenylamine	32.0	30.4		ug/L		95	63 - 117	3	20
2,2'-oxybis[1-chloropropane]	32.0	29.3		ug/L		92	34 - 110	7	20
Pentachlorophenol	64.0	49.1		ug/L		77	29 - 138	2	20
Phenanthrene	32.0	29.3		ug/L		92	63 - 121	3	20
Phenol	32.0	17.9		ug/L		56	33 - 100	13	20
Pyrene	32.0	32.4		ug/L		101	65 - 122	5	20
2,4,5-Trichlorophenol	32.0	29.9		ug/L		93	63 - 121	1	20
2,4,6-Trichlorophenol	32.0	29.1		ug/L		91	61 - 120	3	20
Caprolactam	32.0	18.4		ug/L		57	25 - 100	12	20
Atrazine	32.0	32.1		ug/L		100	57 - 128	4	20
1,1'-Biphenyl	32.0	28.2		ug/L		88	42 - 110	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorobiphenyl	*84*		*30 - 123*
2-Fluorophenol (Surr)	*79*		*30 - 110*
Nitrobenzene-d5 (Surr)	*90*		*33 - 139*
Phenol-d5 (Surr)	*57*		*20 - 100*
Terphenyl-d14 (Surr)	*108*		*42 - 150*
2,4,6-Tribromophenol (Surr)	*101*		*30 - 150*

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 500-372591/1-A
Matrix: Water
Analysis Batch: 372801

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372591

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.040		0.040	0.0053	ug/L		02/17/17 21:00	02/20/17 19:45	1
alpha-BHC	<0.040		0.040	0.0026	ug/L		02/17/17 21:00	02/20/17 19:45	1
alpha-Chlordane	<0.040		0.040	0.0044	ug/L		02/17/17 21:00	02/20/17 19:45	1
beta-BHC	<0.040		0.040	0.010	ug/L		02/17/17 21:00	02/20/17 19:45	1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: MB 500-372591/1-A
Matrix: Water
Analysis Batch: 372801

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372591

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	<0.040		0.040	0.013	ug/L		02/17/17 21:00	02/20/17 19:45	1
4,4'-DDE	<0.040		0.040	0.0038	ug/L		02/17/17 21:00	02/20/17 19:45	1
4,4'-DDT	<0.040		0.040	0.0032	ug/L		02/17/17 21:00	02/20/17 19:45	1
delta-BHC	<0.040		0.040	0.010	ug/L		02/17/17 21:00	02/20/17 19:45	1
Dieldrin	<0.040		0.040	0.013	ug/L		02/17/17 21:00	02/20/17 19:45	1
Endosulfan I	<0.040		0.040	0.0041	ug/L		02/17/17 21:00	02/20/17 19:45	1
Endosulfan II	<0.040		0.040	0.0028	ug/L		02/17/17 21:00	02/20/17 19:45	1
Endosulfan sulfate	<0.040		0.040	0.012	ug/L		02/17/17 21:00	02/20/17 19:45	1
Endrin	<0.040		0.040	0.014	ug/L		02/17/17 21:00	02/20/17 19:45	1
Endrin aldehyde	<0.040		0.040	0.0082	ug/L		02/17/17 21:00	02/20/17 19:45	1
Endrin ketone	<0.040		0.040	0.017	ug/L		02/17/17 21:00	02/20/17 19:45	1
gamma-BHC (Lindane)	<0.040		0.040	0.0056	ug/L		02/17/17 21:00	02/20/17 19:45	1
gamma-Chlordane	<0.040		0.040	0.0072	ug/L		02/17/17 21:00	02/20/17 19:45	1
Heptachlor	<0.040		0.040	0.014	ug/L		02/17/17 21:00	02/20/17 19:45	1
Heptachlor epoxide	<0.040		0.040	0.014	ug/L		02/17/17 21:00	02/20/17 19:45	1
Methoxychlor	<0.080		0.080	0.023	ug/L		02/17/17 21:00	02/20/17 19:45	1
Toxaphene	<0.40		0.40	0.20	ug/L		02/17/17 21:00	02/20/17 19:45	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*112*		*30 - 143*	*02/17/17 21:00*	*02/20/17 19:45*	*1*
Tetrachloro-m-xylene	*78*		*30 - 120*	*02/17/17 21:00*	*02/20/17 19:45*	*1*

Lab Sample ID: LCS 500-372591/2-A
Matrix: Water
Analysis Batch: 372801

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372591

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aldrin	0.320	0.233		ug/L		73	40 - 130
alpha-BHC	0.320	0.241		ug/L		75	70 - 130
alpha-Chlordane	0.320	0.264		ug/L		82	70 - 130
beta-BHC	0.320	0.256		ug/L		80	70 - 130
4,4'-DDD	0.320	0.289		ug/L		90	70 - 130
4,4'-DDE	0.320	0.253		ug/L		79	56 - 130
4,4'-DDT	0.320	0.293		ug/L		92	50 - 137
delta-BHC	0.320	0.261		ug/L		81	70 - 130
Dieldrin	0.320	0.278		ug/L		87	70 - 130
Endosulfan I	0.320	0.127		ug/L		40	40 - 130
Endosulfan II	0.320	0.175		ug/L		55	49 - 130
Endosulfan sulfate	0.320	0.315		ug/L		98	70 - 130
Endrin	0.320	0.298		ug/L		93	69 - 130
Endrin aldehyde	0.320	0.274		ug/L		86	63 - 130
Endrin ketone	0.320	0.334		ug/L		104	54 - 141
gamma-BHC (Lindane)	0.320	0.258		ug/L		81	70 - 130
gamma-Chlordane	0.320	0.266		ug/L		83	63 - 130
Heptachlor	0.320	0.275		ug/L		86	40 - 130
Heptachlor epoxide	0.320	0.282		ug/L		88	70 - 130
Methoxychlor	0.320	0.362		ug/L		113	47 - 153

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: LCS 500-372591/2-A
Matrix: Water
Analysis Batch: 372801

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 372591

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl	*96*		*30 - 143*
Tetrachloro-m-xylene	*60*		*30 - 120*

Lab Sample ID: LCSD 500-372591/3-A
Matrix: Water
Analysis Batch: 372801

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 372591

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aldrin	0.320	0.273		ug/L		85	40 - 130	16	20
alpha-BHC	0.320	0.279		ug/L		87	70 - 130	15	20
alpha-Chlordane	0.320	0.303		ug/L		95	70 - 130	14	20
beta-BHC	0.320	0.295		ug/L		92	70 - 130	14	20
4,4'-DDD	0.320	0.344		ug/L		108	70 - 130	17	20
4,4'-DDE	0.320	0.293		ug/L		92	56 - 130	15	20
4,4'-DDT	0.320	0.328		ug/L		103	50 - 137	11	20
delta-BHC	0.320	0.303		ug/L		95	70 - 130	15	20
Dieldrin	0.320	0.326		ug/L		102	70 - 130	16	20
Endosulfan I	0.320	0.149		ug/L		47	40 - 130	16	20
Endosulfan II	0.320	0.207		ug/L		65	49 - 130	17	20
Endosulfan sulfate	0.320	0.364		ug/L		114	70 - 130	15	20
Endrin	0.320	0.348		ug/L		109	69 - 130	15	20
Endrin aldehyde	0.320	0.312		ug/L		97	63 - 130	13	20
Endrin ketone	0.320	0.389		ug/L		121	54 - 141	15	20
gamma-BHC (Lindane)	0.320	0.301		ug/L		94	70 - 130	15	20
gamma-Chlordane	0.320	0.308		ug/L		96	63 - 130	15	20
Heptachlor	0.320	0.318		ug/L		99	40 - 130	14	20
Heptachlor epoxide	0.320	0.323		ug/L		101	70 - 130	13	20
Methoxychlor	0.320	0.427		ug/L		133	47 - 153	17	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl	*105*		*30 - 143*
Tetrachloro-m-xylene	*67*		*30 - 120*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 500-372591/1-A
Matrix: Water
Analysis Batch: 372765

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 372591

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.40		0.40	0.067	ug/L		02/17/17 21:00	02/20/17 13:16	1
PCB-1221	<0.40		0.40	0.20	ug/L		02/17/17 21:00	02/20/17 13:16	1
PCB-1232	<0.40		0.40	0.20	ug/L		02/17/17 21:00	02/20/17 13:16	1
PCB-1242	<0.40		0.40	0.20	ug/L		02/17/17 21:00	02/20/17 13:16	1
PCB-1248	<0.40		0.40	0.20	ug/L		02/17/17 21:00	02/20/17 13:16	1
PCB-1254	<0.40		0.40	0.20	ug/L		02/17/17 21:00	02/20/17 13:16	1
PCB-1260	<0.40		0.40	0.070	ug/L		02/17/17 21:00	02/20/17 13:16	1

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: MB 500-372591/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372765 — **Prep Batch: 372591**

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*94*		*30 - 127*	*02/17/17 21:00*	*02/20/17 13:16*	*1*
DCB Decachlorobiphenyl	*102*		*30 - 150*	*02/17/17 21:00*	*02/20/17 13:16*	*1*

Lab Sample ID: LCS 500-372591/4-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372765 — **Prep Batch: 372591**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	4.00	3.39		ug/L		85	58 - 121
PCB-1260	4.00	3.63		ug/L		91	62 - 137

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*80*		*30 - 127*
DCB Decachlorobiphenyl	*95*		*30 - 150*

Lab Sample ID: LCSD 500-372591/5-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372765 — **Prep Batch: 372591**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	4.00	3.48		ug/L		87	58 - 121	3	20
PCB-1260	4.00	3.54		ug/L		88	62 - 137	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*86*		*30 - 127*
DCB Decachlorobiphenyl	*95*		*30 - 150*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 500-372467/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373052 — **Prep Batch: 372467**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 20:28	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:28	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 20:28	1
Chromium	<0.010		0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 20:28	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 20:28	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 20:28	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 20:28	1
Manganese	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:28	1
Nickel	<0.010		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 20:28	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 20:28	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 20:28	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:28	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 20:28	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 500-372467/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373052 — **Prep Batch: 372467**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 20:28	1

Lab Sample ID: MB 500-372467/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373200 — **Prep Batch: 372467**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/22/17 18:00	1
Barium	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/22/17 18:00	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/22/17 18:00	1
Calcium	<0.20		0.20	0.059	mg/L		02/17/17 08:13	02/22/17 18:00	1
Iron	0.120	J ^	0.20	0.10	mg/L		02/17/17 08:13	02/22/17 18:00	1
Magnesium	<0.10		0.10	0.041	mg/L		02/17/17 08:13	02/22/17 18:00	1
Potassium	<0.50		0.50	0.16	mg/L		02/17/17 08:13	02/22/17 18:00	1
Sodium	<1.0		1.0	0.43	mg/L		02/17/17 08:13	02/22/17 18:00	1

Lab Sample ID: LCS 500-372467/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373052 — **Prep Batch: 372467**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	0.500	0.506		mg/L		101	80 - 120
Arsenic	0.100	0.100		mg/L		100	80 - 120
Cadmium	0.0500	0.0501		mg/L		100	80 - 120
Chromium	0.200	0.206		mg/L		103	80 - 120
Cobalt	0.500	0.512		mg/L		102	80 - 120
Copper	0.250	0.258		mg/L		103	80 - 120
Lead	0.100	0.0975		mg/L		97	80 - 120
Manganese	0.500	0.530		mg/L		106	80 - 120
Nickel	0.500	0.510		mg/L		102	80 - 120
Selenium	0.100	0.0937		mg/L		94	80 - 120
Silver	0.0500	0.0511		mg/L		102	80 - 120
Thallium	0.100	0.0984		mg/L		98	80 - 120
Vanadium	0.500	0.532		mg/L		106	80 - 120
Zinc	0.500	0.505		mg/L		101	80 - 120

Lab Sample ID: LCS 500-372467/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 373200 — **Prep Batch: 372467**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	2.07		mg/L		104	80 - 120
Barium	2.00	2.14		mg/L		107	80 - 120
Beryllium	0.0500	0.0530		mg/L		106	80 - 120
Calcium	10.0	10.4		mg/L		104	80 - 120
Iron	1.00	1.15	^	mg/L		115	80 - 120
Magnesium	10.0	10.1		mg/L		101	80 - 120
Potassium	10.0	10.6		mg/L		106	80 - 120
Sodium	10.0	10.8		mg/L		108	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-372526/12-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372785 — **Prep Batch: 372526**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:21	1

Lab Sample ID: LCS 500-372526/13-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372785 — **Prep Batch: 372526**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00200	0.00199		mg/L		99	80 - 120

Lab Sample ID: 500-123998-1 MS — **Client Sample ID: MW-03-GW-02152017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372785 — **Prep Batch: 372526**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	<0.00020		0.00100	0.00116		mg/L		116	75 - 125

Lab Sample ID: 500-123998-1 MSD — **Client Sample ID: MW-03-GW-02152017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372785 — **Prep Batch: 372526**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	<0.00020		0.00100	0.00103		mg/L		103	75 - 125	12	20

Lab Sample ID: 500-123998-1 DU — **Client Sample ID: MW-03-GW-02152017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372785 — **Prep Batch: 372526**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Mercury	<0.00020		<0.00020		mg/L		NC	20

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 500-372856/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372856

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 07:01	1

Lab Sample ID: LCS 500-372856/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372856

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfide	6.91	6.81		mg/L		99	80 - 120

Method: 9038 - Sulfate, Turbidimetric

Lab Sample ID: MB 500-374123/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 374123

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	3.04	J	5.0	1.5	mg/L			03/02/17 07:06	1

Lab Sample ID: LCS 500-374123/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 374123

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	20.4		mg/L		102	80 - 120

Lab Sample ID: 500-123998-2 MS — **Client Sample ID: MW-02-GW-02152017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 374123

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	3.0	J B	20.0	22.7		mg/L		98	75 - 125

Lab Sample ID: 500-123998-2 MSD — **Client Sample ID: MW-02-GW-02152017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 374123

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	3.0	J B	20.0	24.0		mg/L		105	75 - 125	6	20

Method: 9060A - Organic Carbon, Total (TOC)

Lab Sample ID: MB 500-372593/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372593

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	<1.0		1.0	0.27	mg/L			02/16/17 18:31	1

Lab Sample ID: LCS 500-372593/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372593

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	10.0	10.5		mg/L		105	80 - 120
TOC Result 1	10.0	10.4		mg/L		104	80 - 120
TOC Result 2	10.0	10.6		mg/L		106	80 - 120

Lab Sample ID: MB 500-372960/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372960

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	0.432	J	1.0	0.27	mg/L			02/20/17 23:58	1

Method: 9060A - Organic Carbon, Total (TOC) (Continued)

Lab Sample ID: LCS 500-372960/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372960

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon - Duplicates	10.0	11.1		mg/L		111	80 - 120
TOC Result 1	10.0	11.1		mg/L		111	80 - 120
TOC Result 2	10.0	11.2		mg/L		112	80 - 120

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 500-372543/1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372543

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.0		5.0	2.5	mg/L			02/17/17 13:00	1

Lab Sample ID: LCS 500-372543/2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372543

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	200	193		mg/L		96	80 - 120

Lab Sample ID: 500-123998-1 MS — **Client Sample ID: MW-03-GW-02152017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372543

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Suspended Solids	11		100	116		mg/L		105	75 - 125

Lab Sample ID: 500-123998-1 DU — **Client Sample ID: MW-03-GW-02152017**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372543

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	11		8.00	F5	mg/L		32	5

Method: SM 4500 NH3 G - Ammonia

Lab Sample ID: MB 500-372578/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372597 — **Prep Batch: 372578**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.20		0.20	0.10	mg/L		02/17/17 19:00	02/17/17 21:51	1

Method: SM 4500 NH3 G - Ammonia (Continued)

Lab Sample ID: LCS 500-372578/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372597 — **Prep Batch: 372578**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.50	2.41		mg/L		96	80 - 120

Method: SM 4500 NO2 B - Nitrogen, Nitrite

Lab Sample ID: MB 500-372536/3 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372536

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/17/17 12:43	1

Lab Sample ID: LCS 500-372536/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372536

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrite	0.100	0.103		mg/L		103	80 - 120

Method: SM 4500 NO3 F - Nitrogen, Nitrate

Lab Sample ID: MB 500-372665/4 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372665

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/17/17 23:58	1

Lab Sample ID: LCS 500-372665/5 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 372665

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrogen, Nitrate Nitrite	1.00	0.955		mg/L		95	80 - 120

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-03-GW-02152017

Date Collected: 02/15/17 13:20
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	373192	02/23/17 18:27	PJH	TAL CHI
Total/NA	Prep	3510C	DL		372692	02/20/17 07:25	JJH	TAL CHI
Total/NA	Analysis	8270D	DL	10	373146	02/23/17 02:43	GES	TAL CHI
Total/NA	Prep	3510C			372692	02/20/17 07:25	JJH	TAL CHI
Total/NA	Analysis	8270D		1	372962	02/22/17 01:52	GES	TAL CHI
Total/NA	Prep	3510C	DL2		372692	02/20/17 07:25	JJH	TAL CHI
Total/NA	Analysis	8270D	DL2	50	373397	02/24/17 15:27	AJD	TAL CHI
Total/NA	Prep	3510C			372591	02/17/17 21:00	LLH	TAL CHI
Total/NA	Analysis	8081B		1	372801	02/20/17 23:16	PJG	TAL CHI
Total/NA	Prep	3510C			372591	02/17/17 21:00	LLH	TAL CHI
Total/NA	Analysis	8082A		1	372765	02/20/17 14:02	BJH	TAL CHI
Dissolved	Prep	3010A			372467	02/17/17 08:13	JEF	TAL CHI
Dissolved	Analysis	6010C		1	373052	02/21/17 20:39	PJ1	TAL CHI
Dissolved	Prep	3010A			372467	02/17/17 08:13	JEF	TAL CHI
Dissolved	Analysis	6010C		1	373200	02/22/17 18:44	PJ1	TAL CHI
Total/NA	Prep	3010A			372467	02/17/17 08:13	JEF	TAL CHI
Total/NA	Analysis	6010C		1	373052	02/21/17 20:35	PJ1	TAL CHI
Total/NA	Prep	3010A			372467	02/17/17 08:13	JEF	TAL CHI
Total/NA	Analysis	6010C		1	373200	02/22/17 18:40	PJ1	TAL CHI
Dissolved	Prep	7470A			372526	02/17/17 13:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	372785	02/20/17 10:42	MJD	TAL CHI
Total/NA	Prep	7470A			372526	02/17/17 13:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	372785	02/20/17 10:36	MJD	TAL CHI
Total/NA	Analysis	9034		1	372856		CLB	TAL CHI
					(Start)	02/21/17 07:37		
					(End)	02/21/17 07:39		
Total/NA	Analysis	9038		1	374123		CLB	TAL CHI
					(Start)	03/02/17 07:08		
					(End)	03/02/17 07:09		
Total/NA	Analysis	9060A		1	372593	02/17/17 00:38	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	372666	02/19/17 20:20	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	372543		SMO	TAL CHI
					(Start)	02/17/17 13:08		
					(End)	02/17/17 13:09		
Total/NA	Prep	SM 4500 NH3 B			372578	02/17/17 19:00	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		10	372597	02/17/17 22:11	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	372536		VIP	TAL CHI
					(Start)	02/17/17 12:44		
					(End)	02/17/17 12:44		
Total/NA	Analysis	SM 4500 NO3 F		1	372665	02/18/17 00:09	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-02-GW-02152017

Lab Sample ID: 500-123998-2

Date Collected: 02/15/17 16:05

Matrix: Water

Date Received: 02/16/17 15:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	373192	02/23/17 17:07	PJH	TAL CHI
Total/NA	Analysis	8260B	DL	10	373192	02/23/17 17:34	PJH	TAL CHI
Total/NA	Prep	3510C	DL		372692	02/20/17 07:25	JJH	TAL CHI
Total/NA	Analysis	8270D	DL	5	373146	02/23/17 03:10	GES	TAL CHI
Total/NA	Prep	3510C			372692	02/20/17 07:25	JJH	TAL CHI
Total/NA	Analysis	8270D		1	372962	02/22/17 02:21	GES	TAL CHI
Total/NA	Prep	3510C			372591	02/17/17 21:00	LLH	TAL CHI
Total/NA	Analysis	8081B		1	372801	02/20/17 23:35	PJG	TAL CHI
Total/NA	Prep	3510C			372591	02/17/17 21:00	LLH	TAL CHI
Total/NA	Analysis	8082A		1	372765	02/20/17 14:18	BJH	TAL CHI
Dissolved	Prep	3010A			372467	02/17/17 08:13	JEF	TAL CHI
Dissolved	Analysis	6010C		1	373052	02/21/17 20:48	PJ1	TAL CHI
Dissolved	Prep	3010A			372467	02/17/17 08:13	JEF	TAL CHI
Dissolved	Analysis	6010C		1	373200	02/22/17 18:52	PJ1	TAL CHI
Total/NA	Prep	3010A			372467	02/17/17 08:13	JEF	TAL CHI
Total/NA	Analysis	6010C		1	373052	02/21/17 20:44	PJ1	TAL CHI
Total/NA	Prep	3010A			372467	02/17/17 08:13	JEF	TAL CHI
Total/NA	Analysis	6010C		1	373200	02/22/17 18:49	PJ1	TAL CHI
Dissolved	Prep	7470A			372526	02/17/17 13:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	372785	02/20/17 10:45	MJD	TAL CHI
Total/NA	Prep	7470A			372526	02/17/17 13:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	372785	02/20/17 10:44	MJD	TAL CHI
Total/NA	Analysis	9034		1	372856		CLB	TAL CHI
					(Start)	02/21/17 07:39		
					(End)	02/21/17 07:42		
Total/NA	Analysis	9038		1	374123		CLB	TAL CHI
					(Start)	03/02/17 07:09		
					(End)	03/02/17 07:10		
Total/NA	Analysis	9060A		1	372593	02/17/17 00:54	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	372666	02/19/17 20:20	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	372543		SMO	TAL CHI
					(Start)	02/17/17 13:12		
					(End)	02/17/17 13:14		
Total/NA	Prep	SM 4500 NH3 B			372578	02/17/17 19:00	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		10	372597	02/17/17 22:14	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	372536		VIP	TAL CHI
					(Start)	02/17/17 12:44		
					(End)	02/17/17 12:45		
Total/NA	Analysis	SM 4500 NO3 F		1	372665	02/18/17 00:11	HMW	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-01-GW-02162017

Lab Sample ID: 500-123998-3

Date Collected: 02/16/17 07:55
Matrix: Water
Date Received: 02/16/17 15:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	373092	02/23/17 04:42	PMF	TAL CHI
Total/NA	Prep	3510C			373345	02/23/17 22:30	LLH	TAL CHI
Total/NA	Analysis	8270D		1	373397	02/24/17 14:30	AJD	TAL CHI
Total/NA	Prep	3510C	DL		373345	02/23/17 22:30	LLH	TAL CHI
Total/NA	Analysis	8270D	DL	5	373397	02/24/17 14:58	AJD	TAL CHI
Total/NA	Prep	3510C			372591	02/17/17 21:00	LLH	TAL CHI
Total/NA	Analysis	8081B		1	372801	02/20/17 23:54	PJG	TAL CHI
Total/NA	Prep	3510C			372591	02/17/17 21:00	LLH	TAL CHI
Total/NA	Analysis	8082A		1	372765	02/20/17 14:33	BJH	TAL CHI
Dissolved	Prep	3010A			372467	02/17/17 08:13	JEF	TAL CHI
Dissolved	Analysis	6010C		1	373052	02/21/17 21:01	PJ1	TAL CHI
Total/NA	Prep	3010A			372467	02/17/17 08:13	JEF	TAL CHI
Total/NA	Analysis	6010C		1	373052	02/21/17 20:57	PJ1	TAL CHI
Dissolved	Prep	7470A			372526	02/17/17 13:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	372785	02/20/17 10:48	MJD	TAL CHI
Total/NA	Prep	7470A			372526	02/17/17 13:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	372785	02/20/17 10:47	MJD	TAL CHI
Total/NA	Analysis	9034		1	372856		CLB	TAL CHI
					(Start)	02/21/17 07:42		
					(End)	02/21/17 07:44		
Total/NA	Analysis	9038		1	374123		CLB	TAL CHI
					(Start)	03/02/17 07:12		
					(End)	03/02/17 07:13		
Total/NA	Analysis	9060A		1	372593	02/17/17 01:11	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	372666	02/19/17 20:20	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	372543		SMO	TAL CHI
					(Start)	02/17/17 13:14		
					(End)	02/17/17 13:15		
Total/NA	Prep	SM 4500 NH3 B			372578	02/17/17 19:00	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		20	372597	02/17/17 22:17	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	372536		VIP	TAL CHI
					(Start)	02/17/17 12:45		
					(End)	02/17/17 12:45		
Total/NA	Analysis	SM 4500 NO3 F		1	372665	02/18/17 00:13	HMW	TAL CHI

Client Sample ID: MW-13-GW-02162017

Lab Sample ID: 500-123998-4

Date Collected: 02/16/17 10:35
Matrix: Water
Date Received: 02/16/17 15:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10	373092	02/23/17 05:09	PMF	TAL CHI
Total/NA	Analysis	8260B	DL	100	373092	02/23/17 05:36	PMF	TAL CHI
Total/NA	Prep	3510C			373020	02/22/17 12:03	JJH	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-13-GW-02162017

Lab Sample ID: 500-123998-4

Date Collected: 02/16/17 10:35
Matrix: Water
Date Received: 02/16/17 15:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8270D		1	373146	02/23/17 00:54	GES	TAL CHI
Total/NA	Prep	3510C	DL		373020	02/22/17 12:03	JJH	TAL CHI
Total/NA	Analysis	8270D	DL	10	373146	02/23/17 01:21	GES	TAL CHI
Total/NA	Prep	3510C			372591	02/17/17 21:00	LLH	TAL CHI
Total/NA	Analysis	8081B		1	372801	02/21/17 00:13	PJG	TAL CHI
Total/NA	Prep	3510C			372591	02/17/17 21:00	LLH	TAL CHI
Total/NA	Analysis	8082A		1	372765	02/20/17 14:48	BJH	TAL CHI
Dissolved	Prep	3010A			372467	02/17/17 08:13	JEF	TAL CHI
Dissolved	Analysis	6010C		1	373052	02/21/17 21:13	PJ1	TAL CHI
Total/NA	Prep	3010A			372467	02/17/17 08:13	JEF	TAL CHI
Total/NA	Analysis	6010C		1	373052	02/21/17 21:07	PJ1	TAL CHI
Dissolved	Prep	7470A			372526	02/17/17 13:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	372785	02/20/17 10:54	MJD	TAL CHI
Total/NA	Prep	7470A			372526	02/17/17 13:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	372785	02/20/17 10:53	MJD	TAL CHI
Total/NA	Analysis	9034		1	372856		CLB	TAL CHI
					(Start)	02/21/17 07:44		
					(End)	02/21/17 07:47		
Total/NA	Analysis	9038		5	374123		CLB	TAL CHI
					(Start)	03/02/17 07:13		
					(End)	03/02/17 07:14		
Total/NA	Analysis	9060A		2	372960	02/21/17 00:31	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	372666	02/19/17 20:20	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	372543		SMO	TAL CHI
					(Start)	02/17/17 13:15		
					(End)	02/17/17 13:16		
Total/NA	Prep	SM 4500 NH3 B			372578	02/17/17 19:00	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		20	372597	02/17/17 22:25	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	372536		VIP	TAL CHI
					(Start)	02/17/17 12:45		
					(End)	02/17/17 12:45		
Total/NA	Analysis	SM 4500 NO3 F		1	372665	02/18/17 00:16	HMW	TAL CHI

Client Sample ID: MW-11-GW-02162017

Lab Sample ID: 500-123998-5

Date Collected: 02/16/17 13:00
Matrix: Water
Date Received: 02/16/17 15:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	373192	02/23/17 18:00	PJH	TAL CHI
Total/NA	Prep	3510C			372692	02/20/17 07:25	JJH	TAL CHI
Total/NA	Analysis	8270D		1	373146	02/23/17 01:49	GES	TAL CHI
Total/NA	Prep	3510C			372591	02/17/17 21:00	LLH	TAL CHI
Total/NA	Analysis	8081B		1	372801	02/21/17 00:33	PJG	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-11-GW-02162017

Lab Sample ID: 500-123998-5

Date Collected: 02/16/17 13:00
Matrix: Water
Date Received: 02/16/17 15:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			372591	02/17/17 21:00	LLH	TAL CHI
Total/NA	Analysis	8082A		1	372765	02/20/17 15:04	BJH	TAL CHI
Dissolved	Prep	3010A			372467	02/17/17 08:13	JEF	TAL CHI
Dissolved	Analysis	6010C		1	373052	02/21/17 21:26	PJ1	TAL CHI
Total/NA	Prep	3010A			372467	02/17/17 08:13	JEF	TAL CHI
Total/NA	Analysis	6010C		1	373052	02/21/17 21:19	PJ1	TAL CHI
Dissolved	Prep	7470A			372526	02/17/17 13:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	372785	02/20/17 10:57	MJD	TAL CHI
Total/NA	Prep	7470A			372526	02/17/17 13:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	372785	02/20/17 10:55	MJD	TAL CHI
Total/NA	Analysis	9034		1	372856		CLB	TAL CHI
					(Start)	02/21/17 07:47		
					(End)	02/21/17 07:50		
Total/NA	Analysis	9038		1	374123		CLB	TAL CHI
					(Start)	03/02/17 07:14		
					(End)	03/02/17 07:15		
Total/NA	Analysis	9060A		1	372593	02/17/17 01:44	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	372666	02/19/17 20:20	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	372543		SMO	TAL CHI
					(Start)	02/17/17 13:16		
					(End)	02/17/17 13:18		
Total/NA	Prep	SM 4500 NH3 B			372578	02/17/17 19:00	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		25	372597	02/17/17 22:28	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	372536		VIP	TAL CHI
					(Start)	02/17/17 12:45		
					(End)	02/17/17 12:46		
Total/NA	Analysis	SM 4500 NO3 F		1	372665	02/18/17 00:16	HMW	TAL CHI

Client Sample ID: DUP-1-02162017

Lab Sample ID: 500-123998-6

Date Collected: 02/16/17 00:00
Matrix: Water
Date Received: 02/16/17 15:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	373092	02/23/17 06:03	PMF	TAL CHI
Total/NA	Prep	3510C			372692	02/20/17 07:25	JJH	TAL CHI
Total/NA	Analysis	8270D		1	373146	02/23/17 02:16	GES	TAL CHI
Total/NA	Prep	3510C	DL		372692	02/20/17 07:25	JJH	TAL CHI
Total/NA	Analysis	8270D	DL	5	373397	02/24/17 15:56	AJD	TAL CHI
Total/NA	Prep	3510C			372591	02/17/17 21:00	LLH	TAL CHI
Total/NA	Analysis	8081B		1	372801	02/21/17 00:52	PJG	TAL CHI
Total/NA	Prep	3510C			372591	02/17/17 21:00	LLH	TAL CHI
Total/NA	Analysis	8082A		1	372765	02/20/17 15:19	BJH	TAL CHI
Dissolved	Prep	3010A			372467	02/17/17 08:13	JEF	TAL CHI
Dissolved	Analysis	6010C		1	373052	02/21/17 21:35	PJ1	TAL CHI

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3010A			372467	02/17/17 08:13	JEF	TAL CHI
Total/NA	Analysis	6010C		1	373052	02/21/17 21:31	PJ1	TAL CHI
Dissolved	Prep	7470A			372526	02/17/17 13:30	MJD	TAL CHI
Dissolved	Analysis	7470A		1	372785	02/20/17 11:00	MJD	TAL CHI
Total/NA	Prep	7470A			372526	02/17/17 13:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	372785	02/20/17 10:58	MJD	TAL CHI
Total/NA	Analysis	9034		1	372856		CLB	TAL CHI
					(Start)	02/21/17 07:50		
					(End)	02/21/17 07:52		
Total/NA	Analysis	9038		1	374123		CLB	TAL CHI
					(Start)	03/02/17 07:15		
					(End)	03/02/17 07:16		
Total/NA	Analysis	9060A		1	372593	02/17/17 02:00	HMW	TAL CHI
Total/NA	Analysis	Nitrate by calc		1	372666	02/19/17 20:20	HMW	TAL CHI
Total/NA	Analysis	SM 2540D		1	372543		SMO	TAL CHI
					(Start)	02/17/17 13:18		
					(End)	02/17/17 13:19		
Total/NA	Prep	SM 4500 NH3 B			372578	02/17/17 19:00	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		20	372597	02/17/17 23:33	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NO2 B		1	372536		VIP	TAL CHI
					(Start)	02/17/17 12:46		
					(End)	02/17/17 12:46		
Total/NA	Analysis	SM 4500 NO3 F		1	372665	02/18/17 00:19	HMW	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Laboratory: TestAmerica Chicago

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	100201	04-30-17 *

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	Cyclohexane
8260B		Water	Methyl acetate
8260B		Water	Methylcyclohexane
8270D	3510C	Water	1,1'-Biphenyl
8270D	3510C	Water	Atrazine
8270D	3510C	Water	Benzaldehyde
8270D	3510C	Water	Caprolactam

* Certification renewal pending - certification considered valid.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

(optional)
Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 200 S. Michigan Ave
Address: Ste 2000
Phone: 312 575 3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis-us.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-123998
Chain of Custody Number:
Page _____ of _____
Temperature °C of Cooler: 2.8, -0.9, 1.7

Client: Arcadis
Client Project #: CI001805.0002.00005
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thumhoffer
Lab PM: Therese Hargraves

Preservative Key
1. HCL, Cool to 4°
500-123998 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOC, PCBs, Pesticides (Preservative 8)	Total metals (3)	Dissolved Metals (3)	Ammonia NO_3/NO_2 (6)	Sulfate (5)	TOC (2)	TSS, SOH, NO_2 (8)	VOC (1)	Dissolved Gases (9)	Comments
1		MW-03-GW-02152017	2-15	1320	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Dissolved metals
2		MW-02-GW-02152017	2-15	1605	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	were field filtered
3		MW-01-GW-02162017	2-16	0755	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
4		MW-13-GW-02162017	2-16	1035	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
5		MW-11-GW-02162017	2-16	1300	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
6		Dup-1-02162017	2-16	—	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	Arcadis	2-16-2017	1455	[signature]	TA	2/16/17	1455
[signature]	TA	2/16/17	1535	[signature]	TALHT	02/16/17	1535

Lab Courier
Shipped
Hand Delivered

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

TA-IL-A-0001 (Rev. 3.0) 3/8/2017

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-123998-1

Login Number: 123998
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.8, -0.9, 1.7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-123998-2
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Authorized for release by:
2/28/2017 10:33:30 AM

Therese Hargraves, Project Manager I
(708)534-5200
therese.hargraves@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Chain of Custody 4
Receipt Checklists 18

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-2

Job ID: 500-123998-2

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-123998-2

Comments
No additional comments.

Receipt
The samples were received on 2/16/2017 3:35 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were -0.9º C, 1.7º C and 2.8º C.

Subcontract non-Sister
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method Dissolved Gases - Methane, Carbon Dioxide, Oxygen and Nitrogen: This method was subcontracted to Pace-Pittsburgh (Microseeps). The subcontract laboratory certification is different from that of the facility issuing the final report.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

February 27, 2017

Therese Hargraves
Test America Inc.
2417 Bond Street
University Park, IL 60484

RE: **500-123998-2**

Pace Workorder: 21748

Dear Therese Hargraves:

Enclosed are the analytical results for sample(s) received by the laboratory on Friday, February 17, 2017. Results reported herein conform to the most current NELAC standards, where applicable, unless otherwise narrated in the body of the report.

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

Sincerely,

Ruth Welsh 02/27/2017
Ruth.Welsh@pacelabs.com

Customer Service Representative

Enclosures

As a valued client we would appreciate your comments on our service.
Please email PAESfeedback@pacelabs.com. Total Number of Pages ____

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

LABORATORY ACCREDITATIONS & CERTIFICATIONS

Accreditor:	Pennsylvania Department of Environmental Protection, Bureau of Laboratories
Accreditation ID:	02-00538
Scope:	NELAP Non-Potable Water and Solid & Hazardous Waste
Accreditor:	West Virginia Department of Environmental Protection, Division of Water and Waste Management
Accreditation ID:	395
Scope:	Non-Potable Water
Accreditor:	South Carolina Department of Health and Environmental Control, Office of Environmental Laboratory Certification
Accreditation ID:	89009003
Scope:	Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: New Jersey, Department of Environmental Protection
Accreditation ID:	PA026
Scope:	Non-Potable Water; Solid and Chemical Materials
Accreditor:	NELAP: New York, Department of Health Wadsworth Center
Accreditation ID:	11815
Scope:	Non-Potable Water; Solid and Hazardous Waste
Accreditor:	State of Connecticut, Department of Public Health, Division of Environmental Health
Accreditation ID:	PH-0263
Scope:	Clean Water Act (CWA) Resource Conservation and Recovery Act (RCRA)
Accreditor:	NELAP: Texas, Commission on Environmental Quality
Accreditation ID:	T104704453-09-TX
Scope:	Non-Potable Water
Accreditor:	State of New Hampshire
Accreditation ID:	299409
Scope:	Non-potable water
Accreditor:	State of Georgia
Accreditation ID:	Chapter 391-3-26
Scope:	As per the Georgia EPD Rules and Regulations for Commercial Laboratories, PAES is accredited by the Pennsylvania Department of Environmental Protection Bureau of Laboratories under the National Environmental Laboratory Approval Program (NELAC).

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

SAMPLE SUMMARY

Workorder: 21748 500-123998-2

Lab ID	Sample ID	Matrix	Date Collected	Date Received
217480001	MW-03-GW-02152017	Water	2/15/2017 13:20	2/17/2017 10:40
217480002	MW-02-GW-02152017	Water	2/15/2017 16:05	2/17/2017 10:40
217480003	MW-01-GW-02162017	Water	2/16/2017 07:55	2/17/2017 10:40
217480004	MW-13-GW-02162017	Water	2/16/2017 10:35	2/17/2017 10:40
217480005	MW-11-GW-02162017	Water	2/16/2017 13:00	2/17/2017 10:40
217480006	DUP-1-02162017	Water	2/16/2017 00:00	2/17/2017 10:40

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21748 500-123998-2

Lab ID: **217480001** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-03-GW-02152017** Date Collected: 2/15/2017 13:20

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**22000**	ug/l	0.50	0.027	1	2/24/2017 13:48	MM	n
Carbon Dioxide	**80**	mg/l	5.0	0.24	1	2/24/2017 13:48	MM	n
Oxygen	**3.0**	mg/l	0.50	0.13	1	2/24/2017 13:48	MM	n
Nitrogen	**9.1**	mg/l	2.0	0.24	1	2/24/2017 13:48	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21748 500-123998-2

Lab ID: **217480002** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-02-GW-02152017** Date Collected: 2/15/2017 16:05

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**16000**	ug/l	0.50	0.027	1	2/24/2017 14:04	MM	n
Carbon Dioxide	**360**	mg/l	5.0	0.24	1	2/24/2017 14:04	MM	n
Oxygen	**1.6**	mg/l	0.50	0.13	1	2/24/2017 14:04	MM	n
Nitrogen	**8.9**	mg/l	2.0	0.24	1	2/24/2017 14:04	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21748 500-123998-2

Lab ID: **217480003** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-01-GW-02162017** Date Collected: 2/16/2017 07:55

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**20000**	ug/l	0.50	0.027	1	2/24/2017 14:17	MM	n
Carbon Dioxide	**<5.0**	mg/l	5.0	0.24	1	2/24/2017 14:17	MM	n
Oxygen	**3.4**	mg/l	0.50	0.13	1	2/24/2017 14:17	MM	n
Nitrogen	**10**	mg/l	2.0	0.24	1	2/24/2017 14:17	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21748 500-123998-2

Lab ID: **217480004** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-13-GW-02162017** Date Collected: 2/16/2017 10:35

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**23000**	ug/l	0.50	0.027	1	2/24/2017 14:30	MM	n
Carbon Dioxide	**64**	mg/l	5.0	0.24	1	2/24/2017 14:30	MM	n
Oxygen	**1.4**	mg/l	0.50	0.13	1	2/24/2017 14:30	MM	n
Nitrogen	**7.9**	mg/l	2.0	0.24	1	2/24/2017 14:30	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21748 500-123998-2

Lab ID: **217480005** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-11-GW-02162017** Date Collected: 2/16/2017 13:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**18000**	ug/l	0.50	0.027	1	2/24/2017 14:43	MM	n
Carbon Dioxide	**210**	mg/l	5.0	0.24	1	2/24/2017 14:43	MM	n
Oxygen	**1.6**	mg/l	0.50	0.13	1	2/24/2017 14:43	MM	n
Nitrogen	**9.5**	mg/l	2.0	0.24	1	2/24/2017 14:43	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21748 500-123998-2

Lab ID: **217480006** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **DUP-1-02162017** Date Collected: 2/16/2017 00:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**21000**	ug/l	0.50	0.027	1	2/24/2017 14:57	MM	n
Carbon Dioxide	**<5.0**	mg/l	5.0	0.24	1	2/24/2017 14:57	MM	n
Oxygen	**3.4**	mg/l	0.50	0.13	1	2/24/2017 14:57	MM	n
Nitrogen	**10**	mg/l	2.0	0.24	1	2/24/2017 14:57	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 21748 500-123998-2

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA

Workorder: 21748 500-123998-2

QC Batch: DISG/5933 Analysis Method: AM20GAX

QC Batch Method: AM20GAX

Associated Lab Samples: 217480001, 217480002, 217480003, 217480004, 217480005, 217480006

METHOD BLANK: 47179

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Methane	ug/l	<0.50	0.50	n

METHOD BLANK: 47180

Parameter	Units	Blank Result	Reporting Limit	Qualifiers
RISK				
Carbon Dioxide	mg/l	<5.0	5.0	n
Oxygen	mg/l	<0.50	0.50	n
Nitrogen	mg/l	<2.0	2.0	n

LABORATORY CONTROL SAMPLE & LCSD: 47181 47183

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Methane	ug/l	750	780	760	104	101	80-120	2.9	20	n

LABORATORY CONTROL SAMPLE & LCSD: 47182 47184

Parameter	Units	Spike Conc.	LCS Result	LCSD Result	LCS % Rec	LCSD % Rec	% Rec Limit	RPD	Max RPD	Qualifiers
RISK										
Carbon Dioxide	mg/l	120	130	130	112	115	80-120	2.6	20	n
Oxygen	mg/l	11	11	11	95	93	80-120	2.1	20	n
Nitrogen	mg/l	140	120	120	85	84	80-120	1.2	20	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA QUALIFIERS

Workorder: 21748 500-123998-2

QUALITY CONTROL PARAMETER QUALIFIERS

n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Workorder: 21748 500-123998-2

Lab ID	Sample ID	Prep Method	Prep Batch	Analysis Method	Analysis Batch
217480001	MW-03-GW-02152017			AM20GAX	DISG/5933
217480002	MW-02-GW-02152017			AM20GAX	DISG/5933
217480003	MW-01-GW-02162017			AM20GAX	DISG/5933
217480004	MW-13-GW-02162017			AM20GAX	DISG/5933
217480005	MW-11-GW-02162017			AM20GAX	DISG/5933
217480006	DUP-1-02162017			AM20GAX	DISG/5933

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

(optional)
Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 200 S. Michigan Ave
Address: Ste 2000
Phone: 312 575 3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis-us.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-123998
Chain of Custody Number:
Page ____ of ____
Temperature °C of Cooler: 2.8, -0.9, 1.7

Client: Arcadis
Client Project #: CI001805.0002.00005
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thumhoffer
Lab PM: Therese Hargraves

Preservative Key
1. HCL, Cool to 4°

500-123998 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOC, PCBs, Pesticides (Preservative: 8)	Total metals (3)	Dissolved Metals (3)	Ammonia NO_3/NO_2 (6)	Sulfate (5)	TOC (2)	TSS, SOM, NO_2 (8)	VOC (1)	Dissolved Gases (9)	Comments
1		MW-03-GW-02152017	2-15	1320	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Dissolved metals
2		MW-02-GW-02152017	2-15	1605	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	were field filtered
3		MW-01-GW-02162017	2-16	0755	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
4		MW-13-GW-02162017	2-16	1035	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
5		MW-11-GW-02162017	2-16	1300	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
6		Dup-1-02162017	2-16	—	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Ben Thum	Arcadis	2-16-2017	1455	[illegible]	TA	2/16/17	1455
[illegible]	TA	2/16/17	1535	[illegible]	TALH	02/16/17	1535

Lab Courier
Shipped
Hand Delivered

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-123998-2

Login Number: 123998
List Number: 1
Creator: Sanchez, Ariel M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	2.8, -0.9, 1.7
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Lake Calumet Cluster Site

DATA REVIEW

Chicago, Illinois

Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs), Pesticides, Polychlorinated Biphenyls (PCBs), Metals, and Miscellaneous General Chemistry Analyses

SDGs #500-123839-1, 500-123839-2, 500-123929-1, 500-123929-2, 500-123998-1, and 500-123998-2

Analyses Performed By:
TestAmerica Laboratories, Inc.
Chicago, Illinois

Report #27268R
Review Level: Tier III
Project: CI001805.0002.00005

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Groups (SDGs) #500-123839-1, 500-123839-2, 500-123929-1, 500-123929-2, 500-123998-1, and 500-123998-2 for samples collected in association with the Lake Calumet Cluster Site. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data as reported by the laboratory were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chains of custody. Analyses were performed on the following samples:

SDG Number	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis					
						VOC	SVOC	Pest/ PCB	MET	MISC	Dslvd Gases
5001238391/ 5001238392	MW-10-GW-02142017	500-123839-1	Water	02/14/2017		X	X	X	X	X	X
	MW-09-GW-02142017	500-123839-2	Water	02/14/2017		X	X	X	X	X	X
	MW-08-GW-02142017	500-123839-3	Water	02/14/2017		X	X	X	X	X	X
	DUP-2-02142017	500-123839-4	Water	02/14/2017	MW-08-GW-02142017	X	X	X	X	X	X
5001239291\ 5001239292	MW-07-GW-02142017	500-123929-1	Water	02/14/2017		X	X	X	X	X	X
	MW-06-GW-02152017	500-123929-2	Water	02/15/2017		X	X	X	X	X	X
	MW-05-GW-02152017	500-123929-3	Water	02/15/2017		X	X	X	X	X	X
	MW-04-GW-02152017	500-123929-4	Water	02/15/2017		X	X	X	X	X	X
5001239981/ 5001239982	MW-03-GW-02152017	217480001	Water	02/15/2017		X	X	X	X	X	X
	MW-02-GW-02152017	217480002	Water	02/15/2017		X	X	X	X	X	X
	MW-01-GW-02162017	217480003	Water	02/16/2017		X	X	X	X	X	X
	MW-13-GW-02162017	217480004	Water	02/16/2017		X	X	X	X	X	X
	MW-11-GW-02162017	217480005	Water	02/16/2017		X	X	X	X	X	X

SDG Number	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis					
						VOC	SVOC	Pest/ PCB	MET	MISC	Dslvd Gases
	DUP-1-02162017	217480006	Water	02/16/2017	MW-01-GW-02162017						

Dslvd = dissolved

Notes:

1. Misc - Miscellaneous parameters include sulfate, sulfide, total organic carbon (TOC), total suspended solids (TSS), ammonia, nitrate and nitrite analyses.
2. The matrix spike/matrix spike duplicate (MS/MSD) analysis was performed on sample locations DUP-2-02142017 (SDG #5001238391 and 5001238392); MW-04-GW-02152017 (SDG #5001239291 for metals and TOC analysis only).

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of Quality Assurance (QA) or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 8260B, 8270D, 8081B, 8082A, and Method AM20GAx (Dissolved gases). Data were reviewed in accordance with *USEPA National Functional Guidelines for Organic Data Review* (October 1999).

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected; the analyte may or may not be present in the sample.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260B	Water	14 days from collection to analysis (preserved)	Cool to < 6 °C; pH < 2 with HCl

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Target compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and system performance and column resolution were acceptable. All analyses were performed within 12 hours of the associated tune analysis.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration Verification (ICV)

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration Verification (CCV)

Each target compound associated with the continuing calibration standard must exhibit a RRF value greater than control limit (0.05) and a percent difference (%D) from the initial calibration within the control limit (20%).

All compounds associated with the calibrations were within the specified control limits, except for the compounds presented in the following table.

SDG	Samples	Initial/ Continuing	Compound	Criteria
500-123839-1	MW-10-GW-02142017 MW-09-GW-02142017 MW-08-GW-02142017 DUP-2-02142017	CCV	Acetone	-23.6%
			Methyl Ethyl Ketone	-20.9%
500-123929-1	MW-04-GW-02152017 MW-05-GW-02152017 MW-06-GW-02152017 MW-07-GW-02142017	CCV	Carbon disulfide	-20.2
500-123998-1	MW-01-GW-02162017 MW-13-GW-02162017 DUP-1-02162017	CCV	Dichlorodifluoromethane	-23.8
			Chloroethane	-32.0%
	MW-03-GW-02152017 MW-02-GW-02152017 MW-11-GW-02162017	CCV	Acetone	-34.3%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibrations	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	
Initial Calibrations	%RSD > 15% or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
	%RSD >90%	Non-detect	R
		Detect	J
Continuing Calibrations	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J
	%D >90% (increase/decrease in sensitivity)	Non-detect	R
		Detect	J

Note:

[1] RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketones, 1,4-dioxane, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

Samples associated with surrogates exhibiting recoveries outside of the control limits are presented in the following table.

Sample Locations	Surrogate	Recovery
SDG 500-123998-1 DUP-1-02162017	4-Bromofluorobenzene	AC
	Dibromofluoromethane	< 10%
	1,2-Dichloroethane-d4	AC
	Toluene-d8	AC

Notes:

AC = Acceptable

The laboratory noted the following: "One surrogate recovery for the following sample was outside control limits: DUP-1-02162017 (500-123998-6). Evidence of matrix interference is present (basic pH); therefore, re-analysis was not performed".

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL (Upper Control Limit)	Non-detect	No Action
	Detect	J
< LL (Lower Control Limit) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
D - Surrogates diluted below the calibration curve	Non-detect	UJ[1]
	Detect	J[1]

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria require the internal standard compounds associated with the VOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within the control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on samples where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSDs exhibited acceptable recoveries and RPDs.

8. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

9. Field Duplicate Sample Analysis

The field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied to the difference between the results for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG #500-123839-1 MW-08-GW-02142017/ DUP-2-02142017	Acetone	5.7	5.0 U	AC
SDG #500-123998-1 MW-01-GW-02162017/ DUP-1-02162017	Acetone	55.0	59.0	7.0%
	Benzene	30	30	0.0%
	1,2-Dichlorobenzene	1.8	1.7	5.7%
	1,4-Dichlorobenzene	3.6	3.6	AC
	2-Butanone (MEK)	46.0	45.0	2.2%
	Vinyl chloride	0.48 J	0.45 J	AC
	Toluene	11.0	11.0	0.0%
	Chlorobenzene	5.8	5.7	1.7%
	Cyclohexane	1.6	1.5	AC
	Methylcyclohexane	1.8	1.9	AC
	Total Xylenes	23.0	24.0	4.3%
	Ethylbenzene	24.0	25.0	4.1%
	Isopropylbenzene	14.0	13.0	7.4

AC = acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

10. Compound Identification

A positive identification of a target compound is made when the relative retention time (RRT) is within ±0.06 RRT units of the compound's RRT in the associated calibration standard and the mass spectrum of the compound matches the compound's mass spectrum in the associated calibration standard within the method-specified criteria.

All identified compounds met the specified criteria.

Sample results associated with compound that exhibited a concentration greater than the linear range of the instrument calibration are summarized in the following table.

Sample ID	Compound	Original Analysis	Diluted Analysis	Reported Analysis
SDG #500-123998-1 MW-03-GW-02152017	Chlorobenzene	--	480 D	--
MW-13-GW-02162017	Toluene	--	2600 D	--
	Xylenes, Total	--	8400 D	--

Note: In the instance where both the original analysis and the diluted analysis sample results exhibited a concentration greater than and/or less than the calibration linear range of the instrument; the sample result exhibiting the greatest concentration will be reported as the final result.

Sample results associated with compounds exhibiting concentrations greater than the linear range are qualified as documented in the table below when reported as the final reported sample result.

Reported Sample Results	Qualification
Diluted sample result within calibration range	D
Diluted sample result less than the calibration range	DJ
Diluted sample result greater than the calibration range	EDJ
Original sample result greater than the calibration range	EJ

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCS

VOCs: SW-846 8260B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Gas Chromatography/Mass Spectrometry (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
C. Trip blanks					X
Laboratory Control Sample (LCS) Accuracy (%R)		X		X	
Laboratory Control Sample Duplicate (LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision RPD		X		X	
Laboratory Duplicate Sample RPD		X		X	
Field Duplicate Sample RPD		X		X	
Surrogate Spike %R		X	X		
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:
%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

DISSOLVED GASES ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
AM20GAX	Water	14 days from collection to analysis	Cool to <6 °C; pH > 10

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Target compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Calibration

Satisfactory instrument calibration is established to Ensure that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

3.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a correlation coefficient greater than 0.995.

3.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (15%).

All compounds associated with the calibrations were within the specified control limits.

4. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit recoveries within the laboratory-established

acceptance limits. The relative percent difference (RPD) between the MS and MSD results must be within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on samples where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD analysis was not performed on a sample from within these SDGs.

5. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS/LCSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analysis exhibited recoveries within the control limits.

6. Field Duplicate Sample Analysis

The field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied to the difference between the results for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG #500-123839-2 MW-08-GW-02142017/ DUP-2-02142017	Methane	15000	15000	0.0%
	Carbon Dioxide	220	230	4.4%
	Oxygen	2.5	2.9	14.8%
	Nitrogen	8.8	10	AC
SDG #500-123998-1 MW-01-GW-02162017/ DUP-1-02162017	Methane	20000	21000	4.9%
	Nitrogen	10.0	10.0	0.0%
	Oxygen	3.4	3.4	0.0%

AC = Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR DISSOLVED GASES

DISSOLVED GASES: AM20GAx	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Gas Chromatography/Thermal Conductivity Detector (GC/TCD)					
Tier II Validation					
Holding times/Temperature/Preservation		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method/Calibration blanks		X		X	
B. Equipment blanks					X
C. Trip blanks					X
Laboratory Control Sample (LCS) Accuracy (%R)		X		X	
Laboratory Control Sample Duplicate (LCSD) (%R)		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike Sample (MS) (%R)		X		X	
Matrix Spike Duplicate Sample (MSD) (%R)		X		X	
MS/MSD Precision (RPD)		X		X	
Laboratory Duplicate Sample (RPD)		X		X	
Field Duplicate Sample (RPD)		X		X	
Surrogate Spike Recoveries		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration correlation coefficients		X		X	
Continuing calibration RRFs					X
Continuing calibration %Ds		X		X	
Compound identification and quantitation		X		X	
A. Chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:
%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

SEMIVOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270D	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to < 6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and system performance and column resolution were acceptable. All analyses were performed within 12 hours of the associated tune analysis.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (20%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial/ Continuing	Compound	Criteria
SDG 500-123929-1 MW-04-GW-02152017 MW-05-GW-02152017 MW-06-GW-02152017 MW-07-GW-02142017	ICV %RSD	Benzaldehyde	-28.4%
	CCV %D	Hexachlorocyclopentadiene	-26.0%
		Carbazole	-20.8%
SDG 500-123998-1 MW-13-GW-02162017 MW-11-GW-02162017 DUP-1-02162017	CCV %D	Benzaldehyde	-30.9%
		Pentachlorophenol	-44.5%
		Carbazole	-22.2%
SDG 500-123998-1 MW-03-GW-02152017 MW-02-GW-02152017	CCV %D	Hexachlorocyclopentadiene	-26.0%
		Carbazole	-20.8%
SDG 500-123998-1 MW-01-GW-02162017	CCV %D	Benzaldehyde	-40.2%
		Hexachlorocyclopentadiene	-31.6%
		Pentachlorophenol	-20.8%
		3-Nitroaniline	22.1%
		Dibenz(a,h)anthracene	20.8%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	
Initial Calibration	%RSD > 20% or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
	%RSD >90%	Non-detect	R
		Detect	J
Continuing Calibration	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J

Initial/Continuing	Criteria	Sample Result	Qualification
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J
	%D >90% (increase/decrease in sensitivity)	Non-detect	R
		Detect	J

Note:
[1] RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketones, 1,4-dioxane, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Surrogate	Recovery
SDG #500-123929-1 MW-06-GW-02152017	Phenol-d6	AC
	2-Fluorophenol	AC
	2,4,6-Tribromophenol	AC
	Nitrobenzene-d5	<LL but > 10%
	2-Fluorobiphenyl	AC
	Terphenyl-d14	AC

Notes:
LL = Lower control limit
AC = Acceptable

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results associated with the deviant fraction are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	No Action
	Detect	J
< LL but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

Control Limit	Sample Result	Qualification
Surrogates diluted below the calibration curve due to the high concentration of a target compounds	Non-detect	J[1]
	Detect	

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria require the internal standard compounds associated with the SVOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

Sample locations associated with internal standards exhibiting responses outside of the control limits are presented in the following table.

Sample Locations	Internal Standard	Response
SDG 500-123929-1 MW-07-GW-02142017 MW-06-GW-02152017	1,4-Dichlorobenzene-d4	AC
	Naphthalene-d8	AC
	Acenaphthene-d10	AC
	Phenanthrene-d10	AC
	Chrysene-d12	AC
	Perylene-d12	< 25%
SDG 500-123998-1 MW-13-GW-02162017	1,4-Dichlorobenzene-d4	AC
	Naphthalene-d8	AC
	Acenaphthene-d10	AC
	Phenanthrene-d10	AC
	Chrysene-d12	AC
	Perylene-d12	< LL but > 25%

Note:

AC = Acceptable

The criteria used to evaluate the internal standard responses are presented in the following table. In the case of an internal standard deviation, the compounds quantitated under the deviant internal standard are qualified as documented in the table below.

Control limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No action
	Detect	J
< the lower control limit (LL) but > 25%	Non-detect	UJ
	Detect	J

Control limit	Sample Result	Qualification
< 25%	Non-detect	R
	Detect	J

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The spiked compounds used in the MS/MSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS and MSD results must be within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSDs performed on samples where the compound concentration detected in the parent sample exceeds the MS/MSD spiking concentration by a factor of four or greater. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

The MS/MSD analysis was not performed on a sample associated with these SDGs.

8. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The spiked compounds used in the LCS/LCSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the LCS and LCSD results must be within the laboratory-established acceptance limits.

Sample locations associated with LCS/LCSD analysis exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Compound	LCS Recovery	LCSD Recovery
SDG #5001238391 MW-10-GW-02142017 MW-09-GW-02142017 MW-08-GW-02142017 DUP-2-02142017	2-Chlorophenol	AC	<LL but >10%
	2,4-Dichlorophenol		<LL but >10%
	4,6-Dinitro-2-methylphenol		<LL but >10%
	2-Nitrophenol		<LL but >10%
	Pentachlorophenol		<LL but >10%
	2,4,5-Trichlorophenol		<LL but >10%
	2,4,6-Trichlorophenol		<LL but >10%
SDG 5001239291 MW-04-GW-02152017 MW-05-GW-02152017 MW-06-GW-02152017 MW-07-GW-02142017	Carbazole	AC	>UL

Sample Locations	Compound	LCS Recovery	LCSD Recovery
SDG 5001239291 MW-03-GW-02152017 MW-02-GW-02152017 MW-01-GW-02162017 MW-11-GW-02162017 DUP-1-02162017	Carbazole	AC	>UL
SDG 5001239291 MW-13-GW-02162017	4-Bromophenyl phenyl ether	<LL but >10%	AC

AC = acceptable

The criteria used to evaluate the LCS/LCSD recoveries are presented in the following table. In the case of an LCS/LCSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

Samples associated with LCS/LCSDs exhibiting RPDs greater than the control limit are presented in the following table.

Sample Locations	Compound
SDG #500-123839-1 MW-10-GW-02142017 MW-09-GW-02142017 MW-08-GW-02142017 DUP-2-02142017	2-Chlorophenol
	2,4-Dichlorophenol
	4,6-Dinitro-2-methylphenol
	2,4-Dinitrophenol
	Hexachlorobutadiene
	Hexachloroethane
	3-Nitroaniline
	2-Nitrophenol
	4-Nitrophenol
	Pentachlorophenol
	Phenol
	2,4,5-Trichlorophenol

The criteria used to evaluate the RPD between the LCS and LCSD are presented in the following table. In the case of RPD deviations, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	UJ
	Detect	J

9. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied to the difference between the results for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG #500-123839-1 MW-08-GW-02142017/ DUP-2-02142017	3 & 4 Methylphenol	1.5 U	0.33 J	AC
SDG #500-123998-1 MW-01-GW-02162017/ DUP-1-02162017	2,4-Dimethylphenol	6.7 J	5.5 J	AC
	2-Methylnaphthalene	5.5	4.3	AC
	2-Methylphenol	1.5	1.4 J	AC
	4-Methyl-2-Pentanone	99	99	0.0%
	4-Methylphenol	6.6	6.3	4.7%
	Acenaphthene	8.1	8.1	0.0%
	Carbazole	6.4	4.3	AC
	Anthracene	0.26 J	U	AC
	Di-n-butyl phthalate	U	0.75 J	AC
	Dibenzofuran	1.4 J	1.3 J	AC
	Fluorene	2.6	2.4	AC
	Naphthalene	130	120	8.0%
	p-Chloroaniline	13	7.4 U	0.0%
	Phenanthrene	1.3	1.2	AC

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
	Phenol	72	96	28.6%
	3 & 4 Methylphenol	6.6	6.3	AC

AC Acceptable

The field duplicate samples exhibited acceptable results.

10. Compound Identification

A positive identification of a target compound is made when the relative retention time (RRT) is within ±0.06 RRT units of the compound's RRT in the associated calibration standard and the mass spectrum of the compound matches the compound's mass spectrum in the associated calibration standard within the method-specified criteria.

All identified compounds met the specified criteria.

Sample results associated with compound that exhibited a concentration greater than the linear range of the instrument calibration are summarized in the following table.

Sample ID	Compound	Original Analysis	Diluted Analysis	Reported Analysis
SDG #500-123929-1 MW-07-GW-02142017	Bis(2-ethylhexyl) phthalate	--	170 D	170 D
	2,4-Dimethylphenol	--	340 D	340 D
SDG #500-123929-1 MW-06-GW-02152017	2,4-Dimethylphenol	--	93 D	93 D
SDG #500-123998-1 MW-03-GW-02152017	Carbazole	--	71 D	71 D
	2-Methylnaphthalene	--	150 D	150 D
	Naphthalene	--	870 D	870 D
SDG #500-123998-1 MW-02-GW-02152017	2-Methylnaphthalene	--	100 D	100 D
	Naphthalene	--	73 D	73 D
SDG #500-123998-1 MW-01-GW-02162017	Naphthalene	--	130 D	130 D
	Phenol	--	72 D	72 D
SDG #500-123998-1 DUP-1-02162017	Naphthalene	--	120 D	120 D
	Phenol	--	96 D	96 D
SDG #500-123998-1 MW-13-GW-02162017	Naphthalene	--	190 D	190 D

Note: In the instance where both the original analysis and the diluted analysis sample results exhibited a concentration greater than and/or less than the calibration linear range of the instrument; the sample result exhibiting the greatest concentration will be reported as the final result.

Sample results associated with compounds exhibiting concentrations greater than the linear range are qualified as documented in the table below when reported as the final reported sample result.

Reported Sample Results	Qualification
Diluted sample result within calibration range	D
Diluted sample result less than the calibration range	DJ
Diluted sample result greater than the calibration range	EDJ
Original sample result greater than the calibration range	EJ

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCS

SVOCs: SW-846 8270D	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Gas Chromatography/Mass Spectrometry (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD) %R		X	X		
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X		X	
MS/MSD Precision (RPD)		X		X	
Laboratory Duplicate Sample RPD		X		X	
Field Duplicate Sample RPD		X		X	
Surrogate Spike Recoveries		X	X		
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X	X		
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard response		X	X		
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Quantitation transcriptions/calculations		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:
%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

PESTICIDES ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8081B	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to < 6 °C

The analyses that exceeded the holding are presented in the following table.2-14

Sample Locations	Holding Time	Criteria
SDG 500-123929-1 MW-07-GW-02142017 (RE)	8 days (extraction completed)	<7 Days from collection to extraction

Sample results associated with sample locations analyzed by analytical method SW-846 8081 were qualified, as specified in the table below. All other holding times were met.

Criteria	Qualification	
	Detected Analytes	Non-detect Analytes
Analysis completed less than two times holding time	J	UJ
Analysis completed greater than two times holding time	J	R

Note: Sample MW-07-GW-02142017 exhibited surrogate recoveries less than the control limit and less than 10 percent. The sample was re-extracted slightly outside holding time as indicated in table above. Therefore, the re-extracted and re-analyzed sample is recommended for reporting and qualified as estimate due to holding time deviation.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. System Performance

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (20%) or a correlation coefficient greater than 0.99.

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%).

All compounds associated with the initial and continuing calibrations were within the specified control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. Pesticide analysis requires that at least one of the two pesticide surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Surrogate	Recovery
SDG 500-123929-1	Tetrachloro-m-xylene	< LL but > 10%
MW-07-GW-02142017	Decachlorobiphenyl	<10%
SDG 500-123929-1	Tetrachloro-m-xylene	AC
MW-07-GW-02142017 (RE)	Decachlorobiphenyl	< LL but > 10%
SDG 500-123929-1	Tetrachloro-m-xylene	AC
MW-06-GW-02152017	Decachlorobiphenyl	< LL but > 10%
SDG 500-123929-1	Tetrachloro-m-xylene	< LL but > 10%
MW-04-GW-02152017	Decachlorobiphenyl	AC

Notes:
Acceptable (AC)

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results associated with the deviant fraction are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
One surrogate exhibiting recovery outside the control limits but > 10%	Non-detect	No Action
	Detect	
Surrogates diluted below the calibration curve due to the high concentration of a target compound.	Non-detect	J[1]
	Detect	

Note:

Note: Sample MW-07-GW-02142017 exhibited surrogate recoveries less than the control limit and less than 10 percent. The sample was re-extracted slightly outside holding time as indicated in table above. Therefore, the re-extracted and re-analyzed sample is recommended for reporting and qualified as estimate due to holding time deviation.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The spiked compounds used in the MS/MSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS and MSD results must be within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSDs performed on samples where the compound concentration detected in the parent sample exceeds the MS/MSD spiking concentration by a factor of four or greater. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

The MS/MSD analysis was not performed on a sample from within these SDGs.

7. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The spiked compounds used in the LCS/LCSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The RPD between the LCS and LCSD results must be within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analyses exhibited recoveries and RPDs within the control limits.

8. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate

sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied to the difference between the results for water matrices.

Results for the field duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Compound	Sample Result	Duplicate Result	RPD
SDG 500-123839-1 MW-08-GW-02142017/ DUP-2-02142017	All compounds	0.036 U	0.037 U	AC
SDG #500-123998-1 MW-01-GW-02162017/ DUP-1-02162017	All compounds	0.037 U	0.038 U	AC

AC Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

9. Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows for both the primary and confirmation columns. When dual column analysis is performed the percent difference (%D) of detected sample results must be less than 40%.

Target compounds were not detected in any of the samples.

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR PESTICIDES

PESTICIDES: SW-846 8081B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Gas Chromatography (GC/ECD)					
Tier II Validation					
Holding times		X	X		
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate (LCSD)		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS)	X				X
Matrix Spike Duplicate (MSD)	X				X
MS/MSD Precision (RPD)	X				X
Laboratory Duplicate Sample RPD	X				X
Field Duplicate Sample RPD		X		X	
Surrogate Spike Recoveries		X	X		
Column %D $\leq$ 40% (If dual column is performed for reporting - not confirmation)	X				X
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
Initial calibration %RSDs		X		X	
Continuing calibration %Ds		X		X	
System performance and column resolution		X		X	
Compound identification and quantitation		X		X	
A. Quantitation Reports		X		X	
B. RT of sample compounds within the established RT windows		X		X	
C. Identification/confirmation		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:
%RSD – relative standard deviation
%R - percent recovery
RPD - relative percent difference
%D – difference.

POLYCHLORINATED BIPHENYLS (PCBs) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8082A	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Target analytes were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. System Performance

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

A maximum RSD of 20% is allowed or a correlation coefficient greater than 0.99. Multiple-point calibrations were performed for Aroclor 1016 and 1260 only. Single-point calibrations were performed for the remaining Aroclors.

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%).

All Aroclors associated with the calibrations were within the specified control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. PCB

analysis requires that one of the two PCB surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Surrogate	Recovery
SDG 500-123929-1	Tetrachloro-m-xylene	< LL but > 10%
MW-07-GW-02142017	Decachlorobiphenyl	< LL but > 10%
SDG 500-123929-1	Tetrachloro-m-xylene	AC
MW-06-GW-02152017	Decachlorobiphenyl	< LL but > 10%

Notes:
AC = Acceptable

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results associated with the deviant fraction are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
One surrogate exhibiting recovery outside the control limits but > 10%	Non-detect	No Action
	Detect	
Surrogates diluted below the calibration curve due to the high concentration of a target compound.	Non-detect	J[1]
	Detect	

Note:

Note: Sample MW-07-GW-02142017 exhibited surrogate recoveries less than the control limit and less than 10 percent. The sample was re-extracted slightly outside holding time as indicated in table above. Therefore, the re-extracted and re-analyzed sample is recommended for reporting and qualified as estimate due to holding time deviation.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The spiked compounds used in the MS/MSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS and MSD results must be within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSDs performed on samples where the compound concentration detected in the parent sample exceeds the MS/MSD spiking concentration by a factor of four or greater. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

The MS/MSD analysis was not performed on a sample from within these SDGs.

7. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The spiked compounds used in the LCS/LCSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The RPD between the LCS and LCSD results must be within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analyses exhibited recoveries and RPDs within the control limits. However, sample locations associated with LCS/LCSD recoveries exhibiting an RPD greater than of the control limit presented in the following table.

Sample Locations	Compound
SDG 500-123929-1 MW-04-GW-02152017 MW-05-GW-02152017 MW-06-GW-02152017 MW-07-GW-02142017	PCB-1260

The criteria used to evaluate the RPD between the LCS/LCSD recoveries are presented in the following table. In the case of an RPD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	UJ
	Detect	J

8. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied to the difference between the results for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID / Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
SDG 500-123929-1 MW-08-GW-02142017/ DUP-2-02142017	All Aroclors	0.36 U	0.37 U	AC

Sample ID / Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
SDG #500-123998-1				
MW-01-GW-02162017/ DUP-1-02162017	All Aroclors	0.37 U	0.38 U	AC

AC Acceptable

The field duplicate samples exhibited acceptable results.

9. Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows for both the primary and confirmation columns. When dual column analysis is performed the relative percent difference (RPD) of detected sample results must be less than 40%.

All detected Aroclors exhibited acceptable %Ds between the primary and confirmation columns.

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR PCBS

PCBs: SW-846 8082A	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Gas Chromatography (GC/ECD)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X	X		
Matrix Spike (MS) %R	X				X
Matrix Spike Duplicate (MSD) %R	X				X
MS/MSD Precision (RPD)	X				X
Laboratory Duplicate Sample RPD	X				X
Field Duplicate Sample RPD		X		X	
Surrogate Spike Recoveries		X	X		
Column (RPD) (If dual column is performed-not confirmation purposes only)		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
Initial calibration %RSDs		X		X	
Continuing calibration %Ds		X		X	
System performance and column resolution		X		X	
Compound identification and quantitation		X		X	
A. Quantitation Reports		X		X	
B. RT of sample compounds within the established RT windows		X		X	
C. Pattern identification		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD – relative standard deviation
%R - percent recovery,
RPD - relative percent difference,
%D – difference

INORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 6010C, 7470A, 9034, 9038, and 9060A, and Standard Methods (SM) 2540D, 4500-NH3-G, 4500-NO2-B, and 4500-NO3-F. Data were reviewed in accordance with *USEPA National Functional Guidelines for Inorganic Data Review* (October 2004).

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and that it was already subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with the USEPA National Functional Guidelines:

- Concentration (C) Qualifiers
  - U The analyte was analyzed for but not detected. The associated value is the analyte instrument detection limit.
  - J The reported value was obtained from a reading less than the reporting limit (RL), but greater than or equal to the method detection limit (MDL).
- Quantitation (Q) Qualifiers
  - E The reported value is estimated due to the presence of interference.
  - N Spiked sample recovery is not within the control limits.
  - * Duplicate analysis is not within the control limits.
- Validation Qualifiers
  - J The analyte was positively identified; however, the associated numerical value is an estimated concentration only.
  - UJ The analyte was not detected above the reporting limit. However, the reported limit is approximate and may or may not represent the actual limit of detection.
  - UB Analyte considered non-detect at the listed value due to associated blank contamination.
  - R The sample results are rejected.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

METALS ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 6010C	Water	180 days from collection to analysis	Cool to < 6 °C; pH < 2 with HNO_3
SW-846 7470A	Water	28 days from collection to analysis	Cool to < 6 °C; pH < 2 with HNO_3

All samples were analyzed within the specified holding times.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Analytes were detected in the associated QA blanks; however, the associated sample results were greater than the BAL and/or were non-detect. Therefore, sample results greater than the BAL resulted in the removal of the laboratory qualifier (B). No other qualification of the sample results was required.

3. Calibration

Satisfactory instrument calibration is established to provide that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument's continuing performance is satisfactory.

3.1 Initial Calibration

The initial calibration must exhibit a correlation coefficient greater than 0.995. A technical review of the data applies limits to all analytes with no exceptions.

3.2 Continuing Calibration

All target analytes associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (10%).

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 for all non-ICP analytes and all initial calibration verification standard recoveries were within the control limits.

All initial and continuing calibration verification standards were within the control limits.

3.3 Reporting limit (RL) Check Standard

The RL check standard serves to verify the linearity of calibration of the analysis at the reporting limit. The RL standard is not required for the analysis of aluminum (Al), barium (Ba), calcium (Ca), iron (Fe), magnesium (Mg), sodium (Na), or potassium (K). The RL check standard must exhibit recoveries between 70-130% (50-150% for antimony (Sb), lead (Pb), and thallium (Tl)).

All RL standard recoveries were within control limits.

3.4 ICP Interference Check Sample (ICS)

The ICS verifies the laboratory's interelement and background correction factors.

All ICS exhibited recoveries within the control limits.

4. Matrix Spike (MS)/Matrix Spike Duplicate (MSD)/Laboratory Duplicate Analysis

MS/MSD and laboratory duplicate data are used to assess the precision and accuracy of the analytical method.

4.1 MS/MSD Analysis

All metal analytes must exhibit a percent recovery within the established acceptance limits of 75% to 125%. The MS/MSD recovery control limits do not apply for MS/MSD performed on samples where the analyte's concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater. In instance where this is true, the data will not be qualified even if the percent recovery does not meet the control limits and the laboratory flag will be removed.

The MS/MSD analysis was not performed on a sample from within these SDGs.

4.2 Laboratory Duplicate Sample Analysis

The laboratory duplicate sample relative percent difference (RPD) criterion is applied when parent and duplicate sample concentrations are greater than or equal to five times the RL. A control limit of 20% for water matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of one times the RL is applied to the difference between the results for water matrices.

The laboratory duplicate sample analysis was not performed All analytes associated with MS/MSD recoveries were within control limits with the exception of the following analyte present in the table below.

Sample Location	Analyte	MS Recovery	MSD Recovery
SDG 500-123929-1 MW-04-GW-02152017	Selenium	AC (75%)	70%

The criteria used to evaluate MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified. The qualifications are applied to all sample results associated with this SDG.

Control limit	Sample Result	Qualification
MS/MSD percent recovery 30% to 74%	Non-detect	UJ
	Detect	J
MS/MSD percent recovery <30%	Non-detect	R
	Detect	J
MS/MSD percent recovery >125%	Non-detect	No Action
	Detect	J

5. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied to the difference between the results for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
SDG 500-123839-1 MW-08-GW-02142017/ DUP-2-02142017	Barium (dissolved)	0.65	0.65	0.0%
	Barium (total)	0.67	0.68	1.5%
	Cadmium (total)	0.00094 J	0.0011 J	AC
	Calcium (total)	120	120	0.0%
	Calcium (dissolved)	120	120	0.0%
	Copper (total)	0.0022 J	0.010 U	AC
	Iron (total)	11.0	11.0	0.0%
	Iron (dissolved)	11.0	11.0	0.0%
	Magnesium (dissolved)	87.0	88.0	1.1%
	Magnesium (total)	91.0	92.0	1.1%
	Manganese (dissolved)	0.18	0.18	0.0%
	Manganese (total)	0.18	0.19	5.4%
	Potassium (dissolved)	35.0	35.0	0.0%
	Potassium (total)	36.0	37.0	2.7%
	Sodium (dissolved)	240	240	0.0%
	Sodium (total)	240	250	4.1%

Sample ID/Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
	Zinc (total)	0.020 U	0.017 J	AC
SDG #500-123998-1 MW-01-GW-02162017/ DUP-1-02162017	Aluminum (total)	0.21	0.22	AC
	Aluminum (dissolved)	0.34	0.33	3.0%
	Antimony (dissolved)	0.0068 J	0.020 U	AC
	Arsenic (dissolved)	0.0038 J	0.0066 J	AC
	Arsenic (total)	0.0046 J	0.0048 J	AC
	Barium (total)	0.45	0.47	4.3%
	Barium (dissolved)	0.46	0.45	2.2%
	Calcium (dissolved)	510	500	2.0%
	Calcium (total)	510	530	3.8%
	Iron (dissolved)	0.20 U	0.12 J	AC
	Lead (total)	0.0050 U	0.0025 J	AC
	Lead (dissolved)	0.0027 J	0.0025 J	AC
	Magnesium (dissolved)	1.7	1.7	AC
	Nickel (dissolved)	0.016	0.015	AC
	Nickel (total)	0.016	0.016	AC
	Potassium (total)	50	50	0.0%
	Potassium (dissolved)	51	50	2.0%
	Sodium (dissolved)	210	210	0.0%
	Sodium (total)	210	220	4.7%

Notes:

AC = Acceptable

The calculated RPDs between the parent sample and field duplicate were acceptable.

6. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS/LCSD analysis must exhibit recoveries between the control limits of 80% and 120%. The relative percent difference (RPD) between the LCS and LCSD results must be no greater than the established acceptance limit of 20%.

All analytes associated with the LCS/LCSD analysis exhibited recoveries and RPDs within the control limits.

7. Serial Dilution (SD) Analysis

The serial dilution analysis is used to assess if a significant physical or chemical interference exists due to sample matrix. Analytes exhibiting concentrations greater than 50 times the MDL in the undiluted sample are evaluated to determine if matrix interference exists. These analytes are required to have less than a 10% difference (%D) between sample results from the undiluted (parent) sample and results associated with the same sample analyzed with a five-fold dilution.

All analytes associated with the serial dilution analyses exhibited %Ds within the control limits except for those presented in the following table.

Sample Locations	Analytes	Serial Dilution (%D)
SDG 500-123839-1 DUP-2-02142017	Barium (total)	24%
	Calcium (total)	27%
	Iron (total)	29%
	Magnesium (total)	23%
	Manganese (total)	27%
	Potassium (total)	23%
	Sodium (total)	24%
SDG 500-123929-1 MW-04-GW-02152017	Calcium (dissolved)	17%
	Magnesium (dissolved)	15%
	Manganese (dissolved)	17%
	Potassium (dissolved)	14%
	Sodium (dissolved)	16%

The criteria used to evaluate SD recoveries are presented in the following table. In the case of SD exceedance, the sample results are qualified. The qualifications are applied to all sample results associated with this SDG.

Control limit	Sample Result	Qualification
SD %D > 10%	Non-detect	UJ
	Detect	J

8. Assessment of Dissolved versus Total Results

The results for dissolved metal analytes should be less than 120% of the associated total metal result for those analytes that are at least five times the reporting limit (RL).

The calculated %D between the total and the dissolved sample results were within the control limit.

9. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR METALS

METALS: SW-846 6010C and 7470A	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP-AES) Atomic Absorption – Manual Cold Vapor (CV)					
Tier II Validation					
Holding Times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Instrument Blanks		X	X		
B. Method Blanks		X	X		
C. Equipment/Field Blanks					X
Laboratory Control Sample (LCS)		X		X	
Laboratory Control Sample Duplicate (LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R		X		X	
Matrix Spike Duplicate (MSD) %R		X	X		
MS/MSD Precision (RPD)		X		X	
Laboratory Duplicate Sample RPD		X		X	
Field Duplicate Sample RPD		X		X	
ICP Serial Dilution %D		X	X		
Total vs. Dissolved		X		X	
Tier III Validation					
Initial Calibration Verification		X		X	
Continuing Calibration Verification		X		X	
RL Standard Recovery		X		X	
ICP Interference Check		X		X	
ICP-MS Internal Standards					X
Transcription/calculations acceptable		X		X	
Raw Data		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:
%R Percent recovery
RPD Relative percent difference

GENERAL CHEMISTRY ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
Ammonia-N by SM 4500-NH3-G	Water	28 days from collection to analysis	Cool to < 6 °C; pH of < 2
Nitrite-N by SM 4500-NO2-B	Water	48 hours from collection to analysis	Cool to < 6 °C
Nitrate+Nitrite as N by SM 4500-NO3-F	Water	28 days from collection to analysis	Cool to < 6 °C; pH of < 2
Sulfate by SW-846 9038A	Water	28 days from collection to analysis	Cool to < 6 °C.
Sulfide by SW-846 9034	Water	7 days from collection to analysis	Cool to < 6 °C.
Total Organic Carbon (TOC) by SW-846 9060A	Water	28 days from collection to analysis	Cool to < 6 °C; pH of < 2
Total Suspended Solids (TSS) by SM 2540D	Water	7 days from collection to analysis	Cool to < 6 °C

The analyses that exceeded the holding time are presented in the following table; all other holding times were met.

Samples	Analysis	Holding Time	Criteria
SDG 500-123839-1 MW-10-GW-02142017 MW-09-GW-02142017 MW-08-GW-02142017 DUP-2-02142017	Nitrite-N by SM 4500-NO2-B	> 48 Hours but < 96 Hours	< 48 Hours

Note: Due to the tendency of nitrite converting into nitrate, nitrate results for samples analyzed greater than 48 hours after collection should be considered as nitrate+nitrite. The nitrite results for the samples which were analyzed for nitrate after 48 hours (but within 28 days) were non-detects. Therefore, the nitrate results do not require qualification.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

All analytes associated with the QA blanks exhibited a concentration less than the MDL, except for the analytes listed in the following table. Sample results associated with QA blank contamination that were greater than the BAL resulted in the removal of the laboratory qualifier (B) of data. Sample results less than the BAL associated with the following samples were qualified as listed in the following table.

Samples	Analyte	Sample Result	Qualification
SDG 500-123839-1 MW-08-GW-02142017 DUP-2-02142017 **SDG 500-123929-1** MW-05-GW-02152017 **SDG 500-123998-1** MW-02-GW-02152017	Sulfate	Detected sample results < RL and < BAL	"UB" at the RL
SDG 500-123839-1 MW-09-GW-0214201 **SDG 500-123929-1** MW-06-GW-02152017 **SDG 500-123998-1** MW-03-GW-02152017 MW-11-GW-02162017		Detected sample results > RL and < BAL	"UB" at detected sample concentration

RL = reporting limit

3. Calibration

Satisfactory instrument calibration is established to ensure that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

The correct number and type of standards were analyzed. The correlation coefficient of the initial calibration was greater than 0.995 and all initial calibration verification standard recoveries were within the control limits.

All calibration standard recoveries were within the control limit.

4. Matrix Spike/Matrix Spike Duplicate Sample (MS/MSD)/Laboratory Duplicate Sample Analysis

MS/MSD and laboratory duplicate sample data are used to assess the precision and accuracy of the analytical method.

4.1 MS/MSD Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. All metal analytes must exhibit recoveries within the established acceptance limits of 75% to 125%. The relative percent difference (RPD) between the MS and MSD results must be no greater than the established acceptance limit of 20%. The MS/MSD control limits do not apply for MS/MSDs performed on samples where the analyte's concentration detected in the parent sample exceeds the MS/MSD spiking concentration by a factor of four or greater. In instance where this is true, the data will not be qualified and any laboratory qualifiers will be removed. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

All analytes associated with MS/MSD recoveries were within control limits with the exception of the following analyte present in the table below.

Sample Location	Analyte	MS Recovery	MSD Recovery
SDG 500-123929-1 MW-04-GW-02152017	TOC	62%	60%

The criteria used to evaluate MS/MSD recoveries are presented in the following table. In the case of an MS/MSD deviation, the sample results are qualified. The qualifications are applied to all sample results associated with this SDG.

Control limit	Sample Result	Qualification
MS/MSD percent recovery 30% to 74%	Non-detect	UJ
	Detect	J
MS/MSD percent recovery <30%	Non-detect	R
	Detect	J
MS/MSD percent recovery >125%	Non-detect	No Action
	Detect	J

4.2 Laboratory Duplicate Sample Analysis

The laboratory duplicate sample RPD criterion is applied when parent and duplicate sample concentrations are at least five times the RL. A control limit of 20% for water matrices is applied when the criteria above is true. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of one times the RL is applied to the difference between the results for water matrices.

MS/MSD analysis was performed in addition of the laboratory duplicate sample analysis. The MS/MSD recoveries and laboratory duplicate exhibited acceptable RPD.

5. Field Duplicate Analysis

Field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied for water matrices.

Results for duplicate samples are summarized in the following table.

Sample ID/Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
SDG 500-123839-1 MW-08-GW-02142017/ DUP-2-02142017	Total Organic Carbon	15	15	0.0%
	Total Suspended Solids	24	26	8.0%
	Ammonia Nitrogen	36	37	2.7%

Sample ID/Duplicate ID	Analyte	Sample Result	Duplicate Result	RPD
SDG #500-123998-1 MW-01-GW-02162017/ DUP-1-02162017	Ammonia Nitrogen	49	49	0.0
	Total Organic Carbon 2	31.0	30.0	3.3
	Total Suspended Solids	29.0	24.0	18.9
	Sulfide	0.98 J	3.5	NC

NC = Non-compliant

The analyte sulfide associated with samples locations MW-01-GW-02162017 and DUP-1-02162017 exhibited a field duplicate RPD greater than the control limit. The associated sample results from sample locations for the listed analyte were qualified as estimated.

6. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The analytes associated with the LCS analysis must exhibit recoveries between the control limits of 80% and 120%.

The LCS analyses exhibited recoveries within the control limits.

7. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR GENERAL CHEMISTRY

General Chemistry: EPA 353.2, SW-846 9034, 9038, 9060A, SM 2540D, 4500-NH3-G, 4500-NO2-B, and 4500-NO3-F	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Miscellaneous Instrumentation					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X	X		
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD) %R	X				X
LCS/LCSD Precision (RPD)	X				X
Matrix Spike (MS) %R		X	X		
Matrix Spike Duplicate (MSD) %R		X	X		
MS/MSD Precision (RPD)		X		X	
Laboratory Duplicate Sample RPD		X		X	
Field Duplicate Sample RPD		X	X		
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
Initial calibration %RSD or correlation coefficient		X		X	
Continuing calibration %R		X		X	
Raw Data		X		X	
Transcription/calculation errors present		X		X	
Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:
%RSD – relative standard deviation
%R - percent recovery
RPD - relative percent difference,
%D – difference

VALIDATION PERFORMED BY: Todd Church

SIGNATURE:

DATE: March 15, 2017

PEER REVIEW: Dennis Capria

DATE: March 17, 2017

CHAIN OF CUSTODY

CORRECTED SAMPLE ANALYSIS DATA SHEETS

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-10-GW-02142017

Lab Sample ID: 500-123839-1

Date Collected: 02/14/17 08:00
Matrix: Water
Date Received: 02/14/17 16:40

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0	J	5.0	1.7	ug/L			02/16/17 19:33	1
Benzene	<0.50		0.50	0.15	ug/L			02/16/17 19:33	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/16/17 19:33	1
Bromoform	<1.0		1.0	0.48	ug/L			02/16/17 19:33	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/16/17 19:33	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/16/17 19:33	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/16/17 19:33	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			02/16/17 19:33	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/16/17 19:33	1
Chloroform	<2.0		2.0	0.37	ug/L			02/16/17 19:33	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/16/17 19:33	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/16/17 19:33	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/16/17 19:33	1
Cyclohexane	<1.0		1.0	0.49	ug/L			02/16/17 19:33	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/16/17 19:33	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/16/17 19:33	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/16/17 19:33	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			02/16/17 19:33	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/16/17 19:33	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			02/16/17 19:33	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/16/17 19:33	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/16/17 19:33	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/16/17 19:33	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/16/17 19:33	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/16/17 19:33	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			02/16/17 19:33	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/16/17 19:33	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			02/16/17 19:33	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/16/17 19:33	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			02/16/17 19:33	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/16/17 19:33	1
Methyl Ethyl Ketone	<5.0	J	5.0	2.1	ug/L			02/16/17 19:33	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/16/17 19:33	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/16/17 19:33	1
Styrene	<1.0		1.0	0.39	ug/L			02/16/17 19:33	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/16/17 19:33	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/16/17 19:33	1
Toluene	<0.50		0.50	0.15	ug/L			02/16/17 19:33	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/16/17 19:33	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/16/17 19:33	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/16/17 19:33	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/16/17 19:33	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/16/17 19:33	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/16/17 19:33	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/16/17 19:33	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/16/17 19:33	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/16/17 19:33	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			02/16/17 19:33	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-10-GW-02142017

Date Collected: 02/14/17 08:00
Date Received: 02/14/17 16:40

Lab Sample ID: 500-123839-1

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*71 - 120*		*02/16/17 19:33*	*1*
Dibromofluoromethane	*94*		*70 - 120*		*02/16/17 19:33*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*71 - 127*		*02/16/17 19:33*	*1*
Toluene-d8 (Surr)	*99*		*75 - 120*		*02/16/17 19:33*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.73		0.73	0.23	ug/L		02/15/17 08:59	02/15/17 17:13	1
Acenaphthylene	<0.73		0.73	0.19	ug/L		02/15/17 08:59	02/15/17 17:13	1
Acetophenone	<3.6		3.6	0.48	ug/L		02/15/17 08:59	02/15/17 17:13	1
Anthracene	<0.73		0.73	0.24	ug/L		02/15/17 08:59	02/15/17 17:13	1
Benzo[a]anthracene	<0.15		0.15	0.041	ug/L		02/15/17 08:59	02/15/17 17:13	1
Benzo[a]pyrene	<0.15		0.15	0.072	ug/L		02/15/17 08:59	02/15/17 17:13	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		02/15/17 08:59	02/15/17 17:13	1
Benzo[g,h,i]perylene	<0.73		0.73	0.27	ug/L		02/15/17 08:59	02/15/17 17:13	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		02/15/17 08:59	02/15/17 17:13	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/15/17 08:59	02/15/17 17:13	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.21	ug/L		02/15/17 08:59	02/15/17 17:13	1
Bis(2-ethylhexyl) phthalate	**1.3**	**J**	7.3	1.2	ug/L		02/15/17 08:59	02/15/17 17:13	1
4-Bromophenyl phenyl ether	<3.6		3.6	0.39	ug/L		02/15/17 08:59	02/15/17 17:13	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/15/17 08:59	02/15/17 17:13	1
Carbazole	<3.6		3.6	0.26	ug/L		02/15/17 08:59	02/15/17 17:13	1
4-Chloroaniline	<7.3		7.3	1.5	ug/L		02/15/17 08:59	02/15/17 17:13	1
4-Chloro-3-methylphenol	<7.3		7.3	1.7	ug/L		02/15/17 08:59	02/15/17 17:13	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/15/17 08:59	02/15/17 17:13	1
2-Chlorophenol	<3.6	* J	3.6	0.41	ug/L		02/15/17 08:59	02/15/17 17:13	1
4-Chlorophenyl phenyl ether	<3.6		3.6	0.46	ug/L		02/15/17 08:59	02/15/17 17:13	1
Chrysene	<0.15		0.15	0.050	ug/L		02/15/17 08:59	02/15/17 17:13	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		02/15/17 08:59	02/15/17 17:13	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		02/15/17 08:59	02/15/17 17:13	1
3,3'-Dichlorobenzidine	<3.6		3.6	1.2	ug/L		02/15/17 08:59	02/15/17 17:13	1
2,4-Dichlorophenol	<7.3	* J	7.3	1.9	ug/L		02/15/17 08:59	02/15/17 17:13	1
Diethyl phthalate	<1.5		1.5	0.26	ug/L		02/15/17 08:59	02/15/17 17:13	1
2,4-Dimethylphenol	<7.3		7.3	1.3	ug/L		02/15/17 08:59	02/15/17 17:13	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/15/17 08:59	02/15/17 17:13	1
Di-n-butyl phthalate	<3.6		3.6	0.53	ug/L		02/15/17 08:59	02/15/17 17:13	1
4,6-Dinitro-2-methylphenol	<15	* J	15	4.3	ug/L		02/15/17 08:59	02/15/17 17:13	1
2,4-Dinitrophenol	<15	* J	15	6.3	ug/L		02/15/17 08:59	02/15/17 17:13	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		02/15/17 08:59	02/15/17 17:13	1
2,6-Dinitrotoluene	<0.73		0.73	0.054	ug/L		02/15/17 08:59	02/15/17 17:13	1
Di-n-octyl phthalate	<7.3		7.3	0.77	ug/L		02/15/17 08:59	02/15/17 17:13	1
Fluoranthene	<0.73		0.73	0.33	ug/L		02/15/17 08:59	02/15/17 17:13	1
Fluorene	<0.73		0.73	0.18	ug/L		02/15/17 08:59	02/15/17 17:13	1
Hexachlorobenzene	<0.36		0.36	0.058	ug/L		02/15/17 08:59	02/15/17 17:13	1
Hexachlorobutadiene	<3.6	* J	3.6	0.38	ug/L		02/15/17 08:59	02/15/17 17:13	1
Hexachlorocyclopentadiene	<15		15	4.6	ug/L		02/15/17 08:59	02/15/17 17:13	1
Hexachloroethane	<3.6	* J	3.6	0.44	ug/L		02/15/17 08:59	02/15/17 17:13	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.054	ug/L		02/15/17 08:59	02/15/17 17:13	1
Isophorone	<1.5		1.5	0.27	ug/L		02/15/17 08:59	02/15/17 17:13	1
2-Methylnaphthalene	<1.5		1.5	0.047	ug/L		02/15/17 08:59	02/15/17 17:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-10-GW-02142017

Lab Sample ID: 500-123839-1

Date Collected: 02/14/17 08:00
Matrix: Water
Date Received: 02/14/17 16:40

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.22	ug/L		02/15/17 08:59	02/15/17 17:13	1
3 & 4 Methylphenol	<1.5		1.5	0.33	ug/L		02/15/17 08:59	02/15/17 17:13	1
Naphthalene	<0.73		0.73	0.23	ug/L		02/15/17 08:59	02/15/17 17:13	1
2-Nitroaniline	<3.6		3.6	0.94	ug/L		02/15/17 08:59	02/15/17 17:13	1
3-Nitroaniline	<7.3	* J	7.3	1.3	ug/L		02/15/17 08:59	02/15/17 17:13	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		02/15/17 08:59	02/15/17 17:13	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		02/15/17 08:59	02/15/17 17:13	1
2-Nitrophenol	<7.3	* J	7.3	1.8	ug/L		02/15/17 08:59	02/15/17 17:13	1
4-Nitrophenol	<15	* J	15	5.4	ug/L		02/15/17 08:59	02/15/17 17:13	1
N-Nitrosodi-n-propylamine	<0.36		0.36	0.11	ug/L		02/15/17 08:59	02/15/17 17:13	1
N-Nitrosodiphenylamine	<0.73		0.73	0.27	ug/L		02/15/17 08:59	02/15/17 17:13	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/15/17 08:59	02/15/17 17:13	1
Pentachlorophenol	<15	* J	15	2.9	ug/L		02/15/17 08:59	02/15/17 17:13	1
Phenanthrene	<0.73		0.73	0.22	ug/L		02/15/17 08:59	02/15/17 17:13	1
Phenol	<3.6	* J	3.6	0.49	ug/L		02/15/17 08:59	02/15/17 17:13	1
Pyrene	<0.73		0.73	0.31	ug/L		02/15/17 08:59	02/15/17 17:13	1
2,4,5-Trichlorophenol	<7.3	* J	7.3	1.9	ug/L		02/15/17 08:59	02/15/17 17:13	1
2,4,6-Trichlorophenol	<3.6	* J	3.6	0.52	ug/L		02/15/17 08:59	02/15/17 17:13	1
Benzaldehyde	<29		29	11	ug/L		02/15/17 08:59	02/15/17 17:13	1
Caprolactam	<7.3		7.3	1.1	ug/L		02/15/17 08:59	02/15/17 17:13	1
Atrazine	<3.6		3.6	0.46	ug/L		02/15/17 08:59	02/15/17 17:13	1
1,1'-Biphenyl	<3.6		3.6	0.26	ug/L		02/15/17 08:59	02/15/17 17:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*82*		*30 - 123*	*02/15/17 08:59*	*02/15/17 17:13*	*1*
2-Fluorophenol (Surr)	*72*		*30 - 110*	*02/15/17 08:59*	*02/15/17 17:13*	*1*
Nitrobenzene-d5 (Surr)	*89*		*33 - 139*	*02/15/17 08:59*	*02/15/17 17:13*	*1*
Phenol-d5 (Surr)	*60*		*20 - 100*	*02/15/17 08:59*	*02/15/17 17:13*	*1*
Terphenyl-d14 (Surr)	*91*		*42 - 150*	*02/15/17 08:59*	*02/15/17 17:13*	*1*
2,4,6-Tribromophenol (Surr)	*97*		*30 - 150*	*02/15/17 08:59*	*02/15/17 17:13*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		02/15/17 07:39	02/21/17 12:13	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		02/15/17 07:39	02/21/17 12:13	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		02/15/17 07:39	02/21/17 12:13	1
beta-BHC	<0.037		0.037	0.0093	ug/L		02/15/17 07:39	02/21/17 12:13	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 12:13	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		02/15/17 07:39	02/21/17 12:13	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		02/15/17 07:39	02/21/17 12:13	1
delta-BHC	<0.037		0.037	0.0094	ug/L		02/15/17 07:39	02/21/17 12:13	1
Dieldrin	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 12:13	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		02/15/17 07:39	02/21/17 12:13	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		02/15/17 07:39	02/21/17 12:13	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		02/15/17 07:39	02/21/17 12:13	1
Endrin	<0.037		0.037	0.013	ug/L		02/15/17 07:39	02/21/17 12:13	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		02/15/17 07:39	02/21/17 12:13	1
Endrin ketone	<0.037		0.037	0.016	ug/L		02/15/17 07:39	02/21/17 12:13	1
gamma-BHC (Lindane)	<0.037		0.037	0.0051	ug/L		02/15/17 07:39	02/21/17 12:13	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		02/15/17 07:39	02/21/17 12:13	1

Client Sample ID: MW-10-GW-02142017

Lab Sample ID: 500-123839-1

Date Collected: 02/14/17 08:00

Matrix: Water

Date Received: 02/14/17 16:40

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 12:13	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		02/15/17 07:39	02/21/17 12:13	1
Methoxychlor	<0.073		0.073	0.021	ug/L		02/15/17 07:39	02/21/17 12:13	1
Toxaphene	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/21/17 12:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*74*		*30 - 143*	*02/15/17 07:39*	*02/21/17 12:13*	*1*
Tetrachloro-m-xylene	*56*		*30 - 120*	*02/15/17 07:39*	*02/21/17 12:13*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.061	ug/L		02/15/17 07:39	02/16/17 09:50	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 09:50	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 09:50	1
PCB-1242	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 09:50	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 09:50	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 09:50	1
PCB-1260	<0.37		0.37	0.064	ug/L		02/15/17 07:39	02/16/17 09:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*58*		*30 - 127*	*02/15/17 07:39*	*02/16/17 09:50*	*1*
DCB Decachlorobiphenyl	*55*		*30 - 150*	*02/15/17 07:39*	*02/16/17 09:50*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 11:47	1
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 11:47	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 11:47	1
Barium	**0.093**	J	0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 11:47	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 11:47	1
Cadmium	**0.0014**	J	0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 11:47	1
Calcium	**180**	J	0.20	0.059	mg/L		02/15/17 08:20	02/20/17 11:47	1
Chromium	<0.010		0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 11:47	1
Cobalt	**0.0011**	J	0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 11:47	1
Copper	**0.0088**	J	0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 11:47	1
Iron	**12**	J	0.20	0.10	mg/L		02/15/17 08:20	02/20/17 11:47	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 11:47	1
Magnesium	**77**	J	0.10	0.041	mg/L		02/15/17 08:20	02/20/17 11:47	1
Manganese	**0.99**	J	0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 11:47	1
Nickel	**0.011**		0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 11:47	1
Potassium	**34**	J	0.50	0.16	mg/L		02/15/17 08:20	02/20/17 11:47	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 11:47	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 11:47	1
Sodium	**64**	J	1.0	0.43	mg/L		02/15/17 08:20	02/20/17 11:47	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 11:47	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 11:47	1
Zinc	**0.074**		0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 11:47	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 11:50	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-10-GW-02142017

Lab Sample ID: 500-123839-1

Date Collected: 02/14/17 08:00
Matrix: Water
Date Received: 02/14/17 16:40

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 11:50	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 11:50	1
Barium	**0.093**		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 11:50	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 11:50	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 11:50	1
Calcium	**180**		0.20	0.059	mg/L		02/15/17 08:20	02/20/17 11:50	1
Chromium	<0.010		0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 11:50	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 11:50	1
Copper	**0.0052**	**J**	0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 11:50	1
Iron	**11**		0.20	0.10	mg/L		02/15/17 08:20	02/20/17 11:50	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 11:50	1
Magnesium	**78**		0.10	0.041	mg/L		02/15/17 08:20	02/20/17 11:50	1
Manganese	**1.0**		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 11:50	1
Nickel	**0.010**		0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 11:50	1
Potassium	**35**		0.50	0.16	mg/L		02/15/17 08:20	02/20/17 11:50	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 11:50	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 11:50	1
Sodium	**65**		1.0	0.43	mg/L		02/15/17 08:20	02/20/17 11:50	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 11:50	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 11:50	1
Zinc	**0.073**		0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 11:50	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:43	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 05:23	1
Sulfate	**530**	~~**B**~~	100	29	mg/L			02/15/17 06:52	20
Total Organic Carbon - Duplicates	**12**		1.0	0.27	mg/L			02/16/17 22:11	1
Nitrogen, Nitrate	**1.3**		0.10	0.035	mg/L			02/19/17 20:18	1
Total Suspended Solids	**30**		5.0	2.5	mg/L			02/15/17 11:22	1
Ammonia	**1.7**		0.20	0.10	mg/L		02/14/17 21:30	02/15/17 00:16	1
Nitrogen, Nitrite	**0.016**	**J**	0.020	0.0088	mg/L			02/15/17 14:18	1
Nitrogen, Nitrate Nitrite	**1.3**		0.10	0.035	mg/L			02/17/17 21:33	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-09-GW-02142017

Lab Sample ID: 500-123839-2

Date Collected: 02/14/17 09:40
Matrix: Water
Date Received: 02/14/17 16:40

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0	J	5.0	1.7	ug/L			02/16/17 20:00	1
Benzene	**1.5**		0.50	0.15	ug/L			02/16/17 20:00	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/16/17 20:00	1
Bromoform	<1.0		1.0	0.48	ug/L			02/16/17 20:00	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/16/17 20:00	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/16/17 20:00	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/16/17 20:00	1
Chlorobenzene	**14**		1.0	0.39	ug/L			02/16/17 20:00	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/16/17 20:00	1
Chloroform	<2.0		2.0	0.37	ug/L			02/16/17 20:00	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/16/17 20:00	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/16/17 20:00	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/16/17 20:00	1
Cyclohexane	<1.0		1.0	0.49	ug/L			02/16/17 20:00	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/16/17 20:00	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/16/17 20:00	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/16/17 20:00	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			02/16/17 20:00	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/16/17 20:00	1
1,4-Dichlorobenzene	**1.4**		1.0	0.36	ug/L			02/16/17 20:00	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/16/17 20:00	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/16/17 20:00	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/16/17 20:00	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/16/17 20:00	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/16/17 20:00	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			02/16/17 20:00	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/16/17 20:00	1
Isopropylbenzene	**3.0**		1.0	0.39	ug/L			02/16/17 20:00	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/16/17 20:00	1
Methylcyclohexane	**1.2**		1.0	0.32	ug/L			02/16/17 20:00	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/16/17 20:00	1
Methyl Ethyl Ketone	<5.0	J	5.0	2.1	ug/L			02/16/17 20:00	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/16/17 20:00	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/16/17 20:00	1
Styrene	<1.0		1.0	0.39	ug/L			02/16/17 20:00	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/16/17 20:00	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/16/17 20:00	1
Toluene	<0.50		0.50	0.15	ug/L			02/16/17 20:00	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/16/17 20:00	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/16/17 20:00	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/16/17 20:00	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/16/17 20:00	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/16/17 20:00	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/16/17 20:00	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/16/17 20:00	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/16/17 20:00	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/16/17 20:00	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			02/16/17 20:00	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-09-GW-02142017

Lab Sample ID: 500-123839-2

Date Collected: 02/14/17 09:40
Matrix: Water
Date Received: 02/14/17 16:40

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*71 - 120*		*02/16/17 20:00*	*1*
Dibromofluoromethane	*95*		*70 - 120*		*02/16/17 20:00*	*1*
1,2-Dichloroethane-d4 (Surr)	*109*		*71 - 127*		*02/16/17 20:00*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*02/16/17 20:00*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**1.1**		0.74	0.23	ug/L		02/15/17 08:59	02/15/17 17:40	1
Acenaphthylene	<0.74		0.74	0.20	ug/L		02/15/17 08:59	02/15/17 17:40	1
Acetophenone	<3.7		3.7	0.49	ug/L		02/15/17 08:59	02/15/17 17:40	1
Anthracene	<0.74		0.74	0.25	ug/L		02/15/17 08:59	02/15/17 17:40	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		02/15/17 08:59	02/15/17 17:40	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		02/15/17 08:59	02/15/17 17:40	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		02/15/17 08:59	02/15/17 17:40	1
Benzo[g,h,i]perylene	<0.74		0.74	0.28	ug/L		02/15/17 08:59	02/15/17 17:40	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		02/15/17 08:59	02/15/17 17:40	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/15/17 08:59	02/15/17 17:40	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		02/15/17 08:59	02/15/17 17:40	1
Bis(2-ethylhexyl) phthalate	<7.4		7.4	1.3	ug/L		02/15/17 08:59	02/15/17 17:40	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		02/15/17 08:59	02/15/17 17:40	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/15/17 08:59	02/15/17 17:40	1
Carbazole	<3.7		3.7	0.26	ug/L		02/15/17 08:59	02/15/17 17:40	1
4-Chloroaniline	<7.4		7.4	1.5	ug/L		02/15/17 08:59	02/15/17 17:40	1
4-Chloro-3-methylphenol	<7.4		7.4	1.7	ug/L		02/15/17 08:59	02/15/17 17:40	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/15/17 08:59	02/15/17 17:40	1
2-Chlorophenol	<3.7	J	3.7	0.41	ug/L		02/15/17 08:59	02/15/17 17:40	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		02/15/17 08:59	02/15/17 17:40	1
Chrysene	<0.15		0.15	0.050	ug/L		02/15/17 08:59	02/15/17 17:40	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		02/15/17 08:59	02/15/17 17:40	1
Dibenzofuran	**0.21**	**J**	1.5	0.19	ug/L		02/15/17 08:59	02/15/17 17:40	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		02/15/17 08:59	02/15/17 17:40	1
2,4-Dichlorophenol	<7.4	J	7.4	1.9	ug/L		02/15/17 08:59	02/15/17 17:40	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		02/15/17 08:59	02/15/17 17:40	1
2,4-Dimethylphenol	<7.4		7.4	1.3	ug/L		02/15/17 08:59	02/15/17 17:40	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/15/17 08:59	02/15/17 17:40	1
Di-n-butyl phthalate	<3.7		3.7	0.54	ug/L		02/15/17 08:59	02/15/17 17:40	1
4,6-Dinitro-2-methylphenol	<15	J	15	4.4	ug/L		02/15/17 08:59	02/15/17 17:40	1
2,4-Dinitrophenol	<15	J	15	6.3	ug/L		02/15/17 08:59	02/15/17 17:40	1
2,4-Dinitrotoluene	<0.74		0.74	0.18	ug/L		02/15/17 08:59	02/15/17 17:40	1
2,6-Dinitrotoluene	<0.74		0.74	0.054	ug/L		02/15/17 08:59	02/15/17 17:40	1
Di-n-octyl phthalate	<7.4		7.4	0.77	ug/L		02/15/17 08:59	02/15/17 17:40	1
Fluoranthene	<0.74		0.74	0.33	ug/L		02/15/17 08:59	02/15/17 17:40	1
Fluorene	**0.42**	**J**	0.74	0.18	ug/L		02/15/17 08:59	02/15/17 17:40	1
Hexachlorobenzene	<0.37		0.37	0.059	ug/L		02/15/17 08:59	02/15/17 17:40	1
Hexachlorobutadiene	<3.7	J	3.7	0.38	ug/L		02/15/17 08:59	02/15/17 17:40	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		02/15/17 08:59	02/15/17 17:40	1
Hexachloroethane	<3.7	J	3.7	0.44	ug/L		02/15/17 08:59	02/15/17 17:40	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		02/15/17 08:59	02/15/17 17:40	1
Isophorone	<1.5		1.5	0.28	ug/L		02/15/17 08:59	02/15/17 17:40	1
2-Methylnaphthalene	**2.5**		1.5	0.048	ug/L		02/15/17 08:59	02/15/17 17:40	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-09-GW-02142017

Lab Sample ID: 500-123839-2

Date Collected: 02/14/17 09:40
Matrix: Water
Date Received: 02/14/17 16:40

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.23	ug/L		02/15/17 08:59	02/15/17 17:40	1
3 & 4 Methylphenol	<1.5		1.5	0.33	ug/L		02/15/17 08:59	02/15/17 17:40	1
Naphthalene	**0.29**	**J**	0.74	0.23	ug/L		02/15/17 08:59	02/15/17 17:40	1
2-Nitroaniline	<3.7		3.7	0.95	ug/L		02/15/17 08:59	02/15/17 17:40	1
3-Nitroaniline	<7.4	J	7.4	1.3	ug/L		02/15/17 08:59	02/15/17 17:40	1
4-Nitroaniline	<7.4		7.4	1.2	ug/L		02/15/17 08:59	02/15/17 17:40	1
Nitrobenzene	<0.74		0.74	0.33	ug/L		02/15/17 08:59	02/15/17 17:40	1
2-Nitrophenol	<7.4	J	7.4	1.8	ug/L		02/15/17 08:59	02/15/17 17:40	1
4-Nitrophenol	<15	J	15	5.5	ug/L		02/15/17 08:59	02/15/17 17:40	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		02/15/17 08:59	02/15/17 17:40	1
N-Nitrosodiphenylamine	<0.74		0.74	0.27	ug/L		02/15/17 08:59	02/15/17 17:40	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/15/17 08:59	02/15/17 17:40	1
Pentachlorophenol	<15	J	15	2.9	ug/L		02/15/17 08:59	02/15/17 17:40	1
Phenanthrene	**0.37**	**J**	0.74	0.22	ug/L		02/15/17 08:59	02/15/17 17:40	1
Phenol	<3.7	J	3.7	0.50	ug/L		02/15/17 08:59	02/15/17 17:40	1
Pyrene	<0.74		0.74	0.31	ug/L		02/15/17 08:59	02/15/17 17:40	1
2,4,5-Trichlorophenol	<7.4	J	7.4	1.9	ug/L		02/15/17 08:59	02/15/17 17:40	1
2,4,6-Trichlorophenol	<3.7	J	3.7	0.53	ug/L		02/15/17 08:59	02/15/17 17:40	1
Benzaldehyde	<30		30	11	ug/L		02/15/17 08:59	02/15/17 17:40	1
Caprolactam	<7.4		7.4	1.1	ug/L		02/15/17 08:59	02/15/17 17:40	1
Atrazine	<3.7		3.7	0.46	ug/L		02/15/17 08:59	02/15/17 17:40	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		02/15/17 08:59	02/15/17 17:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*61*		*30 - 123*	*02/15/17 08:59*	*02/15/17 17:40*	*1*
2-Fluorophenol (Surr)	*52*		*30 - 110*	*02/15/17 08:59*	*02/15/17 17:40*	*1*
Nitrobenzene-d5 (Surr)	*68*		*33 - 139*	*02/15/17 08:59*	*02/15/17 17:40*	*1*
Phenol-d5 (Surr)	*47*		*20 - 100*	*02/15/17 08:59*	*02/15/17 17:40*	*1*
Terphenyl-d14 (Surr)	*86*		*42 - 150*	*02/15/17 08:59*	*02/15/17 17:40*	*1*
2,4,6-Tribromophenol (Surr)	*88*		*30 - 150*	*02/15/17 08:59*	*02/15/17 17:40*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0048	ug/L		02/15/17 07:39	02/21/17 12:33	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		02/15/17 07:39	02/21/17 12:33	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		02/15/17 07:39	02/21/17 12:33	1
beta-BHC	<0.037		0.037	0.0093	ug/L		02/15/17 07:39	02/21/17 12:33	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 12:33	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		02/15/17 07:39	02/21/17 12:33	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		02/15/17 07:39	02/21/17 12:33	1
delta-BHC	<0.037		0.037	0.0094	ug/L		02/15/17 07:39	02/21/17 12:33	1
Dieldrin	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 12:33	1
Endosulfan I	<0.037		0.037	0.0037	ug/L		02/15/17 07:39	02/21/17 12:33	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		02/15/17 07:39	02/21/17 12:33	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		02/15/17 07:39	02/21/17 12:33	1
Endrin	<0.037		0.037	0.013	ug/L		02/15/17 07:39	02/21/17 12:33	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		02/15/17 07:39	02/21/17 12:33	1
Endrin ketone	<0.037		0.037	0.016	ug/L		02/15/17 07:39	02/21/17 12:33	1
gamma-BHC (Lindane)	<0.037		0.037	0.0051	ug/L		02/15/17 07:39	02/21/17 12:33	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		02/15/17 07:39	02/21/17 12:33	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-09-GW-02142017

Lab Sample ID: 500-123839-2
Date Collected: 02/14/17 09:40
Matrix: Water
Date Received: 02/14/17 16:40

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 12:33	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		02/15/17 07:39	02/21/17 12:33	1
Methoxychlor	<0.073		0.073	0.021	ug/L		02/15/17 07:39	02/21/17 12:33	1
Toxaphene	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/21/17 12:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*66*		*30 - 143*	*02/15/17 07:39*	*02/21/17 12:33*	*1*
Tetrachloro-m-xylene	*46*		*30 - 120*	*02/15/17 07:39*	*02/21/17 12:33*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.061	ug/L		02/15/17 07:39	02/16/17 10:06	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:06	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:06	1
PCB-1242	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:06	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:06	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:06	1
PCB-1260	<0.37		0.37	0.064	ug/L		02/15/17 07:39	02/16/17 10:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*53*		*30 - 127*	*02/15/17 07:39*	*02/16/17 10:06*	*1*
DCB Decachlorobiphenyl	*57*		*30 - 150*	*02/15/17 07:39*	*02/16/17 10:06*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 12:00	1
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 12:00	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:00	1
Barium	**0.82**	J	0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:00	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 12:00	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 12:00	1
Calcium	**120**	J	0.20	0.059	mg/L		02/15/17 08:20	02/20/17 12:00	1
Chromium	**0.0040**	J	0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 12:00	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 12:00	1
Copper	<0.010		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:00	1
Iron	**26**	J	0.20	0.10	mg/L		02/15/17 08:20	02/20/17 12:00	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 12:00	1
Magnesium	**81**	J	0.10	0.041	mg/L		02/15/17 08:20	02/20/17 12:00	1
Manganese	**0.16**	J	0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:00	1
Nickel	**0.0046**	J	0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 12:00	1
Potassium	**77**	J	0.50	0.16	mg/L		02/15/17 08:20	02/20/17 12:00	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 12:00	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 12:00	1
Sodium	**200**	J	1.0	0.43	mg/L		02/15/17 08:20	02/20/17 12:00	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:00	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 12:00	1
Zinc	<0.020		0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 12:00	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 12:04	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-09-GW-02142017

Date Collected: 02/14/17 09:40
Date Received: 02/14/17 16:40

Lab Sample ID: 500-123839-2

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 12:04	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:04	1
Barium	**0.83**		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:04	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 12:04	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 12:04	1
Calcium	**120**		0.20	0.059	mg/L		02/15/17 08:20	02/20/17 12:04	1
Chromium	**0.0030**	**J**	0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 12:04	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 12:04	1
Copper	<0.010		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:04	1
Iron	**26**		0.20	0.10	mg/L		02/15/17 08:20	02/20/17 12:04	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 12:04	1
Magnesium	**83**		0.10	0.041	mg/L		02/15/17 08:20	02/20/17 12:04	1
Manganese	**0.16**		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:04	1
Nickel	**0.0041**	**J**	0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 12:04	1
Potassium	**78**		0.50	0.16	mg/L		02/15/17 08:20	02/20/17 12:04	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 12:04	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 12:04	1
Sodium	**200**		1.0	0.43	mg/L		02/15/17 08:20	02/20/17 12:04	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:04	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 12:04	1
Zinc	<0.020		0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 12:04	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:49	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 05:26	1
Sulfate	**10**	~~B~~ UB	5.0	1.5	mg/L			02/15/17 06:53	1
Total Organic Carbon - Duplicates	**26**		1.0	0.27	mg/L			02/16/17 22:28	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:18	1
Total Suspended Solids	**45**		5.0	2.5	mg/L			02/15/17 11:24	1
Ammonia	**73**		5.0	2.5	mg/L		02/14/17 21:30	02/15/17 01:01	25
Nitrogen, Nitrite	<0.020	J	0.020	0.0088	mg/L			02/15/17 14:19	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/17/17 21:36	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-08-GW-02142017

Lab Sample ID: 500-123839-3

Date Collected: 02/14/17 11:30
Matrix: Water
Date Received: 02/14/17 16:40

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	5.7	J	5.0	1.7	ug/L			02/16/17 20:27	1
Benzene	<0.50		0.50	0.15	ug/L			02/16/17 20:27	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/16/17 20:27	1
Bromoform	<1.0		1.0	0.48	ug/L			02/16/17 20:27	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/16/17 20:27	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/16/17 20:27	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/16/17 20:27	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			02/16/17 20:27	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/16/17 20:27	1
Chloroform	<2.0		2.0	0.37	ug/L			02/16/17 20:27	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/16/17 20:27	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/16/17 20:27	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/16/17 20:27	1
Cyclohexane	<1.0		1.0	0.49	ug/L			02/16/17 20:27	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/16/17 20:27	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/16/17 20:27	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/16/17 20:27	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			02/16/17 20:27	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/16/17 20:27	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			02/16/17 20:27	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/16/17 20:27	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/16/17 20:27	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/16/17 20:27	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/16/17 20:27	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/16/17 20:27	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			02/16/17 20:27	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/16/17 20:27	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			02/16/17 20:27	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/16/17 20:27	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			02/16/17 20:27	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/16/17 20:27	1
Methyl Ethyl Ketone	<5.0	J	5.0	2.1	ug/L			02/16/17 20:27	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/16/17 20:27	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/16/17 20:27	1
Styrene	<1.0		1.0	0.39	ug/L			02/16/17 20:27	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/16/17 20:27	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/16/17 20:27	1
Toluene	<0.50		0.50	0.15	ug/L			02/16/17 20:27	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/16/17 20:27	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/16/17 20:27	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/16/17 20:27	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/16/17 20:27	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/16/17 20:27	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/16/17 20:27	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/16/17 20:27	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/16/17 20:27	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/16/17 20:27	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			02/16/17 20:27	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-08-GW-02142017

Lab Sample ID: 500-123839-3

Date Collected: 02/14/17 11:30
Matrix: Water
Date Received: 02/14/17 16:40

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*		*02/16/17 20:27*	*1*
Dibromofluoromethane	*95*		*70 - 120*		*02/16/17 20:27*	*1*
1,2-Dichloroethane-d4 (Surr)	*104*		*71 - 127*		*02/16/17 20:27*	*1*
Toluene-d8 (Surr)	*99*		*75 - 120*		*02/16/17 20:27*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.73		0.73	0.23	ug/L		02/15/17 08:59	02/15/17 18:07	1
Acenaphthylene	<0.73		0.73	0.20	ug/L		02/15/17 08:59	02/15/17 18:07	1
Acetophenone	<3.7		3.7	0.49	ug/L		02/15/17 08:59	02/15/17 18:07	1
Anthracene	<0.73		0.73	0.24	ug/L		02/15/17 08:59	02/15/17 18:07	1
Benzo[a]anthracene	<0.15		0.15	0.041	ug/L		02/15/17 08:59	02/15/17 18:07	1
Benzo[a]pyrene	<0.15		0.15	0.072	ug/L		02/15/17 08:59	02/15/17 18:07	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		02/15/17 08:59	02/15/17 18:07	1
Benzo[g,h,i]perylene	<0.73		0.73	0.27	ug/L		02/15/17 08:59	02/15/17 18:07	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		02/15/17 08:59	02/15/17 18:07	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/15/17 08:59	02/15/17 18:07	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.21	ug/L		02/15/17 08:59	02/15/17 18:07	1
Bis(2-ethylhexyl) phthalate	<7.3		7.3	1.3	ug/L		02/15/17 08:59	02/15/17 18:07	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		02/15/17 08:59	02/15/17 18:07	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/15/17 08:59	02/15/17 18:07	1
Carbazole	<3.7		3.7	0.26	ug/L		02/15/17 08:59	02/15/17 18:07	1
4-Chloroaniline	<7.3		7.3	1.5	ug/L		02/15/17 08:59	02/15/17 18:07	1
4-Chloro-3-methylphenol	<7.3		7.3	1.7	ug/L		02/15/17 08:59	02/15/17 18:07	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/15/17 08:59	02/15/17 18:07	1
2-Chlorophenol	<3.7	* J	3.7	0.41	ug/L		02/15/17 08:59	02/15/17 18:07	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		02/15/17 08:59	02/15/17 18:07	1
Chrysene	<0.15		0.15	0.050	ug/L		02/15/17 08:59	02/15/17 18:07	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		02/15/17 08:59	02/15/17 18:07	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		02/15/17 08:59	02/15/17 18:07	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		02/15/17 08:59	02/15/17 18:07	1
2,4-Dichlorophenol	<7.3	* J	7.3	1.9	ug/L		02/15/17 08:59	02/15/17 18:07	1
Diethyl phthalate	<1.5		1.5	0.26	ug/L		02/15/17 08:59	02/15/17 18:07	1
2,4-Dimethylphenol	<7.3		7.3	1.3	ug/L		02/15/17 08:59	02/15/17 18:07	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/15/17 08:59	02/15/17 18:07	1
Di-n-butyl phthalate	<3.7		3.7	0.53	ug/L		02/15/17 08:59	02/15/17 18:07	1
4,6-Dinitro-2-methylphenol	<15	* J	15	4.3	ug/L		02/15/17 08:59	02/15/17 18:07	1
2,4-Dinitrophenol	<15	* J	15	6.3	ug/L		02/15/17 08:59	02/15/17 18:07	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		02/15/17 08:59	02/15/17 18:07	1
2,6-Dinitrotoluene	<0.73		0.73	0.054	ug/L		02/15/17 08:59	02/15/17 18:07	1
Di-n-octyl phthalate	<7.3		7.3	0.77	ug/L		02/15/17 08:59	02/15/17 18:07	1
Fluoranthene	<0.73		0.73	0.33	ug/L		02/15/17 08:59	02/15/17 18:07	1
Fluorene	<0.73		0.73	0.18	ug/L		02/15/17 08:59	02/15/17 18:07	1
Hexachlorobenzene	<0.37		0.37	0.058	ug/L		02/15/17 08:59	02/15/17 18:07	1
Hexachlorobutadiene	<3.7	* J	3.7	0.38	ug/L		02/15/17 08:59	02/15/17 18:07	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		02/15/17 08:59	02/15/17 18:07	1
Hexachloroethane	<3.7	* J	3.7	0.44	ug/L		02/15/17 08:59	02/15/17 18:07	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		02/15/17 08:59	02/15/17 18:07	1
Isophorone	<1.5		1.5	0.27	ug/L		02/15/17 08:59	02/15/17 18:07	1
2-Methylnaphthalene	<1.5		1.5	0.048	ug/L		02/15/17 08:59	02/15/17 18:07	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-08-GW-02142017

Lab Sample ID: 500-123839-3
Date Collected: 02/14/17 11:30
Matrix: Water
Date Received: 02/14/17 16:40

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.22	ug/L		02/15/17 08:59	02/15/17 18:07	1
3 & 4 Methylphenol	<1.5		1.5	0.33	ug/L		02/15/17 08:59	02/15/17 18:07	1
Naphthalene	<0.73		0.73	0.23	ug/L		02/15/17 08:59	02/15/17 18:07	1
2-Nitroaniline	<3.7		3.7	0.94	ug/L		02/15/17 08:59	02/15/17 18:07	1
3-Nitroaniline	<7.3	* J	7.3	1.3	ug/L		02/15/17 08:59	02/15/17 18:07	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		02/15/17 08:59	02/15/17 18:07	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		02/15/17 08:59	02/15/17 18:07	1
2-Nitrophenol	<7.3	* J	7.3	1.8	ug/L		02/15/17 08:59	02/15/17 18:07	1
4-Nitrophenol	<15	* J	15	5.4	ug/L		02/15/17 08:59	02/15/17 18:07	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		02/15/17 08:59	02/15/17 18:07	1
N-Nitrosodiphenylamine	<0.73		0.73	0.27	ug/L		02/15/17 08:59	02/15/17 18:07	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/15/17 08:59	02/15/17 18:07	1
Pentachlorophenol	<15	* J	15	2.9	ug/L		02/15/17 08:59	02/15/17 18:07	1
Phenanthrene	<0.73		0.73	0.22	ug/L		02/15/17 08:59	02/15/17 18:07	1
Phenol	<3.7	* J	3.7	0.49	ug/L		02/15/17 08:59	02/15/17 18:07	1
Pyrene	<0.73		0.73	0.31	ug/L		02/15/17 08:59	02/15/17 18:07	1
2,4,5-Trichlorophenol	<7.3	* J	7.3	1.9	ug/L		02/15/17 08:59	02/15/17 18:07	1
2,4,6-Trichlorophenol	<3.7	* J	3.7	0.52	ug/L		02/15/17 08:59	02/15/17 18:07	1
Benzaldehyde	<29		29	11	ug/L		02/15/17 08:59	02/15/17 18:07	1
Caprolactam	<7.3		7.3	1.1	ug/L		02/15/17 08:59	02/15/17 18:07	1
Atrazine	<3.7		3.7	0.46	ug/L		02/15/17 08:59	02/15/17 18:07	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		02/15/17 08:59	02/15/17 18:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*59*		*30 - 123*	*02/15/17 08:59*	*02/15/17 18:07*	*1*
2-Fluorophenol (Surr)	*50*		*30 - 110*	*02/15/17 08:59*	*02/15/17 18:07*	*1*
Nitrobenzene-d5 (Surr)	*61*		*33 - 139*	*02/15/17 08:59*	*02/15/17 18:07*	*1*
Phenol-d5 (Surr)	*42*		*20 - 100*	*02/15/17 08:59*	*02/15/17 18:07*	*1*
Terphenyl-d14 (Surr)	*70*		*42 - 150*	*02/15/17 08:59*	*02/15/17 18:07*	*1*
2,4,6-Tribromophenol (Surr)	*79*		*30 - 150*	*02/15/17 08:59*	*02/15/17 18:07*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.036		0.036	0.0048	ug/L		02/15/17 07:39	02/21/17 12:52	1
alpha-BHC	<0.036		0.036	0.0024	ug/L		02/15/17 07:39	02/21/17 12:52	1
alpha-Chlordane	<0.036		0.036	0.0040	ug/L		02/15/17 07:39	02/21/17 12:52	1
beta-BHC	<0.036		0.036	0.0093	ug/L		02/15/17 07:39	02/21/17 12:52	1
4,4'-DDD	<0.036		0.036	0.012	ug/L		02/15/17 07:39	02/21/17 12:52	1
4,4'-DDE	<0.036		0.036	0.0035	ug/L		02/15/17 07:39	02/21/17 12:52	1
4,4'-DDT	<0.036		0.036	0.0029	ug/L		02/15/17 07:39	02/21/17 12:52	1
delta-BHC	<0.036		0.036	0.0094	ug/L		02/15/17 07:39	02/21/17 12:52	1
Dieldrin	<0.036		0.036	0.012	ug/L		02/15/17 07:39	02/21/17 12:52	1
Endosulfan I	<0.036		0.036	0.0037	ug/L		02/15/17 07:39	02/21/17 12:52	1
Endosulfan II	<0.036		0.036	0.0025	ug/L		02/15/17 07:39	02/21/17 12:52	1
Endosulfan sulfate	<0.036		0.036	0.011	ug/L		02/15/17 07:39	02/21/17 12:52	1
Endrin	<0.036		0.036	0.013	ug/L		02/15/17 07:39	02/21/17 12:52	1
Endrin aldehyde	<0.036		0.036	0.0075	ug/L		02/15/17 07:39	02/21/17 12:52	1
Endrin ketone	<0.036		0.036	0.015	ug/L		02/15/17 07:39	02/21/17 12:52	1
gamma-BHC (Lindane)	<0.036		0.036	0.0051	ug/L		02/15/17 07:39	02/21/17 12:52	1
gamma-Chlordane	<0.036		0.036	0.0066	ug/L		02/15/17 07:39	02/21/17 12:52	1

Client Sample ID: MW-08-GW-02142017

Lab Sample ID: 500-123839-3

Date Collected: 02/14/17 11:30

Matrix: Water

Date Received: 02/14/17 16:40

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.036		0.036	0.012	ug/L		02/15/17 07:39	02/21/17 12:52	1
Heptachlor epoxide	<0.036		0.036	0.013	ug/L		02/15/17 07:39	02/21/17 12:52	1
Methoxychlor	<0.073		0.073	0.021	ug/L		02/15/17 07:39	02/21/17 12:52	1
Toxaphene	<0.36		0.36	0.18	ug/L		02/15/17 07:39	02/21/17 12:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*81*		*30 - 143*	*02/15/17 07:39*	*02/21/17 12:52*	*1*
Tetrachloro-m-xylene	*45*		*30 - 120*	*02/15/17 07:39*	*02/21/17 12:52*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.36		0.36	0.061	ug/L		02/15/17 07:39	02/16/17 10:21	1
PCB-1221	<0.36		0.36	0.18	ug/L		02/15/17 07:39	02/16/17 10:21	1
PCB-1232	<0.36		0.36	0.18	ug/L		02/15/17 07:39	02/16/17 10:21	1
PCB-1242	<0.36		0.36	0.18	ug/L		02/15/17 07:39	02/16/17 10:21	1
PCB-1248	<0.36		0.36	0.18	ug/L		02/15/17 07:39	02/16/17 10:21	1
PCB-1254	<0.36		0.36	0.18	ug/L		02/15/17 07:39	02/16/17 10:21	1
PCB-1260	<0.36		0.36	0.064	ug/L		02/15/17 07:39	02/16/17 10:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*51*		*30 - 127*	*02/15/17 07:39*	*02/16/17 10:21*	*1*
DCB Decachlorobiphenyl	*74*		*30 - 150*	*02/15/17 07:39*	*02/16/17 10:21*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 12:09	1
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 12:09	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:09	1
Barium	**0.67**	J	0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:09	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 12:09	1
Cadmium	**0.00094**	J	0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 12:09	1
Calcium	**120**	J	0.20	0.059	mg/L		02/15/17 08:20	02/20/17 12:09	1
Chromium	<0.010		0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 12:09	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 12:09	1
Copper	**0.0022**	J	0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:09	1
Iron	**11**	J	0.20	0.10	mg/L		02/15/17 08:20	02/20/17 12:09	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 12:09	1
Magnesium	**91**	J	0.10	0.041	mg/L		02/15/17 08:20	02/20/17 12:09	1
Manganese	**0.18**	J	0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:09	1
Nickel	<0.010		0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 12:09	1
Potassium	**36**	J	0.50	0.16	mg/L		02/15/17 08:20	02/20/17 12:09	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 12:09	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 12:09	1
Sodium	**240**	J	1.0	0.43	mg/L		02/15/17 08:20	02/20/17 12:09	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:09	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 12:09	1
Zinc	<0.020		0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 12:09	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 12:16	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: MW-08-GW-02142017

Date Collected: 02/14/17 11:30
Date Received: 02/14/17 16:40

Lab Sample ID: 500-123839-3

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 12:16	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:16	1
Barium	**0.65**		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:16	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 12:16	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 12:16	1
Calcium	**120**		0.20	0.059	mg/L		02/15/17 08:20	02/20/17 12:16	1
Chromium	<0.010		0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 12:16	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 12:16	1
Copper	<0.010		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:16	1
Iron	**11**		0.20	0.10	mg/L		02/15/17 08:20	02/20/17 12:16	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 12:16	1
Magnesium	**87**		0.10	0.041	mg/L		02/15/17 08:20	02/20/17 12:16	1
Manganese	**0.18**		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:16	1
Nickel	<0.010		0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 12:16	1
Potassium	**35**		0.50	0.16	mg/L		02/15/17 08:20	02/20/17 12:16	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 12:16	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 12:16	1
Sodium	**240**		1.0	0.43	mg/L		02/15/17 08:20	02/20/17 12:16	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:16	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 12:16	1
Zinc	<0.020		0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 12:16	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:52	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00012**	**J**	0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 05:28	1
Sulfate	5.0 **2.4**	**J** ~~**B**~~ UB	5.0	1.5	mg/L			02/15/17 07:02	1
Total Organic Carbon - Duplicates	**15**		1.0	0.27	mg/L			02/16/17 22:44	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:18	1
Total Suspended Solids	**24**		5.0	2.5	mg/L			02/15/17 11:26	1
Ammonia	**36**		2.0	1.0	mg/L		02/14/17 21:30	02/15/17 01:04	10
Nitrogen, Nitrite	<0.020	J	0.020	0.0088	mg/L			02/15/17 14:20	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/17/17 21:38	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: Dup-2-02142017

Date Collected: 02/14/17 00:00
Date Received: 02/14/17 16:40

Lab Sample ID: 500-123839-4

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0	J	5.0	1.7	ug/L			02/16/17 20:54	1
Benzene	<0.50		0.50	0.15	ug/L			02/16/17 20:54	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/16/17 20:54	1
Bromoform	<1.0		1.0	0.48	ug/L			02/16/17 20:54	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/16/17 20:54	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/16/17 20:54	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/16/17 20:54	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			02/16/17 20:54	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/16/17 20:54	1
Chloroform	<2.0		2.0	0.37	ug/L			02/16/17 20:54	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/16/17 20:54	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/16/17 20:54	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/16/17 20:54	1
Cyclohexane	<1.0		1.0	0.49	ug/L			02/16/17 20:54	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/16/17 20:54	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/16/17 20:54	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/16/17 20:54	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			02/16/17 20:54	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/16/17 20:54	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			02/16/17 20:54	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/16/17 20:54	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/16/17 20:54	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/16/17 20:54	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/16/17 20:54	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/16/17 20:54	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			02/16/17 20:54	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/16/17 20:54	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			02/16/17 20:54	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/16/17 20:54	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			02/16/17 20:54	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/16/17 20:54	1
Methyl Ethyl Ketone	<5.0	J	5.0	2.1	ug/L			02/16/17 20:54	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/16/17 20:54	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/16/17 20:54	1
Styrene	<1.0		1.0	0.39	ug/L			02/16/17 20:54	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/16/17 20:54	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/16/17 20:54	1
Toluene	<0.50		0.50	0.15	ug/L			02/16/17 20:54	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/16/17 20:54	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/16/17 20:54	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/16/17 20:54	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/16/17 20:54	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/16/17 20:54	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/16/17 20:54	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/16/17 20:54	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/16/17 20:54	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/16/17 20:54	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			02/16/17 20:54	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: Dup-2-02142017

Date Collected: 02/14/17 00:00
Date Received: 02/14/17 16:40

Lab Sample ID: 500-123839-4

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*98*		*71 - 120*		*02/16/17 20:54*	*1*
Dibromofluoromethane	*94*		*70 - 120*		*02/16/17 20:54*	*1*
1,2-Dichloroethane-d4 (Surr)	*107*		*71 - 127*		*02/16/17 20:54*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*02/16/17 20:54*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.73		0.73	0.23	ug/L		02/15/17 08:59	02/15/17 18:34	1
Acenaphthylene	<0.73		0.73	0.20	ug/L		02/15/17 08:59	02/15/17 18:34	1
Acetophenone	<3.7		3.7	0.49	ug/L		02/15/17 08:59	02/15/17 18:34	1
Anthracene	<0.73		0.73	0.24	ug/L		02/15/17 08:59	02/15/17 18:34	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		02/15/17 08:59	02/15/17 18:34	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		02/15/17 08:59	02/15/17 18:34	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		02/15/17 08:59	02/15/17 18:34	1
Benzo[g,h,i]perylene	<0.73		0.73	0.28	ug/L		02/15/17 08:59	02/15/17 18:34	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		02/15/17 08:59	02/15/17 18:34	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/15/17 08:59	02/15/17 18:34	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.21	ug/L		02/15/17 08:59	02/15/17 18:34	1
Bis(2-ethylhexyl) phthalate	<7.3		7.3	1.3	ug/L		02/15/17 08:59	02/15/17 18:34	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		02/15/17 08:59	02/15/17 18:34	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/15/17 08:59	02/15/17 18:34	1
Carbazole	<3.7		3.7	0.26	ug/L		02/15/17 08:59	02/15/17 18:34	1
4-Chloroaniline	<7.3		7.3	1.5	ug/L		02/15/17 08:59	02/15/17 18:34	1
4-Chloro-3-methylphenol	<7.3		7.3	1.7	ug/L		02/15/17 08:59	02/15/17 18:34	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/15/17 08:59	02/15/17 18:34	1
2-Chlorophenol	<3.7	* J	3.7	0.41	ug/L		02/15/17 08:59	02/15/17 18:34	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		02/15/17 08:59	02/15/17 18:34	1
Chrysene	<0.15		0.15	0.050	ug/L		02/15/17 08:59	02/15/17 18:34	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		02/15/17 08:59	02/15/17 18:34	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		02/15/17 08:59	02/15/17 18:34	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		02/15/17 08:59	02/15/17 18:34	1
2,4-Dichlorophenol	<7.3	* J	7.3	1.9	ug/L		02/15/17 08:59	02/15/17 18:34	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		02/15/17 08:59	02/15/17 18:34	1
2,4-Dimethylphenol	<7.3		7.3	1.3	ug/L		02/15/17 08:59	02/15/17 18:34	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/15/17 08:59	02/15/17 18:34	1
Di-n-butyl phthalate	<3.7		3.7	0.54	ug/L		02/15/17 08:59	02/15/17 18:34	1
4,6-Dinitro-2-methylphenol	<15	* J	15	4.3	ug/L		02/15/17 08:59	02/15/17 18:34	1
2,4-Dinitrophenol	<15	* J	15	6.3	ug/L		02/15/17 08:59	02/15/17 18:34	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		02/15/17 08:59	02/15/17 18:34	1
2,6-Dinitrotoluene	<0.73		0.73	0.054	ug/L		02/15/17 08:59	02/15/17 18:34	1
Di-n-octyl phthalate	<7.3		7.3	0.77	ug/L		02/15/17 08:59	02/15/17 18:34	1
Fluoranthene	<0.73		0.73	0.33	ug/L		02/15/17 08:59	02/15/17 18:34	1
Fluorene	<0.73		0.73	0.18	ug/L		02/15/17 08:59	02/15/17 18:34	1
Hexachlorobenzene	<0.37		0.37	0.058	ug/L		02/15/17 08:59	02/15/17 18:34	1
Hexachlorobutadiene	<3.7	* J	3.7	0.38	ug/L		02/15/17 08:59	02/15/17 18:34	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		02/15/17 08:59	02/15/17 18:34	1
Hexachloroethane	<3.7	* J	3.7	0.44	ug/L		02/15/17 08:59	02/15/17 18:34	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		02/15/17 08:59	02/15/17 18:34	1
Isophorone	<1.5		1.5	0.28	ug/L		02/15/17 08:59	02/15/17 18:34	1
2-Methylnaphthalene	<1.5		1.5	0.048	ug/L		02/15/17 08:59	02/15/17 18:34	1

Client Sample ID: Dup-2-02142017

Date Collected: 02/14/17 00:00
Date Received: 02/14/17 16:40

Lab Sample ID: 500-123839-4

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.22	ug/L		02/15/17 08:59	02/15/17 18:34	1
3 & 4 Methylphenol	**0.33**	**J**	1.5	0.33	ug/L		02/15/17 08:59	02/15/17 18:34	1
Naphthalene	<0.73		0.73	0.23	ug/L		02/15/17 08:59	02/15/17 18:34	1
2-Nitroaniline	<3.7		3.7	0.94	ug/L		02/15/17 08:59	02/15/17 18:34	1
3-Nitroaniline	<7.3	* J	7.3	1.3	ug/L		02/15/17 08:59	02/15/17 18:34	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		02/15/17 08:59	02/15/17 18:34	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		02/15/17 08:59	02/15/17 18:34	1
2-Nitrophenol	<7.3	* J	7.3	1.8	ug/L		02/15/17 08:59	02/15/17 18:34	1
4-Nitrophenol	<15	* J	15	5.4	ug/L		02/15/17 08:59	02/15/17 18:34	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		02/15/17 08:59	02/15/17 18:34	1
N-Nitrosodiphenylamine	<0.73		0.73	0.27	ug/L		02/15/17 08:59	02/15/17 18:34	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/15/17 08:59	02/15/17 18:34	1
Pentachlorophenol	<15	* J	15	2.9	ug/L		02/15/17 08:59	02/15/17 18:34	1
Phenanthrene	<0.73		0.73	0.22	ug/L		02/15/17 08:59	02/15/17 18:34	1
Phenol	<3.7	* J	3.7	0.49	ug/L		02/15/17 08:59	02/15/17 18:34	1
Pyrene	<0.73		0.73	0.31	ug/L		02/15/17 08:59	02/15/17 18:34	1
2,4,5-Trichlorophenol	<7.3	* J	7.3	1.9	ug/L		02/15/17 08:59	02/15/17 18:34	1
2,4,6-Trichlorophenol	<3.7	* J	3.7	0.53	ug/L		02/15/17 08:59	02/15/17 18:34	1
Benzaldehyde	<29		29	11	ug/L		02/15/17 08:59	02/15/17 18:34	1
Caprolactam	<7.3		7.3	1.1	ug/L		02/15/17 08:59	02/15/17 18:34	1
Atrazine	<3.7		3.7	0.46	ug/L		02/15/17 08:59	02/15/17 18:34	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		02/15/17 08:59	02/15/17 18:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*54*		*30 - 123*	*02/15/17 08:59*	*02/15/17 18:34*	*1*
2-Fluorophenol (Surr)	*38*		*30 - 110*	*02/15/17 08:59*	*02/15/17 18:34*	*1*
Nitrobenzene-d5 (Surr)	*51*		*33 - 139*	*02/15/17 08:59*	*02/15/17 18:34*	*1*
Phenol-d5 (Surr)	*36*		*20 - 100*	*02/15/17 08:59*	*02/15/17 18:34*	*1*
Terphenyl-d14 (Surr)	*81*		*42 - 150*	*02/15/17 08:59*	*02/15/17 18:34*	*1*
2,4,6-Tribromophenol (Surr)	*85*		*30 - 150*	*02/15/17 08:59*	*02/15/17 18:34*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0048	ug/L		02/15/17 07:39	02/21/17 13:11	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		02/15/17 07:39	02/21/17 13:11	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		02/15/17 07:39	02/21/17 13:11	1
beta-BHC	<0.037		0.037	0.0093	ug/L		02/15/17 07:39	02/21/17 13:11	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 13:11	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		02/15/17 07:39	02/21/17 13:11	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		02/15/17 07:39	02/21/17 13:11	1
delta-BHC	<0.037		0.037	0.0094	ug/L		02/15/17 07:39	02/21/17 13:11	1
Dieldrin	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 13:11	1
Endosulfan I	<0.037		0.037	0.0037	ug/L		02/15/17 07:39	02/21/17 13:11	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		02/15/17 07:39	02/21/17 13:11	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		02/15/17 07:39	02/21/17 13:11	1
Endrin	<0.037		0.037	0.013	ug/L		02/15/17 07:39	02/21/17 13:11	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		02/15/17 07:39	02/21/17 13:11	1
Endrin ketone	<0.037		0.037	0.016	ug/L		02/15/17 07:39	02/21/17 13:11	1
gamma-BHC (Lindane)	<0.037		0.037	0.0051	ug/L		02/15/17 07:39	02/21/17 13:11	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		02/15/17 07:39	02/21/17 13:11	1

Client Sample ID: Dup-2-02142017

Lab Sample ID: 500-123839-4

Date Collected: 02/14/17 00:00

Matrix: Water

Date Received: 02/14/17 16:40

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.012	ug/L		02/15/17 07:39	02/21/17 13:11	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		02/15/17 07:39	02/21/17 13:11	1
Methoxychlor	<0.073		0.073	0.021	ug/L		02/15/17 07:39	02/21/17 13:11	1
Toxaphene	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/21/17 13:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*80*		*30 - 143*	*02/15/17 07:39*	*02/21/17 13:11*	*1*
Tetrachloro-m-xylene	*37*		*30 - 120*	*02/15/17 07:39*	*02/21/17 13:11*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.061	ug/L		02/15/17 07:39	02/16/17 10:36	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:36	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:36	1
PCB-1242	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:36	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:36	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/15/17 07:39	02/16/17 10:36	1
PCB-1260	<0.37		0.37	0.064	ug/L		02/15/17 07:39	02/16/17 10:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*47*		*30 - 127*	*02/15/17 07:39*	*02/16/17 10:36*	*1*
DCB Decachlorobiphenyl	*79*		*30 - 150*	*02/15/17 07:39*	*02/16/17 10:36*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 12:20	1
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 12:20	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:20	1
Barium	**0.68**	J	0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:20	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 12:20	1
Cadmium	**0.0011**	J	0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 12:20	1
Calcium	**120**	J	0.20	0.059	mg/L		02/15/17 08:20	02/20/17 12:20	1
Chromium	<0.010		0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 12:20	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 12:20	1
Copper	<0.010		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:20	1
Iron	**11**	J	0.20	0.10	mg/L		02/15/17 08:20	02/20/17 12:20	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 12:20	1
Magnesium	**92**	J	0.10	0.041	mg/L		02/15/17 08:20	02/20/17 12:20	1
Manganese	**0.19**	J	0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:20	1
Nickel	<0.010		0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 12:20	1
Potassium	**37**	J	0.50	0.16	mg/L		02/15/17 08:20	02/20/17 12:20	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 12:20	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 12:20	1
Sodium	**250**	J	1.0	0.43	mg/L		02/15/17 08:20	02/20/17 12:20	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:20	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 12:20	1
Zinc	**0.017**	J	0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 12:20	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/15/17 08:20	02/20/17 12:24	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123839-1

Client Sample ID: Dup-2-02142017

Date Collected: 02/14/17 00:00
Date Received: 02/14/17 16:40

Lab Sample ID: 500-123839-4

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		02/15/17 08:20	02/20/17 12:24	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:24	1
Barium	**0.65**		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:24	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/15/17 08:20	02/20/17 12:24	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/15/17 08:20	02/20/17 12:24	1
Calcium	**120**		0.20	0.059	mg/L		02/15/17 08:20	02/20/17 12:24	1
Chromium	<0.010		0.010	0.0024	mg/L		02/15/17 08:20	02/20/17 12:24	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/15/17 08:20	02/20/17 12:24	1
Copper	<0.010		0.010	0.0022	mg/L		02/15/17 08:20	02/20/17 12:24	1
Iron	**11**		0.20	0.10	mg/L		02/15/17 08:20	02/20/17 12:24	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/15/17 08:20	02/20/17 12:24	1
Magnesium	**88**		0.10	0.041	mg/L		02/15/17 08:20	02/20/17 12:24	1
Manganese	**0.18**		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:24	1
Nickel	<0.010		0.010	0.0037	mg/L		02/15/17 08:20	02/20/17 12:24	1
Potassium	**35**		0.50	0.16	mg/L		02/15/17 08:20	02/20/17 12:24	1
Selenium	<0.010		0.010	0.0051	mg/L		02/15/17 08:20	02/20/17 12:24	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/15/17 08:20	02/20/17 12:24	1
Sodium	**240**		1.0	0.43	mg/L		02/15/17 08:20	02/20/17 12:24	1
Thallium	<0.010		0.010	0.0034	mg/L		02/15/17 08:20	02/20/17 12:24	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/15/17 08:20	02/20/17 12:24	1
Zinc	<0.020		0.020	0.0090	mg/L		02/15/17 08:20	02/20/17 12:24	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:55	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/15/17 13:00	02/16/17 08:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 05:31	1
Sulfate	5.0 **1.7**	~~J B~~ UB	5.0	1.5	mg/L			02/20/17 09:22	1
Total Organic Carbon - Duplicates	**15**		1.0	0.27	mg/L			02/16/17 23:01	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:18	1
Total Suspended Solids	**26**		5.0	2.5	mg/L			02/15/17 11:27	1
Ammonia	**37**		2.0	1.0	mg/L		02/14/17 21:30	02/15/17 01:07	10
Nitrogen, Nitrite	<0.020	J	0.020	0.0088	mg/L			02/15/17 14:20	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/17/17 21:40	1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
*	RPD of the LCS and LCSD exceeds the control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21740 500-123839-2

Lab ID: **217400001** Date Received: 2/16/2017 14:15 Matrix: Water

Sample ID: **MW-10-GW-02142017** Date Collected: 2/14/2017 08:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**32**	ug/l	0.50	0.027	1	2/24/2017 12:53	MM	n
Carbon Dioxide	**46**	mg/l	5.0	0.24	1	2/24/2017 12:53	MM	n
Oxygen	**3.8**	mg/l	0.50	0.13	1	2/24/2017 12:53	MM	n
Nitrogen	**24**	mg/l	2.0	0.24	1	2/24/2017 12:53	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21740 500-123839-2

Lab ID: **217400002** Date Received: 2/16/2017 14:15 Matrix: Water

Sample ID: **MW-09-GW-02142017** Date Collected: 2/14/2017 09:40

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**13000**	ug/l	0.50	0.027	1	2/24/2017 13:08	MM	n
Carbon Dioxide	**450**	mg/l	5.0	0.24	1	2/24/2017 13:08	MM	n
Oxygen	**1.8**	mg/l	0.50	0.13	1	2/24/2017 13:08	MM	n
Nitrogen	**9.4**	mg/l	2.0	0.24	1	2/24/2017 13:08	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21740 500-123839-2

Lab ID: **217400003** Date Received: 2/16/2017 14:15 Matrix: Water

Sample ID: **MW-08-GW-02142017** Date Collected: 2/14/2017 11:30

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**15000**	ug/l	0.50	0.027	1	2/24/2017 13:22	MM	n
Carbon Dioxide	**220**	mg/l	5.0	0.24	1	2/24/2017 13:22	MM	n
Oxygen	**2.5**	mg/l	0.50	0.13	1	2/24/2017 13:22	MM	n
Nitrogen	**8.8**	mg/l	2.0	0.24	1	2/24/2017 13:22	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21740 500-123839-2

Lab ID: **217400004** Date Received: 2/16/2017 14:15 Matrix: Water

Sample ID: **DUP-2-02142017** Date Collected: 2/14/2017 00:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**15000**	ug/l	0.50	0.027	1	2/24/2017 13:35	MM	n
Carbon Dioxide	**230**	mg/l	5.0	0.24	1	2/24/2017 13:35	MM	n
Oxygen	**2.9**	mg/l	0.50	0.13	1	2/24/2017 13:35	MM	n
Nitrogen	**10**	mg/l	2.0	0.24	1	2/24/2017 13:35	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 21740 500-123839-2

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS

This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

(optional)
Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 200 S. Michigan Ave
Address: Ste 2000
Phone: 312-575-3700
Fax: \
E-Mail: Jack.Kratzmeyer@arcadis.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-123839
Chain of Custody Number:
Page ____ of ____
Temperature °C of Cooler: 48, 0.5

Client: Arcadis
Client Project #: CI001805.0002.0005
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thurnhoffer
Lab PM: Therese Hargraves

Preservative Key: 500-123839 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOCs, PCBs, Pesticides (8)	Total metals (3)	Dissolved metals (3)	Ammonia, NO3/NO2 (6)	Sulfide (5)	TOC (2)	TSS, SO4, NO2 (8)	VOC (1)	Dissolved Gases (9)	Comments
1		MW-10-GW-02142017	2/14	0800	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Dissolved
2		MW-09-GW-02142017	2/14	0940	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Metals
3		MW-08-GW-02142017	2/14	1130	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	field filtered
4		Dup-2-02142017	2/14	—	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Ben Thurnhoffer	Arcadis	2-14-2017	1600	[signature]	TA 2/14/17	2/14/17	1600
[signature]	TA	2/14/17	1640	[signature]	TACHI	02/14/17	1640

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

2/27/2017
TAL-4124-500 (1209)

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-07-GW-02142017

Date Collected: 02/14/17 15:25
Date Received: 02/15/17 16:47

Lab Sample ID: 500-123929-1

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**27**		5.0	1.7	ug/L			02/21/17 01:55	1
Benzene	**14**		0.50	0.15	ug/L			02/21/17 01:55	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/21/17 01:55	1
Bromoform	<1.0		1.0	0.48	ug/L			02/21/17 01:55	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/21/17 01:55	1
Carbon disulfide	<2.0	J	2.0	0.45	ug/L			02/21/17 01:55	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/21/17 01:55	1
Chlorobenzene	**0.86**	**J**	1.0	0.39	ug/L			02/21/17 01:55	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/21/17 01:55	1
Chloroform	<2.0		2.0	0.37	ug/L			02/21/17 01:55	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/21/17 01:55	1
cis-1,2-Dichloroethene	**4.1**		1.0	0.41	ug/L			02/21/17 01:55	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/21/17 01:55	1
Cyclohexane	**0.55**	**J**	1.0	0.49	ug/L			02/21/17 01:55	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/21/17 01:55	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/21/17 01:55	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/21/17 01:55	1
1,2-Dichlorobenzene	**5.9**		1.0	0.33	ug/L			02/21/17 01:55	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/21/17 01:55	1
1,4-Dichlorobenzene	**14**		1.0	0.36	ug/L			02/21/17 01:55	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/21/17 01:55	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/21/17 01:55	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/21/17 01:55	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/21/17 01:55	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/21/17 01:55	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/21/17 01:55	1
Isopropylbenzene	**11**		1.0	0.39	ug/L			02/21/17 01:55	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/21/17 01:55	1
Methylcyclohexane	**0.98**	**J**	1.0	0.32	ug/L			02/21/17 01:55	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/21/17 01:55	1
Methyl Ethyl Ketone	**8.1**		5.0	2.1	ug/L			02/21/17 01:55	1
methyl isobutyl ketone	**45**		5.0	2.2	ug/L			02/21/17 01:55	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/21/17 01:55	1
Styrene	<1.0		1.0	0.39	ug/L			02/21/17 01:55	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/21/17 01:55	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/21/17 01:55	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/21/17 01:55	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/21/17 01:55	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/21/17 01:55	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/21/17 01:55	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/21/17 01:55	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/21/17 01:55	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/21/17 01:55	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/21/17 01:55	1
Vinyl chloride	**8.4**		0.50	0.20	ug/L			02/21/17 01:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*		*02/21/17 01:55*	*1*
Dibromofluoromethane	*96*		*70 - 120*		*02/21/17 01:55*	*1*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-07-GW-02142017

Date Collected: 02/14/17 15:25
Date Received: 02/15/17 16:47

Lab Sample ID: 500-123929-1

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*110*		*71 - 127*		*02/21/17 01:55*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*02/21/17 01:55*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	**180**		5.0	1.8	ug/L			02/21/17 02:20	10
Toluene	**380**		5.0	1.5	ug/L			02/21/17 02:20	10
Xylenes, Total	**910**		10	2.2	ug/L			02/21/17 02:20	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*71 - 120*		*02/21/17 02:20*	*10*
Dibromofluoromethane	*98*		*70 - 120*		*02/21/17 02:20*	*10*
1,2-Dichloroethane-d4 (Surr)	*112*		*71 - 127*		*02/21/17 02:20*	*10*
Toluene-d8 (Surr)	*95*		*75 - 120*		*02/21/17 02:20*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**4.3**		0.73	0.22	ug/L		02/20/17 07:25	02/21/17 23:26	1
Acenaphthylene	<0.73		0.73	0.19	ug/L		02/20/17 07:25	02/21/17 23:26	1
Acetophenone	<3.6		3.6	0.48	ug/L		02/20/17 07:25	02/21/17 23:26	1
Anthracene	**2.6**		0.73	0.24	ug/L		02/20/17 07:25	02/21/17 23:26	1
Benzo[a]anthracene	**1.5**		0.15	0.041	ug/L		02/20/17 07:25	02/21/17 23:26	1
Benzo[a]pyrene R	~~<0.15~~	~~*~~	~~0.15~~	~~0.072~~	~~ug/L~~		~~02/20/17 07:25~~	~~02/21/17 23:26~~	1
Benzo[b]fluoranthene	**1.3**	~~*~~ J	0.15	0.059	ug/L		02/20/17 07:25	02/21/17 23:26	1
Benzo[g,h,i]perylene R	~~<0.73~~	~~*~~	~~0.73~~	~~0.27~~	~~ug/L~~		~~02/20/17 07:25~~	~~02/21/17 23:26~~	1
Benzo[k]fluoranthene	**0.56**	~~*~~ J	0.15	0.046	ug/L		02/20/17 07:25	02/21/17 23:26	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/21/17 23:26	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/21/17 23:26	1
4-Bromophenyl phenyl ether	<3.6		3.6	0.39	ug/L		02/20/17 07:25	02/21/17 23:26	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/20/17 07:25	02/21/17 23:26	1
Carbazole	<3.6	~~*~~ J	3.6	0.26	ug/L		02/20/17 07:25	02/21/17 23:26	1
4-Chloroaniline	<7.3		7.3	1.5	ug/L		02/20/17 07:25	02/21/17 23:26	1
4-Chloro-3-methylphenol	**41**		7.3	1.7	ug/L		02/20/17 07:25	02/21/17 23:26	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/20/17 07:25	02/21/17 23:26	1
2-Chlorophenol	<3.6		3.6	0.41	ug/L		02/20/17 07:25	02/21/17 23:26	1
4-Chlorophenyl phenyl ether	<3.6		3.6	0.46	ug/L		02/20/17 07:25	02/21/17 23:26	1
Chrysene	**1.6**		0.15	0.049	ug/L		02/20/17 07:25	02/21/17 23:26	1
Dibenz(a,h)anthracene R	~~<0.22~~	~~*~~	~~0.22~~	~~0.037~~	~~ug/L~~		~~02/20/17 07:25~~	~~02/21/17 23:26~~	~~1~~
Dibenzofuran	<1.5		1.5	0.19	ug/L		02/20/17 07:25	02/21/17 23:26	1
3,3'-Dichlorobenzidine	<3.6		3.6	1.2	ug/L		02/20/17 07:25	02/21/17 23:26	1
2,4-Dichlorophenol	<7.3		7.3	1.9	ug/L		02/20/17 07:25	02/21/17 23:26	1
Diethyl phthalate	<1.5		1.5	0.26	ug/L		02/20/17 07:25	02/21/17 23:26	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/20/17 07:25	02/21/17 23:26	1
Di-n-butyl phthalate	<3.6		3.6	0.53	ug/L		02/20/17 07:25	02/21/17 23:26	1
4,6-Dinitro-2-methylphenol	<15		15	4.3	ug/L		02/20/17 07:25	02/21/17 23:26	1
2,4-Dinitrophenol	<15		15	6.2	ug/L		02/20/17 07:25	02/21/17 23:26	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		02/20/17 07:25	02/21/17 23:26	1
2,6-Dinitrotoluene	<0.73		0.73	0.054	ug/L		02/20/17 07:25	02/21/17 23:26	1
Di-n-octyl phthalate	<7.3		7.3	0.76	ug/L		02/20/17 07:25	02/21/17 23:26	1
Fluoranthene	<0.73		0.73	0.33	ug/L		02/20/17 07:25	02/21/17 23:26	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-07-GW-02142017

Date Collected: 02/14/17 15:25
Date Received: 02/15/17 16:47

Lab Sample ID: 500-123929-1

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluorene	**3.1**		0.73	0.18	ug/L		02/20/17 07:25	02/21/17 23:26	1
Hexachlorobenzene	<0.36		0.36	0.058	ug/L		02/20/17 07:25	02/21/17 23:26	1
Hexachlorobutadiene	<3.6		3.6	0.37	ug/L		02/20/17 07:25	02/21/17 23:26	1
Hexachlorocyclopentadiene	<15	J	15	4.6	ug/L		02/20/17 07:25	02/21/17 23:26	1
Hexachloroethane	<3.6		3.6	0.43	ug/L		02/20/17 07:25	02/21/17 23:26	1
Indeno[1,2,3-cd]pyrene R	~~<0.15~~	~~*~~	~~0.15~~	~~0.054~~	~~ug/L~~		~~02/20/17 07:25~~	~~02/21/17 23:26~~	1
Isophorone	<1.5		1.5	0.27	ug/L		02/20/17 07:25	02/21/17 23:26	1
2-Methylnaphthalene	**5.0**		1.5	0.047	ug/L		02/20/17 07:25	02/21/17 23:26	1
2-Methylphenol	**49**		1.5	0.22	ug/L		02/20/17 07:25	02/21/17 23:26	1
3 & 4 Methylphenol	**9.5**		1.5	0.33	ug/L		02/20/17 07:25	02/21/17 23:26	1
Naphthalene	**33**		0.73	0.22	ug/L		02/20/17 07:25	02/21/17 23:26	1
2-Nitroaniline	<3.6		3.6	0.94	ug/L		02/20/17 07:25	02/21/17 23:26	1
3-Nitroaniline	<7.3		7.3	1.3	ug/L		02/20/17 07:25	02/21/17 23:26	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		02/20/17 07:25	02/21/17 23:26	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		02/20/17 07:25	02/21/17 23:26	1
2-Nitrophenol	<7.3		7.3	1.8	ug/L		02/20/17 07:25	02/21/17 23:26	1
4-Nitrophenol	<15		15	5.4	ug/L		02/20/17 07:25	02/21/17 23:26	1
N-Nitrosodi-n-propylamine	<0.36		0.36	0.11	ug/L		02/20/17 07:25	02/21/17 23:26	1
N-Nitrosodiphenylamine	<0.73		0.73	0.27	ug/L		02/20/17 07:25	02/21/17 23:26	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/21/17 23:26	1
Pentachlorophenol	<15		15	2.9	ug/L		02/20/17 07:25	02/21/17 23:26	1
Phenanthrene	**10**		0.73	0.22	ug/L		02/20/17 07:25	02/21/17 23:26	1
Phenol	<3.6		3.6	0.49	ug/L		02/20/17 07:25	02/21/17 23:26	1
Pyrene	**10**		0.73	0.31	ug/L		02/20/17 07:25	02/21/17 23:26	1
2,4,5-Trichlorophenol	<7.3		7.3	1.9	ug/L		02/20/17 07:25	02/21/17 23:26	1
2,4,6-Trichlorophenol	<3.6		3.6	0.52	ug/L		02/20/17 07:25	02/21/17 23:26	1
Benzaldehyde	**40**	~~*~~ J	29	11	ug/L		02/20/17 07:25	02/21/17 23:26	1
Caprolactam	<7.3		7.3	1.1	ug/L		02/20/17 07:25	02/21/17 23:26	1
Atrazine	<3.6		3.6	0.45	ug/L		02/20/17 07:25	02/21/17 23:26	1
1,1'-Biphenyl	**2.2**	**J**	3.6	0.26	ug/L		02/20/17 07:25	02/21/17 23:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*66*		*30 - 123*	*02/20/17 07:25*	*02/21/17 23:26*	*1*
2-Fluorophenol (Surr)	*61*		*30 - 110*	*02/20/17 07:25*	*02/21/17 23:26*	*1*
Nitrobenzene-d5 (Surr)	*43*		*33 - 139*	*02/20/17 07:25*	*02/21/17 23:26*	*1*
Phenol-d5 (Surr)	*73*		*20 - 100*	*02/20/17 07:25*	*02/21/17 23:26*	*1*
Terphenyl-d14 (Surr)	*131*		*42 - 150*	*02/20/17 07:25*	*02/21/17 23:26*	*1*
2,4,6-Tribromophenol (Surr)	*119*		*30 - 150*	*02/20/17 07:25*	*02/21/17 23:26*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	**170**	D	73	12	ug/L		02/20/17 07:25	02/22/17 18:29	10
2,4-Dimethylphenol	**340**	D	73	13	ug/L		02/20/17 07:25	02/22/17 18:29	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*42*		*30 - 123*	*02/20/17 07:25*	*02/22/17 18:29*	*10*
2-Fluorophenol (Surr)	*81*		*30 - 110*	*02/20/17 07:25*	*02/22/17 18:29*	*10*
Nitrobenzene-d5 (Surr)	*59*		*33 - 139*	*02/20/17 07:25*	*02/22/17 18:29*	*10*
Phenol-d5 (Surr)	*88*		*20 - 100*	*02/20/17 07:25*	*02/22/17 18:29*	*10*
Terphenyl-d14 (Surr)	*79*		*42 - 150*	*02/20/17 07:25*	*02/22/17 18:29*	*10*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-07-GW-02142017

Date Collected: 02/14/17 15:25
Date Received: 02/15/17 16:47

Lab Sample ID: 500-123929-1
Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol (Surr)	*61*		*30 - 150*	*02/20/17 07:25*	*02/22/17 18:29*	*10*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.18		0.18	0.024	ug/L		02/16/17 09:00	02/21/17 16:04	5
alpha-BHC	<0.18		0.18	0.012	ug/L		02/16/17 09:00	02/21/17 16:04	5
alpha-Chlordane	<0.18		0.18	0.020	ug/L		02/16/17 09:00	02/21/17 16:04	5
beta-BHC	<0.18		0.18	0.047	ug/L		02/16/17 09:00	02/21/17 16:04	5
4,4'-DDD	<0.18		0.18	0.061	ug/L		02/16/17 09:00	02/21/17 16:04	5
4,4'-DDE	<0.18		0.18	0.017	ug/L		02/16/17 09:00	02/21/17 16:04	5
4,4'-DDT	<0.18		0.18	0.015	ug/L		02/16/17 09:00	02/21/17 16:04	5
delta-BHC	<0.18		0.18	0.047	ug/L		02/16/17 09:00	02/21/17 16:04	5
Dieldrin	<0.18		0.18	0.059	ug/L		02/16/17 09:00	02/21/17 16:04	5
Endosulfan I	<0.18		0.18	0.019	ug/L		02/16/17 09:00	02/21/17 16:04	5
Endosulfan II	<0.18		0.18	0.013	ug/L		02/16/17 09:00	02/21/17 16:04	5
Endosulfan sulfate	<0.18		0.18	0.054	ug/L		02/16/17 09:00	02/21/17 16:04	5
Endrin	<0.18		0.18	0.065	ug/L		02/16/17 09:00	02/21/17 16:04	5
Endrin aldehyde	<0.18		0.18	0.038	ug/L		02/16/17 09:00	02/21/17 16:04	5
Endrin ketone	<0.18		0.18	0.078	ug/L		02/16/17 09:00	02/21/17 16:04	5
gamma-BHC (Lindane)	<0.18		0.18	0.026	ug/L		02/16/17 09:00	02/21/17 16:04	5
gamma-Chlordane	<0.18		0.18	0.033	ug/L		02/16/17 09:00	02/21/17 16:04	5
Heptachlor	<0.18		0.18	0.062	ug/L		02/16/17 09:00	02/21/17 16:04	5
Heptachlor epoxide	<0.18		0.18	0.063	ug/L		02/16/17 09:00	02/21/17 16:04	5
Methoxychlor	<0.37		0.37	0.11	ug/L		02/16/17 09:00	02/21/17 16:04	5
Toxaphene	<1.8		1.8	0.92	ug/L		02/16/17 09:00	02/21/17 16:04	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*7*	*X*	*30 - 143*	*02/16/17 09:00*	*02/21/17 16:04*	*5*
Tetrachloro-m-xylene	*16*	*X*	*30 - 120*	*02/16/17 09:00*	*02/21/17 16:04*	*5*

Method: 8081B - Organochlorine Pesticides (GC) - RE

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.18	H J	0.18	0.025	ug/L		02/22/17 17:59	02/23/17 13:12	5
alpha-BHC	<0.18	H	0.18	0.012	ug/L		02/22/17 17:59	02/23/17 13:12	5
alpha-Chlordane	<0.18	H	0.18	0.020	ug/L		02/22/17 17:59	02/23/17 13:12	5
beta-BHC	<0.18	H	0.18	0.047	ug/L		02/22/17 17:59	02/23/17 13:12	5
4,4'-DDD	<0.18	H	0.18	0.061	ug/L		02/22/17 17:59	02/23/17 13:12	5
4,4'-DDE	<0.18	H	0.18	0.018	ug/L		02/22/17 17:59	02/23/17 13:12	5
4,4'-DDT	<0.18	H	0.18	0.015	ug/L		02/22/17 17:59	02/23/17 13:12	5
delta-BHC	<0.18	H	0.18	0.048	ug/L		02/22/17 17:59	02/23/17 13:12	5
Dieldrin	<0.18	H	0.18	0.060	ug/L		02/22/17 17:59	02/23/17 13:12	5
Endosulfan I	<0.18	H	0.18	0.019	ug/L		02/22/17 17:59	02/23/17 13:12	5
Endosulfan II	<0.18	H	0.18	0.013	ug/L		02/22/17 17:59	02/23/17 13:12	5
Endosulfan sulfate	<0.18	H	0.18	0.054	ug/L		02/22/17 17:59	02/23/17 13:12	5
Endrin	<0.18	H	0.18	0.066	ug/L		02/22/17 17:59	02/23/17 13:12	5
Endrin aldehyde	<0.18	H	0.18	0.038	ug/L		02/22/17 17:59	02/23/17 13:12	5
Endrin ketone	<0.18	H	0.18	0.079	ug/L		02/22/17 17:59	02/23/17 13:12	5
gamma-BHC (Lindane)	<0.18	H	0.18	0.026	ug/L		02/22/17 17:59	02/23/17 13:12	5
gamma-Chlordane	<0.18	H	0.18	0.033	ug/L		02/22/17 17:59	02/23/17 13:12	5
Heptachlor	<0.18	H	0.18	0.062	ug/L		02/22/17 17:59	02/23/17 13:12	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-07-GW-02142017

Date Collected: 02/14/17 15:25
Date Received: 02/15/17 16:47

Lab Sample ID: 500-123929-1

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) - RE (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor epoxide	<0.18	~~H~~ J	0.18	0.064	ug/L		02/22/17 17:59	02/23/17 13:12	5
Methoxychlor	<0.37	~~H~~	0.37	0.11	ug/L		02/22/17 17:59	02/23/17 13:12	5
Toxaphene	<1.8	~~H~~	1.8	0.92	ug/L		02/22/17 17:59	02/23/17 13:12	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*10*	*X*	*30 - 143*	*02/22/17 17:59*	*02/23/17 13:12*	*5*
Tetrachloro-m-xylene	*34*		*30 - 120*	*02/22/17 17:59*	*02/23/17 13:12*	*5*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37	J	0.37	0.062	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1016	<0.37		0.37	0.062	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1242	**2.3**		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1242	**3.1**		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1254	**1.6**		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1254	**2.7**		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1260	<0.37		0.37	0.064	ug/L		02/16/17 09:00	02/24/17 12:55	1
PCB-1260	<0.37	~~X~~	0.37	0.064	ug/L		02/16/17 09:00	02/24/17 12:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*15*	*X*	*30 - 127*	*02/16/17 09:00*	*02/24/17 12:55*	*1*
Tetrachloro-m-xylene	*19*	*X*	*30 - 127*	*02/16/17 09:00*	*02/24/17 12:55*	*1*
DCB Decachlorobiphenyl	*10*	*X*	*30 - 150*	*02/16/17 09:00*	*02/24/17 12:55*	*1*
DCB Decachlorobiphenyl	*14*	*X*	*30 - 150*	*02/16/17 09:00*	*02/24/17 12:55*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**1.3**		0.20	0.062	mg/L		02/16/17 07:48	02/20/17 19:04	1
Antimony	**0.013**	**J**	0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 19:04	1
Arsenic	**0.039**		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:04	1
Barium	**0.51**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:04	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 19:04	1
Cadmium	**0.0052**		0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 19:04	1
Calcium	**9.6**		0.20	0.059	mg/L		02/16/17 07:48	02/20/17 19:04	1
Chromium	**0.36**		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 19:04	1
Cobalt	**0.039**		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 19:04	1
Copper	**0.057**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:04	1
Iron	**3.9**		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 19:04	1
Lead	**0.50**		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 19:04	1
Magnesium	**25**		0.10	0.041	mg/L		02/16/17 07:48	02/20/17 19:04	1
Manganese	**0.015**		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:04	1
Nickel	**0.14**		0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 19:04	1
Potassium	**570**		0.50	0.16	mg/L		02/16/17 07:48	02/20/17 19:04	1
Selenium	**0.0093**	**J**	0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 19:04	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-07-GW-02142017

Date Collected: 02/14/17 15:25
Date Received: 02/15/17 16:47

Lab Sample ID: 500-123929-1

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 19:04	1
Sodium	**3500**		10	4.3	mg/L		02/16/17 07:48	02/21/17 13:03	10
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:04	1
Vanadium	**0.055**		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 19:04	1
Zinc	**0.67**		0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 19:04	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.77**		0.20	0.062	mg/L		02/16/17 07:48	02/20/17 19:08	1
Antimony	**0.0085**	J	0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 19:08	1
Arsenic	**0.032**		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:08	1
Barium	**0.46**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:08	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 19:08	1
Cadmium	**0.0027**		0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 19:08	1
Calcium	**9.1**	J	0.20	0.059	mg/L		02/16/17 07:48	02/20/17 19:08	1
Chromium	**0.33**		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 19:08	1
Cobalt	**0.038**		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 19:08	1
Copper	**0.026**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:08	1
Iron	**3.4**		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 19:08	1
Lead	**0.18**		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 19:08	1
Magnesium	**25**	J	0.10	0.041	mg/L		02/16/17 07:48	02/20/17 19:08	1
Manganese	**0.013**	J	0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:08	1
Nickel	**0.13**		0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 19:08	1
Potassium	**570**	J	0.50	0.16	mg/L		02/16/17 07:48	02/20/17 19:08	1
Selenium	**0.0070**	J	0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 19:08	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 19:08	1
Sodium	**3600**	J	10	4.3	mg/L		02/16/17 07:48	02/21/17 13:08	10
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:08	1
Vanadium	**0.048**		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 19:08	1
Zinc	**0.32**		0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 19:08	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00086**		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 09:23	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	**0.00036**		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 09:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**8.0**		1.0	0.18	mg/L			02/21/17 07:26	1
Sulfate	<50		50	15	mg/L			02/20/17 09:17	10
Total Organic Carbon - Duplicates	**540**	~~B~~	40	11	mg/L			02/20/17 00:59	40
Nitrogen, Nitrate	**0.059**	J	0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**13**		5.0	2.5	mg/L			02/16/17 10:19	1
Ammonia	**740**		40	20	mg/L		02/16/17 18:50	02/16/17 23:54	10
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/16/17 10:28	1
Nitrogen, Nitrate Nitrite	**0.059**	J	0.10	0.035	mg/L			02/17/17 21:48	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-06-GW-02152017

Lab Sample ID: 500-123929-2

Date Collected: 02/15/17 08:00
Matrix: Water
Date Received: 02/15/17 16:47

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**43**		5.0	1.7	ug/L			02/21/17 02:45	1
Benzene	**6.6**		0.50	0.15	ug/L			02/21/17 02:45	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/21/17 02:45	1
Bromoform	<1.0		1.0	0.48	ug/L			02/21/17 02:45	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/21/17 02:45	1
Carbon disulfide	**1.6**	**J**	2.0	0.45	ug/L			02/21/17 02:45	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/21/17 02:45	1
Chlorobenzene	**0.62**	**J**	1.0	0.39	ug/L			02/21/17 02:45	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/21/17 02:45	1
Chloroform	<2.0		2.0	0.37	ug/L			02/21/17 02:45	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/21/17 02:45	1
cis-1,2-Dichloroethene	**3.6**		1.0	0.41	ug/L			02/21/17 02:45	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/21/17 02:45	1
Cyclohexane	<1.0		1.0	0.49	ug/L			02/21/17 02:45	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/21/17 02:45	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/21/17 02:45	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/21/17 02:45	1
1,2-Dichlorobenzene	**2.3**		1.0	0.33	ug/L			02/21/17 02:45	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/21/17 02:45	1
1,4-Dichlorobenzene	**13**		1.0	0.36	ug/L			02/21/17 02:45	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/21/17 02:45	1
1,1-Dichloroethane	**0.45**	**J**	1.0	0.41	ug/L			02/21/17 02:45	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/21/17 02:45	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/21/17 02:45	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/21/17 02:45	1
Ethylbenzene	**55**		0.50	0.18	ug/L			02/21/17 02:45	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/21/17 02:45	1
Isopropylbenzene	**4.0**		1.0	0.39	ug/L			02/21/17 02:45	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/21/17 02:45	1
Methylcyclohexane	**0.76**	**J**	1.0	0.32	ug/L			02/21/17 02:45	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/21/17 02:45	1
Methyl Ethyl Ketone	**14**		5.0	2.1	ug/L			02/21/17 02:45	1
methyl isobutyl ketone	**25**		5.0	2.2	ug/L			02/21/17 02:45	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/21/17 02:45	1
Styrene	<1.0		1.0	0.39	ug/L			02/21/17 02:45	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/21/17 02:45	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/21/17 02:45	1
Toluene	**130**		0.50	0.15	ug/L			02/21/17 02:45	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/21/17 02:45	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/21/17 02:45	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/21/17 02:45	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/21/17 02:45	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/21/17 02:45	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/21/17 02:45	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/21/17 02:45	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/21/17 02:45	1
Vinyl chloride	**3.4**		0.50	0.20	ug/L			02/21/17 02:45	1
Xylenes, Total	**230**		1.0	0.22	ug/L			02/21/17 02:45	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-06-GW-02152017

Date Collected: 02/15/17 08:00
Date Received: 02/15/17 16:47

Lab Sample ID: 500-123929-2

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*		*02/21/17 02:45*	*1*
Dibromofluoromethane	*100*		*70 - 120*		*02/21/17 02:45*	*1*
1,2-Dichloroethane-d4 (Surr)	*113*		*71 - 127*		*02/21/17 02:45*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*02/21/17 02:45*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.50**	**J**	0.73	0.23	ug/L		02/20/17 07:25	02/21/17 23:55	1
Acenaphthylene	<0.73		0.73	0.20	ug/L		02/20/17 07:25	02/21/17 23:55	1
Acetophenone	<3.7		3.7	0.49	ug/L		02/20/17 07:25	02/21/17 23:55	1
Anthracene	**0.30**	**J**	0.73	0.24	ug/L		02/20/17 07:25	02/21/17 23:55	1
Benzo[a]anthracene	<0.15		0.15	0.041	ug/L		02/20/17 07:25	02/21/17 23:55	1
Benzo[a]pyrene R	~~<0.15~~	~~*~~	~~0.15~~	~~0.072~~	~~ug/L~~		~~02/20/17 07:25~~	~~02/21/17 23:55~~	~~1~~
Benzo[b]fluoranthene	~~<0.15~~	~~*~~	~~0.15~~	~~0.059~~	~~ug/L~~		~~02/20/17 07:25~~	~~02/21/17 23:55~~	~~1~~
Benzo[g,h,i]perylene R	~~<0.73~~	~~*~~	~~0.73~~	~~0.27~~	~~ug/L~~		~~02/20/17 07:25~~	~~02/21/17 23:55~~	~~1~~
Benzo[k]fluoranthene R R	~~<0.15~~	~~*~~	~~0.15~~	~~0.047~~	~~ug/L~~		~~02/20/17 07:25~~	~~02/21/17 23:55~~	~~1~~
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/21/17 23:55	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/21/17 23:55	1
Bis(2-ethylhexyl) phthalate	**41**		7.3	1.3	ug/L		02/20/17 07:25	02/21/17 23:55	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		02/20/17 07:25	02/21/17 23:55	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/20/17 07:25	02/21/17 23:55	1
Carbazole	<3.7	~~*~~ J	3.7	0.26	ug/L		02/20/17 07:25	02/21/17 23:55	1
4-Chloroaniline	<7.3		7.3	1.5	ug/L		02/20/17 07:25	02/21/17 23:55	1
4-Chloro-3-methylphenol	**12**		7.3	1.7	ug/L		02/20/17 07:25	02/21/17 23:55	1
2-Chloronaphthalene	**3.1**		1.5	0.17	ug/L		02/20/17 07:25	02/21/17 23:55	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		02/20/17 07:25	02/21/17 23:55	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		02/20/17 07:25	02/21/17 23:55	1
Chrysene	<0.15		0.15	0.050	ug/L		02/20/17 07:25	02/21/17 23:55	1
Dibenz(a,h)anthracene R	~~<0.22~~	~~*~~	~~0.22~~	~~0.037~~	~~ug/L~~		~~02/20/17 07:25~~	~~02/21/17 23:55~~	~~1~~
Dibenzofuran	<1.5		1.5	0.19	ug/L		02/20/17 07:25	02/21/17 23:55	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		02/20/17 07:25	02/21/17 23:55	1
2,4-Dichlorophenol	<7.3		7.3	1.9	ug/L		02/20/17 07:25	02/21/17 23:55	1
Diethyl phthalate	<1.5		1.5	0.26	ug/L		02/20/17 07:25	02/21/17 23:55	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/20/17 07:25	02/21/17 23:55	1
Di-n-butyl phthalate	**1.4**	**J**	3.7	0.53	ug/L		02/20/17 07:25	02/21/17 23:55	1
4,6-Dinitro-2-methylphenol	<15		15	4.3	ug/L		02/20/17 07:25	02/21/17 23:55	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		02/20/17 07:25	02/21/17 23:55	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		02/20/17 07:25	02/21/17 23:55	1
2,6-Dinitrotoluene	<0.73		0.73	0.054	ug/L		02/20/17 07:25	02/21/17 23:55	1
Di-n-octyl phthalate	<7.3		7.3	0.77	ug/L		02/20/17 07:25	02/21/17 23:55	1
Fluoranthene	**0.43**	**J**	0.73	0.33	ug/L		02/20/17 07:25	02/21/17 23:55	1
Fluorene	**0.39**	**J**	0.73	0.18	ug/L		02/20/17 07:25	02/21/17 23:55	1
Hexachlorobenzene	<0.37		0.37	0.058	ug/L		02/20/17 07:25	02/21/17 23:55	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		02/20/17 07:25	02/21/17 23:55	1
Hexachlorocyclopentadiene	<15	J	15	4.7	ug/L		02/20/17 07:25	02/21/17 23:55	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		02/20/17 07:25	02/21/17 23:55	1
Indeno[1,2,3-cd]pyrene R	~~<0.15~~	~~*~~	~~0.15~~	~~0.055~~	~~ug/L~~		~~02/20/17 07:25~~	~~02/21/17 23:55~~	~~1~~
Isophorone	<1.5		1.5	0.27	ug/L		02/20/17 07:25	02/21/17 23:55	1
2-Methylnaphthalene	**2.0**		1.5	0.048	ug/L		02/20/17 07:25	02/21/17 23:55	1
2-Methylphenol	**18**		1.5	0.22	ug/L		02/20/17 07:25	02/21/17 23:55	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-06-GW-02152017

Lab Sample ID: 500-123929-2

Date Collected: 02/15/17 08:00
Matrix: Water
Date Received: 02/15/17 16:47

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3 & 4 Methylphenol	**5.0**		1.5	0.33	ug/L		02/20/17 07:25	02/21/17 23:55	1
Naphthalene	**23**		0.73	0.23	ug/L		02/20/17 07:25	02/21/17 23:55	1
2-Nitroaniline	<3.7		3.7	0.94	ug/L		02/20/17 07:25	02/21/17 23:55	1
3-Nitroaniline	<7.3		7.3	1.3	ug/L		02/20/17 07:25	02/21/17 23:55	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		02/20/17 07:25	02/21/17 23:55	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		02/20/17 07:25	02/21/17 23:55	1
2-Nitrophenol	<7.3		7.3	1.8	ug/L		02/20/17 07:25	02/21/17 23:55	1
4-Nitrophenol	<15		15	5.4	ug/L		02/20/17 07:25	02/21/17 23:55	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		02/20/17 07:25	02/21/17 23:55	1
N-Nitrosodiphenylamine	<0.73		0.73	0.27	ug/L		02/20/17 07:25	02/21/17 23:55	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/21/17 23:55	1
Pentachlorophenol	<15		15	2.9	ug/L		02/20/17 07:25	02/21/17 23:55	1
Phenanthrene	**1.0**		0.73	0.22	ug/L		02/20/17 07:25	02/21/17 23:55	1
Phenol	<3.7		3.7	0.49	ug/L		02/20/17 07:25	02/21/17 23:55	1
Pyrene	**0.59**	**J**	0.73	0.31	ug/L		02/20/17 07:25	02/21/17 23:55	1
2,4,5-Trichlorophenol	<7.3		7.3	1.9	ug/L		02/20/17 07:25	02/21/17 23:55	1
2,4,6-Trichlorophenol	<3.7		3.7	0.52	ug/L		02/20/17 07:25	02/21/17 23:55	1
Benzaldehyde	**20**	**J**	29	11	ug/L		02/20/17 07:25	02/21/17 23:55	1
Caprolactam	<7.3		7.3	1.1	ug/L		02/20/17 07:25	02/21/17 23:55	1
Atrazine	<3.7		3.7	0.46	ug/L		02/20/17 07:25	02/21/17 23:55	1
1,1'-Biphenyl	**1.5**	**J**	3.7	0.27	ug/L		02/20/17 07:25	02/21/17 23:55	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*55*		*30 - 123*	*02/20/17 07:25*	*02/21/17 23:55*	*1*
2-Fluorophenol (Surr)	*64*		*30 - 110*	*02/20/17 07:25*	*02/21/17 23:55*	*1*
Nitrobenzene-d5 (Surr)	*32*	*X*	*33 - 139*	*02/20/17 07:25*	*02/21/17 23:55*	*1*
Phenol-d5 (Surr)	*69*		*20 - 100*	*02/20/17 07:25*	*02/21/17 23:55*	*1*
Terphenyl-d14 (Surr)	*100*		*42 - 150*	*02/20/17 07:25*	*02/21/17 23:55*	*1*
2,4,6-Tribromophenol (Surr)	*96*		*30 - 150*	*02/20/17 07:25*	*02/21/17 23:55*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-Dimethylphenol	**93**	D	37	6.6	ug/L		02/20/17 07:25	02/22/17 18:58	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*43*		*30 - 123*	*02/20/17 07:25*	*02/22/17 18:58*	*5*
2-Fluorophenol (Surr)	*68*		*30 - 110*	*02/20/17 07:25*	*02/22/17 18:58*	*5*
Nitrobenzene-d5 (Surr)	*47*		*33 - 139*	*02/20/17 07:25*	*02/22/17 18:58*	*5*
Phenol-d5 (Surr)	*74*		*20 - 100*	*02/20/17 07:25*	*02/22/17 18:58*	*5*
Terphenyl-d14 (Surr)	*92*		*42 - 150*	*02/20/17 07:25*	*02/22/17 18:58*	*5*
2,4,6-Tribromophenol (Surr)	*69*		*30 - 150*	*02/20/17 07:25*	*02/22/17 18:58*	*5*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		02/16/17 09:00	02/21/17 15:06	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		02/16/17 09:00	02/21/17 15:06	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		02/16/17 09:00	02/21/17 15:06	1
beta-BHC	<0.037		0.037	0.0094	ug/L		02/16/17 09:00	02/21/17 15:06	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:06	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		02/16/17 09:00	02/21/17 15:06	1

Client Sample ID: MW-06-GW-02152017

Lab Sample ID: 500-123929-2

Date Collected: 02/15/17 08:00

Matrix: Water

Date Received: 02/15/17 16:47

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDT	<0.037		0.037	0.0029	ug/L		02/16/17 09:00	02/21/17 15:06	1
delta-BHC	<0.037		0.037	0.0095	ug/L		02/16/17 09:00	02/21/17 15:06	1
Dieldrin	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:06	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		02/16/17 09:00	02/21/17 15:06	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		02/16/17 09:00	02/21/17 15:06	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		02/16/17 09:00	02/21/17 15:06	1
Endrin	<0.037		0.037	0.013	ug/L		02/16/17 09:00	02/21/17 15:06	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		02/16/17 09:00	02/21/17 15:06	1
Endrin ketone	<0.037		0.037	0.016	ug/L		02/16/17 09:00	02/21/17 15:06	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		02/16/17 09:00	02/21/17 15:06	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		02/16/17 09:00	02/21/17 15:06	1
Heptachlor	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:06	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		02/16/17 09:00	02/21/17 15:06	1
Methoxychlor	<0.074		0.074	0.021	ug/L		02/16/17 09:00	02/21/17 15:06	1
Toxaphene	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/21/17 15:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*26*	*X*	*30 - 143*	*02/16/17 09:00*	*02/21/17 15:06*	*1*
Tetrachloro-m-xylene	*58*		*30 - 120*	*02/16/17 09:00*	*02/21/17 15:06*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1016	<0.37		0.37	0.062	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1242	**2.1**		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1242	**2.6**		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1260	<0.37		0.37	0.064	ug/L		02/16/17 09:00	02/24/17 13:10	1
PCB-1260	<0.37	* J	0.37	0.064	ug/L		02/16/17 09:00	02/24/17 13:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*35*		*30 - 127*	*02/16/17 09:00*	*02/24/17 13:10*	*1*
Tetrachloro-m-xylene	*42*		*30 - 127*	*02/16/17 09:00*	*02/24/17 13:10*	*1*
DCB Decachlorobiphenyl	*18*	*X*	*30 - 150*	*02/16/17 09:00*	*02/24/17 13:10*	*1*
DCB Decachlorobiphenyl	*26*	*X*	*30 - 150*	*02/16/17 09:00*	*02/24/17 13:10*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.29**		0.20	0.062	mg/L		02/16/17 07:48	02/20/17 19:13	1
Antimony	<0.020		0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 19:13	1
Arsenic	**0.021**		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:13	1
Barium	**0.26**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:13	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 19:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-06-GW-02152017

Lab Sample ID: 500-123929-2
Date Collected: 02/15/17 08:00
Matrix: Water
Date Received: 02/15/17 16:47

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	0.0015	J	0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 19:13	1
Calcium	15		0.20	0.059	mg/L		02/16/17 07:48	02/20/17 19:13	1
Chromium	0.11		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 19:13	1
Cobalt	0.025		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 19:13	1
Copper	0.0096	J	0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:13	1
Iron	0.98		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 19:13	1
Lead	0.11		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 19:13	1
Magnesium	31		0.10	0.041	mg/L		02/16/17 07:48	02/20/17 19:13	1
Manganese	0.0079	J	0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:13	1
Nickel	0.10		0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 19:13	1
Potassium	520		0.50	0.16	mg/L		02/16/17 07:48	02/20/17 19:13	1
Selenium	0.0081	J	0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 19:13	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 19:13	1
Sodium	3300		10	4.3	mg/L		02/16/17 07:48	02/21/17 13:12	10
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:13	1
Vanadium	0.032		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 19:13	1
Zinc	0.11		0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 19:13	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	0.14	J	0.20	0.062	mg/L		02/16/17 07:48	02/20/17 19:18	1
Antimony	<0.020		0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 19:18	1
Arsenic	0.020		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:18	1
Barium	0.26		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:18	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 19:18	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 19:18	1
Calcium	15	J	0.20	0.059	mg/L		02/16/17 07:48	02/20/17 19:18	1
Chromium	0.10		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 19:18	1
Cobalt	0.025		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 19:18	1
Copper	<0.010		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:18	1
Iron	0.59		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 19:18	1
Lead	0.0080		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 19:18	1
Magnesium	31	J	0.10	0.041	mg/L		02/16/17 07:48	02/20/17 19:18	1
Manganese	0.0071	J	0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:18	1
Nickel	0.10		0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 19:18	1
Potassium	520	J	0.50	0.16	mg/L		02/16/17 07:48	02/20/17 19:18	1
Selenium	<0.010		0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 19:18	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 19:18	1
Sodium	3500	J	10	4.3	mg/L		02/16/17 07:48	02/21/17 13:17	10
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:18	1
Vanadium	0.029		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 19:18	1
Zinc	0.023		0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 19:18	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 09:26	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 09:27	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-06-GW-02152017

Lab Sample ID: 500-123929-2

Date Collected: 02/15/17 08:00

Matrix: Water

Date Received: 02/15/17 16:47

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**7.2**		1.0	0.18	mg/L			02/21/17 07:29	1
Sulfate	**21**	~~B~~ UB	10	2.9	mg/L			02/20/17 09:18	2
Total Organic Carbon - Duplicates	**310**	~~B~~	20	5.3	mg/L			02/20/17 01:16	20
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**4.0**	**J**	5.0	2.5	mg/L			02/16/17 10:20	1
Ammonia	**530**		40	20	mg/L		02/16/17 18:50	02/16/17 23:57	10
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/16/17 10:28	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/17/17 21:49	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-05-GW-02152017

Lab Sample ID: 500-123929-3

Date Collected: 02/15/17 09:40
Matrix: Water
Date Received: 02/15/17 16:47

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**8.5**		5.0	1.7	ug/L			02/21/17 03:10	1
Benzene	**0.24**	**J**	0.50	0.15	ug/L			02/21/17 03:10	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/21/17 03:10	1
Bromoform	<1.0		1.0	0.48	ug/L			02/21/17 03:10	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/21/17 03:10	1
Carbon disulfide	<2.0	J	2.0	0.45	ug/L			02/21/17 03:10	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/21/17 03:10	1
Chlorobenzene	**2.9**		1.0	0.39	ug/L			02/21/17 03:10	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/21/17 03:10	1
Chloroform	<2.0		2.0	0.37	ug/L			02/21/17 03:10	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/21/17 03:10	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/21/17 03:10	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/21/17 03:10	1
Cyclohexane	**2.2**		1.0	0.49	ug/L			02/21/17 03:10	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/21/17 03:10	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/21/17 03:10	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/21/17 03:10	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			02/21/17 03:10	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/21/17 03:10	1
1,4-Dichlorobenzene	**1.4**		1.0	0.36	ug/L			02/21/17 03:10	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/21/17 03:10	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/21/17 03:10	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/21/17 03:10	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/21/17 03:10	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/21/17 03:10	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			02/21/17 03:10	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/21/17 03:10	1
Isopropylbenzene	**36**		1.0	0.39	ug/L			02/21/17 03:10	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/21/17 03:10	1
Methylcyclohexane	**0.55**	**J**	1.0	0.32	ug/L			02/21/17 03:10	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/21/17 03:10	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			02/21/17 03:10	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/21/17 03:10	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/21/17 03:10	1
Styrene	<1.0		1.0	0.39	ug/L			02/21/17 03:10	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/21/17 03:10	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/21/17 03:10	1
Toluene	<0.50		0.50	0.15	ug/L			02/21/17 03:10	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/21/17 03:10	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/21/17 03:10	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/21/17 03:10	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/21/17 03:10	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/21/17 03:10	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/21/17 03:10	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/21/17 03:10	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/21/17 03:10	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/21/17 03:10	1
Xylenes, Total	**0.90**	**J**	1.0	0.22	ug/L			02/21/17 03:10	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-05-GW-02152017

Lab Sample ID: 500-123929-3

Date Collected: 02/15/17 09:40
Matrix: Water
Date Received: 02/15/17 16:47

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*103*		*71 - 120*		*02/21/17 03:10*	*1*
Dibromofluoromethane	*97*		*70 - 120*		*02/21/17 03:10*	*1*
1,2-Dichloroethane-d4 (Surr)	*112*		*71 - 127*		*02/21/17 03:10*	*1*
Toluene-d8 (Surr)	*96*		*75 - 120*		*02/21/17 03:10*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.32**	**J**	0.75	0.23	ug/L		02/20/17 07:25	02/22/17 00:24	1
Acenaphthylene	<0.75		0.75	0.20	ug/L		02/20/17 07:25	02/22/17 00:24	1
Acetophenone	<3.8		3.8	0.50	ug/L		02/20/17 07:25	02/22/17 00:24	1
Anthracene	<0.75		0.75	0.25	ug/L		02/20/17 07:25	02/22/17 00:24	1
Benzo[a]anthracene	<0.15		0.15	0.043	ug/L		02/20/17 07:25	02/22/17 00:24	1
Benzo[a]pyrene	<0.15		0.15	0.074	ug/L		02/20/17 07:25	02/22/17 00:24	1
Benzo[b]fluoranthene	<0.15		0.15	0.061	ug/L		02/20/17 07:25	02/22/17 00:24	1
Benzo[g,h,i]perylene	<0.75		0.75	0.28	ug/L		02/20/17 07:25	02/22/17 00:24	1
Benzo[k]fluoranthene	<0.15		0.15	0.048	ug/L		02/20/17 07:25	02/22/17 00:24	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/22/17 00:24	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		02/20/17 07:25	02/22/17 00:24	1
Bis(2-ethylhexyl) phthalate	<7.5		7.5	1.3	ug/L		02/20/17 07:25	02/22/17 00:24	1
4-Bromophenyl phenyl ether	<3.8		3.8	0.41	ug/L		02/20/17 07:25	02/22/17 00:24	1
Butyl benzyl phthalate	<1.5		1.5	0.36	ug/L		02/20/17 07:25	02/22/17 00:24	1
Carbazole	<3.8	*	3.8	0.27	ug/L		02/20/17 07:25	02/22/17 00:24	1
4-Chloroaniline	<7.5		7.5	1.5	ug/L		02/20/17 07:25	02/22/17 00:24	1
4-Chloro-3-methylphenol	<7.5		7.5	1.7	ug/L		02/20/17 07:25	02/22/17 00:24	1
2-Chloronaphthalene	<1.5		1.5	0.18	ug/L		02/20/17 07:25	02/22/17 00:24	1
2-Chlorophenol	<3.8		3.8	0.42	ug/L		02/20/17 07:25	02/22/17 00:24	1
4-Chlorophenyl phenyl ether	<3.8		3.8	0.48	ug/L		02/20/17 07:25	02/22/17 00:24	1
Chrysene	<0.15		0.15	0.051	ug/L		02/20/17 07:25	02/22/17 00:24	1
Dibenz(a,h)anthracene	<0.23		0.23	0.038	ug/L		02/20/17 07:25	02/22/17 00:24	1
Dibenzofuran	<1.5		1.5	0.20	ug/L		02/20/17 07:25	02/22/17 00:24	1
3,3'-Dichlorobenzidine	<3.8		3.8	1.3	ug/L		02/20/17 07:25	02/22/17 00:24	1
2,4-Dichlorophenol	<7.5		7.5	2.0	ug/L		02/20/17 07:25	02/22/17 00:24	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		02/20/17 07:25	02/22/17 00:24	1
2,4-Dimethylphenol	<7.5		7.5	1.4	ug/L		02/20/17 07:25	02/22/17 00:24	1
Dimethyl phthalate	<1.5		1.5	0.24	ug/L		02/20/17 07:25	02/22/17 00:24	1
Di-n-butyl phthalate	<3.8		3.8	0.55	ug/L		02/20/17 07:25	02/22/17 00:24	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		02/20/17 07:25	02/22/17 00:24	1
2,4-Dinitrophenol	<15		15	6.5	ug/L		02/20/17 07:25	02/22/17 00:24	1
2,4-Dinitrotoluene	<0.75		0.75	0.18	ug/L		02/20/17 07:25	02/22/17 00:24	1
2,6-Dinitrotoluene	<0.75		0.75	0.055	ug/L		02/20/17 07:25	02/22/17 00:24	1
Di-n-octyl phthalate	<7.5		7.5	0.79	ug/L		02/20/17 07:25	02/22/17 00:24	1
Fluoranthene	<0.75		0.75	0.34	ug/L		02/20/17 07:25	02/22/17 00:24	1
Fluorene	**0.20**	**J**	0.75	0.18	ug/L		02/20/17 07:25	02/22/17 00:24	1
Hexachlorobenzene	<0.38		0.38	0.060	ug/L		02/20/17 07:25	02/22/17 00:24	1
Hexachlorobutadiene	<3.8		3.8	0.39	ug/L		02/20/17 07:25	02/22/17 00:24	1
Hexachlorocyclopentadiene	<15	J	15	4.8	ug/L		02/20/17 07:25	02/22/17 00:24	1
Hexachloroethane	<3.8		3.8	0.45	ug/L		02/20/17 07:25	02/22/17 00:24	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.056	ug/L		02/20/17 07:25	02/22/17 00:24	1
Isophorone	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/22/17 00:24	1
2-Methylnaphthalene	**0.40**	**J**	1.5	0.049	ug/L		02/20/17 07:25	02/22/17 00:24	1

Client Sample ID: MW-05-GW-02152017

Lab Sample ID: 500-123929-3

Date Collected: 02/15/17 09:40

Matrix: Water

Date Received: 02/15/17 16:47

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.23	ug/L		02/20/17 07:25	02/22/17 00:24	1
3 & 4 Methylphenol	<1.5		1.5	0.34	ug/L		02/20/17 07:25	02/22/17 00:24	1
Naphthalene	<0.75		0.75	0.23	ug/L		02/20/17 07:25	02/22/17 00:24	1
2-Nitroaniline	<3.8		3.8	0.97	ug/L		02/20/17 07:25	02/22/17 00:24	1
3-Nitroaniline	<7.5		7.5	1.3	ug/L		02/20/17 07:25	02/22/17 00:24	1
4-Nitroaniline	<7.5		7.5	1.3	ug/L		02/20/17 07:25	02/22/17 00:24	1
Nitrobenzene	<0.75		0.75	0.34	ug/L		02/20/17 07:25	02/22/17 00:24	1
2-Nitrophenol	<7.5		7.5	1.9	ug/L		02/20/17 07:25	02/22/17 00:24	1
4-Nitrophenol	<15		15	5.6	ug/L		02/20/17 07:25	02/22/17 00:24	1
N-Nitrosodi-n-propylamine	<0.38		0.38	0.12	ug/L		02/20/17 07:25	02/22/17 00:24	1
N-Nitrosodiphenylamine	**0.98**		0.75	0.28	ug/L		02/20/17 07:25	02/22/17 00:24	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.29	ug/L		02/20/17 07:25	02/22/17 00:24	1
Pentachlorophenol	<15		15	3.0	ug/L		02/20/17 07:25	02/22/17 00:24	1
Phenanthrene	<0.75		0.75	0.23	ug/L		02/20/17 07:25	02/22/17 00:24	1
Phenol	<3.8		3.8	0.50	ug/L		02/20/17 07:25	02/22/17 00:24	1
Pyrene	<0.75		0.75	0.32	ug/L		02/20/17 07:25	02/22/17 00:24	1
2,4,5-Trichlorophenol	<7.5		7.5	1.9	ug/L		02/20/17 07:25	02/22/17 00:24	1
2,4,6-Trichlorophenol	<3.8		3.8	0.54	ug/L		02/20/17 07:25	02/22/17 00:24	1
Benzaldehyde	<30	J	30	11	ug/L		02/20/17 07:25	02/22/17 00:24	1
Caprolactam	<7.5		7.5	1.1	ug/L		02/20/17 07:25	02/22/17 00:24	1
Atrazine	<3.8		3.8	0.47	ug/L		02/20/17 07:25	02/22/17 00:24	1
1,1'-Biphenyl	<3.8		3.8	0.27	ug/L		02/20/17 07:25	02/22/17 00:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*62*		*30 - 123*	*02/20/17 07:25*	*02/22/17 00:24*	*1*
2-Fluorophenol (Surr)	*65*		*30 - 110*	*02/20/17 07:25*	*02/22/17 00:24*	*1*
Nitrobenzene-d5 (Surr)	*63*		*33 - 139*	*02/20/17 07:25*	*02/22/17 00:24*	*1*
Phenol-d5 (Surr)	*52*		*20 - 100*	*02/20/17 07:25*	*02/22/17 00:24*	*1*
Terphenyl-d14 (Surr)	*96*		*42 - 150*	*02/20/17 07:25*	*02/22/17 00:24*	*1*
2,4,6-Tribromophenol (Surr)	*99*		*30 - 150*	*02/20/17 07:25*	*02/22/17 00:24*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		02/16/17 09:00	02/21/17 15:26	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		02/16/17 09:00	02/21/17 15:26	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		02/16/17 09:00	02/21/17 15:26	1
beta-BHC	<0.037		0.037	0.0093	ug/L		02/16/17 09:00	02/21/17 15:26	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:26	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		02/16/17 09:00	02/21/17 15:26	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		02/16/17 09:00	02/21/17 15:26	1
delta-BHC	<0.037		0.037	0.0094	ug/L		02/16/17 09:00	02/21/17 15:26	1
Dieldrin	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:26	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		02/16/17 09:00	02/21/17 15:26	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		02/16/17 09:00	02/21/17 15:26	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		02/16/17 09:00	02/21/17 15:26	1
Endrin	<0.037		0.037	0.013	ug/L		02/16/17 09:00	02/21/17 15:26	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		02/16/17 09:00	02/21/17 15:26	1
Endrin ketone	<0.037		0.037	0.016	ug/L		02/16/17 09:00	02/21/17 15:26	1
gamma-BHC (Lindane)	<0.037		0.037	0.0051	ug/L		02/16/17 09:00	02/21/17 15:26	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		02/16/17 09:00	02/21/17 15:26	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-05-GW-02152017

Date Collected: 02/15/17 09:40
Date Received: 02/15/17 16:47

Lab Sample ID: 500-123929-3

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:26	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		02/16/17 09:00	02/21/17 15:26	1
Methoxychlor	<0.073		0.073	0.021	ug/L		02/16/17 09:00	02/21/17 15:26	1
Toxaphene	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/21/17 15:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*70*		*30 - 143*	*02/16/17 09:00*	*02/21/17 15:26*	*1*
Tetrachloro-m-xylene	*41*		*30 - 120*	*02/16/17 09:00*	*02/21/17 15:26*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.061	ug/L		02/16/17 09:00	02/24/17 13:26	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:26	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:26	1
PCB-1242	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:26	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:26	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:26	1
PCB-1260	<0.37	J	0.37	0.064	ug/L		02/16/17 09:00	02/24/17 13:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*63*		*30 - 127*	*02/16/17 09:00*	*02/24/17 13:26*	*1*
DCB Decachlorobiphenyl	*90*		*30 - 150*	*02/16/17 09:00*	*02/24/17 13:26*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/16/17 07:48	02/20/17 19:22	1
Antimony	<0.020		0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 19:22	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:22	1
Barium	**0.86**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:22	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 19:22	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 19:22	1
Calcium	**76**		0.20	0.059	mg/L		02/16/17 07:48	02/20/17 19:22	1
Chromium	<0.010		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 19:22	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 19:22	1
Copper	<0.010		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:22	1
Iron	**20**		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 19:22	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 19:22	1
Magnesium	**90**		0.10	0.041	mg/L		02/16/17 07:48	02/20/17 19:22	1
Manganese	**0.053**		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:22	1
Nickel	**0.0046**	J	0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 19:22	1
Potassium	**43**		0.50	0.16	mg/L		02/16/17 07:48	02/20/17 19:22	1
Selenium	<0.010		0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 19:22	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 19:22	1
Sodium	**150**		1.0	0.43	mg/L		02/16/17 07:48	02/20/17 19:22	1
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:22	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 19:22	1
Zinc	**0.0093**	J	0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 19:22	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/16/17 07:48	02/20/17 19:26	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-05-GW-02152017

Lab Sample ID: 500-123929-3

Date Collected: 02/15/17 09:40
Matrix: Water
Date Received: 02/15/17 16:47

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 19:26	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:26	1
Barium	**0.83**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:26	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 19:26	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 19:26	1
Calcium	**73**	J	0.20	0.059	mg/L		02/16/17 07:48	02/20/17 19:26	1
Chromium	<0.010		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 19:26	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 19:26	1
Copper	<0.010		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:26	1
Iron	**19**		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 19:26	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 19:26	1
Magnesium	**88**	J	0.10	0.041	mg/L		02/16/17 07:48	02/20/17 19:26	1
Manganese	**0.051**	J	0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:26	1
Nickel	<0.010		0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 19:26	1
Potassium	**42**	J	0.50	0.16	mg/L		02/16/17 07:48	02/20/17 19:26	1
Selenium	<0.010		0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 19:26	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 19:26	1
Sodium	**150**	J	1.0	0.43	mg/L		02/16/17 07:48	02/20/17 19:26	1
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:26	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 19:26	1
Zinc	<0.020		0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 19:26	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 09:29	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 09:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 07:32	1
Sulfate 5.0	~~2.9~~	~~J B~~ UB	5.0	1.5	mg/L			02/23/17 03:32	1
Total Organic Carbon - Duplicates	**18**	~~B~~	1.0	0.27	mg/L			02/20/17 01:33	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**56**		5.0	2.5	mg/L			02/16/17 10:22	1
Ammonia	**50**		4.0	2.0	mg/L		02/16/17 18:50	02/16/17 22:40	20
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/16/17 10:29	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/17/17 21:50	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-04-GW-02152017

Lab Sample ID: 500-123929-4

Date Collected: 02/15/17 11:35
Matrix: Water
Date Received: 02/15/17 16:47

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**31**		5.0	1.7	ug/L			02/21/17 03:35	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/21/17 03:35	1
Bromoform	<1.0		1.0	0.48	ug/L			02/21/17 03:35	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/21/17 03:35	1
Carbon disulfide	**2.2**	J	2.0	0.45	ug/L			02/21/17 03:35	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/21/17 03:35	1
Chlorobenzene	**2.0**		1.0	0.39	ug/L			02/21/17 03:35	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/21/17 03:35	1
Chloroform	**0.65**	J	2.0	0.37	ug/L			02/21/17 03:35	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/21/17 03:35	1
cis-1,2-Dichloroethene	**11**		1.0	0.41	ug/L			02/21/17 03:35	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/21/17 03:35	1
Cyclohexane	**1.9**		1.0	0.49	ug/L			02/21/17 03:35	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/21/17 03:35	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/21/17 03:35	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/21/17 03:35	1
1,2-Dichlorobenzene	**0.56**	J	1.0	0.33	ug/L			02/21/17 03:35	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/21/17 03:35	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			02/21/17 03:35	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/21/17 03:35	1
1,1-Dichloroethane	**18**		1.0	0.41	ug/L			02/21/17 03:35	1
1,2-Dichloroethane	**58**		1.0	0.39	ug/L			02/21/17 03:35	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/21/17 03:35	1
1,2-Dichloropropane	**1.7**		1.0	0.43	ug/L			02/21/17 03:35	1
Ethylbenzene	**13**		0.50	0.18	ug/L			02/21/17 03:35	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/21/17 03:35	1
Isopropylbenzene	**0.92**	J	1.0	0.39	ug/L			02/21/17 03:35	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/21/17 03:35	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			02/21/17 03:35	1
Methylene Chloride	**6.9**		5.0	1.6	ug/L			02/21/17 03:35	1
Methyl Ethyl Ketone	**9.7**		5.0	2.1	ug/L			02/21/17 03:35	1
methyl isobutyl ketone	**20**		5.0	2.2	ug/L			02/21/17 03:35	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/21/17 03:35	1
Styrene	<1.0		1.0	0.39	ug/L			02/21/17 03:35	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/21/17 03:35	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/21/17 03:35	1
Toluene	**28**		0.50	0.15	ug/L			02/21/17 03:35	1
trans-1,2-Dichloroethene	**1.1**		1.0	0.35	ug/L			02/21/17 03:35	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/21/17 03:35	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/21/17 03:35	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/21/17 03:35	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/21/17 03:35	1
Trichloroethene	**2.4**		0.50	0.16	ug/L			02/21/17 03:35	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/21/17 03:35	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/21/17 03:35	1
Vinyl chloride	**3.8**		0.50	0.20	ug/L			02/21/17 03:35	1
Xylenes, Total	**17**		1.0	0.22	ug/L			02/21/17 03:35	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-04-GW-02152017

Lab Sample ID: 500-123929-4

Date Collected: 02/15/17 11:35
Matrix: Water
Date Received: 02/15/17 16:47

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*101*		*71 - 120*		*02/21/17 03:35*	*1*
Dibromofluoromethane	*97*		*70 - 120*		*02/21/17 03:35*	*1*
1,2-Dichloroethane-d4 (Surr)	*110*		*71 - 127*		*02/21/17 03:35*	*1*
Toluene-d8 (Surr)	*97*		*75 - 120*		*02/21/17 03:35*	*1*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**530**		5.0	1.5	ug/L			02/21/17 04:00	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*71 - 120*		*02/21/17 04:00*	*10*
Dibromofluoromethane	*96*		*70 - 120*		*02/21/17 04:00*	*10*
1,2-Dichloroethane-d4 (Surr)	*115*		*71 - 127*		*02/21/17 04:00*	*10*
Toluene-d8 (Surr)	*96*		*75 - 120*		*02/21/17 04:00*	*10*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<0.73		0.73	0.23	ug/L		02/20/17 07:25	02/22/17 00:53	1
Acenaphthylene	<0.73		0.73	0.20	ug/L		02/20/17 07:25	02/22/17 00:53	1
Acetophenone	**3.0**	**J**	3.7	0.49	ug/L		02/20/17 07:25	02/22/17 00:53	1
Anthracene	<0.73		0.73	0.24	ug/L		02/20/17 07:25	02/22/17 00:53	1
Benzo[a]anthracene	<0.15		0.15	0.041	ug/L		02/20/17 07:25	02/22/17 00:53	1
Benzo[a]pyrene	<0.15		0.15	0.072	ug/L		02/20/17 07:25	02/22/17 00:53	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		02/20/17 07:25	02/22/17 00:53	1
Benzo[g,h,i]perylene	<0.73		0.73	0.27	ug/L		02/20/17 07:25	02/22/17 00:53	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		02/20/17 07:25	02/22/17 00:53	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/22/17 00:53	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/22/17 00:53	1
Bis(2-ethylhexyl) phthalate	<7.3		7.3	1.3	ug/L		02/20/17 07:25	02/22/17 00:53	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		02/20/17 07:25	02/22/17 00:53	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/20/17 07:25	02/22/17 00:53	1
Carbazole	<3.7		3.7	0.26	ug/L		02/20/17 07:25	02/22/17 00:53	1
4-Chloroaniline	<7.3		7.3	1.5	ug/L		02/20/17 07:25	02/22/17 00:53	1
4-Chloro-3-methylphenol	<7.3		7.3	1.7	ug/L		02/20/17 07:25	02/22/17 00:53	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/20/17 07:25	02/22/17 00:53	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		02/20/17 07:25	02/22/17 00:53	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.46	ug/L		02/20/17 07:25	02/22/17 00:53	1
Chrysene	<0.15		0.15	0.050	ug/L		02/20/17 07:25	02/22/17 00:53	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		02/20/17 07:25	02/22/17 00:53	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		02/20/17 07:25	02/22/17 00:53	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		02/20/17 07:25	02/22/17 00:53	1
2,4-Dichlorophenol	<7.3		7.3	1.9	ug/L		02/20/17 07:25	02/22/17 00:53	1
Diethyl phthalate	<1.5		1.5	0.26	ug/L		02/20/17 07:25	02/22/17 00:53	1
2,4-Dimethylphenol	**31**		7.3	1.3	ug/L		02/20/17 07:25	02/22/17 00:53	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/20/17 07:25	02/22/17 00:53	1
Di-n-butyl phthalate	<3.7		3.7	0.53	ug/L		02/20/17 07:25	02/22/17 00:53	1
4,6-Dinitro-2-methylphenol	<15		15	4.3	ug/L		02/20/17 07:25	02/22/17 00:53	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		02/20/17 07:25	02/22/17 00:53	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		02/20/17 07:25	02/22/17 00:53	1
2,6-Dinitrotoluene	<0.73		0.73	0.054	ug/L		02/20/17 07:25	02/22/17 00:53	1
Di-n-octyl phthalate	<7.3		7.3	0.77	ug/L		02/20/17 07:25	02/22/17 00:53	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-04-GW-02152017

Date Collected: 02/15/17 11:35
Date Received: 02/15/17 16:47

Lab Sample ID: 500-123929-4

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.73		0.73	0.33	ug/L		02/20/17 07:25	02/22/17 00:53	1
Fluorene	<0.73		0.73	0.18	ug/L		02/20/17 07:25	02/22/17 00:53	1
Hexachlorobenzene	<0.37		0.37	0.058	ug/L		02/20/17 07:25	02/22/17 00:53	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		02/20/17 07:25	02/22/17 00:53	1
Hexachlorocyclopentadiene	<15	J	15	4.7	ug/L		02/20/17 07:25	02/22/17 00:53	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		02/20/17 07:25	02/22/17 00:53	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		02/20/17 07:25	02/22/17 00:53	1
Isophorone	<1.5		1.5	0.27	ug/L		02/20/17 07:25	02/22/17 00:53	1
2-Methylnaphthalene	<1.5		1.5	0.048	ug/L		02/20/17 07:25	02/22/17 00:53	1
2-Methylphenol	**7.7**		1.5	0.22	ug/L		02/20/17 07:25	02/22/17 00:53	1
3 & 4 Methylphenol	**11**		1.5	0.33	ug/L		02/20/17 07:25	02/22/17 00:53	1
Naphthalene	<0.73		0.73	0.23	ug/L		02/20/17 07:25	02/22/17 00:53	1
2-Nitroaniline	<3.7		3.7	0.94	ug/L		02/20/17 07:25	02/22/17 00:53	1
3-Nitroaniline	<7.3		7.3	1.3	ug/L		02/20/17 07:25	02/22/17 00:53	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		02/20/17 07:25	02/22/17 00:53	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		02/20/17 07:25	02/22/17 00:53	1
2-Nitrophenol	<7.3		7.3	1.8	ug/L		02/20/17 07:25	02/22/17 00:53	1
4-Nitrophenol	<15		15	5.4	ug/L		02/20/17 07:25	02/22/17 00:53	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		02/20/17 07:25	02/22/17 00:53	1
N-Nitrosodiphenylamine	<0.73		0.73	0.27	ug/L		02/20/17 07:25	02/22/17 00:53	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/22/17 00:53	1
Pentachlorophenol	<15		15	2.9	ug/L		02/20/17 07:25	02/22/17 00:53	1
Phenanthrene	<0.73		0.73	0.22	ug/L		02/20/17 07:25	02/22/17 00:53	1
Phenol	**13**		3.7	0.49	ug/L		02/20/17 07:25	02/22/17 00:53	1
Pyrene	<0.73		0.73	0.31	ug/L		02/20/17 07:25	02/22/17 00:53	1
2,4,5-Trichlorophenol	<7.3		7.3	1.9	ug/L		02/20/17 07:25	02/22/17 00:53	1
2,4,6-Trichlorophenol	<3.7		3.7	0.52	ug/L		02/20/17 07:25	02/22/17 00:53	1
Benzaldehyde	<29	J	29	11	ug/L		02/20/17 07:25	02/22/17 00:53	1
Caprolactam	<7.3		7.3	1.1	ug/L		02/20/17 07:25	02/22/17 00:53	1
Atrazine	<3.7		3.7	0.46	ug/L		02/20/17 07:25	02/22/17 00:53	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		02/20/17 07:25	02/22/17 00:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*39*		*30 - 123*	*02/20/17 07:25*	*02/22/17 00:53*	*1*
2-Fluorophenol (Surr)	*65*		*30 - 110*	*02/20/17 07:25*	*02/22/17 00:53*	*1*
Nitrobenzene-d5 (Surr)	*55*		*33 - 139*	*02/20/17 07:25*	*02/22/17 00:53*	*1*
Phenol-d5 (Surr)	*54*		*20 - 100*	*02/20/17 07:25*	*02/22/17 00:53*	*1*
Terphenyl-d14 (Surr)	*86*		*42 - 150*	*02/20/17 07:25*	*02/22/17 00:53*	*1*
2,4,6-Tribromophenol (Surr)	*68*		*30 - 150*	*02/20/17 07:25*	*02/22/17 00:53*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		02/16/17 09:00	02/21/17 15:45	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		02/16/17 09:00	02/21/17 15:45	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		02/16/17 09:00	02/21/17 15:45	1
beta-BHC	<0.037		0.037	0.0094	ug/L		02/16/17 09:00	02/21/17 15:45	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:45	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		02/16/17 09:00	02/21/17 15:45	1
4,4'-DDT	<0.037		0.037	0.0030	ug/L		02/16/17 09:00	02/21/17 15:45	1
delta-BHC	<0.037		0.037	0.0095	ug/L		02/16/17 09:00	02/21/17 15:45	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-04-GW-02152017

Date Collected: 02/15/17 11:35
Date Received: 02/15/17 16:47

Lab Sample ID: 500-123929-4

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dieldrin	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:45	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		02/16/17 09:00	02/21/17 15:45	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		02/16/17 09:00	02/21/17 15:45	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		02/16/17 09:00	02/21/17 15:45	1
Endrin	<0.037		0.037	0.013	ug/L		02/16/17 09:00	02/21/17 15:45	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		02/16/17 09:00	02/21/17 15:45	1
Endrin ketone	<0.037		0.037	0.016	ug/L		02/16/17 09:00	02/21/17 15:45	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		02/16/17 09:00	02/21/17 15:45	1
gamma-Chlordane	<0.037		0.037	0.0067	ug/L		02/16/17 09:00	02/21/17 15:45	1
Heptachlor	<0.037		0.037	0.012	ug/L		02/16/17 09:00	02/21/17 15:45	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		02/16/17 09:00	02/21/17 15:45	1
Methoxychlor	<0.074		0.074	0.021	ug/L		02/16/17 09:00	02/21/17 15:45	1
Toxaphene	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/21/17 15:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*53*		*30 - 143*	*02/16/17 09:00*	*02/21/17 15:45*	*1*
Tetrachloro-m-xylene	*28*	*X*	*30 - 120*	*02/16/17 09:00*	*02/21/17 15:45*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		02/16/17 09:00	02/24/17 13:41	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:41	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:41	1
PCB-1242	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:41	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:41	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/16/17 09:00	02/24/17 13:41	1
PCB-1260	<0.37	* J	0.37	0.065	ug/L		02/16/17 09:00	02/24/17 13:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*60*		*30 - 127*	*02/16/17 09:00*	*02/24/17 13:41*	*1*
DCB Decachlorobiphenyl	*89*		*30 - 150*	*02/16/17 09:00*	*02/24/17 13:41*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.094**	**J**	0.20	0.062	mg/L		02/16/17 07:48	02/20/17 19:29	1
Antimony	<0.020		0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 19:29	1
Arsenic	**0.0073**	**J**	0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:29	1
Barium	**0.033**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:29	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 19:29	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 19:29	1
Calcium	**160**		0.20	0.059	mg/L		02/16/17 07:48	02/20/17 19:29	1
Chromium	<0.010		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 19:29	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 19:29	1
Copper	<0.010		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:29	1
Iron	**2.5**		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 19:29	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 19:29	1
Magnesium	**43**		0.10	0.041	mg/L		02/16/17 07:48	02/20/17 19:29	1
Manganese	**1.2**		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:29	1
Nickel	**0.0066**	**J**	0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 19:29	1
Potassium	**14**		0.50	0.16	mg/L		02/16/17 07:48	02/20/17 19:29	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123929-1

Client Sample ID: MW-04-GW-02152017

Date Collected: 02/15/17 11:35
Date Received: 02/15/17 16:47

Lab Sample ID: 500-123929-4

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.010		0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 19:29	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 19:29	1
Sodium	**380**		1.0	0.43	mg/L		02/16/17 07:48	02/20/17 19:29	1
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:29	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 19:29	1
Zinc	<0.020		0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 19:29	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.064**	**J**	0.20	0.062	mg/L		02/16/17 07:48	02/20/17 19:34	1
Antimony	<0.020		0.020	0.0064	mg/L		02/16/17 07:48	02/20/17 19:34	1
Arsenic	**0.0094**	**J**	0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:34	1
Barium	**0.036**		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:34	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/16/17 07:48	02/20/17 19:34	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/16/17 07:48	02/20/17 19:34	1
Calcium	**180**	~~V~~ J	0.20	0.059	mg/L		02/16/17 07:48	02/20/17 19:34	1
Chromium	<0.010		0.010	0.0024	mg/L		02/16/17 07:48	02/20/17 19:34	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/16/17 07:48	02/20/17 19:34	1
Copper	<0.010		0.010	0.0022	mg/L		02/16/17 07:48	02/20/17 19:34	1
Iron	**2.7**		0.20	0.10	mg/L		02/16/17 07:48	02/20/17 19:34	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/16/17 07:48	02/20/17 19:34	1
Magnesium	**48**	~~V~~ J	0.10	0.041	mg/L		02/16/17 07:48	02/20/17 19:34	1
Manganese	**1.3**	~~V~~ J	0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:34	1
Nickel	**0.0056**	**J**	0.010	0.0037	mg/L		02/16/17 07:48	02/20/17 19:34	1
Potassium	**16**	~~V~~ J	0.50	0.16	mg/L		02/16/17 07:48	02/20/17 19:34	1
Selenium	<0.010	~~F1~~ J	0.010	0.0051	mg/L		02/16/17 07:48	02/20/17 19:34	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/16/17 07:48	02/20/17 19:34	1
Sodium	**420**	~~V~~ J	1.0	0.43	mg/L		02/16/17 07:48	02/20/17 19:34	1
Thallium	<0.010		0.010	0.0034	mg/L		02/16/17 07:48	02/20/17 19:34	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/16/17 07:48	02/20/17 19:34	1
Zinc	<0.020		0.020	0.0090	mg/L		02/16/17 07:48	02/20/17 19:34	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 09:31	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/16/17 12:45	02/17/17 09:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**1.0**		1.0	0.18	mg/L			02/21/17 07:34	1
Sulfate	**530**	~~B~~	100	29	mg/L			02/20/17 09:26	20
Total Organic Carbon - Duplicates	**15**	~~B F1~~ J	1.0	0.27	mg/L			02/20/17 01:49	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**7.5**		5.0	2.5	mg/L			02/16/17 10:23	1
Ammonia	**7.7**		0.40	0.20	mg/L		02/16/17 18:50	02/17/17 00:00	2
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/16/17 10:29	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/17/17 21:53	1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
*	ISTD response or retention time outside acceptable limits
*	LCS or LCSD is outside acceptance limits.
X	Surrogate is outside control limits

GC Semi VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits
H	Sample was prepped or analyzed beyond the specified holding time
*	RPD of the LCS and LCSD exceeds the control limits

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
V	Serial Dilution exceeds the control limits
F1	MS and/or MSD Recovery is outside acceptance limits.
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
B	Compound was found in the blank and sample.
F1	MS and/or MSD Recovery is outside acceptance limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

(optional)
Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 200 S. Michigan Ave
Address: Ste 2000
Phone: 312-579-3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-123929
Chain of Custody Number:
Page ____ of ____
Temperature °C of Cooler: 4.1, 2.8

Client: Arcadis
Client Project #: CI001805.0002.00005
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thurnhoffer
Lab PM: Therese Hargraves

Preservative Key: 1. HCL, Cool to 4°; 500-123929 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOCs, PCB Pesticide	Total Metals	Dissolved Metals	Ammonia NO3/NO2	Sulfide	TOC	TSS, SO4 NO2	VOC	Dissolved Gases	Comments
							8	3	3	6	5	2	8	1	9	
1		MW-07-GW-02142017	2-14	1525	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Dissolved Metal
2		MW-06-GW-02152017	2-15	0800	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Samples were
3		MW-05-GW-02152017	2-15	0940	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	field filtered
4		MW-04-GW-02152017	2-15	1135	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
~~—~~		~~MW-03-GW-02152017~~	~~2-15~~	~~1320~~	~~18~~	~~W~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	MW-07, 06, 05
															AS	TOC & VOC
															02/15/17	preservative very
																reactive, some
																bubbles present

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Ben Thurnhoffer	Arcadis	2-15-2017	1552	[signature]	TA	2/15/17	1552
[signature]	TA	2/15/17	1630	[signature]	TACHI	02/15/17	1630

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments: "MW-03-GW-02152017" wasn't sent in with other samples will send tomorrow. AS 02/15/17

2/28/2017
TAL-4124-500 (1209)

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21749 500-123929-2

Lab ID: **217490001** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-07-GW-02142017** Date Collected: 2/14/2017 15:25

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**21000**	ug/l	0.50	0.027	1	2/24/2017 15:13	MM	n
Carbon Dioxide	**62**	mg/l	5.0	0.24	1	2/24/2017 15:13	MM	n
Oxygen	**1.3**	mg/l	0.50	0.13	1	2/24/2017 15:13	MM	n
Nitrogen	**9.2**	mg/l	2.0	0.24	1	2/24/2017 15:13	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21749 500-123929-2

Lab ID: **217490002** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-06-GW-02152017** Date Collected: 2/15/2017 08:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**21000**	ug/l	0.50	0.027	1	2/24/2017 15:26	MM	n
Carbon Dioxide	**17**	mg/l	5.0	0.24	1	2/24/2017 15:26	MM	n
Oxygen	**1.8**	mg/l	0.50	0.13	1	2/24/2017 15:26	MM	n
Nitrogen	**11**	mg/l	2.0	0.24	1	2/24/2017 15:26	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21749 500-123929-2

Lab ID: **217490003** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-05-GW-02152017** Date Collected: 2/15/2017 09:40

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**19000**	ug/l	0.50	0.027	1	2/24/2017 15:39	MM	n
Carbon Dioxide	**320**	mg/l	5.0	0.24	1	2/24/2017 15:39	MM	n
Oxygen	**1.5**	mg/l	0.50	0.13	1	2/24/2017 15:39	MM	n
Nitrogen	**6.9**	mg/l	2.0	0.24	1	2/24/2017 15:39	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21749 500-123929-2

Lab ID: **217490004** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-04-GW-02152017** Date Collected: 2/15/2017 11:35

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**17000**	ug/l	0.50	0.027	1	2/24/2017 15:52	MM	n
Carbon Dioxide	**200**	mg/l	5.0	0.24	1	2/24/2017 15:52	MM	n
Oxygen	**3.2**	mg/l	0.50	0.13	1	2/24/2017 15:52	MM	n
Nitrogen	**10**	mg/l	2.0	0.24	1	2/24/2017 15:52	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 21749 500-123929-2

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Chain of Custody Record

Lab Job #: 500-123929

Chain of Custody Number:

Page ____ of ____

Temperature °C of Cooler: 4.1, 2.8

(optional)
Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 200 S. Michigan Ave
Address: Ste 2000
Phone: 312-579-3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Client: Arcadis
Client Project #: CID01805.0002.00005
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thurnhoffer
Lab PM: Therese Hargraves

Preservative Key: 1. HCL, Cool to 4°; 500-123929 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOCs, PCB Pesticide	Total Metals	Dissolved Metals	Ammonia NO3/NO2	Sulfide	TOC	TSS, SO4 NO2	VOC	Dissolved Gases	Comments
							8	3	3	6	5	2	8	1	9	
1		MW-07-GW-02142017	2-14	1525	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Dissolved Metal
2		MW-06-GW-02152017	2-15	0800	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Samples were
3		MW-05-GW-02152017	2-15	0940	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	field filtered
4		MW-04-GW-02152017	2-15	1135	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
~~—~~		~~MW-03-GW-02152017~~	~~2-15~~	~~1320~~	~~18~~	~~W~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	~~✓~~	MW-07, 06, 05
															AS	TOC & VOC
															02/15/17	preservative very
																reactive, some
																bubbles present

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Ben Thurnhoffer	Arcadis	2-15-2017	1552	[signature]	TA	2/15/17	1552
[signature]	TA	2/15/17	1630	[signature]	TACHI	02/15/17	1630

Lab Courier: TA
Shipped:
Hand Delivered:

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments: "MW-03-GW-02152017" wasn't sent in with other samples will send tomorrow. AS 02/15/17

2/28/2017
TAL-4124-500 (1209)

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-03-GW-02152017

Lab Sample ID: 500-123998-1

Date Collected: 02/15/17 13:20
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<25	J	25	8.7	ug/L			02/23/17 18:27	5
Benzene	**57**		2.5	0.73	ug/L			02/23/17 18:27	5
Bromodichloromethane	<5.0		5.0	1.9	ug/L			02/23/17 18:27	5
Bromoform	<5.0		5.0	2.4	ug/L			02/23/17 18:27	5
Bromomethane	<10		10	4.0	ug/L			02/23/17 18:27	5
Carbon disulfide	<10		10	2.2	ug/L			02/23/17 18:27	5
Carbon tetrachloride	<5.0		5.0	1.9	ug/L			02/23/17 18:27	5
Chlorobenzene	**2.7**	**J**	5.0	1.9	ug/L			02/23/17 18:27	5
Chloroethane	<5.0		5.0	2.5	ug/L			02/23/17 18:27	5
Chloroform	<10		10	1.9	ug/L			02/23/17 18:27	5
Chloromethane	<5.0		5.0	1.6	ug/L			02/23/17 18:27	5
cis-1,2-Dichloroethene	<5.0		5.0	2.0	ug/L			02/23/17 18:27	5
cis-1,3-Dichloropropene	<5.0		5.0	2.1	ug/L			02/23/17 18:27	5
Cyclohexane	<5.0		5.0	2.4	ug/L			02/23/17 18:27	5
Dibromochloromethane	<5.0		5.0	2.4	ug/L			02/23/17 18:27	5
1,2-Dibromo-3-Chloropropane	<25		25	10	ug/L			02/23/17 18:27	5
1,2-Dibromoethane	<5.0		5.0	1.9	ug/L			02/23/17 18:27	5
1,2-Dichlorobenzene	<5.0		5.0	1.7	ug/L			02/23/17 18:27	5
1,3-Dichlorobenzene	<5.0		5.0	2.0	ug/L			02/23/17 18:27	5
1,4-Dichlorobenzene	<5.0		5.0	1.8	ug/L			02/23/17 18:27	5
Dichlorodifluoromethane	<10		10	3.4	ug/L			02/23/17 18:27	5
1,1-Dichloroethane	<5.0		5.0	2.1	ug/L			02/23/17 18:27	5
1,2-Dichloroethane	<5.0		5.0	2.0	ug/L			02/23/17 18:27	5
1,1-Dichloroethene	<5.0		5.0	2.0	ug/L			02/23/17 18:27	5
1,2-Dichloropropane	<5.0		5.0	2.1	ug/L			02/23/17 18:27	5
Ethylbenzene	**13**		2.5	0.92	ug/L			02/23/17 18:27	5
2-Hexanone	<25		25	7.8	ug/L			02/23/17 18:27	5
Isopropylbenzene	<5.0		5.0	1.9	ug/L			02/23/17 18:27	5
Methyl acetate	<25		25	10	ug/L			02/23/17 18:27	5
Methylcyclohexane	<5.0		5.0	1.6	ug/L			02/23/17 18:27	5
Methylene Chloride	<25		25	8.2	ug/L			02/23/17 18:27	5
Methyl Ethyl Ketone	<25		25	11	ug/L			02/23/17 18:27	5
methyl isobutyl ketone	<25		25	11	ug/L			02/23/17 18:27	5
Methyl tert-butyl ether	<5.0		5.0	2.0	ug/L			02/23/17 18:27	5
Styrene	<5.0		5.0	1.9	ug/L			02/23/17 18:27	5
1,1,2,2-Tetrachloroethane	<5.0		5.0	2.0	ug/L			02/23/17 18:27	5
Tetrachloroethene	<5.0		5.0	1.9	ug/L			02/23/17 18:27	5
Toluene	**29**		2.5	0.76	ug/L			02/23/17 18:27	5
trans-1,2-Dichloroethene	<5.0		5.0	1.7	ug/L			02/23/17 18:27	5
trans-1,3-Dichloropropene	<5.0		5.0	1.8	ug/L			02/23/17 18:27	5
1,2,4-Trichlorobenzene	<5.0		5.0	1.7	ug/L			02/23/17 18:27	5
1,1,1-Trichloroethane	<5.0		5.0	1.9	ug/L			02/23/17 18:27	5
1,1,2-Trichloroethane	<5.0		5.0	1.8	ug/L			02/23/17 18:27	5
Trichloroethene	<2.5		2.5	0.82	ug/L			02/23/17 18:27	5
Trichlorofluoromethane	<5.0		5.0	2.1	ug/L			02/23/17 18:27	5
1,1,2-Trichloro-1,2,2-trifluoroethane	<5.0		5.0	2.3	ug/L			02/23/17 18:27	5
Vinyl chloride	<2.5		2.5	1.0	ug/L			02/23/17 18:27	5
Xylenes, Total	**63**		5.0	1.1	ug/L			02/23/17 18:27	5

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-03-GW-02152017

Date Collected: 02/15/17 13:20
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-1

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*71 - 120*		*02/23/17 18:27*	*5*
Dibromofluoromethane	*93*		*70 - 120*		*02/23/17 18:27*	*5*
1,2-Dichloroethane-d4 (Surr)	*100*		*71 - 127*		*02/23/17 18:27*	*5*
Toluene-d8 (Surr)	*99*		*75 - 120*		*02/23/17 18:27*	*5*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**20**		0.75	0.23	ug/L		02/20/17 07:25	02/22/17 01:52	1
Acenaphthylene	**1.9**		0.75	0.20	ug/L		02/20/17 07:25	02/22/17 01:52	1
Acetophenone	<3.8		3.8	0.50	ug/L		02/20/17 07:25	02/22/17 01:52	1
Anthracene	**7.6**		0.75	0.25	ug/L		02/20/17 07:25	02/22/17 01:52	1
Benzo[a]anthracene	**0.39**		0.15	0.043	ug/L		02/20/17 07:25	02/22/17 01:52	1
Benzo[a]pyrene	**0.23**		0.15	0.074	ug/L		02/20/17 07:25	02/22/17 01:52	1
Benzo[b]fluoranthene	**0.19**		0.15	0.061	ug/L		02/20/17 07:25	02/22/17 01:52	1
Benzo[g,h,i]perylene	<0.75		0.75	0.28	ug/L		02/20/17 07:25	02/22/17 01:52	1
Benzo[k]fluoranthene	<0.15		0.15	0.048	ug/L		02/20/17 07:25	02/22/17 01:52	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/22/17 01:52	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		02/20/17 07:25	02/22/17 01:52	1
Bis(2-ethylhexyl) phthalate	<7.5		7.5	1.3	ug/L		02/20/17 07:25	02/22/17 01:52	1
4-Bromophenyl phenyl ether	<3.8		3.8	0.41	ug/L		02/20/17 07:25	02/22/17 01:52	1
Butyl benzyl phthalate	<1.5		1.5	0.36	ug/L		02/20/17 07:25	02/22/17 01:52	1
4-Chloroaniline	<7.5		7.5	1.5	ug/L		02/20/17 07:25	02/22/17 01:52	1
4-Chloro-3-methylphenol	<7.5		7.5	1.7	ug/L		02/20/17 07:25	02/22/17 01:52	1
2-Chloronaphthalene	<1.5		1.5	0.18	ug/L		02/20/17 07:25	02/22/17 01:52	1
2-Chlorophenol	<3.8		3.8	0.42	ug/L		02/20/17 07:25	02/22/17 01:52	1
4-Chlorophenyl phenyl ether	<3.8		3.8	0.48	ug/L		02/20/17 07:25	02/22/17 01:52	1
Chrysene	**0.36**		0.15	0.051	ug/L		02/20/17 07:25	02/22/17 01:52	1
Dibenz(a,h)anthracene	<0.23		0.23	0.038	ug/L		02/20/17 07:25	02/22/17 01:52	1
Dibenzofuran	**27**		1.5	0.20	ug/L		02/20/17 07:25	02/22/17 01:52	1
3,3'-Dichlorobenzidine	<3.8		3.8	1.3	ug/L		02/20/17 07:25	02/22/17 01:52	1
2,4-Dichlorophenol	<7.5		7.5	2.0	ug/L		02/20/17 07:25	02/22/17 01:52	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		02/20/17 07:25	02/22/17 01:52	1
2,4-Dimethylphenol	**17**		7.5	1.4	ug/L		02/20/17 07:25	02/22/17 01:52	1
Dimethyl phthalate	<1.5		1.5	0.24	ug/L		02/20/17 07:25	02/22/17 01:52	1
Di-n-butyl phthalate	<3.8		3.8	0.55	ug/L		02/20/17 07:25	02/22/17 01:52	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		02/20/17 07:25	02/22/17 01:52	1
2,4-Dinitrophenol	<15		15	6.5	ug/L		02/20/17 07:25	02/22/17 01:52	1
2,4-Dinitrotoluene	<0.75		0.75	0.18	ug/L		02/20/17 07:25	02/22/17 01:52	1
2,6-Dinitrotoluene	<0.75		0.75	0.055	ug/L		02/20/17 07:25	02/22/17 01:52	1
Di-n-octyl phthalate	<7.5		7.5	0.79	ug/L		02/20/17 07:25	02/22/17 01:52	1
Fluoranthene	**5.8**		0.75	0.34	ug/L		02/20/17 07:25	02/22/17 01:52	1
Fluorene	**43**		0.75	0.18	ug/L		02/20/17 07:25	02/22/17 01:52	1
Hexachlorobenzene	<0.38		0.38	0.060	ug/L		02/20/17 07:25	02/22/17 01:52	1
Hexachlorobutadiene	<3.8		3.8	0.39	ug/L		02/20/17 07:25	02/22/17 01:52	1
Hexachlorocyclopentadiene	<15	J	15	4.8	ug/L		02/20/17 07:25	02/22/17 01:52	1
Hexachloroethane	<3.8		3.8	0.45	ug/L		02/20/17 07:25	02/22/17 01:52	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.056	ug/L		02/20/17 07:25	02/22/17 01:52	1
Isophorone	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/22/17 01:52	1
2-Methylphenol	**2.2**		1.5	0.23	ug/L		02/20/17 07:25	02/22/17 01:52	1
3 & 4 Methylphenol	**1.6**		1.5	0.34	ug/L		02/20/17 07:25	02/22/17 01:52	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-03-GW-02152017

Lab Sample ID: 500-123998-1

Date Collected: 02/15/17 13:20
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Nitroaniline	<3.8		3.8	0.97	ug/L		02/20/17 07:25	02/22/17 01:52	1
3-Nitroaniline	<7.5		7.5	1.3	ug/L		02/20/17 07:25	02/22/17 01:52	1
4-Nitroaniline	<7.5		7.5	1.2	ug/L		02/20/17 07:25	02/22/17 01:52	1
Nitrobenzene	<0.75		0.75	0.34	ug/L		02/20/17 07:25	02/22/17 01:52	1
2-Nitrophenol	<7.5		7.5	1.9	ug/L		02/20/17 07:25	02/22/17 01:52	1
4-Nitrophenol	<15		15	5.6	ug/L		02/20/17 07:25	02/22/17 01:52	1
N-Nitrosodi-n-propylamine	<0.38		0.38	0.12	ug/L		02/20/17 07:25	02/22/17 01:52	1
N-Nitrosodiphenylamine	<0.75		0.75	0.28	ug/L		02/20/17 07:25	02/22/17 01:52	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.29	ug/L		02/20/17 07:25	02/22/17 01:52	1
Pentachlorophenol	<15		15	3.0	ug/L		02/20/17 07:25	02/22/17 01:52	1
Phenanthrene	**36**		0.75	0.23	ug/L		02/20/17 07:25	02/22/17 01:52	1
Phenol	<3.8		3.8	0.50	ug/L		02/20/17 07:25	02/22/17 01:52	1
Pyrene	**4.1**		0.75	0.32	ug/L		02/20/17 07:25	02/22/17 01:52	1
2,4,5-Trichlorophenol	<7.5		7.5	1.9	ug/L		02/20/17 07:25	02/22/17 01:52	1
2,4,6-Trichlorophenol	<3.8		3.8	0.54	ug/L		02/20/17 07:25	02/22/17 01:52	1
Benzaldehyde	<30		30	11	ug/L		02/20/17 07:25	02/22/17 01:52	1
Caprolactam	<7.5		7.5	1.1	ug/L		02/20/17 07:25	02/22/17 01:52	1
Atrazine	<3.8		3.8	0.47	ug/L		02/20/17 07:25	02/22/17 01:52	1
1,1'-Biphenyl	**15**		3.8	0.27	ug/L		02/20/17 07:25	02/22/17 01:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*59*		*30 - 123*	*02/20/17 07:25*	*02/22/17 01:52*	*1*
2-Fluorophenol (Surr)	*66*		*30 - 110*	*02/20/17 07:25*	*02/22/17 01:52*	*1*
Nitrobenzene-d5 (Surr)	*70*		*33 - 139*	*02/20/17 07:25*	*02/22/17 01:52*	*1*
Phenol-d5 (Surr)	*50*		*20 - 100*	*02/20/17 07:25*	*02/22/17 01:52*	*1*
Terphenyl-d14 (Surr)	*96*		*42 - 150*	*02/20/17 07:25*	*02/22/17 01:52*	*1*
2,4,6-Tribromophenol (Surr)	*96*		*30 - 150*	*02/20/17 07:25*	*02/22/17 01:52*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Carbazole	**71**	* JD	38	2.7	ug/L		02/20/17 07:25	02/23/17 02:43	10
2-Methylnaphthalene	**150**	D	15	0.49	ug/L		02/20/17 07:25	02/23/17 02:43	10

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**870**	D	38	12	ug/L		02/20/17 07:25	02/24/17 15:27	50

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.038		0.038	0.0051	ug/L		02/17/17 21:00	02/20/17 23:16	1
alpha-BHC	<0.038		0.038	0.0025	ug/L		02/17/17 21:00	02/20/17 23:16	1
alpha-Chlordane	<0.038		0.038	0.0042	ug/L		02/17/17 21:00	02/20/17 23:16	1
beta-BHC	<0.038		0.038	0.0098	ug/L		02/17/17 21:00	02/20/17 23:16	1
4,4'-DDD	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/20/17 23:16	1
4,4'-DDE	<0.038		0.038	0.0036	ug/L		02/17/17 21:00	02/20/17 23:16	1
4,4'-DDT	<0.038		0.038	0.0031	ug/L		02/17/17 21:00	02/20/17 23:16	1
delta-BHC	<0.038		0.038	0.0099	ug/L		02/17/17 21:00	02/20/17 23:16	1
Dieldrin	<0.038		0.038	0.012	ug/L		02/17/17 21:00	02/20/17 23:16	1
Endosulfan I	<0.038		0.038	0.0039	ug/L		02/17/17 21:00	02/20/17 23:16	1
Endosulfan II	<0.038		0.038	0.0027	ug/L		02/17/17 21:00	02/20/17 23:16	1

Client Sample ID: MW-03-GW-02152017

Lab Sample ID: 500-123998-1

Date Collected: 02/15/17 13:20

Matrix: Water

Date Received: 02/16/17 15:35

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endosulfan sulfate	<0.038		0.038	0.011	ug/L		02/17/17 21:00	02/20/17 23:16	1
Endrin	<0.038		0.038	0.014	ug/L		02/17/17 21:00	02/20/17 23:16	1
Endrin aldehyde	<0.038		0.038	0.0079	ug/L		02/17/17 21:00	02/20/17 23:16	1
Endrin ketone	<0.038		0.038	0.016	ug/L		02/17/17 21:00	02/20/17 23:16	1
gamma-BHC (Lindane)	<0.038		0.038	0.0054	ug/L		02/17/17 21:00	02/20/17 23:16	1
gamma-Chlordane	<0.038		0.038	0.0069	ug/L		02/17/17 21:00	02/20/17 23:16	1
Heptachlor	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/20/17 23:16	1
Heptachlor epoxide	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/20/17 23:16	1
Methoxychlor	<0.077		0.077	0.022	ug/L		02/17/17 21:00	02/20/17 23:16	1
Toxaphene	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 23:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*76*		*30 - 143*	*02/17/17 21:00*	*02/20/17 23:16*	*1*
Tetrachloro-m-xylene	*105*		*30 - 120*	*02/17/17 21:00*	*02/20/17 23:16*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.38		0.38	0.064	ug/L		02/17/17 21:00	02/20/17 14:02	1
PCB-1221	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:02	1
PCB-1232	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:02	1
PCB-1242	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:02	1
PCB-1248	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:02	1
PCB-1254	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:02	1
PCB-1260	<0.38		0.38	0.067	ug/L		02/17/17 21:00	02/20/17 14:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*53*		*30 - 127*	*02/17/17 21:00*	*02/20/17 14:02*	*1*
DCB Decachlorobiphenyl	*62*		*30 - 150*	*02/17/17 21:00*	*02/20/17 14:02*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/22/17 18:40	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 20:35	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:35	1
Barium	**1.1**		0.010	0.0022	mg/L		02/17/17 08:13	02/22/17 18:40	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/22/17 18:40	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 20:35	1
Calcium	**94**		0.20	0.059	mg/L		02/17/17 08:13	02/22/17 18:40	1
Chromium	<0.010		0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 20:35	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 20:35	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 20:35	1
Iron	**4.0**	~~**^ B**~~	0.20	0.10	mg/L		02/17/17 08:13	02/22/17 18:40	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 20:35	1
Magnesium	**94**		0.10	0.041	mg/L		02/17/17 08:13	02/22/17 18:40	1
Manganese	**0.10**		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:35	1
Nickel	**0.0062**	**J**	0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 20:35	1
Potassium	**69**		0.50	0.16	mg/L		02/17/17 08:13	02/22/17 18:40	1
Selenium	**0.0055**	**J**	0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 20:35	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 20:35	1
Sodium	**300**		1.0	0.43	mg/L		02/17/17 08:13	02/22/17 18:40	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-03-GW-02152017

Date Collected: 02/15/17 13:20
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-1

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:35	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 20:35	1
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 20:35	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/22/17 18:44	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 20:39	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:39	1
Barium	**0.95**		0.010	0.0022	mg/L		02/17/17 08:13	02/22/17 18:44	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/22/17 18:44	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 20:39	1
Calcium	**86**		0.20	0.059	mg/L		02/17/17 08:13	02/22/17 18:44	1
Chromium	<0.010		0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 20:39	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 20:39	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 20:39	1
Iron	**3.3**	~~^ B~~	0.20	0.10	mg/L		02/17/17 08:13	02/22/17 18:44	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 20:39	1
Magnesium	**84**		0.10	0.041	mg/L		02/17/17 08:13	02/22/17 18:44	1
Manganese	**0.091**		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:39	1
Nickel	**0.0049**	**J**	0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 20:39	1
Potassium	**62**		0.50	0.16	mg/L		02/17/17 08:13	02/22/17 18:44	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 20:39	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 20:39	1
Sodium	**270**		1.0	0.43	mg/L		02/17/17 08:13	02/22/17 18:44	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:39	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 20:39	1
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 20:39	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:36	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 07:37	1
Sulfate	**5.0**	~~B~~ UB	5.0	1.5	mg/L			03/02/17 07:08	1
Total Organic Carbon - Duplicates	**22**		1.0	0.27	mg/L			02/17/17 00:38	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**11**		5.0	2.5	mg/L			02/17/17 13:08	1
Ammonia	**41**		2.0	1.0	mg/L		02/17/17 19:00	02/17/17 22:11	10
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/17/17 12:44	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/18/17 00:09	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-02-GW-02152017

Lab Sample ID: 500-123998-2

Date Collected: 02/15/17 16:05
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**6.3**	J	5.0	1.7	ug/L			02/23/17 17:07	1
Benzene	**14**		0.50	0.15	ug/L			02/23/17 17:07	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/23/17 17:07	1
Bromoform	<1.0		1.0	0.48	ug/L			02/23/17 17:07	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/23/17 17:07	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/23/17 17:07	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/23/17 17:07	1
Chloroethane	**4.5**		1.0	0.51	ug/L			02/23/17 17:07	1
Chloroform	<2.0		2.0	0.37	ug/L			02/23/17 17:07	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/23/17 17:07	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/23/17 17:07	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/23/17 17:07	1
Cyclohexane	<1.0		1.0	0.49	ug/L			02/23/17 17:07	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/23/17 17:07	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/23/17 17:07	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/23/17 17:07	1
1,2-Dichlorobenzene	**6.2**		1.0	0.33	ug/L			02/23/17 17:07	1
1,3-Dichlorobenzene	**4.1**		1.0	0.40	ug/L			02/23/17 17:07	1
1,4-Dichlorobenzene	**11**		1.0	0.36	ug/L			02/23/17 17:07	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/23/17 17:07	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/23/17 17:07	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/23/17 17:07	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/23/17 17:07	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/23/17 17:07	1
Ethylbenzene	**1.4**		0.50	0.18	ug/L			02/23/17 17:07	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/23/17 17:07	1
Isopropylbenzene	**4.9**		1.0	0.39	ug/L			02/23/17 17:07	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/23/17 17:07	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			02/23/17 17:07	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/23/17 17:07	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			02/23/17 17:07	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/23/17 17:07	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/23/17 17:07	1
Styrene	<1.0		1.0	0.39	ug/L			02/23/17 17:07	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/23/17 17:07	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/23/17 17:07	1
Toluene	**0.84**		0.50	0.15	ug/L			02/23/17 17:07	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/23/17 17:07	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/23/17 17:07	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/23/17 17:07	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/23/17 17:07	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/23/17 17:07	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/23/17 17:07	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/23/17 17:07	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/23/17 17:07	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/23/17 17:07	1
Xylenes, Total	**3.9**		1.0	0.22	ug/L			02/23/17 17:07	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-02-GW-02152017

Date Collected: 02/15/17 16:05
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-2

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		71 - 120		02/23/17 17:07	1
Dibromofluoromethane	93		70 - 120		02/23/17 17:07	1
1,2-Dichloroethane-d4 (Surr)	101		71 - 127		02/23/17 17:07	1
Toluene-d8 (Surr)	98		75 - 120		02/23/17 17:07	1

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	**480**	D	10	3.9	ug/L			02/23/17 17:34	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		71 - 120		02/23/17 17:34	10
Dibromofluoromethane	95		70 - 120		02/23/17 17:34	10
1,2-Dichloroethane-d4 (Surr)	103		71 - 127		02/23/17 17:34	10
Toluene-d8 (Surr)	99		75 - 120		02/23/17 17:34	10

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**1.0**		0.75	0.23	ug/L		02/20/17 07:25	02/22/17 02:21	1
Acenaphthylene	<0.75		0.75	0.20	ug/L		02/20/17 07:25	02/22/17 02:21	1
Acetophenone	<3.8		3.8	0.50	ug/L		02/20/17 07:25	02/22/17 02:21	1
Anthracene	<0.75		0.75	0.25	ug/L		02/20/17 07:25	02/22/17 02:21	1
Benzo[a]anthracene	<0.15		0.15	0.043	ug/L		02/20/17 07:25	02/22/17 02:21	1
Benzo[a]pyrene	<0.15		0.15	0.074	ug/L		02/20/17 07:25	02/22/17 02:21	1
Benzo[b]fluoranthene	<0.15		0.15	0.061	ug/L		02/20/17 07:25	02/22/17 02:21	1
Benzo[g,h,i]perylene	<0.75		0.75	0.28	ug/L		02/20/17 07:25	02/22/17 02:21	1
Benzo[k]fluoranthene	<0.15		0.15	0.048	ug/L		02/20/17 07:25	02/22/17 02:21	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/22/17 02:21	1
Bis(2-chloroethyl)ether	**1.4**	J	1.5	0.22	ug/L		02/20/17 07:25	02/22/17 02:21	1
Bis(2-ethylhexyl) phthalate	<7.5		7.5	1.3	ug/L		02/20/17 07:25	02/22/17 02:21	1
4-Bromophenyl phenyl ether	<3.8		3.8	0.41	ug/L		02/20/17 07:25	02/22/17 02:21	1
Butyl benzyl phthalate	<1.5		1.5	0.36	ug/L		02/20/17 07:25	02/22/17 02:21	1
Carbazole	<3.8	~~J~~	3.8	0.27	ug/L		02/20/17 07:25	02/22/17 02:21	1
4-Chloroaniline	<7.5		7.5	1.5	ug/L		02/20/17 07:25	02/22/17 02:21	1
4-Chloro-3-methylphenol	<7.5		7.5	1.7	ug/L		02/20/17 07:25	02/22/17 02:21	1
2-Chloronaphthalene	<1.5		1.5	0.18	ug/L		02/20/17 07:25	02/22/17 02:21	1
2-Chlorophenol	**4.9**		3.8	0.42	ug/L		02/20/17 07:25	02/22/17 02:21	1
4-Chlorophenyl phenyl ether	<3.8		3.8	0.48	ug/L		02/20/17 07:25	02/22/17 02:21	1
Chrysene	<0.15		0.15	0.051	ug/L		02/20/17 07:25	02/22/17 02:21	1
Dibenz(a,h)anthracene	<0.23		0.23	0.038	ug/L		02/20/17 07:25	02/22/17 02:21	1
Dibenzofuran	<1.5		1.5	0.20	ug/L		02/20/17 07:25	02/22/17 02:21	1
3,3'-Dichlorobenzidine	<3.8		3.8	1.3	ug/L		02/20/17 07:25	02/22/17 02:21	1
2,4-Dichlorophenol	<7.5		7.5	2.0	ug/L		02/20/17 07:25	02/22/17 02:21	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		02/20/17 07:25	02/22/17 02:21	1
2,4-Dimethylphenol	<7.5		7.5	1.4	ug/L		02/20/17 07:25	02/22/17 02:21	1
Dimethyl phthalate	<1.5		1.5	0.24	ug/L		02/20/17 07:25	02/22/17 02:21	1
Di-n-butyl phthalate	<3.8		3.8	0.55	ug/L		02/20/17 07:25	02/22/17 02:21	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		02/20/17 07:25	02/22/17 02:21	1
2,4-Dinitrophenol	<15		15	6.5	ug/L		02/20/17 07:25	02/22/17 02:21	1
2,4-Dinitrotoluene	<0.75		0.75	0.18	ug/L		02/20/17 07:25	02/22/17 02:21	1
2,6-Dinitrotoluene	<0.75		0.75	0.055	ug/L		02/20/17 07:25	02/22/17 02:21	1
Di-n-octyl phthalate	<7.5		7.5	0.79	ug/L		02/20/17 07:25	02/22/17 02:21	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-02-GW-02152017

Date Collected: 02/15/17 16:05
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-2
Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	<0.75		0.75	0.34	ug/L		02/20/17 07:25	02/22/17 02:21	1
Fluorene	**0.67**	**J**	0.75	0.18	ug/L		02/20/17 07:25	02/22/17 02:21	1
Hexachlorobenzene	<0.38		0.38	0.060	ug/L		02/20/17 07:25	02/22/17 02:21	1
Hexachlorobutadiene	<3.8		3.8	0.39	ug/L		02/20/17 07:25	02/22/17 02:21	1
Hexachlorocyclopentadiene	<15	J	15	4.8	ug/L		02/20/17 07:25	02/22/17 02:21	1
Hexachloroethane	<3.8		3.8	0.45	ug/L		02/20/17 07:25	02/22/17 02:21	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.056	ug/L		02/20/17 07:25	02/22/17 02:21	1
Isophorone	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/22/17 02:21	1
2-Methylphenol	<1.5		1.5	0.23	ug/L		02/20/17 07:25	02/22/17 02:21	1
3 & 4 Methylphenol	<1.5		1.5	0.34	ug/L		02/20/17 07:25	02/22/17 02:21	1
2-Nitroaniline	<3.8		3.8	0.97	ug/L		02/20/17 07:25	02/22/17 02:21	1
3-Nitroaniline	<7.5		7.5	1.3	ug/L		02/20/17 07:25	02/22/17 02:21	1
4-Nitroaniline	<7.5		7.5	1.3	ug/L		02/20/17 07:25	02/22/17 02:21	1
Nitrobenzene	<0.75		0.75	0.34	ug/L		02/20/17 07:25	02/22/17 02:21	1
2-Nitrophenol	<7.5		7.5	1.9	ug/L		02/20/17 07:25	02/22/17 02:21	1
4-Nitrophenol	<15		15	5.6	ug/L		02/20/17 07:25	02/22/17 02:21	1
N-Nitrosodi-n-propylamine	<0.38		0.38	0.12	ug/L		02/20/17 07:25	02/22/17 02:21	1
N-Nitrosodiphenylamine	**7.1**		0.75	0.28	ug/L		02/20/17 07:25	02/22/17 02:21	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.29	ug/L		02/20/17 07:25	02/22/17 02:21	1
Pentachlorophenol	<15		15	3.0	ug/L		02/20/17 07:25	02/22/17 02:21	1
Phenanthrene	**0.32**	**J**	0.75	0.23	ug/L		02/20/17 07:25	02/22/17 02:21	1
Phenol	<3.8		3.8	0.50	ug/L		02/20/17 07:25	02/22/17 02:21	1
Pyrene	<0.75		0.75	0.32	ug/L		02/20/17 07:25	02/22/17 02:21	1
2,4,5-Trichlorophenol	<7.5		7.5	1.9	ug/L		02/20/17 07:25	02/22/17 02:21	1
2,4,6-Trichlorophenol	<3.8		3.8	0.54	ug/L		02/20/17 07:25	02/22/17 02:21	1
Benzaldehyde	<30		30	11	ug/L		02/20/17 07:25	02/22/17 02:21	1
Caprolactam	<7.5		7.5	1.1	ug/L		02/20/17 07:25	02/22/17 02:21	1
Atrazine	<3.8		3.8	0.47	ug/L		02/20/17 07:25	02/22/17 02:21	1
1,1'-Biphenyl	<3.8		3.8	0.27	ug/L		02/20/17 07:25	02/22/17 02:21	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*62*		*30 - 123*	*02/20/17 07:25*	*02/22/17 02:21*	*1*
2-Fluorophenol (Surr)	*63*		*30 - 110*	*02/20/17 07:25*	*02/22/17 02:21*	*1*
Nitrobenzene-d5 (Surr)	*62*		*33 - 139*	*02/20/17 07:25*	*02/22/17 02:21*	*1*
Phenol-d5 (Surr)	*54*		*20 - 100*	*02/20/17 07:25*	*02/22/17 02:21*	*1*
Terphenyl-d14 (Surr)	*99*		*42 - 150*	*02/20/17 07:25*	*02/22/17 02:21*	*1*
2,4,6-Tribromophenol (Surr)	*99*		*30 - 150*	*02/20/17 07:25*	*02/22/17 02:21*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	**100**	D	7.5	0.24	ug/L		02/20/17 07:25	02/23/17 03:10	5
Naphthalene	**73**	D	3.8	1.2	ug/L		02/20/17 07:25	02/23/17 03:10	5

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.038		0.038	0.0051	ug/L		02/17/17 21:00	02/20/17 23:35	1
alpha-BHC	<0.038		0.038	0.0025	ug/L		02/17/17 21:00	02/20/17 23:35	1
alpha-Chlordane	<0.038		0.038	0.0042	ug/L		02/17/17 21:00	02/20/17 23:35	1
beta-BHC	<0.038		0.038	0.0098	ug/L		02/17/17 21:00	02/20/17 23:35	1
4,4'-DDD	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/20/17 23:35	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-02-GW-02152017

Date Collected: 02/15/17 16:05
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-2

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDE	<0.038		0.038	0.0037	ug/L		02/17/17 21:00	02/20/17 23:35	1
4,4'-DDT	<0.038		0.038	0.0031	ug/L		02/17/17 21:00	02/20/17 23:35	1
delta-BHC	<0.038		0.038	0.0099	ug/L		02/17/17 21:00	02/20/17 23:35	1
Dieldrin	<0.038		0.038	0.012	ug/L		02/17/17 21:00	02/20/17 23:35	1
Endosulfan I	<0.038		0.038	0.0039	ug/L		02/17/17 21:00	02/20/17 23:35	1
Endosulfan II	<0.038		0.038	0.0027	ug/L		02/17/17 21:00	02/20/17 23:35	1
Endosulfan sulfate	<0.038		0.038	0.011	ug/L		02/17/17 21:00	02/20/17 23:35	1
Endrin	<0.038		0.038	0.014	ug/L		02/17/17 21:00	02/20/17 23:35	1
Endrin aldehyde	<0.038		0.038	0.0079	ug/L		02/17/17 21:00	02/20/17 23:35	1
Endrin ketone	<0.038		0.038	0.016	ug/L		02/17/17 21:00	02/20/17 23:35	1
gamma-BHC (Lindane)	<0.038		0.038	0.0054	ug/L		02/17/17 21:00	02/20/17 23:35	1
gamma-Chlordane	<0.038		0.038	0.0069	ug/L		02/17/17 21:00	02/20/17 23:35	1
Heptachlor	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/20/17 23:35	1
Heptachlor epoxide	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/20/17 23:35	1
Methoxychlor	<0.077		0.077	0.022	ug/L		02/17/17 21:00	02/20/17 23:35	1
Toxaphene	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 23:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*73*		*30 - 143*	*02/17/17 21:00*	*02/20/17 23:35*	*1*
Tetrachloro-m-xylene	*117*		*30 - 120*	*02/17/17 21:00*	*02/20/17 23:35*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.38		0.38	0.064	ug/L		02/17/17 21:00	02/20/17 14:18	1
PCB-1221	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:18	1
PCB-1232	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:18	1
PCB-1242	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:18	1
PCB-1248	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:18	1
PCB-1254	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:18	1
PCB-1260	<0.38		0.38	0.067	ug/L		02/17/17 21:00	02/20/17 14:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*79*		*30 - 127*	*02/17/17 21:00*	*02/20/17 14:18*	*1*
DCB Decachlorobiphenyl	*72*		*30 - 150*	*02/17/17 21:00*	*02/20/17 14:18*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/22/17 18:49	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 20:44	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:44	1
Barium	**0.34**		0.010	0.0022	mg/L		02/17/17 08:13	02/22/17 18:49	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/22/17 18:49	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 20:44	1
Calcium	**98**		0.20	0.059	mg/L		02/17/17 08:13	02/22/17 18:49	1
Chromium	<0.010		0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 20:44	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 20:44	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 20:44	1
Iron	**34**	~~^ B~~	0.20	0.10	mg/L		02/17/17 08:13	02/22/17 18:49	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 20:44	1
Magnesium	**49**		0.10	0.041	mg/L		02/17/17 08:13	02/22/17 18:49	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-02-GW-02152017

Date Collected: 02/15/17 16:05
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-2

Matrix: Water

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	0.21		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:44	1
Nickel	0.0045	J	0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 20:44	1
Potassium	34		0.50	0.16	mg/L		02/17/17 08:13	02/22/17 18:49	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 20:44	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 20:44	1
Sodium	160		1.0	0.43	mg/L		02/17/17 08:13	02/22/17 18:49	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:44	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 20:44	1
Zinc	0.050		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 20:44	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/22/17 18:52	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 20:48	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:48	1
Barium	0.36		0.010	0.0022	mg/L		02/17/17 08:13	02/22/17 18:52	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/22/17 18:52	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 20:48	1
Calcium	110		0.20	0.059	mg/L		02/17/17 08:13	02/22/17 18:52	1
Chromium	0.0032	J	0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 20:48	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 20:48	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 20:48	1
Iron	36	~~^ B~~	0.20	0.10	mg/L		02/17/17 08:13	02/22/17 18:52	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 20:48	1
Magnesium	54		0.10	0.041	mg/L		02/17/17 08:13	02/22/17 18:52	1
Manganese	0.23		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:48	1
Nickel	0.0043	J	0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 20:48	1
Potassium	37		0.50	0.16	mg/L		02/17/17 08:13	02/22/17 18:52	1
Selenium	0.0069	J	0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 20:48	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 20:48	1
Sodium	180		1.0	0.43	mg/L		02/17/17 08:13	02/22/17 18:52	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:48	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 20:48	1
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 20:48	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:44	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	0.38	J	1.0	0.18	mg/L			02/21/17 07:39	1
Sulfate	5.0 ~~3.0~~	~~J B~~ UB	5.0	1.5	mg/L			03/02/17 07:09	1
Total Organic Carbon - Duplicates	19		1.0	0.27	mg/L			02/17/17 00:54	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	63		5.0	2.5	mg/L			02/17/17 13:12	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-02-GW-02152017

Lab Sample ID: 500-123998-2

Date Collected: 02/15/17 16:05
Matrix: Water
Date Received: 02/16/17 15:35

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**46**		2.0	1.0	mg/L		02/17/17 19:00	02/17/17 22:14	10
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/17/17 12:44	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/18/17 00:11	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-01-GW-02162017

Lab Sample ID: 500-123998-3

Date Collected: 02/16/17 07:55
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**55**		5.0	1.7	ug/L			02/23/17 04:42	1
Benzene	**30**		0.50	0.15	ug/L			02/23/17 04:42	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/23/17 04:42	1
Bromoform	<1.0		1.0	0.48	ug/L			02/23/17 04:42	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/23/17 04:42	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/23/17 04:42	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/23/17 04:42	1
Chlorobenzene	**5.8**		1.0	0.39	ug/L			02/23/17 04:42	1
Chloroethane	<1.0	J	1.0	0.51	ug/L			02/23/17 04:42	1
Chloroform	<2.0		2.0	0.37	ug/L			02/23/17 04:42	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/23/17 04:42	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/23/17 04:42	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/23/17 04:42	1
Cyclohexane	**1.6**		1.0	0.49	ug/L			02/23/17 04:42	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/23/17 04:42	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/23/17 04:42	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/23/17 04:42	1
1,2-Dichlorobenzene	**1.8**		1.0	0.33	ug/L			02/23/17 04:42	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/23/17 04:42	1
1,4-Dichlorobenzene	**3.6**		1.0	0.36	ug/L			02/23/17 04:42	1
Dichlorodifluoromethane	<2.0	J	2.0	0.67	ug/L			02/23/17 04:42	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/23/17 04:42	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/23/17 04:42	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/23/17 04:42	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/23/17 04:42	1
Ethylbenzene	**24**		0.50	0.18	ug/L			02/23/17 04:42	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/23/17 04:42	1
Isopropylbenzene	**14**		1.0	0.39	ug/L			02/23/17 04:42	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/23/17 04:42	1
Methylcyclohexane	**1.8**		1.0	0.32	ug/L			02/23/17 04:42	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/23/17 04:42	1
Methyl Ethyl Ketone	**46**		5.0	2.1	ug/L			02/23/17 04:42	1
methyl isobutyl ketone	**99**		5.0	2.2	ug/L			02/23/17 04:42	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/23/17 04:42	1
Styrene	<1.0		1.0	0.39	ug/L			02/23/17 04:42	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/23/17 04:42	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/23/17 04:42	1
Toluene	**11**		0.50	0.15	ug/L			02/23/17 04:42	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/23/17 04:42	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/23/17 04:42	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/23/17 04:42	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/23/17 04:42	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/23/17 04:42	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/23/17 04:42	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/23/17 04:42	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/23/17 04:42	1
Vinyl chloride	**0.48**	**J**	0.50	0.20	ug/L			02/23/17 04:42	1
Xylenes, Total	**23**		1.0	0.22	ug/L			02/23/17 04:42	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-01-GW-02162017

Lab Sample ID: 500-123998-3

Date Collected: 02/16/17 07:55
Matrix: Water
Date Received: 02/16/17 15:35

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*100*		*71 - 120*		*02/23/17 04:42*	*1*
Dibromofluoromethane	*92*		*70 - 120*		*02/23/17 04:42*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*71 - 127*		*02/23/17 04:42*	*1*
Toluene-d8 (Surr)	*101*		*75 - 120*		*02/23/17 04:42*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**8.1**		0.77	0.24	ug/L		02/23/17 22:30	02/24/17 14:30	1
Acenaphthylene	<0.77		0.77	0.20	ug/L		02/23/17 22:30	02/24/17 14:30	1
Acetophenone	**2.0**	J	3.8	0.51	ug/L		02/23/17 22:30	02/24/17 14:30	1
Anthracene	**0.26**	J	0.77	0.26	ug/L		02/23/17 22:30	02/24/17 14:30	1
Benzo[a]anthracene	<0.15		0.15	0.043	ug/L		02/23/17 22:30	02/24/17 14:30	1
Benzo[a]pyrene	<0.15		0.15	0.076	ug/L		02/23/17 22:30	02/24/17 14:30	1
Benzo[b]fluoranthene	<0.15		0.15	0.062	ug/L		02/23/17 22:30	02/24/17 14:30	1
Benzo[g,h,i]perylene	<0.77		0.77	0.29	ug/L		02/23/17 22:30	02/24/17 14:30	1
Benzo[k]fluoranthene	<0.15		0.15	0.049	ug/L		02/23/17 22:30	02/24/17 14:30	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.22	ug/L		02/23/17 22:30	02/24/17 14:30	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		02/23/17 22:30	02/24/17 14:30	1
Bis(2-ethylhexyl) phthalate	<7.7		7.7	1.3	ug/L		02/23/17 22:30	02/24/17 14:30	1
4-Bromophenyl phenyl ether	<3.8		3.8	0.41	ug/L		02/23/17 22:30	02/24/17 14:30	1
Butyl benzyl phthalate	<1.5		1.5	0.37	ug/L		02/23/17 22:30	02/24/17 14:30	1
Carbazole	**6.4**	* J	3.8	0.27	ug/L		02/23/17 22:30	02/24/17 14:30	1
4-Chloroaniline	**13**		7.7	1.5	ug/L		02/23/17 22:30	02/24/17 14:30	1
4-Chloro-3-methylphenol	<7.7		7.7	1.8	ug/L		02/23/17 22:30	02/24/17 14:30	1
2-Chloronaphthalene	<1.5		1.5	0.18	ug/L		02/23/17 22:30	02/24/17 14:30	1
2-Chlorophenol	<3.8		3.8	0.43	ug/L		02/23/17 22:30	02/24/17 14:30	1
4-Chlorophenyl phenyl ether	<3.8		3.8	0.49	ug/L		02/23/17 22:30	02/24/17 14:30	1
Chrysene	<0.15		0.15	0.052	ug/L		02/23/17 22:30	02/24/17 14:30	1
Dibenz(a,h)anthracene	<0.23		0.23	0.039	ug/L		02/23/17 22:30	02/24/17 14:30	1
Dibenzofuran	**1.4**	J	1.5	0.20	ug/L		02/23/17 22:30	02/24/17 14:30	1
3,3'-Dichlorobenzidine	<3.8		3.8	1.3	ug/L		02/23/17 22:30	02/24/17 14:30	1
2,4-Dichlorophenol	<7.7		7.7	2.0	ug/L		02/23/17 22:30	02/24/17 14:30	1
Diethyl phthalate	<1.5		1.5	0.28	ug/L		02/23/17 22:30	02/24/17 14:30	1
2,4-Dimethylphenol	**6.7**	J	7.7	1.4	ug/L		02/23/17 22:30	02/24/17 14:30	1
Dimethyl phthalate	<1.5		1.5	0.24	ug/L		02/23/17 22:30	02/24/17 14:30	1
Di-n-butyl phthalate	<3.8		3.8	0.56	ug/L		02/23/17 22:30	02/24/17 14:30	1
4,6-Dinitro-2-methylphenol	<15		15	4.5	ug/L		02/23/17 22:30	02/24/17 14:30	1
2,4-Dinitrophenol	<15		15	6.6	ug/L		02/23/17 22:30	02/24/17 14:30	1
2,4-Dinitrotoluene	<0.77		0.77	0.19	ug/L		02/23/17 22:30	02/24/17 14:30	1
2,6-Dinitrotoluene	<0.77		0.77	0.056	ug/L		02/23/17 22:30	02/24/17 14:30	1
Di-n-octyl phthalate	<7.7		7.7	0.80	ug/L		02/23/17 22:30	02/24/17 14:30	1
Fluoranthene	<0.77		0.77	0.35	ug/L		02/23/17 22:30	02/24/17 14:30	1
Fluorene	**2.6**		0.77	0.19	ug/L		02/23/17 22:30	02/24/17 14:30	1
Hexachlorobenzene	<0.38		0.38	0.061	ug/L		02/23/17 22:30	02/24/17 14:30	1
Hexachlorobutadiene	<3.8		3.8	0.39	ug/L		02/23/17 22:30	02/24/17 14:30	1
Hexachlorocyclopentadiene	<15	J	15	4.9	ug/L		02/23/17 22:30	02/24/17 14:30	1
Hexachloroethane	<3.8		3.8	0.46	ug/L		02/23/17 22:30	02/24/17 14:30	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.057	ug/L		02/23/17 22:30	02/24/17 14:30	1
Isophorone	<1.5		1.5	0.29	ug/L		02/23/17 22:30	02/24/17 14:30	1
2-Methylnaphthalene	**5.5**		1.5	0.050	ug/L		02/23/17 22:30	02/24/17 14:30	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-01-GW-02162017

Lab Sample ID: 500-123998-3

Date Collected: 02/16/17 07:55
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	**1.5**		1.5	0.23	ug/L		02/23/17 22:30	02/24/17 14:30	1
3 & 4 Methylphenol	**6.6**		1.5	0.34	ug/L		02/23/17 22:30	02/24/17 14:30	1
2-Nitroaniline	<3.8		3.8	0.99	ug/L		02/23/17 22:30	02/24/17 14:30	1
3-Nitroaniline	<7.7		7.7	1.4	ug/L		02/23/17 22:30	02/24/17 14:30	1
4-Nitroaniline	<7.7		7.7	1.3	ug/L		02/23/17 22:30	02/24/17 14:30	1
Nitrobenzene	<0.77		0.77	0.34	ug/L		02/23/17 22:30	02/24/17 14:30	1
2-Nitrophenol	<7.7		7.7	1.9	ug/L		02/23/17 22:30	02/24/17 14:30	1
4-Nitrophenol	<15		15	5.7	ug/L		02/23/17 22:30	02/24/17 14:30	1
N-Nitrosodi-n-propylamine	<0.38		0.38	0.12	ug/L		02/23/17 22:30	02/24/17 14:30	1
N-Nitrosodiphenylamine	<0.77		0.77	0.28	ug/L		02/23/17 22:30	02/24/17 14:30	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.29	ug/L		02/23/17 22:30	02/24/17 14:30	1
Pentachlorophenol	<15	J	15	3.0	ug/L		02/23/17 22:30	02/24/17 14:30	1
Phenanthrene	**1.3**		0.77	0.23	ug/L		02/23/17 22:30	02/24/17 14:30	1
Pyrene	<0.77		0.77	0.33	ug/L		02/23/17 22:30	02/24/17 14:30	1
2,4,5-Trichlorophenol	<7.7		7.7	2.0	ug/L		02/23/17 22:30	02/24/17 14:30	1
2,4,6-Trichlorophenol	<3.8		3.8	0.55	ug/L		02/23/17 22:30	02/24/17 14:30	1
Benzaldehyde	<31	J	31	12	ug/L		02/23/17 22:30	02/24/17 14:30	1
Caprolactam	<7.7		7.7	1.1	ug/L		02/23/17 22:30	02/24/17 14:30	1
Atrazine	<3.8		3.8	0.48	ug/L		02/23/17 22:30	02/24/17 14:30	1
1,1'-Biphenyl	<3.8		3.8	0.28	ug/L		02/23/17 22:30	02/24/17 14:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*71*		*30 - 123*	*02/23/17 22:30*	*02/24/17 14:30*	*1*
2-Fluorophenol (Surr)	*58*		*30 - 110*	*02/23/17 22:30*	*02/24/17 14:30*	*1*
Nitrobenzene-d5 (Surr)	*67*		*33 - 139*	*02/23/17 22:30*	*02/24/17 14:30*	*1*
Phenol-d5 (Surr)	*41*		*20 - 100*	*02/23/17 22:30*	*02/24/17 14:30*	*1*
Terphenyl-d14 (Surr)	*96*		*42 - 150*	*02/23/17 22:30*	*02/24/17 14:30*	*1*
2,4,6-Tribromophenol (Surr)	*105*		*30 - 150*	*02/23/17 22:30*	*02/24/17 14:30*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**130**	D	3.8	1.2	ug/L		02/23/17 22:30	02/24/17 14:58	5
Phenol	**72**	D	19	2.6	ug/L		02/23/17 22:30	02/24/17 14:58	5

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		02/17/17 21:00	02/20/17 23:54	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		02/17/17 21:00	02/20/17 23:54	1
alpha-Chlordane	<0.037		0.037	0.0040	ug/L		02/17/17 21:00	02/20/17 23:54	1
beta-BHC	<0.037		0.037	0.0094	ug/L		02/17/17 21:00	02/20/17 23:54	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		02/17/17 21:00	02/20/17 23:54	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		02/17/17 21:00	02/20/17 23:54	1
4,4'-DDT	<0.037		0.037	0.0029	ug/L		02/17/17 21:00	02/20/17 23:54	1
delta-BHC	<0.037		0.037	0.0094	ug/L		02/17/17 21:00	02/20/17 23:54	1
Dieldrin	<0.037		0.037	0.012	ug/L		02/17/17 21:00	02/20/17 23:54	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		02/17/17 21:00	02/20/17 23:54	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		02/17/17 21:00	02/20/17 23:54	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		02/17/17 21:00	02/20/17 23:54	1
Endrin	<0.037		0.037	0.013	ug/L		02/17/17 21:00	02/20/17 23:54	1
Endrin aldehyde	<0.037		0.037	0.0075	ug/L		02/17/17 21:00	02/20/17 23:54	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-01-GW-02162017

Lab Sample ID: 500-123998-3

Date Collected: 02/16/17 07:55
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endrin ketone	<0.037		0.037	0.016	ug/L		02/17/17 21:00	02/20/17 23:54	1
gamma-BHC (Lindane)	<0.037		0.037	0.0051	ug/L		02/17/17 21:00	02/20/17 23:54	1
gamma-Chlordane	<0.037		0.037	0.0066	ug/L		02/17/17 21:00	02/20/17 23:54	1
Heptachlor	<0.037		0.037	0.012	ug/L		02/17/17 21:00	02/20/17 23:54	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		02/17/17 21:00	02/20/17 23:54	1
Methoxychlor	<0.073		0.073	0.021	ug/L		02/17/17 21:00	02/20/17 23:54	1
Toxaphene	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 23:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*79*		*30 - 143*	*02/17/17 21:00*	*02/20/17 23:54*	*1*
Tetrachloro-m-xylene	*73*		*30 - 120*	*02/17/17 21:00*	*02/20/17 23:54*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.061	ug/L		02/17/17 21:00	02/20/17 14:33	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 14:33	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 14:33	1
PCB-1242	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 14:33	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 14:33	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 14:33	1
PCB-1260	<0.37		0.37	0.064	ug/L		02/17/17 21:00	02/20/17 14:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*70*		*30 - 127*	*02/17/17 21:00*	*02/20/17 14:33*	*1*
DCB Decachlorobiphenyl	*65*		*30 - 150*	*02/17/17 21:00*	*02/20/17 14:33*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.34**		0.20	0.062	mg/L		02/17/17 08:13	02/21/17 20:57	1
Antimony	**0.0068**	**J**	0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 20:57	1
Arsenic	**0.0038**	**J**	0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:57	1
Barium	**0.46**		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 20:57	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/21/17 20:57	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 20:57	1
Calcium	**510**		0.20	0.059	mg/L		02/17/17 08:13	02/21/17 20:57	1
Chromium	<0.010		0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 20:57	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 20:57	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 20:57	1
Iron	<0.20		0.20	0.10	mg/L		02/17/17 08:13	02/21/17 20:57	1
Lead	**0.0027**	**J**	0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 20:57	1
Magnesium	**1.7**		0.10	0.041	mg/L		02/17/17 08:13	02/21/17 20:57	1
Manganese	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:57	1
Nickel	**0.016**		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 20:57	1
Potassium	**51**		0.50	0.16	mg/L		02/17/17 08:13	02/21/17 20:57	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 20:57	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 20:57	1
Sodium	**210**		1.0	0.43	mg/L		02/17/17 08:13	02/21/17 20:57	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 20:57	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 20:57	1
Zinc	**0.012**	**J**	0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 20:57	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-01-GW-02162017

Lab Sample ID: 500-123998-3

Date Collected: 02/16/17 07:55
Matrix: Water
Date Received: 02/16/17 15:35

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.21**		0.20	0.062	mg/L		02/17/17 08:13	02/21/17 21:01	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 21:01	1
Arsenic	**0.0046**	**J**	0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:01	1
Barium	**0.45**		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:01	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/21/17 21:01	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 21:01	1
Calcium	**510**		0.20	0.059	mg/L		02/17/17 08:13	02/21/17 21:01	1
Chromium	<0.010		0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 21:01	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 21:01	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:01	1
Iron	<0.20		0.20	0.10	mg/L		02/17/17 08:13	02/21/17 21:01	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 21:01	1
Magnesium	<0.10		0.10	0.041	mg/L		02/17/17 08:13	02/21/17 21:01	1
Manganese	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:01	1
Nickel	**0.016**		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 21:01	1
Potassium	**50**		0.50	0.16	mg/L		02/17/17 08:13	02/21/17 21:01	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 21:01	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 21:01	1
Sodium	**210**		1.0	0.43	mg/L		02/17/17 08:13	02/21/17 21:01	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:01	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 21:01	1
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 21:01	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:47	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**0.98**	**J**	1.0	0.18	mg/L			02/21/17 07:42	1
Sulfate	**24**	~~**B**~~	5.0	1.5	mg/L			03/02/17 07:12	1
Total Organic Carbon - Duplicates	**31**		1.0	0.27	mg/L			02/17/17 01:11	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**29**		5.0	2.5	mg/L			02/17/17 13:14	1
Ammonia	**49**		4.0	2.0	mg/L		02/17/17 19:00	02/17/17 22:17	20
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/17/17 12:45	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/18/17 00:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-13-GW-02162017

Lab Sample ID: 500-123998-4

Date Collected: 02/16/17 10:35
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<50		50	17	ug/L			02/23/17 05:09	10
Benzene	**410**		5.0	1.5	ug/L			02/23/17 05:09	10
Bromodichloromethane	<10		10	3.7	ug/L			02/23/17 05:09	10
Bromoform	<10		10	4.8	ug/L			02/23/17 05:09	10
Bromomethane	<20		20	8.0	ug/L			02/23/17 05:09	10
Carbon disulfide	<20		20	4.5	ug/L			02/23/17 05:09	10
Carbon tetrachloride	<10		10	3.8	ug/L			02/23/17 05:09	10
Chlorobenzene	<10		10	3.9	ug/L			02/23/17 05:09	10
Chloroethane	<10	J	10	5.1	ug/L			02/23/17 05:09	10
Chloroform	<20		20	3.7	ug/L			02/23/17 05:09	10
Chloromethane	<10		10	3.2	ug/L			02/23/17 05:09	10
cis-1,2-Dichloroethene	**37**		10	4.1	ug/L			02/23/17 05:09	10
cis-1,3-Dichloropropene	<10		10	4.2	ug/L			02/23/17 05:09	10
Cyclohexane	<10		10	4.9	ug/L			02/23/17 05:09	10
Dibromochloromethane	<10		10	4.9	ug/L			02/23/17 05:09	10
1,2-Dibromo-3-Chloropropane	<50		50	20	ug/L			02/23/17 05:09	10
1,2-Dibromoethane	<10		10	3.9	ug/L			02/23/17 05:09	10
1,2-Dichlorobenzene	**18**		10	3.3	ug/L			02/23/17 05:09	10
1,3-Dichlorobenzene	<10		10	4.0	ug/L			02/23/17 05:09	10
1,4-Dichlorobenzene	<10		10	3.6	ug/L			02/23/17 05:09	10
Dichlorodifluoromethane	<20	J	20	6.7	ug/L			02/23/17 05:09	10
1,1-Dichloroethane	<10		10	4.1	ug/L			02/23/17 05:09	10
1,2-Dichloroethane	<10		10	3.9	ug/L			02/23/17 05:09	10
1,1-Dichloroethene	<10		10	3.9	ug/L			02/23/17 05:09	10
1,2-Dichloropropane	<10		10	4.3	ug/L			02/23/17 05:09	10
Ethylbenzene	**1300**		5.0	1.8	ug/L			02/23/17 05:09	10
2-Hexanone	<50		50	16	ug/L			02/23/17 05:09	10
Isopropylbenzene	**100**		10	3.9	ug/L			02/23/17 05:09	10
Methyl acetate	<50		50	20	ug/L			02/23/17 05:09	10
Methylcyclohexane	<10		10	3.2	ug/L			02/23/17 05:09	10
Methylene Chloride	<50		50	16	ug/L			02/23/17 05:09	10
Methyl Ethyl Ketone	<50		50	21	ug/L			02/23/17 05:09	10
methyl isobutyl ketone	<50		50	22	ug/L			02/23/17 05:09	10
Methyl tert-butyl ether	<10		10	3.9	ug/L			02/23/17 05:09	10
Styrene	<10		10	3.9	ug/L			02/23/17 05:09	10
1,1,2,2-Tetrachloroethane	<10		10	4.0	ug/L			02/23/17 05:09	10
Tetrachloroethene	<10		10	3.7	ug/L			02/23/17 05:09	10
trans-1,2-Dichloroethene	<10		10	3.5	ug/L			02/23/17 05:09	10
trans-1,3-Dichloropropene	<10		10	3.6	ug/L			02/23/17 05:09	10
1,2,4-Trichlorobenzene	<10		10	3.4	ug/L			02/23/17 05:09	10
1,1,1-Trichloroethane	<10		10	3.8	ug/L			02/23/17 05:09	10
1,1,2-Trichloroethane	<10		10	3.5	ug/L			02/23/17 05:09	10
Trichloroethene	<5.0		5.0	1.6	ug/L			02/23/17 05:09	10
Trichlorofluoromethane	<10		10	4.3	ug/L			02/23/17 05:09	10
1,1,2-Trichloro-1,2,2-trifluoroethane	<10		10	4.6	ug/L			02/23/17 05:09	10
Vinyl chloride	**11**		5.0	2.0	ug/L			02/23/17 05:09	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*99*		*71 - 120*		*02/23/17 05:09*	*10*

TestAmerica Chicago

Client Sample ID: MW-13-GW-02162017

Lab Sample ID: 500-123998-4

Date Collected: 02/16/17 10:35
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*93*		*70 - 120*		*02/23/17 05:09*	*10*
1,2-Dichloroethane-d4 (Surr)	*100*		*71 - 127*		*02/23/17 05:09*	*10*
Toluene-d8 (Surr)	*101*		*75 - 120*		*02/23/17 05:09*	*10*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**2600**	D	50	15	ug/L			02/23/17 05:36	100
Xylenes, Total	**8400**	D	100	22	ug/L			02/23/17 05:36	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*		*02/23/17 05:36*	*100*
Dibromofluoromethane	*91*		*70 - 120*		*02/23/17 05:36*	*100*
1,2-Dichloroethane-d4 (Surr)	*99*		*71 - 127*		*02/23/17 05:36*	*100*
Toluene-d8 (Surr)	*100*		*75 - 120*		*02/23/17 05:36*	*100*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.86**		0.74	0.23	ug/L		02/22/17 12:03	02/23/17 00:54	1
Acenaphthylene	**2.3**		0.74	0.20	ug/L		02/22/17 12:03	02/23/17 00:54	1
Acetophenone	**32**		3.7	0.49	ug/L		02/22/17 12:03	02/23/17 00:54	1
Anthracene	**0.29**	J	0.74	0.25	ug/L		02/22/17 12:03	02/23/17 00:54	1
Benzo[a]anthracene	<0.15	J	0.15	0.042	ug/L		02/22/17 12:03	02/23/17 00:54	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		02/22/17 12:03	02/23/17 00:54	1
Benzo[b]fluoranthene	<0.15		0.15	0.060	ug/L		02/22/17 12:03	02/23/17 00:54	1
Benzo[g,h,i]perylene	<0.74		0.74	0.28	ug/L		02/22/17 12:03	02/23/17 00:54	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		02/22/17 12:03	02/23/17 00:54	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/22/17 12:03	02/23/17 00:54	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		02/22/17 12:03	02/23/17 00:54	1
Bis(2-ethylhexyl) phthalate	**2.9**	J	7.4	1.3	ug/L		02/22/17 12:03	02/23/17 00:54	1
4-Bromophenyl phenyl ether	<3.7	J	3.7	0.40	ug/L		02/22/17 12:03	02/23/17 00:54	1
Butyl benzyl phthalate	**1.3**	J	1.5	0.35	ug/L		02/22/17 12:03	02/23/17 00:54	1
Carbazole	<3.7	J	3.7	0.26	ug/L		02/22/17 12:03	02/23/17 00:54	1
4-Chloroaniline	<7.4		7.4	1.5	ug/L		02/22/17 12:03	02/23/17 00:54	1
4-Chloro-3-methylphenol	<7.4		7.4	1.7	ug/L		02/22/17 12:03	02/23/17 00:54	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/22/17 12:03	02/23/17 00:54	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		02/22/17 12:03	02/23/17 00:54	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		02/22/17 12:03	02/23/17 00:54	1
Chrysene	<0.15		0.15	0.050	ug/L		02/22/17 12:03	02/23/17 00:54	1
Dibenz(a,h)anthracene	<0.22	J	0.22	0.037	ug/L		02/22/17 12:03	02/23/17 00:54	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		02/22/17 12:03	02/23/17 00:54	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		02/22/17 12:03	02/23/17 00:54	1
2,4-Dichlorophenol	<7.4		7.4	1.9	ug/L		02/22/17 12:03	02/23/17 00:54	1
Diethyl phthalate	**11**		1.5	0.27	ug/L		02/22/17 12:03	02/23/17 00:54	1
2,4-Dimethylphenol	**42**		7.4	1.3	ug/L		02/22/17 12:03	02/23/17 00:54	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/22/17 12:03	02/23/17 00:54	1
Di-n-butyl phthalate	**3.9**		3.7	0.54	ug/L		02/22/17 12:03	02/23/17 00:54	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		02/22/17 12:03	02/23/17 00:54	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		02/22/17 12:03	02/23/17 00:54	1
2,4-Dinitrotoluene	<0.74		0.74	0.18	ug/L		02/22/17 12:03	02/23/17 00:54	1
2,6-Dinitrotoluene	<0.74		0.74	0.054	ug/L		02/22/17 12:03	02/23/17 00:54	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-13-GW-02162017

Date Collected: 02/16/17 10:35
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-4

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Di-n-octyl phthalate	<7.4		7.4	0.77	ug/L		02/22/17 12:03	02/23/17 00:54	1
Fluoranthene	<0.74		0.74	0.33	ug/L		02/22/17 12:03	02/23/17 00:54	1
Fluorene	**1.2**		0.74	0.18	ug/L		02/22/17 12:03	02/23/17 00:54	1
Hexachlorobenzene	<0.37		0.37	0.059	ug/L		02/22/17 12:03	02/23/17 00:54	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		02/22/17 12:03	02/23/17 00:54	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		02/22/17 12:03	02/23/17 00:54	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		02/22/17 12:03	02/23/17 00:54	1
Indeno[1,2,3-cd]pyrene	<0.15	* J	0.15	0.055	ug/L		02/22/17 12:03	02/23/17 00:54	1
Isophorone	<1.5		1.5	0.28	ug/L		02/22/17 12:03	02/23/17 00:54	1
2-Methylnaphthalene	**11**		1.5	0.048	ug/L		02/22/17 12:03	02/23/17 00:54	1
2-Methylphenol	<1.5		1.5	0.23	ug/L		02/22/17 12:03	02/23/17 00:54	1
3 & 4 Methylphenol	**40**		1.5	0.33	ug/L		02/22/17 12:03	02/23/17 00:54	1
2-Nitroaniline	<3.7		3.7	0.95	ug/L		02/22/17 12:03	02/23/17 00:54	1
3-Nitroaniline	<7.4		7.4	1.3	ug/L		02/22/17 12:03	02/23/17 00:54	1
4-Nitroaniline	<7.4		7.4	1.2	ug/L		02/22/17 12:03	02/23/17 00:54	1
Nitrobenzene	<0.74		0.74	0.33	ug/L		02/22/17 12:03	02/23/17 00:54	1
2-Nitrophenol	<7.4		7.4	1.8	ug/L		02/22/17 12:03	02/23/17 00:54	1
4-Nitrophenol	<15		15	5.5	ug/L		02/22/17 12:03	02/23/17 00:54	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		02/22/17 12:03	02/23/17 00:54	1
N-Nitrosodiphenylamine	**11**		0.74	0.27	ug/L		02/22/17 12:03	02/23/17 00:54	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/22/17 12:03	02/23/17 00:54	1
Pentachlorophenol	<15	J	15	2.9	ug/L		02/22/17 12:03	02/23/17 00:54	1
Phenanthrene	**0.86**		0.74	0.22	ug/L		02/22/17 12:03	02/23/17 00:54	1
Phenol	**39**		3.7	0.50	ug/L		02/22/17 12:03	02/23/17 00:54	1
Pyrene	<0.74		0.74	0.31	ug/L		02/22/17 12:03	02/23/17 00:54	1
2,4,5-Trichlorophenol	<7.4		7.4	1.9	ug/L		02/22/17 12:03	02/23/17 00:54	1
2,4,6-Trichlorophenol	**1.3**	**J**	3.7	0.53	ug/L		02/22/17 12:03	02/23/17 00:54	1
Benzaldehyde	<30	* J	30	11	ug/L		02/22/17 12:03	02/23/17 00:54	1
Caprolactam	<7.4		7.4	1.1	ug/L		02/22/17 12:03	02/23/17 00:54	1
Atrazine	<3.7		3.7	0.46	ug/L		02/22/17 12:03	02/23/17 00:54	1
1,1'-Biphenyl	**2.0**	**J**	3.7	0.27	ug/L		02/22/17 12:03	02/23/17 00:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*68*		*30 - 123*	*02/22/17 12:03*	*02/23/17 00:54*	*1*
2-Fluorophenol (Surr)	*21*	*X*	*30 - 110*	*02/22/17 12:03*	*02/23/17 00:54*	*1*
Nitrobenzene-d5 (Surr)	*69*		*33 - 139*	*02/22/17 12:03*	*02/23/17 00:54*	*1*
Phenol-d5 (Surr)	*46*		*20 - 100*	*02/22/17 12:03*	*02/23/17 00:54*	*1*
Terphenyl-d14 (Surr)	*82*		*42 - 150*	*02/22/17 12:03*	*02/23/17 00:54*	*1*
2,4,6-Tribromophenol (Surr)	*95*		*30 - 150*	*02/22/17 12:03*	*02/23/17 00:54*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**190**	D	7.4	2.3	ug/L		02/22/17 12:03	02/23/17 01:21	10

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.038		0.038	0.0051	ug/L		02/17/17 21:00	02/21/17 00:13	1
alpha-BHC	<0.038		0.038	0.0025	ug/L		02/17/17 21:00	02/21/17 00:13	1
alpha-Chlordane	<0.038		0.038	0.0042	ug/L		02/17/17 21:00	02/21/17 00:13	1
beta-BHC	<0.038		0.038	0.0097	ug/L		02/17/17 21:00	02/21/17 00:13	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-13-GW-02162017

Date Collected: 02/16/17 10:35
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-4

Matrix: Water

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/21/17 00:13	1
4,4'-DDE	<0.038		0.038	0.0036	ug/L		02/17/17 21:00	02/21/17 00:13	1
4,4'-DDT	<0.038		0.038	0.0031	ug/L		02/17/17 21:00	02/21/17 00:13	1
delta-BHC	<0.038		0.038	0.0098	ug/L		02/17/17 21:00	02/21/17 00:13	1
Dieldrin	<0.038		0.038	0.012	ug/L		02/17/17 21:00	02/21/17 00:13	1
Endosulfan I	<0.038		0.038	0.0039	ug/L		02/17/17 21:00	02/21/17 00:13	1
Endosulfan II	<0.038		0.038	0.0027	ug/L		02/17/17 21:00	02/21/17 00:13	1
Endosulfan sulfate	<0.038		0.038	0.011	ug/L		02/17/17 21:00	02/21/17 00:13	1
Endrin	<0.038		0.038	0.014	ug/L		02/17/17 21:00	02/21/17 00:13	1
Endrin aldehyde	<0.038		0.038	0.0078	ug/L		02/17/17 21:00	02/21/17 00:13	1
Endrin ketone	<0.038		0.038	0.016	ug/L		02/17/17 21:00	02/21/17 00:13	1
gamma-BHC (Lindane)	<0.038		0.038	0.0053	ug/L		02/17/17 21:00	02/21/17 00:13	1
gamma-Chlordane	<0.038		0.038	0.0069	ug/L		02/17/17 21:00	02/21/17 00:13	1
Heptachlor	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/21/17 00:13	1
Heptachlor epoxide	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/21/17 00:13	1
Methoxychlor	<0.076		0.076	0.022	ug/L		02/17/17 21:00	02/21/17 00:13	1
Toxaphene	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/21/17 00:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*47*		*30 - 143*	*02/17/17 21:00*	*02/21/17 00:13*	*1*
Tetrachloro-m-xylene	*40*		*30 - 120*	*02/17/17 21:00*	*02/21/17 00:13*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.38		0.38	0.064	ug/L		02/17/17 21:00	02/20/17 14:48	1
PCB-1221	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:48	1
PCB-1232	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:48	1
PCB-1242	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:48	1
PCB-1248	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:48	1
PCB-1254	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 14:48	1
PCB-1260	<0.38		0.38	0.067	ug/L		02/17/17 21:00	02/20/17 14:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*105*		*30 - 127*	*02/17/17 21:00*	*02/20/17 14:48*	*1*
DCB Decachlorobiphenyl	*58*		*30 - 150*	*02/17/17 21:00*	*02/20/17 14:48*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/21/17 21:07	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 21:07	1
Arsenic	**0.0074**	**J**	0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:07	1
Barium	**0.25**		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:07	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/21/17 21:07	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 21:07	1
Calcium	**100**		0.20	0.059	mg/L		02/17/17 08:13	02/21/17 21:07	1
Chromium	**0.0032**	**J**	0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 21:07	1
Cobalt	**0.0018**	**J**	0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 21:07	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:07	1
Iron	**4.8**		0.20	0.10	mg/L		02/17/17 08:13	02/21/17 21:07	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 21:07	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-13-GW-02162017

Lab Sample ID: 500-123998-4

Date Collected: 02/16/17 10:35
Matrix: Water
Date Received: 02/16/17 15:35

Method: 6010C - Metals (ICP) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Magnesium	**47**		0.10	0.041	mg/L		02/17/17 08:13	02/21/17 21:07	1
Manganese	**0.24**		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:07	1
Nickel	**0.014**		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 21:07	1
Potassium	**67**		0.50	0.16	mg/L		02/17/17 08:13	02/21/17 21:07	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 21:07	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 21:07	1
Sodium	**230**		1.0	0.43	mg/L		02/17/17 08:13	02/21/17 21:07	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:07	1
Vanadium	**0.0028**	**J**	0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 21:07	1
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 21:07	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/21/17 21:13	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 21:13	1
Arsenic	**0.0070**	**J**	0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:13	1
Barium	**0.25**		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:13	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/21/17 21:13	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 21:13	1
Calcium	**100**		0.20	0.059	mg/L		02/17/17 08:13	02/21/17 21:13	1
Chromium	**0.0027**	**J**	0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 21:13	1
Cobalt	**0.0020**	**J**	0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 21:13	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:13	1
Iron	**4.3**		0.20	0.10	mg/L		02/17/17 08:13	02/21/17 21:13	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 21:13	1
Magnesium	**48**		0.10	0.041	mg/L		02/17/17 08:13	02/21/17 21:13	1
Manganese	**0.24**		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:13	1
Nickel	**0.014**		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 21:13	1
Potassium	**69**		0.50	0.16	mg/L		02/17/17 08:13	02/21/17 21:13	1
Selenium	**0.0063**	**J**	0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 21:13	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 21:13	1
Sodium	**240**		1.0	0.43	mg/L		02/17/17 08:13	02/21/17 21:13	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:13	1
Vanadium	**0.0025**	**J**	0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 21:13	1
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 21:13	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:53	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**3.4**		1.0	0.18	mg/L			02/21/17 07:44	1
Sulfate	**100**	~~**B**~~	25	7.4	mg/L			03/02/17 07:13	5
Total Organic Carbon - Duplicates	**61**	~~**B**~~	2.0	0.53	mg/L			02/21/17 00:31	2
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-13-GW-02162017

Lab Sample ID: 500-123998-4

Date Collected: 02/16/17 10:35
Matrix: Water
Date Received: 02/16/17 15:35

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	**20**		5.0	2.5	mg/L			02/17/17 13:15	1
Ammonia	**57**		4.0	2.0	mg/L		02/17/17 19:00	02/17/17 22:25	20
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/17/17 12:45	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/18/17 00:16	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-11-GW-02162017

Lab Sample ID: 500-123998-5

Date Collected: 02/16/17 13:00
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0	J	5.0	1.7	ug/L			02/23/17 18:00	1
Benzene	**81**		0.50	0.15	ug/L			02/23/17 18:00	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			02/23/17 18:00	1
Bromoform	<1.0		1.0	0.48	ug/L			02/23/17 18:00	1
Bromomethane	<2.0		2.0	0.80	ug/L			02/23/17 18:00	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			02/23/17 18:00	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			02/23/17 18:00	1
Chlorobenzene	**11**		1.0	0.39	ug/L			02/23/17 18:00	1
Chloroethane	<1.0		1.0	0.51	ug/L			02/23/17 18:00	1
Chloroform	<2.0		2.0	0.37	ug/L			02/23/17 18:00	1
Chloromethane	<1.0		1.0	0.32	ug/L			02/23/17 18:00	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			02/23/17 18:00	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			02/23/17 18:00	1
Cyclohexane	**110**		1.0	0.49	ug/L			02/23/17 18:00	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			02/23/17 18:00	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			02/23/17 18:00	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			02/23/17 18:00	1
1,2-Dichlorobenzene	**1.2**		1.0	0.33	ug/L			02/23/17 18:00	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			02/23/17 18:00	1
1,4-Dichlorobenzene	**3.8**		1.0	0.36	ug/L			02/23/17 18:00	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			02/23/17 18:00	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			02/23/17 18:00	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			02/23/17 18:00	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			02/23/17 18:00	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			02/23/17 18:00	1
Ethylbenzene	**3.1**		0.50	0.18	ug/L			02/23/17 18:00	1
2-Hexanone	<5.0		5.0	1.6	ug/L			02/23/17 18:00	1
Isopropylbenzene	**61**		1.0	0.39	ug/L			02/23/17 18:00	1
Methyl acetate	<5.0		5.0	2.0	ug/L			02/23/17 18:00	1
Methylcyclohexane	**170**		1.0	0.32	ug/L			02/23/17 18:00	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			02/23/17 18:00	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			02/23/17 18:00	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			02/23/17 18:00	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			02/23/17 18:00	1
Styrene	<1.0		1.0	0.39	ug/L			02/23/17 18:00	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			02/23/17 18:00	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			02/23/17 18:00	1
Toluene	**0.82**		0.50	0.15	ug/L			02/23/17 18:00	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			02/23/17 18:00	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			02/23/17 18:00	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			02/23/17 18:00	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			02/23/17 18:00	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			02/23/17 18:00	1
Trichloroethene	<0.50		0.50	0.16	ug/L			02/23/17 18:00	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			02/23/17 18:00	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			02/23/17 18:00	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			02/23/17 18:00	1
Xylenes, Total	**17**		1.0	0.22	ug/L			02/23/17 18:00	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-11-GW-02162017

Lab Sample ID: 500-123998-5

Date Collected: 02/16/17 13:00
Matrix: Water
Date Received: 02/16/17 15:35

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*71 - 120*		*02/23/17 18:00*	*1*
Dibromofluoromethane	*94*		*70 - 120*		*02/23/17 18:00*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*71 - 127*		*02/23/17 18:00*	*1*
Toluene-d8 (Surr)	*98*		*75 - 120*		*02/23/17 18:00*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**0.23**	**J**	0.73	0.23	ug/L		02/20/17 07:25	02/23/17 01:49	1
Acenaphthylene	<0.73		0.73	0.20	ug/L		02/20/17 07:25	02/23/17 01:49	1
Acetophenone	<3.7		3.7	0.49	ug/L		02/20/17 07:25	02/23/17 01:49	1
Anthracene	<0.73		0.73	0.25	ug/L		02/20/17 07:25	02/23/17 01:49	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		02/20/17 07:25	02/23/17 01:49	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		02/20/17 07:25	02/23/17 01:49	1
Benzo[b]fluoranthene	<0.15		0.15	0.059	ug/L		02/20/17 07:25	02/23/17 01:49	1
Benzo[g,h,i]perylene	<0.73		0.73	0.28	ug/L		02/20/17 07:25	02/23/17 01:49	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		02/20/17 07:25	02/23/17 01:49	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/23/17 01:49	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/23/17 01:49	1
Bis(2-ethylhexyl) phthalate	<7.3		7.3	1.3	ug/L		02/20/17 07:25	02/23/17 01:49	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		02/20/17 07:25	02/23/17 01:49	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/20/17 07:25	02/23/17 01:49	1
Carbazole	<3.7	J	3.7	0.26	ug/L		02/20/17 07:25	02/23/17 01:49	1
4-Chloroaniline	<7.3		7.3	1.5	ug/L		02/20/17 07:25	02/23/17 01:49	1
4-Chloro-3-methylphenol	<7.3		7.3	1.7	ug/L		02/20/17 07:25	02/23/17 01:49	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/20/17 07:25	02/23/17 01:49	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		02/20/17 07:25	02/23/17 01:49	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		02/20/17 07:25	02/23/17 01:49	1
Chrysene	<0.15		0.15	0.050	ug/L		02/20/17 07:25	02/23/17 01:49	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		02/20/17 07:25	02/23/17 01:49	1
Dibenzofuran	<1.5		1.5	0.19	ug/L		02/20/17 07:25	02/23/17 01:49	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		02/20/17 07:25	02/23/17 01:49	1
2,4-Dichlorophenol	<7.3		7.3	1.9	ug/L		02/20/17 07:25	02/23/17 01:49	1
Diethyl phthalate	**0.64**	**J**	1.5	0.27	ug/L		02/20/17 07:25	02/23/17 01:49	1
2,4-Dimethylphenol	<7.3		7.3	1.3	ug/L		02/20/17 07:25	02/23/17 01:49	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/20/17 07:25	02/23/17 01:49	1
Di-n-butyl phthalate	**0.69**	**J**	3.7	0.54	ug/L		02/20/17 07:25	02/23/17 01:49	1
4,6-Dinitro-2-methylphenol	<15		15	4.3	ug/L		02/20/17 07:25	02/23/17 01:49	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		02/20/17 07:25	02/23/17 01:49	1
2,4-Dinitrotoluene	<0.73		0.73	0.18	ug/L		02/20/17 07:25	02/23/17 01:49	1
2,6-Dinitrotoluene	<0.73		0.73	0.054	ug/L		02/20/17 07:25	02/23/17 01:49	1
Di-n-octyl phthalate	<7.3		7.3	0.77	ug/L		02/20/17 07:25	02/23/17 01:49	1
Fluoranthene	<0.73		0.73	0.33	ug/L		02/20/17 07:25	02/23/17 01:49	1
Fluorene	<0.73		0.73	0.18	ug/L		02/20/17 07:25	02/23/17 01:49	1
Hexachlorobenzene	<0.37		0.37	0.058	ug/L		02/20/17 07:25	02/23/17 01:49	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		02/20/17 07:25	02/23/17 01:49	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		02/20/17 07:25	02/23/17 01:49	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		02/20/17 07:25	02/23/17 01:49	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		02/20/17 07:25	02/23/17 01:49	1
Isophorone	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/23/17 01:49	1
2-Methylnaphthalene	**3.7**		1.5	0.048	ug/L		02/20/17 07:25	02/23/17 01:49	1

Client Sample ID: MW-11-GW-02162017

Lab Sample ID: 500-123998-5

Date Collected: 02/16/17 13:00

Matrix: Water

Date Received: 02/16/17 15:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<1.5		1.5	0.22	ug/L		02/20/17 07:25	02/23/17 01:49	1
3 & 4 Methylphenol	**3.2**		1.5	0.33	ug/L		02/20/17 07:25	02/23/17 01:49	1
Naphthalene	**2.4**		0.73	0.23	ug/L		02/20/17 07:25	02/23/17 01:49	1
2-Nitroaniline	<3.7		3.7	0.95	ug/L		02/20/17 07:25	02/23/17 01:49	1
3-Nitroaniline	<7.3		7.3	1.3	ug/L		02/20/17 07:25	02/23/17 01:49	1
4-Nitroaniline	<7.3		7.3	1.2	ug/L		02/20/17 07:25	02/23/17 01:49	1
Nitrobenzene	<0.73		0.73	0.33	ug/L		02/20/17 07:25	02/23/17 01:49	1
2-Nitrophenol	<7.3		7.3	1.8	ug/L		02/20/17 07:25	02/23/17 01:49	1
4-Nitrophenol	<15		15	5.5	ug/L		02/20/17 07:25	02/23/17 01:49	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		02/20/17 07:25	02/23/17 01:49	1
N-Nitrosodiphenylamine	**1.7**		0.73	0.27	ug/L		02/20/17 07:25	02/23/17 01:49	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/23/17 01:49	1
Pentachlorophenol	<15	J	15	2.9	ug/L		02/20/17 07:25	02/23/17 01:49	1
Phenanthrene	<0.73		0.73	0.22	ug/L		02/20/17 07:25	02/23/17 01:49	1
Phenol	**0.73**	**J**	3.7	0.49	ug/L		02/20/17 07:25	02/23/17 01:49	1
Pyrene	<0.73		0.73	0.31	ug/L		02/20/17 07:25	02/23/17 01:49	1
2,4,5-Trichlorophenol	<7.3		7.3	1.9	ug/L		02/20/17 07:25	02/23/17 01:49	1
2,4,6-Trichlorophenol	<3.7		3.7	0.53	ug/L		02/20/17 07:25	02/23/17 01:49	1
Benzaldehyde	<29	^ J	29	11	ug/L		02/20/17 07:25	02/23/17 01:49	1
Caprolactam	<7.3		7.3	1.1	ug/L		02/20/17 07:25	02/23/17 01:49	1
Atrazine	<3.7		3.7	0.46	ug/L		02/20/17 07:25	02/23/17 01:49	1
1,1'-Biphenyl	**0.99**	**J**	3.7	0.27	ug/L		02/20/17 07:25	02/23/17 01:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*41*		*30 - 123*	*02/20/17 07:25*	*02/23/17 01:49*	*1*
2-Fluorophenol (Surr)	*51*		*30 - 110*	*02/20/17 07:25*	*02/23/17 01:49*	*1*
Nitrobenzene-d5 (Surr)	*59*		*33 - 139*	*02/20/17 07:25*	*02/23/17 01:49*	*1*
Phenol-d5 (Surr)	*46*		*20 - 100*	*02/20/17 07:25*	*02/23/17 01:49*	*1*
Terphenyl-d14 (Surr)	*63*		*42 - 150*	*02/20/17 07:25*	*02/23/17 01:49*	*1*
2,4,6-Tribromophenol (Surr)	*60*		*30 - 150*	*02/20/17 07:25*	*02/23/17 01:49*	*1*

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.037		0.037	0.0049	ug/L		02/17/17 21:00	02/21/17 00:33	1
alpha-BHC	<0.037		0.037	0.0024	ug/L		02/17/17 21:00	02/21/17 00:33	1
alpha-Chlordane	<0.037		0.037	0.0041	ug/L		02/17/17 21:00	02/21/17 00:33	1
beta-BHC	<0.037		0.037	0.0094	ug/L		02/17/17 21:00	02/21/17 00:33	1
4,4'-DDD	<0.037		0.037	0.012	ug/L		02/17/17 21:00	02/21/17 00:33	1
4,4'-DDE	<0.037		0.037	0.0035	ug/L		02/17/17 21:00	02/21/17 00:33	1
4,4'-DDT	<0.037		0.037	0.0030	ug/L		02/17/17 21:00	02/21/17 00:33	1
delta-BHC	<0.037		0.037	0.0095	ug/L		02/17/17 21:00	02/21/17 00:33	1
Dieldrin	<0.037		0.037	0.012	ug/L		02/17/17 21:00	02/21/17 00:33	1
Endosulfan I	<0.037		0.037	0.0038	ug/L		02/17/17 21:00	02/21/17 00:33	1
Endosulfan II	<0.037		0.037	0.0026	ug/L		02/17/17 21:00	02/21/17 00:33	1
Endosulfan sulfate	<0.037		0.037	0.011	ug/L		02/17/17 21:00	02/21/17 00:33	1
Endrin	<0.037		0.037	0.013	ug/L		02/17/17 21:00	02/21/17 00:33	1
Endrin aldehyde	<0.037		0.037	0.0076	ug/L		02/17/17 21:00	02/21/17 00:33	1
Endrin ketone	<0.037		0.037	0.016	ug/L		02/17/17 21:00	02/21/17 00:33	1
gamma-BHC (Lindane)	<0.037		0.037	0.0052	ug/L		02/17/17 21:00	02/21/17 00:33	1
gamma-Chlordane	<0.037		0.037	0.0067	ug/L		02/17/17 21:00	02/21/17 00:33	1

Client Sample ID: MW-11-GW-02162017

Lab Sample ID: 500-123998-5

Date Collected: 02/16/17 13:00
Matrix: Water
Date Received: 02/16/17 15:35

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Heptachlor	<0.037		0.037	0.012	ug/L		02/17/17 21:00	02/21/17 00:33	1
Heptachlor epoxide	<0.037		0.037	0.013	ug/L		02/17/17 21:00	02/21/17 00:33	1
Methoxychlor	<0.074		0.074	0.021	ug/L		02/17/17 21:00	02/21/17 00:33	1
Toxaphene	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/21/17 00:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*60*		*30 - 143*	*02/17/17 21:00*	*02/21/17 00:33*	*1*
Tetrachloro-m-xylene	*67*		*30 - 120*	*02/17/17 21:00*	*02/21/17 00:33*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.37		0.37	0.062	ug/L		02/17/17 21:00	02/20/17 15:04	1
PCB-1221	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 15:04	1
PCB-1232	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 15:04	1
PCB-1242	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 15:04	1
PCB-1248	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 15:04	1
PCB-1254	<0.37		0.37	0.18	ug/L		02/17/17 21:00	02/20/17 15:04	1
PCB-1260	<0.37		0.37	0.065	ug/L		02/17/17 21:00	02/20/17 15:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*87*		*30 - 127*	*02/17/17 21:00*	*02/20/17 15:04*	*1*
DCB Decachlorobiphenyl	*46*		*30 - 150*	*02/17/17 21:00*	*02/20/17 15:04*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/21/17 21:19	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 21:19	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:19	1
Barium	**0.79**		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:19	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/21/17 21:19	1
Cadmium	**0.0011**	**J**	0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 21:19	1
Calcium	**130**		0.20	0.059	mg/L		02/17/17 08:13	02/21/17 21:19	1
Chromium	**0.0073**	**J**	0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 21:19	1
Cobalt	**0.0018**	**J**	0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 21:19	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:19	1
Iron	**29**		0.20	0.10	mg/L		02/17/17 08:13	02/21/17 21:19	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 21:19	1
Magnesium	**120**		0.10	0.041	mg/L		02/17/17 08:13	02/21/17 21:19	1
Manganese	**0.22**		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:19	1
Nickel	**0.020**		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 21:19	1
Potassium	**110**		0.50	0.16	mg/L		02/17/17 08:13	02/21/17 21:19	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 21:19	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 21:19	1
Sodium	**380**		1.0	0.43	mg/L		02/17/17 08:13	02/21/17 21:19	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:19	1
Vanadium	**0.0050**		0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 21:19	1
Zinc	**0.011**	**J**	0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 21:19	1

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		02/17/17 08:13	02/21/17 21:26	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: MW-11-GW-02162017

Lab Sample ID: 500-123998-5

Date Collected: 02/16/17 13:00
Matrix: Water
Date Received: 02/16/17 15:35

Method: 6010C - Metals (ICP) - Dissolved (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 21:26	1
Arsenic	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:26	1
Barium	**0.79**		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:26	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/21/17 21:26	1
Cadmium	**0.0010**	**J**	0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 21:26	1
Calcium	**130**		0.20	0.059	mg/L		02/17/17 08:13	02/21/17 21:26	1
Chromium	**0.0076**	**J**	0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 21:26	1
Cobalt	**0.0017**	**J**	0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 21:26	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:26	1
Iron	**28**		0.20	0.10	mg/L		02/17/17 08:13	02/21/17 21:26	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 21:26	1
Magnesium	**120**		0.10	0.041	mg/L		02/17/17 08:13	02/21/17 21:26	1
Manganese	**0.22**		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:26	1
Nickel	**0.019**		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 21:26	1
Potassium	**120**		0.50	0.16	mg/L		02/17/17 08:13	02/21/17 21:26	1
Selenium	**0.0068**	**J**	0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 21:26	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 21:26	1
Sodium	**390**		1.0	0.43	mg/L		02/17/17 08:13	02/21/17 21:26	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:26	1
Vanadium	**0.0042**	**J**	0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 21:26	1
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 21:26	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:55	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.0		1.0	0.18	mg/L			02/21/17 07:47	1
Sulfate	**7.2**	~~**B**~~ UB	5.0	1.5	mg/L			03/02/17 07:14	1
Total Organic Carbon - Duplicates	**36**		1.0	0.27	mg/L			02/17/17 01:44	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**100**		5.0	2.5	mg/L			02/17/17 13:16	1
Ammonia	**59**		5.0	2.5	mg/L		02/17/17 19:00	02/17/17 22:28	25
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/17/17 12:45	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/18/17 00:16	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: DUP-1-02162017

Date Collected: 02/16/17 00:00
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-6

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	**59**	J	5.0	1.7	ug/L			02/23/17 06:03	1
Benzene	**30**	J	0.50	0.15	ug/L			02/23/17 06:03	1
Bromodichloromethane	<1.0	R	1.0	0.37	ug/L			02/23/17 06:03	1
Bromoform	<1.0	R	1.0	0.48	ug/L			02/23/17 06:03	1
Bromomethane	<2.0	R	2.0	0.80	ug/L			02/23/17 06:03	1
Carbon disulfide	<2.0	R	2.0	0.45	ug/L			02/23/17 06:03	1
Carbon tetrachloride	<1.0	R	1.0	0.38	ug/L			02/23/17 06:03	1
Chlorobenzene	**5.7**	J	1.0	0.39	ug/L			02/23/17 06:03	1
Chloroethane	<1.0	R	1.0	0.51	ug/L			02/23/17 06:03	1
Chloroform	<2.0	R	2.0	0.37	ug/L			02/23/17 06:03	1
Chloromethane	<1.0	R	1.0	0.32	ug/L			02/23/17 06:03	1
cis-1,2-Dichloroethene	<1.0	R	1.0	0.41	ug/L			02/23/17 06:03	1
cis-1,3-Dichloropropene	<1.0	R	1.0	0.42	ug/L			02/23/17 06:03	1
Cyclohexane	**1.5**	J	1.0	0.49	ug/L			02/23/17 06:03	1
Dibromochloromethane	<1.0	R	1.0	0.49	ug/L			02/23/17 06:03	1
1,2-Dibromo-3-Chloropropane	<5.0	R	5.0	2.0	ug/L			02/23/17 06:03	1
1,2-Dibromoethane	<1.0	R	1.0	0.39	ug/L			02/23/17 06:03	1
1,2-Dichlorobenzene	**1.7**	J	1.0	0.33	ug/L			02/23/17 06:03	1
1,3-Dichlorobenzene	<1.0	R	1.0	0.40	ug/L			02/23/17 06:03	1
1,4-Dichlorobenzene	**3.6**	J	1.0	0.36	ug/L			02/23/17 06:03	1
Dichlorodifluoromethane	<2.0	R	2.0	0.67	ug/L			02/23/17 06:03	1
1,1-Dichloroethane	<1.0	R	1.0	0.41	ug/L			02/23/17 06:03	1
1,2-Dichloroethane	<1.0	R	1.0	0.39	ug/L			02/23/17 06:03	1
1,1-Dichloroethene	<1.0	R	1.0	0.39	ug/L			02/23/17 06:03	1
1,2-Dichloropropane	<1.0	R	1.0	0.43	ug/L			02/23/17 06:03	1
Ethylbenzene	**25**	J	0.50	0.18	ug/L			02/23/17 06:03	1
2-Hexanone	<5.0	R	5.0	1.6	ug/L			02/23/17 06:03	1
Isopropylbenzene	**13**	J	1.0	0.39	ug/L			02/23/17 06:03	1
Methyl acetate	<5.0	R	5.0	2.0	ug/L			02/23/17 06:03	1
Methylcyclohexane	**1.9**	J	1.0	0.32	ug/L			02/23/17 06:03	1
Methylene Chloride	<5.0	R	5.0	1.6	ug/L			02/23/17 06:03	1
Methyl Ethyl Ketone	**45**	J	5.0	2.1	ug/L			02/23/17 06:03	1
methyl isobutyl ketone	**99**	J	5.0	2.2	ug/L			02/23/17 06:03	1
Methyl tert-butyl ether	<1.0	R	1.0	0.39	ug/L			02/23/17 06:03	1
Styrene	<1.0	R	1.0	0.39	ug/L			02/23/17 06:03	1
1,1,2,2-Tetrachloroethane	<1.0	R	1.0	0.40	ug/L			02/23/17 06:03	1
Tetrachloroethene	<1.0	R	1.0	0.37	ug/L			02/23/17 06:03	1
Toluene	**11**	J	0.50	0.15	ug/L			02/23/17 06:03	1
trans-1,2-Dichloroethene	<1.0	R	1.0	0.35	ug/L			02/23/17 06:03	1
trans-1,3-Dichloropropene	<1.0	R	1.0	0.36	ug/L			02/23/17 06:03	1
1,2,4-Trichlorobenzene	<1.0	R	1.0	0.34	ug/L			02/23/17 06:03	1
1,1,1-Trichloroethane	<1.0	R	1.0	0.38	ug/L			02/23/17 06:03	1
1,1,2-Trichloroethane	<1.0	R	1.0	0.35	ug/L			02/23/17 06:03	1
Trichloroethene	<0.50	R	0.50	0.16	ug/L			02/23/17 06:03	1
Trichlorofluoromethane	<1.0	R	1.0	0.43	ug/L			02/23/17 06:03	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0	R	1.0	0.46	ug/L			02/23/17 06:03	1
Vinyl chloride	**0.45**	J	0.50	0.20	ug/L			02/23/17 06:03	1
Xylenes, Total	**24**	J	1.0	0.22	ug/L			02/23/17 06:03	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: DUP-1-02162017

Date Collected: 02/16/17 00:00
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-6

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*		*02/23/17 06:03*	*1*
Dibromofluoromethane	*9*	*X*	*70 - 120*		*02/23/17 06:03*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*71 - 127*		*02/23/17 06:03*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*02/23/17 06:03*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	**8.1**		0.74	0.23	ug/L		02/20/17 07:25	02/23/17 02:16	1
Acenaphthylene	<0.74		0.74	0.20	ug/L		02/20/17 07:25	02/23/17 02:16	1
Acetophenone	**1.4**	**J**	3.7	0.49	ug/L		02/20/17 07:25	02/23/17 02:16	1
Anthracene	<0.74		0.74	0.25	ug/L		02/20/17 07:25	02/23/17 02:16	1
Benzo[a]anthracene	<0.15		0.15	0.042	ug/L		02/20/17 07:25	02/23/17 02:16	1
Benzo[a]pyrene	<0.15		0.15	0.073	ug/L		02/20/17 07:25	02/23/17 02:16	1
Benzo[b]fluoranthene	<0.15		0.15	0.060	ug/L		02/20/17 07:25	02/23/17 02:16	1
Benzo[g,h,i]perylene	<0.74		0.74	0.28	ug/L		02/20/17 07:25	02/23/17 02:16	1
Benzo[k]fluoranthene	<0.15		0.15	0.047	ug/L		02/20/17 07:25	02/23/17 02:16	1
Bis(2-chloroethoxy)methane	<1.5		1.5	0.21	ug/L		02/20/17 07:25	02/23/17 02:16	1
Bis(2-chloroethyl)ether	<1.5		1.5	0.22	ug/L		02/20/17 07:25	02/23/17 02:16	1
Bis(2-ethylhexyl) phthalate	<7.4		7.4	1.3	ug/L		02/20/17 07:25	02/23/17 02:16	1
4-Bromophenyl phenyl ether	<3.7		3.7	0.40	ug/L		02/20/17 07:25	02/23/17 02:16	1
Butyl benzyl phthalate	<1.5		1.5	0.35	ug/L		02/20/17 07:25	02/23/17 02:16	1
Carbazole	**4.3**	~~*~~ J	3.7	0.26	ug/L		02/20/17 07:25	02/23/17 02:16	1
4-Chloroaniline	<7.4		7.4	1.5	ug/L		02/20/17 07:25	02/23/17 02:16	1
4-Chloro-3-methylphenol	<7.4		7.4	1.7	ug/L		02/20/17 07:25	02/23/17 02:16	1
2-Chloronaphthalene	<1.5		1.5	0.17	ug/L		02/20/17 07:25	02/23/17 02:16	1
2-Chlorophenol	<3.7		3.7	0.41	ug/L		02/20/17 07:25	02/23/17 02:16	1
4-Chlorophenyl phenyl ether	<3.7		3.7	0.47	ug/L		02/20/17 07:25	02/23/17 02:16	1
Chrysene	<0.15		0.15	0.050	ug/L		02/20/17 07:25	02/23/17 02:16	1
Dibenz(a,h)anthracene	<0.22		0.22	0.037	ug/L		02/20/17 07:25	02/23/17 02:16	1
Dibenzofuran	**1.3**	**J**	1.5	0.19	ug/L		02/20/17 07:25	02/23/17 02:16	1
3,3'-Dichlorobenzidine	<3.7		3.7	1.3	ug/L		02/20/17 07:25	02/23/17 02:16	1
2,4-Dichlorophenol	<7.4		7.4	1.9	ug/L		02/20/17 07:25	02/23/17 02:16	1
Diethyl phthalate	<1.5		1.5	0.27	ug/L		02/20/17 07:25	02/23/17 02:16	1
2,4-Dimethylphenol	**5.5**	**J**	7.4	1.3	ug/L		02/20/17 07:25	02/23/17 02:16	1
Dimethyl phthalate	<1.5		1.5	0.23	ug/L		02/20/17 07:25	02/23/17 02:16	1
Di-n-butyl phthalate	**0.75**	**J**	3.7	0.54	ug/L		02/20/17 07:25	02/23/17 02:16	1
4,6-Dinitro-2-methylphenol	<15		15	4.4	ug/L		02/20/17 07:25	02/23/17 02:16	1
2,4-Dinitrophenol	<15		15	6.3	ug/L		02/20/17 07:25	02/23/17 02:16	1
2,4-Dinitrotoluene	<0.74		0.74	0.18	ug/L		02/20/17 07:25	02/23/17 02:16	1
2,6-Dinitrotoluene	<0.74		0.74	0.054	ug/L		02/20/17 07:25	02/23/17 02:16	1
Di-n-octyl phthalate	<7.4		7.4	0.77	ug/L		02/20/17 07:25	02/23/17 02:16	1
Fluoranthene	<0.74		0.74	0.33	ug/L		02/20/17 07:25	02/23/17 02:16	1
Fluorene	**2.4**		0.74	0.18	ug/L		02/20/17 07:25	02/23/17 02:16	1
Hexachlorobenzene	<0.37		0.37	0.059	ug/L		02/20/17 07:25	02/23/17 02:16	1
Hexachlorobutadiene	<3.7		3.7	0.38	ug/L		02/20/17 07:25	02/23/17 02:16	1
Hexachlorocyclopentadiene	<15		15	4.7	ug/L		02/20/17 07:25	02/23/17 02:16	1
Hexachloroethane	<3.7		3.7	0.44	ug/L		02/20/17 07:25	02/23/17 02:16	1
Indeno[1,2,3-cd]pyrene	<0.15		0.15	0.055	ug/L		02/20/17 07:25	02/23/17 02:16	1
Isophorone	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/23/17 02:16	1
2-Methylnaphthalene	**4.3**		1.5	0.048	ug/L		02/20/17 07:25	02/23/17 02:16	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: DUP-1-02162017

Date Collected: 02/16/17 00:00
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-6

Matrix: Water

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	**1.4**	J	1.5	0.23	ug/L		02/20/17 07:25	02/23/17 02:16	1
3 & 4 Methylphenol	**6.3**		1.5	0.33	ug/L		02/20/17 07:25	02/23/17 02:16	1
2-Nitroaniline	<3.7		3.7	0.95	ug/L		02/20/17 07:25	02/23/17 02:16	1
3-Nitroaniline	<7.4		7.4	1.3	ug/L		02/20/17 07:25	02/23/17 02:16	1
4-Nitroaniline	<7.4		7.4	1.2	ug/L		02/20/17 07:25	02/23/17 02:16	1
Nitrobenzene	<0.74		0.74	0.33	ug/L		02/20/17 07:25	02/23/17 02:16	1
2-Nitrophenol	<7.4		7.4	1.8	ug/L		02/20/17 07:25	02/23/17 02:16	1
4-Nitrophenol	<15		15	5.5	ug/L		02/20/17 07:25	02/23/17 02:16	1
N-Nitrosodi-n-propylamine	<0.37		0.37	0.11	ug/L		02/20/17 07:25	02/23/17 02:16	1
N-Nitrosodiphenylamine	<0.74		0.74	0.27	ug/L		02/20/17 07:25	02/23/17 02:16	1
2,2'-oxybis[1-chloropropane]	<1.5		1.5	0.28	ug/L		02/20/17 07:25	02/23/17 02:16	1
Pentachlorophenol	<15	J	15	2.9	ug/L		02/20/17 07:25	02/23/17 02:16	1
Phenanthrene	**1.2**		0.74	0.22	ug/L		02/20/17 07:25	02/23/17 02:16	1
Pyrene	<0.74		0.74	0.31	ug/L		02/20/17 07:25	02/23/17 02:16	1
2,4,5-Trichlorophenol	<7.4		7.4	1.9	ug/L		02/20/17 07:25	02/23/17 02:16	1
2,4,6-Trichlorophenol	<3.7		3.7	0.53	ug/L		02/20/17 07:25	02/23/17 02:16	1
Benzaldehyde	<30	J	30	11	ug/L		02/20/17 07:25	02/23/17 02:16	1
Caprolactam	<7.4		7.4	1.1	ug/L		02/20/17 07:25	02/23/17 02:16	1
Atrazine	<3.7		3.7	0.46	ug/L		02/20/17 07:25	02/23/17 02:16	1
1,1'-Biphenyl	<3.7		3.7	0.27	ug/L		02/20/17 07:25	02/23/17 02:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorobiphenyl	*37*		*30 - 123*	*02/20/17 07:25*	*02/23/17 02:16*	*1*
2-Fluorophenol (Surr)	*41*		*30 - 110*	*02/20/17 07:25*	*02/23/17 02:16*	*1*
Nitrobenzene-d5 (Surr)	*33*		*33 - 139*	*02/20/17 07:25*	*02/23/17 02:16*	*1*
Phenol-d5 (Surr)	*40*		*20 - 100*	*02/20/17 07:25*	*02/23/17 02:16*	*1*
Terphenyl-d14 (Surr)	*71*		*42 - 150*	*02/20/17 07:25*	*02/23/17 02:16*	*1*
2,4,6-Tribromophenol (Surr)	*78*		*30 - 150*	*02/20/17 07:25*	*02/23/17 02:16*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	**120**	D	3.7	1.1	ug/L		02/20/17 07:25	02/24/17 15:56	5
Phenol	**96**	D	18	2.5	ug/L		02/20/17 07:25	02/24/17 15:56	5

Method: 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	<0.038		0.038	0.0050	ug/L		02/17/17 21:00	02/21/17 00:52	1
alpha-BHC	<0.038		0.038	0.0024	ug/L		02/17/17 21:00	02/21/17 00:52	1
alpha-Chlordane	<0.038		0.038	0.0041	ug/L		02/17/17 21:00	02/21/17 00:52	1
beta-BHC	<0.038		0.038	0.0096	ug/L		02/17/17 21:00	02/21/17 00:52	1
4,4'-DDD	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/21/17 00:52	1
4,4'-DDE	<0.038		0.038	0.0036	ug/L		02/17/17 21:00	02/21/17 00:52	1
4,4'-DDT	<0.038		0.038	0.0030	ug/L		02/17/17 21:00	02/21/17 00:52	1
delta-BHC	<0.038		0.038	0.0097	ug/L		02/17/17 21:00	02/21/17 00:52	1
Dieldrin	<0.038		0.038	0.012	ug/L		02/17/17 21:00	02/21/17 00:52	1
Endosulfan I	<0.038		0.038	0.0039	ug/L		02/17/17 21:00	02/21/17 00:52	1
Endosulfan II	<0.038		0.038	0.0026	ug/L		02/17/17 21:00	02/21/17 00:52	1
Endosulfan sulfate	<0.038		0.038	0.011	ug/L		02/17/17 21:00	02/21/17 00:52	1
Endrin	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/21/17 00:52	1
Endrin aldehyde	<0.038		0.038	0.0077	ug/L		02/17/17 21:00	02/21/17 00:52	1

Client Sample ID: DUP-1-02162017

Lab Sample ID: 500-123998-6

Date Collected: 02/16/17 00:00

Matrix: Water

Date Received: 02/16/17 15:35

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Endrin ketone	<0.038		0.038	0.016	ug/L		02/17/17 21:00	02/21/17 00:52	1
gamma-BHC (Lindane)	<0.038		0.038	0.0053	ug/L		02/17/17 21:00	02/21/17 00:52	1
gamma-Chlordane	<0.038		0.038	0.0068	ug/L		02/17/17 21:00	02/21/17 00:52	1
Heptachlor	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/21/17 00:52	1
Heptachlor epoxide	<0.038		0.038	0.013	ug/L		02/17/17 21:00	02/21/17 00:52	1
Methoxychlor	<0.075		0.075	0.022	ug/L		02/17/17 21:00	02/21/17 00:52	1
Toxaphene	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/21/17 00:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl	*79*		*30 - 143*	*02/17/17 21:00*	*02/21/17 00:52*	*1*
Tetrachloro-m-xylene	*66*		*30 - 120*	*02/17/17 21:00*	*02/21/17 00:52*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.38		0.38	0.063	ug/L		02/17/17 21:00	02/20/17 15:19	1
PCB-1221	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 15:19	1
PCB-1232	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 15:19	1
PCB-1242	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 15:19	1
PCB-1248	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 15:19	1
PCB-1254	<0.38		0.38	0.19	ug/L		02/17/17 21:00	02/20/17 15:19	1
PCB-1260	<0.38		0.38	0.066	ug/L		02/17/17 21:00	02/20/17 15:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*66*		*30 - 127*	*02/17/17 21:00*	*02/20/17 15:19*	*1*
DCB Decachlorobiphenyl	*70*		*30 - 150*	*02/17/17 21:00*	*02/20/17 15:19*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.33**		0.20	0.062	mg/L		02/17/17 08:13	02/21/17 21:31	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 21:31	1
Arsenic	**0.0066**	**J**	0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:31	1
Barium	**0.45**		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:31	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/21/17 21:31	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 21:31	1
Calcium	**500**		0.20	0.059	mg/L		02/17/17 08:13	02/21/17 21:31	1
Chromium	<0.010		0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 21:31	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 21:31	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:31	1
Iron	**0.12**	**J**	0.20	0.10	mg/L		02/17/17 08:13	02/21/17 21:31	1
Lead	**0.0025**	**J**	0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 21:31	1
Magnesium	**1.7**		0.10	0.041	mg/L		02/17/17 08:13	02/21/17 21:31	1
Manganese	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:31	1
Nickel	**0.015**		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 21:31	1
Potassium	**50**		0.50	0.16	mg/L		02/17/17 08:13	02/21/17 21:31	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 21:31	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 21:31	1
Sodium	**210**		1.0	0.43	mg/L		02/17/17 08:13	02/21/17 21:31	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:31	1
Vanadium	**0.0020**	**J**	0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 21:31	1
Zinc	**0.010**	**J**	0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 21:31	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-123998-1

Client Sample ID: DUP-1-02162017

Date Collected: 02/16/17 00:00
Date Received: 02/16/17 15:35

Lab Sample ID: 500-123998-6

Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.22**		0.20	0.062	mg/L		02/17/17 08:13	02/21/17 21:35	1
Antimony	<0.020		0.020	0.0064	mg/L		02/17/17 08:13	02/21/17 21:35	1
Arsenic	**0.0048**	**J**	0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:35	1
Barium	**0.47**		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:35	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		02/17/17 08:13	02/21/17 21:35	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		02/17/17 08:13	02/21/17 21:35	1
Calcium	**530**		0.20	0.059	mg/L		02/17/17 08:13	02/21/17 21:35	1
Chromium	<0.010		0.010	0.0024	mg/L		02/17/17 08:13	02/21/17 21:35	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		02/17/17 08:13	02/21/17 21:35	1
Copper	<0.010		0.010	0.0022	mg/L		02/17/17 08:13	02/21/17 21:35	1
Iron	<0.20		0.20	0.10	mg/L		02/17/17 08:13	02/21/17 21:35	1
Lead	<0.0050		0.0050	0.0025	mg/L		02/17/17 08:13	02/21/17 21:35	1
Magnesium	**0.043**	**J**	0.10	0.041	mg/L		02/17/17 08:13	02/21/17 21:35	1
Manganese	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:35	1
Nickel	**0.016**		0.010	0.0037	mg/L		02/17/17 08:13	02/21/17 21:35	1
Potassium	**52**		0.50	0.16	mg/L		02/17/17 08:13	02/21/17 21:35	1
Selenium	<0.010		0.010	0.0051	mg/L		02/17/17 08:13	02/21/17 21:35	1
Silver	<0.0050		0.0050	0.0013	mg/L		02/17/17 08:13	02/21/17 21:35	1
Sodium	**220**		1.0	0.43	mg/L		02/17/17 08:13	02/21/17 21:35	1
Thallium	<0.010		0.010	0.0034	mg/L		02/17/17 08:13	02/21/17 21:35	1
Vanadium	**0.0021**	**J**	0.0050	0.0019	mg/L		02/17/17 08:13	02/21/17 21:35	1
Zinc	<0.020		0.020	0.0090	mg/L		02/17/17 08:13	02/21/17 21:35	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 10:58	1

Method: 7470A - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		02/17/17 13:30	02/20/17 11:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	**3.5**	J	1.0	0.18	mg/L			02/21/17 07:50	1
Sulfate	**22**	~~B~~	5.0	1.5	mg/L			03/02/17 07:15	1
Total Organic Carbon - Duplicates	**30**		1.0	0.27	mg/L			02/17/17 02:00	1
Nitrogen, Nitrate	<0.10		0.10	0.035	mg/L			02/19/17 20:20	1
Total Suspended Solids	**24**		5.0	2.5	mg/L			02/17/17 13:18	1
Ammonia	**49**		4.0	2.0	mg/L		02/17/17 19:00	02/17/17 23:33	20
Nitrogen, Nitrite	<0.020		0.020	0.0088	mg/L			02/17/17 12:46	1
Nitrogen, Nitrate Nitrite	<0.10		0.10	0.035	mg/L			02/18/17 00:19	1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate is outside control limits

GC/MS Semi VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
X	Surrogate is outside control limits
*	ISTD response or retention time outside acceptable limits

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
^	ICV,CCV,ICB,CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC is outside acceptance limits.
B	Compound was found in the blank and sample.

General Chemistry

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL. The data are considered valid because the absolute difference is less than the RL.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

(optional)
Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 200 S. Michigan Ave
Address: Ste 2000
Phone: 312 575 3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis-us.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-123998
Chain of Custody Number:
Page _____ of _____
Temperature °C of Cooler: 2.8, -0.9, 1.7

Client: Arcadis
Client Project #: CI001805.0002.00005
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thumhoffer
Lab PM: Therese Hargraves

Preservative Key
1. HCL, Cool to 4°
500-123998 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOC, PCBs, Pesticides (Preservative 8)	Total metals (3)	Dissolved Metals (3)	Ammonia NO_3/NO_2 (6)	Sulfate (5)	TOC (2)	TSS, SOH, NO_2 (8)	VOC (1)	Dissolved Gases (9)	Comments
1		MW-03-GW-02152017	2-15	1320	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Dissolved metals
2		MW-02-GW-02152017	2-15	1605	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	were field filtered
3		MW-01-GW-02162017	2-16	0755	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
4		MW-13-GW-02162017	2-16	1035	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
5		MW-11-GW-02162017	2-16	1300	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
6		Dup-1-02162017	2-16	—	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
[signature]	Arcadis	2-16-2017	1455	[signature]	TA	2/16/17	1455
[signature]	TA	2/16/17	1535	[signature]	TALHT	02/16/17	1535

Lab Courier
Shipped
Hand Delivered

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

TA-IL-A-0001 (Rev. 3.0) 3/8/2017

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21748 500-123998-2

Lab ID: **217480001** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-03-GW-02152017** Date Collected: 2/15/2017 13:20

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**22000**	ug/l	0.50	0.027	1	2/24/2017 13:48	MM	n
Carbon Dioxide	**80**	mg/l	5.0	0.24	1	2/24/2017 13:48	MM	n
Oxygen	**3.0**	mg/l	0.50	0.13	1	2/24/2017 13:48	MM	n
Nitrogen	**9.1**	mg/l	2.0	0.24	1	2/24/2017 13:48	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21748 500-123998-2

Lab ID: **217480002** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-02-GW-02152017** Date Collected: 2/15/2017 16:05

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**16000**	ug/l	0.50	0.027	1	2/24/2017 14:04	MM	n
Carbon Dioxide	**360**	mg/l	5.0	0.24	1	2/24/2017 14:04	MM	n
Oxygen	**1.6**	mg/l	0.50	0.13	1	2/24/2017 14:04	MM	n
Nitrogen	**8.9**	mg/l	2.0	0.24	1	2/24/2017 14:04	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21748 500-123998-2

Lab ID: **217480003** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-01-GW-02162017** Date Collected: 2/16/2017 07:55

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**20000**	ug/l	0.50	0.027	1	2/24/2017 14:17	MM	n
Carbon Dioxide	**<5.0**	mg/l	5.0	0.24	1	2/24/2017 14:17	MM	n
Oxygen	**3.4**	mg/l	0.50	0.13	1	2/24/2017 14:17	MM	n
Nitrogen	**10**	mg/l	2.0	0.24	1	2/24/2017 14:17	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21748 500-123998-2

Lab ID: **217480004** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-13-GW-02162017** Date Collected: 2/16/2017 10:35

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**23000**	ug/l	0.50	0.027	1	2/24/2017 14:30	MM	n
Carbon Dioxide	**64**	mg/l	5.0	0.24	1	2/24/2017 14:30	MM	n
Oxygen	**1.4**	mg/l	0.50	0.13	1	2/24/2017 14:30	MM	n
Nitrogen	**7.9**	mg/l	2.0	0.24	1	2/24/2017 14:30	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21748 500-123998-2

Lab ID: **217480005** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **MW-11-GW-02162017** Date Collected: 2/16/2017 13:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX			Analytical Method: AM20GAX					
Methane	**18000**	ug/l	0.50	0.027	1	2/24/2017 14:43	MM	n
Carbon Dioxide	**210**	mg/l	5.0	0.24	1	2/24/2017 14:43	MM	n
Oxygen	**1.6**	mg/l	0.50	0.13	1	2/24/2017 14:43	MM	n
Nitrogen	**9.5**	mg/l	2.0	0.24	1	2/24/2017 14:43	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS

Workorder: 21748 500-123998-2

Lab ID: **217480006** Date Received: 2/17/2017 10:40 Matrix: Water

Sample ID: **DUP-1-02162017** Date Collected: 2/16/2017 00:00

Parameters	Results	Units	PQL	MDL	DF	Analyzed	By	Qualifiers
RISK - PAES								
Analysis Desc: AM20GAX		Analytical Method: AM20GAX						
Methane	**21000**	ug/l	0.50	0.027	1	2/24/2017 14:57	MM	n
Carbon Dioxide	**<5.0**	mg/l	5.0	0.24	1	2/24/2017 14:57	MM	n
Oxygen	**3.4**	mg/l	0.50	0.13	1	2/24/2017 14:57	MM	n
Nitrogen	**10**	mg/l	2.0	0.24	1	2/24/2017 14:57	MM	n

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

Pace Analytical Energy Services LLC
220 William Pitt Way
Pittsburgh, PA 15238
Phone: (412) 826-5245
Fax: (412) 826-3433

ANALYTICAL RESULTS QUALIFIERS

Workorder: 21748 500-123998-2

DEFINITIONS/QUALIFIERS

MDL	Method Detection Limit. Can be used synonymously with LOD; Limit Of Detection.
PQL	Practical Quanitation Limit. Can be used synonymously with LOQ; Limit Of Quantitation.
ND	Not detected at or above reporting limit.
DF	Dilution Factor.
S	Surrogate.
RPD	Relative Percent Difference.
% Rec	Percent Recovery.
U	Indicates the compound was analyzed for, but not detected at or above the noted concentration.
J	Estimated concentration greater than the set method detection limit (MDL) and less than the set reporting limit (PQL).
n	The laboratory does not hold NELAP/TNI accreditation for this method or analyte.

CERTIFICATE OF ANALYSIS
This report shall not be reproduced, except in full,
without the written consent of Pace Analytical Energy Services LLC.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

(optional)
Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 200 S. Michigan Ave
Address: Ste 2000
Phone: 312 575 3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis-us.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500-123998
Chain of Custody Number:
Page ____ of ____
Temperature °C of Cooler: 2.8, -0.9, 1.7

Client: Arcadis
Client Project #: CI001805.0002.00005
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: B. Thumhoffer
Lab PM: Therese Hargraves

Preservative Key
1. HCL, Cool to 4°

500-123998 COC

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	SVOC, PCBs, Pesticides (Preservative: 8)	Total metals (3)	Dissolved Metals (3)	Ammonia NO_3/NO_2 (6)	Sulfate (5)	TOC (2)	TSS, SOM, NO_2 (8)	VOC (1)	Dissolved Gases (9)	Comments
1		MW-03-GW-02152017	2-15	1320	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	Dissolved metals
2		MW-02-GW-02152017	2-15	1605	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	were field filtered
3		MW-01-GW-02162017	2-16	0755	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
4		MW-13-GW-02162017	2-16	1035	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
5		MW-11-GW-02162017	2-16	1300	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	
6		Dup-1-02162017	2-16	—	18	W	✓	✓	✓	✓	✓	✓	✓	✓	✓	

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Ben Thum	Arcadis	2-16-2017	1455	[illegible]	TA	2/16/17	1455
[illegible]	TA	2/16/17	1535	[illegible]	TALH	02/16/17	1535

Lab Courier
Shipped
Hand Delivered

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

APPENDIX G

Seep Investigation Laboratory Report

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-122773-1
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
120 S La Salle St #1350
Chicago, Illinois 60603

Attn: Mr. Jack Kratzmeyer

Therese Hargraves

Authorized for release by:
1/24/2017 2:12:25 PM

Therese Hargraves, Project Manager I
(708)534-5200
therese.hargraves@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Detection Summary 4
Method Summary 5
Sample Summary 6
Client Sample Results 7
Definitions 15
QC Association 16
Surrogate Summary 18
QC Sample Results 19
Chronicle 26
Certification Summary 27
Chain of Custody 28
Receipt Checklists 29

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Job ID: 500-122773-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-122773-1

Comments
No additional comments.

Receipt
The samples were received on 1/19/2017 12:20 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.7º C.

GC/MS VOA
Method(s) 8260B: The matrix spike duplicate for sample -3 was analyzed 13 minutes outside the 12 hour tune time:C-1-011917 (500-122773-3). All QC were within limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Client Sample ID: B-1-011917 — Lab Sample ID: 500-122773-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Aluminum	0.20		0.20	0.062	mg/L	1		6010C	Total/NA
Barium	0.028		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	67		0.20	0.059	mg/L	1		6010C	Total/NA
Copper	0.0023	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	0.69		0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	24		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.13		0.010	0.0034	mg/L	1		6010C	Total/NA
Potassium	7.1		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	38		1.0	0.43	mg/L	1		6010C	Total/NA
Ammonia	0.29		0.20	0.10	mg/L	1		SM 4500 NH3 G	Total/NA

Client Sample ID: B-2-011917 — Lab Sample ID: 500-122773-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.50		0.50	0.15	ug/L	1		8260B	Total/NA
Chlorobenzene	3.1		1.0	0.39	ug/L	1		8260B	Total/NA
Barium	0.068		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	130		0.20	0.059	mg/L	1		6010C	Total/NA
Iron	1.1		0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	32		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.33		0.010	0.0034	mg/L	1		6010C	Total/NA
Potassium	12		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	190		1.0	0.43	mg/L	1		6010C	Total/NA
Ammonia	3.3		0.20	0.10	mg/L	1		SM 4500 NH3 G	Total/NA

Client Sample ID: C-1-011917 — Lab Sample ID: 500-122773-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	6.2		5.0	1.7	ug/L	1		8260B	Total/NA
Aluminum	0.14	J	0.20	0.062	mg/L	1		6010C	Total/NA
Barium	0.066		0.010	0.0022	mg/L	1		6010C	Total/NA
Calcium	170		0.20	0.059	mg/L	1		6010C	Total/NA
Copper	0.0023	J	0.010	0.0022	mg/L	1		6010C	Total/NA
Iron	1.5		0.20	0.10	mg/L	1		6010C	Total/NA
Magnesium	54		0.10	0.041	mg/L	1		6010C	Total/NA
Manganese	0.35		0.010	0.0034	mg/L	1		6010C	Total/NA
Potassium	9.0		0.50	0.16	mg/L	1		6010C	Total/NA
Sodium	52		1.0	0.43	mg/L	1		6010C	Total/NA
Ammonia	2.3		0.20	0.10	mg/L	1		SM 4500 NH3 G	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 500-122773-4

No Detections.

This Detection Summary does not include radiochemical test results.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
6010C	Metals (ICP)	SW846	TAL CHI
7470A	Mercury (CVAA)	SW846	TAL CHI
SM 4500 NH3 G	Ammonia	SM	TAL CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-122773-1	B-1-011917	Water	01/19/17 10:15	01/19/17 12:20
500-122773-2	B-2-011917	Water	01/19/17 10:40	01/19/17 12:20
500-122773-3	C-1-011917	Water	01/19/17 10:55	01/19/17 12:20
500-122773-4	Trip Blank	Water	01/19/17 00:00	01/19/17 12:20

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Client Sample ID: B-1-011917

Date Collected: 01/19/17 10:15
Date Received: 01/19/17 12:20

Lab Sample ID: 500-122773-1

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			01/20/17 17:05	1
Benzene	<0.50		0.50	0.15	ug/L			01/20/17 17:05	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			01/20/17 17:05	1
Bromoform	<1.0		1.0	0.48	ug/L			01/20/17 17:05	1
Bromomethane	<2.0		2.0	0.80	ug/L			01/20/17 17:05	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			01/20/17 17:05	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			01/20/17 17:05	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			01/20/17 17:05	1
Chloroethane	<1.0		1.0	0.51	ug/L			01/20/17 17:05	1
Chloroform	<2.0		2.0	0.37	ug/L			01/20/17 17:05	1
Chloromethane	<1.0		1.0	0.32	ug/L			01/20/17 17:05	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			01/20/17 17:05	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			01/20/17 17:05	1
Cyclohexane	<1.0		1.0	0.49	ug/L			01/20/17 17:05	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			01/20/17 17:05	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			01/20/17 17:05	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			01/20/17 17:05	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			01/20/17 17:05	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			01/20/17 17:05	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			01/20/17 17:05	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			01/20/17 17:05	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			01/20/17 17:05	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			01/20/17 17:05	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			01/20/17 17:05	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			01/20/17 17:05	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			01/20/17 17:05	1
2-Hexanone	<5.0		5.0	1.6	ug/L			01/20/17 17:05	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			01/20/17 17:05	1
Methyl acetate	<5.0		5.0	2.0	ug/L			01/20/17 17:05	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			01/20/17 17:05	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			01/20/17 17:05	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			01/20/17 17:05	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			01/20/17 17:05	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			01/20/17 17:05	1
Styrene	<1.0		1.0	0.39	ug/L			01/20/17 17:05	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			01/20/17 17:05	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			01/20/17 17:05	1
Toluene	<0.50		0.50	0.15	ug/L			01/20/17 17:05	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			01/20/17 17:05	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			01/20/17 17:05	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			01/20/17 17:05	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			01/20/17 17:05	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			01/20/17 17:05	1
Trichloroethene	<0.50		0.50	0.16	ug/L			01/20/17 17:05	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			01/20/17 17:05	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			01/20/17 17:05	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			01/20/17 17:05	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			01/20/17 17:05	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Client Sample ID: B-1-011917

Date Collected: 01/19/17 10:15
Date Received: 01/19/17 12:20

Lab Sample ID: 500-122773-1

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*71 - 120*		*01/20/17 17:05*	*1*
Dibromofluoromethane	*90*		*70 - 120*		*01/20/17 17:05*	*1*
1,2-Dichloroethane-d4 (Surr)	*109*		*71 - 127*		*01/20/17 17:05*	*1*
Toluene-d8 (Surr)	*93*		*75 - 120*		*01/20/17 17:05*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.20**		0.20	0.062	mg/L		01/19/17 14:28	01/20/17 12:31	1
Antimony	<0.020		0.020	0.0064	mg/L		01/19/17 14:28	01/20/17 12:31	1
Arsenic	<0.010		0.010	0.0034	mg/L		01/19/17 14:28	01/20/17 12:31	1
Barium	**0.028**		0.010	0.0022	mg/L		01/19/17 14:28	01/20/17 12:31	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		01/19/17 14:28	01/20/17 12:31	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		01/19/17 14:28	01/20/17 12:31	1
Calcium	**67**		0.20	0.059	mg/L		01/19/17 14:28	01/20/17 12:31	1
Chromium	<0.010		0.010	0.0024	mg/L		01/19/17 14:28	01/20/17 12:31	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		01/19/17 14:28	01/20/17 12:31	1
Copper	**0.0023**	**J**	0.010	0.0022	mg/L		01/19/17 14:28	01/20/17 12:31	1
Iron	**0.69**		0.20	0.10	mg/L		01/19/17 14:28	01/20/17 12:31	1
Lead	<0.0050		0.0050	0.0025	mg/L		01/19/17 14:28	01/20/17 12:31	1
Magnesium	**24**		0.10	0.041	mg/L		01/19/17 14:28	01/20/17 12:31	1
Manganese	**0.13**		0.010	0.0034	mg/L		01/19/17 14:28	01/20/17 12:31	1
Nickel	<0.010		0.010	0.0037	mg/L		01/19/17 14:28	01/20/17 12:31	1
Potassium	**7.1**		0.50	0.16	mg/L		01/19/17 14:28	01/20/17 12:31	1
Selenium	<0.010		0.010	0.0051	mg/L		01/19/17 14:28	01/20/17 12:31	1
Silver	<0.0050		0.0050	0.0013	mg/L		01/19/17 14:28	01/20/17 12:31	1
Sodium	**38**		1.0	0.43	mg/L		01/19/17 14:28	01/20/17 12:31	1
Thallium	<0.010		0.010	0.0034	mg/L		01/19/17 14:28	01/20/17 12:31	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		01/19/17 14:28	01/20/17 12:31	1
Zinc	<0.020		0.020	0.0090	mg/L		01/19/17 14:28	01/20/17 12:31	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		01/20/17 08:30	01/20/17 13:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**0.29**		0.20	0.10	mg/L		01/20/17 19:30	01/20/17 22:27	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Client Sample ID: B-2-011917

Date Collected: 01/19/17 10:40
Date Received: 01/19/17 12:20

Lab Sample ID: 500-122773-2

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			01/20/17 17:32	1
Benzene	**0.50**		0.50	0.15	ug/L			01/20/17 17:32	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			01/20/17 17:32	1
Bromoform	<1.0		1.0	0.48	ug/L			01/20/17 17:32	1
Bromomethane	<2.0		2.0	0.80	ug/L			01/20/17 17:32	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			01/20/17 17:32	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			01/20/17 17:32	1
Chlorobenzene	**3.1**		1.0	0.39	ug/L			01/20/17 17:32	1
Chloroethane	<1.0		1.0	0.51	ug/L			01/20/17 17:32	1
Chloroform	<2.0		2.0	0.37	ug/L			01/20/17 17:32	1
Chloromethane	<1.0		1.0	0.32	ug/L			01/20/17 17:32	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			01/20/17 17:32	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			01/20/17 17:32	1
Cyclohexane	<1.0		1.0	0.49	ug/L			01/20/17 17:32	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			01/20/17 17:32	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			01/20/17 17:32	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			01/20/17 17:32	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			01/20/17 17:32	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			01/20/17 17:32	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			01/20/17 17:32	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			01/20/17 17:32	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			01/20/17 17:32	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			01/20/17 17:32	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			01/20/17 17:32	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			01/20/17 17:32	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			01/20/17 17:32	1
2-Hexanone	<5.0		5.0	1.6	ug/L			01/20/17 17:32	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			01/20/17 17:32	1
Methyl acetate	<5.0		5.0	2.0	ug/L			01/20/17 17:32	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			01/20/17 17:32	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			01/20/17 17:32	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			01/20/17 17:32	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			01/20/17 17:32	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			01/20/17 17:32	1
Styrene	<1.0		1.0	0.39	ug/L			01/20/17 17:32	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			01/20/17 17:32	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			01/20/17 17:32	1
Toluene	<0.50		0.50	0.15	ug/L			01/20/17 17:32	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			01/20/17 17:32	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			01/20/17 17:32	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			01/20/17 17:32	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			01/20/17 17:32	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			01/20/17 17:32	1
Trichloroethene	<0.50		0.50	0.16	ug/L			01/20/17 17:32	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			01/20/17 17:32	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			01/20/17 17:32	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			01/20/17 17:32	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			01/20/17 17:32	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Client Sample ID: B-2-011917

Date Collected: 01/19/17 10:40
Date Received: 01/19/17 12:20

Lab Sample ID: 500-122773-2

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*71 - 120*		*01/20/17 17:32*	*1*
Dibromofluoromethane	*95*		*70 - 120*		*01/20/17 17:32*	*1*
1,2-Dichloroethane-d4 (Surr)	*113*		*71 - 127*		*01/20/17 17:32*	*1*
Toluene-d8 (Surr)	*92*		*75 - 120*		*01/20/17 17:32*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		01/19/17 14:28	01/20/17 12:36	1
Antimony	<0.020		0.020	0.0064	mg/L		01/19/17 14:28	01/20/17 12:36	1
Arsenic	<0.010		0.010	0.0034	mg/L		01/19/17 14:28	01/20/17 12:36	1
Barium	**0.068**		0.010	0.0022	mg/L		01/19/17 14:28	01/20/17 12:36	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		01/19/17 14:28	01/20/17 12:36	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		01/19/17 14:28	01/20/17 12:36	1
Calcium	**130**		0.20	0.059	mg/L		01/19/17 14:28	01/20/17 12:36	1
Chromium	<0.010		0.010	0.0024	mg/L		01/19/17 14:28	01/20/17 12:36	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		01/19/17 14:28	01/20/17 12:36	1
Copper	<0.010		0.010	0.0022	mg/L		01/19/17 14:28	01/20/17 12:36	1
Iron	**1.1**		0.20	0.10	mg/L		01/19/17 14:28	01/20/17 12:36	1
Lead	<0.0050		0.0050	0.0025	mg/L		01/19/17 14:28	01/20/17 12:36	1
Magnesium	**32**		0.10	0.041	mg/L		01/19/17 14:28	01/20/17 12:36	1
Manganese	**0.33**		0.010	0.0034	mg/L		01/19/17 14:28	01/20/17 12:36	1
Nickel	<0.010		0.010	0.0037	mg/L		01/19/17 14:28	01/20/17 12:36	1
Potassium	**12**		0.50	0.16	mg/L		01/19/17 14:28	01/20/17 12:36	1
Selenium	<0.010		0.010	0.0051	mg/L		01/19/17 14:28	01/20/17 12:36	1
Silver	<0.0050		0.0050	0.0013	mg/L		01/19/17 14:28	01/20/17 12:36	1
Sodium	**190**		1.0	0.43	mg/L		01/19/17 14:28	01/20/17 12:36	1
Thallium	<0.010		0.010	0.0034	mg/L		01/19/17 14:28	01/20/17 12:36	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		01/19/17 14:28	01/20/17 12:36	1
Zinc	<0.020		0.020	0.0090	mg/L		01/19/17 14:28	01/20/17 12:36	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		01/20/17 08:30	01/20/17 13:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**3.3**		0.20	0.10	mg/L		01/20/17 19:30	01/20/17 22:30	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Client Sample ID: C-1-011917

Date Collected: 01/19/17 10:55
Date Received: 01/19/17 12:20

Lab Sample ID: 500-122773-3

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	6.2		5.0	1.7	ug/L			01/20/17 17:59	1
Benzene	<0.50		0.50	0.15	ug/L			01/20/17 17:59	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			01/20/17 17:59	1
Bromoform	<1.0		1.0	0.48	ug/L			01/20/17 17:59	1
Bromomethane	<2.0		2.0	0.80	ug/L			01/20/17 17:59	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			01/20/17 17:59	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			01/20/17 17:59	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			01/20/17 17:59	1
Chloroethane	<1.0		1.0	0.51	ug/L			01/20/17 17:59	1
Chloroform	<2.0		2.0	0.37	ug/L			01/20/17 17:59	1
Chloromethane	<1.0		1.0	0.32	ug/L			01/20/17 17:59	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			01/20/17 17:59	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			01/20/17 17:59	1
Cyclohexane	<1.0		1.0	0.49	ug/L			01/20/17 17:59	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			01/20/17 17:59	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			01/20/17 17:59	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			01/20/17 17:59	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			01/20/17 17:59	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			01/20/17 17:59	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			01/20/17 17:59	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			01/20/17 17:59	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			01/20/17 17:59	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			01/20/17 17:59	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			01/20/17 17:59	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			01/20/17 17:59	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			01/20/17 17:59	1
2-Hexanone	<5.0		5.0	1.6	ug/L			01/20/17 17:59	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			01/20/17 17:59	1
Methyl acetate	<5.0		5.0	2.0	ug/L			01/20/17 17:59	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			01/20/17 17:59	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			01/20/17 17:59	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			01/20/17 17:59	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			01/20/17 17:59	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			01/20/17 17:59	1
Styrene	<1.0		1.0	0.39	ug/L			01/20/17 17:59	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			01/20/17 17:59	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			01/20/17 17:59	1
Toluene	<0.50		0.50	0.15	ug/L			01/20/17 17:59	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			01/20/17 17:59	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			01/20/17 17:59	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			01/20/17 17:59	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			01/20/17 17:59	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			01/20/17 17:59	1
Trichloroethene	<0.50		0.50	0.16	ug/L			01/20/17 17:59	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			01/20/17 17:59	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			01/20/17 17:59	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			01/20/17 17:59	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			01/20/17 17:59	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Client Sample ID: C-1-011917

Date Collected: 01/19/17 10:55
Date Received: 01/19/17 12:20

Lab Sample ID: 500-122773-3

Matrix: Water

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*97*		*71 - 120*		*01/20/17 17:59*	*1*
Dibromofluoromethane	*91*		*70 - 120*		*01/20/17 17:59*	*1*
1,2-Dichloroethane-d4 (Surr)	*113*		*71 - 127*		*01/20/17 17:59*	*1*
Toluene-d8 (Surr)	*93*		*75 - 120*		*01/20/17 17:59*	*1*

Method: 6010C - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.14**	**J**	0.20	0.062	mg/L		01/19/17 14:28	01/20/17 12:40	1
Antimony	<0.020		0.020	0.0064	mg/L		01/19/17 14:28	01/20/17 12:40	1
Arsenic	<0.010		0.010	0.0034	mg/L		01/19/17 14:28	01/20/17 12:40	1
Barium	**0.066**		0.010	0.0022	mg/L		01/19/17 14:28	01/20/17 12:40	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		01/19/17 14:28	01/20/17 12:40	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		01/19/17 14:28	01/20/17 12:40	1
Calcium	**170**		0.20	0.059	mg/L		01/19/17 14:28	01/20/17 12:40	1
Chromium	<0.010		0.010	0.0024	mg/L		01/19/17 14:28	01/20/17 12:40	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		01/19/17 14:28	01/20/17 12:40	1
Copper	**0.0023**	**J**	0.010	0.0022	mg/L		01/19/17 14:28	01/20/17 12:40	1
Iron	**1.5**		0.20	0.10	mg/L		01/19/17 14:28	01/20/17 12:40	1
Lead	<0.0050		0.0050	0.0025	mg/L		01/19/17 14:28	01/20/17 12:40	1
Magnesium	**54**		0.10	0.041	mg/L		01/19/17 14:28	01/20/17 12:40	1
Manganese	**0.35**		0.010	0.0034	mg/L		01/19/17 14:28	01/20/17 12:40	1
Nickel	<0.010		0.010	0.0037	mg/L		01/19/17 14:28	01/20/17 12:40	1
Potassium	**9.0**		0.50	0.16	mg/L		01/19/17 14:28	01/20/17 12:40	1
Selenium	<0.010		0.010	0.0051	mg/L		01/19/17 14:28	01/20/17 12:40	1
Silver	<0.0050		0.0050	0.0013	mg/L		01/19/17 14:28	01/20/17 12:40	1
Sodium	**52**		1.0	0.43	mg/L		01/19/17 14:28	01/20/17 12:40	1
Thallium	<0.010		0.010	0.0034	mg/L		01/19/17 14:28	01/20/17 12:40	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		01/19/17 14:28	01/20/17 12:40	1
Zinc	<0.020		0.020	0.0090	mg/L		01/19/17 14:28	01/20/17 12:40	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		01/20/17 08:30	01/20/17 13:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	**2.3**		0.20	0.10	mg/L		01/20/17 19:30	01/20/17 22:44	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Client Sample ID: Trip Blank

Date Collected: 01/19/17 00:00
Date Received: 01/19/17 12:20

Lab Sample ID: 500-122773-4

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			01/20/17 18:26	1
Benzene	<0.50		0.50	0.15	ug/L			01/20/17 18:26	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			01/20/17 18:26	1
Bromoform	<1.0		1.0	0.48	ug/L			01/20/17 18:26	1
Bromomethane	<2.0		2.0	0.80	ug/L			01/20/17 18:26	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			01/20/17 18:26	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			01/20/17 18:26	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			01/20/17 18:26	1
Chloroethane	<1.0		1.0	0.51	ug/L			01/20/17 18:26	1
Chloroform	<2.0		2.0	0.37	ug/L			01/20/17 18:26	1
Chloromethane	<1.0		1.0	0.32	ug/L			01/20/17 18:26	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			01/20/17 18:26	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			01/20/17 18:26	1
Cyclohexane	<1.0		1.0	0.49	ug/L			01/20/17 18:26	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			01/20/17 18:26	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			01/20/17 18:26	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			01/20/17 18:26	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			01/20/17 18:26	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			01/20/17 18:26	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			01/20/17 18:26	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			01/20/17 18:26	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			01/20/17 18:26	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			01/20/17 18:26	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			01/20/17 18:26	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			01/20/17 18:26	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			01/20/17 18:26	1
2-Hexanone	<5.0		5.0	1.6	ug/L			01/20/17 18:26	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			01/20/17 18:26	1
Methyl acetate	<5.0		5.0	2.0	ug/L			01/20/17 18:26	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			01/20/17 18:26	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			01/20/17 18:26	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			01/20/17 18:26	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			01/20/17 18:26	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			01/20/17 18:26	1
Styrene	<1.0		1.0	0.39	ug/L			01/20/17 18:26	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			01/20/17 18:26	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			01/20/17 18:26	1
Toluene	<0.50		0.50	0.15	ug/L			01/20/17 18:26	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			01/20/17 18:26	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			01/20/17 18:26	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			01/20/17 18:26	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			01/20/17 18:26	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			01/20/17 18:26	1
Trichloroethene	<0.50		0.50	0.16	ug/L			01/20/17 18:26	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			01/20/17 18:26	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			01/20/17 18:26	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			01/20/17 18:26	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			01/20/17 18:26	1

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Client Sample ID: Trip Blank

Date Collected: 01/19/17 00:00
Date Received: 01/19/17 12:20

Lab Sample ID: 500-122773-4

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	98		71 - 120		01/20/17 18:26	1
Dibromofluoromethane	91		70 - 120		01/20/17 18:26	1
1,2-Dichloroethane-d4 (Surr)	109		71 - 127		01/20/17 18:26	1
Toluene-d8 (Surr)	92		75 - 120		01/20/17 18:26	1

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Qualifiers

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

GC/MS VOA

Analysis Batch: 369233

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-122773-1	B-1-011917	Total/NA	Water	8260B	
500-122773-2	B-2-011917	Total/NA	Water	8260B	
500-122773-3	C-1-011917	Total/NA	Water	8260B	
500-122773-4	Trip Blank	Total/NA	Water	8260B	
MB 500-369233/6	Method Blank	Total/NA	Water	8260B	
LCS 500-369233/4	Lab Control Sample	Total/NA	Water	8260B	
500-122773-3 MS	C-1-011917	Total/NA	Water	8260B	
500-122773-3 MSD	C-1-011917	Total/NA	Water	8260B	

Metals

Prep Batch: 369156

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-122773-1	B-1-011917	Total/NA	Water	3010A	
500-122773-2	B-2-011917	Total/NA	Water	3010A	
500-122773-3	C-1-011917	Total/NA	Water	3010A	
MB 500-369156/1-A	Method Blank	Total/NA	Water	3010A	
LCS 500-369156/2-A	Lab Control Sample	Total/NA	Water	3010A	

Prep Batch: 369265

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-122773-1	B-1-011917	Total/NA	Water	7470A	
500-122773-2	B-2-011917	Total/NA	Water	7470A	
500-122773-3	C-1-011917	Total/NA	Water	7470A	
MB 500-369265/12-A	Method Blank	Total/NA	Water	7470A	
LCS 500-369265/13-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 369326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-122773-1	B-1-011917	Total/NA	Water	7470A	369265
500-122773-2	B-2-011917	Total/NA	Water	7470A	369265
500-122773-3	C-1-011917	Total/NA	Water	7470A	369265
MB 500-369265/12-A	Method Blank	Total/NA	Water	7470A	369265
LCS 500-369265/13-A	Lab Control Sample	Total/NA	Water	7470A	369265

Analysis Batch: 369361

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-122773-1	B-1-011917	Total/NA	Water	6010C	369156
500-122773-2	B-2-011917	Total/NA	Water	6010C	369156
500-122773-3	C-1-011917	Total/NA	Water	6010C	369156
MB 500-369156/1-A	Method Blank	Total/NA	Water	6010C	369156
LCS 500-369156/2-A	Lab Control Sample	Total/NA	Water	6010C	369156

General Chemistry

Prep Batch: 369367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-122773-1	B-1-011917	Total/NA	Water	SM 4500 NH3 B	
500-122773-2	B-2-011917	Total/NA	Water	SM 4500 NH3 B	
500-122773-3	C-1-011917	Total/NA	Water	SM 4500 NH3 B	

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

General Chemistry (Continued)

Prep Batch: 369367 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 500-369367/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	
LCS 500-369367/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
500-122773-2 MS	B-2-011917	Total/NA	Water	SM 4500 NH3 B	
500-122773-2 MSD	B-2-011917	Total/NA	Water	SM 4500 NH3 B	

Analysis Batch: 369407

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-122773-1	B-1-011917	Total/NA	Water	SM 4500 NH3 G	369367
500-122773-2	B-2-011917	Total/NA	Water	SM 4500 NH3 G	369367
500-122773-3	C-1-011917	Total/NA	Water	SM 4500 NH3 G	369367
MB 500-369367/1-A	Method Blank	Total/NA	Water	SM 4500 NH3 G	369367
LCS 500-369367/2-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 G	369367
500-122773-2 MS	B-2-011917	Total/NA	Water	SM 4500 NH3 G	369367
500-122773-2 MSD	B-2-011917	Total/NA	Water	SM 4500 NH3 G	369367

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	12DCE	TOL
Lab Sample ID	Client Sample ID	(71-120)	(70-120)	(71-127)	(75-120)
500-122773-1	B-1-011917	95	90	109	93
500-122773-2	B-2-011917	95	95	113	92
500-122773-3	C-1-011917	97	91	113	93
500-122773-3 MS	C-1-011917	95	95	109	94
500-122773-3 MSD	C-1-011917	93	96	110	93
500-122773-4	Trip Blank	98	91	109	92
LCS 500-369233/4	Lab Control Sample	95	94	109	94
MB 500-369233/6	Method Blank	96	90	109	94

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane
12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-369233/6
Matrix: Water
Analysis Batch: 369233

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<5.0		5.0	1.7	ug/L			01/20/17 09:48	1
Benzene	<0.50		0.50	0.15	ug/L			01/20/17 09:48	1
Bromodichloromethane	<1.0		1.0	0.37	ug/L			01/20/17 09:48	1
Bromoform	<1.0		1.0	0.48	ug/L			01/20/17 09:48	1
Bromomethane	<2.0		2.0	0.80	ug/L			01/20/17 09:48	1
Carbon disulfide	<2.0		2.0	0.45	ug/L			01/20/17 09:48	1
Carbon tetrachloride	<1.0		1.0	0.38	ug/L			01/20/17 09:48	1
Chlorobenzene	<1.0		1.0	0.39	ug/L			01/20/17 09:48	1
Chloroethane	<1.0		1.0	0.51	ug/L			01/20/17 09:48	1
Chloroform	<2.0		2.0	0.37	ug/L			01/20/17 09:48	1
Chloromethane	<1.0		1.0	0.32	ug/L			01/20/17 09:48	1
cis-1,2-Dichloroethene	<1.0		1.0	0.41	ug/L			01/20/17 09:48	1
cis-1,3-Dichloropropene	<1.0		1.0	0.42	ug/L			01/20/17 09:48	1
Cyclohexane	<1.0		1.0	0.49	ug/L			01/20/17 09:48	1
Dibromochloromethane	<1.0		1.0	0.49	ug/L			01/20/17 09:48	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0	2.0	ug/L			01/20/17 09:48	1
1,2-Dibromoethane	<1.0		1.0	0.39	ug/L			01/20/17 09:48	1
1,2-Dichlorobenzene	<1.0		1.0	0.33	ug/L			01/20/17 09:48	1
1,3-Dichlorobenzene	<1.0		1.0	0.40	ug/L			01/20/17 09:48	1
1,4-Dichlorobenzene	<1.0		1.0	0.36	ug/L			01/20/17 09:48	1
Dichlorodifluoromethane	<2.0		2.0	0.67	ug/L			01/20/17 09:48	1
1,1-Dichloroethane	<1.0		1.0	0.41	ug/L			01/20/17 09:48	1
1,2-Dichloroethane	<1.0		1.0	0.39	ug/L			01/20/17 09:48	1
1,1-Dichloroethene	<1.0		1.0	0.39	ug/L			01/20/17 09:48	1
1,2-Dichloropropane	<1.0		1.0	0.43	ug/L			01/20/17 09:48	1
Ethylbenzene	<0.50		0.50	0.18	ug/L			01/20/17 09:48	1
2-Hexanone	<5.0		5.0	1.6	ug/L			01/20/17 09:48	1
Isopropylbenzene	<1.0		1.0	0.39	ug/L			01/20/17 09:48	1
Methyl acetate	<5.0		5.0	2.0	ug/L			01/20/17 09:48	1
Methylcyclohexane	<1.0		1.0	0.32	ug/L			01/20/17 09:48	1
Methylene Chloride	<5.0		5.0	1.6	ug/L			01/20/17 09:48	1
Methyl Ethyl Ketone	<5.0		5.0	2.1	ug/L			01/20/17 09:48	1
methyl isobutyl ketone	<5.0		5.0	2.2	ug/L			01/20/17 09:48	1
Methyl tert-butyl ether	<1.0		1.0	0.39	ug/L			01/20/17 09:48	1
Styrene	<1.0		1.0	0.39	ug/L			01/20/17 09:48	1
1,1,2,2-Tetrachloroethane	<1.0		1.0	0.40	ug/L			01/20/17 09:48	1
Tetrachloroethene	<1.0		1.0	0.37	ug/L			01/20/17 09:48	1
Toluene	<0.50		0.50	0.15	ug/L			01/20/17 09:48	1
trans-1,2-Dichloroethene	<1.0		1.0	0.35	ug/L			01/20/17 09:48	1
trans-1,3-Dichloropropene	<1.0		1.0	0.36	ug/L			01/20/17 09:48	1
1,2,4-Trichlorobenzene	<1.0		1.0	0.34	ug/L			01/20/17 09:48	1
1,1,1-Trichloroethane	<1.0		1.0	0.38	ug/L			01/20/17 09:48	1
1,1,2-Trichloroethane	<1.0		1.0	0.35	ug/L			01/20/17 09:48	1
Trichloroethene	<0.50		0.50	0.16	ug/L			01/20/17 09:48	1
Trichlorofluoromethane	<1.0		1.0	0.43	ug/L			01/20/17 09:48	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		1.0	0.46	ug/L			01/20/17 09:48	1
Vinyl chloride	<0.50		0.50	0.20	ug/L			01/20/17 09:48	1
Xylenes, Total	<1.0		1.0	0.22	ug/L			01/20/17 09:48	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		71 - 120		01/20/17 09:48	1
Dibromofluoromethane	90		70 - 120		01/20/17 09:48	1
1,2-Dichloroethane-d4 (Surr)	109		71 - 127		01/20/17 09:48	1
Toluene-d8 (Surr)	94		75 - 120		01/20/17 09:48	1

Lab Sample ID: LCS 500-369233/4
Matrix: Water
Analysis Batch: 369233

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	50.0	39.7		ug/L		79	37 - 141
Benzene	50.0	48.9		ug/L		98	70 - 125
Bromodichloromethane	50.0	46.0		ug/L		92	70 - 125
Bromoform	50.0	41.6		ug/L		83	54 - 128
Bromomethane	50.0	30.8		ug/L		62	40 - 150
Carbon disulfide	50.0	49.1		ug/L		98	68 - 125
Carbon tetrachloride	50.0	48.5		ug/L		97	70 - 125
Chlorobenzene	50.0	47.4		ug/L		95	70 - 125
Chloroethane	50.0	44.7		ug/L		89	60 - 139
Chloroform	50.0	49.6		ug/L		99	70 - 125
Chloromethane	50.0	65.9		ug/L		132	60 - 140
cis-1,2-Dichloroethene	50.0	50.4		ug/L		101	70 - 125
cis-1,3-Dichloropropene	50.0	47.9		ug/L		96	70 - 125
Cyclohexane	50.0	62.7		ug/L		125	56 - 149
Dibromochloromethane	50.0	43.8		ug/L		88	66 - 125
1,2-Dibromo-3-Chloropropane	50.0	41.2		ug/L		82	51 - 125
1,2-Dibromoethane	50.0	45.5		ug/L		91	70 - 125
1,2-Dichlorobenzene	50.0	50.0		ug/L		100	70 - 125
1,3-Dichlorobenzene	50.0	49.1		ug/L		98	70 - 125
1,4-Dichlorobenzene	50.0	48.5		ug/L		97	70 - 125
Dichlorodifluoromethane	50.0	51.6		ug/L		103	51 - 140
1,1-Dichloroethane	50.0	53.8		ug/L		108	70 - 125
1,2-Dichloroethane	50.0	57.4		ug/L		115	70 - 125
1,1-Dichloroethene	50.0	48.0		ug/L		96	70 - 125
1,2-Dichloropropane	50.0	55.7		ug/L		111	70 - 125
Ethylbenzene	50.0	46.9		ug/L		94	70 - 125
2-Hexanone	50.0	53.5		ug/L		107	49 - 139
Isopropylbenzene	50.0	50.4		ug/L		101	70 - 125
Methyl acetate	250	345		ug/L		138	60 - 148
Methylcyclohexane	50.0	51.4		ug/L		103	70 - 127
Methylene Chloride	50.0	47.0		ug/L		94	68 - 125
Methyl Ethyl Ketone	50.0	50.1		ug/L		100	52 - 142
methyl isobutyl ketone	50.0	50.9		ug/L		102	47 - 140
Methyl tert-butyl ether	50.0	47.5		ug/L		95	67 - 125
Styrene	50.0	48.4		ug/L		97	70 - 125
1,1,2,2-Tetrachloroethane	50.0	47.0		ug/L		94	68 - 125
Tetrachloroethene	50.0	50.4		ug/L		101	70 - 125
Toluene	50.0	50.3		ug/L		101	70 - 125
trans-1,2-Dichloroethene	50.0	49.3		ug/L		99	70 - 125
trans-1,3-Dichloropropene	50.0	47.5		ug/L		95	70 - 125
1,2,4-Trichlorobenzene	50.0	54.5		ug/L		109	64 - 126
1,1,1-Trichloroethane	50.0	51.1		ug/L		102	70 - 125
1,1,2-Trichloroethane	50.0	46.4		ug/L		93	70 - 125
Trichloroethene	50.0	47.2		ug/L		94	70 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-369233/4
Matrix: Water
Analysis Batch: 369233

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichlorofluoromethane	50.0	50.2		ug/L		100	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	50.0	48.4		ug/L		97	57 - 141
Vinyl chloride	50.0	51.2		ug/L		102	70 - 126
Xylenes, Total	100	96.7		ug/L		97	70 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*71 - 120*
Dibromofluoromethane	*94*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*109*		*71 - 127*
Toluene-d8 (Surr)	*94*		*75 - 120*

Lab Sample ID: 500-122773-3 MS
Matrix: Water
Analysis Batch: 369233

Client Sample ID: C-1-011917
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acetone	6.2		50.0	52.7		ug/L		93	37 - 141
Benzene	<0.50		50.0	44.6		ug/L		89	70 - 125
Bromodichloromethane	<1.0		50.0	42.2		ug/L		84	70 - 125
Bromoform	<1.0		50.0	39.0		ug/L		78	54 - 128
Bromomethane	<2.0		50.0	28.6		ug/L		57	40 - 150
Carbon disulfide	<2.0		50.0	45.6		ug/L		91	68 - 125
Carbon tetrachloride	<1.0		50.0	42.6		ug/L		85	70 - 125
Chlorobenzene	<1.0		50.0	44.4		ug/L		89	70 - 125
Chloroethane	<1.0		50.0	45.0		ug/L		90	60 - 139
Chloroform	<2.0		50.0	45.9		ug/L		92	70 - 125
Chloromethane	<1.0		50.0	47.4		ug/L		95	60 - 140
cis-1,2-Dichloroethene	<1.0		50.0	46.1		ug/L		92	70 - 125
cis-1,3-Dichloropropene	<1.0		50.0	42.4		ug/L		85	70 - 125
Cyclohexane	<1.0		50.0	57.4		ug/L		115	56 - 149
Dibromochloromethane	<1.0		50.0	40.1		ug/L		80	66 - 125
1,2-Dibromo-3-Chloropropane	<5.0		50.0	36.2		ug/L		72	51 - 125
1,2-Dibromoethane	<1.0		50.0	42.9		ug/L		86	70 - 125
1,2-Dichlorobenzene	<1.0		50.0	47.2		ug/L		94	70 - 125
1,3-Dichlorobenzene	<1.0		50.0	45.3		ug/L		91	70 - 125
1,4-Dichlorobenzene	<1.0		50.0	45.0		ug/L		90	70 - 125
Dichlorodifluoromethane	<2.0		50.0	48.3		ug/L		97	51 - 140
1,1-Dichloroethane	<1.0		50.0	49.2		ug/L		98	70 - 125
1,2-Dichloroethane	<1.0		50.0	52.6		ug/L		105	70 - 125
1,1-Dichloroethene	<1.0		50.0	42.8		ug/L		86	70 - 125
1,2-Dichloropropane	<1.0		50.0	50.4		ug/L		101	70 - 125
Ethylbenzene	<0.50		50.0	43.1		ug/L		86	70 - 125
2-Hexanone	<5.0		50.0	50.7		ug/L		101	49 - 139
Isopropylbenzene	<1.0		50.0	46.4		ug/L		93	70 - 125
Methyl acetate	<5.0		250	300		ug/L		120	60 - 148
Methylcyclohexane	<1.0		50.0	45.0		ug/L		90	70 - 127
Methylene Chloride	<5.0		50.0	42.5		ug/L		85	68 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-122773-3 MS
Matrix: Water
Analysis Batch: 369233

Client Sample ID: C-1-011917
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Methyl Ethyl Ketone	<5.0		50.0	53.1		ug/L		106	52 - 142
methyl isobutyl ketone	<5.0		50.0	50.3		ug/L		101	47 - 140
Methyl tert-butyl ether	<1.0		50.0	44.6		ug/L		89	67 - 125
Styrene	<1.0		50.0	44.7		ug/L		89	70 - 125
1,1,2,2-Tetrachloroethane	<1.0		50.0	46.2		ug/L		92	68 - 125
Tetrachloroethene	<1.0		50.0	45.1		ug/L		90	70 - 125
Toluene	<0.50		50.0	44.8		ug/L		90	70 - 125
trans-1,2-Dichloroethene	<1.0		50.0	44.7		ug/L		89	70 - 125
trans-1,3-Dichloropropene	<1.0		50.0	42.5		ug/L		85	70 - 125
1,2,4-Trichlorobenzene	<1.0		50.0	47.6		ug/L		95	64 - 126
1,1,1-Trichloroethane	<1.0		50.0	45.8		ug/L		92	70 - 125
1,1,2-Trichloroethane	<1.0		50.0	43.1		ug/L		86	70 - 125
Trichloroethene	<0.50		50.0	42.9		ug/L		86	70 - 125
Trichlorofluoromethane	<1.0		50.0	45.2		ug/L		90	60 - 126
1,1,2-Trichloro-1,2,2-trifluoroethane	<1.0		50.0	41.4		ug/L		83	57 - 141
Vinyl chloride	<0.50		50.0	46.3		ug/L		93	70 - 126
Xylenes, Total	<1.0		100	90.1		ug/L		90	70 - 125

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*95*		*71 - 120*
Dibromofluoromethane	*95*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*109*		*71 - 127*
Toluene-d8 (Surr)	*94*		*75 - 120*

Lab Sample ID: 500-122773-3 MSD
Matrix: Water
Analysis Batch: 369233

Client Sample ID: C-1-011917
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acetone	6.2		50.0	56.6		ug/L		101	37 - 141	7	20
Benzene	<0.50		50.0	48.5		ug/L		97	70 - 125	8	20
Bromodichloromethane	<1.0		50.0	45.0		ug/L		90	70 - 125	6	20
Bromoform	<1.0		50.0	43.0		ug/L		86	54 - 128	10	20
Bromomethane	<2.0		50.0	31.5		ug/L		63	40 - 150	10	20
Carbon disulfide	<2.0		50.0	49.4		ug/L		99	68 - 125	8	20
Carbon tetrachloride	<1.0		50.0	45.6		ug/L		91	70 - 125	7	20
Chlorobenzene	<1.0		50.0	47.5		ug/L		95	70 - 125	7	20
Chloroethane	<1.0		50.0	49.6		ug/L		99	60 - 139	10	20
Chloroform	<2.0		50.0	49.8		ug/L		100	70 - 125	8	20
Chloromethane	<1.0		50.0	55.0		ug/L		110	60 - 140	15	20
cis-1,2-Dichloroethene	<1.0		50.0	49.5		ug/L		99	70 - 125	7	20
cis-1,3-Dichloropropene	<1.0		50.0	46.4		ug/L		93	70 - 125	9	20
Cyclohexane	<1.0		50.0	62.2		ug/L		124	56 - 149	8	20
Dibromochloromethane	<1.0		50.0	43.4		ug/L		87	66 - 125	8	20
1,2-Dibromo-3-Chloropropane	<5.0		50.0	40.7		ug/L		81	51 - 125	12	20
1,2-Dibromoethane	<1.0		50.0	46.0		ug/L		92	70 - 125	7	20
1,2-Dichlorobenzene	<1.0		50.0	49.6		ug/L		99	70 - 125	5	20

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 500-122773-3 MSD
Matrix: Water
Analysis Batch: 369233

Client Sample ID: C-1-011917
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,3-Dichlorobenzene	<1.0		50.0	48.2		ug/L		96	70 - 125	6	20
1,4-Dichlorobenzene	<1.0		50.0	47.4		ug/L		95	70 - 125	5	20
Dichlorodifluoromethane	<2.0		50.0	53.1		ug/L		106	51 - 140	9	20
1,1-Dichloroethane	<1.0		50.0	54.6		ug/L		109	70 - 125	10	20
1,2-Dichloroethane	<1.0		50.0	57.9		ug/L		116	70 - 125	10	20
1,1-Dichloroethene	<1.0		50.0	46.0		ug/L		92	70 - 125	7	20
1,2-Dichloropropane	<1.0		50.0	55.7		ug/L		111	70 - 125	10	20
Ethylbenzene	<0.50		50.0	45.9		ug/L		92	70 - 125	6	20
2-Hexanone	<5.0		50.0	55.2		ug/L		110	49 - 139	8	20
Isopropylbenzene	<1.0		50.0	49.0		ug/L		98	70 - 125	5	20
Methyl acetate	<5.0		250	333		ug/L		133	60 - 148	10	20
Methylcyclohexane	<1.0		50.0	49.4		ug/L		99	70 - 127	9	20
Methylene Chloride	<5.0		50.0	46.2		ug/L		92	68 - 125	8	20
Methyl Ethyl Ketone	<5.0		50.0	57.5		ug/L		115	52 - 142	8	20
methyl isobutyl ketone	<5.0		50.0	53.2		ug/L		106	47 - 140	6	20
Methyl tert-butyl ether	<1.0		50.0	48.1		ug/L		96	67 - 125	8	20
Styrene	<1.0		50.0	48.4		ug/L		97	70 - 125	8	20
1,1,2,2-Tetrachloroethane	<1.0		50.0	47.5		ug/L		95	68 - 125	3	20
Tetrachloroethene	<1.0		50.0	48.4		ug/L		97	70 - 125	7	20
Toluene	<0.50		50.0	48.3		ug/L		97	70 - 125	8	20
trans-1,2-Dichloroethene	<1.0		50.0	47.7		ug/L		95	70 - 125	6	20
trans-1,3-Dichloropropene	<1.0		50.0	45.4		ug/L		91	70 - 125	7	20
1,2,4-Trichlorobenzene	<1.0		50.0	51.3		ug/L		103	64 - 126	8	20
1,1,1-Trichloroethane	<1.0		50.0	49.6		ug/L		99	70 - 125	8	20
1,1,2-Trichloroethane	<1.0		50.0	47.6		ug/L		95	70 - 125	10	20
Trichloroethene	<0.50		50.0	45.8		ug/L		92	70 - 125	7	20
Trichlorofluoromethane	<1.0		50.0	50.3		ug/L		101	60 - 126	11	20
1,1,2-Trichloro-1,2,2-trifluoroetha ne	<1.0		50.0	48.4		ug/L		97	57 - 141	16	20
Vinyl chloride	<0.50		50.0	51.5		ug/L		103	70 - 126	11	20
Xylenes, Total	<1.0		100	94.7		ug/L		95	70 - 125	5	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*93*		*71 - 120*
Dibromofluoromethane	*96*		*70 - 120*
1,2-Dichloroethane-d4 (Surr)	*110*		*71 - 127*
Toluene-d8 (Surr)	*93*		*75 - 120*

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 500-369156/1-A
Matrix: Water
Analysis Batch: 369361

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 369156

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.20		0.20	0.062	mg/L		01/19/17 14:28	01/20/17 12:02	1
Antimony	<0.020		0.020	0.0064	mg/L		01/19/17 14:28	01/20/17 12:02	1
Arsenic	<0.010		0.010	0.0034	mg/L		01/19/17 14:28	01/20/17 12:02	1

Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: MB 500-369156/1-A
Matrix: Water
Analysis Batch: 369361

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 369156

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	<0.010		0.010	0.0022	mg/L		01/19/17 14:28	01/20/17 12:02	1
Beryllium	<0.0040		0.0040	0.00085	mg/L		01/19/17 14:28	01/20/17 12:02	1
Cadmium	<0.0020		0.0020	0.00094	mg/L		01/19/17 14:28	01/20/17 12:02	1
Calcium	<0.20		0.20	0.059	mg/L		01/19/17 14:28	01/20/17 12:02	1
Chromium	<0.010		0.010	0.0024	mg/L		01/19/17 14:28	01/20/17 12:02	1
Cobalt	<0.0050		0.0050	0.00096	mg/L		01/19/17 14:28	01/20/17 12:02	1
Copper	<0.010		0.010	0.0022	mg/L		01/19/17 14:28	01/20/17 12:02	1
Iron	<0.20		0.20	0.10	mg/L		01/19/17 14:28	01/20/17 12:02	1
Lead	<0.0050		0.0050	0.0025	mg/L		01/19/17 14:28	01/20/17 12:02	1
Magnesium	<0.10		0.10	0.041	mg/L		01/19/17 14:28	01/20/17 12:02	1
Manganese	<0.010		0.010	0.0034	mg/L		01/19/17 14:28	01/20/17 12:02	1
Nickel	<0.010		0.010	0.0037	mg/L		01/19/17 14:28	01/20/17 12:02	1
Potassium	<0.50		0.50	0.16	mg/L		01/19/17 14:28	01/20/17 12:02	1
Selenium	<0.010		0.010	0.0051	mg/L		01/19/17 14:28	01/20/17 12:02	1
Silver	<0.0050		0.0050	0.0013	mg/L		01/19/17 14:28	01/20/17 12:02	1
Sodium	<1.0		1.0	0.43	mg/L		01/19/17 14:28	01/20/17 12:02	1
Thallium	<0.010		0.010	0.0034	mg/L		01/19/17 14:28	01/20/17 12:02	1
Vanadium	<0.0050		0.0050	0.0019	mg/L		01/19/17 14:28	01/20/17 12:02	1
Zinc	<0.020		0.020	0.0090	mg/L		01/19/17 14:28	01/20/17 12:02	1

Lab Sample ID: LCS 500-369156/2-A
Matrix: Water
Analysis Batch: 369361

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 369156

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Aluminum	2.00	1.94		mg/L		97	80 - 120
Antimony	0.500	0.483		mg/L		97	80 - 120
Arsenic	0.100	0.0923		mg/L		92	80 - 120
Barium	2.00	1.97		mg/L		98	80 - 120
Beryllium	0.0500	0.0492		mg/L		98	80 - 120
Cadmium	0.0500	0.0471		mg/L		94	80 - 120
Calcium	10.0	9.81		mg/L		98	80 - 120
Chromium	0.200	0.193		mg/L		97	80 - 120
Cobalt	0.500	0.484		mg/L		97	80 - 120
Copper	0.250	0.247		mg/L		99	80 - 120
Iron	1.00	1.06		mg/L		106	80 - 120
Lead	0.100	0.0933		mg/L		93	80 - 120
Magnesium	10.0	9.35		mg/L		94	80 - 120
Manganese	0.500	0.487		mg/L		97	80 - 120
Nickel	0.500	0.483		mg/L		97	80 - 120
Potassium	10.0	9.64		mg/L		96	80 - 120
Selenium	0.100	0.0850		mg/L		85	80 - 120
Silver	0.0500	0.0466		mg/L		93	80 - 120
Sodium	10.0	9.73		mg/L		97	80 - 120
Thallium	0.100	0.0919		mg/L		92	80 - 120
Vanadium	0.500	0.494		mg/L		99	80 - 120
Zinc	0.500	0.491		mg/L		98	80 - 120

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 500-369265/12-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 369326 — **Prep Batch: 369265**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00020		0.00020	0.00011	mg/L		01/20/17 08:30	01/20/17 13:01	1

Lab Sample ID: LCS 500-369265/13-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 369326 — **Prep Batch: 369265**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.00200	0.00206		mg/L		103	80 - 120

Method: SM 4500 NH3 G - Ammonia

Lab Sample ID: MB 500-369367/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 369407 — **Prep Batch: 369367**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.20		0.20	0.10	mg/L		01/20/17 19:30	01/20/17 22:07	1

Lab Sample ID: LCS 500-369367/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 369407 — **Prep Batch: 369367**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	2.50	2.38		mg/L		95	80 - 120

Lab Sample ID: 500-122773-2 MS — **Client Sample ID: B-2-011917**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 369407 — **Prep Batch: 369367**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia	3.3		2.50	5.59		mg/L		93	75 - 125

Lab Sample ID: 500-122773-2 MSD — **Client Sample ID: B-2-011917**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 369407 — **Prep Batch: 369367**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia	3.3		2.50	5.65		mg/L		96	75 - 125	1	20

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Client Sample ID: B-1-011917 — Lab Sample ID: 500-122773-1

Date Collected: 01/19/17 10:15 — **Matrix: Water**
Date Received: 01/19/17 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	369233	01/20/17 17:05	PMF	TAL CHI
Total/NA	Prep	3010A			369156	01/19/17 14:28	JNH	TAL CHI
Total/NA	Analysis	6010C		1	369361	01/20/17 12:31	KML	TAL CHI
Total/NA	Prep	7470A			369265	01/20/17 08:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	369326	01/20/17 13:28	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			369367	01/20/17 19:30	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		1	369407	01/20/17 22:27	HMW	TAL CHI

Client Sample ID: B-2-011917 — Lab Sample ID: 500-122773-2

Date Collected: 01/19/17 10:40 — **Matrix: Water**
Date Received: 01/19/17 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	369233	01/20/17 17:32	PMF	TAL CHI
Total/NA	Prep	3010A			369156	01/19/17 14:28	JNH	TAL CHI
Total/NA	Analysis	6010C		1	369361	01/20/17 12:36	KML	TAL CHI
Total/NA	Prep	7470A			369265	01/20/17 08:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	369326	01/20/17 13:30	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			369367	01/20/17 19:30	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		1	369407	01/20/17 22:30	HMW	TAL CHI

Client Sample ID: C-1-011917 — Lab Sample ID: 500-122773-3

Date Collected: 01/19/17 10:55 — **Matrix: Water**
Date Received: 01/19/17 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	369233	01/20/17 17:59	PMF	TAL CHI
Total/NA	Prep	3010A			369156	01/19/17 14:28	JNH	TAL CHI
Total/NA	Analysis	6010C		1	369361	01/20/17 12:40	KML	TAL CHI
Total/NA	Prep	7470A			369265	01/20/17 08:30	MJD	TAL CHI
Total/NA	Analysis	7470A		1	369326	01/20/17 13:31	MJD	TAL CHI
Total/NA	Prep	SM 4500 NH3 B			369367	01/20/17 19:30	HMW	TAL CHI
Total/NA	Analysis	SM 4500 NH3 G		1	369407	01/20/17 22:44	HMW	TAL CHI

Client Sample ID: Trip Blank — Lab Sample ID: 500-122773-4

Date Collected: 01/19/17 00:00 — **Matrix: Water**
Date Received: 01/19/17 12:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	369233	01/20/17 18:26	PMF	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-122773-1

Laboratory: TestAmerica Chicago

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	100201	04-30-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260B		Water	Cyclohexane
8260B		Water	Methyl acetate
8260B		Water	Methylcyclohexane

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Chain of Custody Record

Lab Job #: 500-122773

Chain of Custody Number:

Page ____ of ____

Temperature °C of Cooler: 3.7

(optional)
Report To
Contact: Ellyn Gates
Company:
Address:
Address:
Phone:
Fax:
E-Mail: ellyn.gates@arcadis.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

500-122773 COC

Client: Arcadis
Client Project #: C1001805.0002
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #:
Sampler: Berthurnhoffer
Lab PM: Therese Hargraves

Preservative: HNO3 | Sulfuric | HCl

Parameter

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	6010C TAL Metals	Ammonia	8260B VOCs							Comments
1		B-1-011917	1-19-17	10:15	5	W	1	1	3							
2		B-2-011917	1-19-17	10:40	5	W	1	1	3							
3		C-1-011917	↓	10:55	5	W	1	1	3							

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days X 10 Days ___ 15 Days ___ Other
Requested Due Date ____

Sample Disposal
[ ] Return to Client [X] Disposal by Lab [ ] Archive for ____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Ellyn Gates	Arcadis	1/19/17	12:20	[signature]	TA	1/19/17	1220

Lab Courier:
Shipped:
Hand Delivered: ✓

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:

TAL-4124-500 (1209)

1/24/2017

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-122773-1

Login Number: 122773
List Number: 1
Creator: Kelsey, Shawn M

List Source: TestAmerica Chicago

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	3.7c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX H

MW-12 LNAPL Data Validation and Laboratory Report

Lake Calumet Cluster Site

DATA REVIEW

Chicago, Illinois

Volatile Organic Compounds (VOCs), Semivolatile Organic Compounds (SVOCs), and Polychlorinated Biphenyls (PCBs) Analyses

SDG #500-124554-1

Analyses Performed By:
TestAmerica Laboratories, Inc.
Chicago, Illinois

Report #27457R
Review Level: Tier III
Project: CI001805.0002.00005

SUMMARY

This data quality assessment summarizes the review of Sample Delivery Group (SDG) #500-124554-1 for samples collected in association with the Lake Calumet Cluster Site. The review was conducted as a Tier III evaluation and included review of data package completeness. Only analytical data as reported by the laboratory were reviewed for this validation. Field documentation was not included in this review. Included with this assessment are the validation annotated sample result sheets, and chains of custody. Analyses were performed on the following samples:

SDG Number	Sample ID	Lab ID	Matrix	Sample Collection Date	Parent Sample	Analysis					
						VOC	SVOC	PCB	MET	MISC	Dslvd Gases
500-124554-1	MW-12-FP-03022017	500-124554-1	Waste	03/02/2017		X	X	X			

ANALYTICAL DATA PACKAGE DOCUMENTATION

The table below is the evaluation of the data package completeness.

Items Reviewed	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
1. Sample receipt condition		X		X	
2. Requested analyses and sample results		X		X	
3. Master tracking list		X		X	
4. Methods of analysis		X		X	
5. Reporting limits		X		X	
6. Sample collection date		X		X	
7. Laboratory sample received date		X		X	
8. Sample preservation verification (as applicable)		X		X	
9. Sample preparation/extraction/analysis dates		X		X	
10. Fully executed Chain-of-Custody (COC) form		X		X	
11. Narrative summary of Quality Assurance (QA) or sample problems provided		X		X	
12. Data Package Completeness and Compliance		X		X	

ORGANIC ANALYSIS INTRODUCTION

Analyses were performed according to United States Environmental Protection Agency (USEPA) SW-846 Methods 8260B, 8270D, and 8082A. Data were reviewed in accordance with *USEPA National Functional Guidelines for Organic Data Review* (October 1999).

The data review process is an evaluation of data on a technical basis rather than a determination of contract compliance. As such, the standards against which the data are being weighed may differ from those specified in the analytical method. It is assumed that the data package represents the best efforts of the laboratory and had already been subjected to adequate and sufficient quality review prior to submission.

During the review process, laboratory qualified and unqualified data are verified against the supporting documentation. Based on this evaluation, qualifier codes may be added, deleted, or modified by the data reviewer. Results are qualified with the following codes in accordance with USEPA National Functional Guidelines:

- Concentration (C) Qualifiers

  U The compound was analyzed for but not detected. The associated value is the compound quantitation limit.

  B The compound has been found in the sample as well as its associated blank, its presence in the sample may be suspect.

- Quantitation (Q) Qualifiers

  E The compound was quantitated above the calibration range.

  D Concentration is based on a diluted sample analysis.

- Validation Qualifiers

  J The compound was positively identified; however, the associated numerical value is an estimated concentration only.

  UJ The compound was not detected above the reported sample quantitation limit. However, the reported limit is approximate and may or may not represent the actual limit of quantitation.

  JN The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification. The associated numerical value is an estimated concentration only.

  UB Compound considered non-detect at the listed value due to associated blank contamination.

  N The analysis indicates the presence of a compound for which there is presumptive evidence to make a tentative identification.

  R The sample results are rejected; the analyte may or may not be present in the sample.

Two facts should be noted by all data users. First, the "R" flag means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. "R" values should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

VOLATILE ORGANIC COMPOUND (VOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8260C	Water	14 days from collection to analysis (preserved) 7 days from collection to analysis (non-preserved)	Cool to <6 °C; preserved to a pH of less than 2 s.u.
	Soil/Waste	48 hours from collection to extraction and 14 days from extraction to analysis	Cool to <6 °C.

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Target compounds were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and system performance and column resolution were acceptable. All analyses were performed within 12 hours of the associated tune analysis.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration Verification (ICV)

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (15%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration Verification (CCV)

Each target compound associated with the continuing calibration standard must exhibit a RRF value

greater than control limit (0.05) and a percent difference (%D) from the initial calibration within the control limit (20%).

All compounds associated with the calibrations were within the specified control limits, except for the compounds presented in the following table.

Samples	Initial/ Continuing	Compound	Criteria
MW-12-FP-03022017	CCV	Bromomethane	-33.9%
		Chloroethane	-41.9%
		Bromoform	-20.1%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibrations	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	
Initial Calibrations	%RSD > 15% or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
	%RSD >90%	Non-detect	R
		Detect	J
Continuing Calibrations	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J
	%D >90% (increase/decrease in sensitivity)	Non-detect	R
		Detect	J

Note:

[1] RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketones, 1,4-dioxane, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. VOC analysis requires that all surrogates associated with the analysis exhibit recoveries within the laboratory-established acceptance limits.

All surrogate recoveries were within control limits.

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria require the internal standard compounds associated with the VOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within the control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The compounds used to perform the MS/MSD analysis must exhibit a percent recovery within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS/MSD recoveries must exhibit an RPD within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSD performed on samples where the compound concentration detected in the parent sample exceeds the MS/MSD concentration by a factor of four or greater.

The MS/MSD was not performed on a sample within this SDG.

8. Laboratory Control Sample (LCS) Analysis

The LCS analysis is used to assess the accuracy of the analytical method independent of matrix interferences. The compounds associated with the LCS analysis must exhibit a percent recovery within the laboratory-established acceptance limits.

All compounds associated with the LCS analysis exhibited recoveries within the control limits.

9. Field Duplicate Sample Analysis

The field duplicate analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied to the difference between the results for water matrices.

A field duplicate was not performed on sample within this SDG.

10. Compound Identification

A positive identification of a target compound is made when the relative retention time (RRT) is within ±0.06 RRT units of the compound's RRT in the associated calibration standard and the mass spectrum of the compound matches the compound's mass spectrum in the associated calibration standard within the method-specified criteria.

All identified compounds met the specified criteria.

Sample results associated with compound that exhibited a concentration greater than the linear range of the instrument calibration are summarized in the following table.

Sample ID	Compound	Original Analysis	Diluted Analysis	Reported Analysis
MW-12-FP-03022017	Toluene	--	4400 D	4400 D

Sample ID	Compound	Original Analysis	Diluted Analysis	Reported Analysis
	Ethylbenzene	--	6400 D	6400 D
	Xylenes, Total	--	23000 D	23000 D

Note: In the instance where both the original analysis and the diluted analysis sample results exhibited a concentration greater than and/or less than the calibration linear range of the instrument; the sample result exhibiting the greatest concentration will be reported as the final result.

Sample results associated with compounds exhibiting concentrations greater than the linear range are qualified as documented in the table below when reported as the final reported sample result.

Reported Sample Results	Qualification
Diluted sample result within calibration range	D
Diluted sample result less than the calibration range	DJ
Diluted sample result greater than the calibration range	EDJ
Original sample result greater than the calibration range	EJ

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR VOCS

VOCs: SW-846 8260B	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Gas Chromatography/Mass Spectrometry (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
C. Trip blanks					X
Laboratory Control Sample (LCS) Accuracy (%R)		X		X	
Laboratory Control Sample Duplicate (LCSD) %R					X
LCS/LCSD Precision (RPD)					X
Matrix Spike (MS) %R	X				X
Matrix Spike Duplicate (MSD) %R	X				X
MS/MSD Precision RPD	X				X
Laboratory Duplicate Sample RPD	X				X
Field Duplicate Sample RPD	X				X
Surrogate Spike %R		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X		X	
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:
%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

SEMIVOLATILE ORGANIC COMPOUND (SVOC) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8270D	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to < 6 °C
	Soil/Waste	14 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Compounds were not detected above the MDL in the associated blanks; therefore detected sample results were not associated with blank contamination.

3. Mass Spectrometer Tuning

Mass spectrometer performance was acceptable and system performance and column resolution were acceptable. All analyses were performed within 12 hours of the associated tune analysis.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

The method specifies percent relative standard deviation (%RSD) and relative response factor (RRF) limits for select compounds only. A technical review of the data applies limits to all compounds with no exceptions.

All target compounds associated with the initial calibration standards must exhibit a %RSD less than the control limit (20%) or a correlation coefficient greater than 0.99 and an RRF value greater than control limit (0.05).

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference

(%D) less than the control limit (20%) and RRF value greater than control limit (0.05).

All compounds associated with the calibrations were within the specified control limits, with the exception of the compounds presented in the following table.

Sample Locations	Initial/ Continuing	Compound	Criteria
MW-12-FP-03022017	ICV %RSD	Benzaldehyde	28.4%
	CCV %D	Benzaldehyde	-75.5%
		Hexachlorocyclopentadiene	-20.7%
		4-Nitroaniline	-25.5%

The criteria used to evaluate the initial and continuing calibration are presented in the following table. In the case of a calibration deviation, the sample results are qualified.

Initial/Continuing	Criteria	Sample Result	Qualification
Initial and Continuing Calibration	RRF <0.05	Non-detect	R
		Detect	J
	RRF <0.01[1]	Non-detect	R
		Detect	J
	RRF >0.05 or RRF >0.01[1]	Non-detect	No Action
		Detect	
Initial Calibration	%RSD > 20% or a correlation coefficient <0.99	Non-detect	UJ
		Detect	J
	%RSD >90%	Non-detect	R
		Detect	J
Continuing Calibration	%D >20% (increase in sensitivity)	Non-detect	No Action
		Detect	J
	%D >20% (decrease in sensitivity)	Non-detect	UJ
		Detect	J
	%D >90% (increase/decrease in sensitivity)	Non-detect	R
		Detect	J

Note:
[1] RRF of 0.01 only applies to compounds which are typically poor responding compounds (i.e., ketones, 1,4-dioxane, etc.)

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. SVOC analysis requires that two of the three SVOC surrogate compounds within each fraction exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Surrogate	Recovery
MW-12-FP-03022017	Phenol-d6	>UL
	2-Fluorophenol	<LL but > 10%
	2,4,6-Tribromophenol	AC
	Nitrobenzene-d5	>UL
	2-Fluorobiphenyl	>UL
	Terphenyl-d14	AC

Notes:
LL = Lower control limit
AC = Acceptable

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results associated with the deviant fraction are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> UL	Non-detect	No Action
	Detect	J
< LL but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
Surrogates diluted below the calibration curve due to the high concentration of a target compounds	Non-detect	J[1]
	Detect	

6. Internal Standard Performance

Internal standard performance criteria insure that the GC/MS sensitivity and response are stable during every sample analysis. The criteria require the internal standard compounds associated with the SVOC exhibit area counts that are not greater than two times (+100%) or less than one-half (-50%) of the area counts of the associated continuing calibration standard.

All internal standard responses were within the control limits.

7. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The spiked compounds used in the MS/MSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS and MSD results must be within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSDs performed on samples where the compound concentration detected in the parent sample exceeds the MS/MSD spiking concentration by a

factor of four or greater. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

The MS/MSD analysis was not performed on a sample associated with these SDGs.

8. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The spiked compounds used in the LCS/LCSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the LCS and LCSD results must be within the laboratory-established acceptance limits.

Sample locations associated with LCS/LCSD analysis exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Compound	LCS Recovery	LCSD Recovery
MW-12-FP-03022017	3-Nitroaniline	<LL but >10%	<LL but >10%
	4-Nitroaniline	<LL but >10%	<LL but >10%
	Carbazole	<LL but >10%	<LL but >10%

AC = acceptable

The criteria used to evaluate the LCS/LCSD recoveries are presented in the following table. In the case of an LCS/LCSD deviation, the sample results are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J

9. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied to the difference between the results for water matrices.

A field duplicate was not performed on sample within this SDG.

10. Compound Identification

A positive identification of a target compound is made when the relative retention time (RRT) is within ±0.06 RRT units of the compound's RRT in the associated calibration standard and the mass spectrum of

the compound matches the compound's mass spectrum in the associated calibration standard within the method-specified criteria.

All identified compounds met the specified criteria.

Sample results associated with compound that exhibited a concentration greater than the linear range of the instrument calibration are summarized in the following table.

Sample ID	Compound	Original Analysis	Diluted Analysis	Reported Analysis
MW-12-FP-03022017	3 & 4 Methylphenol	--	3800 D	3800 D

Note: In the instance where both the original analysis and the diluted analysis sample results exhibited a concentration greater than and/or less than the calibration linear range of the instrument; the sample result exhibiting the greatest concentration will be reported as the final result.

Sample results associated with compounds exhibiting concentrations greater than the linear range are qualified as documented in the table below when reported as the final reported sample result.

Reported Sample Results	Qualification
Diluted sample result within calibration range	D
Diluted sample result less than the calibration range	DJ
Diluted sample result greater than the calibration range	EDJ
Original sample result greater than the calibration range	EJ

11. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR SVOCS

SVOCs: SW-846 8270D	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Gas Chromatography/Mass Spectrometry (GC/MS)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X	X		
Laboratory Control Sample Duplicate (LCSD) %R		X	X		
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R	X				X
Matrix Spike Duplicate (MSD) %R	X				X
MS/MSD Precision (RPD)	X				X
Laboratory Duplicate Sample RPD	X				X
Field Duplicate Sample RPD	X				X
Surrogate Spike Recoveries		X	X		
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
System performance and column resolution		X		X	
Initial calibration %RSDs		X	X		
Continuing calibration RRFs		X		X	
Continuing calibration %Ds		X	X		
Instrument tune and performance check		X		X	
Ion abundance criteria for each instrument used		X		X	
Internal standard response		X		X	
Compound identification and quantitation					
A. Reconstructed ion chromatograms		X		X	
B. Quantitation Reports		X		X	
C. RT of sample compounds within the established RT windows		X		X	
D. Quantitation transcriptions/calculations		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

Notes:
%RSD Relative standard deviation
%R Percent recovery
RPD Relative percent difference
%D Percent difference

POLYCHLORINATED BIPHENYLS (PCBs) ANALYSES

1. Holding Times

The specified holding times for the following methods are presented in the following table.

Method	Matrix	Holding Time	Preservation
SW-846 8082A	Water	7 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C
	Soil/Waste	14 days from collection to extraction and 40 days from extraction to analysis	Cool to <6 °C

All samples were analyzed within the specified holding time criteria.

2. Blank Contamination

Quality assurance (QA) blanks (i.e., method and rinse blanks) are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Rinse blanks measure contamination of samples during field operations.

A blank action level (BAL) of five times the concentration of a detected compound in an associated blank (common laboratory contaminant compounds are calculated at ten times) is calculated for QA blanks containing concentrations greater than the method detection limit (MDL). The BAL is compared to the associated sample results to determine the appropriate qualification of the sample results, if needed.

Target analytes were not detected above the MDL in the associated blanks; therefore, detected sample results were not associated with blank contamination.

3. System Performance

System performance and column resolution were acceptable.

4. Calibration

Satisfactory instrument calibration is established to ensure that the instrument can produce acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument daily performance is satisfactory.

4.1 Initial Calibration

A maximum RSD of 20% is allowed or a correlation coefficient greater than 0.99. Multiple-point calibrations were performed for Aroclor 1016 and 1260 only. Single-point calibrations were performed for the remaining Aroclors.

4.2 Continuing Calibration

All target compounds associated with the continuing calibration standard must exhibit a percent difference (%D) less than the control limit (20%).

All Aroclors associated with the calibrations were within the specified control limits.

5. Surrogates/System Monitoring Compounds

All samples to be analyzed for organic compounds are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. PCB analysis requires that one of the two PCB surrogate compounds exhibit recoveries within the laboratory-established acceptance limits.

Sample locations associated with surrogates exhibiting recoveries outside of the control limits presented in the following table.

Sample Locations	Surrogate	Recovery
MW-12-FP-03022017	Tetrachloro-m-xylene	D
	Decachlorobiphenyl	D

Notes:
AC = Acceptable

The criteria used to evaluate the surrogate recoveries are presented in the following table. In the case of a surrogate deviation, the sample results associated with the deviant fraction are qualified as documented in the table below.

Control Limit	Sample Result	Qualification
> the upper control limit (UL)	Non-detect	No Action
	Detect	J
< the lower control limit (LL) but > 10%	Non-detect	UJ
	Detect	J
< 10%	Non-detect	R
	Detect	J
One surrogate exhibiting recovery outside the control limits but > 10%	Non-detect	No Action
	Detect	
Surrogates diluted below the calibration curve due to the high concentration of a target compound.	Non-detect	J[1]
	Detect	

Note:

[1]A more concentrated analysis was not performed with surrogate compounds within the calibration range; therefore, no determination of extraction efficiency could be made.

6. Matrix Spike/Matrix Spike Duplicate (MS/MSD) Analysis

MS/MSD data are used to assess the precision and accuracy of the analytical method. The spiked compounds used in the MS/MSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The relative percent difference (RPD) between the MS and MSD results must be within the laboratory-established acceptance limits.

Note: The MS/MSD recovery control limits do not apply for MS/MSDs performed on samples where the compound concentration detected in the parent sample exceeds the MS/MSD spiking concentration by a factor of four or greater. Sample results associated with MS/MSD exceedances where the parent samples are not site-specific are not qualified.

The MS/MSD analysis was not performed on a sample from within these SDGs.

7. Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) Analysis

The LCS/LCSD analysis is used to assess the precision and accuracy of the analytical method independent of matrix interferences. The spiked compounds used in the LCS/LCSD analysis must exhibit recoveries within the laboratory-established acceptance limits. The RPD between the LCS and LCSD results must be within the laboratory-established acceptance limits.

All compounds associated with the LCS/LCSD analyses exhibited recoveries and RPDs within the control limits.

8. Field Duplicate Sample Analysis

The field duplicate sample analysis is used to assess the overall precision of the field sampling procedures and analytical method. A control limit of 30% for water matrices is applied to the RPD between the parent sample and the field duplicate. In the instance when the parent and/or duplicate sample concentrations are less than or equal to five times the RL, a control limit of two times the RL is applied to the difference between the results for water matrices.

A field duplicate was not performed on sample within this SDG.

9. Compound Identification

The retention times of all quantitated peaks must fall within the calculated retention time windows for both the primary and confirmation columns. When dual column analysis is performed the relative percent difference (RPD) of detected sample results must be less than 40%.

All detected Aroclors exhibited acceptable %Ds between the primary and confirmation columns.

The laboratory reported both results from the analytical columns. Due to continuing calibration recoveries outside criteria from the confirmation column, the results from the primary column will be reported as the usable result.

10. System Performance and Overall Assessment

Overall system performance was acceptable. Other than for those deviations specifically mentioned in this review, the overall data quality is within the guidelines specified in the method.

DATA VALIDATION CHECKLIST FOR PCBS

PCBs: SW-846 8082A	Reported		Performance Acceptable		Not Required
	No	Yes	No	Yes	
Gas Chromatography (GC/ECD)					
Tier II Validation					
Holding times		X		X	
Reporting limits (units)		X		X	
Blanks					
A. Method blanks		X		X	
B. Equipment blanks					X
Laboratory Control Sample (LCS) %R		X		X	
Laboratory Control Sample Duplicate (LCSD) %R		X		X	
LCS/LCSD Precision (RPD)		X		X	
Matrix Spike (MS) %R	X				X
Matrix Spike Duplicate (MSD) %R	X				X
MS/MSD Precision (RPD)	X				X
Laboratory Duplicate Sample RPD	X				X
Field Duplicate Sample RPD		X		X	
Surrogate Spike Recoveries		X	X		
Column (RPD) (If dual column is performed-not confirmation purposes only)		X		X	
Dilution Factor		X		X	
Moisture Content					X
Tier III Validation					
Initial calibration %RSDs		X		X	
Continuing calibration %Ds		X		X	
System performance and column resolution		X		X	
Compound identification and quantitation		X		X	
A. Quantitation Reports		X		X	
B. RT of sample compounds within the established RT windows		X		X	
C. Pattern identification		X		X	
D. Transcription/calculation errors present		X		X	
E. Reporting limits adjusted to reflect sample dilutions		X		X	

%RSD – relative standard deviation
%R - percent recovery,
RPD - relative percent difference,
%D – difference

VALIDATION PERFORMED BY: Andrew Korycinski

SIGNATURE:

DATE: April 5, 2017

PEER REVIEW: Dennis Capria

DATE: April 5, 2017

CHAIN OF CUSTODY

CORRECTED SAMPLE ANALYSIS DATA SHEETS

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

(optional)
Report To
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 200 S. Michigan Ave
Address: ste 2000
Phone: 312 - 575-3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis.com

(optional)
Bill To
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Chain of Custody Record

Lab Job #: 500- 124554
Chain of Custody Number:
Page ____ of ____
Temperature °C of Cooler: 4.6

Client: Arcadis
Client Project #: CI001805.0002.00005
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #: 50011099
Sampler: Ben Thornhoffer
Lab PM: Therese Hargraves

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	Preservative: 8 / Parameter: Waste Oil SVOC	8 / Waste Oil VOC	8 / Waste Oil PCB							Comments
1		MW-12-FP-03022017	3/2/17	10:10	3	OL	1	1	1							

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days _____ Other
Requested Due Date _____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Ben Thornhoffer	Arcadis	3/2/2017	1134	[illegible]	TA-CHI	3/2/17	1134
Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Relinquished By	Company	Date	Time	Received By	Company	Date	Time

Lab Courier ☐
Shipped ☐
Hand Delivered X

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:
500-124554 COC

03/16/2017

TAL-4124-500 (1209)

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
X	Surrogate is outside control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	LCS or LCSD is outside acceptance limits.

GC Semi VOA

Qualifier	Qualifier Description
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-124554-1

Client Sample ID: MW-12-FP-03022017

Date Collected: 03/02/17 10:10
Date Received: 03/02/17 11:34

Lab Sample ID: 500-124554-1

Matrix: Waste

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	<10		10	3.4	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Chloromethane	<5.0		5.0	1.6	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Vinyl chloride	**7.7**		2.5	1.3	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Bromomethane	<10	J	10	4.0	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Chloroethane	<5.0	J	5.0	2.5	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Trichlorofluoromethane	<5.0		5.0	2.1	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,1-Dichloroethene	<5.0		5.0	2.0	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,1,2-Trichloro-1,2,2-trifluoroethane	<5.0		5.0	2.3	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Acetone	<25		25	8.7	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Carbon disulfide	<10		10	4.0	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Methyl acetate	<25		25	10	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Methylene Chloride	<25		25	8.2	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
trans-1,2-Dichloroethene	<5.0		5.0	1.8	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Methyl tert-butyl ether	<5.0		5.0	2.0	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,1-Dichloroethane	**69**		5.0	2.1	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
cis-1,2-Dichloroethene	**30**		5.0	2.0	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Methyl Ethyl Ketone	<25		25	11	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Chloroform	<10		10	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,1,1-Trichloroethane	<5.0		5.0	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Cyclohexane	<5.0		5.0	2.4	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Carbon tetrachloride	<5.0		5.0	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Benzene	**18**		1.3	0.73	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,2-Dichloroethane	<5.0		5.0	2.0	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Trichloroethene	**69**		2.5	0.82	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Methylcyclohexane	**46**		5.0	1.6	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,2-Dichloropropane	<5.0		5.0	2.1	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Bromodichloromethane	<5.0		5.0	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
cis-1,3-Dichloropropene	<5.0		5.0	2.1	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
methyl isobutyl ketone	**250**		25	11	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
trans-1,3-Dichloropropene	<5.0		5.0	1.8	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,1,2-Trichloroethane	<5.0		5.0	1.8	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Tetrachloroethene	**240**		5.0	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
2-Hexanone	<25		25	7.8	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Dibromochloromethane	<5.0		5.0	2.4	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,2-Dibromoethane	<5.0		5.0	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Chlorobenzene	<5.0		5.0	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Styrene	<5.0		5.0	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Bromoform	<5.0	J	5.0	2.4	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Isopropylbenzene	**170**		5.0	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,1,2,2-Tetrachloroethane	<5.0		5.0	2.0	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,3-Dichlorobenzene	<5.0		5.0	2.0	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,4-Dichlorobenzene	<5.0		5.0	1.8	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,2-Dichlorobenzene	<5.0		5.0	1.7	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,2-Dibromo-3-Chloropropane	<25		25	10	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,2,4-Trichlorobenzene	<5.0		5.0	1.7	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*71 - 127*	*03/05/17 17:07*	*03/13/17 14:13*	*5000*
Toluene-d8 (Surr)	*99*		*75 - 120*	*03/05/17 17:07*	*03/13/17 14:13*	*5000*

Client Sample ID: MW-12-FP-03022017

Date Collected: 03/02/17 10:10
Date Received: 03/02/17 11:34

Lab Sample ID: 500-124554-1

Matrix: Waste

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		71 - 120	03/05/17 17:07	03/13/17 14:13	5000
Dibromofluoromethane	95		70 - 120	03/05/17 17:07	03/13/17 14:13	5000

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**4400**	D	13	7.4	mg/Kg		03/05/17 17:07	03/13/17 14:40	50000
Ethylbenzene	**6400**	D	13	9.2	mg/Kg		03/05/17 17:07	03/13/17 14:40	50000

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		71 - 127	03/05/17 17:07	03/13/17 14:40	50000
Toluene-d8 (Surr)	101		75 - 120	03/05/17 17:07	03/13/17 14:40	50000
4-Bromofluorobenzene (Surr)	102		71 - 120	03/05/17 17:07	03/13/17 14:40	50000
Dibromofluoromethane	94		70 - 120	03/05/17 17:07	03/13/17 14:40	50000

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**23000**	D	250	110	mg/Kg		03/05/17 17:07	03/14/17 11:17	500000

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		71 - 127	03/05/17 17:07	03/14/17 11:17	500000
Toluene-d8 (Surr)	97		75 - 120	03/05/17 17:07	03/14/17 11:17	500000
4-Bromofluorobenzene (Surr)	92		71 - 120	03/05/17 17:07	03/14/17 11:17	500000
Dibromofluoromethane	94		70 - 120	03/05/17 17:07	03/14/17 11:17	500000

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	<2000	J	2000	990	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Phenol	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Bis(2-chloroethyl)ether	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2-Chlorophenol	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2-Methylphenol	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2,2'-oxybis[1-chloropropane]	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Acetophenone	**1100**	J	99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
N-Nitrosodi-n-propylamine	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Hexachloroethane	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Nitrobenzene	<99		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Isophorone	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2-Nitrophenol	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2,4-Dimethylphenol	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Bis(2-chloroethoxy)methane	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2,4-Dichlorophenol	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Naphthalene	**1200**	J	99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
4-Chloroaniline	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Hexachlorobutadiene	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Caprolactam	<990		990	990	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
4-Chloro-3-methylphenol	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2-Methylnaphthalene	**1100**	J	500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Hexachlorocyclopentadiene	<2000	J	2000	1000	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2,4,6-Trichlorophenol	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2,4,5-Trichlorophenol	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10

Client Sample ID: MW-12-FP-03022017

Date Collected: 03/02/17 10:10
Date Received: 03/02/17 11:34

Lab Sample ID: 500-124554-1

Matrix: Waste

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2-Chloronaphthalene	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2-Nitroaniline	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Dimethyl phthalate	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2,6-Dinitrotoluene	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Acenaphthylene	<99		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
3-Nitroaniline	<990	J	990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Acenaphthene	**120**	J	99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2,4-Dinitrophenol	<2000		2000	1000	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
4-Nitrophenol	<2000		2000	1000	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Dibenzofuran	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2,4-Dinitrotoluene	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Diethyl phthalate	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Fluorene	**150**	J	99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
4-Chlorophenyl phenyl ether	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
4-Nitroaniline	<990	J	990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
4,6-Dinitro-2-methylphenol	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
N-Nitrosodiphenylamine	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
4-Bromophenyl phenyl ether	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Hexachlorobenzene	<200		200	100	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Atrazine	<990		990	990	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Pentachlorophenol	<2000		2000	1000	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Phenanthrene	**460**	J	99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Anthracene	<99		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Carbazole	<500	J	500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Di-n-butyl phthalate	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Fluoranthene	**160**	J	99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Pyrene	**180**	J	99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Butyl benzyl phthalate	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
3,3'-Dichlorobenzidine	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Benzo[a]anthracene	**61**	J	99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Chrysene	**71**	J	99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Bis(2-ethylhexyl) phthalate	**420**	J	500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Di-n-octyl phthalate	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Benzo[b]fluoranthene	**60**	J	99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Benzo[k]fluoranthene	<99		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Benzo[a]pyrene	<99		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Indeno[1,2,3-cd]pyrene	<99		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Dibenz(a,h)anthracene	<99		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Benzo[g,h,i]perylene	<99		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*36*	*X*	*40 - 130*	*03/07/17 21:45*	*03/08/17 18:51*	*10*
Phenol-d5 (Surr)	*226*	*X*	*36 - 123*	*03/07/17 21:45*	*03/08/17 18:51*	*10*
Nitrobenzene-d5 (Surr)	*166*	*X*	*33 - 124*	*03/07/17 21:45*	*03/08/17 18:51*	*10*
2-Fluorobiphenyl (Surr)	*120*	*X*	*42 - 115*	*03/07/17 21:45*	*03/08/17 18:51*	*10*
2,4,6-Tribromophenol (Surr)	*102*		*25 - 130*	*03/07/17 21:45*	*03/08/17 18:51*	*10*
Terphenyl-d14 (Surr)	*126*		*25 - 150*	*03/07/17 21:45*	*03/08/17 18:51*	*10*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-124554-1

Client Sample ID: MW-12-FP-03022017

Date Collected: 03/02/17 10:10
Date Received: 03/02/17 11:34

Lab Sample ID: 500-124554-1

Matrix: Waste

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3 & 4 Methylphenol	**3800**		2500	1200	mg/Kg		03/07/17 21:45	03/08/17 17:55	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*0*	*D*	*40 - 130*	*03/07/17 21:45*	*03/08/17 17:55*	*50*
Phenol-d5 (Surr)	*0*	*D*	*36 - 123*	*03/07/17 21:45*	*03/08/17 17:55*	*50*
Nitrobenzene-d5 (Surr)	*0*	*D*	*33 - 124*	*03/07/17 21:45*	*03/08/17 17:55*	*50*
2-Fluorobiphenyl (Surr)	*0*	*D*	*42 - 115*	*03/07/17 21:45*	*03/08/17 17:55*	*50*
2,4,6-Tribromophenol (Surr)	*0*	*D*	*25 - 130*	*03/07/17 21:45*	*03/08/17 17:55*	*50*
Terphenyl-d14 (Surr)	*0*	*D*	*25 - 150*	*03/07/17 21:45*	*03/08/17 17:55*	*50*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<25	UJ	25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
~~PCB-1016~~	~~<25~~		~~25~~	~~12~~	~~mg/Kg~~		~~03/07/17 14:02~~	~~03/09/17 14:05~~	~~50~~
PCB-1221	<25	UJ	25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
~~PCB-1221~~	~~<25~~		~~25~~	~~12~~	~~mg/Kg~~		~~03/07/17 14:02~~	~~03/09/17 14:05~~	~~50~~
PCB-1232	<25	UJ	25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
~~PCB-1232~~	~~<25~~		~~25~~	~~12~~	~~mg/Kg~~		~~03/07/17 14:02~~	~~03/09/17 14:05~~	~~50~~
PCB-1242	<25	UJ	25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
~~PCB-1242~~	~~<25~~		~~25~~	~~12~~	~~mg/Kg~~		~~03/07/17 14:02~~	~~03/09/17 14:05~~	~~50~~
PCB-1248	**180**	J	25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
~~**PCB-1248**~~	~~**170**~~		~~25~~	~~12~~	~~mg/Kg~~		~~03/07/17 14:02~~	~~03/09/17 14:05~~	~~50~~
PCB-1254	**180**	J	25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
~~**PCB-1254**~~	~~**150**~~		~~25~~	~~12~~	~~mg/Kg~~		~~03/07/17 14:02~~	~~03/09/17 14:05~~	~~50~~
PCB-1260	<25	UJ	25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
~~PCB-1260~~	~~<25~~		~~25~~	~~12~~	~~mg/Kg~~		~~03/07/17 14:02~~	~~03/09/17 14:05~~	~~50~~

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*0*	*D*	*62 - 121*	*03/07/17 14:02*	*03/09/17 14:05*	*50*
Tetrachloro-m-xylene	*0*	*D*	*62 - 121*	*03/07/17 14:02*	*03/09/17 14:05*	*50*
DCB Decachlorobiphenyl	*0*	*D*	*53 - 118*	*03/07/17 14:02*	*03/09/17 14:05*	*50*
DCB Decachlorobiphenyl	*0*	*D*	*53 - 118*	*03/07/17 14:02*	*03/09/17 14:05*	*50*

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Chicago
2417 Bond Street
University Park, IL 60484
Tel: (708)534-5200

TestAmerica Job ID: 500-124554-1
Client Project/Site: Lake Calumet Cluster Site

For:
ARCADIS U.S., Inc.
200 S. Michigan Ave
Suite 2000
Chicago, Illinois 60604

Attn: Mr. Jack Kratzmeyer

Therese Hargraves

Authorized for release by:
3/16/2017 4:45:01 PM

Therese Hargraves, Project Manager I
(708)534-5200
therese.hargraves@testamericainc.com

LINKS

Review your project results through TotalAccess

Have a Question? Ask The Expert

Visit us at: www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Cover Page 1
Table of Contents 2
Case Narrative 3
Detection Summary 5
Method Summary 6
Sample Summary 7
Client Sample Results 8
Definitions 12
QC Association 13
Surrogate Summary 14
QC Sample Results 15
Chronicle 26
Certification Summary 27
Chain of Custody 28
Receipt Checklists 29

Job ID: 500-124554-1

Laboratory: TestAmerica Chicago

Narrative

Job Narrative
500-124554-1

Comments
No additional comments.

Receipt
The sample was received on 3/2/2017 11:34 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.6º C.

GC/MS VOA
Method(s) 8260B: The following sample was diluted to bring the concentration of target analytes within the calibration range: MW-12-FP-03022017 (500-124554-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC/MS Semi VOA
Method(s) 8270D: The following analyte has been identified, in the reference method and/or via historical data, to be a poor and/or erratic performer: Benzaldehyde. This analyte may have a %D>60% if the average %D of all the analytes in the initial calibration verification (ICV) is 30%. (ICV 500-369784/13)

Method(s) 8270D: The following sample was diluted due to the nature of the sample matrix: MW-12-FP-03022017 (500-124554-1). Elevated reporting limits (RLs) are provided.

Method(s) 8270D: The following sample required a dilution due to the nature of the sample matrix: MW-12-FP-03022017 (500-124554-1). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method(s) 8270D: Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. The laboratory's SOP allows for 3 analytes to recover outside criteria for this method when utilizing this list of analytes. The LCS/LCSD associated with batch 500-374814 had 3 analytes outside control limits, biased low: 3-Nitroaniline; 4-Nitroaniline; and Carbazole. These results have been reported and qualified. (LCS 500-374814/2-A) and (LCSD 500-374814/3-A)

Method(s) 8270D: CCVIS 500-374842/2 was outside the method criteria for 4-Nitroaniline; Hexachlorobenzene, Hexachlorocyclopentadiene, and Pentachlorophenol. A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analytes is considered estimated.

Method(s) 8270D: Four surrogate recoveries for the following sample were outside control limits: MW-12-FP-03022017 (500-124554-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA
Method(s) 8082A: The following sample was diluted to bring the concentration of target analytes within the calibration range: MW-12-FP-03022017 (500-124554-1). Elevated reporting limits (RLs) are provided.

Method(s) 8082A: The following samples required a dilution due to the nature of the sample matrix: MW-12-FP-03022017 (500-124554-1). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method(s) 8082A: %D fell below the control limit on the confirmation column for DCB Decachlorobiphenyl surrogate, PCB-1016 peak 1, and PCB-1260 peak 1 in the following continuing calibration verification: (CCVIS 500-375068/1); however, the primary column was within control limits.

Job ID: 500-124554-1 (Continued)

Laboratory: TestAmerica Chicago (Continued)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-124554-1

Client Sample ID: MW-12-FP-03022017 — Lab Sample ID: 500-124554-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	7.7		2.5	1.3	mg/Kg	5000		8260B	Total/NA
1,1-Dichloroethane	69		5.0	2.1	mg/Kg	5000		8260B	Total/NA
cis-1,2-Dichloroethene	30		5.0	2.0	mg/Kg	5000		8260B	Total/NA
Benzene	18		1.3	0.73	mg/Kg	5000		8260B	Total/NA
Trichloroethene	69		2.5	0.82	mg/Kg	5000		8260B	Total/NA
Methylcyclohexane	46		5.0	1.6	mg/Kg	5000		8260B	Total/NA
methyl isobutyl ketone	250		25	11	mg/Kg	5000		8260B	Total/NA
Tetrachloroethene	240		5.0	1.9	mg/Kg	5000		8260B	Total/NA
Isopropylbenzene	170		5.0	1.9	mg/Kg	5000		8260B	Total/NA
Toluene - DL	4400		13	7.4	mg/Kg	50000		8260B	Total/NA
Ethylbenzene - DL	6400		13	9.2	mg/Kg	50000		8260B	Total/NA
Xylenes, Total - DL2	23000		250	110	mg/Kg	500000		8260B	Total/NA
Acetophenone	1100		99	50	mg/Kg	10		8270D	Total/NA
Naphthalene	1200		99	50	mg/Kg	10		8270D	Total/NA
2-Methylnaphthalene	1100		500	250	mg/Kg	10		8270D	Total/NA
Acenaphthene	120		99	50	mg/Kg	10		8270D	Total/NA
Fluorene	150		99	50	mg/Kg	10		8270D	Total/NA
Phenanthrene	460		99	50	mg/Kg	10		8270D	Total/NA
Fluoranthene	160		99	50	mg/Kg	10		8270D	Total/NA
Pyrene	180		99	50	mg/Kg	10		8270D	Total/NA
Benzo[a]anthracene	61	J	99	50	mg/Kg	10		8270D	Total/NA
Chrysene	71	J	99	50	mg/Kg	10		8270D	Total/NA
Bis(2-ethylhexyl) phthalate	420	J	500	250	mg/Kg	10		8270D	Total/NA
Benzo[b]fluoranthene	60	J	99	50	mg/Kg	10		8270D	Total/NA
3 & 4 Methylphenol - DL	3800		2500	1200	mg/Kg	50		8270D	Total/NA
PCB-1248	180		25	12	mg/Kg	50		8082A	Total/NA
PCB-1248	170		25	12	mg/Kg	50		8082A	Total/NA
PCB-1254	180		25	12	mg/Kg	50		8082A	Total/NA
PCB-1254	150		25	12	mg/Kg	50		8082A	Total/NA

This Detection Summary does not include radiochemical test results.

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-124554-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL CHI
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL CHI
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	TAL CHI

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-124554-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
500-124554-1	MW-12-FP-03022017	Waste	03/02/17 10:10	03/02/17 11:34

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-124554-1

Client Sample ID: MW-12-FP-03022017

Date Collected: 03/02/17 10:10
Date Received: 03/02/17 11:34

Lab Sample ID: 500-124554-1

Matrix: Waste

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	<10		10	3.4	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Chloromethane	<5.0		5.0	1.6	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Vinyl chloride	**7.7**		2.5	1.3	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Bromomethane	<10		10	4.0	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Chloroethane	<5.0		5.0	2.5	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Trichlorofluoromethane	<5.0		5.0	2.1	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,1-Dichloroethene	<5.0		5.0	2.0	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,1,2-Trichloro-1,2,2-trifluoroethane	<5.0		5.0	2.3	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Acetone	<25		25	8.7	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Carbon disulfide	<10		10	4.0	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Methyl acetate	<25		25	10	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Methylene Chloride	<25		25	8.2	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
trans-1,2-Dichloroethene	<5.0		5.0	1.8	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Methyl tert-butyl ether	<5.0		5.0	2.0	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,1-Dichloroethane	**69**		5.0	2.1	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
cis-1,2-Dichloroethene	**30**		5.0	2.0	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Methyl Ethyl Ketone	<25		25	11	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Chloroform	<10		10	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,1,1-Trichloroethane	<5.0		5.0	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Cyclohexane	<5.0		5.0	2.4	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Carbon tetrachloride	<5.0		5.0	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Benzene	**18**		1.3	0.73	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,2-Dichloroethane	<5.0		5.0	2.0	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Trichloroethene	**69**		2.5	0.82	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Methylcyclohexane	**46**		5.0	1.6	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,2-Dichloropropane	<5.0		5.0	2.1	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Bromodichloromethane	<5.0		5.0	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
cis-1,3-Dichloropropene	<5.0		5.0	2.1	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
methyl isobutyl ketone	**250**		25	11	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
trans-1,3-Dichloropropene	<5.0		5.0	1.8	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,1,2-Trichloroethane	<5.0		5.0	1.8	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Tetrachloroethene	**240**		5.0	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
2-Hexanone	<25		25	7.8	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Dibromochloromethane	<5.0		5.0	2.4	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,2-Dibromoethane	<5.0		5.0	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Chlorobenzene	<5.0		5.0	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Styrene	<5.0		5.0	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Bromoform	<5.0		5.0	2.4	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
Isopropylbenzene	**170**		5.0	1.9	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,1,2,2-Tetrachloroethane	<5.0		5.0	2.0	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,3-Dichlorobenzene	<5.0		5.0	2.0	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,4-Dichlorobenzene	<5.0		5.0	1.8	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,2-Dichlorobenzene	<5.0		5.0	1.7	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,2-Dibromo-3-Chloropropane	<25		25	10	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000
1,2,4-Trichlorobenzene	<5.0		5.0	1.7	mg/Kg		03/05/17 17:07	03/13/17 14:13	5000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*71 - 127*	*03/05/17 17:07*	*03/13/17 14:13*	*5000*
Toluene-d8 (Surr)	*99*		*75 - 120*	*03/05/17 17:07*	*03/13/17 14:13*	*5000*

Client Sample ID: MW-12-FP-03022017

Lab Sample ID: 500-124554-1
Date Collected: 03/02/17 10:10
Matrix: Waste
Date Received: 03/02/17 11:34

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*95*		*71 - 120*	*03/05/17 17:07*	*03/13/17 14:13*	*5000*
Dibromofluoromethane	*95*		*70 - 120*	*03/05/17 17:07*	*03/13/17 14:13*	*5000*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	**4400**		13	7.4	mg/Kg		03/05/17 17:07	03/13/17 14:40	50000
Ethylbenzene	**6400**		13	9.2	mg/Kg		03/05/17 17:07	03/13/17 14:40	50000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*104*		*71 - 127*	*03/05/17 17:07*	*03/13/17 14:40*	*50000*
Toluene-d8 (Surr)	*101*		*75 - 120*	*03/05/17 17:07*	*03/13/17 14:40*	*50000*
4-Bromofluorobenzene (Surr)	*102*		*71 - 120*	*03/05/17 17:07*	*03/13/17 14:40*	*50000*
Dibromofluoromethane	*94*		*70 - 120*	*03/05/17 17:07*	*03/13/17 14:40*	*50000*

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL2

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Xylenes, Total	**23000**		250	110	mg/Kg		03/05/17 17:07	03/14/17 11:17	500000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*71 - 127*	*03/05/17 17:07*	*03/14/17 11:17*	*500000*
Toluene-d8 (Surr)	*97*		*75 - 120*	*03/05/17 17:07*	*03/14/17 11:17*	*500000*
4-Bromofluorobenzene (Surr)	*92*		*71 - 120*	*03/05/17 17:07*	*03/14/17 11:17*	*500000*
Dibromofluoromethane	*94*		*70 - 120*	*03/05/17 17:07*	*03/14/17 11:17*	*500000*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	<2000		2000	990	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Phenol	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Bis(2-chloroethyl)ether	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2-Chlorophenol	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2-Methylphenol	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2,2'-oxybis[1-chloropropane]	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Acetophenone	**1100**		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
N-Nitrosodi-n-propylamine	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Hexachloroethane	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Nitrobenzene	<99		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Isophorone	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2-Nitrophenol	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2,4-Dimethylphenol	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Bis(2-chloroethoxy)methane	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2,4-Dichlorophenol	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Naphthalene	**1200**		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
4-Chloroaniline	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Hexachlorobutadiene	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Caprolactam	<990		990	990	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
4-Chloro-3-methylphenol	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2-Methylnaphthalene	**1100**		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Hexachlorocyclopentadiene	<2000		2000	1000	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2,4,6-Trichlorophenol	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2,4,5-Trichlorophenol	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10

Client Sample ID: MW-12-FP-03022017

Lab Sample ID: 500-124554-1

Date Collected: 03/02/17 10:10

Matrix: Waste

Date Received: 03/02/17 11:34

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1'-Biphenyl	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2-Chloronaphthalene	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2-Nitroaniline	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Dimethyl phthalate	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2,6-Dinitrotoluene	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Acenaphthylene	<99		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
3-Nitroaniline	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Acenaphthene	**120**		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2,4-Dinitrophenol	<2000		2000	1000	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
4-Nitrophenol	<2000		2000	1000	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Dibenzofuran	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
2,4-Dinitrotoluene	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Diethyl phthalate	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Fluorene	**150**		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
4-Chlorophenyl phenyl ether	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
4-Nitroaniline	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
4,6-Dinitro-2-methylphenol	<990		990	500	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
N-Nitrosodiphenylamine	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
4-Bromophenyl phenyl ether	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Hexachlorobenzene	<200		200	100	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Atrazine	<990		990	990	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Pentachlorophenol	<2000		2000	1000	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Phenanthrene	**460**		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Anthracene	<99		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Carbazole	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Di-n-butyl phthalate	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Fluoranthene	**160**		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Pyrene	**180**		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Butyl benzyl phthalate	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
3,3'-Dichlorobenzidine	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Benzo[a]anthracene	**61**	**J**	99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Chrysene	**71**	**J**	99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Bis(2-ethylhexyl) phthalate	**420**	**J**	500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Di-n-octyl phthalate	<500		500	250	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Benzo[b]fluoranthene	**60**	**J**	99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Benzo[k]fluoranthene	<99		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Benzo[a]pyrene	<99		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Indeno[1,2,3-cd]pyrene	<99		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Dibenz(a,h)anthracene	<99		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10
Benzo[g,h,i]perylene	<99		99	50	mg/Kg		03/07/17 21:45	03/08/17 18:51	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*36*	*X*	*40 - 130*	*03/07/17 21:45*	*03/08/17 18:51*	*10*
Phenol-d5 (Surr)	*226*	*X*	*36 - 123*	*03/07/17 21:45*	*03/08/17 18:51*	*10*
Nitrobenzene-d5 (Surr)	*166*	*X*	*33 - 124*	*03/07/17 21:45*	*03/08/17 18:51*	*10*
2-Fluorobiphenyl (Surr)	*120*	*X*	*42 - 115*	*03/07/17 21:45*	*03/08/17 18:51*	*10*
2,4,6-Tribromophenol (Surr)	*102*		*25 - 130*	*03/07/17 21:45*	*03/08/17 18:51*	*10*
Terphenyl-d14 (Surr)	*126*		*25 - 150*	*03/07/17 21:45*	*03/08/17 18:51*	*10*

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-124554-1

Client Sample ID: MW-12-FP-03022017

Lab Sample ID: 500-124554-1

Date Collected: 03/02/17 10:10

Matrix: Waste

Date Received: 03/02/17 11:34

Method: 8270D - Semivolatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3 & 4 Methylphenol	**3800**		2500	1200	mg/Kg		03/07/17 21:45	03/08/17 17:55	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*0*	*D*	*40 - 130*	*03/07/17 21:45*	*03/08/17 17:55*	*50*
Phenol-d5 (Surr)	*0*	*D*	*36 - 123*	*03/07/17 21:45*	*03/08/17 17:55*	*50*
Nitrobenzene-d5 (Surr)	*0*	*D*	*33 - 124*	*03/07/17 21:45*	*03/08/17 17:55*	*50*
2-Fluorobiphenyl (Surr)	*0*	*D*	*42 - 115*	*03/07/17 21:45*	*03/08/17 17:55*	*50*
2,4,6-Tribromophenol (Surr)	*0*	*D*	*25 - 130*	*03/07/17 21:45*	*03/08/17 17:55*	*50*
Terphenyl-d14 (Surr)	*0*	*D*	*25 - 150*	*03/07/17 21:45*	*03/08/17 17:55*	*50*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<25		25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
PCB-1016	<25		25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
PCB-1221	<25		25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
PCB-1221	<25		25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
PCB-1232	<25		25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
PCB-1232	<25		25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
PCB-1242	<25		25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
PCB-1242	<25		25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
PCB-1248	**180**		25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
PCB-1248	**170**		25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
PCB-1254	**180**		25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
PCB-1254	**150**		25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
PCB-1260	<25		25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50
PCB-1260	<25		25	12	mg/Kg		03/07/17 14:02	03/09/17 14:05	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*0*	*D*	*62 - 121*	*03/07/17 14:02*	*03/09/17 14:05*	*50*
Tetrachloro-m-xylene	*0*	*D*	*62 - 121*	*03/07/17 14:02*	*03/09/17 14:05*	*50*
DCB Decachlorobiphenyl	*0*	*D*	*53 - 118*	*03/07/17 14:02*	*03/09/17 14:05*	*50*
DCB Decachlorobiphenyl	*0*	*D*	*53 - 118*	*03/07/17 14:02*	*03/09/17 14:05*	*50*

Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-124554-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.
X	Surrogate is outside control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
*	LCS or LCSD is outside acceptance limits.

GC Semi VOA

Qualifier	Qualifier Description
D	Sample results are obtained from a dilution; the surrogate or matrix spike recoveries reported are calculated from diluted samples.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-124554-1

GC/MS VOA

Prep Batch: 374496

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-124554-1	MW-12-FP-03022017	Total/NA	Waste	5030B	
500-124554-1 - DL	MW-12-FP-03022017	Total/NA	Waste	5030B	
500-124554-1 - DL2	MW-12-FP-03022017	Total/NA	Waste	5030B	

Analysis Batch: 375465

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-124554-1	MW-12-FP-03022017	Total/NA	Waste	8260B	374496
500-124554-1 - DL	MW-12-FP-03022017	Total/NA	Waste	8260B	374496
MB 500-375465/7	Method Blank	Total/NA	Waste	8260B	
LCS 500-375465/5	Lab Control Sample	Total/NA	Waste	8260B	

Analysis Batch: 375635

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-124554-1 - DL2	MW-12-FP-03022017	Total/NA	Waste	8260B	374496
MB 500-375635/6	Method Blank	Total/NA	Waste	8260B	
LCS 500-375635/4	Lab Control Sample	Total/NA	Waste	8260B	

GC/MS Semi VOA

Prep Batch: 374814

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-124554-1	MW-12-FP-03022017	Total/NA	Waste	3580A	
500-124554-1 - DL	MW-12-FP-03022017	Total/NA	Waste	3580A	
MB 500-374814/1-A	Method Blank	Total/NA	Waste	3580A	
LCS 500-374814/2-A	Lab Control Sample	Total/NA	Waste	3580A	
LCSD 500-374814/3-A	Lab Control Sample Dup	Total/NA	Waste	3580A	

Analysis Batch: 374842

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-124554-1 - DL	MW-12-FP-03022017	Total/NA	Waste	8270D	374814
500-124554-1	MW-12-FP-03022017	Total/NA	Waste	8270D	374814
MB 500-374814/1-A	Method Blank	Total/NA	Waste	8270D	374814
LCS 500-374814/2-A	Lab Control Sample	Total/NA	Waste	8270D	374814
LCSD 500-374814/3-A	Lab Control Sample Dup	Total/NA	Waste	8270D	374814

GC Semi VOA

Prep Batch: 374749

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-124554-1	MW-12-FP-03022017	Total/NA	Waste	3580A	
MB 500-374749/1-A	Method Blank	Total/NA	Waste	3580A	
LCS 500-374749/2-A	Lab Control Sample	Total/NA	Waste	3580A	
LCSD 500-374749/3-A	Lab Control Sample Dup	Total/NA	Waste	3580A	

Analysis Batch: 375068

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
500-124554-1	MW-12-FP-03022017	Total/NA	Waste	8082A	374749
MB 500-374749/1-A	Method Blank	Total/NA	Waste	8082A	374749
LCS 500-374749/2-A	Lab Control Sample	Total/NA	Waste	8082A	374749
LCSD 500-374749/3-A	Lab Control Sample Dup	Total/NA	Waste	8082A	374749

Surrogate Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-124554-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Waste **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		12DCE	TOL	BFB	DBFM
Lab Sample ID	Client Sample ID	(71-127)	(75-120)	(71-120)	(70-120)
500-124554-1	MW-12-FP-03022017	105	99	95	95
500-124554-1 - DL	MW-12-FP-03022017	104	101	102	94
500-124554-1 - DL2	MW-12-FP-03022017	105	97	92	94
LCS 500-375465/5	Lab Control Sample	99	102	96	97
LCS 500-375635/4	Lab Control Sample	103	102	88	97
MB 500-375465/7	Method Blank	101	100	101	97
MB 500-375635/6	Method Blank	105	100	93	93

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
DBFM = Dibromofluoromethane

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Matrix: Waste **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)					
		2FP	PHL	NBZ	FBP	TBP	TPH
Lab Sample ID	Client Sample ID	(40-130)	(36-123)	(33-124)	(42-115)	(25-130)	(25-150)
500-124554-1 - DL	MW-12-FP-03022017	0 D	0 D	0 D	0 D	0 D	0 D
500-124554-1	MW-12-FP-03022017	36 X	226 X	166 X	120 X	102	126
LCS 500-374814/2-A	Lab Control Sample	118	111	95	87	85	98
LCSD 500-374814/3-A	Lab Control Sample Dup	113	105	91	83	80	95
MB 500-374814/1-A	Method Blank	115	100	91	89	69	98

Surrogate Legend

2FP = 2-Fluorophenol (Surr)
PHL = Phenol-d5 (Surr)
NBZ = Nitrobenzene-d5 (Surr)
FBP = 2-Fluorobiphenyl (Surr)
TBP = 2,4,6-Tribromophenol (Surr)
TPH = Terphenyl-d14 (Surr)

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Waste **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		TCX1	TCX2	DCB1	DCB2
Lab Sample ID	Client Sample ID	(62-121)	(62-121)	(53-118)	(53-118)
500-124554-1	MW-12-FP-03022017	0 D	0 D	0 D	0 D
LCS 500-374749/2-A	Lab Control Sample	104	104	102	98
LCSD 500-374749/3-A	Lab Control Sample Dup	93	91	89	86
MB 500-374749/1-A	Method Blank	96	97	91	91

Surrogate Legend

TCX = Tetrachloro-m-xylene
DCB = DCB Decachlorobiphenyl

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-375465/7
Matrix: Waste
Analysis Batch: 375465

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	<0.0020		0.0020	0.00067	mg/Kg			03/13/17 10:38	1
Chloromethane	<0.0010		0.0010	0.00032	mg/Kg			03/13/17 10:38	1
Vinyl chloride	<0.00050		0.00050	0.00026	mg/Kg			03/13/17 10:38	1
Bromomethane	<0.0020		0.0020	0.00080	mg/Kg			03/13/17 10:38	1
Chloroethane	<0.0010		0.0010	0.00050	mg/Kg			03/13/17 10:38	1
Trichlorofluoromethane	<0.0010		0.0010	0.00043	mg/Kg			03/13/17 10:38	1
1,1-Dichloroethene	<0.0010		0.0010	0.00039	mg/Kg			03/13/17 10:38	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.0010		0.0010	0.00046	mg/Kg			03/13/17 10:38	1
Acetone	<0.0050		0.0050	0.0017	mg/Kg			03/13/17 10:38	1
Carbon disulfide	<0.0020		0.0020	0.00080	mg/Kg			03/13/17 10:38	1
Methyl acetate	<0.0050		0.0050	0.0020	mg/Kg			03/13/17 10:38	1
Methylene Chloride	<0.0050		0.0050	0.0016	mg/Kg			03/13/17 10:38	1
trans-1,2-Dichloroethene	<0.0010		0.0010	0.00035	mg/Kg			03/13/17 10:38	1
Methyl tert-butyl ether	<0.0010		0.0010	0.00039	mg/Kg			03/13/17 10:38	1
1,1-Dichloroethane	<0.0010		0.0010	0.00041	mg/Kg			03/13/17 10:38	1
cis-1,2-Dichloroethene	<0.0010		0.0010	0.00041	mg/Kg			03/13/17 10:38	1
Methyl Ethyl Ketone	<0.0050		0.0050	0.0021	mg/Kg			03/13/17 10:38	1
Chloroform	<0.0020		0.0020	0.00037	mg/Kg			03/13/17 10:38	1
1,1,1-Trichloroethane	<0.0010		0.0010	0.00038	mg/Kg			03/13/17 10:38	1
Cyclohexane	<0.0010		0.0010	0.00048	mg/Kg			03/13/17 10:38	1
Carbon tetrachloride	<0.0010		0.0010	0.00038	mg/Kg			03/13/17 10:38	1
Benzene	<0.00025		0.00025	0.00015	mg/Kg			03/13/17 10:38	1
1,2-Dichloroethane	<0.0010		0.0010	0.00039	mg/Kg			03/13/17 10:38	1
Trichloroethene	<0.00050		0.00050	0.00016	mg/Kg			03/13/17 10:38	1
Methylcyclohexane	<0.0010		0.0010	0.00032	mg/Kg			03/13/17 10:38	1
1,2-Dichloropropane	<0.0010		0.0010	0.00043	mg/Kg			03/13/17 10:38	1
Bromodichloromethane	<0.0010		0.0010	0.00037	mg/Kg			03/13/17 10:38	1
cis-1,3-Dichloropropene	<0.0010		0.0010	0.00042	mg/Kg			03/13/17 10:38	1
methyl isobutyl ketone	<0.0050		0.0050	0.0022	mg/Kg			03/13/17 10:38	1
Toluene	<0.00025		0.00025	0.00015	mg/Kg			03/13/17 10:38	1
trans-1,3-Dichloropropene	<0.0010		0.0010	0.00036	mg/Kg			03/13/17 10:38	1
1,1,2-Trichloroethane	<0.0010		0.0010	0.00035	mg/Kg			03/13/17 10:38	1
Tetrachloroethene	<0.0010		0.0010	0.00037	mg/Kg			03/13/17 10:38	1
2-Hexanone	<0.0050		0.0050	0.0016	mg/Kg			03/13/17 10:38	1
Dibromochloromethane	<0.0010		0.0010	0.00049	mg/Kg			03/13/17 10:38	1
1,2-Dibromoethane	<0.0010		0.0010	0.00039	mg/Kg			03/13/17 10:38	1
Chlorobenzene	<0.0010		0.0010	0.00039	mg/Kg			03/13/17 10:38	1
Ethylbenzene	<0.00025		0.00025	0.00018	mg/Kg			03/13/17 10:38	1
Xylenes, Total	<0.00050		0.00050	0.00022	mg/Kg			03/13/17 10:38	1
Styrene	<0.0010		0.0010	0.00039	mg/Kg			03/13/17 10:38	1
Bromoform	<0.0010		0.0010	0.00048	mg/Kg			03/13/17 10:38	1
Isopropylbenzene	<0.0010		0.0010	0.00038	mg/Kg			03/13/17 10:38	1
1,1,2,2-Tetrachloroethane	<0.0010		0.0010	0.00040	mg/Kg			03/13/17 10:38	1
1,3-Dichlorobenzene	<0.0010		0.0010	0.00040	mg/Kg			03/13/17 10:38	1
1,4-Dichlorobenzene	<0.0010		0.0010	0.00036	mg/Kg			03/13/17 10:38	1
1,2-Dichlorobenzene	<0.0010		0.0010	0.00033	mg/Kg			03/13/17 10:38	1
1,2-Dibromo-3-Chloropropane	<0.0050		0.0050	0.0020	mg/Kg			03/13/17 10:38	1
1,2,4-Trichlorobenzene	<0.0010		0.0010	0.00034	mg/Kg			03/13/17 10:38	1

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-124554-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		71 - 127		03/13/17 10:38	1
Toluene-d8 (Surr)	100		75 - 120		03/13/17 10:38	1
4-Bromofluorobenzene (Surr)	101		71 - 120		03/13/17 10:38	1
Dibromofluoromethane	97		70 - 120		03/13/17 10:38	1

Lab Sample ID: LCS 500-375465/5
Matrix: Waste
Analysis Batch: 375465

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dichlorodifluoromethane	0.0500	0.0353		mg/Kg		71	51 - 140
Chloromethane	0.0500	0.0393		mg/Kg		79	60 - 140
Vinyl chloride	0.0500	0.0386		mg/Kg		77	70 - 126
Bromomethane	0.0500	0.0304		mg/Kg		61	40 - 150
Chloroethane	0.0500	0.0351		mg/Kg		70	60 - 139
Trichlorofluoromethane	0.0500	0.0573		mg/Kg		115	60 - 126
1,1-Dichloroethene	0.0500	0.0423		mg/Kg		85	70 - 125
1,1,2-Trichloro-1,2,2-trifluoroetha ne	0.0500	0.0463		mg/Kg		93	57 - 141
Acetone	0.0500	0.0358		mg/Kg		72	37 - 141
Carbon disulfide	0.0500	0.0405		mg/Kg		81	68 - 125
Methyl acetate	0.250	0.204		mg/Kg		82	60 - 148
Methylene Chloride	0.0500	0.0411		mg/Kg		82	68 - 125
trans-1,2-Dichloroethene	0.0500	0.0421		mg/Kg		84	70 - 125
Methyl tert-butyl ether	0.0500	0.0418		mg/Kg		84	67 - 125
1,1-Dichloroethane	0.0500	0.0399		mg/Kg		80	70 - 125
cis-1,2-Dichloroethene	0.0500	0.0416		mg/Kg		83	70 - 125
Methyl Ethyl Ketone	0.0500	0.0384		mg/Kg		77	52 - 142
Chloroform	0.0500	0.0424		mg/Kg		85	70 - 125
1,1,1-Trichloroethane	0.0500	0.0439		mg/Kg		88	70 - 125
Cyclohexane	0.0500	0.0407		mg/Kg		81	56 - 149
Carbon tetrachloride	0.0500	0.0425		mg/Kg		85	70 - 125
Benzene	0.0500	0.0413		mg/Kg		83	70 - 125
1,2-Dichloroethane	0.0500	0.0414		mg/Kg		83	70 - 125
Trichloroethene	0.0500	0.0429		mg/Kg		86	70 - 125
Methylcyclohexane	0.0500	0.0445		mg/Kg		89	70 - 127
1,2-Dichloropropane	0.0500	0.0400		mg/Kg		80	70 - 125
Bromodichloromethane	0.0500	0.0414		mg/Kg		83	70 - 125
cis-1,3-Dichloropropene	0.0500	0.0419		mg/Kg		84	70 - 125
methyl isobutyl ketone	0.0500	0.0440		mg/Kg		88	47 - 140
Toluene	0.0500	0.0441		mg/Kg		88	70 - 125
trans-1,3-Dichloropropene	0.0500	0.0416		mg/Kg		83	70 - 125
1,1,2-Trichloroethane	0.0500	0.0434		mg/Kg		87	70 - 125
Tetrachloroethene	0.0500	0.0451		mg/Kg		90	70 - 125
2-Hexanone	0.0500	0.0422		mg/Kg		84	49 - 139
Dibromochloromethane	0.0500	0.0426		mg/Kg		85	66 - 125
1,2-Dibromoethane	0.0500	0.0443		mg/Kg		89	70 - 125
Chlorobenzene	0.0500	0.0432		mg/Kg		86	70 - 125
Ethylbenzene	0.0500	0.0452		mg/Kg		90	70 - 125
Xylenes, Total	0.100	0.0871		mg/Kg		87	70 - 125
Styrene	0.0500	0.0435		mg/Kg		87	70 - 125
Bromoform	0.0500	0.0384		mg/Kg		77	54 - 128
Isopropylbenzene	0.0500	0.0436		mg/Kg		87	70 - 125
1,1,2,2-Tetrachloroethane	0.0500	0.0418		mg/Kg		84	68 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-375465/5
Matrix: Waste
Analysis Batch: 375465

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,3-Dichlorobenzene	0.0500	0.0432		mg/Kg		86	70 - 125
1,4-Dichlorobenzene	0.0500	0.0428		mg/Kg		86	70 - 125
1,2-Dichlorobenzene	0.0500	0.0431		mg/Kg		86	70 - 125
1,2-Dibromo-3-Chloropropane	0.0500	0.0393		mg/Kg		79	51 - 125
1,2,4-Trichlorobenzene	0.0500	0.0403		mg/Kg		81	64 - 126

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*99*		*71 - 127*
Toluene-d8 (Surr)	*102*		*75 - 120*
4-Bromofluorobenzene (Surr)	*96*		*71 - 120*
Dibromofluoromethane	*97*		*70 - 120*

Lab Sample ID: MB 500-375635/6
Matrix: Waste
Analysis Batch: 375635

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	<0.0020		0.0020	0.00067	mg/Kg			03/14/17 10:01	1
Chloromethane	<0.0010		0.0010	0.00032	mg/Kg			03/14/17 10:01	1
Vinyl chloride	<0.00050		0.00050	0.00026	mg/Kg			03/14/17 10:01	1
Bromomethane	<0.0020		0.0020	0.00080	mg/Kg			03/14/17 10:01	1
Chloroethane	<0.0010		0.0010	0.00050	mg/Kg			03/14/17 10:01	1
Trichlorofluoromethane	<0.0010		0.0010	0.00043	mg/Kg			03/14/17 10:01	1
1,1-Dichloroethene	<0.0010		0.0010	0.00039	mg/Kg			03/14/17 10:01	1
1,1,2-Trichloro-1,2,2-trifluoroethane	<0.0010		0.0010	0.00046	mg/Kg			03/14/17 10:01	1
Acetone	<0.0050		0.0050	0.0017	mg/Kg			03/14/17 10:01	1
Carbon disulfide	<0.0020		0.0020	0.00080	mg/Kg			03/14/17 10:01	1
Methyl acetate	<0.0050		0.0050	0.0020	mg/Kg			03/14/17 10:01	1
Methylene Chloride	<0.0050		0.0050	0.0016	mg/Kg			03/14/17 10:01	1
trans-1,2-Dichloroethene	<0.0010		0.0010	0.00035	mg/Kg			03/14/17 10:01	1
Methyl tert-butyl ether	<0.0010		0.0010	0.00039	mg/Kg			03/14/17 10:01	1
1,1-Dichloroethane	<0.0010		0.0010	0.00041	mg/Kg			03/14/17 10:01	1
cis-1,2-Dichloroethene	<0.0010		0.0010	0.00041	mg/Kg			03/14/17 10:01	1
Methyl Ethyl Ketone	<0.0050		0.0050	0.0021	mg/Kg			03/14/17 10:01	1
Chloroform	<0.0020		0.0020	0.00037	mg/Kg			03/14/17 10:01	1
1,1,1-Trichloroethane	<0.0010		0.0010	0.00038	mg/Kg			03/14/17 10:01	1
Cyclohexane	<0.0010		0.0010	0.00048	mg/Kg			03/14/17 10:01	1
Carbon tetrachloride	<0.0010		0.0010	0.00038	mg/Kg			03/14/17 10:01	1
Benzene	<0.00025		0.00025	0.00015	mg/Kg			03/14/17 10:01	1
1,2-Dichloroethane	<0.0010		0.0010	0.00039	mg/Kg			03/14/17 10:01	1
Trichloroethene	<0.00050		0.00050	0.00016	mg/Kg			03/14/17 10:01	1
Methylcyclohexane	<0.0010		0.0010	0.00032	mg/Kg			03/14/17 10:01	1
1,2-Dichloropropane	<0.0010		0.0010	0.00043	mg/Kg			03/14/17 10:01	1
Bromodichloromethane	<0.0010		0.0010	0.00037	mg/Kg			03/14/17 10:01	1
cis-1,3-Dichloropropene	<0.0010		0.0010	0.00042	mg/Kg			03/14/17 10:01	1
methyl isobutyl ketone	<0.0050		0.0050	0.0022	mg/Kg			03/14/17 10:01	1
Toluene	<0.00025		0.00025	0.00015	mg/Kg			03/14/17 10:01	1
trans-1,3-Dichloropropene	<0.0010		0.0010	0.00036	mg/Kg			03/14/17 10:01	1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-375635/6
Matrix: Waste
Analysis Batch: 375635

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2-Trichloroethane	<0.0010		0.0010	0.00035	mg/Kg			03/14/17 10:01	1
Tetrachloroethene	<0.0010		0.0010	0.00037	mg/Kg			03/14/17 10:01	1
2-Hexanone	<0.0050		0.0050	0.0016	mg/Kg			03/14/17 10:01	1
Dibromochloromethane	<0.0010		0.0010	0.00049	mg/Kg			03/14/17 10:01	1
1,2-Dibromoethane	<0.0010		0.0010	0.00039	mg/Kg			03/14/17 10:01	1
Chlorobenzene	<0.0010		0.0010	0.00039	mg/Kg			03/14/17 10:01	1
Ethylbenzene	<0.00025		0.00025	0.00018	mg/Kg			03/14/17 10:01	1
Xylenes, Total	<0.00050		0.00050	0.00022	mg/Kg			03/14/17 10:01	1
Styrene	<0.0010		0.0010	0.00039	mg/Kg			03/14/17 10:01	1
Bromoform	<0.0010		0.0010	0.00048	mg/Kg			03/14/17 10:01	1
Isopropylbenzene	<0.0010		0.0010	0.00038	mg/Kg			03/14/17 10:01	1
1,1,2,2-Tetrachloroethane	<0.0010		0.0010	0.00040	mg/Kg			03/14/17 10:01	1
1,3-Dichlorobenzene	<0.0010		0.0010	0.00040	mg/Kg			03/14/17 10:01	1
1,4-Dichlorobenzene	<0.0010		0.0010	0.00036	mg/Kg			03/14/17 10:01	1
1,2-Dichlorobenzene	<0.0010		0.0010	0.00033	mg/Kg			03/14/17 10:01	1
1,2-Dibromo-3-Chloropropane	<0.0050		0.0050	0.0020	mg/Kg			03/14/17 10:01	1
1,2,4-Trichlorobenzene	<0.0010		0.0010	0.00034	mg/Kg			03/14/17 10:01	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*105*		*71 - 127*		*03/14/17 10:01*	*1*
Toluene-d8 (Surr)	*100*		*75 - 120*		*03/14/17 10:01*	*1*
4-Bromofluorobenzene (Surr)	*93*		*71 - 120*		*03/14/17 10:01*	*1*
Dibromofluoromethane	*93*		*70 - 120*		*03/14/17 10:01*	*1*

Lab Sample ID: LCS 500-375635/4
Matrix: Waste
Analysis Batch: 375635

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dichlorodifluoromethane	0.0500	0.0362		mg/Kg		72	51 - 140
Chloromethane	0.0500	0.0372		mg/Kg		74	60 - 140
Vinyl chloride	0.0500	0.0457		mg/Kg		91	70 - 126
Bromomethane	0.0500	0.0593		mg/Kg		119	40 - 150
Chloroethane	0.0500	0.0506		mg/Kg		101	60 - 139
Trichlorofluoromethane	0.0500	0.0489		mg/Kg		98	60 - 126
1,1-Dichloroethene	0.0500	0.0523		mg/Kg		105	70 - 125
1,1,2-Trichloro-1,2,2-trifluoroethane	0.0500	0.0571		mg/Kg		114	57 - 141
Acetone	0.0500	0.0426		mg/Kg		85	37 - 141
Carbon disulfide	0.0500	0.0499		mg/Kg		100	68 - 125
Methyl acetate	0.250	0.270		mg/Kg		108	60 - 148
Methylene Chloride	0.0500	0.0532		mg/Kg		106	68 - 125
trans-1,2-Dichloroethene	0.0500	0.0522		mg/Kg		104	70 - 125
Methyl tert-butyl ether	0.0500	0.0542		mg/Kg		108	67 - 125
1,1-Dichloroethane	0.0500	0.0540		mg/Kg		108	70 - 125
cis-1,2-Dichloroethene	0.0500	0.0523		mg/Kg		105	70 - 125
Methyl Ethyl Ketone	0.0500	0.0512		mg/Kg		102	52 - 142
Chloroform	0.0500	0.0531		mg/Kg		106	70 - 125

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-375635/4
Matrix: Waste
Analysis Batch: 375635

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	0.0500	0.0545		mg/Kg		109	70 - 125
Cyclohexane	0.0500	0.0554		mg/Kg		111	56 - 149
Carbon tetrachloride	0.0500	0.0543		mg/Kg		109	70 - 125
Benzene	0.0500	0.0529		mg/Kg		106	70 - 125
1,2-Dichloroethane	0.0500	0.0562		mg/Kg		112	70 - 125
Trichloroethene	0.0500	0.0571		mg/Kg		114	70 - 125
Methylcyclohexane	0.0500	0.0580		mg/Kg		116	70 - 127
1,2-Dichloropropane	0.0500	0.0532		mg/Kg		106	70 - 125
Bromodichloromethane	0.0500	0.0510		mg/Kg		102	70 - 125
cis-1,3-Dichloropropene	0.0500	0.0527		mg/Kg		105	70 - 125
methyl isobutyl ketone	0.0500	0.0508		mg/Kg		102	47 - 140
Toluene	0.0500	0.0562		mg/Kg		112	70 - 125
trans-1,3-Dichloropropene	0.0500	0.0515		mg/Kg		103	70 - 125
1,1,2-Trichloroethane	0.0500	0.0554		mg/Kg		111	70 - 125
Tetrachloroethene	0.0500	0.0589		mg/Kg		118	70 - 125
2-Hexanone	0.0500	0.0498		mg/Kg		100	49 - 139
Dibromochloromethane	0.0500	0.0533		mg/Kg		107	66 - 125
1,2-Dibromoethane	0.0500	0.0544		mg/Kg		109	70 - 125
Chlorobenzene	0.0500	0.0553		mg/Kg		111	70 - 125
Ethylbenzene	0.0500	0.0567		mg/Kg		113	70 - 125
Xylenes, Total	0.100	0.111		mg/Kg		111	70 - 125
Styrene	0.0500	0.0561		mg/Kg		112	70 - 125
Bromoform	0.0500	0.0497		mg/Kg		99	54 - 128
Isopropylbenzene	0.0500	0.0509		mg/Kg		102	70 - 125
1,1,2,2-Tetrachloroethane	0.0500	0.0511		mg/Kg		102	68 - 125
1,3-Dichlorobenzene	0.0500	0.0515		mg/Kg		103	70 - 125
1,4-Dichlorobenzene	0.0500	0.0523		mg/Kg		105	70 - 125
1,2-Dichlorobenzene	0.0500	0.0526		mg/Kg		105	70 - 125
1,2-Dibromo-3-Chloropropane	0.0500	0.0445		mg/Kg		89	51 - 125
1,2,4-Trichlorobenzene	0.0500	0.0617		mg/Kg		123	64 - 126

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*103*		*71 - 127*
Toluene-d8 (Surr)	*102*		*75 - 120*
4-Bromofluorobenzene (Surr)	*88*		*71 - 120*
Dibromofluoromethane	*97*		*70 - 120*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 500-374814/1-A
Matrix: Waste
Analysis Batch: 374842

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 374814

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzaldehyde	<200		200	100	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Phenol	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Bis(2-chloroethyl)ether	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
2-Chlorophenol	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-374814/1-A
Matrix: Waste
Analysis Batch: 374842

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 374814

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylphenol	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
2,2'-oxybis[1-chloropropane]	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Acetophenone	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
N-Nitrosodi-n-propylamine	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Hexachloroethane	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Nitrobenzene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Isophorone	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
2-Nitrophenol	<100		100	50	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
2,4-Dimethylphenol	<100		100	50	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Bis(2-chloroethoxy)methane	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
2,4-Dichlorophenol	<100		100	50	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Naphthalene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
4-Chloroaniline	<100		100	50	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Hexachlorobutadiene	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Caprolactam	<100		100	100	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
4-Chloro-3-methylphenol	<100		100	50	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
2-Methylnaphthalene	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Hexachlorocyclopentadiene	<200		200	100	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
2,4,6-Trichlorophenol	<100		100	50	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
2,4,5-Trichlorophenol	<100		100	50	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
1,1'-Biphenyl	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
2-Chloronaphthalene	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
2-Nitroaniline	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Dimethyl phthalate	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
2,6-Dinitrotoluene	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Acenaphthylene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
3-Nitroaniline	<100		100	50	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Acenaphthene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
2,4-Dinitrophenol	<200		200	100	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
4-Nitrophenol	<200		200	100	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Dibenzofuran	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
2,4-Dinitrotoluene	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Diethyl phthalate	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Fluorene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
4-Chlorophenyl phenyl ether	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
4-Nitroaniline	<100		100	50	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
4,6-Dinitro-2-methylphenol	<100		100	50	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
N-Nitrosodiphenylamine	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
4-Bromophenyl phenyl ether	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Hexachlorobenzene	<20		20	10	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Atrazine	<100		100	100	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Pentachlorophenol	<200		200	100	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Phenanthrene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Anthracene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Carbazole	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Di-n-butyl phthalate	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Fluoranthene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Pyrene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 500-374814/1-A
Matrix: Waste
Analysis Batch: 374842

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 374814

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Butyl benzyl phthalate	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
3,3'-Dichlorobenzidine	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Benzo[a]anthracene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Chrysene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Bis(2-ethylhexyl) phthalate	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Di-n-octyl phthalate	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Benzo[b]fluoranthene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Benzo[k]fluoranthene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Benzo[a]pyrene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Indeno[1,2,3-cd]pyrene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Dibenz(a,h)anthracene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
Benzo[g,h,i]perylene	<10		10	5.0	mg/Kg		03/07/17 21:45	03/08/17 12:14	1
3 & 4 Methylphenol	<51		51	25	mg/Kg		03/07/17 21:45	03/08/17 12:14	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2-Fluorophenol (Surr)	*115*		*40 - 130*	*03/07/17 21:45*	*03/08/17 12:14*	*1*
Phenol-d5 (Surr)	*100*		*36 - 123*	*03/07/17 21:45*	*03/08/17 12:14*	*1*
Nitrobenzene-d5 (Surr)	*91*		*33 - 124*	*03/07/17 21:45*	*03/08/17 12:14*	*1*
2-Fluorobiphenyl (Surr)	*89*		*42 - 115*	*03/07/17 21:45*	*03/08/17 12:14*	*1*
2,4,6-Tribromophenol (Surr)	*69*		*25 - 130*	*03/07/17 21:45*	*03/08/17 12:14*	*1*
Terphenyl-d14 (Surr)	*98*		*25 - 150*	*03/07/17 21:45*	*03/08/17 12:14*	*1*

Lab Sample ID: LCS 500-374814/2-A
Matrix: Waste
Analysis Batch: 374842

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 374814

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Phenol	80.0	93.0		mg/Kg		116	55 - 118
Bis(2-chloroethyl)ether	80.0	89.5		mg/Kg		112	53 - 116
2-Chlorophenol	80.0	83.0		mg/Kg		104	57 - 117
2-Methylphenol	80.0	88.4		mg/Kg		110	53 - 123
2,2'-oxybis[1-chloropropane]	80.0	93.3		mg/Kg		117	22 - 133
Acetophenone	80.0	77.8		mg/Kg		97	48 - 110
N-Nitrosodi-n-propylamine	80.0	83.6		mg/Kg		104	56 - 119
Hexachloroethane	80.0	85.2		mg/Kg		106	54 - 111
Nitrobenzene	80.0	86.5		mg/Kg		108	56 - 121
Isophorone	80.0	83.3		mg/Kg		104	54 - 120
2-Nitrophenol	80.0	91.6	J	mg/Kg		114	58 - 121
2,4-Dimethylphenol	80.0	83.5	J	mg/Kg		104	50 - 120
Bis(2-chloroethoxy)methane	80.0	84.0		mg/Kg		105	59 - 116
2,4-Dichlorophenol	80.0	80.9	J	mg/Kg		101	61 - 116
Naphthalene	80.0	77.5		mg/Kg		97	58 - 116
4-Chloroaniline	80.0	<100		mg/Kg		21	10 - 150
Hexachlorobutadiene	80.0	66.2		mg/Kg		83	56 - 120
4-Chloro-3-methylphenol	80.0	83.7	J	mg/Kg		105	59 - 117
2-Methylnaphthalene	80.0	73.5		mg/Kg		92	55 - 120
Hexachlorocyclopentadiene	80.0	<200		mg/Kg		57	10 - 116
2,4,6-Trichlorophenol	80.0	76.0	J	mg/Kg		95	50 - 120

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 500-374814/2-A
Matrix: Waste
Analysis Batch: 374842

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 374814

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4,5-Trichlorophenol	80.0	74.6	J	mg/Kg		93	42 - 119
2-Chloronaphthalene	80.0	79.3		mg/Kg		99	57 - 112
2-Nitroaniline	80.0	71.4		mg/Kg		89	52 - 121
Dimethyl phthalate	80.0	78.2		mg/Kg		98	60 - 112
2,6-Dinitrotoluene	80.0	80.2		mg/Kg		100	57 - 118
Acenaphthylene	80.0	79.9		mg/Kg		100	57 - 116
3-Nitroaniline	80.0	<100	*	mg/Kg		16	20 - 144
Acenaphthene	80.0	75.0		mg/Kg		94	52 - 113
2,4-Dinitrophenol	160	127	J	mg/Kg		79	10 - 110
4-Nitrophenol	160	148	J	mg/Kg		92	32 - 123
Dibenzofuran	80.0	79.6		mg/Kg		100	59 - 110
2,4-Dinitrotoluene	80.0	83.0		mg/Kg		104	59 - 119
Diethyl phthalate	80.0	74.9		mg/Kg		94	58 - 117
Fluorene	80.0	77.9		mg/Kg		97	56 - 115
4-Chlorophenyl phenyl ether	80.0	74.1		mg/Kg		93	61 - 111
4-Nitroaniline	80.0	<100	*	mg/Kg		54	55 - 146
4,6-Dinitro-2-methylphenol	160	143		mg/Kg		89	10 - 110
N-Nitrosodiphenylamine	80.0	53.8		mg/Kg		67	62 - 117
4-Bromophenyl phenyl ether	80.0	71.8		mg/Kg		90	61 - 124
Hexachlorobenzene	80.0	67.9		mg/Kg		85	62 - 126
Pentachlorophenol	160	117	J	mg/Kg		73	12 - 116
Phenanthrene	80.0	75.8		mg/Kg		95	58 - 125
Anthracene	80.0	76.5		mg/Kg		96	57 - 118
Carbazole	80.0	<51	*	mg/Kg		24	65 - 137
Di-n-butyl phthalate	80.0	78.4		mg/Kg		98	61 - 123
Fluoranthene	80.0	72.7		mg/Kg		91	61 - 124
Pyrene	80.0	82.7		mg/Kg		103	60 - 115
Butyl benzyl phthalate	80.0	89.7		mg/Kg		112	61 - 115
3,3'-Dichlorobenzidine	80.0	40.3	J	mg/Kg		50	40 - 110
Benzo[a]anthracene	80.0	75.1		mg/Kg		94	63 - 115
Chrysene	80.0	76.8		mg/Kg		96	63 - 118
Bis(2-ethylhexyl) phthalate	80.0	87.1		mg/Kg		109	62 - 117
Di-n-octyl phthalate	80.0	83.9		mg/Kg		105	58 - 129
Benzo[b]fluoranthene	80.0	85.7		mg/Kg		107	61 - 123
Benzo[k]fluoranthene	80.0	83.0		mg/Kg		104	59 - 125
Benzo[a]pyrene	80.0	82.0		mg/Kg		103	64 - 122
Indeno[1,2,3-cd]pyrene	80.0	80.3		mg/Kg		100	50 - 149
Dibenz(a,h)anthracene	80.0	80.0		mg/Kg		100	61 - 134
Benzo[g,h,i]perylene	80.0	84.2		mg/Kg		105	55 - 134
3 & 4 Methylphenol	80.0	83.0		mg/Kg		104	55 - 124

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorophenol (Surr)	*118*		*40 - 130*
Phenol-d5 (Surr)	*111*		*36 - 123*
Nitrobenzene-d5 (Surr)	*95*		*33 - 124*
2-Fluorobiphenyl (Surr)	*87*		*42 - 115*
2,4,6-Tribromophenol (Surr)	*85*		*25 - 130*
Terphenyl-d14 (Surr)	*98*		*25 - 150*

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-124554-1

Lab Sample ID: LCSD 500-374814/3-A
Matrix: Waste
Analysis Batch: 374842

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 374814

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Phenol	80.0	89.0		mg/Kg		111	55 - 118	4	30
Bis(2-chloroethyl)ether	80.0	85.3		mg/Kg		107	53 - 116	5	30
2-Chlorophenol	80.0	78.6		mg/Kg		98	57 - 117	6	30
2-Methylphenol	80.0	83.2		mg/Kg		104	53 - 123	6	30
2,2'-oxybis[1-chloropropane]	80.0	86.1		mg/Kg		108	22 - 133	8	30
Acetophenone	80.0	74.0		mg/Kg		93	48 - 110	5	30
N-Nitrosodi-n-propylamine	80.0	79.2		mg/Kg		99	56 - 119	5	30
Hexachloroethane	80.0	78.8		mg/Kg		99	54 - 111	8	30
Nitrobenzene	80.0	81.8		mg/Kg		102	56 - 121	5	30
Isophorone	80.0	79.4		mg/Kg		99	54 - 120	5	30
2-Nitrophenol	80.0	87.3	J	mg/Kg		109	58 - 121	5	30
2,4-Dimethylphenol	80.0	81.0	J	mg/Kg		101	50 - 120	3	30
Bis(2-chloroethoxy)methane	80.0	80.7		mg/Kg		101	59 - 116	4	30
2,4-Dichlorophenol	80.0	78.3	J	mg/Kg		98	61 - 116	3	30
Naphthalene	80.0	74.5		mg/Kg		93	58 - 116	4	30
4-Chloroaniline	80.0	<100		mg/Kg		17	10 - 150	18	30
Hexachlorobutadiene	80.0	65.4		mg/Kg		82	56 - 120	1	30
4-Chloro-3-methylphenol	80.0	82.3	J	mg/Kg		103	59 - 117	2	30
2-Methylnaphthalene	80.0	73.4		mg/Kg		92	55 - 120	0	30
Hexachlorocyclopentadiene	80.0	<200		mg/Kg		56	10 - 116	0	30
2,4,6-Trichlorophenol	80.0	73.7	J	mg/Kg		92	50 - 120	3	30
2,4,5-Trichlorophenol	80.0	72.0	J	mg/Kg		90	42 - 119	4	30
2-Chloronaphthalene	80.0	75.3		mg/Kg		94	57 - 112	5	30
2-Nitroaniline	80.0	70.4		mg/Kg		88	52 - 121	1	30
Dimethyl phthalate	80.0	74.8		mg/Kg		93	60 - 112	5	30
2,6-Dinitrotoluene	80.0	77.8		mg/Kg		97	57 - 118	3	30
Acenaphthylene	80.0	76.8		mg/Kg		96	57 - 116	4	30
3-Nitroaniline	80.0	<100	*	mg/Kg		16	20 - 144	5	30
Acenaphthene	80.0	70.7		mg/Kg		88	52 - 113	6	30
2,4-Dinitrophenol	160	125	J	mg/Kg		78	10 - 110	1	30
4-Nitrophenol	160	138	J	mg/Kg		86	32 - 123	7	30
Dibenzofuran	80.0	74.4		mg/Kg		93	59 - 110	7	30
2,4-Dinitrotoluene	80.0	78.1		mg/Kg		98	59 - 119	6	30
Diethyl phthalate	80.0	70.6		mg/Kg		88	58 - 117	6	30
Fluorene	80.0	74.5		mg/Kg		93	56 - 115	4	30
4-Chlorophenyl phenyl ether	80.0	70.6		mg/Kg		88	61 - 111	5	30
4-Nitroaniline	80.0	<100	*	mg/Kg		47	55 - 146	14	30
4,6-Dinitro-2-methylphenol	160	138		mg/Kg		86	10 - 110	4	30
N-Nitrosodiphenylamine	80.0	52.3		mg/Kg		65	62 - 117	3	30
4-Bromophenyl phenyl ether	80.0	69.0		mg/Kg		86	61 - 124	4	30
Hexachlorobenzene	80.0	65.1		mg/Kg		81	62 - 126	4	30
Pentachlorophenol	160	107	J	mg/Kg		67	12 - 116	9	30
Phenanthrene	80.0	72.1		mg/Kg		90	58 - 125	5	30
Anthracene	80.0	73.6		mg/Kg		92	57 - 118	4	30
Carbazole	80.0	<51	*	mg/Kg		26	65 - 137	7	30
Di-n-butyl phthalate	80.0	74.0		mg/Kg		92	61 - 123	6	30
Fluoranthene	80.0	68.8		mg/Kg		86	61 - 124	6	30
Pyrene	80.0	80.6		mg/Kg		101	60 - 115	3	30
Butyl benzyl phthalate	80.0	87.4		mg/Kg		109	61 - 115	3	30
3,3'-Dichlorobenzidine	80.0	38.0	J	mg/Kg		48	40 - 110	6	30

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 500-374814/3-A
Matrix: Waste
Analysis Batch: 374842

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 374814

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzo[a]anthracene			80.0	73.3		mg/Kg		92	63 - 115	2	30
Chrysene			80.0	75.2		mg/Kg		94	63 - 118	2	30
Bis(2-ethylhexyl) phthalate			80.0	84.3		mg/Kg		105	62 - 117	3	30
Di-n-octyl phthalate			80.0	80.1		mg/Kg		100	58 - 129	5	30
Benzo[b]fluoranthene			80.0	84.7		mg/Kg		106	61 - 123	1	30
Benzo[k]fluoranthene			80.0	80.2		mg/Kg		100	59 - 125	3	30
Benzo[a]pyrene			80.0	78.2		mg/Kg		98	64 - 122	5	30
Indeno[1,2,3-cd]pyrene			80.0	73.1		mg/Kg		91	50 - 149	9	30
Dibenz(a,h)anthracene			80.0	72.8		mg/Kg		91	61 - 134	9	30
Benzo[g,h,i]perylene			80.0	77.4		mg/Kg		97	55 - 134	8	30
3 & 4 Methylphenol			80.0	79.2		mg/Kg		99	55 - 124	5	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2-Fluorophenol (Surr)	*113*		*40 - 130*
Phenol-d5 (Surr)	*105*		*36 - 123*
Nitrobenzene-d5 (Surr)	*91*		*33 - 124*
2-Fluorobiphenyl (Surr)	*83*		*42 - 115*
2,4,6-Tribromophenol (Surr)	*80*		*25 - 130*
Terphenyl-d14 (Surr)	*95*		*25 - 150*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 500-374749/1-A
Matrix: Waste
Analysis Batch: 375068

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 374749

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<0.50		0.50	0.25	mg/Kg		03/07/17 14:02	03/09/17 13:19	1
PCB-1016	<0.50		0.50	0.25	mg/Kg		03/07/17 14:02	03/09/17 13:19	1
PCB-1221	<0.50		0.50	0.25	mg/Kg		03/07/17 14:02	03/09/17 13:19	1
PCB-1221	<0.50		0.50	0.25	mg/Kg		03/07/17 14:02	03/09/17 13:19	1
PCB-1232	<0.50		0.50	0.25	mg/Kg		03/07/17 14:02	03/09/17 13:19	1
PCB-1232	<0.50		0.50	0.25	mg/Kg		03/07/17 14:02	03/09/17 13:19	1
PCB-1242	<0.50		0.50	0.25	mg/Kg		03/07/17 14:02	03/09/17 13:19	1
PCB-1242	<0.50		0.50	0.25	mg/Kg		03/07/17 14:02	03/09/17 13:19	1
PCB-1248	<0.50		0.50	0.25	mg/Kg		03/07/17 14:02	03/09/17 13:19	1
PCB-1248	<0.50		0.50	0.25	mg/Kg		03/07/17 14:02	03/09/17 13:19	1
PCB-1254	<0.50		0.50	0.25	mg/Kg		03/07/17 14:02	03/09/17 13:19	1
PCB-1254	<0.50		0.50	0.25	mg/Kg		03/07/17 14:02	03/09/17 13:19	1
PCB-1260	<0.50		0.50	0.25	mg/Kg		03/07/17 14:02	03/09/17 13:19	1
PCB-1260	<0.50		0.50	0.25	mg/Kg		03/07/17 14:02	03/09/17 13:19	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*96*		*62 - 121*	*03/07/17 14:02*	*03/09/17 13:19*	*1*
Tetrachloro-m-xylene	*97*		*62 - 121*	*03/07/17 14:02*	*03/09/17 13:19*	*1*
DCB Decachlorobiphenyl	*91*		*53 - 118*	*03/07/17 14:02*	*03/09/17 13:19*	*1*
DCB Decachlorobiphenyl	*91*		*53 - 118*	*03/07/17 14:02*	*03/09/17 13:19*	*1*

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography (Continued)

Lab Sample ID: LCS 500-374749/2-A
Matrix: Waste
Analysis Batch: 375068

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 374749

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
PCB-1016	5.00	5.53		mg/Kg		111	60 - 118
PCB-1016	5.00	5.08		mg/Kg		102	60 - 118
PCB-1260	5.00	5.59		mg/Kg		112	66 - 125
PCB-1260	5.00	5.33		mg/Kg		107	66 - 125

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*104*		*62 - 121*
Tetrachloro-m-xylene	*104*		*62 - 121*
DCB Decachlorobiphenyl	*102*		*53 - 118*
DCB Decachlorobiphenyl	*98*		*53 - 118*

Lab Sample ID: LCSD 500-374749/3-A
Matrix: Waste
Analysis Batch: 375068

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 374749

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
PCB-1016	5.00	4.70		mg/Kg		94	60 - 118	16	30
PCB-1016	5.00	4.33		mg/Kg		87	60 - 118	16	30
PCB-1260	5.00	4.83		mg/Kg		97	66 - 125	15	30
PCB-1260	5.00	4.61		mg/Kg		92	66 - 125	14	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*93*		*62 - 121*
Tetrachloro-m-xylene	*91*		*62 - 121*
DCB Decachlorobiphenyl	*89*		*53 - 118*
DCB Decachlorobiphenyl	*86*		*53 - 118*

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-124554-1

Client Sample ID: MW-12-FP-03022017

Date Collected: 03/02/17 10:10
Date Received: 03/02/17 11:34

Lab Sample ID: 500-124554-1

Matrix: Waste

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			374496	03/05/17 17:07	WRE	TAL CHI
Total/NA	Analysis	8260B		5000	375465	03/13/17 14:13	PMF	TAL CHI
Total/NA	Prep	5030B	DL		374496	03/05/17 17:07	WRE	TAL CHI
Total/NA	Analysis	8260B	DL	50000	375465	03/13/17 14:40	PMF	TAL CHI
Total/NA	Prep	5030B	DL2		374496	03/05/17 17:07	WRE	TAL CHI
Total/NA	Analysis	8260B	DL2	500000	375635	03/14/17 11:17	PMF	TAL CHI
Total/NA	Prep	3580A	DL		374814	03/07/17 21:45	LLH	TAL CHI
Total/NA	Analysis	8270D	DL	50	374842	03/08/17 17:55	AJD	TAL CHI
Total/NA	Prep	3580A			374814	03/07/17 21:45	LLH	TAL CHI
Total/NA	Analysis	8270D		10	374842	03/08/17 18:51	AJD	TAL CHI
Total/NA	Prep	3580A			374749	03/07/17 14:02	JJH	TAL CHI
Total/NA	Analysis	8082A		50	375068	03/09/17 14:05	BJH	TAL CHI

Laboratory References:

TAL CHI = TestAmerica Chicago, 2417 Bond Street, University Park, IL 60484, TEL (708)534-5200

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: Lake Calumet Cluster Site

TestAmerica Job ID: 500-124554-1

Laboratory: TestAmerica Chicago

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Illinois	NELAP	5	100201	04-30-17 *

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260B	5030B	Waste	Cyclohexane
8260B	5030B	Waste	Methyl acetate
8260B	5030B	Waste	Methylcyclohexane
8270D	3580A	Waste	1,1'-Biphenyl
8270D	3580A	Waste	Atrazine
8270D	3580A	Waste	Benzaldehyde
8270D	3580A	Waste	Caprolactam

* Certification renewal pending - certification considered valid.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

2417 Bond Street, University Park, IL 60484
Phone: 708.534.5200 Fax: 708.534.5211

Chain of Custody Record

Report To (optional)
Contact: Jack Kratzmeyer
Company: Arcadis
Address: 200 S. Michigan Ave
Address: Ste 2000
Phone: 312-575-3700
Fax:
E-Mail: Jack.Kratzmeyer@arcadis.com

Bill To (optional)
Contact:
Company:
Address:
Address:
Phone:
Fax:
PO#/Reference#

Lab Job #: 500-124554
Chain of Custody Number:
Page ____ of ____
Temperature °C of Cooler: 4.6

Client: Arcadis
Client Project #: CI001805.0002.00005
Project Name: LCCS
Project Location/State: Chicago, IL
Lab Project #: 50011099
Sampler: Ben Thurnhoffer
Lab PM: Therese Hargraves

Preservative Key
1. HCL, Cool to 4°
2. H2SO4, Cool to 4°
3. HNO3, Cool to 4°
4. NaOH, Cool to 4°
5. NaOH/Zn, Cool to 4°
6. NaHSO4
7. Cool to 4°
8. None
9. Other

Lab ID	MS/MSD	Sample ID	Sampling Date	Sampling Time	# of Containers	Matrix	Waste Oil SVOC	Waste Oil VOC	Waste Oil PCB							Comments
							8	8	8							
1		MW-12-FP-03022017	3/2/17	10:10	3	OL	1	1	1							

Turnaround Time Required (Business Days)
___ 1 Day ___ 2 Days ___ 5 Days ___ 7 Days ___ 10 Days ___ 15 Days ___ Other
Requested Due Date ____

Sample Disposal
☐ Return to Client ☐ Disposal by Lab ☐ Archive for ____ Months (A fee may be assessed if samples are retained longer than 1 month)

Relinquished By	Company	Date	Time	Received By	Company	Date	Time
Ben Thurnhoffer	Arcadis	3/2/2017	1134	[signature]	TA-CHI	3/2/17	1134

Lab Courier:
Shipped:
Hand Delivered: X

Matrix Key
WW – Wastewater
W – Water
S – Soil
SL – Sludge
MS – Miscellaneous
OL – Oil
A – Air
SE – Sediment
SO – Soil
L – Leachate
WI – Wipe
DW – Drinking Water
O – Other

Client Comments

Lab Comments:
500-124554 COC

TAL-4124-580 (1209)
3/16/2017

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 500-124554-1

Login Number: 124554
List Number: 1
Creator: Kelsey, Shawn M

List Source: TestAmerica Chicago

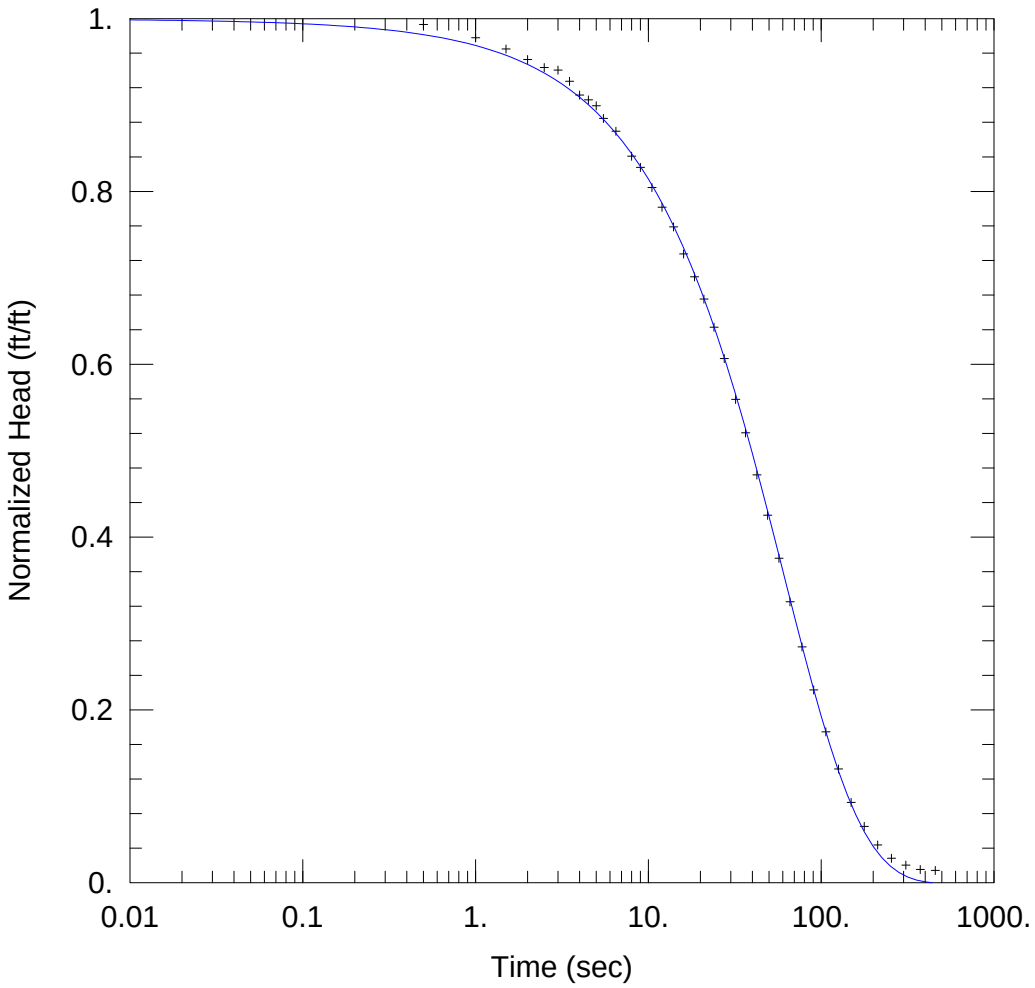
Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	4.6c
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX I

Slug Test Results

MW-1, Test 2

Prepared By:	Prepared For:
Arcadis	Lake Calumet Cluster Site
Project:	Location:
CI001805.0002	Chicago, Illinois



SOLUTION

Aquifer Model: Unconfined
Solution Method: KGS Model

Kr = 1.7 ft/day Ss = 5.7E-6 ft^{-1}
Kz/Kr = 1.

AQUIFER DATA

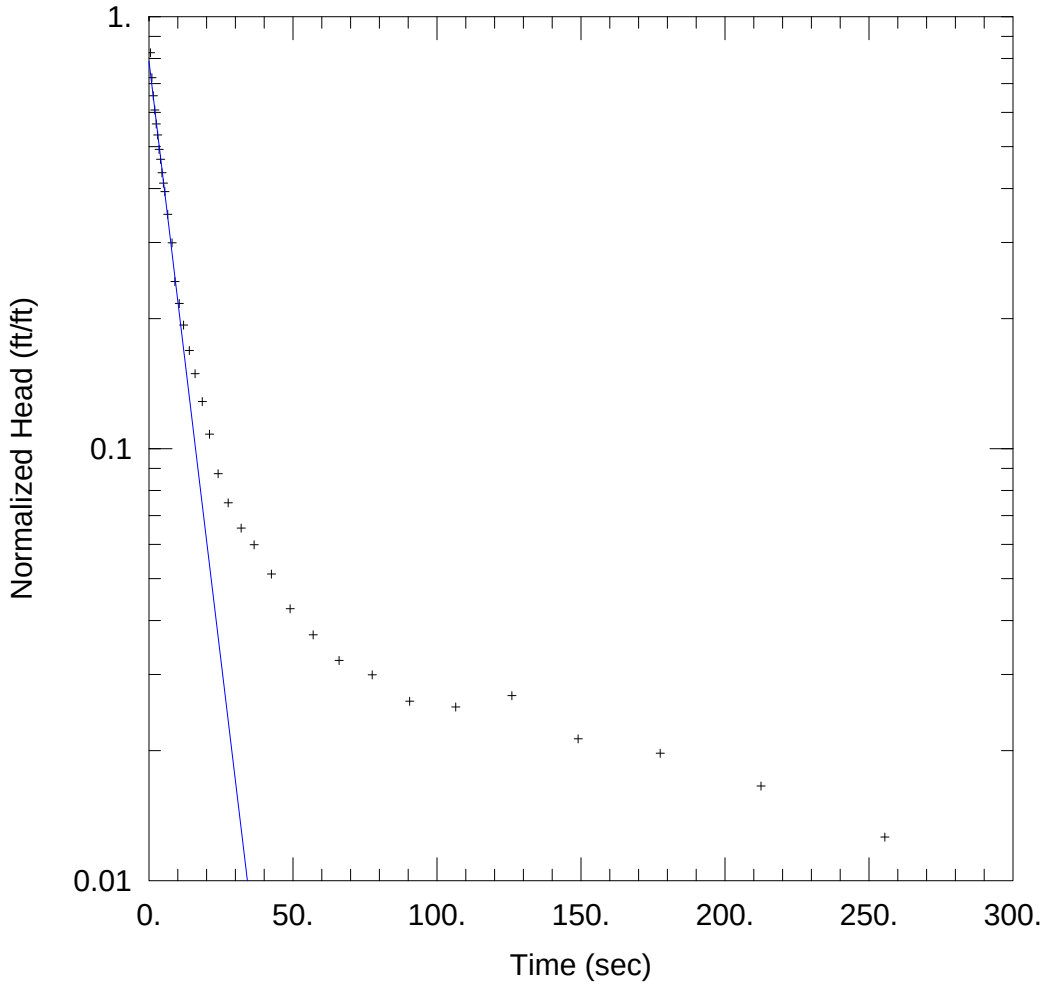
Saturated Thickness: 14.42 ft

WELL DATA (MW-1)

Initial Displacement: 1.627 ft
Static Water Column Height: 14.42 ft
Total Well Penetration Depth: 14.42 ft
Screen Length: 10. ft
Casing Radius: 0.0861 ft
Well Radius: 0.354 ft

MW-2, Test 2

Prepared By:	Prepared For:
Arcadis	Lake Calumet Cluster Site
Project:	Location:
CI001805.0002	Chicago, Illinois



SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 16. ft/day y0 = 1. ft

AQUIFER DATA

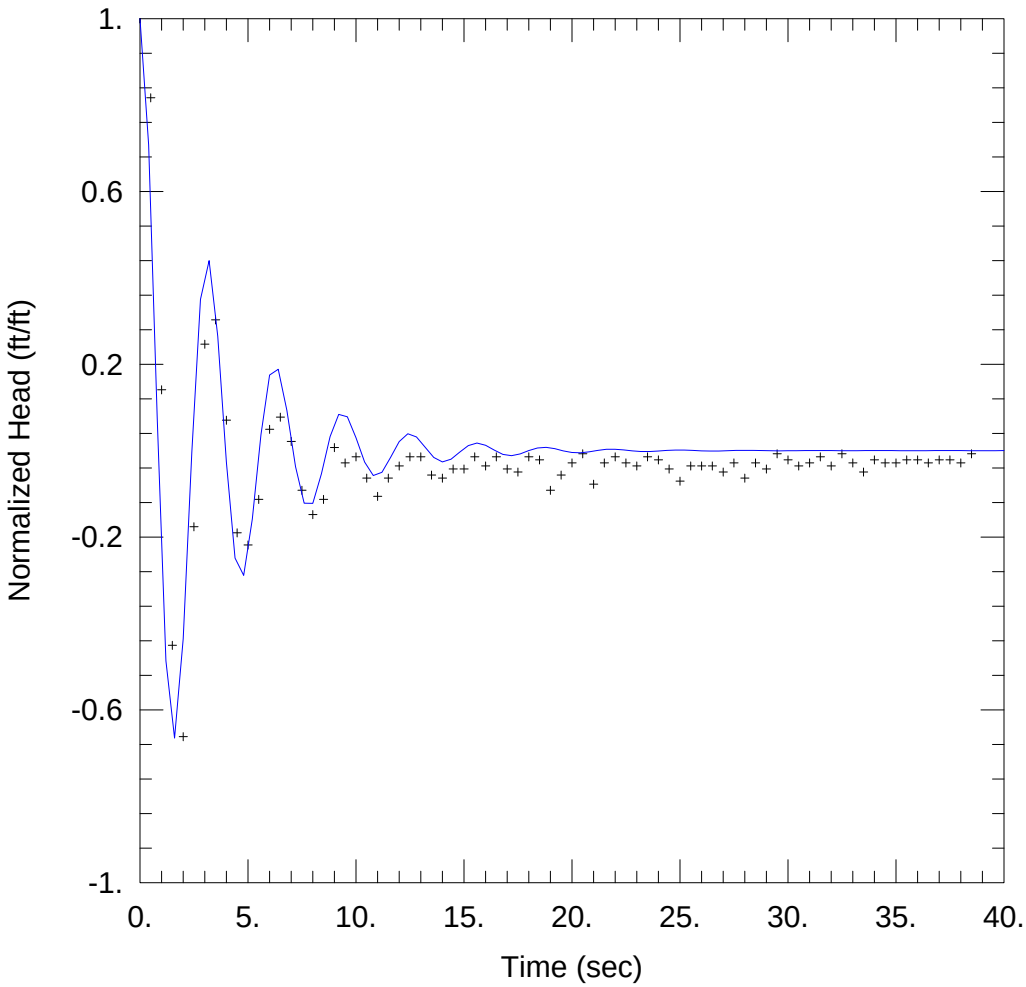
Saturated Thickness: 14.73 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-2)

Initial Displacement: 1.268 ft
Static Water Column Height: 14.73 ft
Total Well Penetration Depth: 14.73 ft
Screen Length: 10. ft
Casing Radius: 0.0861 ft
Well Radius: 0.354 ft

MW-3, Test 2

Prepared By:	Prepared For:
Arcadis	Lake Calumet Cluster Site
Project:	Location:
CI001805.0002	Chicago, Illinois



SOLUTION

Aquifer Model: Unconfined
Solution Method: Springer-Gelhar

K = 700. ft/day Le = 7.8 ft

AQUIFER DATA

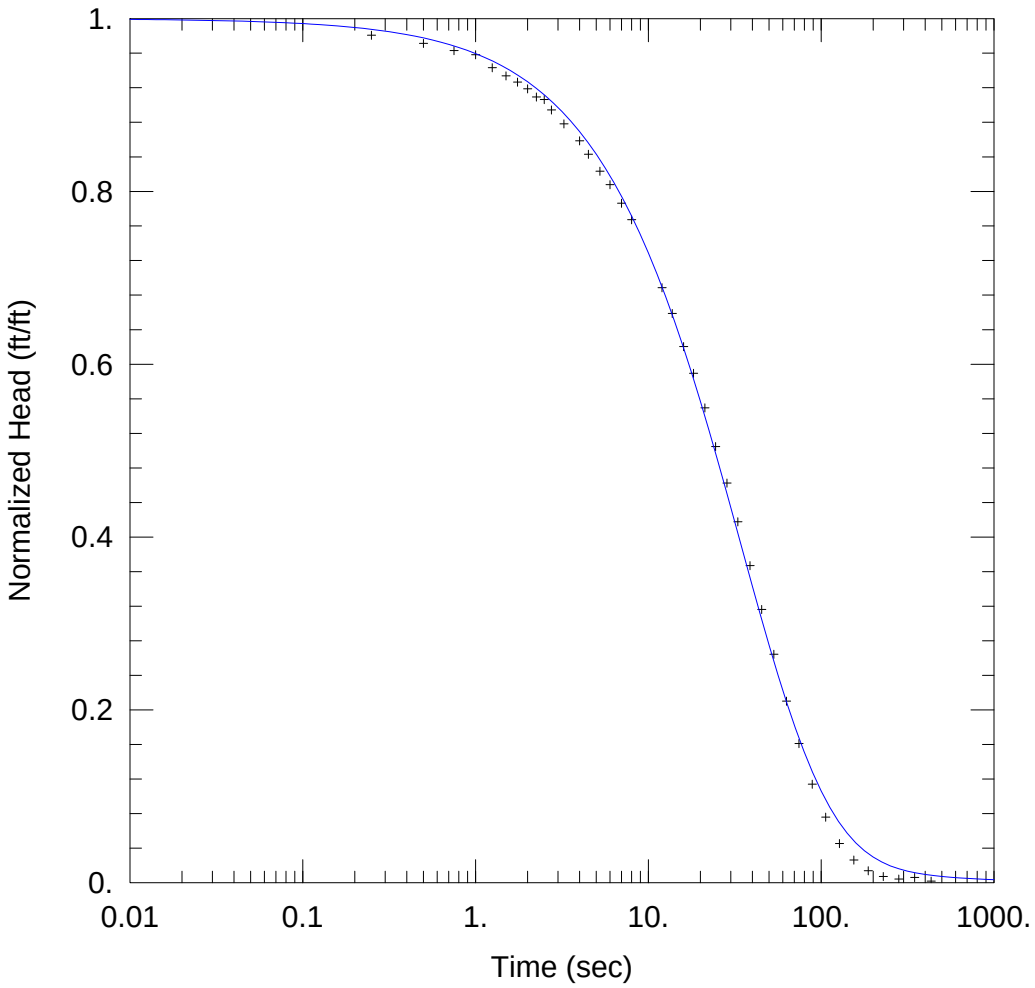
Saturated Thickness: 14.5 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-3)

Initial Displacement: 0.142 ft
Static Water Column Height: 14.5 ft
Total Well Penetration Depth: 14.5 ft
Screen Length: 10. ft
Casing Radius: 0.0861 ft
Well Radius: 0.354 ft

MW-4, Test 1

Prepared By:	Prepared For:
Arcadis	Lake Calumet Cluster Site
Project:	Location:
CI001805.0002	Chicago, Illinois



SOLUTION

Aquifer Model: Confined
Solution Method: Cooper-Bredehoeft-Papadopulos

T = 52. ft^2/day S = 1.5E-6

AQUIFER DATA

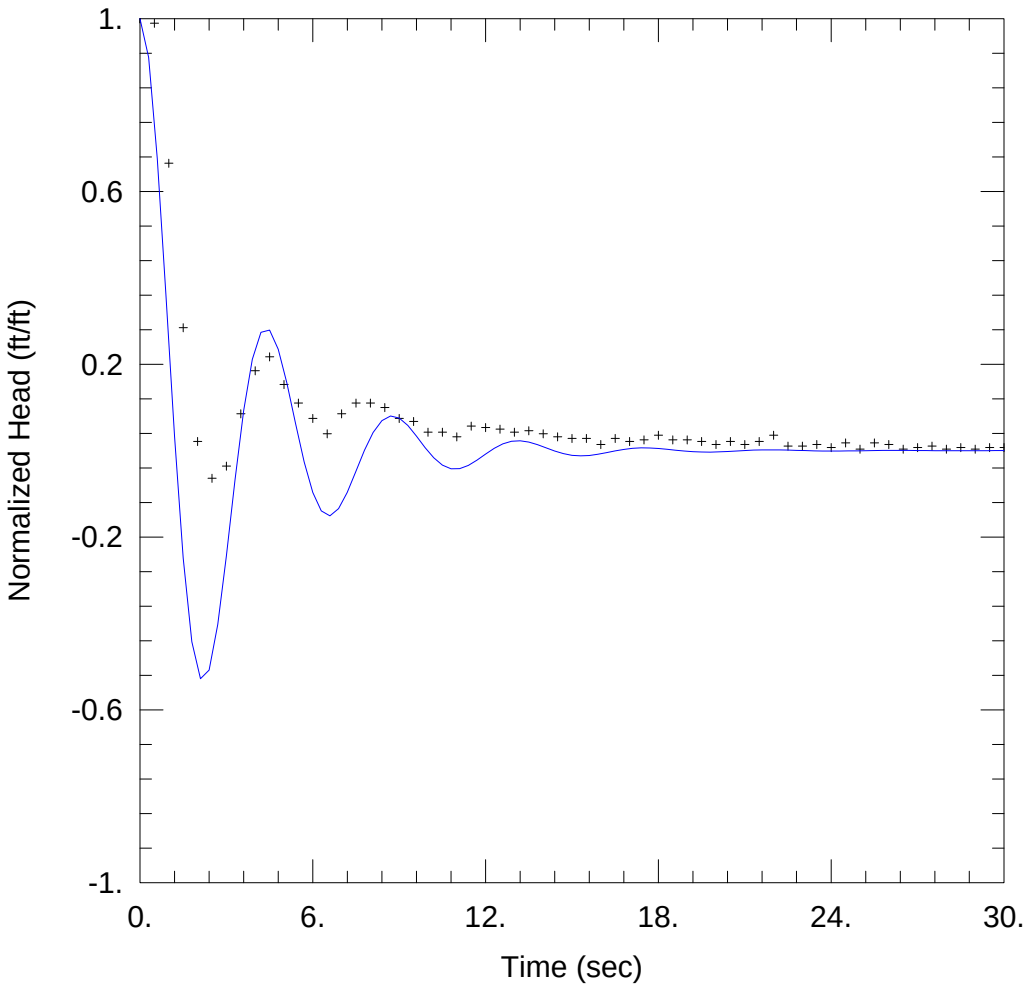
Saturated Thickness: 8.99 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-4)

Initial Displacement: 1.676 ft
Static Water Column Height: 8.99 ft
Total Well Penetration Depth: 8.99 ft
Screen Length: 8.99 ft
Casing Radius: 0.0861 ft
Well Radius: 0.354 ft

MW-5, Test 2

Prepared By:	Prepared For:
Arcadis	Lake Calumet Cluster Site
Project:	Location:
CI001805.0002	Chicago, Illinois



SOLUTION

Aquifer Model: Confined
Solution Method: Butler

K = 480. ft/day Le = 15. ft

AQUIFER DATA

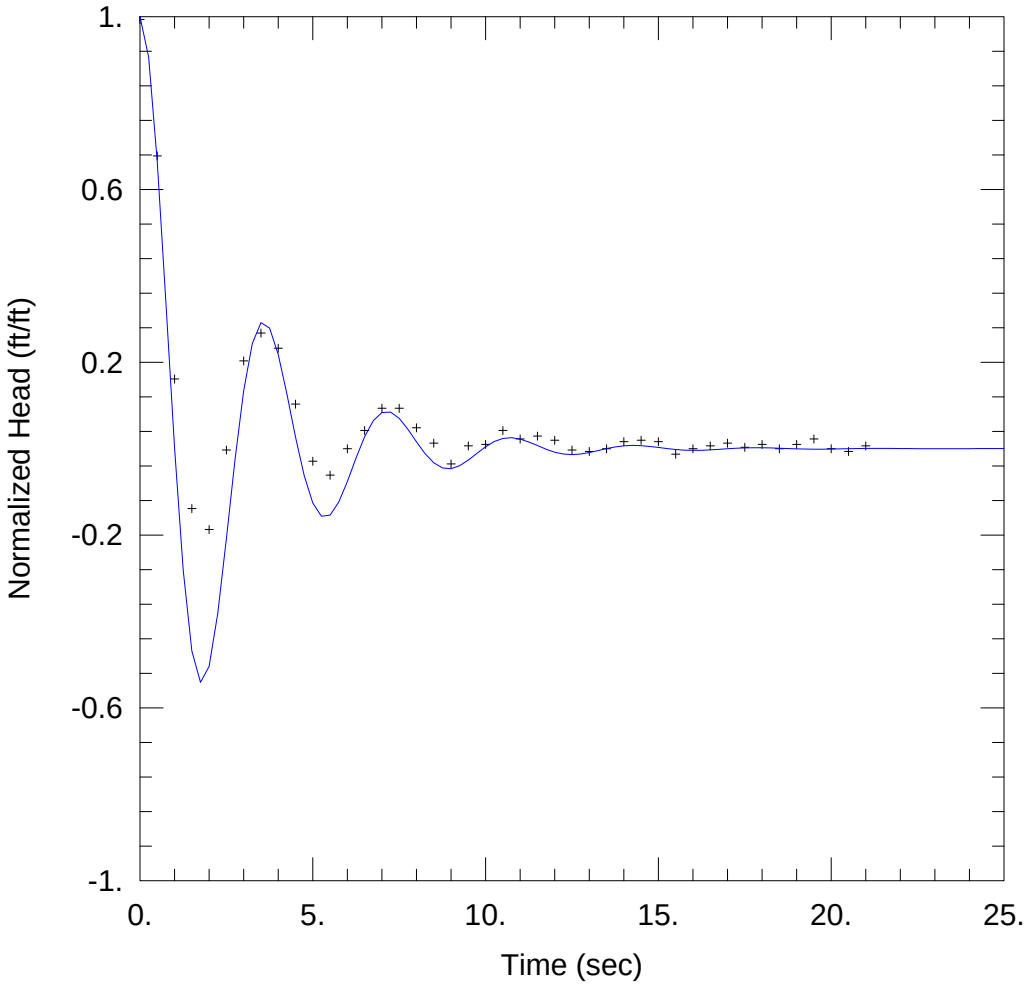
Saturated Thickness: 18.46 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-5)

Initial Displacement: 0.281 ft
Static Water Column Height: 18.46 ft
Total Well Penetration Depth: 18.46 ft
Screen Length: 10. ft
Casing Radius: 0.0861 ft
Well Radius: 0.354 ft

MW-6, Test 1

Prepared By:	Prepared For:
Arcadis	Lake Calumet Cluster Site
Project:	Location:
CI001805.0002	Chicago, Illinois



SOLUTION

Aquifer Model: Unconfined
Solution Method: Springer-Gelhar

K = 400. ft/day Le = 10. ft

AQUIFER DATA

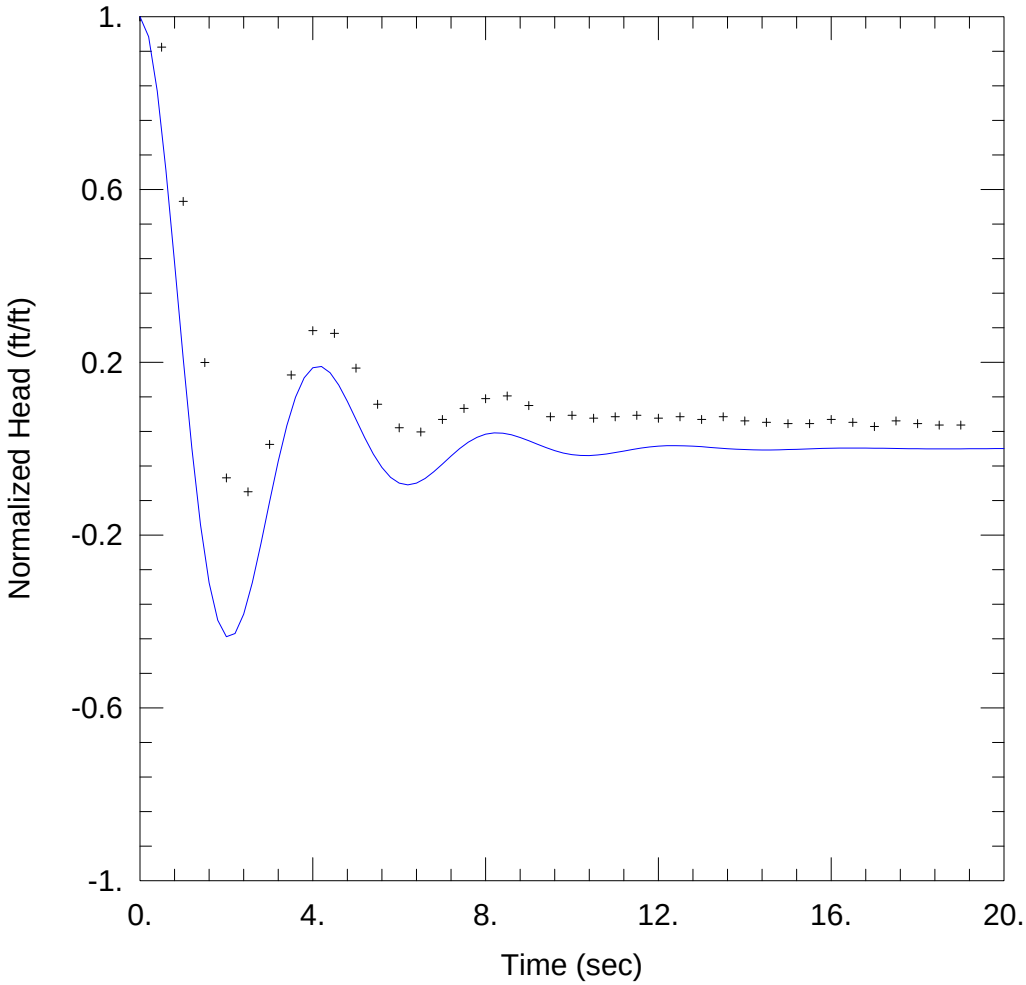
Saturated Thickness: 13.2 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-6)

Initial Displacement: 0.31 ft
Static Water Column Height: 13.2 ft
Total Well Penetration Depth: 13.2 ft
Screen Length: 10. ft
Casing Radius: 0.0861 ft
Well Radius: 0.354 ft

MW-7, Test 2

Prepared By:	Prepared For:
Arcadis	Lake Calumet Cluster Site
Project:	Location:
CI001805.0002	Chicago, Illinois



SOLUTION

Aquifer Model: Confined
Solution Method: Butler

K = 330. ft/day Le = 13. ft

AQUIFER DATA

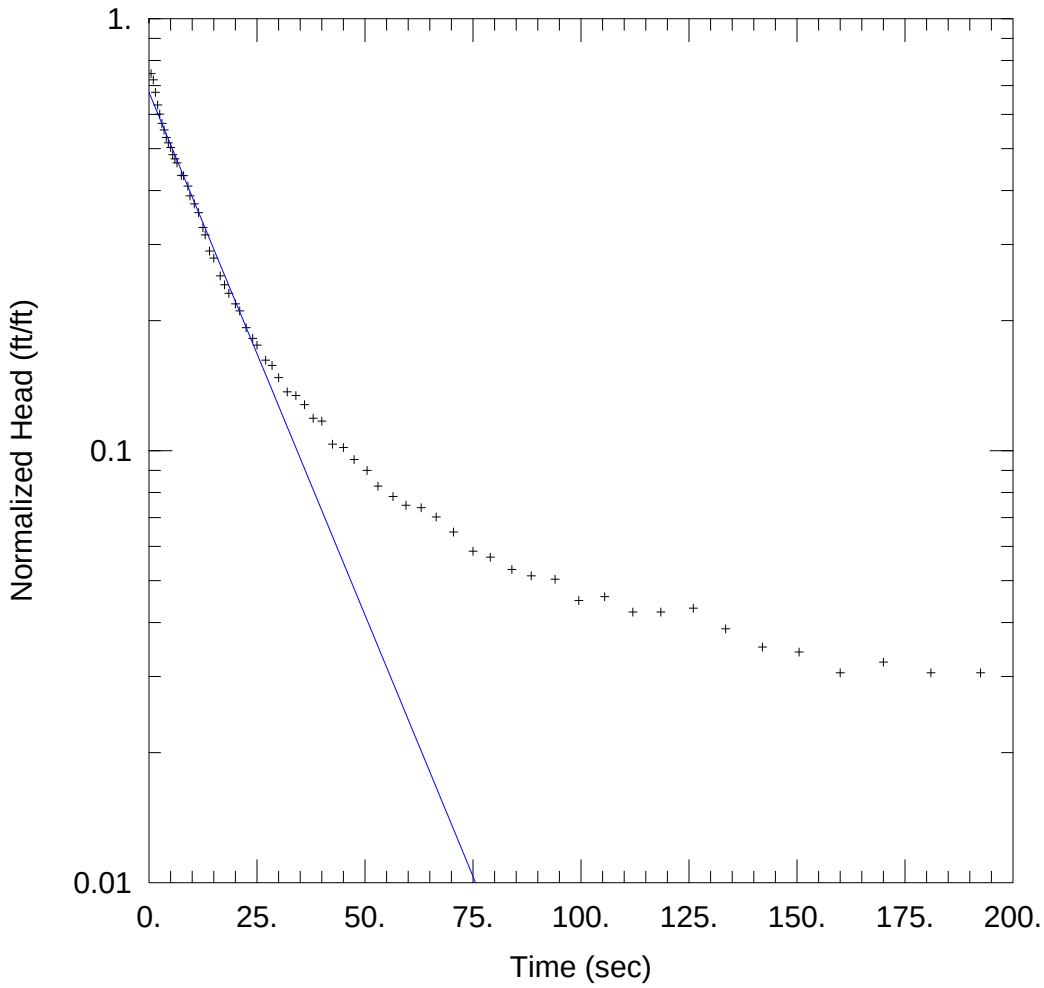
Saturated Thickness: 19.94 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-7)

Initial Displacement: 0.311 ft
Static Water Column Height: 19.94 ft
Total Well Penetration Depth: 19.94 ft
Screen Length: 10. ft
Casing Radius: 0.0861 ft
Well Radius: 0.354 ft

MW-8, Test 2

Prepared By:	Prepared For:
Arcadis	Lake Calumet Cluster Site
Project:	Location:
CI001805.0002	Chicago, Illinois



SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 11. ft/day y0 = 0.75 ft

AQUIFER DATA

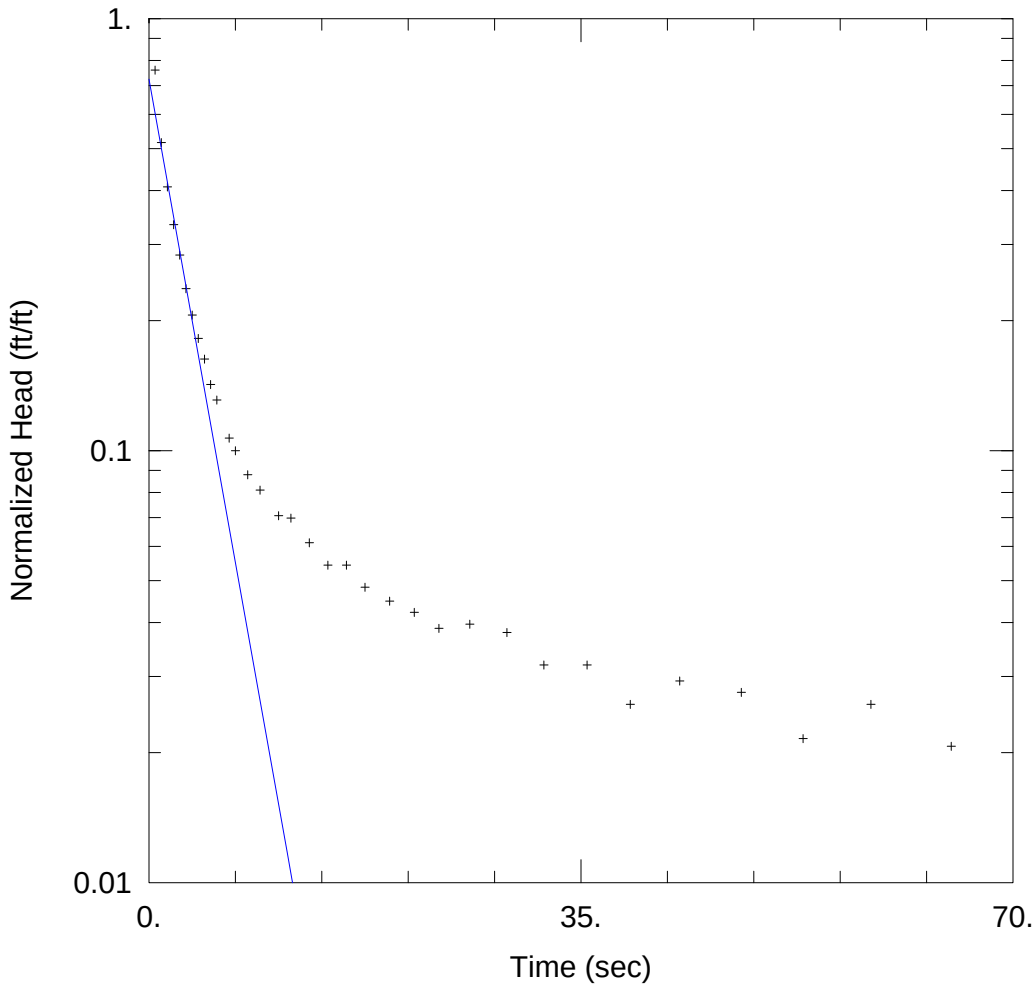
Saturated Thickness: 10.88 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-8)

Initial Displacement: 1.111 ft
Static Water Column Height: 10.88 ft
Total Well Penetration Depth: 10.88 ft
Screen Length: 10. ft
Casing Radius: 0.0861 ft
Well Radius: 0.354 ft

MW-9, Test 2

Prepared By:	Prepared For:
Arcadis	Lake Calumet Cluster Site
Project:	Location:
CI001805.0002	Chicago, Illinois



SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 66. ft/day y0 = 0.84 ft

AQUIFER DATA

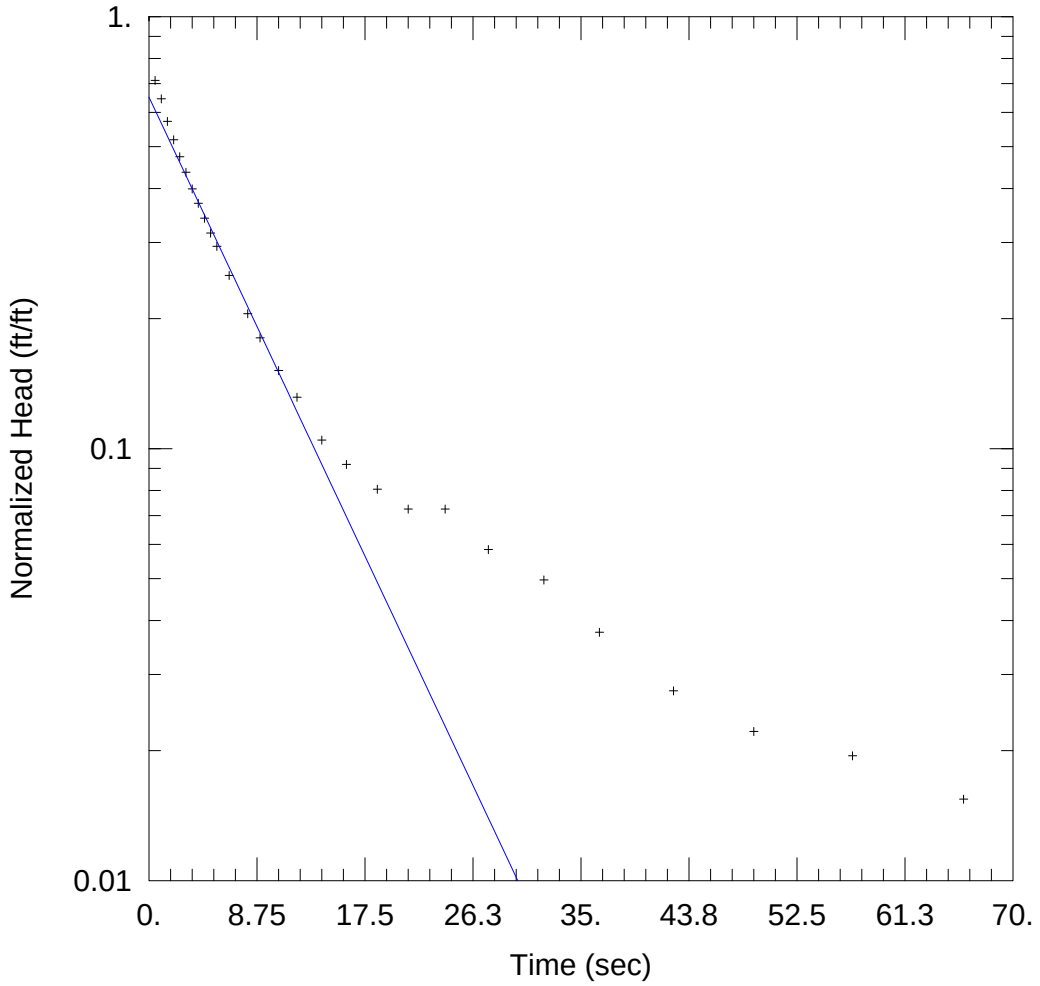
Saturated Thickness: 11.69 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-9)

Initial Displacement: 1.16 ft
Static Water Column Height: 11.69 ft
Total Well Penetration Depth: 11.69 ft
Screen Length: 10. ft
Casing Radius: 0.0861 ft
Well Radius: 0.354 ft

MW-10, Test 1

Prepared By:	Prepared For:
Arcadis	Lake Calumet Cluster Site
Project:	Location:
CI001805.0002	Chicago, Illinois



SOLUTION

Aquifer Model: Unconfined
Solution Method: Bouwer-Rice

K = 22. ft/day y0 = 0.97 ft

AQUIFER DATA

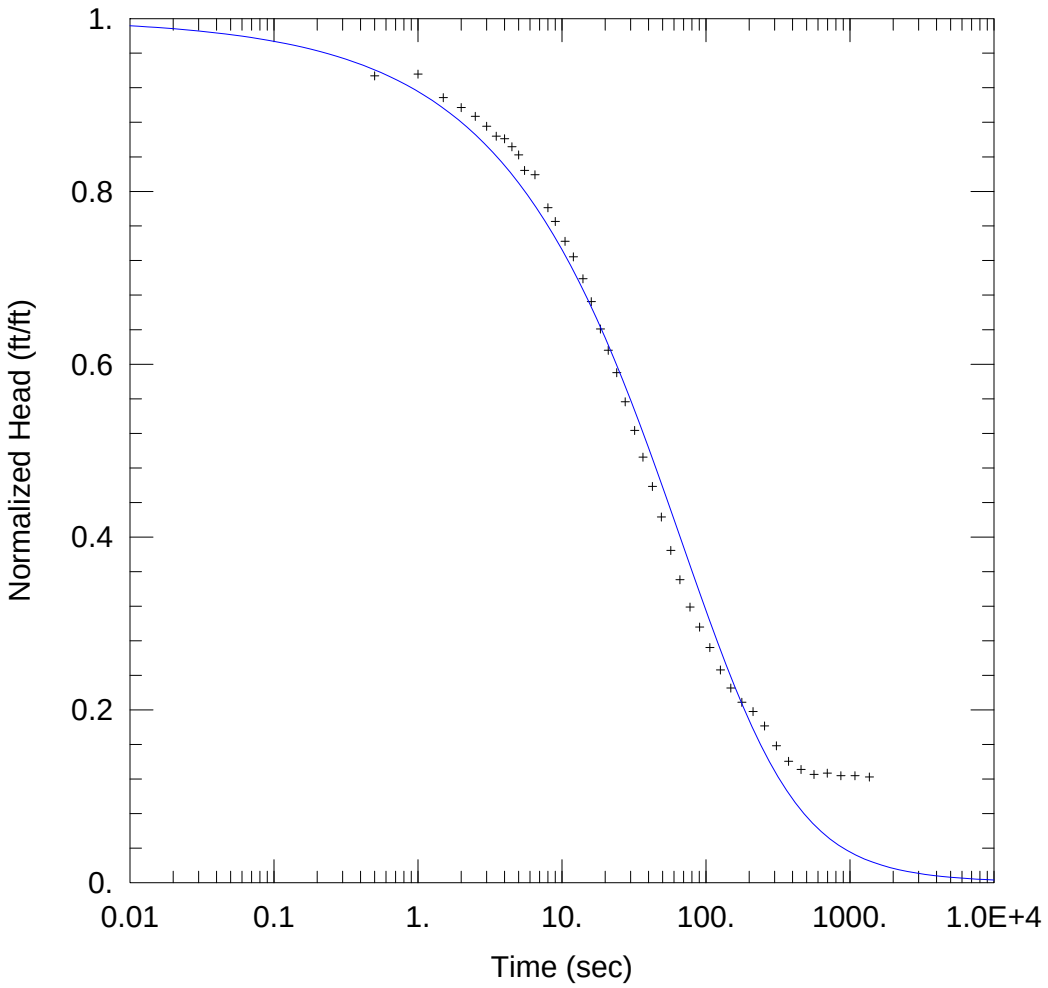
Saturated Thickness: 9.24 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-10)

Initial Displacement: 1.49 ft
Static Water Column Height: 9.24 ft
Total Well Penetration Depth: 9.24 ft
Screen Length: 9.24 ft
Casing Radius: 0.0861 ft
Well Radius: 0.354 ft

MW-11, Test 2

Prepared By:	Prepared For:
Arcadis	Lake Calumet Cluster Site
Project:	Location:
CI001805.0002	Chicago, Illinois



SOLUTION

Aquifer Model: Confined
Solution Method: Cooper-Bredehoeft-Papadopulos

T = 7. ft^2/day S = 0.012

AQUIFER DATA

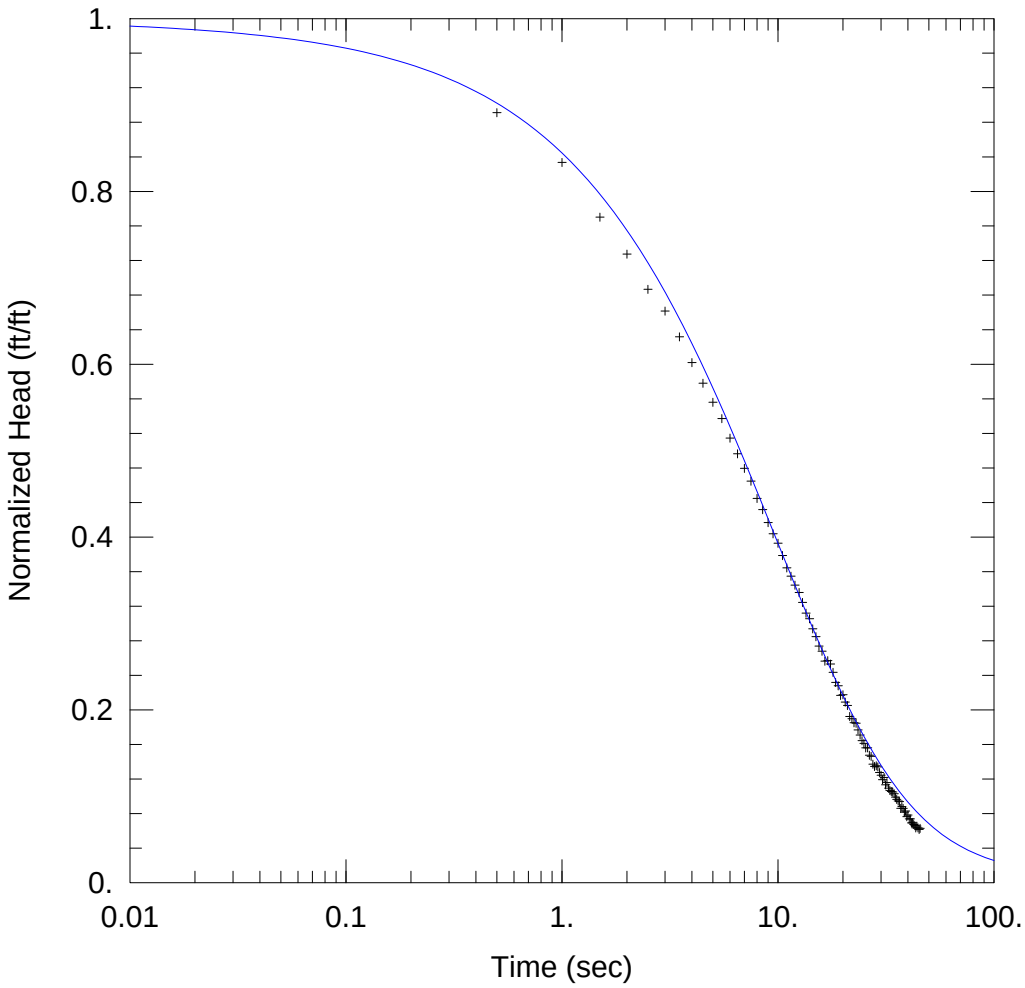
Saturated Thickness: 11.56 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-11)

Initial Displacement: 1.389 ft
Static Water Column Height: 11.56 ft
Total Well Penetration Depth: 11.56 ft
Screen Length: 10. ft
Casing Radius: 0.0861 ft
Well Radius: 0.354 ft

MW-13, Test 2

Prepared By:	Prepared For:
Arcadis	Lake Calumet Cluster Site
Project:	Location:
CI001805.0002	Chicago, Illinois



SOLUTION

Aquifer Model: Confined
Solution Method: Cooper-Bredehoeft-Papadopulos

T = 100. ft^2/day S = 0.00056

AQUIFER DATA

Saturated Thickness: 15.44 ft Anisotropy Ratio (Kz/Kr): 1.

WELL DATA (MW-13)

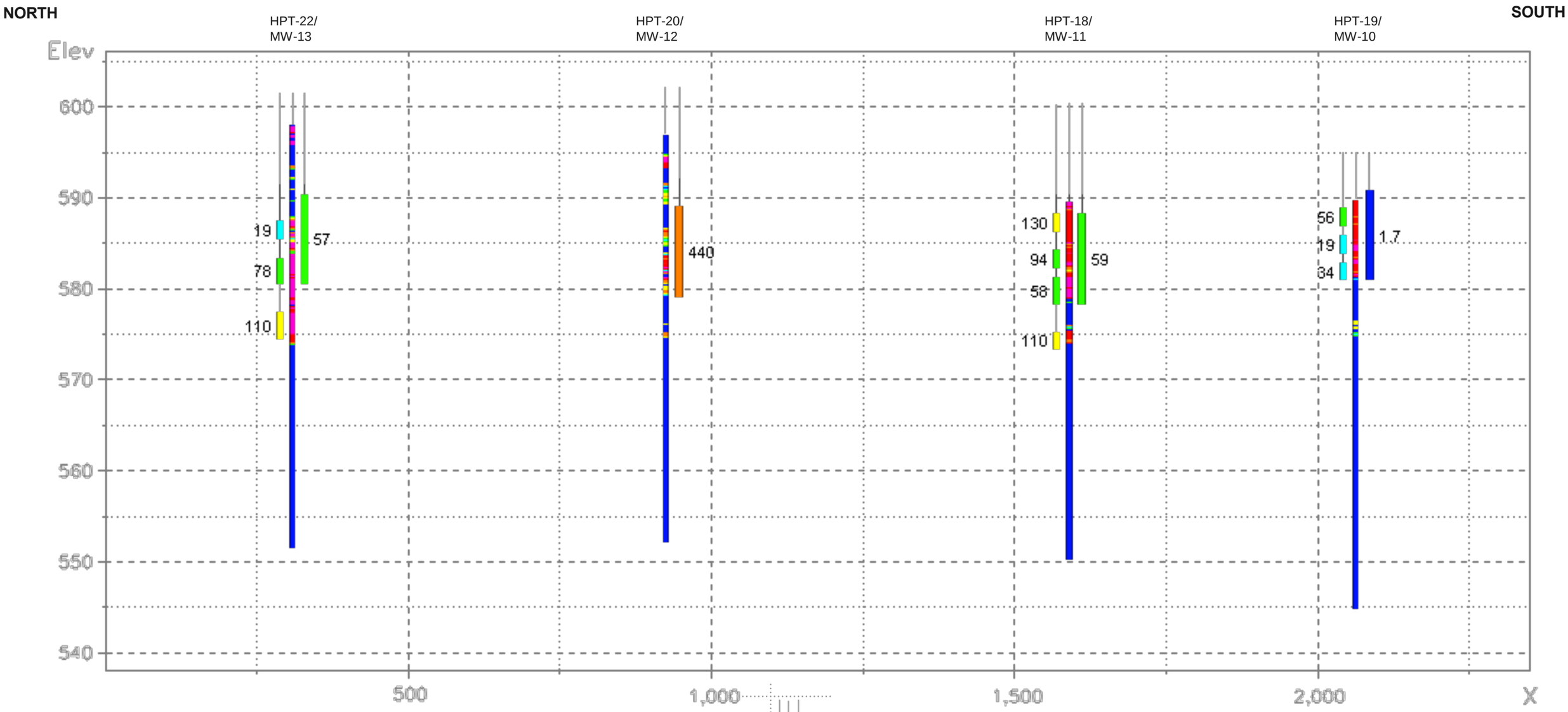
Initial Displacement: 1.545 ft
Static Water Column Height: 15.44 ft
Total Well Penetration Depth: 15.44 ft
Screen Length: 10. ft
Casing Radius: 0.0861 ft
Well Radius: 0.354 ft

APPENDIX J

Northern, Western, and Eastern Site Boundary Profiles

Western Boundary – Estimated Hydraulic Conductivity and Ammonia Nitrogen Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

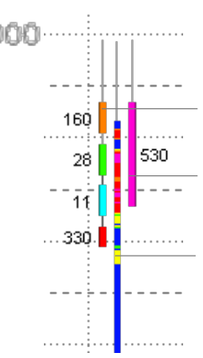


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Ammonia Nitrogen Concentration

- >500 mg/L
- >250 – 500 mg/L
- >100 – 250 mg/L
- >50 – 100 mg/L
- >15 – 50 mg/L
- Non-Detect – 15 mg/L



HPT/VAP Sample– Sampled Interval and Value

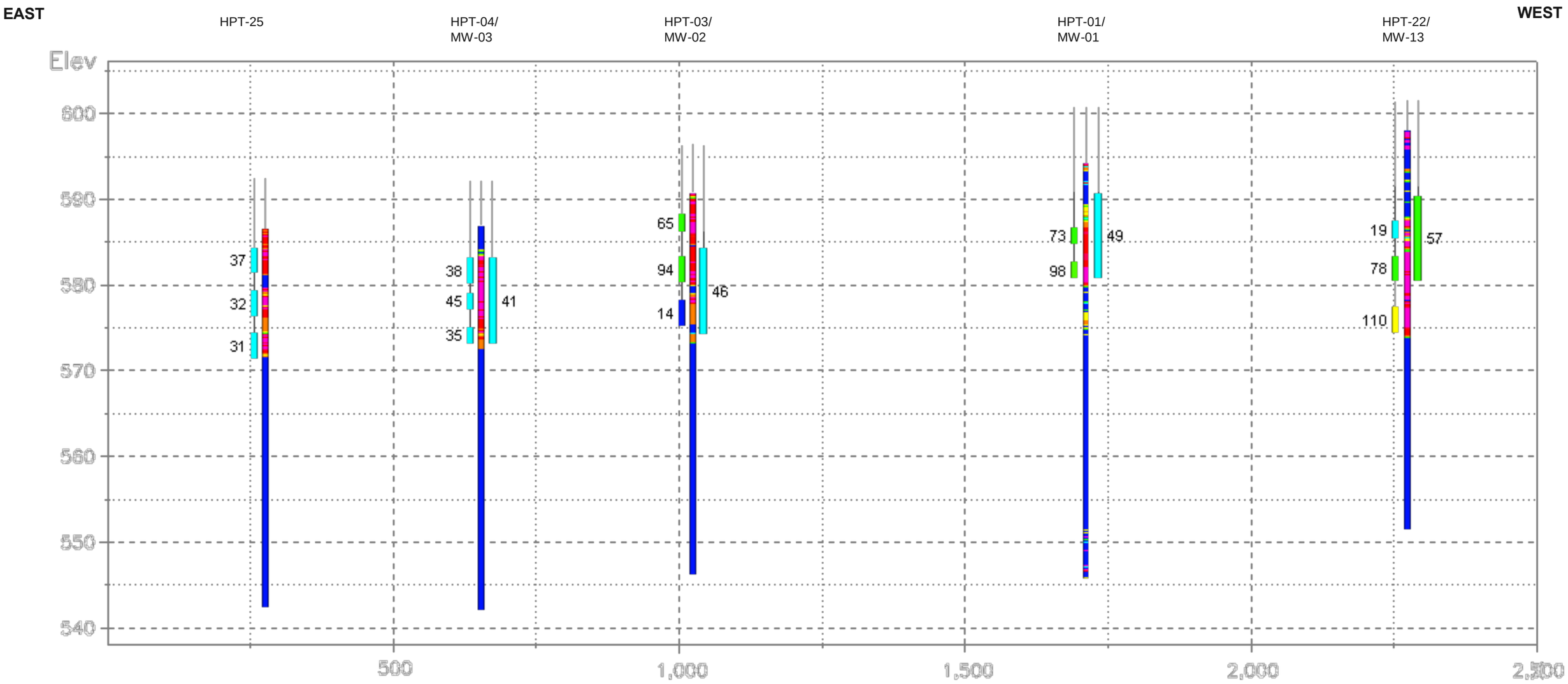
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017 except for MW-12. The data shown at MW-12 is from the most recent sampling event completed at that location (April 2016).

Northern Boundary – Estimated Hydraulic Conductivity and Ammonia Nitrogen Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

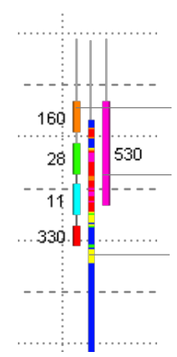


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Ammonia Nitrogen Concentration

- >500 – 750 mg/L
- >250 – 500 mg/L
- >100 – 250 mg/L
- >50 – 100 mg/L
- >15 – 50 mg/L
- Non-Detect – 15 mg/L



HPT/VAP Sample– Sampled Interval and Value

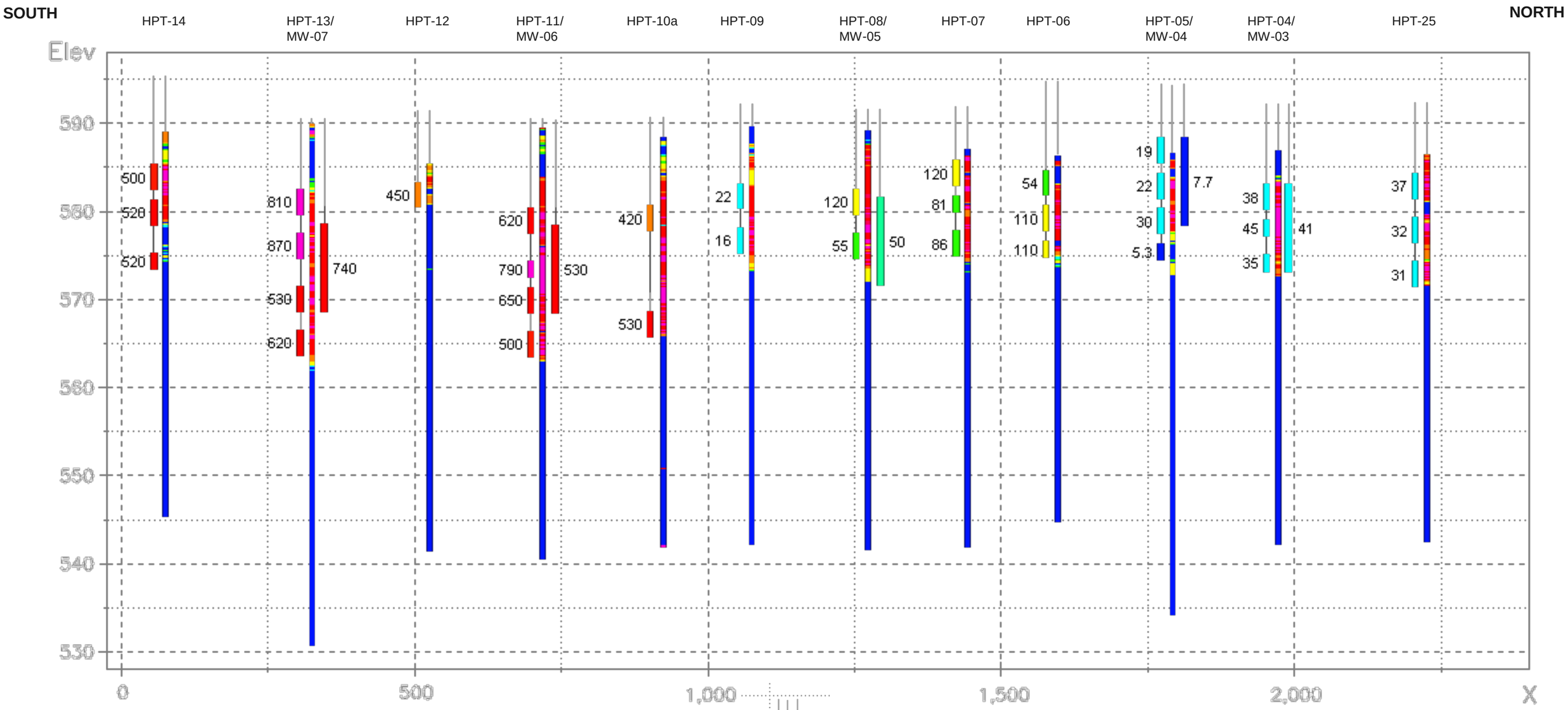
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Eastern Boundary – Estimated Hydraulic Conductivity and Ammonia Nitrogen Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

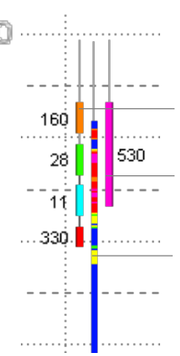


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Ammonia Nitrogen Concentration

- >750 mg/L
- >500 – 750 mg/L
- >250 – 500 mg/L
- >100 – 250 mg/L
- >50 – 100 mg/L
- >15 – 50 mg/L
- Non-Detect – 15 mg/L



HPT/VAP Sample– Sampled Interval and Value

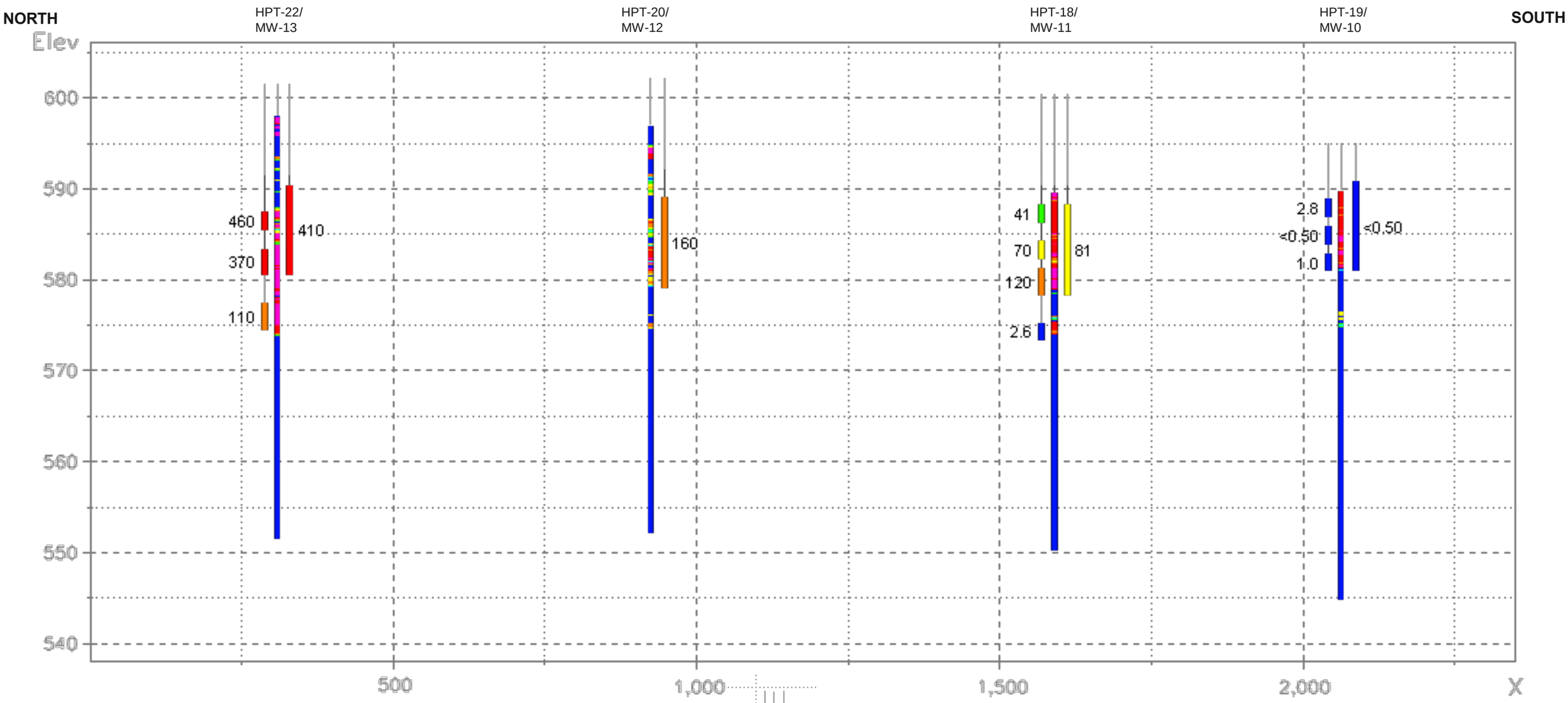
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Western Boundary – Estimated Hydraulic Conductivity and Benzene Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

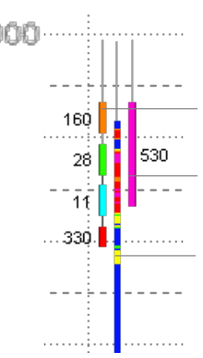


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Benzene Concentration

- >250 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >5.0 – 25 ug/L
- Non-Detect – 5.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

Monitoring well – Screened Interval and Value

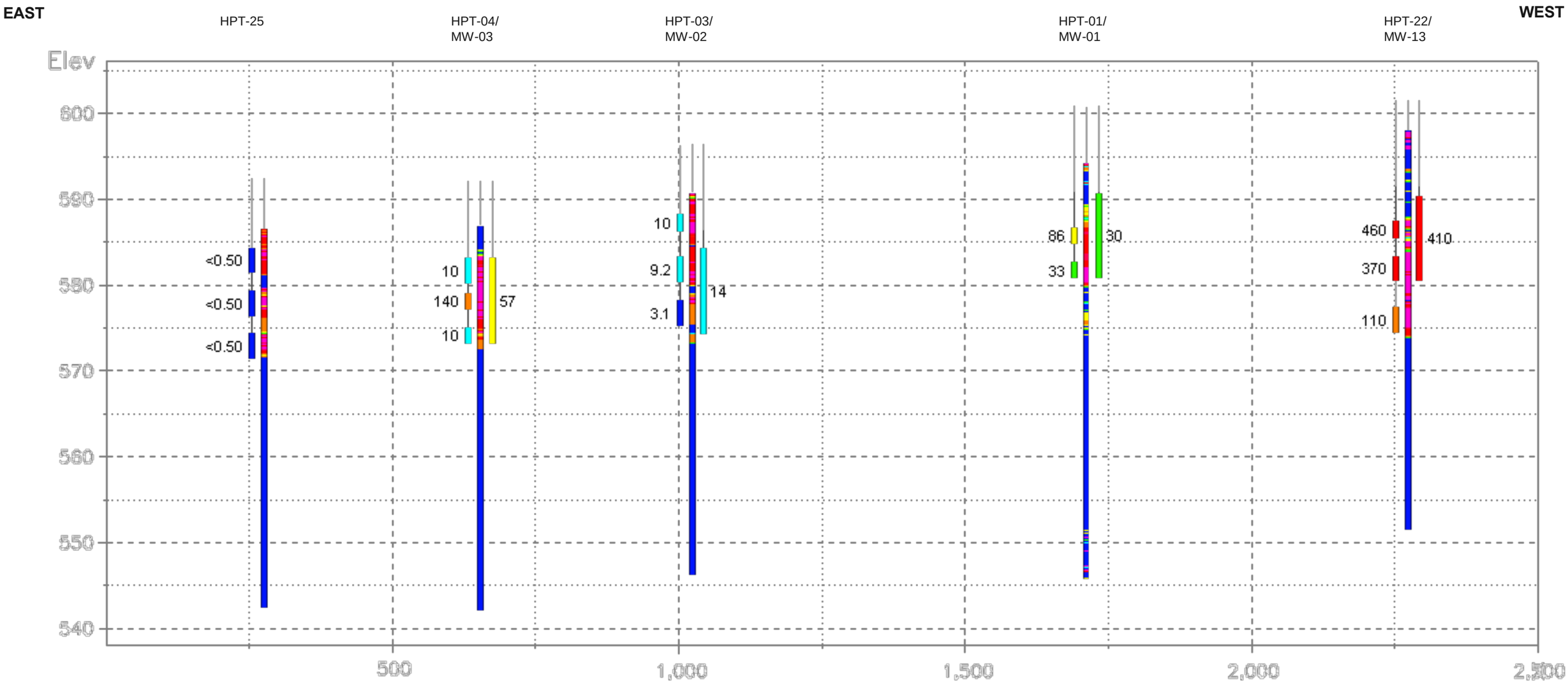
HPT Conductivity Data

NOTES:

1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017 except for MW-12. The data shown at MW-12 is from the most recent sampling event completed at that location (April 2016).

Northern Boundary – Estimated Hydraulic Conductivity and Benzene Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

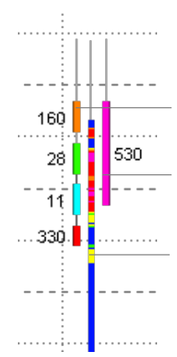


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Benzene Concentration

- >250 – 500 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >5.0 – 25 ug/L
- Non-Detect – 5.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

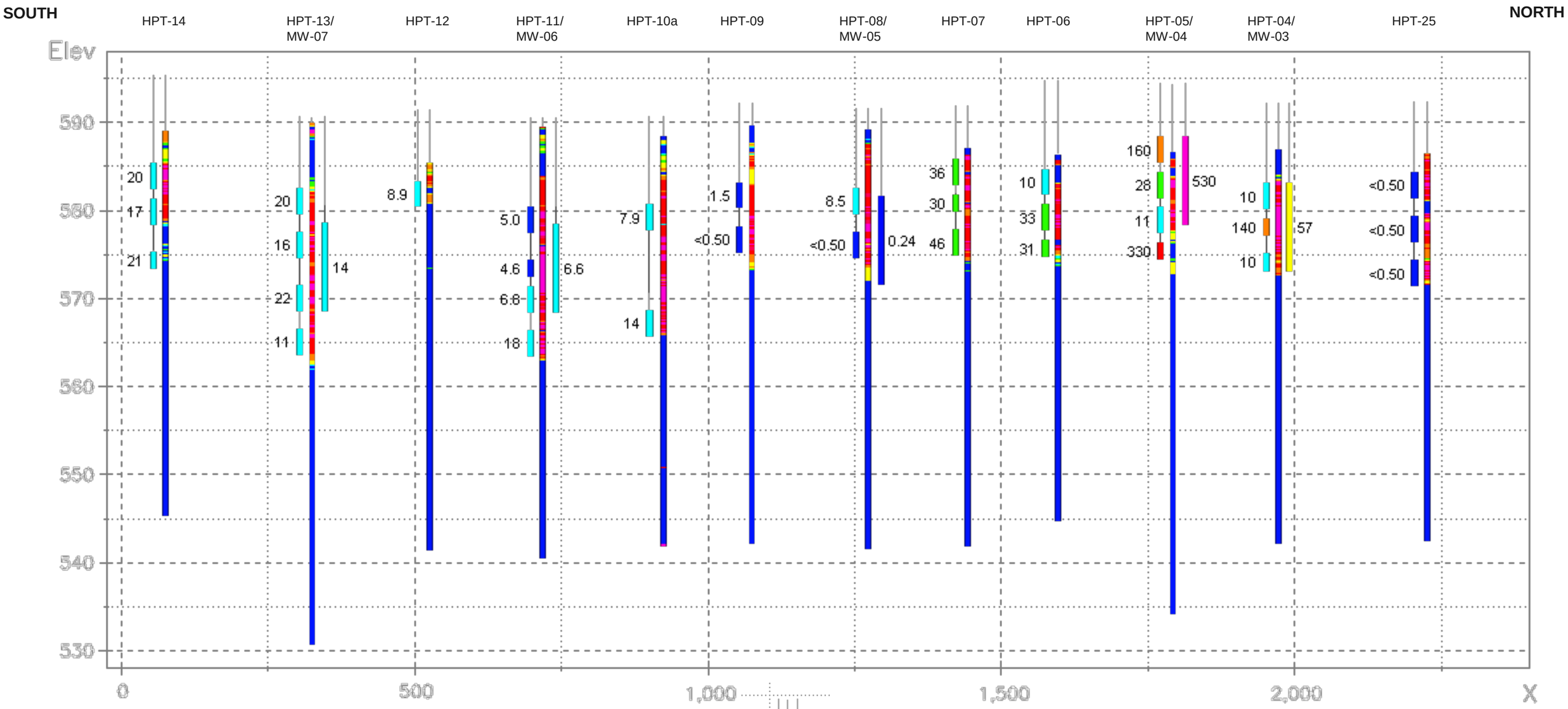
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Eastern Boundary – Estimated Hydraulic Conductivity and Benzene Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

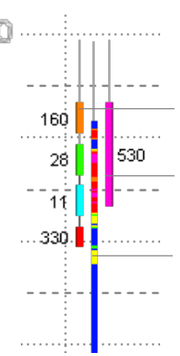


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Benzene Concentration

- >500 ug/L
- >250 – 500 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >5.0 – 25 ug/L
- Non-Detect – 5.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

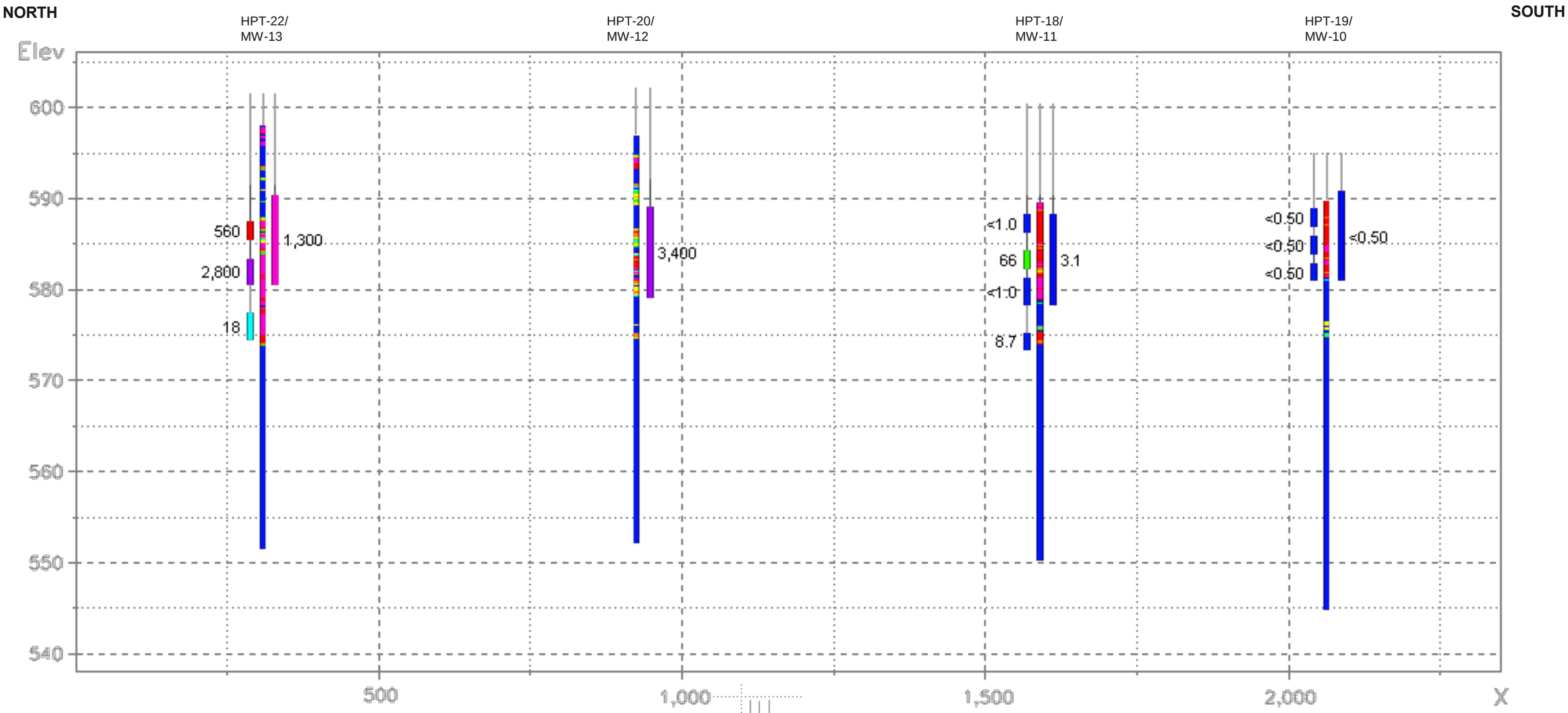
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Western Boundary – Estimated Hydraulic Conductivity and Ethylbenzene Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

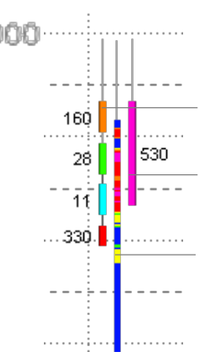


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Ethylbenzene Concentration

- >1,500 ug/L
- >750 – 1,500 ug/L
- >500 – 750 ug/L
- >250 – 500 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >15 – 50 ug/L
- Non-Detect – 15 ug/L



HPT/VAP Sample– Sampled Interval and Value

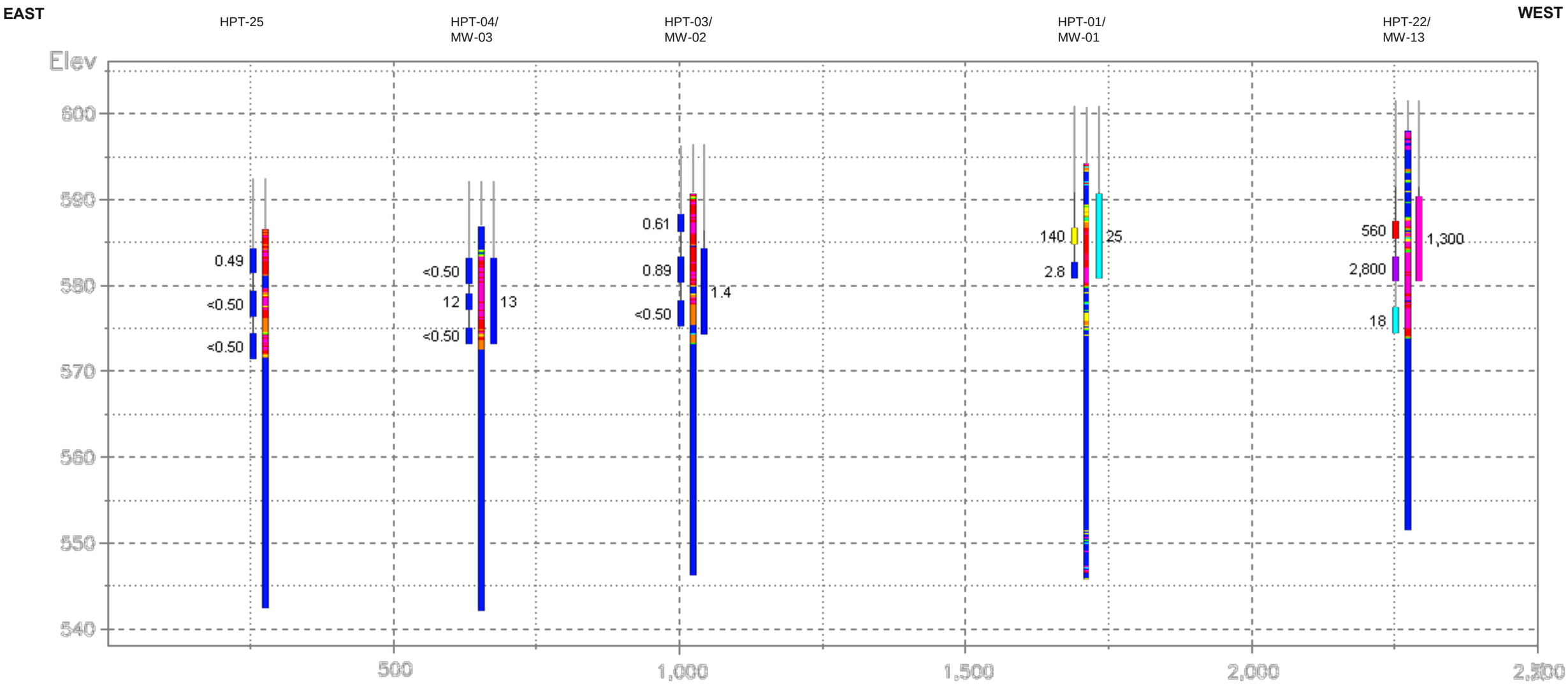
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017 except for MW-12. The data shown at MW-12 is from the most recent sampling event completed at that location (April 2016).

Northern Boundary – Estimated Hydraulic Conductivity and Ethylbenzene Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

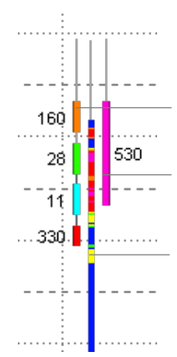


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Ethylbenzene Concentration

- >1,500 ug/L
- >750 – 1,500 ug/L
- >500 – 750 ug/L
- >250 – 500 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >15 – 50 ug/L
- Non-Detect – 15 ug/L



HPT/VAP Sample– Sampled Interval and Value

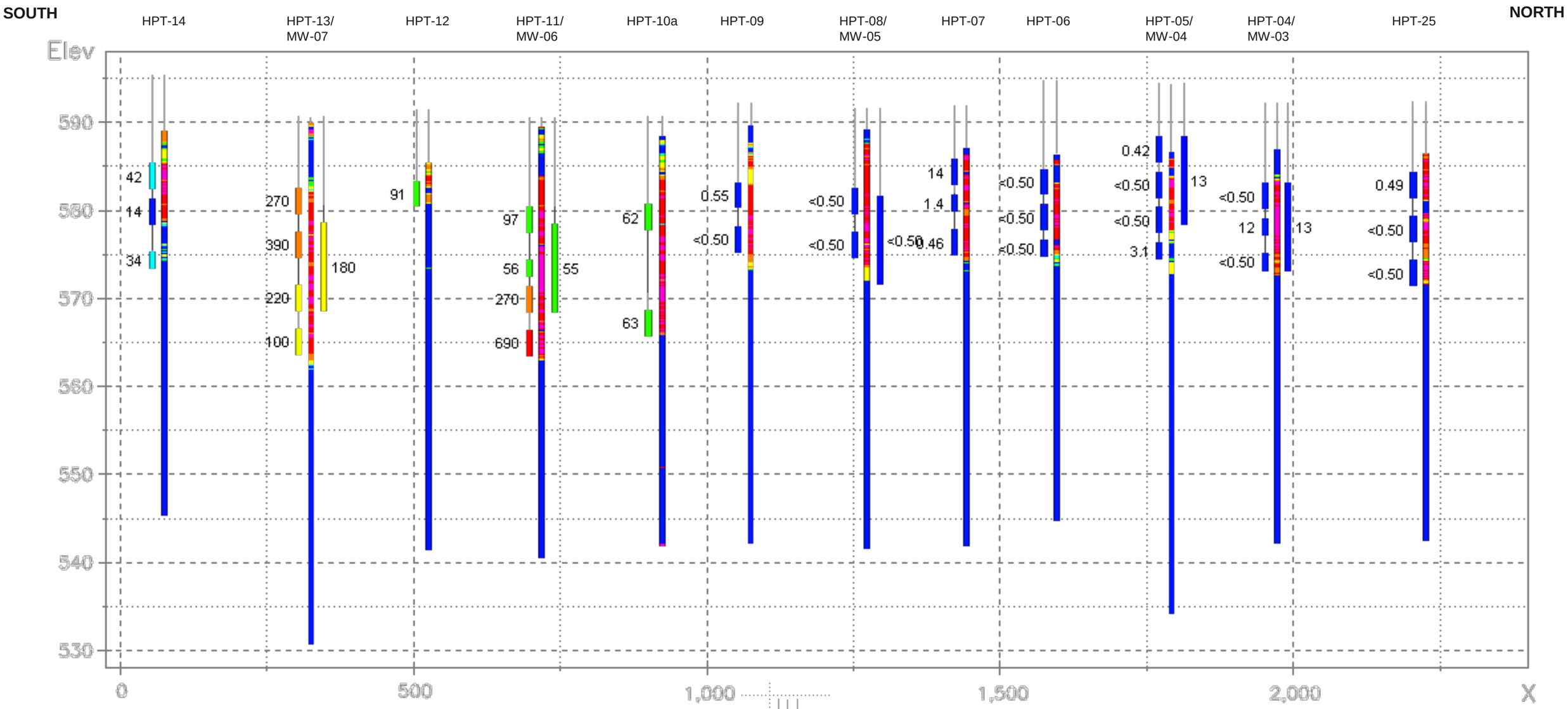
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Eastern Boundary – Estimated Hydraulic Conductivity and Ethylbenzene Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

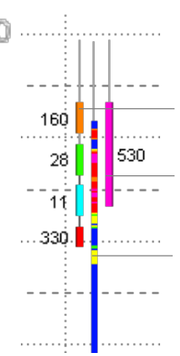


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Ethylbenzene Concentration

- >500 ug/L
- >250 – 500 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >15 – 50 ug/L
- Non-Detect – 15 ug/L



HPT/VAP Sample– Sampled Interval and Value

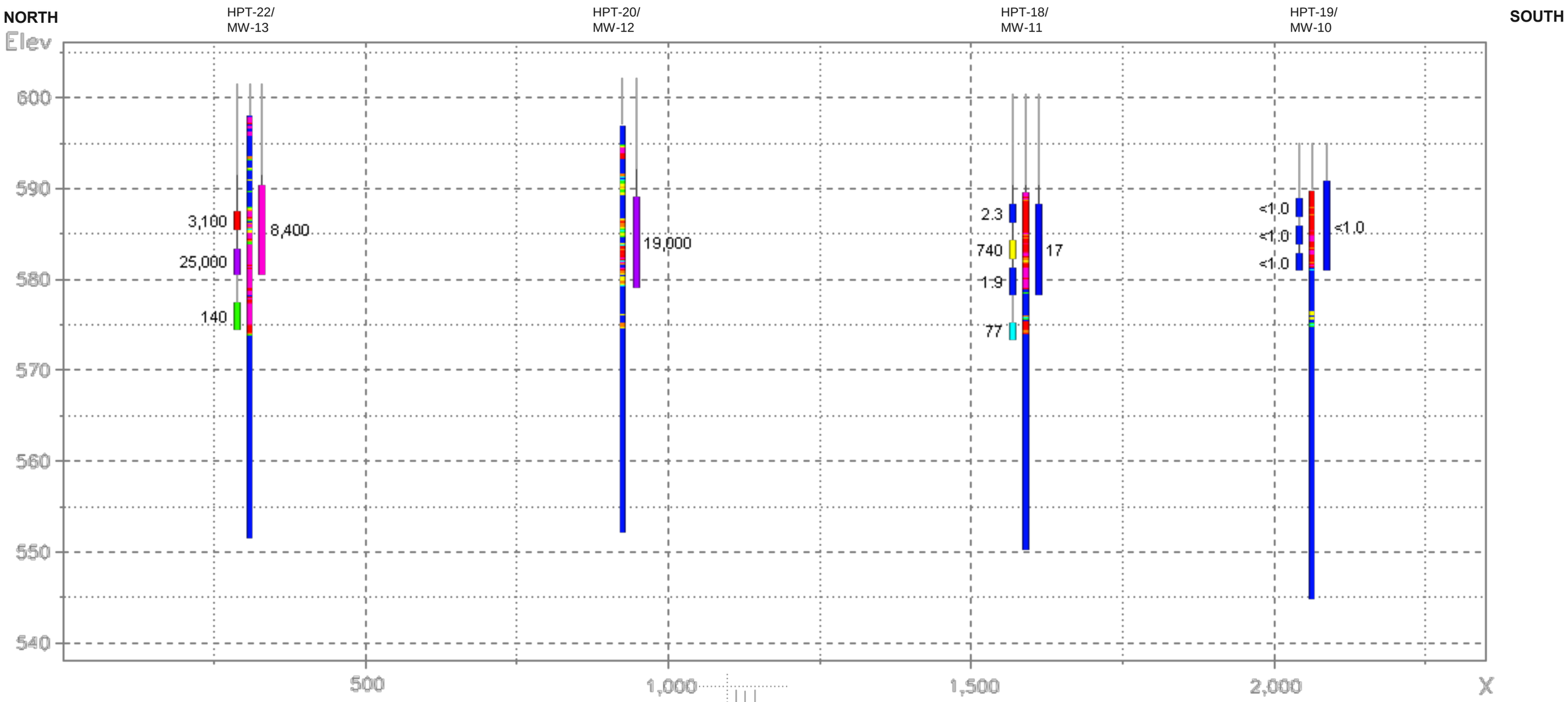
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Western Boundary – Estimated Hydraulic Conductivity and Total Xylenes Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

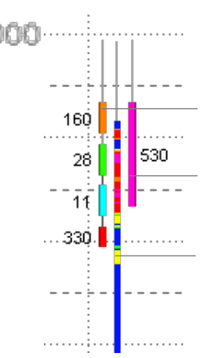


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Xylenes Concentration

- >10,000 ug/L
- >5,000 – 10,000 ug/L
- >1,500 – 5,000 ug/L
- >750 – 1,500 ug/L
- >250 – 750 ug/L
- >100 – 250 ug/L
- >20 – 100 ug/L
- Non-Detect – 20 ug/L



HPT/VAP Sample– Sampled Interval and Value

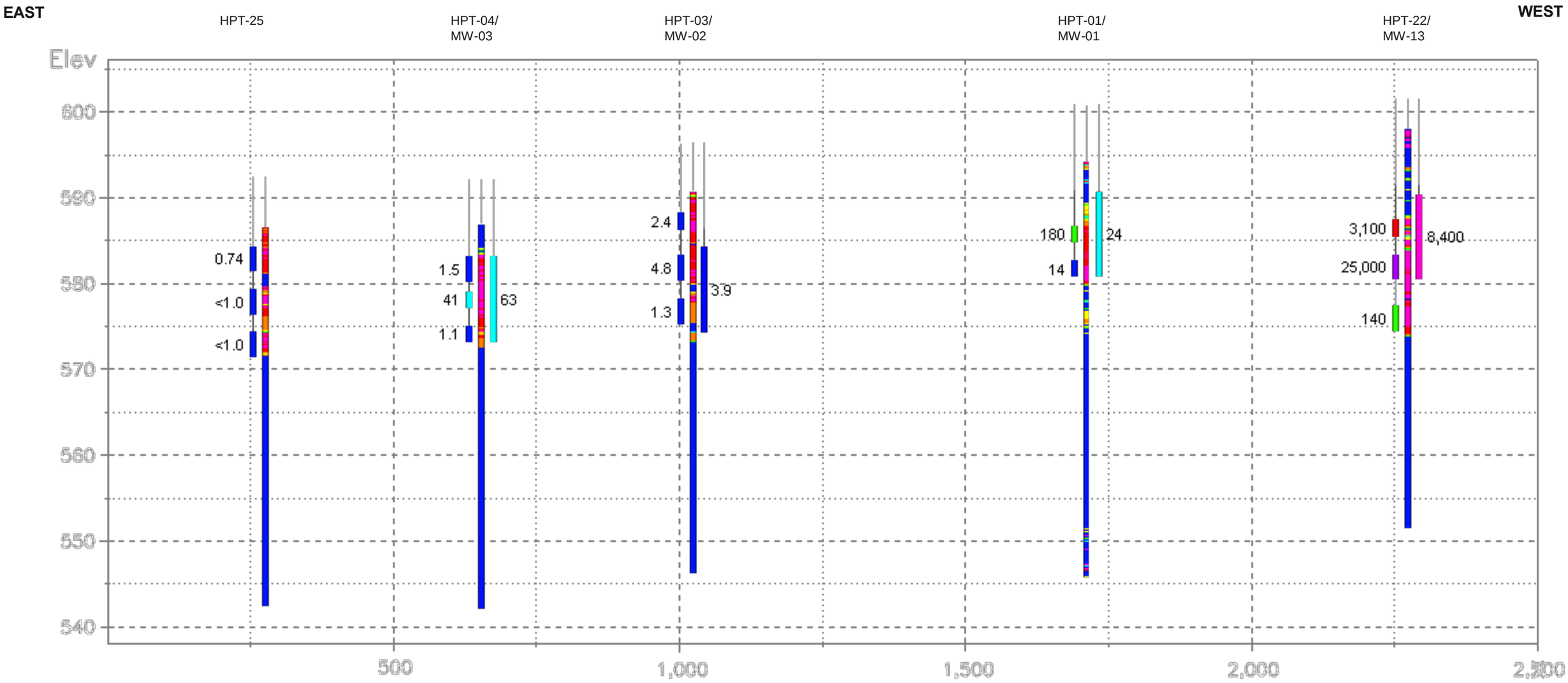
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017 except for MW-12. The data shown at MW-12 is from the most recent sampling event completed at that location (April 2016).

Northern Boundary – Estimated Hydraulic Conductivity and Total Xylenes Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

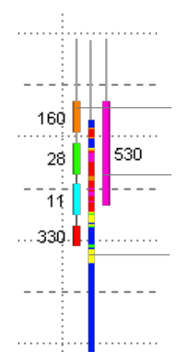


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Xylenes Concentration

- >10.000 ug/L
- >5,000 – 10.000 ug/L
- >1,500 – 5,000 ug/L
- >750 – 1,500 ug/L
- >250 – 750 ug/L
- >100 – 250 ug/L
- >20 – 100 ug/L
- Non-Detect – 20 ug/L



HPT/VAP Sample– Sampled Interval and Value

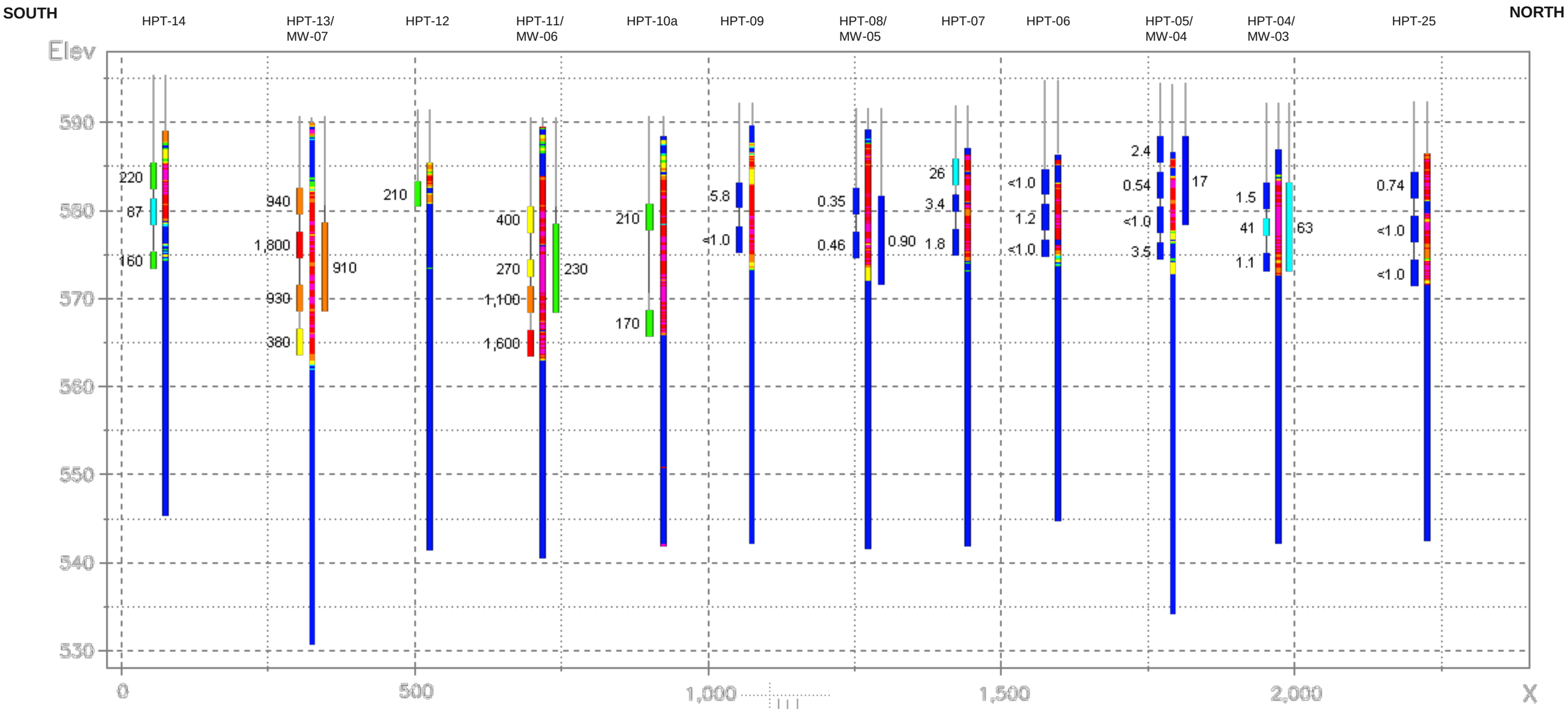
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Eastern Boundary – Estimated Hydraulic Conductivity and Total Xylenes Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

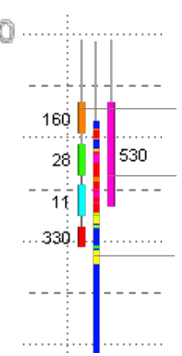


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Xylenes Concentration

- >1,500 ug/L
- >750 – 1,500 ug/L
- >250 – 750 ug/L
- >100 – 250 ug/L
- >20 – 100 ug/L
- Non-Detect – 20 ug/L



HPT/VAP Sample– Sampled Interval and Value

Monitoring well – Screened Interval and Value

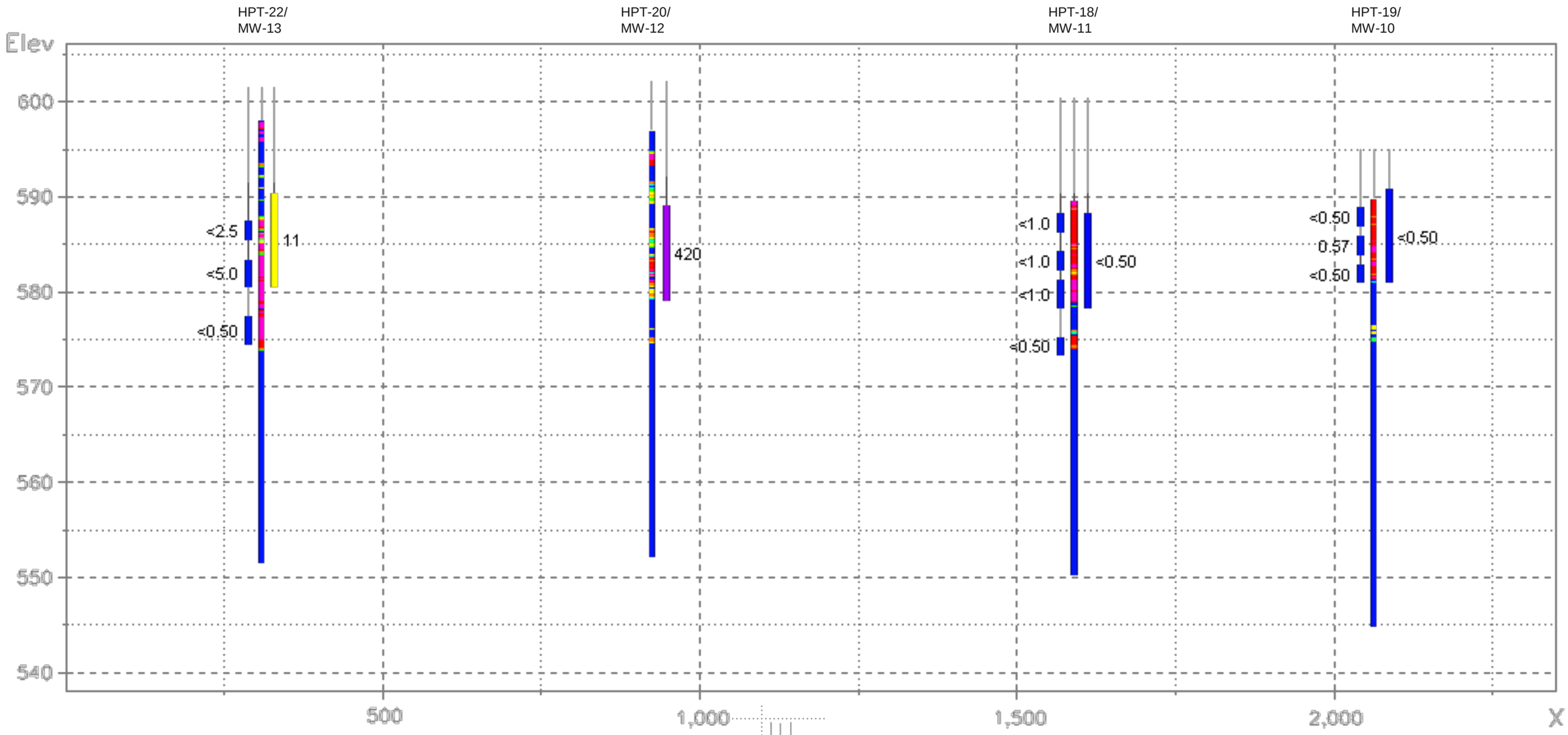
HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Western Boundary – Estimated Hydraulic Conductivity and Vinyl Chloride Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

NORTH **SOUTH**

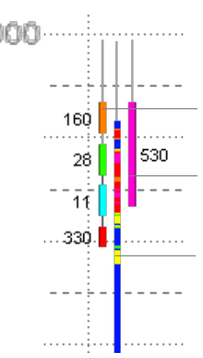


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Vinyl Chloride Concentration

- >100 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >15 – 25 ug/L
- >10 – 15 ug/L
- >5.0 – 10 ug/L
- >1.0 – 5.0 ug/L
- Non-Detect – 1.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

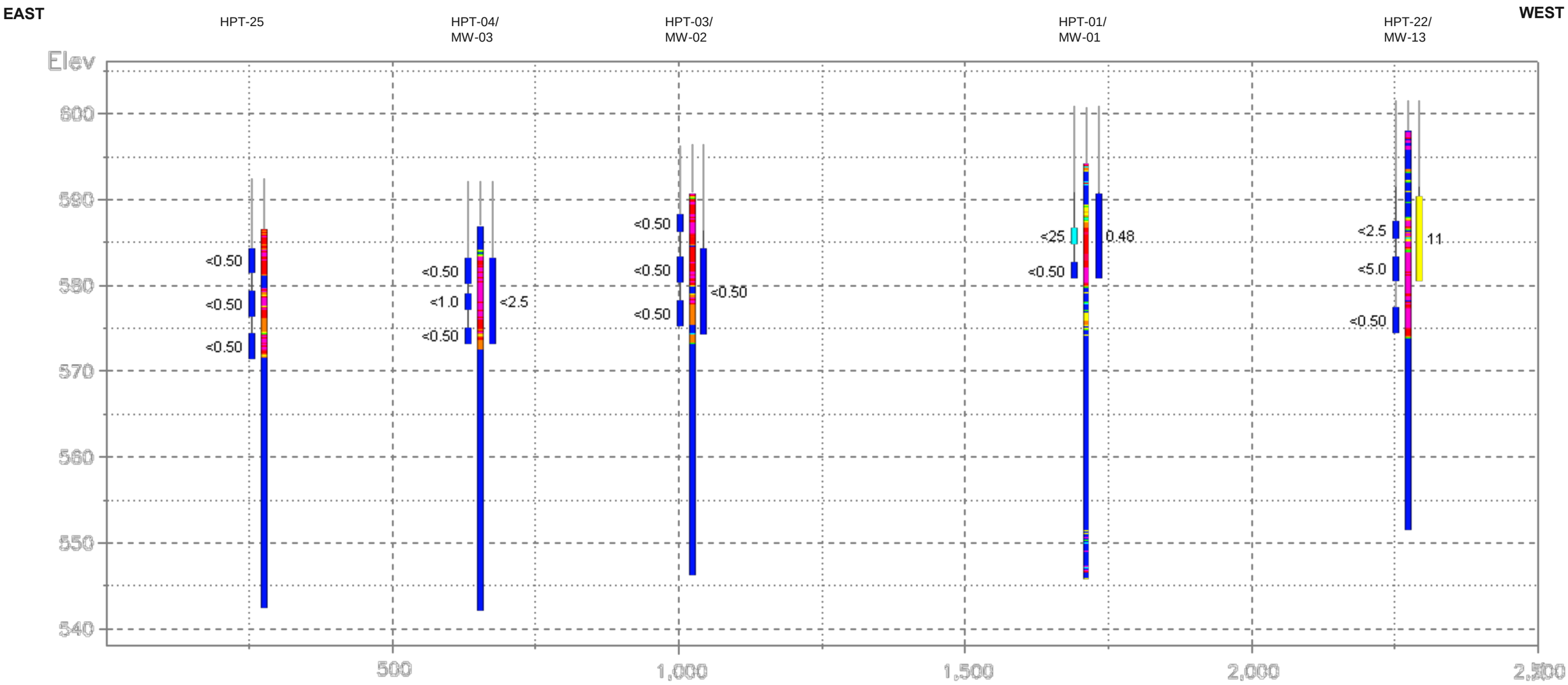
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017 except for MW-12. The data shown at MW-12 is from the most recent sampling event completed at that location (April 2016).

Northern Boundary – Estimated Hydraulic Conductivity and Vinyl Chloride Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

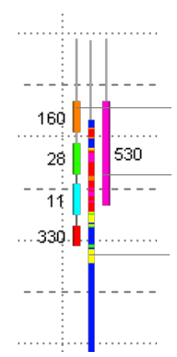


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Vinyl Chloride Concentration

- >25 – 50 ug/L
- >15 – 25 ug/L
- >10 – 15 ug/L
- >5.0 – 10 ug/L
- >1.0 – 5.0 ug/L
- Non-Detect – 1.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

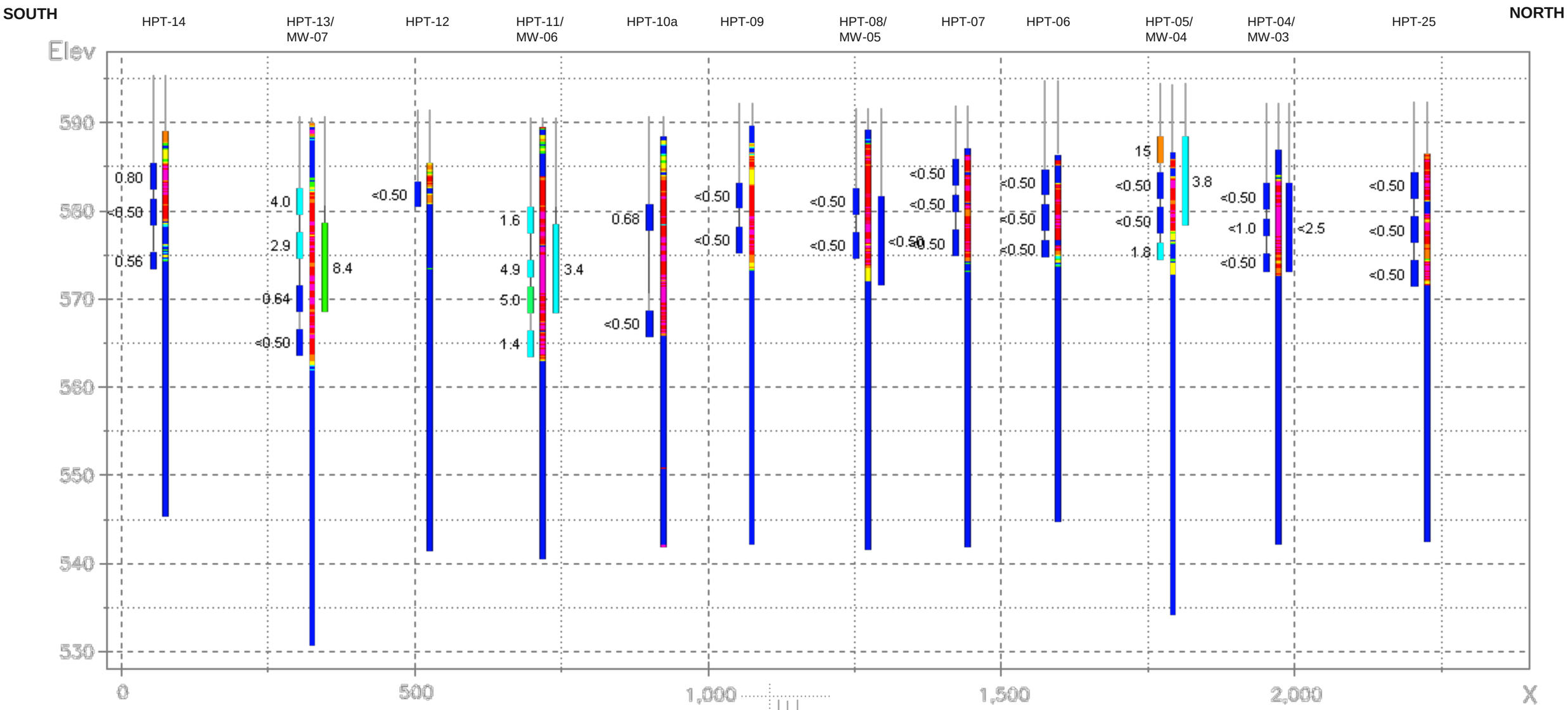
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Eastern Boundary – Estimated Hydraulic Conductivity and Vinyl Chloride Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

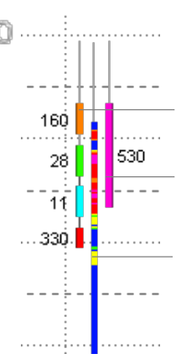


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Vinyl Chloride Concentration

- >25 – 50 ug/L
- >15 – 25 ug/L
- >10 – 15 ug/L
- >5.0 – 10 ug/L
- >1.0 – 5.0 ug/L
- Non-Detect – 1.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

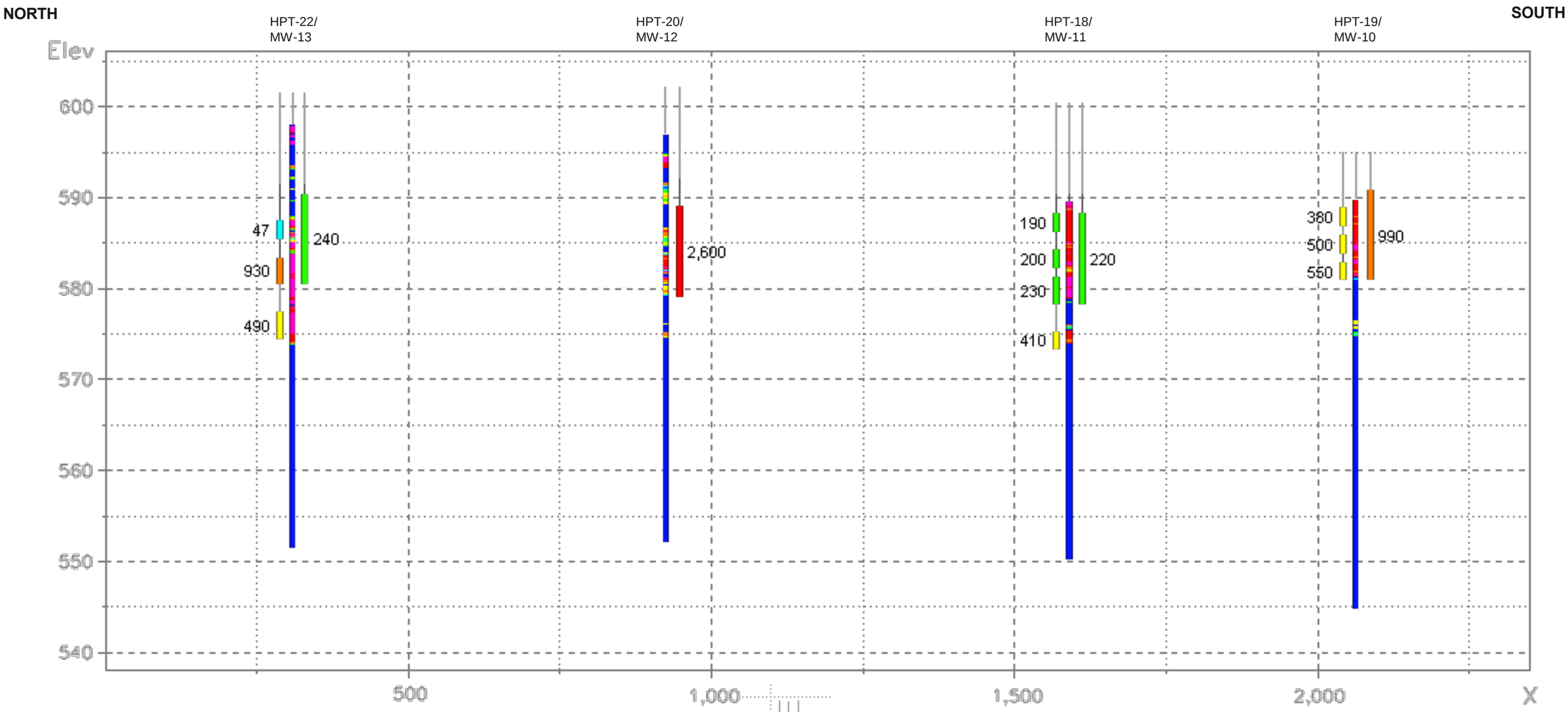
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Western Boundary – Estimated Hydraulic Conductivity and Manganese Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

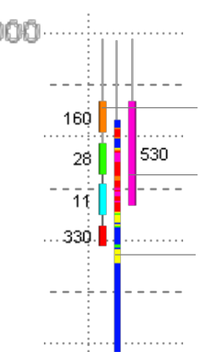


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Manganese Concentration

- >1,500 ug/L
- >750 – 1,500 ug/L
- >250 – 750 ug/L
- >100 – 250 ug/L
- >20 – 100 ug/L
- Non-Detect – 20 ug/L



HPT/VAP Sample– Sampled Interval and Value

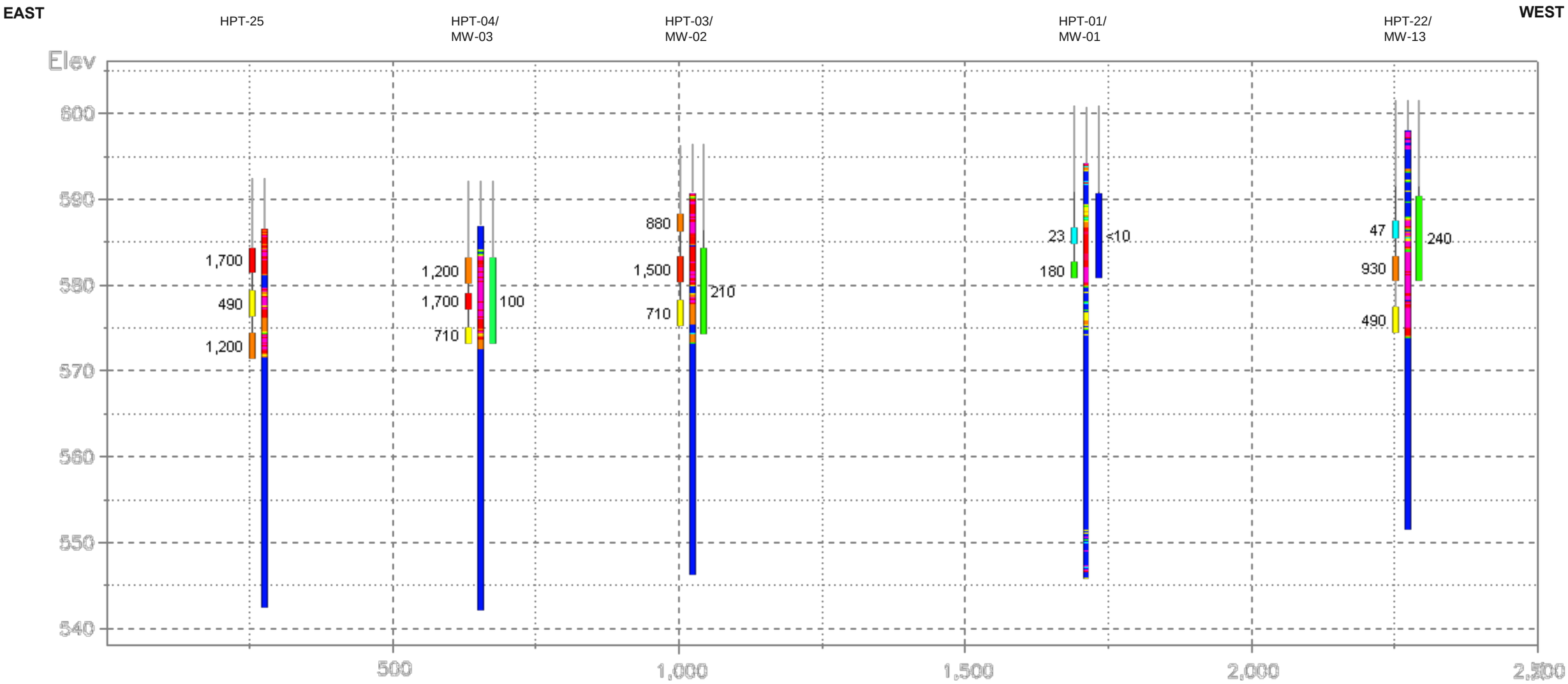
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017 except for MW-12. The data shown at MW-12 is from the most recent sampling event completed at that location (April 2016).

Northern Boundary – Estimated Hydraulic Conductivity and Manganese Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

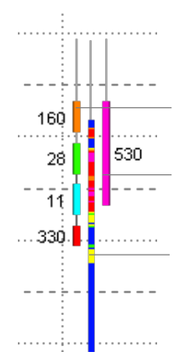


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Manganese Concentration

- >1,500 ug/L
- >750 – 1,500 ug/L
- >250 – 750 ug/L
- >100 – 250 ug/L
- >20 – 100 ug/L
- Non-Detect – 20 ug/L



HPT/VAP Sample– Sampled Interval and Value

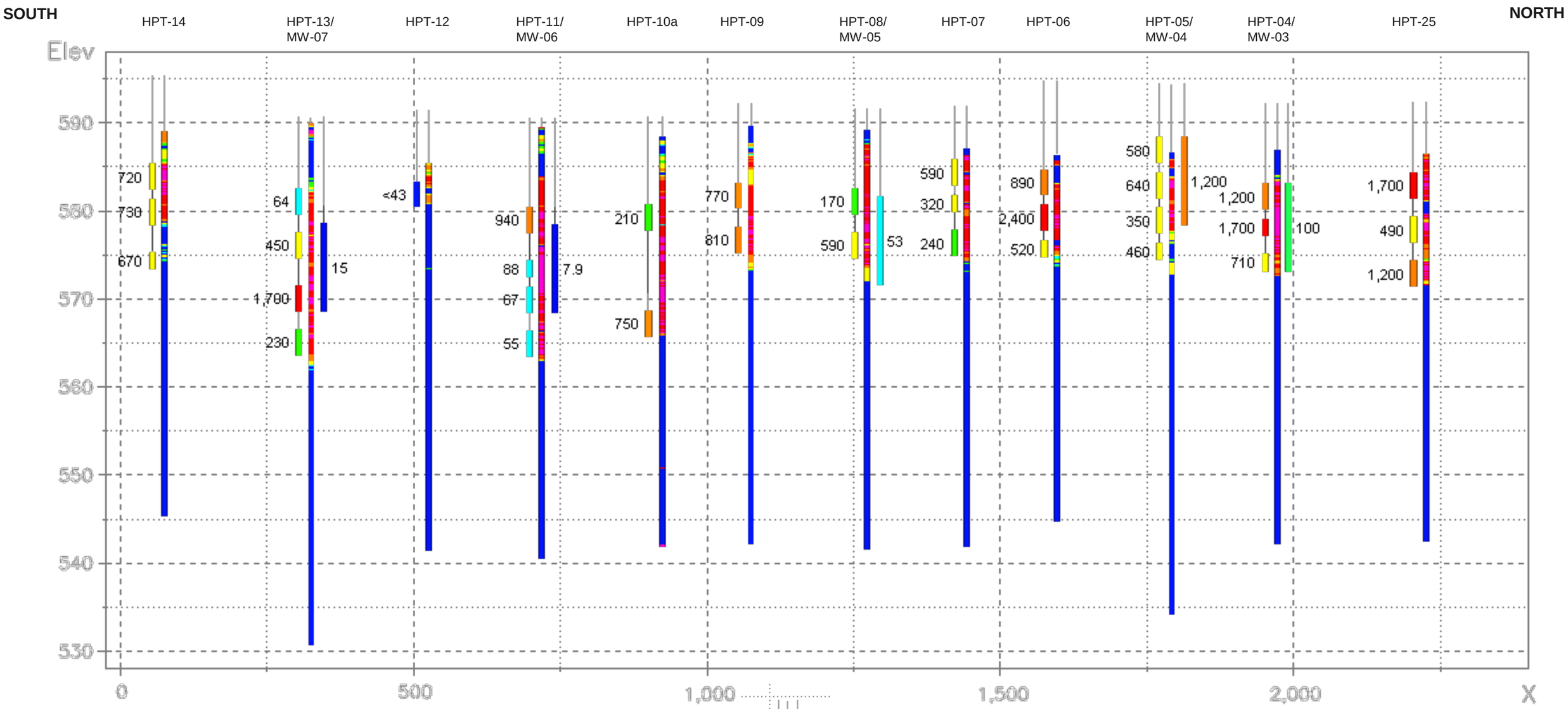
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Eastern Boundary – Estimated Hydraulic Conductivity and Manganese Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

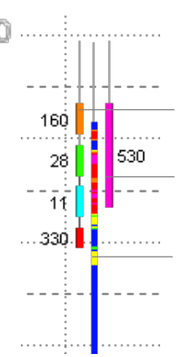


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Manganese Concentration

- >1,500 ug/L
- >750 – 1,500 ug/L
- >250 – 750 ug/L
- >100 – 250 ug/L
- >20 – 100 ug/L
- Non-Detect – 20 ug/L



HPT/VAP Sample– Sampled Interval and Value

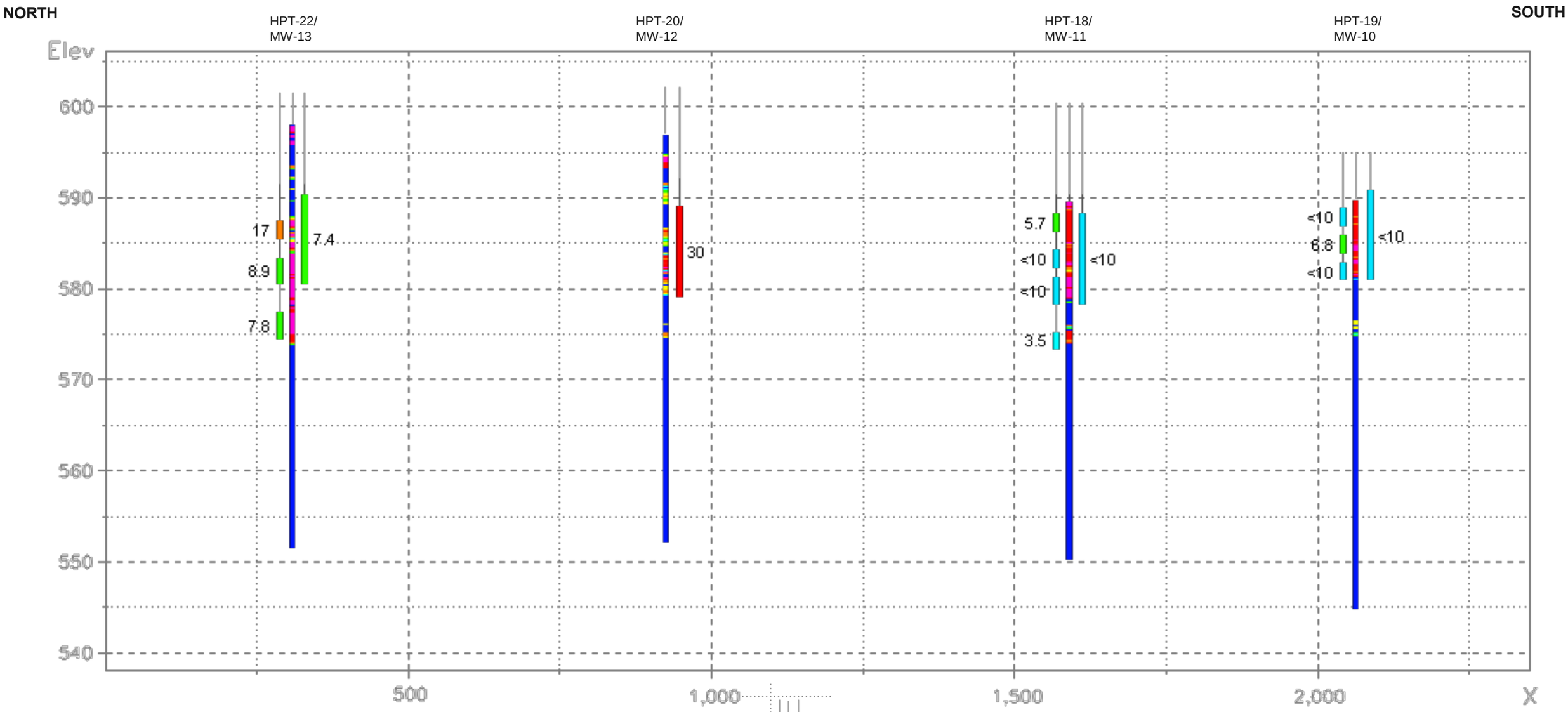
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Western Boundary – Estimated Hydraulic Conductivity and Arsenic Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

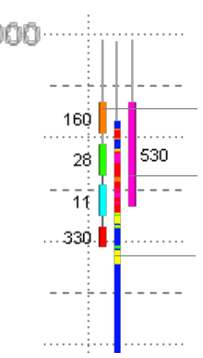


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Arsenic Concentration

- >25 ug/L
- >15 – 25 ug/L
- >10 – 15 ug/L
- >5.0 – 10 ug/L
- >1.0 – 5.0 ug/L
- Non-Detect – 1.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

Monitoring well – Screened Interval and Value

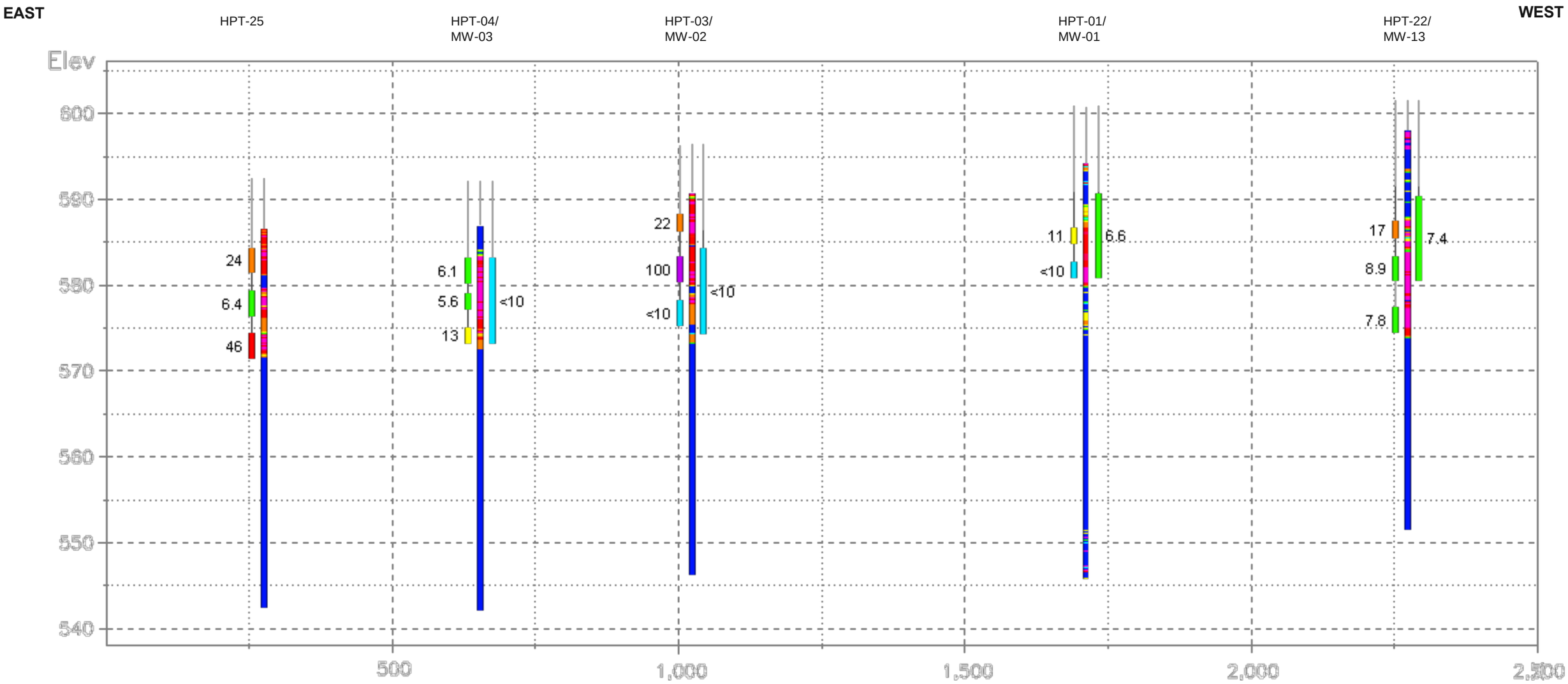
HPT Conductivity Data

NOTES:

1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017 except for MW-12. The data shown at MW-12 is from the most recent sampling event completed at that location (April 2016).

Northern Boundary – Estimated Hydraulic Conductivity and Arsenic Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

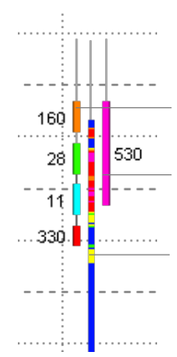


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Arsenic Concentration

- >100 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >15 – 25 ug/L
- >10 – 15 ug/L
- >5.0 – 10 ug/L
- >1.0 – 5.0 ug/L
- Non-Detect – 1.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

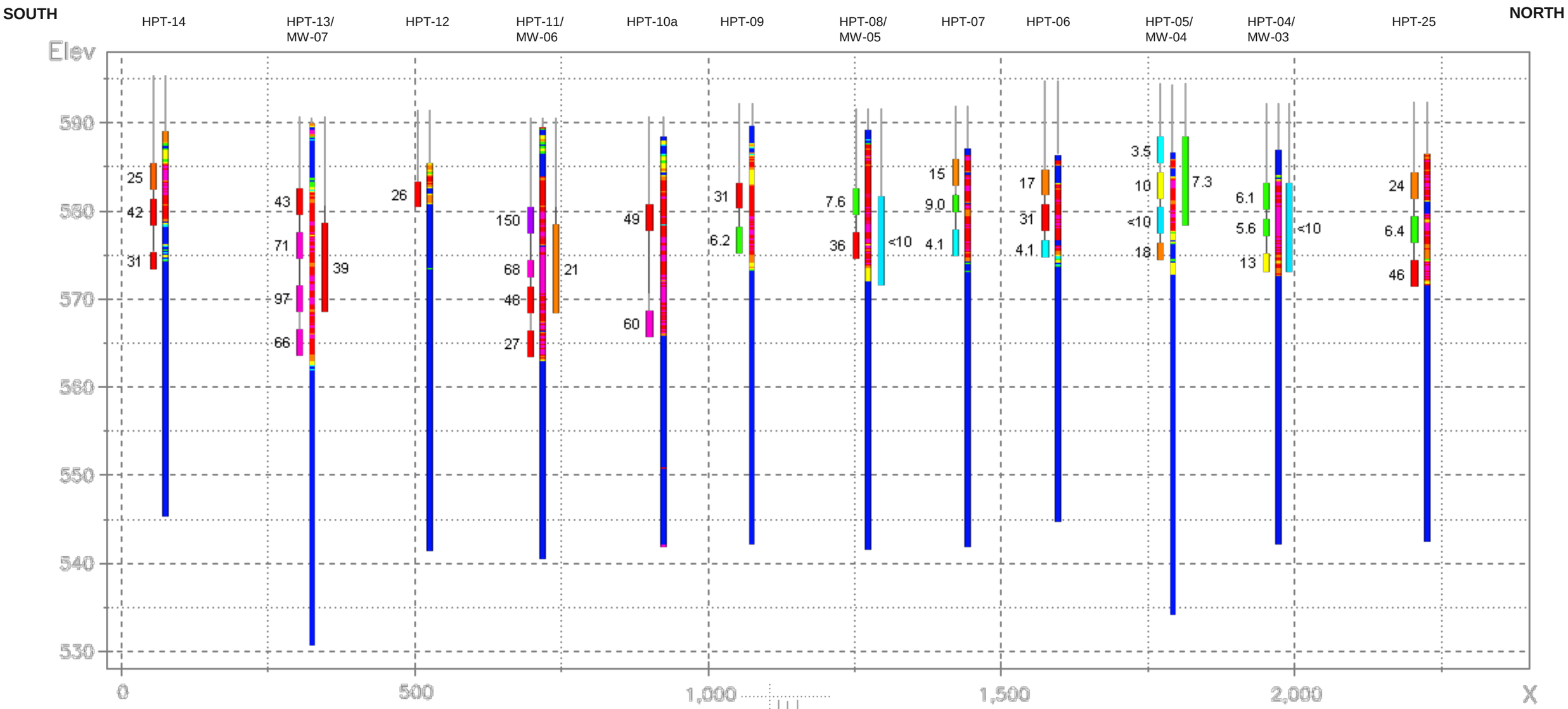
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Eastern Boundary – Estimated Hydraulic Conductivity and Arsenic Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

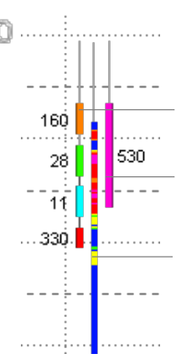


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Arsenic Concentration

- >100 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >15 – 25 ug/L
- >10 – 15 ug/L
- >5.0 – 10 ug/L
- >1.0 – 5.0 ug/L
- Non-Detect – 1.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

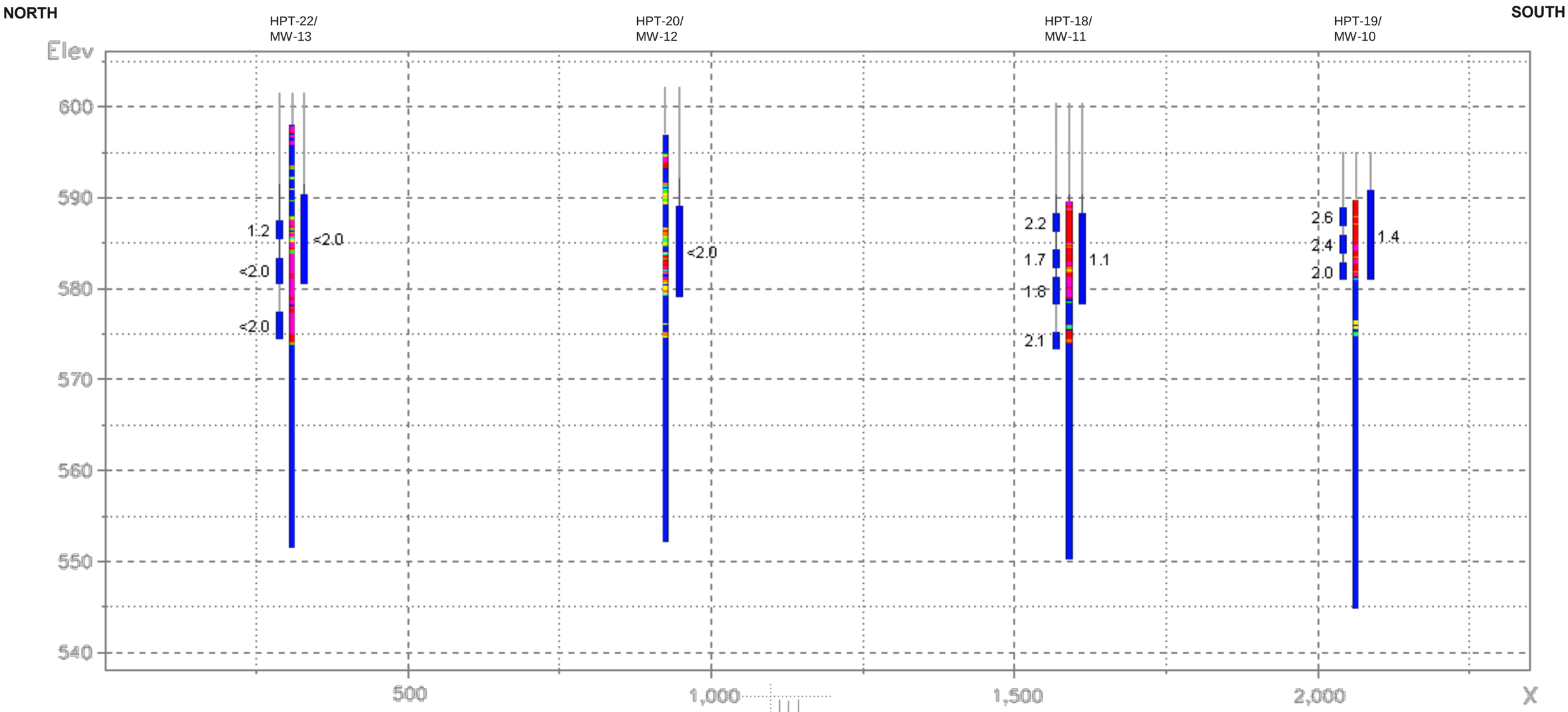
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Western Boundary – Estimated Hydraulic Conductivity and Cadmium Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

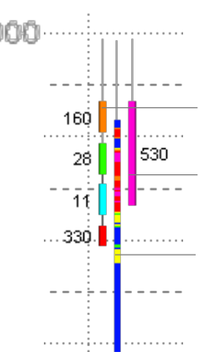


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Cadmium Concentration

- >250 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >5.0 – 25 ug/L
- Non-Detect – 5.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

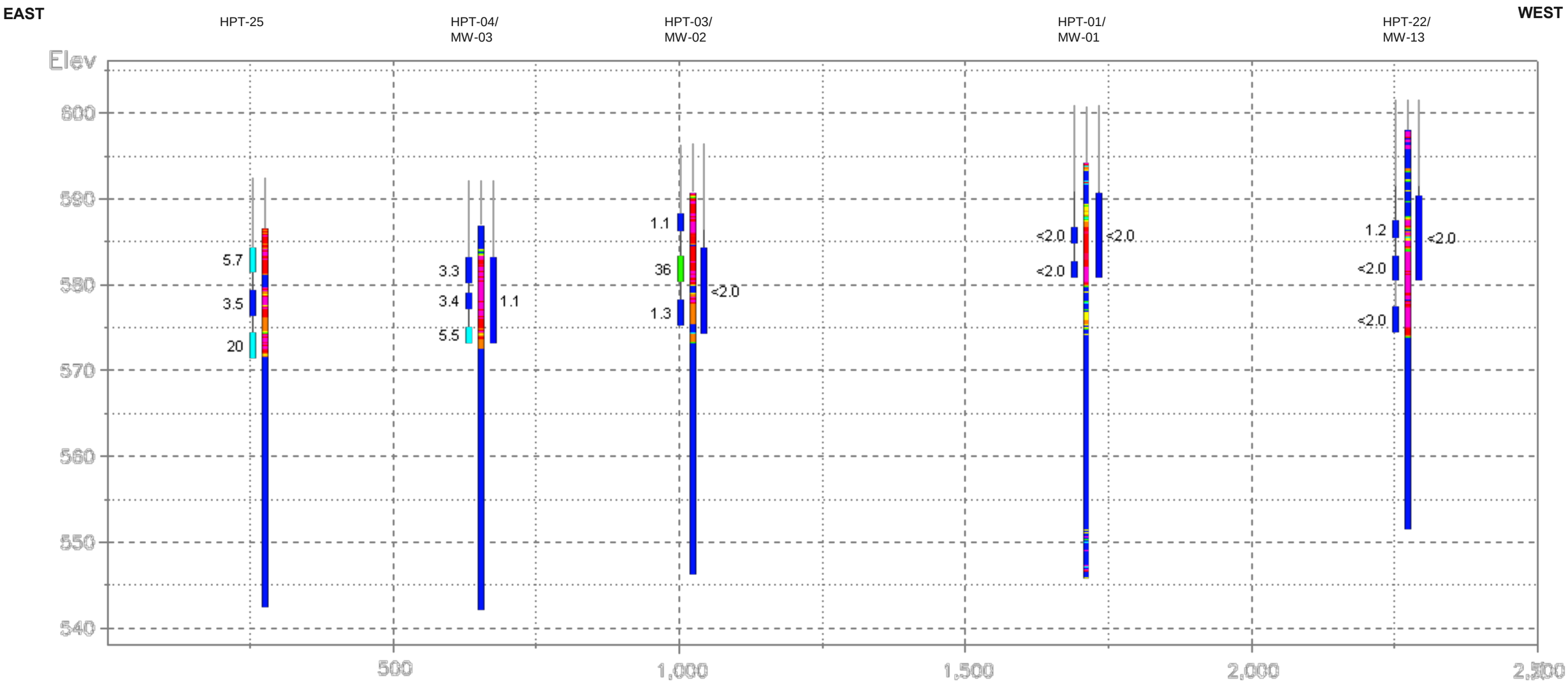
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017 except for MW-12. The data shown at MW-12 is from the most recent sampling event completed at that location (April 2016).

Northern Boundary – Estimated Hydraulic Conductivity and Cadmium Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

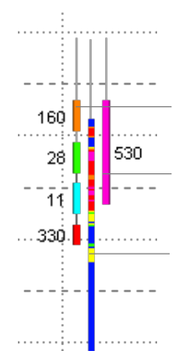


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Cadmium Concentration

- >250 – 500 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >5.0 – 25 ug/L
- Non-Detect – 5.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

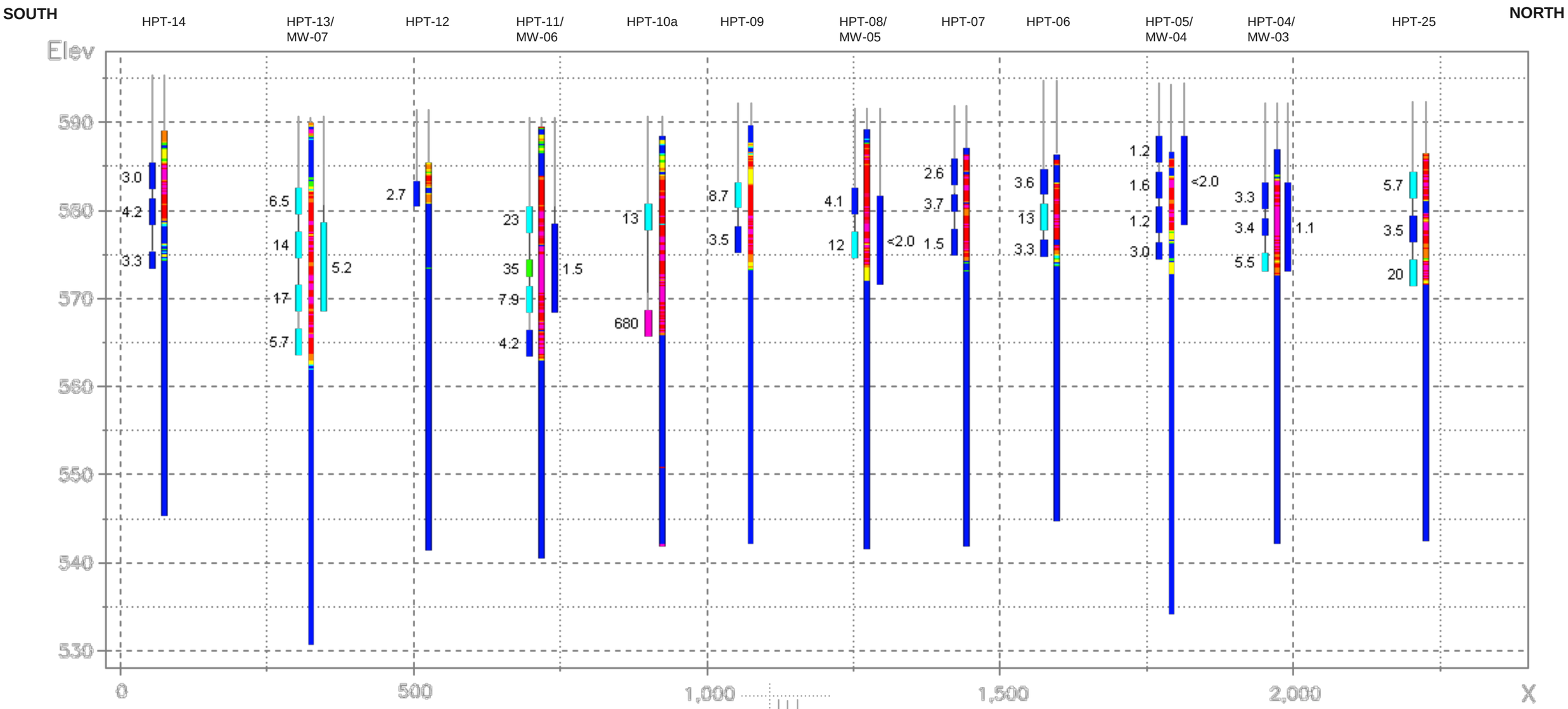
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Eastern Boundary – Estimated Hydraulic Conductivity and Cadmium Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

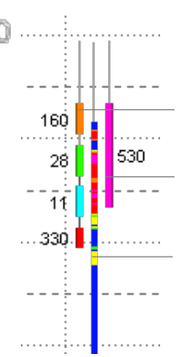


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Cadmium Concentration

- >500 ug/L
- >250 – 500 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >5.0 – 25 ug/L
- Non-Detect – 5.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

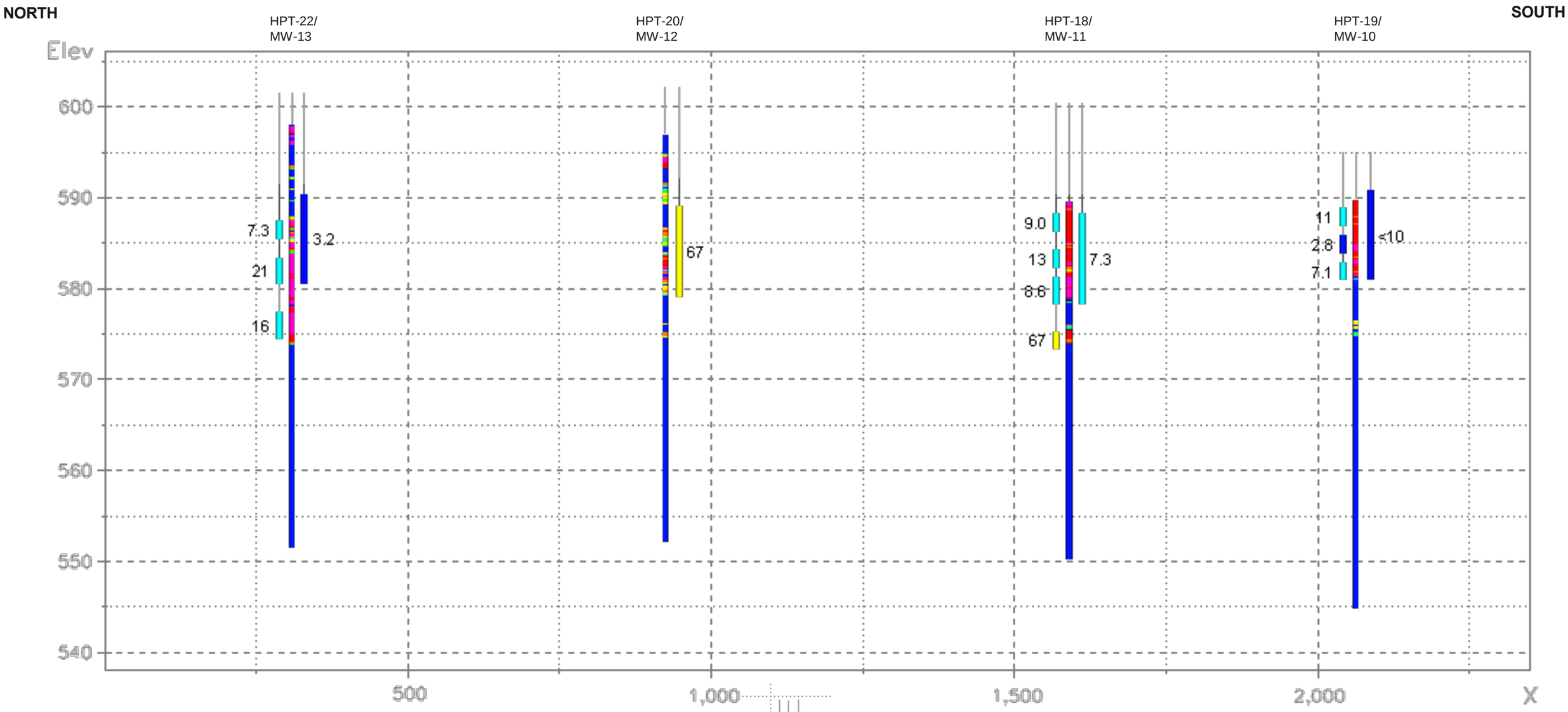
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Western Boundary – Estimated Hydraulic Conductivity and Chromium Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

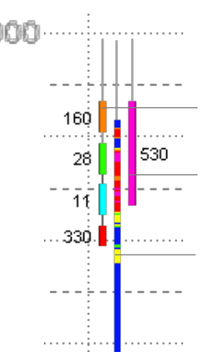


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Chromium Concentration

- >250 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >5.0 – 25 ug/L
- Non-Detect – 5.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

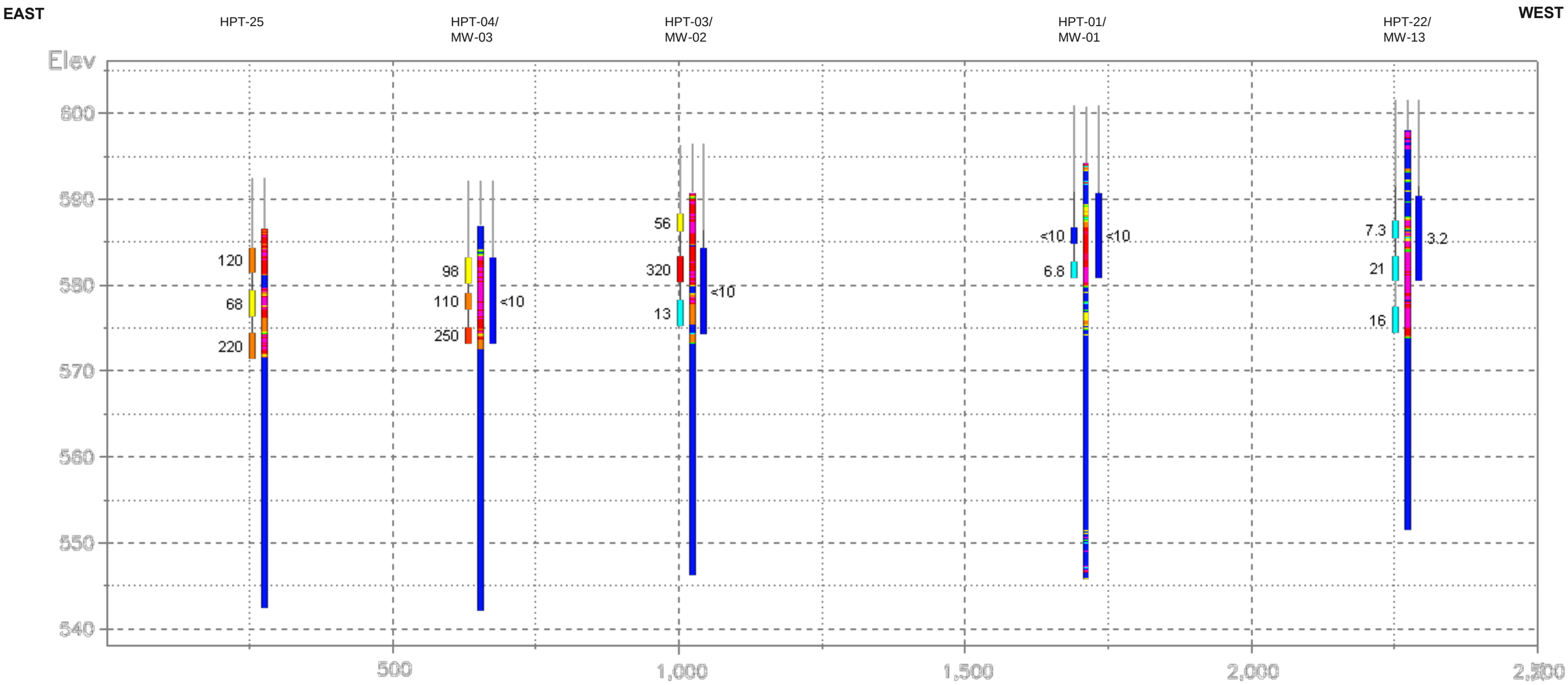
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017 except for MW-12. The data shown at MW-12 is from the most recent sampling event completed at that location (April 2016).

Northern Boundary – Estimated Hydraulic Conductivity and Chromium Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

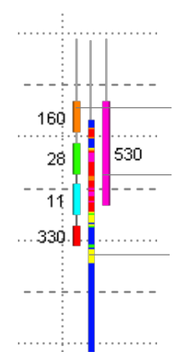


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Chromium Concentration

- >250 – 500 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >5.0 – 25 ug/L
- Non-Detect – 5.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

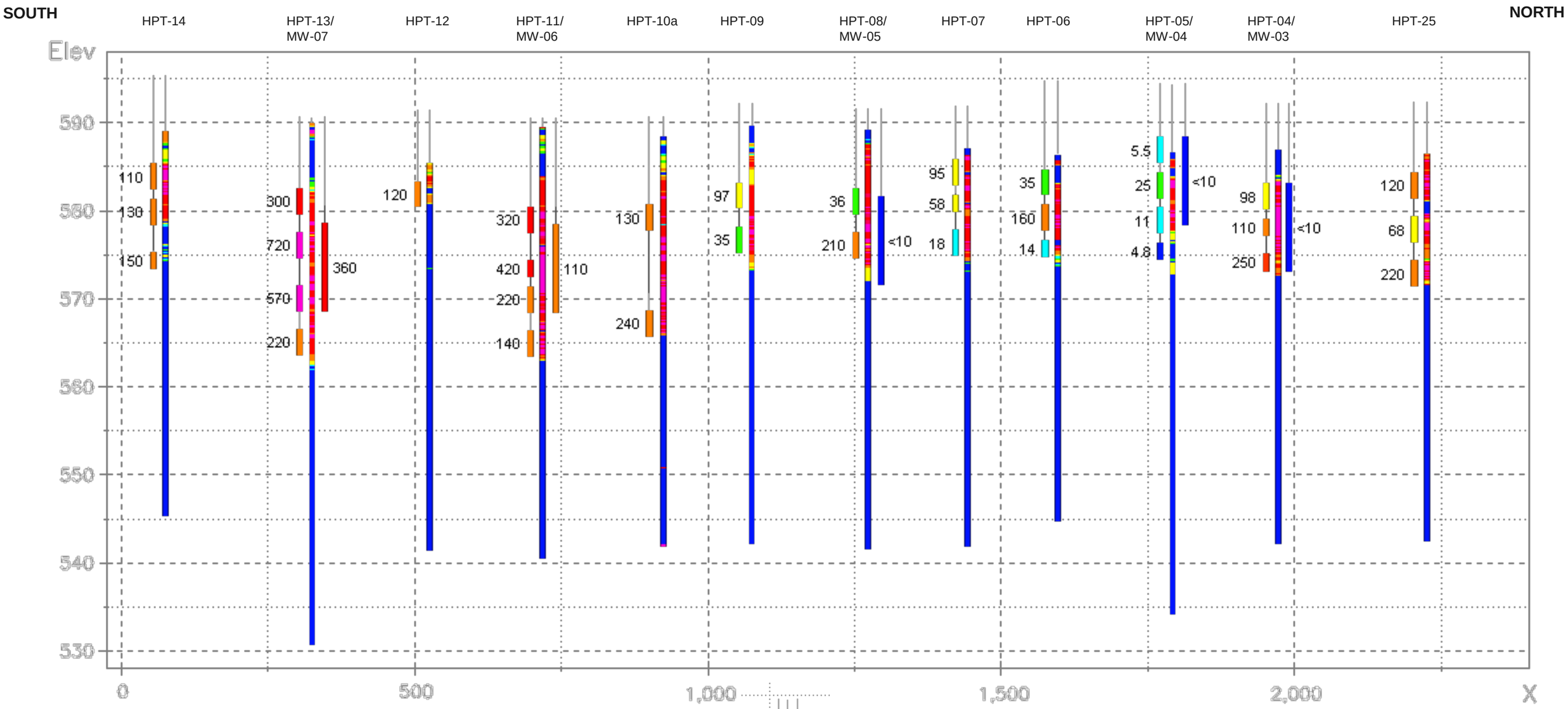
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Eastern Boundary – Estimated Hydraulic Conductivity and Chromium Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

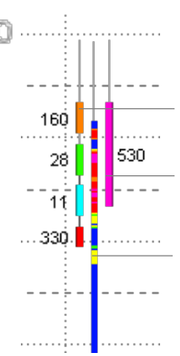


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Chromium Concentration

- >500 ug/L
- >250 – 500 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >5.0 – 25 ug/L
- Non-Detect – 5.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

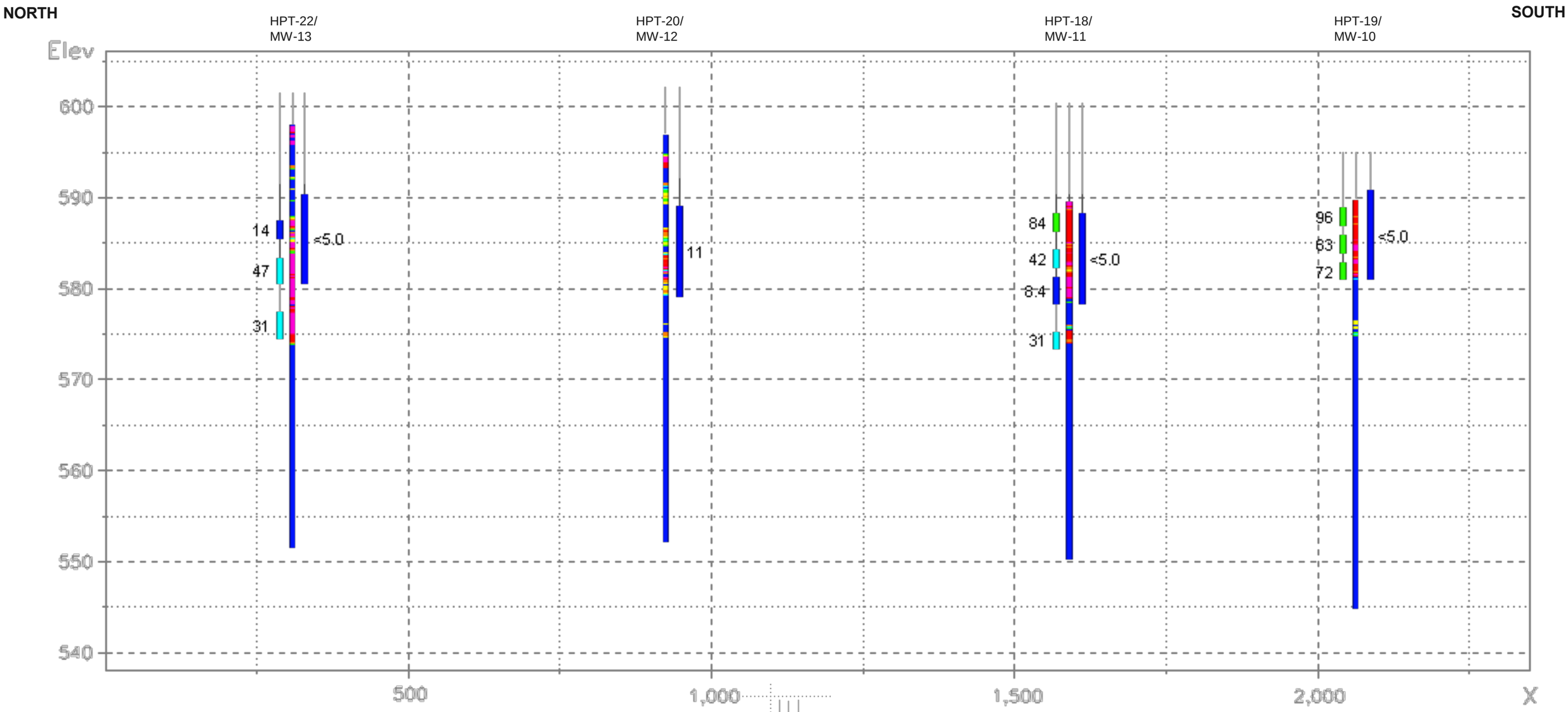
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Western Boundary – Estimated Hydraulic Conductivity and Lead Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

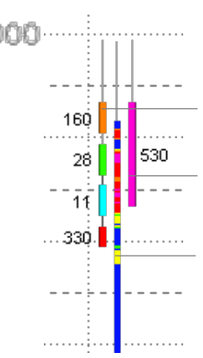


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Lead Concentration

- >500 – 750 ug/L
- >250 – 500 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >15 – 50 ug/L
- Non-Detect – 15 ug/L



HPT/VAP Sample– Sampled Interval and Value

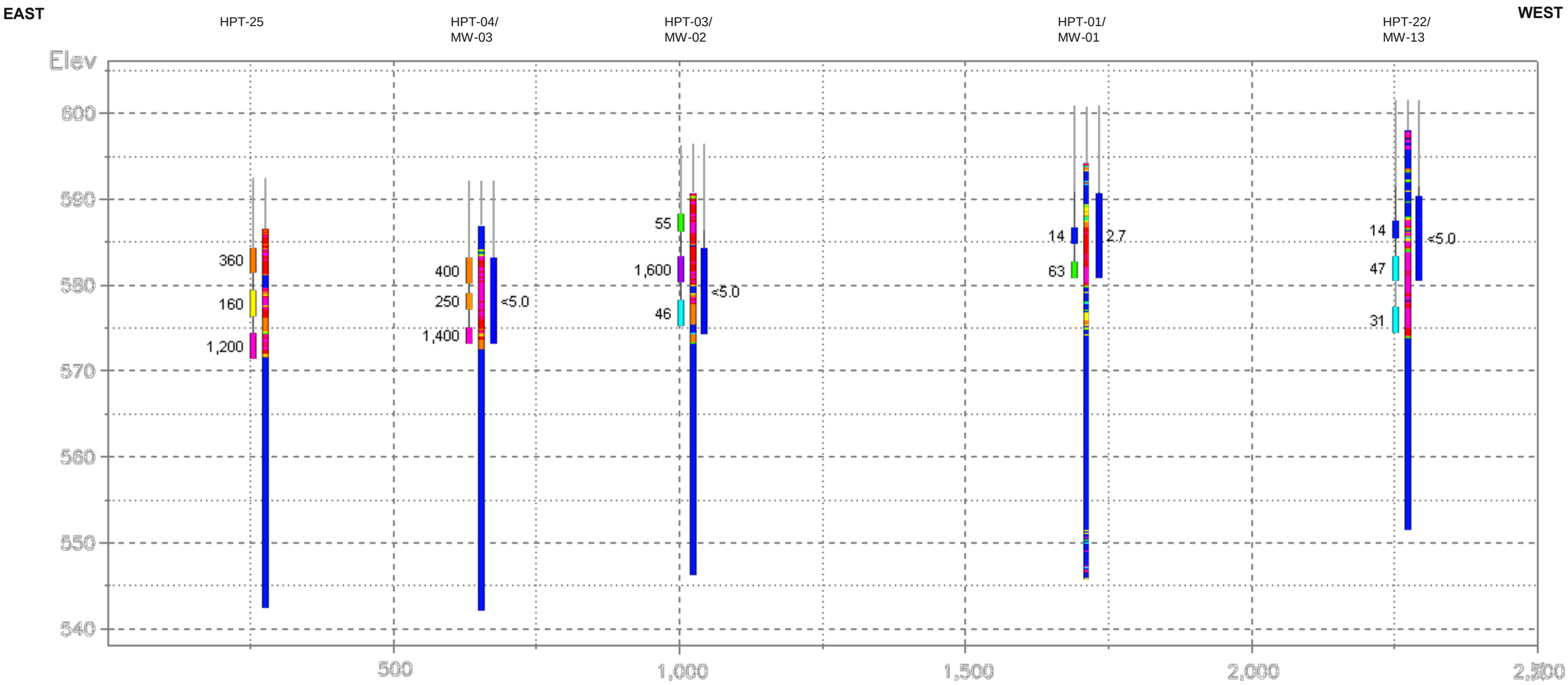
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017 except for MW-12. The data shown at MW-12 is from the most recent sampling event completed at that location (April 2016).

Northern Boundary – Estimated Hydraulic Conductivity and Lead Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

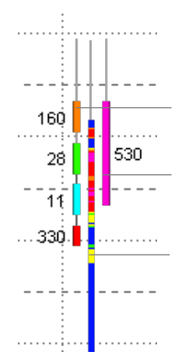


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Lead Concentration

- >1,500 ug/L
- >750 – 1,500 ug/L
- >500 – 750 ug/L
- >250 – 500 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >15 – 50 ug/L
- Non-Detect – 15 ug/L



HPT/VAP Sample– Sampled Interval and Value

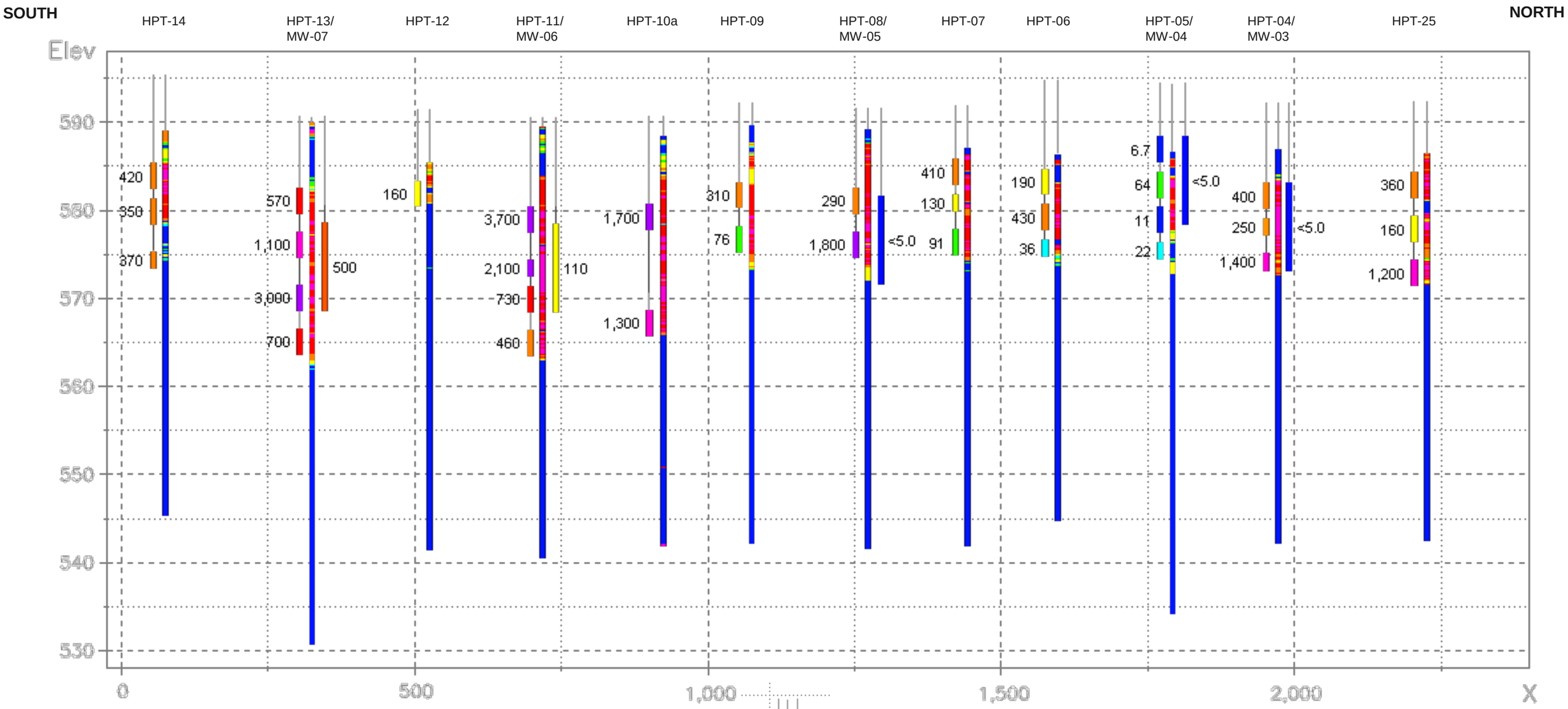
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Eastern Boundary – Estimated Hydraulic Conductivity and Lead Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

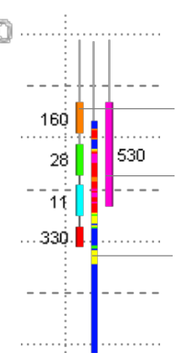


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Lead Concentration

- >1,500 ug/L
- >750 – 1,500 ug/L
- >500 – 750 ug/L
- >250 – 500 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >15 – 50 ug/L
- Non-Detect – 15 ug/L



HPT/VAP Sample– Sampled Interval and Value

Monitoring well – Screened Interval and Value

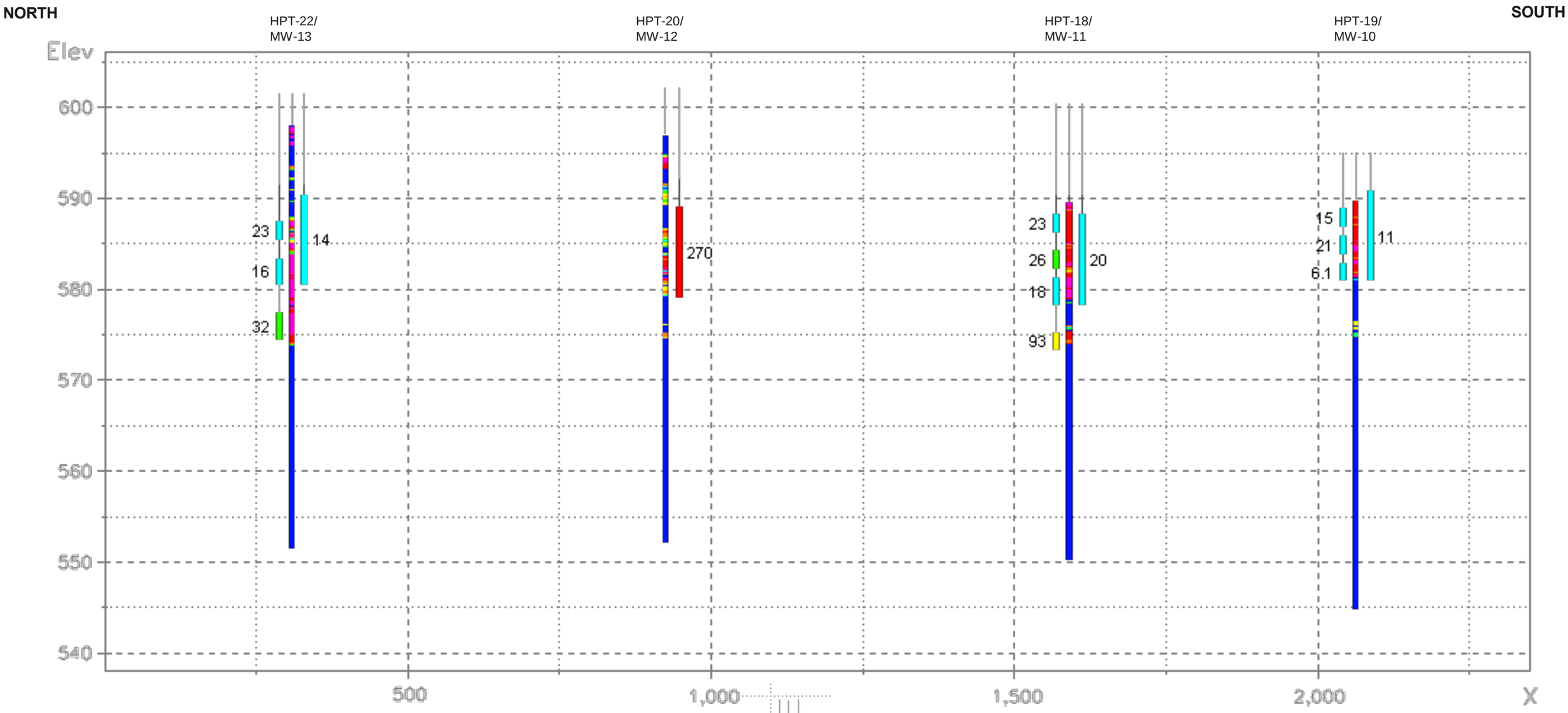
HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Western Boundary – Estimated Hydraulic Conductivity and Nickel Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

ARCADIS Design & Consultancy for natural and built assets

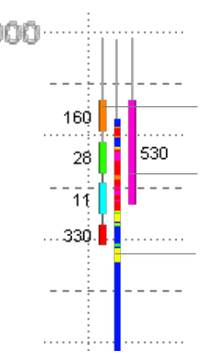


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Nickel Concentration

- >250 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >5.0 – 25 ug/L
- Non-Detect – 5.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

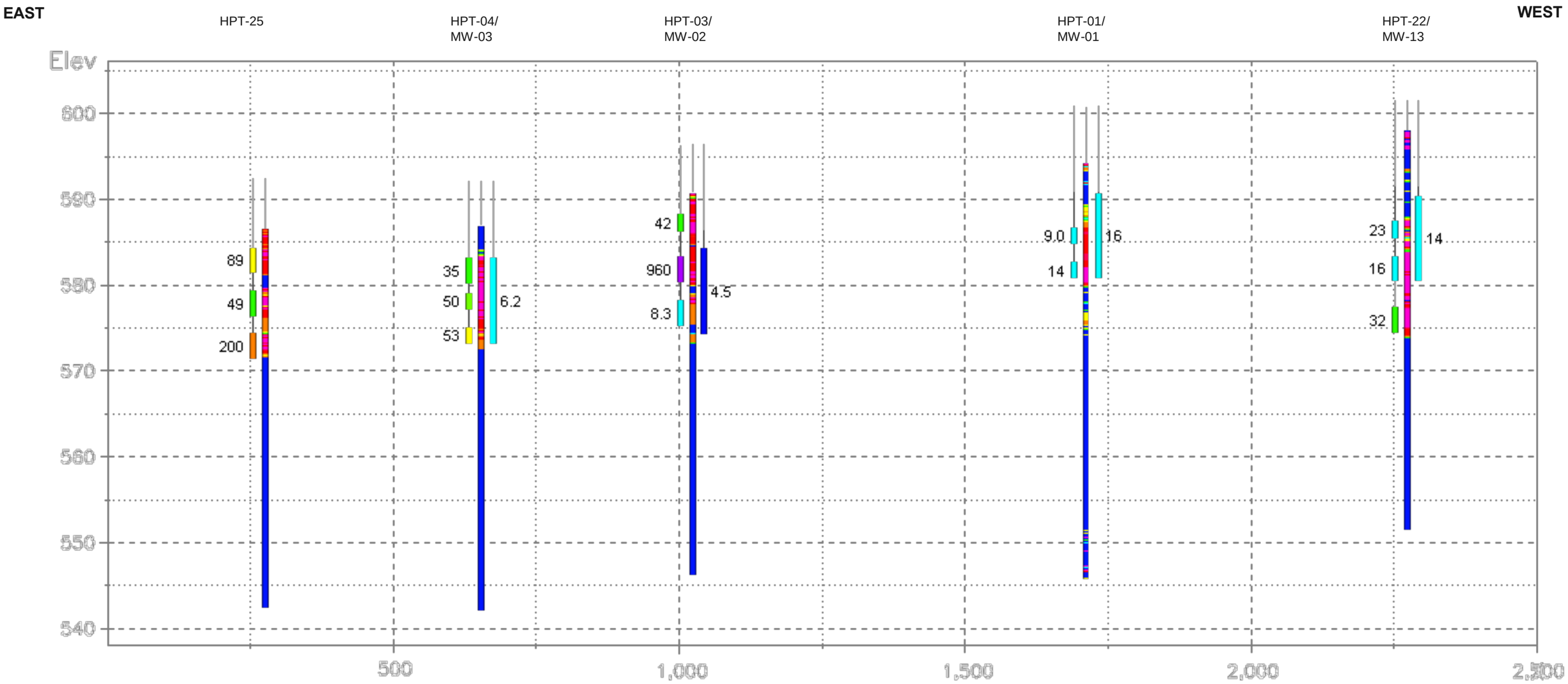
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017 except for MW-12. The data shown at MW-12 is from the most recent sampling event completed at that location (April 2016).

Northern Boundary – Estimated Hydraulic Conductivity and Nickel Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

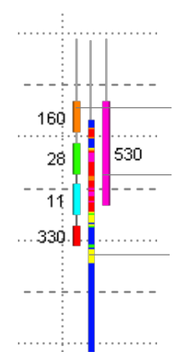


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Nickel Concentration

- >750 ug/L
- >500 – 750 ug/L
- >250 – 500 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >5.0 – 25 ug/L
- Non-Detect – 5.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

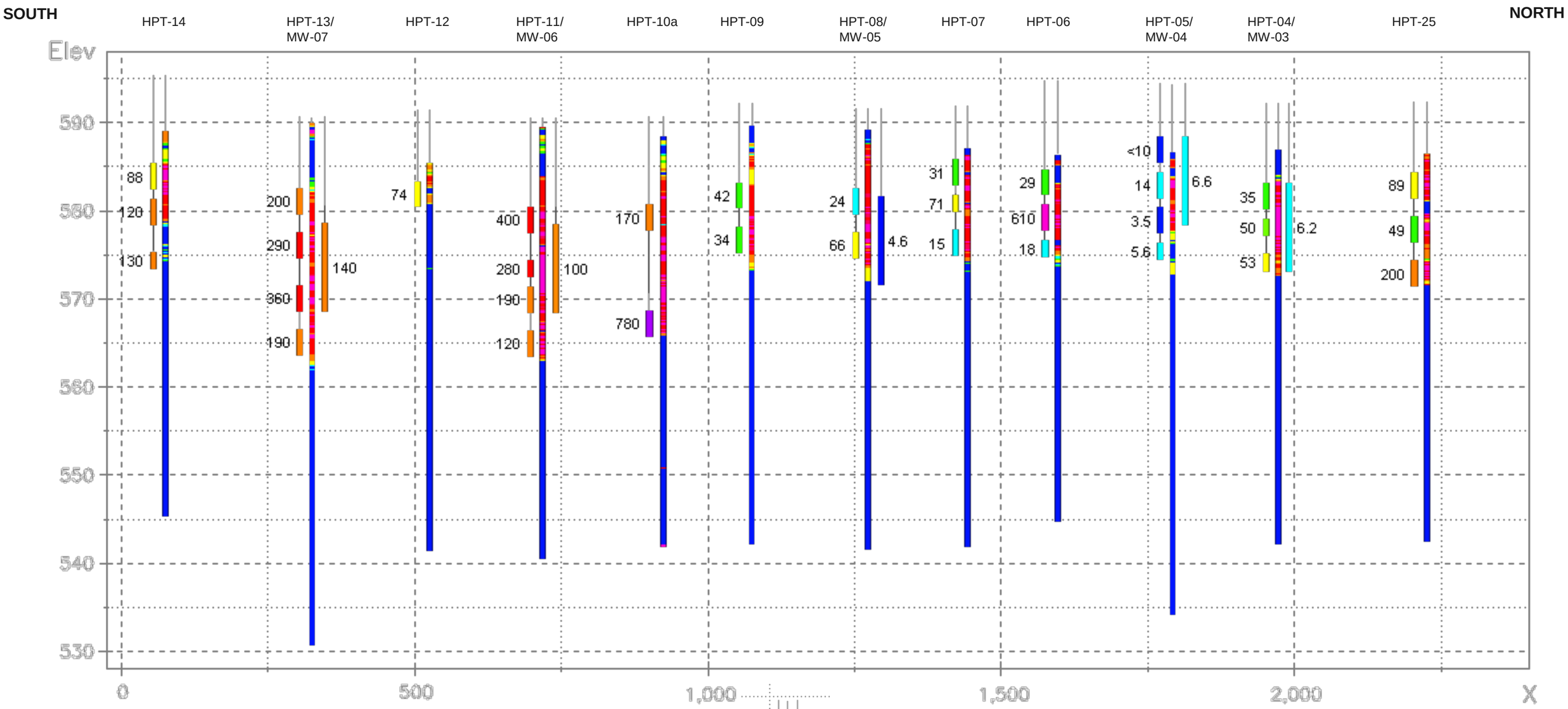
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Eastern Boundary – Estimated Hydraulic Conductivity and Nickel Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

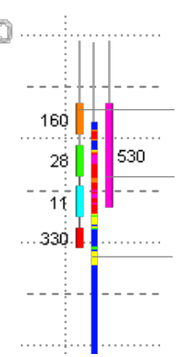


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Nickel Concentration

- >750 ug/L
- >500 – 750 ug/L
- >250 – 500 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >5.0 – 25 ug/L
- Non-Detect – 5.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

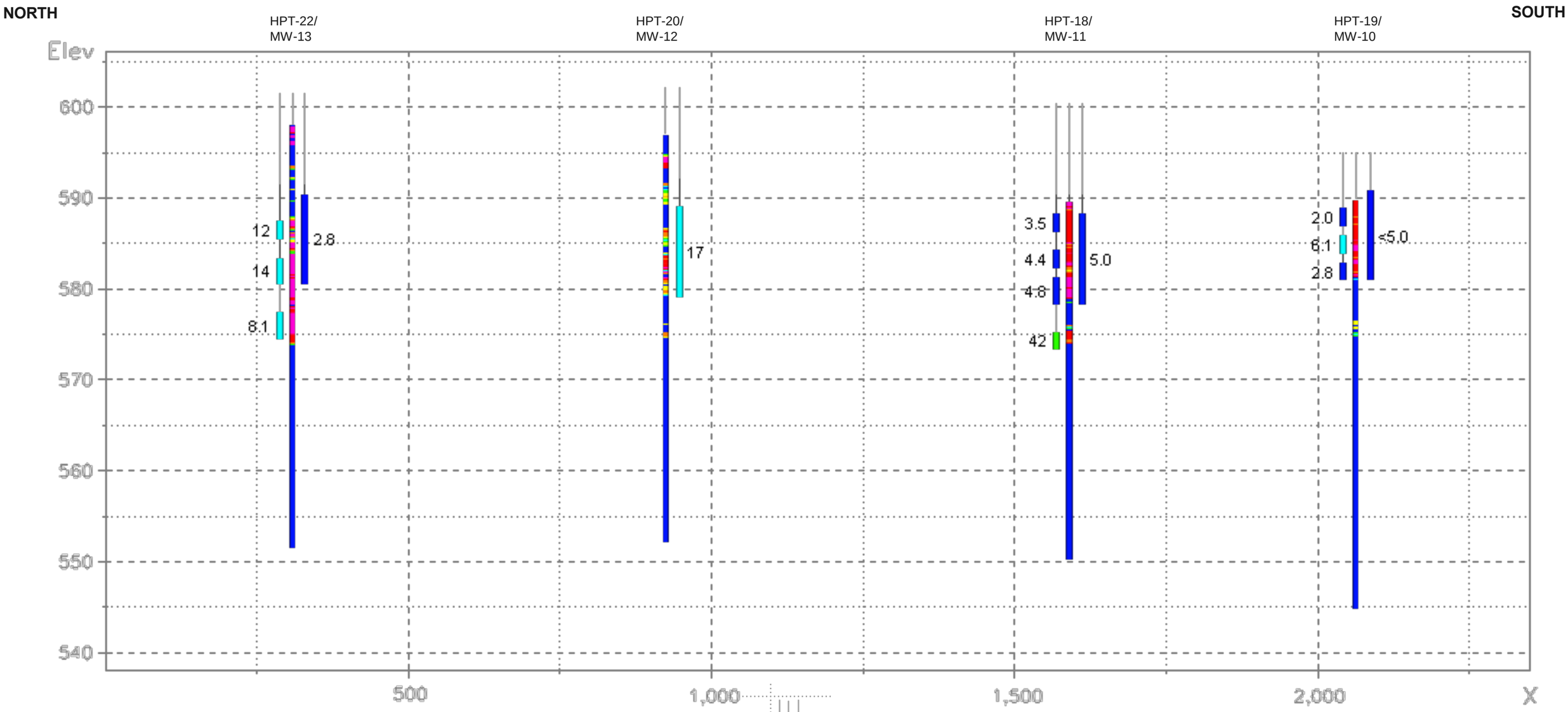
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Western Boundary – Estimated Hydraulic Conductivity and Vanadium Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

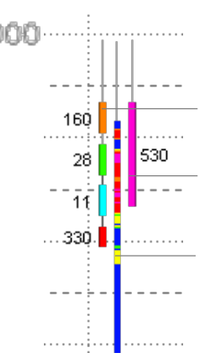


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Vanadium Concentration

- >250 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >5.0 – 25 ug/L
- Non-Detect – 5.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

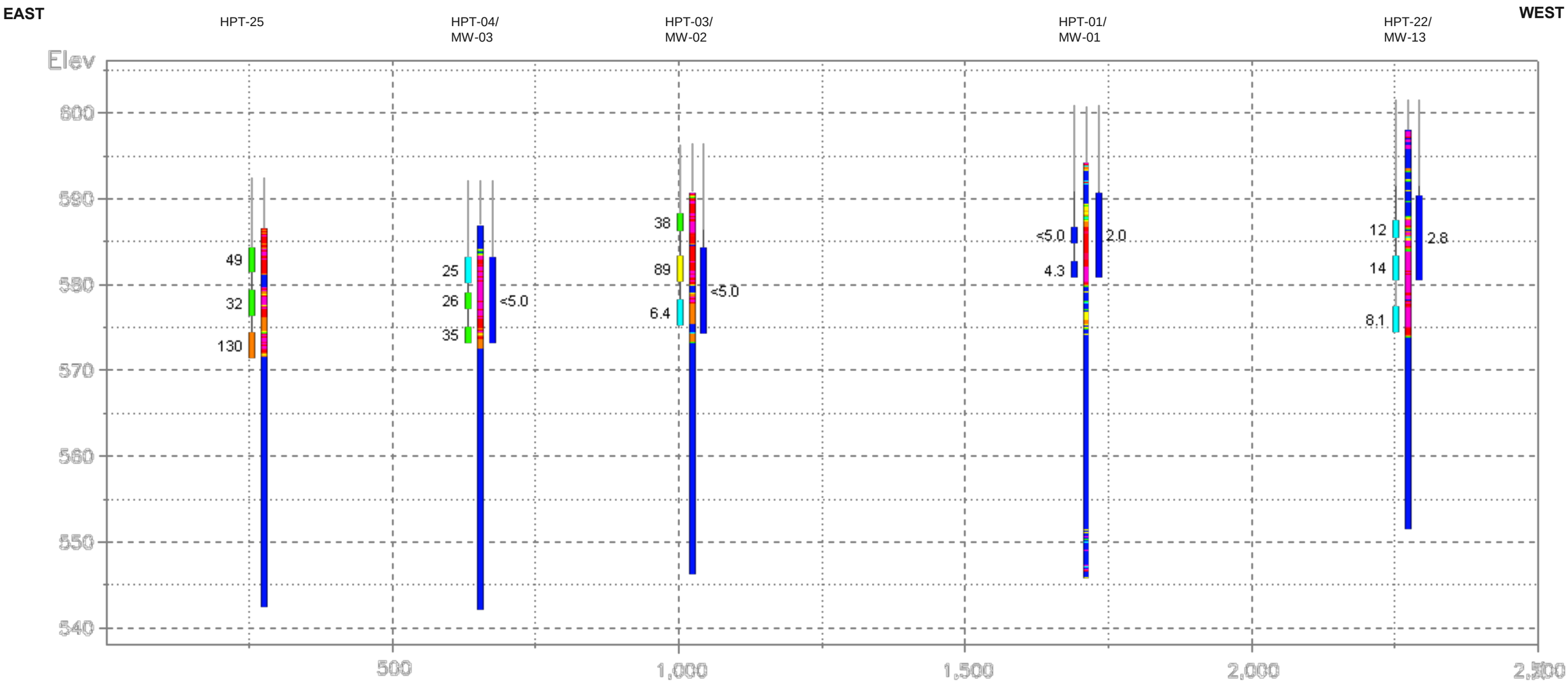
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017 except for MW-12. The data shown at MW-12 is from the most recent sampling event completed at that location (April 2016).

Northern Boundary – Estimated Hydraulic Conductivity and Vanadium Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

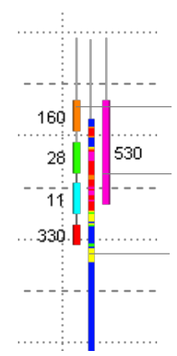


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Vanadium Concentration

- >250 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >5.0 – 25 ug/L
- Non-Detect – 5.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

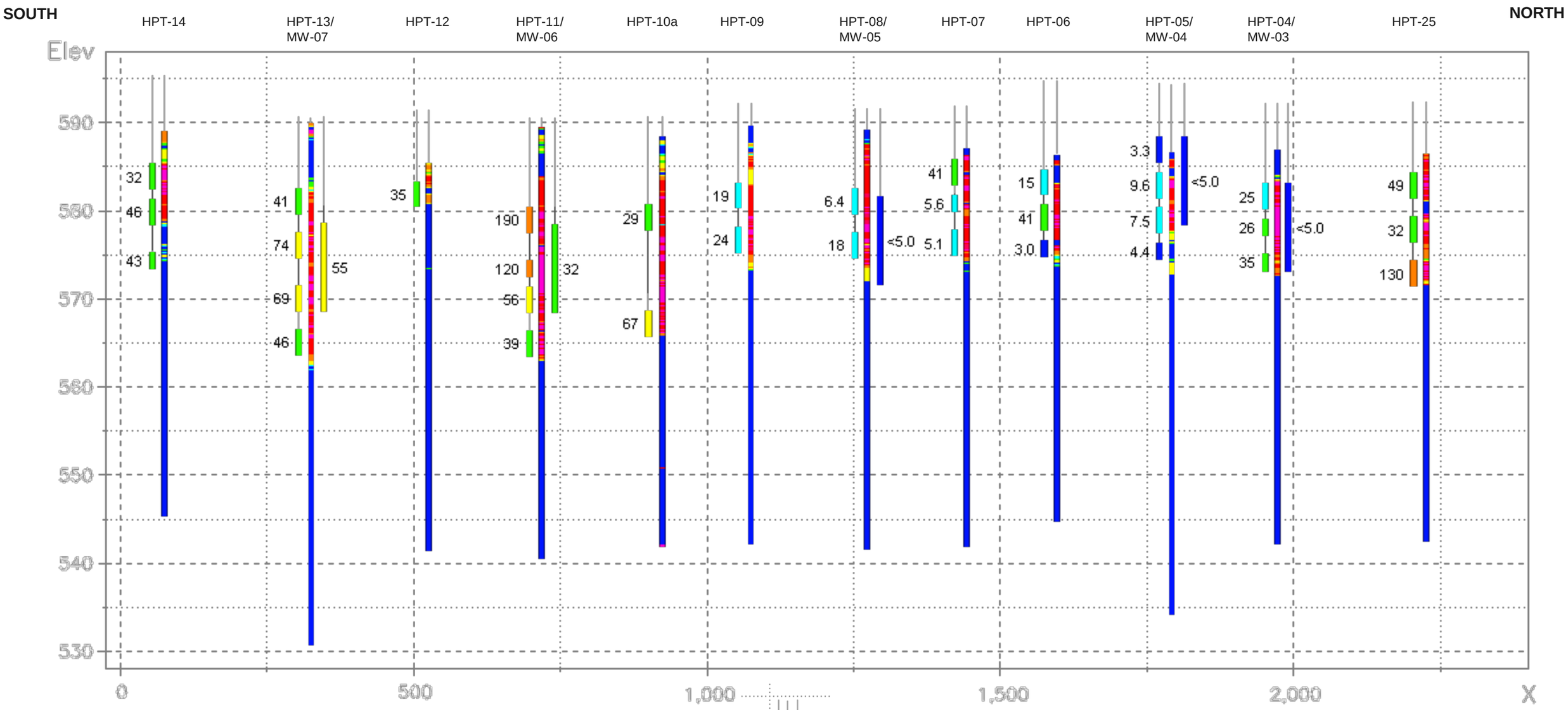
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Eastern Boundary – Estimated Hydraulic Conductivity and Vanadium Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

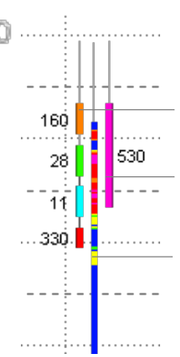


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Vanadium Concentration

- >250 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >25 – 50 ug/L
- >5.0 – 25 ug/L
- Non-Detect – 5.0 ug/L



HPT/VAP Sample– Sampled Interval and Value

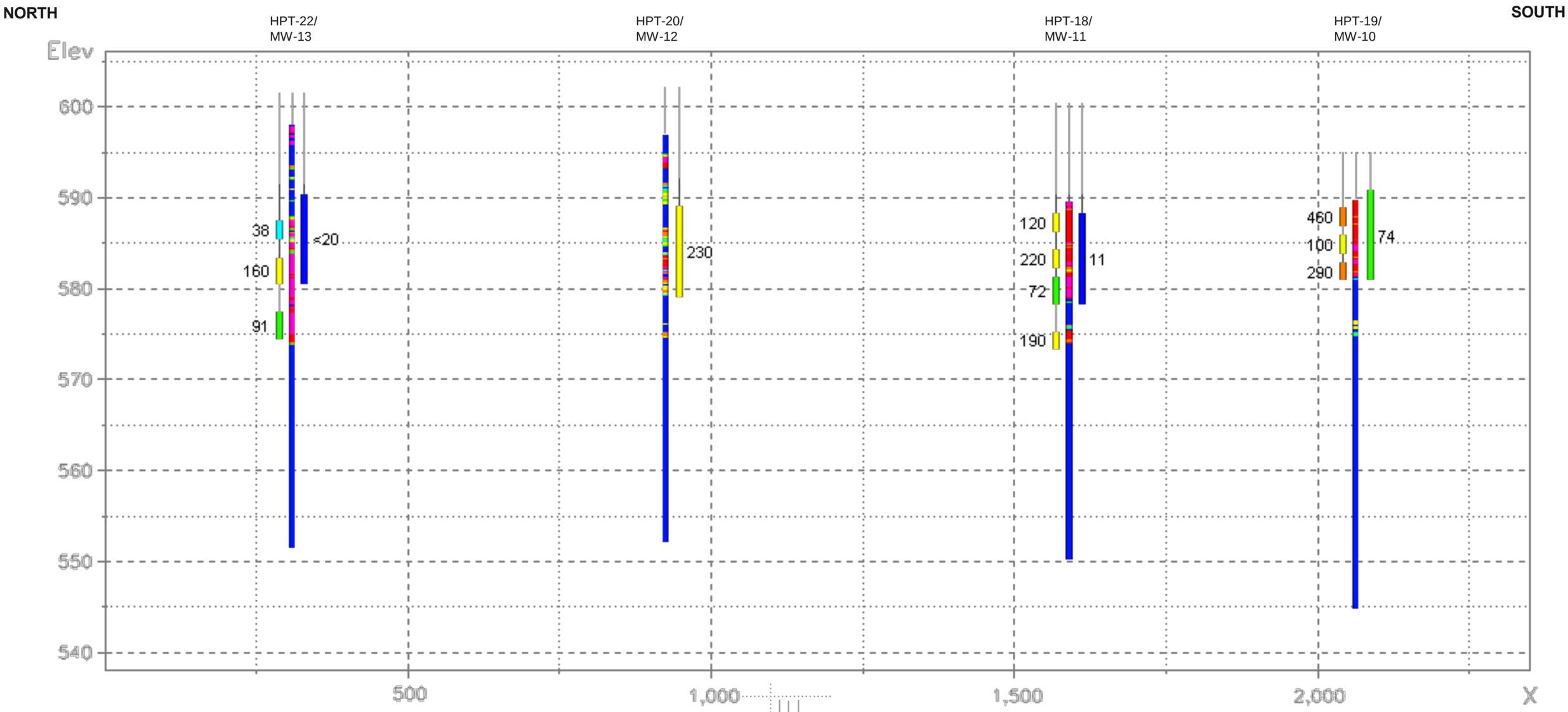
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Western Boundary – Estimated Hydraulic Conductivity and Zinc Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

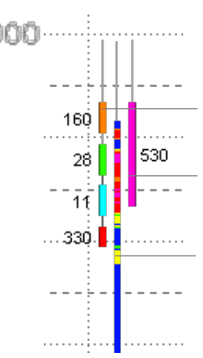


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Zinc Concentration

- >500 ug/L
- >250 – 500 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >15 – 50 ug/L
- Non-Detect – 15 ug/L



HPT/VAP Sample– Sampled Interval and Value

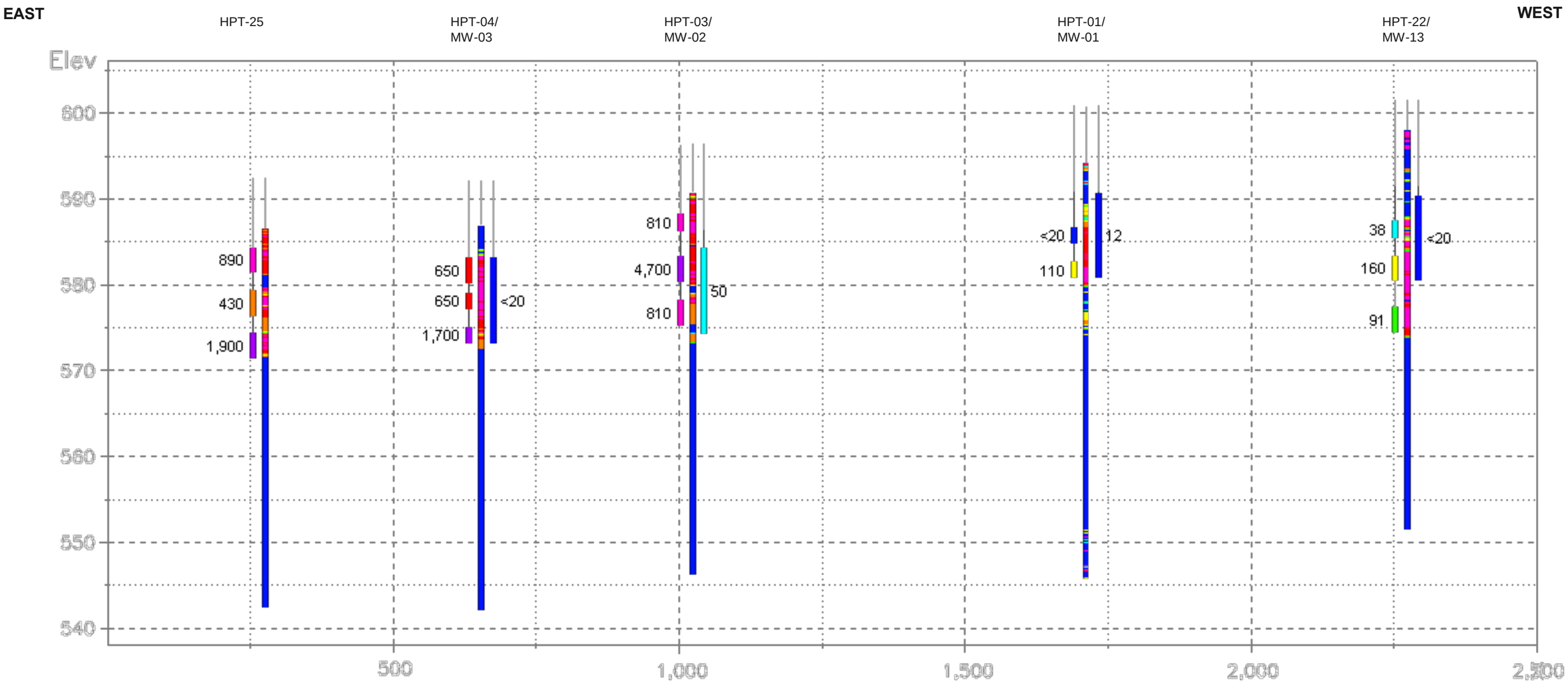
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017 except for MW-12. The data shown at MW-12 is from the most recent sampling event completed at that location (April 2016).

Northern Boundary – Estimated Hydraulic Conductivity and Zinc Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

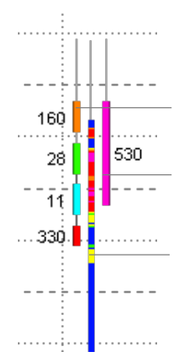


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Zinc Concentration

- >1,500 ug/L
- >750 – 1,500 ug/L
- >500 – 750 ug/L
- >250 – 500 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >15 – 50 ug/L
- Non-Detect – 15 ug/L



HPT/VAP Sample– Sampled Interval and Value

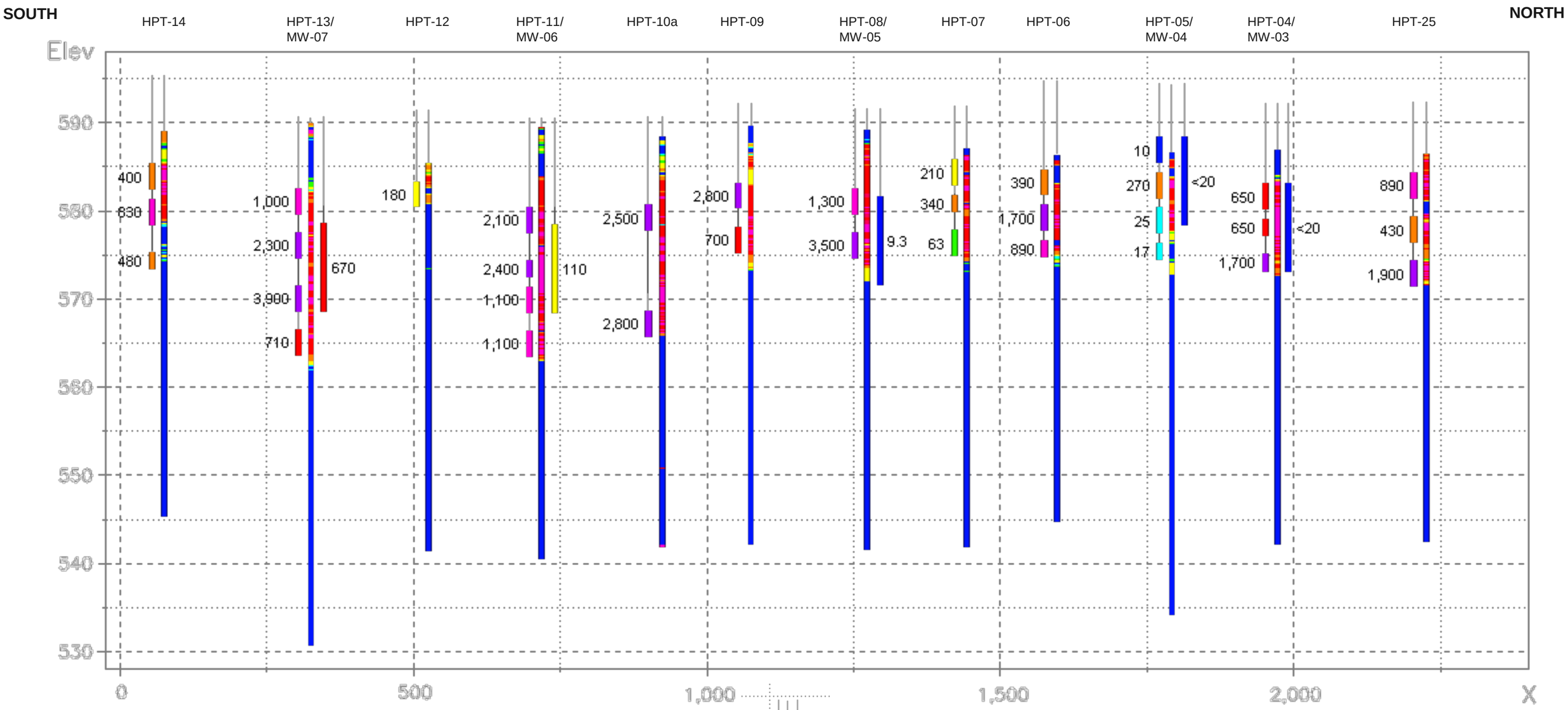
Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

Eastern Boundary – Estimated Hydraulic Conductivity and Zinc Analytical Data

Lake Calumet Cluster Site
Chicago, Illinois

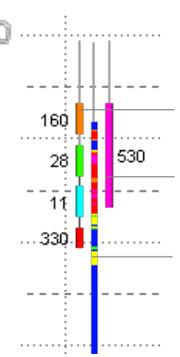


Estimated Hydraulic Conductivity

- >100 ft./day
- >30 – 100 ft./day
- >10 – 30 ft./day
- >3 – 10 ft./day
- >1 – 3 ft./day
- >0.3 – 1 ft./day
- 0 – 0.3 ft./day

Total Zinc Concentration

- >1,500 ug/L
- >750 – 1,500 ug/L
- >500 – 750 ug/L
- >250 – 500 ug/L
- >100 – 250 ug/L
- >50 – 100 ug/L
- >15 – 50 ug/L
- Non-Detect – 15 ug/L



HPT/VAP Sample– Sampled Interval and Value

Monitoring well – Screened Interval and Value

HPT Conductivity Data

NOTES:
1. Vertical exaggeration = 15x
2. The x-axis represents a straight line distance.
3. HPT conductivity data was collected October-November 2015
4. HPT analytical data was collected in November-December 2015
5. Displayed monitoring well groundwater analytical data was collected in February 2017

APPENDIX K

Screening Tables

Table 1. Screening of LCCS Groundwater Data Against Groundwater Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, All Wells[1]	Maximum Non-Detect, All Wells[1]	Illinois Screening Criteria for Groundwater				Illiinois Tiered Approach to Corrective Action Objectives			
						Class I: Potable Resource Groundwater	Exceedance (Yes/No)	Class II: General Resource Groundwater	Exceedance (Yes/No)	Class I: Potable Resource Groundwater	Exceedance (Yes/No)	Class II: General Resource Groundwater	Exceedance (Yes/No)
Anions													
Ammonia Nitrogen	7664-41-7	T	mg/l	785	--	--	--	--	--	--	--	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	1.3	0.2	--	--	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	1.3	0.1	10	No	100	No	10	No	100	No
Nitrite	14797-65-0	T	mg/l	0.035	0.1	--	--	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	1600	50	400	Yes	400	Yes	400	Yes	400	Yes
Gases													
Carbon Dioxide	124-38-9	N	mg/l	450	5	--	--	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	31000	--	--	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	29	--	--	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	5.9	0.5	--	--	--	--	--	--	--	--
General Chemistry													
Total Suspended Solids	ARC-TSS	T	mg/l	140	5	--	--	--	--	--	--	--	--
Metals													
Aluminum	7429-90-5	D	mg/l	1.4	1	--	--	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	1.9	0.2	--	--	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	0.012	0.1	0.006	Yes	0.024	No	0.006	Yes	0.024	No
Antimony	7440-36-0	T	mg/l	0.019	0.1	0.006	Yes	0.024	No	0.006	Yes	0.024	No
Arsenic	7440-38-2	D	mg/l	0.052	0.01	0.01	Yes	0.2	No	0.05	Yes	0.2	No
Arsenic	7440-38-2	T	mg/l	0.058	0.01	0.01	Yes	0.2	No	0.05	Yes	0.2	No
Barium	7440-39-3	D	mg/l	1.2	--	2	No	2	No	2	No	2	No
Barium	7440-39-3	T	mg/l	1.1	--	2	No	2	No	2	No	2	No
Beryllium	7440-41-7	D	mg/l	0.00085	0.02	0.004	No	0.5	No	0.004	No	0.5	No
Beryllium	7440-41-7	T	mg/l	0.0011	0.02	0.004	No	0.5	No	0.004	No	0.5	No
Cadmium	7440-43-9	D	mg/l	0.0061	0.01	0.005	Yes	0.05	No	0.005	Yes	0.05	No
Cadmium	7440-43-9	T	mg/l	0.008	0.01	0.005	Yes	0.05	No	0.005	Yes	0.05	No
Calcium	7440-70-2	D	mg/l	790	--	--	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	930	--	--	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	0.48	0.01	0.1	Yes	1	No	0.1	Yes	1	No
Chromium	7440-47-3	T	mg/l	0.5	0.01	0.1	Yes	1	No	0.1	Yes	1	No
Cobalt	7440-48-4	D	mg/l	0.12	0.005	1	No	1	No	1	No	1	No
Cobalt	7440-48-4	T	mg/l	0.12	0.005	1	No	1	No	1	No	1	No
Copper	7440-50-8	D	mg/l	0.052	0.05	0.65	No	0.65	No	0.65	No	0.65	No
Copper	7440-50-8	T	mg/l	0.082	0.01	0.65	No	0.65	No	0.65	No	0.65	No
Iron	7439-89-6	D	mg/l	41	36	5	Yes	5	Yes	5	Yes	5	Yes
Iron	7439-89-6	T	mg/l	42	34	5	Yes	5	Yes	5	Yes	5	Yes
Lead	7439-92-1	D	mg/l	0.39	0.005	0.0075	Yes	0.1	Yes	0.0075	Yes	0.1	Yes
Lead	7439-92-1	T	mg/l	0.71	0.005	0.0075	Yes	0.1	Yes	0.0075	Yes	0.1	Yes
Magnesium	7439-95-4	D	mg/l	290	0.1	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	300	--	--	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	2.4	0.05	0.15	Yes	10	No	0.15	Yes	10	No
Manganese	7439-96-5	T	mg/l	2.6	0.05	0.15	Yes	10	No	0.15	Yes	10	No
Mercury	7439-97-6	D	mg/l	0.00063	0.0005	0.002	No	0.01	No	0.002	No	0.01	No
Mercury	7439-97-6	T	mg/l	0.0013	0.00023	0.002	No	0.01	No	0.002	No	0.01	No
Nickel	7440-02-0	D	mg/l	0.25	0.01	0.1	Yes	2	No	0.1	Yes	2	No
Nickel	7440-02-0	T	mg/l	0.27	0.01	0.1	Yes	2	No	0.1	Yes	2	No
Potassium	7440-09-7	D	mg/l	700	--	--	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	680	--	--	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	0.039	0.05	0.05	No	0.05	No	0.05	No	0.05	No
Selenium	7782-49-2	T	mg/l	0.023	0.05	0.05	No	0.05	No	0.05	No	0.05	No
Silver	7440-22-4	D	mg/l	0.0016	0.025	0.05	No	--	--	0.05	No	--	--
Silver	7440-22-4	T	mg/l	0.0026	0.025	0.05	No	--	--	0.05	No	--	--
Sodium	7440-23-5	D	mg/l	3600	--	--	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	3600	--	--	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	--	0.05	0.002	Yes	0.02	Yes	0.002	Yes	0.02	Yes
Thallium	7440-28-0	T	mg/l	--	0.05	0.002	Yes	0.02	Yes	0.002	Yes	0.02	Yes
Vanadium	7440-62-2	D	mg/l	0.076	0.005	0.049	Yes	0.1	No	0.049	Yes	0.1	No
Vanadium	7440-62-2	T	mg/l	0.081	0.005	0.049	Yes	0.1	No	0.049	Yes	0.1	No
Zinc	7440-66-6	D	mg/l	0.67	0.02	5	No	10	No	5	No	10	No
Zinc	7440-66-6	T	mg/l	1.1	0.02	5	No	10	No	5	No	10	No
Organochlorine Pesticides													
4,4-DDD	72-54-8	N	ug/l	--	0.2	--	--	--	--	14	No	70	No
4,4-DDE	72-55-9	N	ug/l	--	0.2	--	--	--	--	10	No	50	No
4,4-DDT	50-29-3	N	ug/l	--	0.2	--	--	--	--	6	No	30	No
Aldrin	309-00-2	N	ug/l	--	0.2	--	--	--	--	14	No	70	No
Alpha-BHC	319-84-6	N	ug/l	--	0.2	0.11	Yes	0.55	No	0.11	Yes	0.55	No
Alpha-chlordane	5103-71-9	N	ug/l	--	0.2	--	--	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	0.2	--	--	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	0.2	--	--	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	0.2	--	--	--	--	9	No	45	No
Endosulfan I	959-98-8	N	ug/l	--	0.2	--	--	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	--	0.2	--	--	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	--	0.2	--	--	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	--	0.2	2	No	10	No	2	No	10	No
Endrin aldehyde	7421-93-4	N	ug/l	--	0.2	--	--	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	0.2	--	--	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	0.2	--	--	--	--	0.2	No	1	No
Heptachlor	76-44-8	N	ug/l	--	0.2	0.4	No	2	No	0.4	No	2	No
Heptachlor epoxide	1024-57-3	N	ug/l	--	0.2	0.2	No	1	No	0.2	No	1	No
Methoxychlor	72-43-5	N	ug/l	--	0.4	40	No	200	No	40	No	200	No
Toxaphene	8001-35-2	N	ug/l	--	2	3	No	15	No	3	No	15	No
trans-chlordane	5103-74-2	N	ug/l	--	0.2	--	--	--	--	--	--	--	--
Other													
Sulfide	18496-25-8	N/T	mg/l	12	1	--	--	--	--	--	--	--	--
Total Organic Carbon													
Total Organic Carbon	ARC-TOC	N	mg/l	2200	--	--	--	--	--	--	--	--	--
Polychorinated Biphenyls													
Aroclor 1016	12674-11-2	N	ug/l	--	2	--	--	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	0.93	2	--	--	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	4.45	2	--	--	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	8.1	2	--	--	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	3.5	2	--	--	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	2.4	2	--	--	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	--	2	--	--	--	--	--	--	--	--

Table 1. Screening of LCCS Groundwater Data Against Groundwater Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, All Wells[1]	Maximum Non-Detect, All Wells[1]	Illinois Screening Criteria for Groundwater				Illiinois Tiered Approach to Corrective Action Objectives			
						Class I: Potable Resource Groundwater	Exceedance (Yes/No)	Class II: General Resource Groundwater	Exceedance (Yes/No)	Class I: Potable Resource Groundwater	Exceedance (Yes/No)	Class II: General Resource Groundwater	Exceedance (Yes/No)
Semivolatile Organic Compounds													
1,1-Biphenyl	92-52-4	N	ug/l	38	410	--	--	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	0.32	160	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	810	--	--	--	--	700	Yes	3500	No
2,4,6-Trichlorophenol	88-06-2	N	ug/l	1.3	410	--	--	--	--	10	No	50	No
2,4-Dichlorophenol	120-83-2	N	ug/l	--	810	--	--	--	--	21	Yes	21	Yes
2,4-Dimethylphenol	105-67-9	N	ug/l	470	810	--	--	--	--	140	Yes	140	Yes
2,4-Dinitrophenol	51-28-5	N	ug/l	--	1600	--	--	--	--	14	Yes	14	Yes
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	81	0.1	Yes	0.1	Yes	0.02	Yes	0.02	Yes
2,6-Dinitrotoluene	606-20-2	N	ug/l	2.2	41	0.31	Yes	0.31	Yes	0.31	Yes	0.31	Yes
2-Chloronaphthalene	91-58-7	N	ug/l	3.1	160	--	--	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	5.8	410	--	--	--	--	35	No	175	No
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	1600	--	--	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	360	7.3	28	Yes	140	Yes	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	7600	16	350	Yes	350	Yes	350	Yes	350	Yes
2-Nitroaniline	88-74-4	N	ug/l	--	410	--	--	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	810	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	410	--	--	--	--	20	Yes	100	Yes
3-Nitroaniline	99-09-2	N	ug/l	--	810	--	--	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	410	--	--	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	41	810	--	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	410	--	--	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	510000	1.6	--	--	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	810	--	--	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	1600	--	--	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	29	81	420	No	2100	No	420	No	2100	No
Acenaphthylene	208-96-8	N	ug/l	4.8	81	--	--	--	--	--	--	--	--
Acetophenone	98-86-2	N	ug/l	32	410	--	--	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	12	81	2100	No	10500	No	2100	No	10500	No
Atrazine	1912-24-9	N	ug/l	--	410	3	Yes	15	Yes	3	Yes	15	Yes
Benzaldehyde	100-52-7	N	ug/l	40	1600	--	--	--	--	--	--	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	1.5	16	0.13	Yes	0.65	Yes	0.13	Yes	0.65	Yes
Benzo(a)pyrene	50-32-8	N	ug/l	3.2	16	0.2	Yes	2	Yes	0.2	Yes	2	Yes
Benzo(b)fluoranthene	205-99-2	N	ug/l	3.6	16	0.18	Yes	0.9	Yes	0.18	Yes	0.9	Yes
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	81	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	0.62	16	0.17	Yes	6	No	0.17	Yes	0.85	No
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	3.8	160	--	--	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	1.4	160	--	--	--	--	10	No	10	No
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	290	810	--	--	--	--	6	Yes	60	Yes
Butyl benzyl phthalate	85-68-7	N	ug/l	1.3	160	--	--	--	--	1400	No	7000	No
Caprolactam	105-60-2	N	ug/l	2.9	810	--	--	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	150	410	--	--	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	3.3	41	12	No	60	No	1.5	Yes	7.5	No
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	24	0.3	Yes	1.5	Yes	0.3	Yes	1.5	Yes
Dibenzofuran	132-64-9	N	ug/l	56	160	--	--	--	--	--	--	--	--
Diethyl phthalate	84-66-2	N	ug/l	32	160	5600	No	5600	No	5600	No	5600	No
Dimethyl phthalate	131-11-3	N	ug/l	--	160	--	--	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	5.5	410	700	No	3500	No	700	No	3500	No
Di-n-octyl phthalate	117-84-0	N	ug/l	--	810	--	--	--	--	140	Yes	700	Yes
Fluoranthene	206-44-0	N	ug/l	12	81	280	No	1400	No	280	No	1400	No
Fluorene	86-73-7	N	ug/l	83	81	280	No	1400	No	280	No	1400	No
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	410	--	--	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	41	--	--	--	--	0.06	Yes	0.3	Yes
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	1600	50	Yes	500	Yes	50	Yes	500	Yes
Hexachloroethane	67-72-1	N	ug/l	--	410	--	--	--	--	7	Yes	35	Yes
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	2	16	0.43	Yes	2.2	No	0.43	Yes	2.15	No
Isophorone	78-59-1	N	ug/l	19000	17	--	--	--	--	1400	Yes	1400	Yes
Naphthalene	91-20-3	N	ug/l	3600	3.6	140	Yes	220	Yes	140	Yes	220	Yes
Nitrobenzene	98-95-3	N	ug/l	--	81	--	--	--	--	3.5	Yes	3.5	Yes
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	41	--	--	--	--	1.8	Yes	1.8	Yes
N-Nitrosodiphenylamine	86-30-6	N	ug/l	14.5	81	--	--	--	--	3.2	Yes	16	No
p-Chloroaniline	106-47-8	N	ug/l	13	810	--	--	--	--	28	No	28	No
Pentachlorophenol	87-86-5	N	ug/l	1200	170	1	Yes	5	Yes	1	Yes	5	Yes
Phenanthrene	85-01-8	N	ug/l	69	81	--	--	--	--	--	--	--	--
Phenol	108-95-2	N	ug/l	4000	42	100	Yes	100	Yes	100	Yes	100	Yes
Pyrene	129-00-0	N	ug/l	10	81	210	No	1050	No	210	No	1050	No
Volatile Organic Compounds													
1,1,1-Trichloroethane	71-55-6	N	ug/l	--	20	200	No	1000	No	200	No	1000	No
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	--	20	--	--	--	--	4.3	Yes	420	No
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	20	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	--	20	5	Yes	50	No	5	Yes	50	No
1,1-Dichloroethane	75-34-3	N	ug/l	3300	20	140	Yes	7000	No	700	Yes	3500	No
1,1-Dichloroethene	75-35-4	N	ug/l	10	20	7	Yes	35	No	7	Yes	35	No
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	--	20	70	No	700	No	70	No	700	No
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	100	--	--	--	--	0.2	Yes	0.2	Yes
1,2-Dibromoethane	106-93-4	N	ug/l	--	20	--	--	--	--	0.05	Yes	0.5	Yes
1,2-Dichlorobenzene	95-50-1	N	ug/l	24	20	--	--	--	--	600	No	1500	No
1,2-Dichloroethane	107-06-2	N	ug/l	58	20	--	--	--	--	5	Yes	25	Yes
1,2-Dichloropropane	78-87-5	N	ug/l	1.7	20	5	No	25	No	5	No	25	No
1,3-Dichlorobenzene	541-73-1	N	ug/l	5.6	20	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	23	20	--	--	--	--	75	No	375	No
2-Butanone (MEK)	78-93-3	N	ug/l	2700	100	4200	No	4200	No	4200	No	4200	No
4-Methyl-2-Pentanone	108-10-1	N	ug/l	24000	100	--	--	--	--	560	Yes	--	--
Acetone	67-64-1	N	ug/l	4800	100	6300	No	6300	No	6300	No	6300	No
Benzene	71-43-2	N	ug/l	540	0.5	5	Yes	25	Yes	5	Yes	25	Yes
Bromodichloromethane	75-27-4	N	ug/l	--	20	--	--	--	--	0.2	Yes	0.2	Yes
Bromoform	75-25-2	N	ug/l	--	20	--	--	--	--	1	Yes	1	Yes
Bromomethane	74-83-9	N	ug/l	--	40	--	--	--	--	9.8	Yes	49	No
Carbon Disulfide	75-15-0	N	ug/l	33	40	700	No	3500	No	700	No	3500	No
Carbon Tetrachloride	56-23-5	N	ug/l	--	20	5	Yes	25	No	5	Yes	25	No
CFC-11	75-69-4	N	ug/l	--	20	--	--	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	40	--	--	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	660	20	--	--	--	--	100	Yes	500	Yes
Chlorodibromomethane	124-48-1	N	ug/l	--	20	--	--	--	--	140	No	140	No
Chloroethane	75-00-3	N	ug/l	26	20	--	--	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	0.65	20	--	--	--	--	0.2	Yes	1	No
Chloromethane	74-87-3	N	ug/l	--	20	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	1100	20	70	Yes	200	Yes	70	Yes	200	Yes
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	20	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	110	20	--	--	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	6300	100	5	Yes	50	Yes	5	Yes	50	Yes
Ethylbenzene	100-41-4	N	ug/l	3400	0.5	700	Yes	1000	Yes	700	Yes	1000	Yes
Isopropylbenzene	98-82-8	N	ug/l	110	20	--	--	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	110	100	--	--	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	100	--	--	--	--	35	Yes	--	--
Methylcyclohexane	108-87-2	N	ug/l	170	20	--	--	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	20	70	No	70	No	70	No	70	No
Styrene (Monomer)	100-42-5	N	ug/l	120	20	100	Yes	500	No	100	Yes	500	No
Tetrachloroethene	127-18-4	N	ug/l	680	20	5	Yes	25	Yes	5	Yes	25	Yes
Toluene	108-88-3	N	ug/l	11000	0.5	1000	Yes	2500	Yes	1000	Yes	2500	Yes
Total Xylenes	1330-20-7	N	ug/l	19000	1	10000	Yes	10000	Yes	10000	Yes	10000	Yes
trans-1,2-Dichloroethene	156-60-5	N	ug/l	23	20	100	No	500	No	100	No	500	No
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	20	--	--	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	720	10	5	Yes	25	Yes	5	Yes	25	Yes
Vinyl chloride	75-01-4	N	ug/l	420	10	2	Yes	10	Yes	2	Yes	10	Yes

Notes:

[1] Maximum detect was used to screen criteria if available. If maximum detect not available (i.e., constituent not detected in any samples), the maximum non-detect was used.

-- = not available or not applicable

Table 2. Screening of Maximum LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	Illinois Numeric Water Quality Standards (35 IAC 302.208 and 302.535)							
						Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)	Standards for Open Waters of Lake Michigan	Exceedance (Yes/No)
Anions													
Ammonia Nitrogen	7664-41-7	T	mg/l	785	--	--	--	--	--	--	--	15	Yes
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	0.42	0.2	--	--	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	0.42	0.1	--	--	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	0.035	0.1	--	--	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	640	50	--	--	--	--	--	--	--	--
Gases													
Carbon Dioxide	124-38-9	N	mg/l	320	5	--	--	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	31000	--	--	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	23	--	--	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	5.9	0.5	--	--	--	--	--	--	--	--
General Chemistry													
Total Suspended Solids	ARC-TSS	T	mg/l	72	5	--	--	--	--	--	--	--	--
Metals													
Aluminum	7429-90-5	D	mg/l	1.4	1	--	--	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	1.9	0.2	--	--	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	0.011	0.1	--	--	--	--	--	--	--	--
Antimony	7440-36-0	T	mg/l	0.017	0.1	--	--	--	--	--	--	--	--
Arsenic	7440-38-2	D	mg/l	0.052	0.01	0.36	No	0.19	No	--	--	--	--
Arsenic	7440-38-2	T	mg/l	0.058	0.01	--	--	--	--	--	--	--	--
Barium	7440-39-3	D	mg/l	0.97	--	--	--	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	0.96	--	5	No	--	--	--	--	--	--
Beryllium	7440-41-7	D	mg/l	0.00085	0.02	--	--	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	0.0011	0.02	--	--	--	--	--	--	--	--
Cadmium	7440-43-9	D	mg/l	0.0061	0.01	0.030	No	0.0024	Yes	--	--	--	--
Cadmium	7440-43-9	T	mg/l	0.008	0.01	--	--	--	--	--	--	--	--
Calcium	7440-70-2	D	mg/l	240	--	--	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	240	--	--	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	0.48	0.01	1.3	No	0.44	Yes	--	--	--	--
Chromium	7440-47-3	T	mg/l	0.5	0.01	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	D	mg/l	0.045	0.005	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	T	mg/l	0.044	0.005	--	--	--	--	--	--	--	--
Copper	7440-50-8	D	mg/l	0.052	0.05	0.048	Yes	0.029	Yes	--	--	--	--
Copper	7440-50-8	T	mg/l	0.082	0.01	--	--	--	--	--	--	--	--
Iron	7439-89-6	D	mg/l	26	0.2	1	Yes	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	28	0.2	--	--	--	--	--	--	--	--
Lead	7439-92-1	D	mg/l	0.39	0.005	0.24	Yes	0.051	Yes	--	--	--	--
Lead	7439-92-1	T	mg/l	0.71	0.005	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	D	mg/l	110	--	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	110	--	--	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	2.2	0.05	9.5	No	4.0	No	--	--	--	--
Manganese	7439-96-5	T	mg/l	2.2	0.05	--	--	--	--	--	--	--	--
Mercury	7439-97-6	D	mg/l	0.00063	0.0005	0.0022	No	0.0011	No	--	--	--	--
Mercury	7439-97-6	T	mg/l	0.0013	0.00023	--	--	--	--	0.012	No	--	--
Nickel	7440-02-0	D	mg/l	0.17	0.01	0.21	No	0.013	Yes	--	--	--	--
Nickel	7440-02-0	T	mg/l	0.16	0.01	--	--	--	--	--	--	--	--
Potassium	7440-09-7	D	mg/l	700	--	--	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	680	--	--	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	0.039	0.05	--	--	--	--	--	--	--	--
Selenium	7782-49-2	T	mg/l	0.011	0.05	1	No	--	--	--	--	--	--
Silver	7440-22-4	D	mg/l	0.0016	0.025	--	--	--	--	--	--	--	--
Silver	7440-22-4	T	mg/l	0.0026	0.025	5	No	--	--	--	--	--	--
Sodium	7440-23-5	D	mg/l	3600	--	--	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	3600	--	--	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	--	0.05	--	--	--	--	--	--	--	--
Thallium	7440-28-0	T	mg/l	--	0.05	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	D	mg/l	0.076	0.005	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	T	mg/l	0.081	0.005	--	--	--	--	--	--	--	--
Zinc	7440-66-6	D	mg/l	0.67	0.02	0.30	Yes	0.079	Yes	--	--	--	--
Zinc	7440-66-6	T	mg/l	1.1	0.02	--	--	--	--	--	--	--	--
Organochlorine Pesticides													
4,4-DDD	72-54-8	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
4,4-DDE	72-55-9	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
4,4-DDT	50-29-3	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Aldrin	309-00-2	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Alpha-BHC	319-84-6	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Endosulfan I	959-98-8	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Endrin aldehyde	7421-93-4	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Heptachlor	76-44-8	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Heptachlor epoxide	1024-57-3	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Methoxychlor	72-43-5	N	ug/l	--	0.39	--	--	--	--	--	--	--	--
Toxaphene	8001-35-2	N	ug/l	--	1.9	--	--	--	--	--	--	--	--
trans-chlordane	5103-74-2	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Other													
Sulfide	18496-25-8	N/T	mg/l	12	1	--	--	--	--	--	--	--	--
Total Organic Carbon													
Total Organic Carbon	ARC-TOC	N	mg/l	650	--	--	--	--	--	--	--	--	--
Polychorinated Biphenyls													
Aroclor 1016	12674-11-2	N	ug/l	--	0.43	--	--	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	0.93	0.43	--	--	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	4.45	0.42	--	--	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	8.1	0.43	--	--	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	3.5	0.43	--	--	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	2.4	0.43	--	--	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	--	0.43	--	--	--	--	--	--	--	--

Table 2. Screening of Maximum LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	Illinois Numeric Water Quality Standards for the Chicago Area Waterway System (35 IAC 302.407)					
						Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Anions											
Ammonia Nitrogen	7664-41-7	T	mg/l	785	--	--	--	--	--	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	0.42	0.2	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	0.42	0.1	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	0.035	0.1	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	640	50	--	--	--	--	--	--
Gases											
Carbon Dioxide	124-38-9	N	mg/l	320	5	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	31000	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	23	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	5.9	0.5	--	--	--	--	--	--
General Chemistry											
Total Suspended Solids	ARC-TSS	T	mg/l	72	5	--	--	--	--	--	--
Metals											
Aluminum	7429-90-5	D	mg/l	1.4	1	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	1.9	0.2	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	0.011	0.1	--	--	--	--	--	--
Antimony	7440-36-0	T	mg/l	0.017	0.1	--	--	--	--	--	--
Arsenic	7440-38-2	D	mg/l	0.052	0.01	0.34	No	0.15	No	--	--
Arsenic	7440-38-2	T	mg/l	0.058	0.01	--	--	--	--	--	--
Barium	7440-39-3	D	mg/l	0.97	--	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	0.96	--	--	--	--	--	--	--
Beryllium	7440-41-7	D	mg/l	0.00085	0.02	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	0.0011	0.02	--	--	--	--	--	--
Cadmium	7440-43-9	D	mg/l	0.0061	0.01	0.030	No	0.0023	Yes	--	--
Cadmium	7440-43-9	T	mg/l	0.008	0.01	--	--	--	--	--	--
Calcium	7440-70-2	D	mg/l	240	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	240	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	0.48	0.01	1.4	No	0.18	Yes	--	--
Chromium	7440-47-3	T	mg/l	0.5	0.01	--	--	--	--	--	--
Cobalt	7440-48-4	D	mg/l	0.045	0.005	--	--	--	--	--	--
Cobalt	7440-48-4	T	mg/l	0.044	0.005	--	--	--	--	--	--
Copper	7440-50-8	D	mg/l	0.052	0.05	0.040	Yes	0.024	Yes	--	--
Copper	7440-50-8	T	mg/l	0.082	0.01	--	--	--	--	--	--
Iron	7439-89-6	D	mg/l	26	0.2	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	28	0.2	--	--	--	--	--	--
Lead	7439-92-1	D	mg/l	0.39	0.005	0.24	Yes	0.051	Yes	--	--
Lead	7439-92-1	T	mg/l	0.71	0.005	--	--	--	--	--	--
Magnesium	7439-95-4	D	mg/l	110	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	110	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	2.2	0.05	9.5	No	4.0	No	--	--
Manganese	7439-96-5	T	mg/l	2.2	0.05	--	--	--	--	--	--
Mercury	7439-97-6	D	mg/l	0.00063	0.0005	0.0012	No	0.00065	No	--	--
Mercury	7439-97-6	T	mg/l	0.0013	0.00023	--	--	--	--	0.012	No
Nickel	7440-02-0	D	mg/l	0.17	0.01	0.21	No	0.013	Yes	--	--
Nickel	7440-02-0	T	mg/l	0.16	0.01	--	--	--	--	--	--
Potassium	7440-09-7	D	mg/l	700	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	680	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	0.039	0.05	--	--	--	--	--	--
Selenium	7782-49-2	T	mg/l	0.011	0.05	--	--	--	--	--	--
Silver	7440-22-4	D	mg/l	0.0016	0.025	--	--	--	--	--	--
Silver	7440-22-4	T	mg/l	0.0026	0.025	--	--	--	--	--	--
Sodium	7440-23-5	D	mg/l	3600	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	3600	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	--	0.05	--	--	--	--	--	--
Thallium	7440-28-0	T	mg/l	--	0.05	--	--	--	--	--	--
Vanadium	7440-62-2	D	mg/l	0.076	0.005	--	--	--	--	--	--
Vanadium	7440-62-2	T	mg/l	0.081	0.005	--	--	--	--	--	--
Zinc	7440-66-6	D	mg/l	0.67	0.02	0.30	Yes	0.079	Yes	--	--
Zinc	7440-66-6	T	mg/l	1.1	0.02	--	--	--	--	--	--
Organochlorine Pesticides											
4,4-DDD	72-54-8	N	ug/l	--	0.19	--	--	--	--	--	--
4,4-DDE	72-55-9	N	ug/l	--	0.19	--	--	--	--	--	--
4,4-DDT	50-29-3	N	ug/l	--	0.19	--	--	--	--	--	--
Aldrin	309-00-2	N	ug/l	--	0.19	--	--	--	--	--	--
Alpha-BHC	319-84-6	N	ug/l	--	0.19	--	--	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	0.19	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	0.19	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	0.19	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	0.19	--	--	--	--	--	--
Endosulfan I	959-98-8	N	ug/l	--	0.19	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	--	0.19	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	--	0.19	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	--	0.19	--	--	--	--	--	--
Endrin aldehyde	7421-93-4	N	ug/l	--	0.19	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	0.19	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	0.19	--	--	--	--	--	--
Heptachlor	76-44-8	N	ug/l	--	0.19	--	--	--	--	--	--
Heptachlor epoxide	1024-57-3	N	ug/l	--	0.19	--	--	--	--	--	--
Methoxychlor	72-43-5	N	ug/l	--	0.39	--	--	--	--	--	--
Toxaphene	8001-35-2	N	ug/l	--	1.9	--	--	--	--	--	--
trans-chlordane	5103-74-2	N	ug/l	--	0.19	--	--	--	--	--	--
Other											
Sulfide	18496-25-8	N/T	mg/l	12	1	--	--	--	--	--	--
Total Organic Carbon											
Total Organic Carbon	ARC-TOC	N	mg/l	650	--	--	--	--	--	--	--
Polychorinated Biphenyls											
Aroclor 1016	12674-11-2	N	ug/l	--	0.43	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	0.93	0.43	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	4.45	0.42	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	8.1	0.43	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	3.5	0.43	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	2.4	0.43	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	--	0.43	--	--	--	--	--	--

Table 2. Screening of Maximum LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	Illinois Derived Water Quality Standards (35 IAC 302.210)					
						Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Anions											
Ammonia Nitrogen	7664-41-7	T	mg/l	785	--	--	--	--	--	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	0.42	0.2	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	0.42	0.1	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	0.035	0.1	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	640	50	--	--	--	--	--	--
Gases											
Carbon Dioxide	124-38-9	N	mg/l	320	5	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	31000	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	23	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	5.9	0.5	--	--	--	--	--	--
General Chemistry											
Total Suspended Solids	ARC-TSS	T	mg/l	72	5	--	--	--	--	--	--
Metals											
Aluminum	7429-90-5	D	mg/l	1.4	1	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	1.9	0.2	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	0.011	0.1	--	--	--	--	12000	No
Antimony	7440-36-0	T	mg/l	0.017	0.1	--	--	--	--	--	--
Arsenic	7440-38-2	D	mg/l	0.052	0.01	--	--	--	--	--	--
Arsenic	7440-38-2	T	mg/l	0.058	0.01	--	--	--	--	--	--
Barium	7440-39-3	D	mg/l	0.97	--	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	0.96	--	--	--	--	--	--	--
Beryllium	7440-41-7	D	mg/l	0.00085	0.02	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	0.0011	0.02	--	--	--	--	--	--
Cadmium	7440-43-9	D	mg/l	0.0061	0.01	--	--	--	--	--	--
Cadmium	7440-43-9	T	mg/l	0.008	0.01	--	--	--	--	--	--
Calcium	7440-70-2	D	mg/l	240	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	240	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	0.48	0.01	--	--	--	--	--	--
Chromium	7440-47-3	T	mg/l	0.5	0.01	--	--	--	--	--	--
Cobalt	7440-48-4	D	mg/l	0.045	0.005	--	--	--	--	--	--
Cobalt	7440-48-4	T	mg/l	0.044	0.005	--	--	--	--	--	--
Copper	7440-50-8	D	mg/l	0.052	0.05	--	--	--	--	--	--
Copper	7440-50-8	T	mg/l	0.082	0.01	--	--	--	--	--	--
Iron	7439-89-6	D	mg/l	26	0.2	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	28	0.2	--	--	--	--	--	--
Lead	7439-92-1	D	mg/l	0.39	0.005	--	--	--	--	--	--
Lead	7439-92-1	T	mg/l	0.71	0.005	--	--	--	--	--	--
Magnesium	7439-95-4	D	mg/l	110	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	110	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	2.2	0.05	--	--	--	--	--	--
Manganese	7439-96-5	T	mg/l	2.2	0.05	--	--	--	--	--	--
Mercury	7439-97-6	D	mg/l	0.00063	0.0005	--	--	--	--	--	--
Mercury	7439-97-6	T	mg/l	0.0013	0.00023	--	--	--	--	--	--
Nickel	7440-02-0	D	mg/l	0.17	0.01	--	--	--	--	--	--
Nickel	7440-02-0	T	mg/l	0.16	0.01	--	--	--	--	--	--
Potassium	7440-09-7	D	mg/l	700	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	680	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	0.039	0.05	--	--	--	--	--	--
Selenium	7782-49-2	T	mg/l	0.011	0.05	--	--	--	--	--	--
Silver	7440-22-4	D	mg/l	0.0016	0.025	--	--	--	--	--	--
Silver	7440-22-4	T	mg/l	0.0026	0.025	--	--	--	--	--	--
Sodium	7440-23-5	D	mg/l	3600	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	3600	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	--	0.05	--	--	--	--	0.003	Yes
Thallium	7440-28-0	T	mg/l	--	0.05	--	--	--	--	--	--
Vanadium	7440-62-2	D	mg/l	0.076	0.005	--	--	--	--	--	--
Vanadium	7440-62-2	T	mg/l	0.081	0.005	--	--	--	--	--	--
Zinc	7440-66-6	D	mg/l	0.67	0.02	--	--	--	--	--	--
Zinc	7440-66-6	T	mg/l	1.1	0.02	--	--	--	--	--	--
Organochlorine Pesticides											
4,4-DDD	72-54-8	N	ug/l	--	0.19	--	--	--	--	0.00027	Yes
4,4-DDE	72-55-9	N	ug/l	--	0.19	--	--	--	--	0.00019	Yes
4,4-DDT	50-29-3	N	ug/l	--	0.19	--	--	--	--	0.00019	Yes
Aldrin	309-00-2	N	ug/l	--	0.19	--	--	--	--	0.000046	Yes
Alpha-BHC	319-84-6	N	ug/l	--	0.19	--	--	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	0.19	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	0.19	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	0.19	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	0.19	--	--	--	--	--	--
Endosulfan I	959-98-8	N	ug/l	--	0.19	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	--	0.19	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	--	0.19	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	--	0.19	--	--	--	--	--	--
Endrin aldehyde	7421-93-4	N	ug/l	--	0.19	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	0.19	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	0.19	--	--	--	--	--	--
Heptachlor	76-44-8	N	ug/l	--	0.19	--	--	--	--	--	--
Heptachlor epoxide	1024-57-3	N	ug/l	--	0.19	--	--	--	--	--	--
Methoxychlor	72-43-5	N	ug/l	--	0.39	--	--	--	--	--	--
Toxaphene	8001-35-2	N	ug/l	--	1.9	--	--	--	--	0.00024	Yes
trans-chlordane	5103-74-2	N	ug/l	--	0.19	--	--	--	--	--	--
Other											
Sulfide	18496-25-8	N/T	mg/l	12	1	--	--	--	--	--	--
Total Organic Carbon											
Total Organic Carbon	ARC-TOC	N	mg/l	650	--	--	--	--	--	--	--
Polychorinated Biphenyls											
Aroclor 1016	12674-11-2	N	ug/l	--	0.43	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	0.93	0.43	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	4.45	0.42	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	8.1	0.43	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	3.5	0.43	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	2.4	0.43	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	--	0.43	--	--	--	--	--	--

Table 2. Screening of Maximum LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	USEPA Ambient Water Quality Criteria							
						Human Health Criteria, Water and Organism	Exceedance (Yes/No)	Human Health Criteria, Organism Only	Exceedance (Yes/No)	Acute Aquatic Life Criteria	Exceedance (Yes/No)	Chronic Aquatic Life Criteria	Exceedance (Yes/No)
Anions													
Ammonia Nitrogen	7664-41-7	T	mg/l	785	--	--	--	--	--	--	--	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	0.42	0.2	--	--	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	0.42	0.1	10	No	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	0.035	0.1	--	--	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	640	50	--	--	--	--	--	--	--	--
Gases													
Carbon Dioxide	124-38-9	N	mg/l	320	5	--	--	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	31000	--	--	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	23	--	--	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	5.9	0.5	--	--	--	--	--	--	--	--
General Chemistry													
Total Suspended Solids	ARC-TSS	T	mg/l	72	5	--	--	--	--	--	--	--	--
Metals													
Aluminum	7429-90-5	D	mg/l	1.4	1	--	--	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	1.9	0.2	--	--	--	--	0.75	Yes	0.087	Yes
Antimony	7440-36-0	D	mg/l	0.011	0.1	0.0056	Yes	0.64	No	--	--	--	--
Antimony	7440-36-0	T	mg/l	0.017	0.1	0.0056	Yes	0.64	No	--	--	--	--
Arsenic	7440-38-2	D	mg/l	0.052	0.01	0.000018	Yes	0.00014	Yes	0.34	No	0.15	No
Arsenic	7440-38-2	T	mg/l	0.058	0.01	0.000018	Yes	0.00014	Yes	--	--	--	--
Barium	7440-39-3	D	mg/l	0.97	--	1	No	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	0.96	--	1	No	--	--	--	--	--	--
Beryllium	7440-41-7	D	mg/l	0.00085	0.02	--	--	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	0.0011	0.02	--	--	--	--	--	--	--	--
Cadmium	7440-43-9	D	mg/l	0.0061	0.01	--	--	--	--	0.0050	Yes	0.0016	Yes
Cadmium	7440-43-9	T	mg/l	0.008	0.01	--	--	--	--	--	--	--	--
Calcium	7440-70-2	D	mg/l	240	--	--	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	240	--	--	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	0.48	0.01	--	--	--	--	1.4	No	0.18	Yes
Chromium	7440-47-3	T	mg/l	0.5	0.01	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	D	mg/l	0.045	0.005	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	T	mg/l	0.044	0.005	--	--	--	--	--	--	--	--
Copper	7440-50-8	D	mg/l	0.052	0.05	1.3	No	--	--	--	--	--	--
Copper	7440-50-8	T	mg/l	0.082	0.01	1.3	No	--	--	--	--	--	--
Iron	7439-89-6	D	mg/l	26	0.2	--	--	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	28	0.2	--	--	--	--	--	--	1	Yes
Lead	7439-92-1	D	mg/l	0.39	0.005	--	--	--	--	0.21	Yes	0.0081	Yes
Lead	7439-92-1	T	mg/l	0.71	0.005	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	D	mg/l	110	--	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	110	--	--	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	2.2	0.05	0.05	Yes	0.1	Yes	--	--	--	--
Manganese	7439-96-5	T	mg/l	2.2	0.05	0.05	Yes	0.1	Yes	--	--	--	--
Mercury	7439-97-6	D	mg/l	0.00063	0.0005	--	--	--	--	0.0014	No	0.00077	No
Mercury	7439-97-6	T	mg/l	0.0013	0.00023	--	--	--	--	--	--	--	--
Nickel	7440-02-0	D	mg/l	0.17	0.01	0.61	No	4.6	No	1.2	No	0.13	Yes
Nickel	7440-02-0	T	mg/l	0.16	0.01	0.61	No	4.6	No	--	--	--	--
Potassium	7440-09-7	D	mg/l	700	--	--	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	680	--	--	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	0.039	0.05	0.17	No	4.2	No	--	--	--	--
Selenium	7782-49-2	T	mg/l	0.011	0.05	0.17	No	4.2	No	--	--	--	--
Silver	7440-22-4	D	mg/l	0.0016	0.025	--	--	--	--	0.021	No	--	--
Silver	7440-22-4	T	mg/l	0.0026	0.025	--	--	--	--	--	--	--	--
Sodium	7440-23-5	D	mg/l	3600	--	--	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	3600	--	--	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	--	0.05	0.00024	Yes	0.00047	Yes	--	--	--	--
Thallium	7440-28-0	T	mg/l	--	0.05	0.00024	Yes	0.00047	Yes	--	--	--	--
Vanadium	7440-62-2	D	mg/l	0.076	0.005	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	T	mg/l	0.081	0.005	--	--	--	--	--	--	--	--
Zinc	7440-66-6	D	mg/l	0.67	0.02	7.4	No	26	No	0.3	Yes	0.3	Yes
Zinc	7440-66-6	T	mg/l	1.1	0.02	7.4	No	26	No	--	--	--	--
Organochlorine Pesticides													
4,4-DDD	72-54-8	N	ug/l	--	0.19	0.00012	Yes	0.00012	Yes	--	--	--	--
4,4-DDE	72-55-9	N	ug/l	--	0.19	0.000018	Yes	0.000018	Yes	--	--	--	--
4,4-DDT	50-29-3	N	ug/l	--	0.19	0.00003	Yes	0.00003	Yes	1.1	No	0.001	Yes
Aldrin	309-00-2	N	ug/l	--	0.19	0.00000077	Yes	0.00000077	Yes	3	No	--	--
Alpha-BHC	319-84-6	N	ug/l	--	0.19	0.00036	Yes	0.00039	Yes	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	0.19	0.008	Yes	0.014	Yes	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	0.19	0.0000012	Yes	0.0000012	Yes	0.24	No	0.056	Yes
Endosulfan I	959-98-8	N	ug/l	--	0.19	20	No	30	No	0.22	No	0.056	Yes
Endosulfan II	33213-65-9	N	ug/l	--	0.19	20	No	40	No	0.22	No	0.056	Yes
Endosulfan sulfate	1031-07-8	N	ug/l	--	0.19	20	No	40	No	--	--	--	--
Endrin	72-20-8	N	ug/l	--	0.19	0.03	Yes	0.03	Yes	0.086	Yes	0.036	Yes
Endrin aldehyde	7421-93-4	N	ug/l	--	0.19	1	No	1	No	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	0.19	4.2	No	4.4	No	0.95	No	--	--
Heptachlor	76-44-8	N	ug/l	--	0.19	0.0000059	Yes	0.0000059	Yes	0.52	No	0.0038	Yes
Heptachlor epoxide	1024-57-3	N	ug/l	--	0.19	0.000032	Yes	0.000032	Yes	0.52	No	0.0038	Yes
Methoxychlor	72-43-5	N	ug/l	--	0.39	0.02	Yes	0.02	Yes	--	--	0.03	Yes
Toxaphene	8001-35-2	N	ug/l	--	1.9	0.0007	Yes	0.00071	Yes	0.73	Yes	0.0002	Yes
trans-chlordane	5103-74-2	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Other													
Sulfide	18496-25-8	N/T	mg/l	12	1	--	--	--	--	--	--	--	--
Total Organic Carbon													
Total Organic Carbon	ARC-TOC	N	mg/l	650	--	--	--	--	--	--	--	--	--
Polychorinated Biphenyls													
Aroclor 1016	12674-11-2	N	ug/l	--	0.43	--	--	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	0.93	0.43	--	--	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	4.45	0.42	--	--	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	8.1	0.43	--	--	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	3.5	0.43	--	--	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	2.4	0.43	--	--	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	--	0.43	--	--	--	--	--	--	--	--

Table 2. Screening of Maximum LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	Calumet Open Space Reserve						Recreator Surface Water Benchmark	
						Surface Water Background	Exceedance (Yes/No)	Surface Water Threshold	Exceedance (Yes/No)	Surface Water Benchmark	Exceedance (Yes/No)	Benchmark	Exceedance (Yes/No)
Anions													
Ammonia Nitrogen	7664-41-7	T	mg/l	785	--	--	--	25	Yes	140	Yes	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	0.42	0.2	--	--	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	0.42	0.1	--	--	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	0.035	0.1	--	--	--	--	--	--	18.1	No
Sulfate	14808-79-8	T	mg/l	640	50	--	--	--	--	--	--	--	--
Gases													
Carbon Dioxide	124-38-9	N	mg/l	320	5	--	--	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	31000	--	--	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	23	--	--	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	5.9	0.5	--	--	--	--	--	--	--	--
General Chemistry													
Total Suspended Solids	ARC-TSS	T	mg/l	72	5	--	--	--	--	--	--	--	--
Metals													
Aluminum	7429-90-5	D	mg/l	1.4	1	0.14	Yes	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	1.9	0.2	0.14	Yes	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	0.011	0.1	< 0.008	Yes	0.03	No	0.088	No	0.0562	No
Antimony	7440-36-0	T	mg/l	0.017	0.1	< 0.008	Yes	0.03	No	0.088	No	0.0562	No
Arsenic	7440-38-2	D	mg/l	0.052	0.01	0.0025	Yes	0.048	Yes	0.34	No	0.00969	Yes
Arsenic	7440-38-2	T	mg/l	0.058	0.01	0.0025	Yes	0.048	Yes	0.34	No	0.00969	Yes
Barium	7440-39-3	D	mg/l	0.97	--	0.05	Yes	5	No	5	No	21.6	No
Barium	7440-39-3	T	mg/l	0.96	--	0.05	Yes	5	No	5	No	21.6	No
Beryllium	7440-41-7	D	mg/l	0.00085	0.02	< 0.004	No	--	--	--	--	0.0443	No
Beryllium	7440-41-7	T	mg/l	0.0011	0.02	< 0.004	No	--	--	--	--	0.0443	No
Cadmium	7440-43-9	D	mg/l	0.0061	0.01	< 0.002	Yes	0.0051	Yes	0.0143	No	0.0461	No
Cadmium	7440-43-9	T	mg/l	0.008	0.01	< 0.002	Yes	0.0051	Yes	0.0143	No	0.0461	No
Calcium	7440-70-2	D	mg/l	240	--	--	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	240	--	--	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	0.48	0.01	< 0.008	Yes	--	--	--	--	561	No
Chromium	7440-47-3	T	mg/l	0.5	0.01	< 0.008	Yes	--	--	--	--	561	No
Cobalt	7440-48-4	D	mg/l	0.045	0.005	< 0.008	Yes	0.024	Yes	0.11	No	0.0558	No
Cobalt	7440-48-4	T	mg/l	0.044	0.005	< 0.008	Yes	0.024	Yes	0.11	No	0.0558	No
Copper	7440-50-8	D	mg/l	0.052	0.05	0.0051	Yes	0.0232	Yes	0.0364	Yes	7.22	No
Copper	7440-50-8	T	mg/l	0.082	0.01	0.0051	Yes	0.0232	Yes	0.0364	Yes	7.22	No
Iron	7439-89-6	D	mg/l	26	0.2	0.71	Yes	1	Yes	1	Yes	126	No
Iron	7439-89-6	T	mg/l	28	0.2	0.71	Yes	1	Yes	1	Yes	126	No
Lead	7439-92-1	D	mg/l	0.39	0.005	< 0.002	Yes	0.0167	Yes	0.3182	Yes	--	--
Lead	7439-92-1	T	mg/l	0.71	0.005	< 0.002	Yes	0.0167	Yes	0.3182	Yes	--	--
Magnesium	7439-95-4	D	mg/l	110	--	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	110	--	--	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	2.2	0.05	0.042	Yes	1	Yes	1	Yes	1.96	Yes
Manganese	7439-96-5	T	mg/l	2.2	0.05	0.042	Yes	1	Yes	1	Yes	1.96	Yes
Mercury	7439-97-6	D	mg/l	0.00063	0.0005	0.000017	Yes	0.0009	No	0.0017	No	--	--
Mercury	7439-97-6	T	mg/l	0.0013	0.00023	0.000017	Yes	0.0009	Yes	0.0017	No	--	--
Nickel	7440-02-0	D	mg/l	0.17	0.01	< 0.02	Yes	0.1336	Yes	1.2028	No	3.01	No
Nickel	7440-02-0	T	mg/l	0.16	0.01	< 0.02	Yes	0.1336	Yes	1.2028	No	3.01	No
Potassium	7440-09-7	D	mg/l	700	--	--	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	680	--	--	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	0.039	0.05	< 0.002	Yes	0.005	Yes	0.01	Yes	0.903	No
Selenium	7782-49-2	T	mg/l	0.011	0.05	< 0.002	Yes	0.005	Yes	0.01	Yes	0.903	No
Silver	7440-22-4	D	mg/l	0.0016	0.025	< 0.002	No	0.005	No	0.005	No	0.529	No
Silver	7440-22-4	T	mg/l	0.0026	0.025	< 0.002	Yes	0.005	No	0.005	No	0.529	No
Sodium	7440-23-5	D	mg/l	3600	--	--	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	3600	--	--	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	--	0.05	< 0.002	Yes	0.01	Yes	0.02	Yes	--	--
Thallium	7440-28-0	T	mg/l	--	0.05	< 0.002	Yes	0.01	Yes	0.02	Yes	--	--
Vanadium	7440-62-2	D	mg/l	0.076	0.005	< 0.002	Yes	0.012	Yes	0.19	No	0.315	No
Vanadium	7440-62-2	T	mg/l	0.081	0.005	< 0.002	Yes	0.012	Yes	0.19	No	0.315	No
Zinc	7440-66-6	D	mg/l	0.67	0.02	0.012	Yes	0.3039	Yes	0.3014	Yes	55.3	No
Zinc	7440-66-6	T	mg/l	1.1	0.02	0.012	Yes	0.3039	Yes	0.3014	Yes	55.3	No
Organochlorine Pesticides													
4,4-DDD	72-54-8	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
4,4-DDE	72-55-9	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
4,4-DDT	50-29-3	N	ug/l	--	0.19	--	--	0.000001	Yes	0.000001	Yes	--	--
Aldrin	309-00-2	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Alpha-BHC	319-84-6	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	0.19	--	--	0.06	Yes	0.24	No	--	--
Endosulfan I	959-98-8	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	--	0.19	--	--	0.03	Yes	0.16	Yes	--	--
Endrin aldehyde	7421-93-4	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Heptachlor	76-44-8	N	ug/l	--	0.19	--	--	0.004	Yes	0.52	No	--	--
Heptachlor epoxide	1024-57-3	N	ug/l	--	0.19	--	--	0.004	Yes	0.52	No	--	--
Methoxychlor	72-43-5	N	ug/l	--	0.39	--	--	--	--	--	--	--	--
Toxaphene	8001-35-2	N	ug/l	--	1.9	--	--	--	--	--	--	--	--
trans-chlordane	5103-74-2	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
Other													
Sulfide	18496-25-8	N/T	mg/l	12	1	--	--	--	--	--	--	--	--
Total Organic Carbon													
Total Organic Carbon	ARC-TOC	N	mg/l	650	--	--	--	--	--	--	--	--	--
Polychorinated Biphenyls													
Aroclor 1016	12674-11-2	N	ug/l	--	0.43	--	--	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	0.93	0.43	--	--	--	--	--	--	0.194	Yes
Aroclor 1232	11141-16-5	N	ug/l	4.45	0.42	--	--	--	--	--	--	0.194	Yes
Aroclor 1242	53469-21-9	N	ug/l	8.1	0.43	--	--	--	--	--	--	8.1	No
Aroclor 1248	12672-29-6	N	ug/l	3.5	0.43	--	--	--	--	--	--	8.1	No
Aroclor 1254	11097-69-1	N	ug/l	2.4	0.43	--	--	--	--	--	--	3.8	No
Aroclor 1260	11096-82-5	N	ug/l	--	0.43	--	--	--	--	--	--	--	--

Table 2. Screening of Maximum LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	Illinois Numeric Water Quality Standards (35 IAC 302.208 and 302.535)							
						Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)	Standards for Open Waters of Lake Michigan	Exceedance (Yes/No)
Semivolatile Organic Compounds													
1,1-Biphenyl	92-52-4	N	ug/l	2.2	42.5	--	--	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	0.32	17	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	85	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	120-83-2	N	ug/l	--	85	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	470	36.5	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	51-28-5	N	ug/l	--	170	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	7.4	--	--	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	N	ug/l	3.1	17	--	--	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	170	--	--	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	9.4	7.3	--	--	--	--	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	88	1.7	--	--	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	85	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	85	--	--	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	41	85	--	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	290	1.6	--	--	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	85	--	--	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	170	--	--	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	4.3	8.5	--	--	--	--	--	--	--	--
Acenaphthylene	208-96-8	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
Acetophenone	98-86-2	N	ug/l	17	42.5	--	--	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	3.3	8.5	--	--	--	--	--	--	--	--
Atrazine	1912-24-9	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
Benzaldehyde	100-52-7	N	ug/l	40	300	--	--	--	--	--	--	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	1.5	1.7	--	--	--	--	--	--	--	--
Benzo(a)pyrene	50-32-8	N	ug/l	3.2	1.7	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	205-99-2	N	ug/l	3.6	1.7	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	0.62	1.7	--	--	--	--	--	--	--	--
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	17	--	--	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	--	17	--	--	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	290	36	--	--	--	--	--	--	--	--
Butyl benzyl phthalate	85-68-7	N	ug/l	--	17	--	--	--	--	--	--	--	--
Caprolactam	105-60-2	N	ug/l	--	85	--	--	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	5.7	42.5	--	--	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	3.3	4.25	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	2.55	--	--	--	--	--	--	--	--
Dibenzofuran	132-64-9	N	ug/l	--	17	--	--	--	--	--	--	--	--
Diethyl phthalate	84-66-2	N	ug/l	--	17	--	--	--	--	--	--	--	--
Dimethyl phthalate	131-11-3	N	ug/l	--	17	--	--	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	1.4	42.5	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	117-84-0	N	ug/l	--	85	--	--	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	12	8.5	--	--	--	--	--	--	--	--
Fluorene	86-73-7	N	ug/l	3.2	8.5	--	--	--	--	--	--	--	--
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	170	--	--	--	--	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	2	1.7	--	--	--	--	--	--	--	--
Isophorone	78-59-1	N	ug/l	--	17	--	--	--	--	--	--	--	--
Naphthalene	91-20-3	N	ug/l	48	3.6	--	--	--	--	--	--	--	--
Nitrobenzene	98-95-3	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	5.4	8.5	--	--	--	--	--	--	--	--
p-Chloroaniline	106-47-8	N	ug/l	--	85	--	--	--	--	--	--	--	--
Pentachlorophenol	87-86-5	N	ug/l	--	170	--	--	--	--	--	--	--	--
Phenanthrene	85-01-8	N	ug/l	16	8.5	--	--	--	--	--	--	--	--
Phenol	108-95-2	N	ug/l	45.5	42	100	No	--	--	--	--	--	--
Pyrene	129-00-0	N	ug/l	10	8.5	--	--	--	--	--	--	--	--
Volatile Organic Compounds													
1,1,1-Trichloroethane	71-55-6	N	ug/l	--	1	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	--	1	--	--	--	--	--	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	1	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	--	1	--	--	--	--	--	--	--	--
1,1-Dichloroethane	75-34-3	N	ug/l	24	1	--	--	--	--	--	--	--	--
1,1-Dichloroethene	75-35-4	N	ug/l	--	1	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	--	1	--	--	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	5	--	--	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	1	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	8.9	1	--	--	--	--	--	--	--	--
1,2-Dichloroethane	107-06-2	N	ug/l	58	1	--	--	--	--	--	--	--	--
1,2-Dichloropropane	78-87-5	N	ug/l	1.7	1	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	541-73-1	N	ug/l	--	1	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	17	1	--	--	--	--	--	--	--	--
2-Butanone (MEK)	78-93-3	N	ug/l	24	5	--	--	--	--	--	--	--	--
4-Methyl-2-Pentanone	108-10-1	N	ug/l	100	5	--	--	--	--	--	--	--	--
Acetone	67-64-1	N	ug/l	56	5	--	--	--	--	--	--	--	--
Benzene	71-43-2	N	ug/l	530	0.5	4200	No	860	No	310	Yes	--	--
Bromodichloromethane	75-27-4	N	ug/l	--	1	--	--	--	--	--	--	--	--
Bromoform	75-25-2	N	ug/l	--	1	--	--	--	--	--	--	--	--
Bromomethane	74-83-9	N	ug/l	--	2	--	--	--	--	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	33	2	--	--	--	--	--	--	--	--
Carbon Tetrachloride	56-23-5	N	ug/l	--	1	--	--	--	--	--	--	--	--
CFC-11	75-69-4	N	ug/l	--	1	--	--	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	2	--	--	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	4.6	1	--	--	--	--	--	--	--	--
Chlorodibromomethane	124-48-1	N	ug/l	--	1	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	N	ug/l	--	1	--	--	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	0.65	2	--	--	--	--	--	--	--	--
Chloromethane	74-87-3	N	ug/l	--	1	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	11	1	--	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	1	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	2.2	1	--	--	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	6.9	5	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	180	0.5	150	Yes	14	Yes	--	--	--	--
Isopropylbenzene	98-82-8	N	ug/l	40	1	--	--	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	110	5	--	--	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	5	--	--	--	--	--	--	--	--
Methylcyclohexane	108-87-2	N	ug/l	1.4	1	--	--	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	1	--	--	--	--	--	--	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	1	--	--	--	--	--	--	--	--
Tetrachloroethene	127-18-4	N	ug/l	--	1	--	--	--	--	--	--	--	--
Toluene	108-88-3	N	ug/l	420	0.5	2000	No	600	No	--	--	--	--
Total Xylenes	1330-20-7	N	ug/l	910	1	920	No	360	Yes	--	--	--	--
trans-1,2-Dichloroethene	156-60-5	N	ug/l	1.1	1	--	--	--	--	--	--	--	--
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	1	--	--	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	2.4	0.5	--	--	--	--	--	--	--	--
Vinyl chloride	75-01-4	N	ug/l	13	0.5	--	--	--	--	--	--	--	--

Notes:

[1] Maximum detect was used to screen criteria if available. If maximum detect not available (i.e., constituent not detected in any samples), the maximum non-detect was used.

-- = not available or not applicable

Table 2. Screening of Maximum LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	Illinois Numeric Water Quality Standards for the Chicago Area Waterway System (35 IAC 302.407)					
						Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Semivolatile Organic Compounds											
1,1-Biphenyl	92-52-4	N	ug/l	2.2	42.5	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	0.32	17	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	85	--	--	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	N	ug/l	--	42.5	--	--	--	--	--	--
2,4-Dichlorophenol	120-83-2	N	ug/l	--	85	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	470	36.5	--	--	--	--	--	--
2,4-Dinitrophenol	51-28-5	N	ug/l	--	170	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	8.5	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	7.4	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	N	ug/l	3.1	17	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	--	42.5	--	--	--	--	--	--
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	170	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	9.4	7.3	--	--	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	88	1.7	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	42.5	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	85	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	42.5	--	--	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	85	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	42.5	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	41	85	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	42.5	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	290	1.6	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	85	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	170	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	4.3	8.5	--	--	--	--	--	--
Acenaphthylene	208-96-8	N	ug/l	--	8.5	--	--	--	--	--	--
Acetophenone	98-86-2	N	ug/l	17	42.5	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	3.3	8.5	--	--	--	--	--	--
Atrazine	1912-24-9	N	ug/l	--	42.5	--	--	--	--	--	--
Benzaldehyde	100-52-7	N	ug/l	40	300	--	--	--	--	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	1.5	1.7	--	--	--	--	--	--
Benzo(a)pyrene	50-32-8	N	ug/l	3.2	1.7	--	--	--	--	--	--
Benzo(b)fluoranthene	205-99-2	N	ug/l	3.6	1.7	--	--	--	--	--	--
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	8.5	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	0.62	1.7	--	--	--	--	--	--
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	17	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	--	17	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	290	36	--	--	--	--	--	--
Butyl benzyl phthalate	85-68-7	N	ug/l	--	17	--	--	--	--	--	--
Caprolactam	105-60-2	N	ug/l	--	85	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	5.7	42.5	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	3.3	4.25	--	--	--	--	--	--
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	2.55	--	--	--	--	--	--
Dibenzofuran	132-64-9	N	ug/l	--	17	--	--	--	--	--	--
Diethyl phthalate	84-66-2	N	ug/l	--	17	--	--	--	--	--	--
Dimethyl phthalate	131-11-3	N	ug/l	--	17	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	1.4	42.5	--	--	--	--	--	--
Di-n-octyl phthalate	117-84-0	N	ug/l	--	85	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	12	8.5	--	--	--	--	--	--
Fluorene	86-73-7	N	ug/l	3.2	8.5	--	--	--	--	--	--
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	42.5	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	4.25	--	--	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	170	--	--	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	--	42.5	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	2	1.7	--	--	--	--	--	--
Isophorone	78-59-1	N	ug/l	--	17	--	--	--	--	--	--
Naphthalene	91-20-3	N	ug/l	48	3.6	--	--	--	--	--	--
Nitrobenzene	98-95-3	N	ug/l	--	8.5	--	--	--	--	--	--
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	4.25	--	--	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	5.4	8.5	--	--	--	--	--	--
p-Chloroaniline	106-47-8	N	ug/l	--	85	--	--	--	--	--	--
Pentachlorophenol	87-86-5	N	ug/l	--	170	--	--	--	--	--	--
Phenanthrene	85-01-8	N	ug/l	16	8.5	--	--	--	--	--	--
Phenol	108-95-2	N	ug/l	45.5	42	--	--	--	--	860000	No
Pyrene	129-00-0	N	ug/l	10	8.5	--	--	--	--	--	--
Volatile Organic Compounds											
1,1,1-Trichloroethane	71-55-6	N	ug/l	--	1	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	--	1	--	--	--	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	1	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	--	1	--	--	--	--	--	--
1,1-Dichloroethane	75-34-3	N	ug/l	24	1	--	--	--	--	--	--
1,1-Dichloroethene	75-35-4	N	ug/l	--	1	--	--	--	--	--	--
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	--	1	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	5	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	1	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	8.9	1	--	--	--	--	--	--
1,2-Dichloroethane	107-06-2	N	ug/l	58	1	--	--	--	--	--	--
1,2-Dichloropropane	78-87-5	N	ug/l	1.7	1	--	--	--	--	--	--
1,3-Dichlorobenzene	541-73-1	N	ug/l	--	1	--	--	--	--	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	17	1	--	--	--	--	--	--
2-Butanone (MEK)	78-93-3	N	ug/l	24	5	--	--	--	--	--	--
4-Methyl-2-Pentanone	108-10-1	N	ug/l	100	5	--	--	--	--	--	--
Acetone	67-64-1	N	ug/l	56	5	--	--	--	--	--	--
Benzene	71-43-2	N	ug/l	530	0.5	4200	No	860	No	310	Yes
Bromodichloromethane	75-27-4	N	ug/l	--	1	--	--	--	--	--	--
Bromoform	75-25-2	N	ug/l	--	1	--	--	--	--	--	--
Bromomethane	74-83-9	N	ug/l	--	2	--	--	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	33	2	--	--	--	--	--	--
Carbon Tetrachloride	56-23-5	N	ug/l	--	1	--	--	--	--	--	--
CFC-11	75-69-4	N	ug/l	--	1	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	2	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	4.6	1	--	--	--	--	--	--
Chlorodibromomethane	124-48-1	N	ug/l	--	1	--	--	--	--	--	--
Chloroethane	75-00-3	N	ug/l	--	1	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	0.65	2	--	--	--	--	--	--
Chloromethane	74-87-3	N	ug/l	--	1	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	11	1	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	1	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	2.2	1	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	6.9	5	--	--	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	180	0.5	150	Yes	14	Yes	--	--
Isopropylbenzene	98-82-8	N	ug/l	40	1	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	110	5	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	5	--	--	--	--	--	--
Methylcyclohexane	108-87-2	N	ug/l	1.4	1	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	1	--	--	--	--	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	1	--	--	--	--	--	--
Tetrachloroethene	127-18-4	N	ug/l	--	1	--	--	--	--	--	--
Toluene	108-88-3	N	ug/l	420	0.5	2000	No	600	No	--	--
Total Xylenes	1330-20-7	N	ug/l	910	1	920	No	360	Yes	--	--
trans-1,2-Dichloroethene	156-60-5	N	ug/l	1.1	1	--	--	--	--	--	--
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	1	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	2.4	0.5	--	--	--	--	--	--
Vinyl chloride	75-01-4	N	ug/l	13	0.5	--	--	--	--	--	--

Notes:

[1] Maximum detect was used to screen criteria if available. If maximum detect not available (i.e., constituent not de

-- = not available or not applicable

Table 2. Screening of Maximum LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	Illinois Derived Water Quality Standards (35 IAC 302.210)					
						Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Semivolatile Organic Compounds											
1,1-Biphenyl	92-52-4	N	ug/l	2.2	42.5	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	0.32	17	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	85	--	--	--	--	0.0032	Yes
2,4,6-Trichlorophenol	88-06-2	N	ug/l	--	42.5	--	--	--	--	2.1	Yes
2,4-Dichlorophenol	120-83-2	N	ug/l	--	85	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	470	36.5	--	--	--	--	--	--
2,4-Dinitrophenol	51-28-5	N	ug/l	--	170	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	8.5	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	7.4	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	N	ug/l	3.1	17	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	--	42.5	--	--	--	--	--	--
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	170	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	9.4	7.3	--	--	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	88	1.7	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	42.5	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	85	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	42.5	--	--	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	85	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	42.5	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	41	85	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	42.5	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	290	1.6	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	85	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	170	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	4.3	8.5	120	No	62	No	--	--
Acenaphthylene	208-96-8	N	ug/l	--	8.5	190	No	15	No	--	--
Acetophenone	98-86-2	N	ug/l	17	42.5	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	3.3	8.5	0.66	Yes	0.53	Yes	0.035	Yes
Atrazine	1912-24-9	N	ug/l	--	42.5	82	No	9	Yes	--	--
Benzaldehyde	100-52-7	N	ug/l	40	300	180	No	14	Yes	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	1.5	1.7	--	--	--	--	0.16	Yes
Benzo(a)pyrene	50-32-8	N	ug/l	3.2	1.7	--	--	--	--	0.016	Yes
Benzo(b)fluoranthene	205-99-2	N	ug/l	3.6	1.7	--	--	--	--	0.16	Yes
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	8.5	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	0.62	1.7	--	--	--	--	1.6	No
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	17	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	--	17	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	290	36	76	Yes	17	Yes	1.9	Yes
Butyl benzyl phthalate	85-68-7	N	ug/l	--	17	--	--	--	--	--	--
Caprolactam	105-60-2	N	ug/l	--	85	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	5.7	42.5	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	3.3	4.25	--	--	--	--	16	No
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	2.55	--	--	--	--	16	No
Dibenzofuran	132-64-9	N	ug/l	--	17	190	No	15	Yes	--	--
Diethyl phthalate	84-66-2	N	ug/l	--	17	--	--	--	--	--	--
Dimethyl phthalate	131-11-3	N	ug/l	--	17	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	1.4	42.5	--	--	--	--	--	--
Di-n-octyl phthalate	117-84-0	N	ug/l	--	85	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	12	8.5	4.3	Yes	1.8	Yes	120	No
Fluorene	86-73-7	N	ug/l	3.2	8.5	59	No	16	No	4500	No
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	42.5	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	4.25	--	--	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	170	--	--	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	--	42.5	--	--	--	--	2.9	Yes
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	2	1.7	--	--	--	--	0.16	Yes
Isophorone	78-59-1	N	ug/l	--	17	--	--	--	--	760	No
Naphthalene	91-20-3	N	ug/l	48	3.6	510	No	68	No	--	--
Nitrobenzene	98-95-3	N	ug/l	--	8.5	15000	No	8500	No	530	No
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	4.25	--	--	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	5.4	8.5	--	--	--	--	--	--
p-Chloroaniline	106-47-8	N	ug/l	--	85	--	--	--	--	--	--
Pentachlorophenol	87-86-5	N	ug/l	--	170	--	--	--	--	2.5	Yes
Phenanthrene	85-01-8	N	ug/l	16	8.5	46	No	3.7	Yes	--	--
Phenol	108-95-2	N	ug/l	45.5	42	--	--	--	--	--	--
Pyrene	129-00-0	N	ug/l	10	8.5	--	--	--	--	3500	No
Volatile Organic Compounds											
1,1,1-Trichloroethane	71-55-6	N	ug/l	--	1	4900	No	390	No	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	--	1	1800	No	140	No	3.2	No
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	1	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	--	1	19000	No	4400	No	12	No
1,1-Dichloroethane	75-34-3	N	ug/l	24	1	20000	No	2000	No	--	--
1,1-Dichloroethene	75-35-4	N	ug/l	--	1	3000	No	240	No	120	No
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	--	1	370	No	72	No	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	5	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	1	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	8.9	1	210	No	170	No	--	--
1,2-Dichloroethane	107-06-2	N	ug/l	58	1	25000	No	4500	No	23	Yes
1,2-Dichloropropane	78-87-5	N	ug/l	1.7	1	4800	No	380	No	--	--
1,3-Dichlorobenzene	541-73-1	N	ug/l	--	1	500	No	200	No	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	17	1	1800	No	620	No	--	--
2-Butanone (MEK)	78-93-3	N	ug/l	24	5	320000	No	26000	No	--	--
4-Methyl-2-Pentanone	108-10-1	N	ug/l	100	5	46000	No	1400	No	--	--
Acetone	67-64-1	N	ug/l	56	5	1500000	No	120000	No	--	--
Benzene	71-43-2	N	ug/l	530	0.5	3900	No	800	No	--	--
Bromodichloromethane	75-27-4	N	ug/l	--	1	10	No	1	No	14.9	No
Bromoform	75-25-2	N	ug/l	--	1	--	--	--	--	50	No
Bromomethane	74-83-9	N	ug/l	--	2	--	--	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	33	2	200	No	20	Yes	--	--
Carbon Tetrachloride	56-23-5	N	ug/l	--	1	3500	No	280	No	1.4	No
CFC-11	75-69-4	N	ug/l	--	1	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	2	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	4.6	1	990	No	79	No	4500	No
Chlorodibromomethane	124-48-1	N	ug/l	--	1	--	--	--	--	11	No
Chloroethane	75-00-3	N	ug/l	--	1	13000	No	1000	No	--	--
Chloroform	67-66-3	N	ug/l	0.65	2	1900	No	150	No	130	No
Chloromethane	74-87-3	N	ug/l	--	1	16000	No	1300	No	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	11	1	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	1	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	2.2	1	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	6.9	5	--	--	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	180	0.5	--	--	--	--	--	--
Isopropylbenzene	98-82-8	N	ug/l	40	1	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	110	5	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	5	12000	No	950	No	--	--
Methylcyclohexane	108-87-2	N	ug/l	1.4	1	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	1	67000	No	5400	No	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	1	--	--	--	--	--	--
Tetrachloroethene	127-18-4	N	ug/l	--	1	--	--	--	--	--	--
Toluene	108-88-3	N	ug/l	420	0.5	--	--	--	--	--	--
Total Xylenes	1330-20-7	N	ug/l	910	1	--	--	--	--	--	--
trans-1,2-Dichloroethene	156-60-5	N	ug/l	1.1	1	--	--	--	--	34000	No
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	1	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	2.4	0.5	12000	No	940	No	25	No
Vinyl chloride	75-01-4	N	ug/l	13	0.5	8400	No	930	No	2	Yes

Notes:

[1] Maximum detect was used to screen criteria if available. If maximum detect not available (i.e., constituent not de

-- = not available or not applicable

Table 2. Screening of Maximum LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	USEPA Ambient Water Quality Criteria							
						Human Health Criteria, Water and Organism	Exceedance (Yes/No)	Human Health Criteria, Organism Only	Exceedance (Yes/No)	Acute Aquatic Life Criteria	Exceedance (Yes/No)	Chronic Aquatic Life Criteria	Exceedance (Yes/No)
Semivolatile Organic Compounds													
1,1-Biphenyl	92-52-4	N	ug/l	2.2	42.5	--	--	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	0.32	17	200	No	4000	No	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	85	300	No	600	No	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	N	ug/l	--	42.5	1.5	Yes	2.8	Yes	--	--	--	--
2,4-Dichlorophenol	120-83-2	N	ug/l	--	85	10	Yes	60	Yes	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	470	36.5	100	Yes	3000	No	--	--	--	--
2,4-Dinitrophenol	51-28-5	N	ug/l	--	170	10	Yes	300	No	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	8.5	0.049	Yes	1.7	Yes	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	7.4	--	--	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	N	ug/l	3.1	17	800	No	1000	No	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	--	42.5	30	Yes	800	No	--	--	--	--
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	170	2	Yes	30	Yes	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	9.4	7.3	--	--	--	--	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	88	1.7	--	--	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	85	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	42.5	0.049	Yes	0.15	Yes	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	85	--	--	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	41	85	500	No	2000	No	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	290	1.6	--	--	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	85	--	--	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	170	--	--	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	4.3	8.5	70	No	90	No	--	--	--	--
Acenaphthylene	208-96-8	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
Acetophenone	98-86-2	N	ug/l	17	42.5	--	--	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	3.3	8.5	300	No	400	No	--	--	--	--
Atrazine	1912-24-9	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
Benzaldehyde	100-52-7	N	ug/l	40	300	--	--	--	--	--	--	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	1.5	1.7	0.0012	Yes	0.0013	Yes	--	--	--	--
Benzo(a)pyrene	50-32-8	N	ug/l	3.2	1.7	0.00012	Yes	0.00013	Yes	--	--	--	--
Benzo(b)fluoranthene	205-99-2	N	ug/l	3.6	1.7	0.0012	Yes	0.0013	Yes	--	--	--	--
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	0.62	1.7	0.012	Yes	0.013	Yes	--	--	--	--
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	17	--	--	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	--	17	0.03	Yes	2.2	Yes	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	290	36	0.32	Yes	0.37	Yes	--	--	--	--
Butyl benzyl phthalate	85-68-7	N	ug/l	--	17	0.1	Yes	0.1	Yes	--	--	--	--
Caprolactam	105-60-2	N	ug/l	--	85	--	--	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	5.7	42.5	--	--	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	3.3	4.25	0.12	Yes	0.13	Yes	--	--	--	--
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	2.55	0.00012	Yes	0.00013	Yes	--	--	--	--
Dibenzofuran	132-64-9	N	ug/l	--	17	--	--	--	--	--	--	--	--
Diethyl phthalate	84-66-2	N	ug/l	--	17	600	No	600	No	--	--	--	--
Dimethyl phthalate	131-11-3	N	ug/l	--	17	2000	No	2000	No	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	1.4	42.5	20	No	30	No	--	--	--	--
Di-n-octyl phthalate	117-84-0	N	ug/l	--	85	--	--	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	12	8.5	20	No	20	No	--	--	--	--
Fluorene	86-73-7	N	ug/l	3.2	8.5	50	No	70	No	--	--	--	--
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	42.5	0.01	Yes	0.01	Yes	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	4.25	0.000079	Yes	0.000079	Yes	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	170	4	Yes	4	Yes	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	--	42.5	0.1	Yes	0.1	Yes	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	2	1.7	0.0012	Yes	0.0013	Yes	--	--	--	--
Isophorone	78-59-1	N	ug/l	--	17	34	No	1800	No	--	--	--	--
Naphthalene	91-20-3	N	ug/l	48	3.6	--	--	--	--	--	--	--	--
Nitrobenzene	98-95-3	N	ug/l	--	8.5	10	No	600	No	--	--	--	--
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	4.25	0.005	Yes	0.51	Yes	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	5.4	8.5	3.3	Yes	6	No	--	--	--	--
p-Chloroaniline	106-47-8	N	ug/l	--	85	--	--	--	--	--	--	--	--
Pentachlorophenol	87-86-5	N	ug/l	--	170	0.03	Yes	0.04	Yes	19	Yes	15	Yes
Phenanthrene	85-01-8	N	ug/l	16	8.5	--	--	--	--	--	--	--	--
Phenol	108-95-2	N	ug/l	45.5	42	4000	No	300000	No	--	--	--	--
Pyrene	129-00-0	N	ug/l	10	8.5	20	No	30	No	--	--	--	--
Volatile Organic Compounds													
1,1,1-Trichloroethane	71-55-6	N	ug/l	--	1	10000	No	200000	No	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	--	1	0.2	Yes	3	No	--	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	1	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	--	1	0.55	Yes	8.9	No	--	--	--	--
1,1-Dichloroethane	75-34-3	N	ug/l	24	1	--	--	--	--	--	--	--	--
1,1-Dichloroethene	75-35-4	N	ug/l	--	1	300	No	20000	No	--	--	--	--
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	--	1	0.071	Yes	0.076	Yes	--	--	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	5	--	--	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	1	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	8.9	1	1000	No	3000	No	--	--	--	--
1,2-Dichloroethane	107-06-2	N	ug/l	58	1	9.9	Yes	650	No	--	--	--	--
1,2-Dichloropropane	78-87-5	N	ug/l	1.7	1	0.9	Yes	31	No	--	--	--	--
1,3-Dichlorobenzene	541-73-1	N	ug/l	--	1	7	No	10	No	--	--	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	17	1	300	No	900	No	--	--	--	--
2-Butanone (MEK)	78-93-3	N	ug/l	24	5	--	--	--	--	--	--	--	--
4-Methyl-2-Pentanone	108-10-1	N	ug/l	100	5	--	--	--	--	--	--	--	--
Acetone	67-64-1	N	ug/l	56	5	--	--	--	--	--	--	--	--
Benzene	71-43-2	N	ug/l	530	0.5	0.58	Yes	16	Yes	--	--	--	--
Bromodichloromethane	75-27-4	N	ug/l	--	1	0.95	Yes	27	No	--	--	--	--
Bromoform	75-25-2	N	ug/l	--	1	7	No	120	No	--	--	--	--
Bromomethane	74-83-9	N	ug/l	--	2	100	No	10000	No	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	33	2	--	--	--	--	--	--	--	--
Carbon Tetrachloride	56-23-5	N	ug/l	--	1	0.4	Yes	5	No	--	--	--	--
CFC-11	75-69-4	N	ug/l	--	1	--	--	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	2	--	--	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	4.6	1	100	No	800	No	--	--	--	--
Chlorodibromomethane	124-48-1	N	ug/l	--	1	0.8	Yes	21	No	--	--	--	--
Chloroethane	75-00-3	N	ug/l	--	1	--	--	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	0.65	2	60	No	2000	No	--	--	--	--
Chloromethane	74-87-3	N	ug/l	--	1	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	11	1	--	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	1	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	2.2	1	--	--	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	6.9	5	20	No	1000	No	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	180	0.5	68	Yes	130	Yes	--	--	--	--
Isopropylbenzene	98-82-8	N	ug/l	40	1	--	--	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	110	5	--	--	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	5	--	--	--	--	--	--	--	--
Methylcyclohexane	108-87-2	N	ug/l	1.4	1	--	--	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	1	--	--	--	--	--	--	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	1	--	--	--	--	--	--	--	--
Tetrachloroethene	127-18-4	N	ug/l	--	1	10	No	29	No	--	--	--	--
Toluene	108-88-3	N	ug/l	420	0.5	57	Yes	520	No	--	--	--	--
Total Xylenes	1330-20-7	N	ug/l	910	1	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	156-60-5	N	ug/l	1.1	1	100	No	4000	No	--	--	--	--
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	1	--	--	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	2.4	0.5	0.6	Yes	7	No	--	--	--	--
Vinyl chloride	75-01-4	N	ug/l	13	0.5	0.022	Yes	1.6	Yes	--	--	--	--

Notes:

[1] Maximum detect was used to screen criteria if available. If maximum detect not available (i.e., constituent not de

-- = not available or not applicable

Table 2. Screening of Maximum LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	Calumet Open Space Reserve						Recreator Surface Water Benchmark	
						Surface Water Background	Exceedance (Yes/No)	Surface Water Threshold	Exceedance (Yes/No)	Surface Water Benchmark	Exceedance (Yes/No)	Benchmark	Exceedance (Yes/No)
Semivolatile Organic Compounds													
1,1-Biphenyl	92-52-4	N	ug/l	2.2	42.5	--	--	--	--	--	--	102	No
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	0.32	17	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	85	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	N	ug/l	--	42.5	--	--	--	--	--	--	36.9	Yes
2,4-Dichlorophenol	120-83-2	N	ug/l	--	85	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	470	36.5	--	--	--	--	--	--	2040	No
2,4-Dinitrophenol	51-28-5	N	ug/l	--	170	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	7.4	--	--	--	--	--	--	5.8	Yes
2-Chloronaphthalene	91-58-7	N	ug/l	3.1	17	--	--	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	--	42.5	--	--	--	--	--	--	576	No
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	170	--	--	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	9.4	7.3	--	--	--	--	--	--	85.9	No
2-Methylphenol	95-48-7	N	ug/l	88	1.7	--	--	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	85	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	85	--	--	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	41	85	--	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	290	1.6	--	--	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	85	--	--	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	170	--	--	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	4.3	8.5	--	--	62	No	120	No	1260	No
Acenaphthylene	208-96-8	N	ug/l	--	8.5	--	--	15	No	190	No	1260	No
Acetophenone	98-86-2	N	ug/l	17	42.5	--	--	--	--	--	--	14700	No
Anthracene	120-12-7	N	ug/l	3.3	8.5	--	--	4	No	35	No	3550	No
Atrazine	1912-24-9	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
Benzaldehyde	100-52-7	N	ug/l	40	300	--	--	--	--	--	--	2510	No
Benzo(a)anthracene	56-55-3	N	ug/l	1.5	1.7	--	--	0.03	Yes	0.2	Yes	36.5	No
Benzo(a)pyrene	50-32-8	N	ug/l	3.2	1.7	--	--	0.02	Yes	8.1	No	3.65	No
Benzo(b)fluoranthene	205-99-2	N	ug/l	3.6	1.7	--	--	9.1	No	5.7	No	36.5	No
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	8.5	--	--	7.6	Yes	13.2	No	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	0.62	1.7	--	--	--	--	--	--	365	No
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	17	--	--	--	--	--	--	507	No
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	--	17	--	--	--	--	--	--	11	Yes
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	290	36	--	--	--	--	--	--	1160	No
Butyl benzyl phthalate	85-68-7	N	ug/l	--	17	--	--	--	--	--	--	433	No
Caprolactam	105-60-2	N	ug/l	--	85	--	--	--	--	--	--	88300	No
Carbazole	86-74-8	N	ug/l	5.7	42.5	--	--	--	--	--	--	644	No
Chrysene	218-01-9	N	ug/l	3.3	4.25	--	--	3.6	No	17.6	No	3650	No
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	2.55	--	--	0.5	Yes	2.5	Yes	--	--
Dibenzofuran	132-64-9	N	ug/l	--	17	--	--	--	--	--	--	17.8	No
Diethyl phthalate	84-66-2	N	ug/l	--	17	--	--	--	--	--	--	101000	No
Dimethyl phthalate	131-11-3	N	ug/l	--	17	--	--	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	1.4	42.5	--	--	--	--	--	--	2200	No
Di-n-octyl phthalate	117-84-0	N	ug/l	--	85	--	--	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	12	8.5	--	--	4.4	Yes	199	No	7600	No
Fluorene	86-73-7	N	ug/l	3.2	8.5	--	--	19	No	336.8	No	644	No
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	170	--	--	--	--	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	--	42.5	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	2	1.7	--	--	4.3	No	5	No	36.5	No
Isophorone	78-59-1	N	ug/l	--	17	--	--	--	--	--	--	10300	No
Naphthalene	91-20-3	N	ug/l	48	3.6	--	--	68	No	510	No	812	No
Nitrobenzene	98-95-3	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	5.4	8.5	--	--	--	--	--	--	697	No
p-Chloroaniline	106-47-8	N	ug/l	--	85	--	--	--	--	--	--	43.4	Yes
Pentachlorophenol	87-86-5	N	ug/l	--	170	--	--	--	--	--	--	0.866	Yes
Phenanthrene	85-01-8	N	ug/l	16	8.5	--	--	3.7	Yes	46	No	3550	No
Phenol	108-95-2	N	ug/l	45.5	42	--	--	--	--	--	--	43600	No
Pyrene	129-00-0	N	ug/l	10	8.5	--	--	0.3	Yes	87.6	No	220	No
Volatile Organic Compounds													
1,1,1-Trichloroethane	71-55-6	N	ug/l	--	1	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	--	1	--	--	--	--	--	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	1	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	--	1	--	--	--	--	--	--	--	--
1,1-Dichloroethane	75-34-3	N	ug/l	24	1	--	--	--	--	--	--	1390	No
1,1-Dichloroethene	75-35-4	N	ug/l	--	1	--	--	--	--	--	--	5190	No
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	--	1	--	--	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	5	--	--	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	1	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	8.9	1	--	--	--	--	--	--	3460	No
1,2-Dichloroethane	107-06-2	N	ug/l	58	1	--	--	--	--	--	--	108	No
1,2-Dichloropropane	78-87-5	N	ug/l	1.7	1	--	--	--	--	--	--	197	No
1,3-Dichlorobenzene	541-73-1	N	ug/l	--	1	--	--	--	--	--	--	313	No
1,4-Dichlorobenzene	106-46-7	N	ug/l	17	1	--	--	--	--	--	--	313	No
2-Butanone (MEK)	78-93-3	N	ug/l	24	5	--	--	--	--	--	--	107000	No
4-Methyl-2-Pentanone	108-10-1	N	ug/l	100	5	--	--	--	--	--	--	107000	No
Acetone	67-64-1	N	ug/l	56	5	--	--	--	--	--	--	--	--
Benzene	71-43-2	N	ug/l	530	0.5	--	--	--	--	--	--	--	--
Bromodichloromethane	75-27-4	N	ug/l	--	1	--	--	--	--	--	--	--	--
Bromoform	75-25-2	N	ug/l	--	1	--	--	--	--	--	--	--	--
Bromomethane	74-83-9	N	ug/l	--	2	--	--	--	--	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	33	2	--	--	--	--	--	--	10800	No
Carbon Tetrachloride	56-23-5	N	ug/l	--	1	--	--	--	--	--	--	--	--
CFC-11	75-69-4	N	ug/l	--	1	--	--	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	2	--	--	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	4.6	1	--	--	--	--	--	--	1230	No
Chlorodibromomethane	124-48-1	N	ug/l	--	1	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	N	ug/l	--	1	--	--	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	0.65	2	--	--	--	--	--	--	244	No
Chloromethane	74-87-3	N	ug/l	--	1	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	11	1	--	--	--	--	--	--	213	No
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	1	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	2.2	1	--	--	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	6.9	5	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	180	0.5	--	--	--	--	--	--	175	Yes
Isopropylbenzene	98-82-8	N	ug/l	40	1	--	--	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	110	5	--	--	--	--	--	--	180000	No
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	5	--	--	--	--	--	--	--	--
Methylcyclohexane	108-87-2	N	ug/l	1.4	1	--	--	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	1	--	--	--	--	--	--	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	1	--	--	--	--	--	--	10500	No
Tetrachloroethene	127-18-4	N	ug/l	--	1	--	--	--	--	--	--	267	No
Toluene	108-88-3	N	ug/l	420	0.5	--	--	--	--	--	--	4880	No
Total Xylenes	1330-20-7	N	ug/l	910	1	--	--	--	--	--	--	8410	No
trans-1,2-Dichloroethene	156-60-5	N	ug/l	1.1	1	--	--	--	--	--	--	2130	No
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	1	--	--	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	2.4	0.5	--	--	--	--	--	--	48.6	No
Vinyl chloride	75-01-4	N	ug/l	13	0.5	--	--	--	--	--	--	0.056	Yes

Notes:

[1] Maximum detect was used to screen criteria if available. If maximum detect not available (i.e., constituent not de

-- = not available or not applicable

Table 3. Screening of Average LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Arithmetic Average[1]	Illinois Numeric Water Quality Standards (35 IAC 302.208 and 302.535)							
					Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)	Standards for Open Waters of Lake Michigan	Exceedance (Yes/No)
Anions												
Ammonia Nitrogen	7664-41-7	T	mg/l	280	--	--	--	--	--	--	15	Yes
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	0.0796	--	--	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	0.0746	--	--	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	0.0147	--	--	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	104	--	--	--	--	--	--	--	--
Gases												
Carbon Dioxide	124-38-9	N	mg/l	124	--	--	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	18400	--	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	9.82	--	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	2.29	--	--	--	--	--	--	--	--
General Chemistry												
Total Suspended Solids	ARC-TSS	T	mg/l	19.3	--	--	--	--	--	--	--	--
Metals												
Aluminum	7429-90-5	D	mg/l	0.344	--	--	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	0.485	--	--	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	0.0138	--	--	--	--	--	--	--	--
Antimony	7440-36-0	T	mg/l	0.0148	--	--	--	--	--	--	--	--
Arsenic	7440-38-2	D	mg/l	0.0165	0.36	No	0.19	No	--	--	--	--
Arsenic	7440-38-2	T	mg/l	0.0181	--	--	--	--	--	--	--	--
Barium	7440-39-3	D	mg/l	0.481	--	--	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	0.492	5	No	--	--	--	--	--	--
Beryllium	7440-41-7	D	mg/l	0.00274	--	--	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	0.00276	--	--	--	--	--	--	--	--
Cadmium	7440-43-9	D	mg/l	0.00201	0.030	No	0.0024	No	--	--	--	--
Cadmium	7440-43-9	T	mg/l	0.00262	--	--	--	--	--	--	--	--
Calcium	7440-70-2	D	mg/l	74.4	--	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	72.9	--	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	0.113	1.3	No	0.44	No	--	--	--	--
Chromium	7440-47-3	T	mg/l	0.121	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	D	mg/l	0.0162	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	T	mg/l	0.0163	--	--	--	--	--	--	--	--
Copper	7440-50-8	D	mg/l	0.0105	0.048	No	0.029	No	--	--	--	--
Copper	7440-50-8	T	mg/l	0.0177	--	--	--	--	--	--	--	--
Iron	7439-89-6	D	mg/l	7.43	1	Yes	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	7.72	--	--	--	--	--	--	--	--
Lead	7439-92-1	D	mg/l	0.0597	0.24	No	0.051	Yes	--	--	--	--
Lead	7439-92-1	T	mg/l	0.159	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	D	mg/l	56.1	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	55.3	--	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	0.262	9.5	No	4.0	No	--	--	--	--
Manganese	7439-96-5	T	mg/l	0.259	--	--	--	--	--	--	--	--
Mercury	7439-97-6	D	mg/l	0.000169	0.0022	No	0.0011	No	--	--	--	--
Mercury	7439-97-6	T	mg/l	0.000304	--	--	--	--	0.012	No	--	--
Nickel	7440-02-0	D	mg/l	0.0588	0.21	No	0.013	Yes	--	--	--	--
Nickel	7440-02-0	T	mg/l	0.059	--	--	--	--	--	--	--	--
Potassium	7440-09-7	D	mg/l	263	--	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	262	--	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	0.00802	--	--	--	--	--	--	--	--
Selenium	7782-49-2	T	mg/l	0.00773	1	No	--	--	--	--	--	--
Silver	7440-22-4	D	mg/l	0.00346	--	--	--	--	--	--	--	--
Silver	7440-22-4	T	mg/l	0.00347	5	No	--	--	--	--	--	--
Sodium	7440-23-5	D	mg/l	1490	--	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	1480	--	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	0.007	--	--	--	--	--	--	--	--
Thallium	7440-28-0	T	mg/l	0.007	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	D	mg/l	0.0242	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	T	mg/l	0.0271	--	--	--	--	--	--	--	--
Zinc	7440-66-6	D	mg/l	0.119	0.30	No	0.079	Yes	--	--	--	--
Zinc	7440-66-6	T	mg/l	0.24	--	--	--	--	--	--	--	--
Organochlorine Pesticides												
4,4-DDD	72-54-8	N	ug/l	0.0327	--	--	--	--	--	--	--	--
4,4-DDE	72-55-9	N	ug/l	0.0327	--	--	--	--	--	--	--	--
4,4-DDT	50-29-3	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Aldrin	309-00-2	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Alpha-BHC	319-84-6	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Endosulfan I	959-98-8	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Endrin aldehyde	7421-93-4	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Heptachlor	76-44-8	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Heptachlor epoxide	1024-57-3	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Methoxychlor	72-43-5	N	ug/l	0.0657	--	--	--	--	--	--	--	--
Toxaphene	8001-35-2	N	ug/l	0.327	--	--	--	--	--	--	--	--
trans-chlordane	5103-74-2	N	ug/l	0.0327	--	--	--	--	--	--	--	--
Other												
Sulfide	18496-25-8	N/T	mg/l	4.36	--	--	--	--	--	--	--	--
Total Organic Carbon												
Total Organic Carbon	ARC-TOC	N	mg/l	201	--	--	--	--	--	--	--	--
Polychorinated Biphenyls												
Aroclor 1016	12674-11-2	N	ug/l	0.19	--	--	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	0.226	--	--	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	0.482	--	--	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	1.43	--	--	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	0.356	--	--	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	0.446	--	--	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	0.19	--	--	--	--	--	--	--	--

Table 3. Screening of Average LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Illinois Numeric Water Quality Standards for the Chicago Area Waterway System (35 IAC 302.407)					
				Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Anions									
Ammonia Nitrogen	7664-41-7	T	mg/l	--	--	--	--	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	--	--	--	--	--	--
Gases									
Carbon Dioxide	124-38-9	N	mg/l	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	--	--	--	--	--	--
General Chemistry									
Total Suspended Solids	ARC-TSS	T	mg/l	--	--	--	--	--	--
Metals									
Aluminum	7429-90-5	D	mg/l	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	--	--	--	--	--	--
Antimony	7440-36-0	T	mg/l	--	--	--	--	--	--
Arsenic	7440-38-2	D	mg/l	0.34	No	0.15	No	--	--
Arsenic	7440-38-2	T	mg/l	--	--	--	--	--	--
Barium	7440-39-3	D	mg/l	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	--	--	--	--	--	--
Beryllium	7440-41-7	D	mg/l	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	--	--	--	--	--	--
Cadmium	7440-43-9	D	mg/l	0.030	No	0.0023	No	--	--
Cadmium	7440-43-9	T	mg/l	--	--	--	--	--	--
Calcium	7440-70-2	D	mg/l	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	1.4	No	0.18	No	--	--
Chromium	7440-47-3	T	mg/l	--	--	--	--	--	--
Cobalt	7440-48-4	D	mg/l	--	--	--	--	--	--
Cobalt	7440-48-4	T	mg/l	--	--	--	--	--	--
Copper	7440-50-8	D	mg/l	0.040	No	0.024	No	--	--
Copper	7440-50-8	T	mg/l	--	--	--	--	--	--
Iron	7439-89-6	D	mg/l	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	--	--	--	--	--	--
Lead	7439-92-1	D	mg/l	0.24	No	0.051	Yes	--	--
Lead	7439-92-1	T	mg/l	--	--	--	--	--	--
Magnesium	7439-95-4	D	mg/l	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	9.5	No	4.0	No	--	--
Manganese	7439-96-5	T	mg/l	--	--	--	--	--	--
Mercury	7439-97-6	D	mg/l	0.0012	No	0.00065	No	--	--
Mercury	7439-97-6	T	mg/l	--	--	--	--	0.012	No
Nickel	7440-02-0	D	mg/l	0.21	No	0.013	Yes	--	--
Nickel	7440-02-0	T	mg/l	--	--	--	--	--	--
Potassium	7440-09-7	D	mg/l	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	--	--	--	--	--	--
Selenium	7782-49-2	T	mg/l	--	--	--	--	--	--
Silver	7440-22-4	D	mg/l	--	--	--	--	--	--
Silver	7440-22-4	T	mg/l	--	--	--	--	--	--
Sodium	7440-23-5	D	mg/l	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	--	--	--	--	--	--
Thallium	7440-28-0	T	mg/l	--	--	--	--	--	--
Vanadium	7440-62-2	D	mg/l	--	--	--	--	--	--
Vanadium	7440-62-2	T	mg/l	--	--	--	--	--	--
Zinc	7440-66-6	D	mg/l	0.30	No	0.079	Yes	--	--
Zinc	7440-66-6	T	mg/l	--	--	--	--	--	--
Organochlorine Pesticides									
4,4-DDD	72-54-8	N	ug/l	--	--	--	--	--	--
4,4-DDE	72-55-9	N	ug/l	--	--	--	--	--	--
4,4-DDT	50-29-3	N	ug/l	--	--	--	--	--	--
Aldrin	309-00-2	N	ug/l	--	--	--	--	--	--
Alpha-BHC	319-84-6	N	ug/l	--	--	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	--	--	--	--	--
Endosulfan I	959-98-8	N	ug/l	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	--	--	--	--	--	--
Endrin aldehyde	7421-93-4	N	ug/l	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	--	--	--	--	--
Heptachlor	76-44-8	N	ug/l	--	--	--	--	--	--
Heptachlor epoxide	1024-57-3	N	ug/l	--	--	--	--	--	--
Methoxychlor	72-43-5	N	ug/l	--	--	--	--	--	--
Toxaphene	8001-35-2	N	ug/l	--	--	--	--	--	--
trans-chlordane	5103-74-2	N	ug/l	--	--	--	--	--	--
Other									
Sulfide	18496-25-8	N/T	mg/l	--	--	--	--	--	--
Total Organic Carbon									
Total Organic Carbon	ARC-TOC	N	mg/l	--	--	--	--	--	--
Polychorinated Biphenyls									
Aroclor 1016	12674-11-2	N	ug/l	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	--	--	--	--	--	--

Table 3. Screening of Average LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Illinois Derived Water Quality Standards (35 IAC 302.210)					
				Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Anions									
Ammonia Nitrogen	7664-41-7	T	mg/l	--	--	--	--	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	--	--	--	--	--	--
Gases									
Carbon Dioxide	124-38-9	N	mg/l	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	--	--	--	--	--	--
General Chemistry									
Total Suspended Solids	ARC-TSS	T	mg/l	--	--	--	--	--	--
Metals									
Aluminum	7429-90-5	D	mg/l	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	--	--	--	--	12000	No
Antimony	7440-36-0	T	mg/l	--	--	--	--	--	--
Arsenic	7440-38-2	D	mg/l	--	--	--	--	--	--
Arsenic	7440-38-2	T	mg/l	--	--	--	--	--	--
Barium	7440-39-3	D	mg/l	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	--	--	--	--	--	--
Beryllium	7440-41-7	D	mg/l	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	--	--	--	--	--	--
Cadmium	7440-43-9	D	mg/l	--	--	--	--	--	--
Cadmium	7440-43-9	T	mg/l	--	--	--	--	--	--
Calcium	7440-70-2	D	mg/l	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	--	--	--	--	--	--
Chromium	7440-47-3	T	mg/l	--	--	--	--	--	--
Cobalt	7440-48-4	D	mg/l	--	--	--	--	--	--
Cobalt	7440-48-4	T	mg/l	--	--	--	--	--	--
Copper	7440-50-8	D	mg/l	--	--	--	--	--	--
Copper	7440-50-8	T	mg/l	--	--	--	--	--	--
Iron	7439-89-6	D	mg/l	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	--	--	--	--	--	--
Lead	7439-92-1	D	mg/l	--	--	--	--	--	--
Lead	7439-92-1	T	mg/l	--	--	--	--	--	--
Magnesium	7439-95-4	D	mg/l	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	--	--	--	--	--	--
Manganese	7439-96-5	T	mg/l	--	--	--	--	--	--
Mercury	7439-97-6	D	mg/l	--	--	--	--	--	--
Mercury	7439-97-6	T	mg/l	--	--	--	--	--	--
Nickel	7440-02-0	D	mg/l	--	--	--	--	--	--
Nickel	7440-02-0	T	mg/l	--	--	--	--	--	--
Potassium	7440-09-7	D	mg/l	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	--	--	--	--	--	--
Selenium	7782-49-2	T	mg/l	--	--	--	--	--	--
Silver	7440-22-4	D	mg/l	--	--	--	--	--	--
Silver	7440-22-4	T	mg/l	--	--	--	--	--	--
Sodium	7440-23-5	D	mg/l	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	--	--	--	--	0.003	Yes
Thallium	7440-28-0	T	mg/l	--	--	--	--	--	--
Vanadium	7440-62-2	D	mg/l	--	--	--	--	--	--
Vanadium	7440-62-2	T	mg/l	--	--	--	--	--	--
Zinc	7440-66-6	D	mg/l	--	--	--	--	--	--
Zinc	7440-66-6	T	mg/l	--	--	--	--	--	--
Organochlorine Pesticides									
4,4-DDD	72-54-8	N	ug/l	--	--	--	--	0.00027	Yes
4,4-DDE	72-55-9	N	ug/l	--	--	--	--	0.00019	Yes
4,4-DDT	50-29-3	N	ug/l	--	--	--	--	0.00019	Yes
Aldrin	309-00-2	N	ug/l	--	--	--	--	0.000046	Yes
Alpha-BHC	319-84-6	N	ug/l	--	--	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	--	--	--	--	--
Endosulfan I	959-98-8	N	ug/l	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	--	--	--	--	--	--
Endrin aldehyde	7421-93-4	N	ug/l	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	--	--	--	--	--
Heptachlor	76-44-8	N	ug/l	--	--	--	--	--	--
Heptachlor epoxide	1024-57-3	N	ug/l	--	--	--	--	--	--
Methoxychlor	72-43-5	N	ug/l	--	--	--	--	--	--
Toxaphene	8001-35-2	N	ug/l	--	--	--	--	0.00024	Yes
trans-chlordane	5103-74-2	N	ug/l	--	--	--	--	--	--
Other									
Sulfide	18496-25-8	N/T	mg/l	--	--	--	--	--	--
Total Organic Carbon									
Total Organic Carbon	ARC-TOC	N	mg/l	--	--	--	--	--	--
Polychorinated Biphenyls									
Aroclor 1016	12674-11-2	N	ug/l	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	--	--	--	--	--	--

Table 3. Screening of Average LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	USEPA Ambient Water Quality Criteria							
				Human Health Criteria, Water and Organism	Exceedance (Yes/No)	Human Health Criteria, Organism Only	Exceedance (Yes/No)	Acute Aquatic Life Criteria	Exceedance (Yes/No)	Chronic Aquatic Life Criteria	Exceedance (Yes/No)
Anions											
Ammonia Nitrogen	7664-41-7	T	mg/l	--	--	--	--	--	--	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	--	--	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	10	No	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	--	--	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	--	--	--	--	--	--	--	--
Gases											
Carbon Dioxide	124-38-9	N	mg/l	--	--	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	--	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	--	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	--	--	--	--	--	--	--	--
General Chemistry											
Total Suspended Solids	ARC-TSS	T	mg/l	--	--	--	--	--	--	--	--
Metals											
Aluminum	7429-90-5	D	mg/l	--	--	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	--	--	--	--	0.75	No	0.087	Yes
Antimony	7440-36-0	D	mg/l	0.0056	Yes	0.64	No	--	--	--	--
Antimony	7440-36-0	T	mg/l	0.0056	Yes	0.64	No	--	--	--	--
Arsenic	7440-38-2	D	mg/l	0.000018	Yes	0.00014	Yes	0.34	No	0.15	No
Arsenic	7440-38-2	T	mg/l	0.000018	Yes	0.00014	Yes	--	--	--	--
Barium	7440-39-3	D	mg/l	1	No	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	1	No	--	--	--	--	--	--
Beryllium	7440-41-7	D	mg/l	--	--	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	--	--	--	--	--	--	--	--
Cadmium	7440-43-9	D	mg/l	--	--	--	--	0.0050	No	0.0016	Yes
Cadmium	7440-43-9	T	mg/l	--	--	--	--	--	--	--	--
Calcium	7440-70-2	D	mg/l	--	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	--	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	--	--	--	--	1.4	No	0.18	No
Chromium	7440-47-3	T	mg/l	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	D	mg/l	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	T	mg/l	--	--	--	--	--	--	--	--
Copper	7440-50-8	D	mg/l	1.3	No	--	--	--	--	--	--
Copper	7440-50-8	T	mg/l	1.3	No	--	--	--	--	--	--
Iron	7439-89-6	D	mg/l	--	--	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	--	--	--	--	--	--	1	Yes
Lead	7439-92-1	D	mg/l	--	--	--	--	0.21	No	0.0081	Yes
Lead	7439-92-1	T	mg/l	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	D	mg/l	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	--	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	0.05	Yes	0.1	Yes	--	--	--	--
Manganese	7439-96-5	T	mg/l	0.05	Yes	0.1	Yes	--	--	--	--
Mercury	7439-97-6	D	mg/l	--	--	--	--	0.0014	No	0.00077	No
Mercury	7439-97-6	T	mg/l	--	--	--	--	--	--	--	--
Nickel	7440-02-0	D	mg/l	0.61	No	4.6	No	1.2	No	0.13	No
Nickel	7440-02-0	T	mg/l	0.61	No	4.6	No	--	--	--	--
Potassium	7440-09-7	D	mg/l	--	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	--	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	0.17	No	4.2	No	--	--	--	--
Selenium	7782-49-2	T	mg/l	0.17	No	4.2	No	--	--	--	--
Silver	7440-22-4	D	mg/l	--	--	--	--	0.021	No	--	--
Silver	7440-22-4	T	mg/l	--	--	--	--	--	--	--	--
Sodium	7440-23-5	D	mg/l	--	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	--	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	0.00024	Yes	0.00047	Yes	--	--	--	--
Thallium	7440-28-0	T	mg/l	0.00024	Yes	0.00047	Yes	--	--	--	--
Vanadium	7440-62-2	D	mg/l	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	T	mg/l	--	--	--	--	--	--	--	--
Zinc	7440-66-6	D	mg/l	7.4	No	26	No	0.3	No	0.3	No
Zinc	7440-66-6	T	mg/l	7.4	No	26	No	--	--	--	--
Organochlorine Pesticides											
4,4-DDD	72-54-8	N	ug/l	0.00012	Yes	0.00012	Yes	--	--	--	--
4,4-DDE	72-55-9	N	ug/l	0.000018	Yes	0.000018	Yes	--	--	--	--
4,4-DDT	50-29-3	N	ug/l	0.00003	Yes	0.00003	Yes	1.1	No	0.001	Yes
Aldrin	309-00-2	N	ug/l	0.00000077	Yes	0.00000077	Yes	3	No	--	--
Alpha-BHC	319-84-6	N	ug/l	0.00036	Yes	0.00039	Yes	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	--	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	0.008	Yes	0.014	Yes	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	--	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	0.0000012	Yes	0.0000012	Yes	0.24	No	0.056	No
Endosulfan I	959-98-8	N	ug/l	20	No	30	No	0.22	No	0.056	No
Endosulfan II	33213-65-9	N	ug/l	20	No	40	No	0.22	No	0.056	No
Endosulfan sulfate	1031-07-8	N	ug/l	20	No	40	No	--	--	--	--
Endrin	72-20-8	N	ug/l	0.03	Yes	0.03	Yes	0.086	No	0.036	No
Endrin aldehyde	7421-93-4	N	ug/l	1	No	1	No	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	--	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	4.2	No	4.4	No	0.95	No	--	--
Heptachlor	76-44-8	N	ug/l	0.0000059	Yes	0.0000059	Yes	0.52	No	0.0038	Yes
Heptachlor epoxide	1024-57-3	N	ug/l	0.000032	Yes	0.000032	Yes	0.52	No	0.0038	Yes
Methoxychlor	72-43-5	N	ug/l	0.02	Yes	0.02	Yes	--	--	0.03	Yes
Toxaphene	8001-35-2	N	ug/l	0.0007	Yes	0.00071	Yes	0.73	No	0.0002	Yes
trans-chlordane	5103-74-2	N	ug/l	--	--	--	--	--	--	--	--
Other											
Sulfide	18496-25-8	N/T	mg/l	--	--	--	--	--	--	--	--
Total Organic Carbon											
Total Organic Carbon	ARC-TOC	N	mg/l	--	--	--	--	--	--	--	--
Polychorinated Biphenyls											
Aroclor 1016	12674-11-2	N	ug/l	--	--	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	--	--	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	--	--	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	--	--	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	--	--	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	--	--	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	--	--	--	--	--	--	--	--

Table 3. Screening of Average LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Calumet Open Space Reserve						Recreator Surface Water Benchmark	
				Surface Water Background	Exceedance (Yes/No)	Surface Water Threshold	Exceedance (Yes/No)	Surface Water Benchmark	Exceedance (Yes/No)	Benchmark	Exceedance (Yes/No)
Anions											
Ammonia Nitrogen	7664-41-7	T	mg/l	--	--	25	Yes	140	Yes	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	--	--	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	--	--	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	--	--	--	--	--	--	18.1	No
Sulfate	14808-79-8	T	mg/l	--	--	--	--	--	--	--	--
Gases											
Carbon Dioxide	124-38-9	N	mg/l	--	--	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	--	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	--	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	--	--	--	--	--	--	--	--
General Chemistry											
Total Suspended Solids	ARC-TSS	T	mg/l	--	--	--	--	--	--	--	--
Metals											
Aluminum	7429-90-5	D	mg/l	0.14	Yes	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	0.14	Yes	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	< 0.008	Yes	0.03	No	0.088	No	0.0562	No
Antimony	7440-36-0	T	mg/l	< 0.008	Yes	0.03	No	0.088	No	0.0562	No
Arsenic	7440-38-2	D	mg/l	0.0025	Yes	0.048	No	0.34	No	0.00969	Yes
Arsenic	7440-38-2	T	mg/l	0.0025	Yes	0.048	No	0.34	No	0.00969	Yes
Barium	7440-39-3	D	mg/l	0.05	Yes	5	No	5	No	21.6	No
Barium	7440-39-3	T	mg/l	0.05	Yes	5	No	5	No	21.6	No
Beryllium	7440-41-7	D	mg/l	< 0.004	No	--	--	--	--	0.0443	No
Beryllium	7440-41-7	T	mg/l	< 0.004	No	--	--	--	--	0.0443	No
Cadmium	7440-43-9	D	mg/l	< 0.002	Yes	0.0051	No	0.0143	No	0.0461	No
Cadmium	7440-43-9	T	mg/l	< 0.002	Yes	0.0051	No	0.0143	No	0.0461	No
Calcium	7440-70-2	D	mg/l	--	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	--	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	< 0.008	Yes	--	--	--	--	561	No
Chromium	7440-47-3	T	mg/l	< 0.008	Yes	--	--	--	--	561	No
Cobalt	7440-48-4	D	mg/l	< 0.008	Yes	0.024	No	0.11	No	0.0558	No
Cobalt	7440-48-4	T	mg/l	< 0.008	Yes	0.024	No	0.11	No	0.0558	No
Copper	7440-50-8	D	mg/l	0.0051	Yes	0.0232	No	0.0364	No	7.22	No
Copper	7440-50-8	T	mg/l	0.0051	Yes	0.0232	No	0.0364	No	7.22	No
Iron	7439-89-6	D	mg/l	0.71	Yes	1	Yes	1	Yes	126	No
Iron	7439-89-6	T	mg/l	0.71	Yes	1	Yes	1	Yes	126	No
Lead	7439-92-1	D	mg/l	< 0.002	Yes	0.0167	Yes	0.3182	No	--	--
Lead	7439-92-1	T	mg/l	< 0.002	Yes	0.0167	Yes	0.3182	No	--	--
Magnesium	7439-95-4	D	mg/l	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	--	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	0.042	Yes	1	No	1	No	1.96	No
Manganese	7439-96-5	T	mg/l	0.042	Yes	1	No	1	No	1.96	No
Mercury	7439-97-6	D	mg/l	0.000017	Yes	0.0009	No	0.0017	No	--	--
Mercury	7439-97-6	T	mg/l	0.000017	Yes	0.0009	No	0.0017	No	--	--
Nickel	7440-02-0	D	mg/l	< 0.02	Yes	0.1336	No	1.2028	No	3.01	No
Nickel	7440-02-0	T	mg/l	< 0.02	Yes	0.1336	No	1.2028	No	3.01	No
Potassium	7440-09-7	D	mg/l	--	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	--	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	< 0.002	Yes	0.005	Yes	0.01	No	0.903	No
Selenium	7782-49-2	T	mg/l	< 0.002	Yes	0.005	Yes	0.01	No	0.903	No
Silver	7440-22-4	D	mg/l	< 0.002	Yes	0.005	No	0.005	No	0.529	No
Silver	7440-22-4	T	mg/l	< 0.002	Yes	0.005	No	0.005	No	0.529	No
Sodium	7440-23-5	D	mg/l	--	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	--	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	< 0.002	Yes	0.01	No	0.02	No	--	--
Thallium	7440-28-0	T	mg/l	< 0.002	Yes	0.01	No	0.02	No	--	--
Vanadium	7440-62-2	D	mg/l	< 0.002	Yes	0.012	Yes	0.19	No	0.315	No
Vanadium	7440-62-2	T	mg/l	< 0.002	Yes	0.012	Yes	0.19	No	0.315	No
Zinc	7440-66-6	D	mg/l	0.012	Yes	0.3039	No	0.3014	No	55.3	No
Zinc	7440-66-6	T	mg/l	0.012	Yes	0.3039	No	0.3014	No	55.3	No
Organochlorine Pesticides											
4,4-DDD	72-54-8	N	ug/l	--	--	--	--	--	--	--	--
4,4-DDE	72-55-9	N	ug/l	--	--	--	--	--	--	--	--
4,4-DDT	50-29-3	N	ug/l	--	--	0.000001	Yes	0.000001	Yes	--	--
Aldrin	309-00-2	N	ug/l	--	--	--	--	--	--	--	--
Alpha-BHC	319-84-6	N	ug/l	--	--	--	--	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	--	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	--	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	--	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	--	0.06	No	0.24	No	--	--
Endosulfan I	959-98-8	N	ug/l	--	--	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	--	--	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	--	--	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	--	--	0.03	Yes	0.16	No	--	--
Endrin aldehyde	7421-93-4	N	ug/l	--	--	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	--	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	--	--	--	--	--	--	--
Heptachlor	76-44-8	N	ug/l	--	--	0.004	Yes	0.52	No	--	--
Heptachlor epoxide	1024-57-3	N	ug/l	--	--	0.004	Yes	0.52	No	--	--
Methoxychlor	72-43-5	N	ug/l	--	--	--	--	--	--	--	--
Toxaphene	8001-35-2	N	ug/l	--	--	--	--	--	--	--	--
trans-chlordane	5103-74-2	N	ug/l	--	--	--	--	--	--	--	--
Other											
Sulfide	18496-25-8	N/T	mg/l	--	--	--	--	--	--	--	--
Total Organic Carbon											
Total Organic Carbon	ARC-TOC	N	mg/l	--	--	--	--	--	--	--	--
Polychorinated Biphenyls											
Aroclor 1016	12674-11-2	N	ug/l	--	--	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	--	--	--	--	--	--	0.194	Yes
Aroclor 1232	11141-16-5	N	ug/l	--	--	--	--	--	--	0.194	Yes
Aroclor 1242	53469-21-9	N	ug/l	--	--	--	--	--	--	8.1	No
Aroclor 1248	12672-29-6	N	ug/l	--	--	--	--	--	--	8.1	No
Aroclor 1254	11097-69-1	N	ug/l	--	--	--	--	--	--	3.8	No
Aroclor 1260	11096-82-5	N	ug/l	--	--	--	--	--	--	--	--

Table 3. Screening of Average LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Arithmetic Average[1]	Illinois Numeric Water Quality Standards (35 IAC 302.208 and 302.535)							
					Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)	Standards for Open Waters of Lake Michigan	Exceedance (Yes/No)
Semivolatile Organic Compounds												
1,1-Biphenyl	92-52-4	N	ug/l	7.06	--	--	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	2.82	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	14.1	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	N	ug/l	7.06	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	120-83-2	N	ug/l	14.1	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	95.8	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	51-28-5	N	ug/l	28.4	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	1.41	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	0.997	--	--	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	N	ug/l	2.9	--	--	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	7.06	--	--	--	--	--	--	--	--
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	28.4	--	--	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	2.42	--	--	--	--	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	19.8	--	--	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	7.06	--	--	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	14.1	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	7.06	--	--	--	--	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	14.1	--	--	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	7.06	--	--	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	16.3	--	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	7.06	--	--	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	64.2	--	--	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	14.1	--	--	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	28.4	--	--	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	1.6	--	--	--	--	--	--	--	--
Acenaphthylene	208-96-8	N	ug/l	1.41	--	--	--	--	--	--	--	--
Acetophenone	98-86-2	N	ug/l	6.32	--	--	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	1.42	--	--	--	--	--	--	--	--
Atrazine	1912-24-9	N	ug/l	7.06	--	--	--	--	--	--	--	--
Benzaldehyde	100-52-7	N	ug/l	46.4	--	--	--	--	--	--	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	0.355	--	--	--	--	--	--	--	--
Benzo(a)pyrene	50-32-8	N	ug/l	0.463	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	205-99-2	N	ug/l	0.549	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	191-24-2	N	ug/l	1.52	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	0.314	--	--	--	--	--	--	--	--
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	2.84	--	--	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	2.84	--	--	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	65.6	--	--	--	--	--	--	--	--
Butyl benzyl phthalate	85-68-7	N	ug/l	2.84	--	--	--	--	--	--	--	--
Caprolactam	105-60-2	N	ug/l	14.1	--	--	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	5.03	--	--	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	0.822	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	0.458	--	--	--	--	--	--	--	--
Dibenzofuran	132-64-9	N	ug/l	2.84	--	--	--	--	--	--	--	--
Diethyl phthalate	84-66-2	N	ug/l	2.84	--	--	--	--	--	--	--	--
Dimethyl phthalate	131-11-3	N	ug/l	2.84	--	--	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	7.03	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	117-84-0	N	ug/l	14.1	--	--	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	2.14	--	--	--	--	--	--	--	--
Fluorene	86-73-7	N	ug/l	1.48	--	--	--	--	--	--	--	--
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	7.06	--	--	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	0.706	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	33.5	--	--	--	--	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	7.06	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	0.377	--	--	--	--	--	--	--	--
Isophorone	78-59-1	N	ug/l	2.84	--	--	--	--	--	--	--	--
Naphthalene	91-20-3	N	ug/l	11.7	--	--	--	--	--	--	--	--
Nitrobenzene	98-95-3	N	ug/l	1.41	--	--	--	--	--	--	--	--
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	0.706	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	1.57	--	--	--	--	--	--	--	--
p-Chloroaniline	106-47-8	N	ug/l	14.1	--	--	--	--	--	--	--	--
Pentachlorophenol	87-86-5	N	ug/l	28.4	--	--	--	--	--	--	--	--
Phenanthrene	85-01-8	N	ug/l	3.24	--	--	--	--	--	--	--	--
Phenol	108-95-2	N	ug/l	10.4	100	No	--	--	--	--	--	--
Pyrene	129-00-0	N	ug/l	2.47	--	--	--	--	--	--	--	--
Volatile Organic Compounds												
1,1,1-Trichloroethane	71-55-6	N	ug/l	0.5	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	0.5	--	--	--	--	--	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	0.5	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	0.5	--	--	--	--	--	--	--	--
1,1-Dichloroethane	75-34-3	N	ug/l	4.15	--	--	--	--	--	--	--	--
1,1-Dichloroethene	75-35-4	N	ug/l	0.5	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	0.5	--	--	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	2.5	--	--	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	0.5	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	2.12	--	--	--	--	--	--	--	--
1,2-Dichloroethane	107-06-2	N	ug/l	7.76	--	--	--	--	--	--	--	--
1,2-Dichloropropane	78-87-5	N	ug/l	0.6	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	541-73-1	N	ug/l	0.5	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	6.52	--	--	--	--	--	--	--	--
2-Butanone (MEK)	78-93-3	N	ug/l	7.89	--	--	--	--	--	--	--	--
4-Methyl-2-Pentanone	108-10-1	N	ug/l	23.3	--	--	--	--	--	--	--	--
Acetone	67-64-1	N	ug/l	22.2	--	--	--	--	--	--	--	--
Benzene	71-43-2	N	ug/l	107	4200	No	860	No	310	No	--	--
Bromodichloromethane	75-27-4	N	ug/l	0.5	--	--	--	--	--	--	--	--
Bromoform	75-25-2	N	ug/l	0.5	--	--	--	--	--	--	--	--
Bromomethane	74-83-9	N	ug/l	1	--	--	--	--	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	4.45	--	--	--	--	--	--	--	--
Carbon Tetrachloride	56-23-5	N	ug/l	0.5	--	--	--	--	--	--	--	--
CFC-11	75-69-4	N	ug/l	0.5	--	--	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	1	--	--	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	1.32	--	--	--	--	--	--	--	--
Chlorodibromomethane	124-48-1	N	ug/l	0.5	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	N	ug/l	0.5	--	--	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	0.608	--	--	--	--	--	--	--	--
Chloromethane	74-87-3	N	ug/l	0.5	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	3.93	--	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	0.5	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	0.963	--	--	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	2.72	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	48	150	No	14	Yes	--	--	--	--
Isopropylbenzene	98-82-8	N	ug/l	10.5	--	--	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	7.88	--	--	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	2.5	--	--	--	--	--	--	--	--
Methylcyclohexane	108-87-2	N	ug/l	0.679	--	--	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	0.5	--	--	--	--	--	--	--	--
Styrene (Monomer)	100-42-5	N	ug/l	0.5	--	--	--	--	--	--	--	--
Tetrachloroethene	127-18-4	N	ug/l	0.5	--	--	--	--	--	--	--	--
Toluene	108-88-3	N	ug/l	111	2000	No	600	No	--	--	--	--
Total Xylenes	1330-20-7	N	ug/l	211	920	No	360	No	--	--	--	--
trans-1,2-Dichloroethene	156-60-5	N	ug/l	0.555	--	--	--	--	--	--	--	--
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	0.5	--	--	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	0.419	--	--	--	--	--	--	--	--
Vinyl chloride	75-01-4	N	ug/l	4.26	--	--	--	--	--	--	--	--

Notes:

[1] Average calculated using half reporting limit for non-detects.

-- = not available or not applicable

Table 3. Screening of Average LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Illinois Numeric Water Quality Standards for the Chicago Area Waterway System (35 IAC 302.407)					
				Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Semivolatile Organic Compounds									
1,1-Biphenyl	92-52-4	N	ug/l	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	--	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	N	ug/l	--	--	--	--	--	--
2,4-Dichlorophenol	120-83-2	N	ug/l	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	--	--	--	--	--	--
2,4-Dinitrophenol	51-28-5	N	ug/l	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	N	ug/l	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	--	--	--	--	--	--
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	--	--	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	--	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	--	--	--	--	--	--
Acenaphthylene	208-96-8	N	ug/l	--	--	--	--	--	--
Acetophenone	98-86-2	N	ug/l	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	--	--	--	--	--	--
Atrazine	1912-24-9	N	ug/l	--	--	--	--	--	--
Benzaldehyde	100-52-7	N	ug/l	--	--	--	--	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	--	--	--	--	--	--
Benzo(a)pyrene	50-32-8	N	ug/l	--	--	--	--	--	--
Benzo(b)fluoranthene	205-99-2	N	ug/l	--	--	--	--	--	--
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	--	--	--	--	--	--
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	--	--	--	--	--	--
Butyl benzyl phthalate	85-68-7	N	ug/l	--	--	--	--	--	--
Caprolactam	105-60-2	N	ug/l	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	--	--	--	--	--	--
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	--	--	--	--	--
Dibenzofuran	132-64-9	N	ug/l	--	--	--	--	--	--
Diethyl phthalate	84-66-2	N	ug/l	--	--	--	--	--	--
Dimethyl phthalate	131-11-3	N	ug/l	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	--	--	--	--	--	--
Di-n-octyl phthalate	117-84-0	N	ug/l	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	--	--	--	--	--	--
Fluorene	86-73-7	N	ug/l	--	--	--	--	--	--
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	--	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	--	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	--	--	--	--	--	--
Isophorone	78-59-1	N	ug/l	--	--	--	--	--	--
Naphthalene	91-20-3	N	ug/l	--	--	--	--	--	--
Nitrobenzene	98-95-3	N	ug/l	--	--	--	--	--	--
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	--	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	--	--	--	--	--	--
p-Chloroaniline	106-47-8	N	ug/l	--	--	--	--	--	--
Pentachlorophenol	87-86-5	N	ug/l	--	--	--	--	--	--
Phenanthrene	85-01-8	N	ug/l	--	--	--	--	--	--
Phenol	108-95-2	N	ug/l	--	--	--	--	860000	No
Pyrene	129-00-0	N	ug/l	--	--	--	--	--	--
Volatile Organic Compounds									
1,1,1-Trichloroethane	71-55-6	N	ug/l	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	--	--	--	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	--	--	--	--	--	--
1,1-Dichloroethane	75-34-3	N	ug/l	--	--	--	--	--	--
1,1-Dichloroethene	75-35-4	N	ug/l	--	--	--	--	--	--
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	--	--	--	--	--	--
1,2-Dichloroethane	107-06-2	N	ug/l	--	--	--	--	--	--
1,2-Dichloropropane	78-87-5	N	ug/l	--	--	--	--	--	--
1,3-Dichlorobenzene	541-73-1	N	ug/l	--	--	--	--	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	--	--	--	--	--	--
2-Butanone (MEK)	78-93-3	N	ug/l	--	--	--	--	--	--
4-Methyl-2-Pentanone	108-10-1	N	ug/l	--	--	--	--	--	--
Acetone	67-64-1	N	ug/l	--	--	--	--	--	--
Benzene	71-43-2	N	ug/l	4200	No	860	No	310	No
Bromodichloromethane	75-27-4	N	ug/l	--	--	--	--	--	--
Bromoform	75-25-2	N	ug/l	--	--	--	--	--	--
Bromomethane	74-83-9	N	ug/l	--	--	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	--	--	--	--	--	--
Carbon Tetrachloride	56-23-5	N	ug/l	--	--	--	--	--	--
CFC-11	75-69-4	N	ug/l	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	--	--	--	--	--	--
Chlorodibromomethane	124-48-1	N	ug/l	--	--	--	--	--	--
Chloroethane	75-00-3	N	ug/l	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	--	--	--	--	--	--
Chloromethane	74-87-3	N	ug/l	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	--	--	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	150	No	14	Yes	--	--
Isopropylbenzene	98-82-8	N	ug/l	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	--	--	--	--	--
Methylcyclohexane	108-87-2	N	ug/l	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	--	--	--	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	--	--	--	--	--
Tetrachloroethene	127-18-4	N	ug/l	--	--	--	--	--	--
Toluene	108-88-3	N	ug/l	2000	No	600	No	--	--
Total Xylenes	1330-20-7	N	ug/l	920	No	360	No	--	--
trans-1,2-Dichloroethene	156-60-5	N	ug/l	--	--	--	--	--	--
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	--	--	--	--	--	--
Vinyl chloride	75-01-4	N	ug/l	--	--	--	--	--	--

Notes:

[1] Average calculated using half reporting limit for non-detects.

-- = not available or not applicable

Table 3. Screening of Average LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Illinois Derived Water Quality Standards (35 IAC 302.210)					
				Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Semivolatile Organic Compounds									
1,1-Biphenyl	92-52-4	N	ug/l	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	--	--	--	0.0032	Yes
2,4,6-Trichlorophenol	88-06-2	N	ug/l	--	--	--	--	2.1	Yes
2,4-Dichlorophenol	120-83-2	N	ug/l	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	--	--	--	--	--	--
2,4-Dinitrophenol	51-28-5	N	ug/l	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	N	ug/l	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	--	--	--	--	--	--
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	--	--	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	--	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	120	No	62	No	--	--
Acenaphthylene	208-96-8	N	ug/l	190	No	15	No	--	--
Acetophenone	98-86-2	N	ug/l	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	0.66	Yes	0.53	Yes	0.035	Yes
Atrazine	1912-24-9	N	ug/l	82	No	9	No	--	--
Benzaldehyde	100-52-7	N	ug/l	180	No	14	Yes	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	--	--	--	--	0.16	Yes
Benzo(a)pyrene	50-32-8	N	ug/l	--	--	--	--	0.016	Yes
Benzo(b)fluoranthene	205-99-2	N	ug/l	--	--	--	--	0.16	Yes
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	--	--	--	--	1.6	No
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	76	No	17	Yes	1.9	Yes
Butyl benzyl phthalate	85-68-7	N	ug/l	--	--	--	--	--	--
Caprolactam	105-60-2	N	ug/l	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	--	--	--	--	16	No
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	--	--	--	16	No
Dibenzofuran	132-64-9	N	ug/l	190	No	15	No	--	--
Diethyl phthalate	84-66-2	N	ug/l	--	--	--	--	--	--
Dimethyl phthalate	131-11-3	N	ug/l	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	--	--	--	--	--	--
Di-n-octyl phthalate	117-84-0	N	ug/l	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	4.3	No	1.8	Yes	120	No
Fluorene	86-73-7	N	ug/l	59	No	16	No	4500	No
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	--	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	--	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	--	--	--	--	2.9	Yes
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	--	--	--	--	0.16	Yes
Isophorone	78-59-1	N	ug/l	--	--	--	--	760	No
Naphthalene	91-20-3	N	ug/l	510	No	68	No	--	--
Nitrobenzene	98-95-3	N	ug/l	15000	No	8500	No	530	No
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	--	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	--	--	--	--	--	--
p-Chloroaniline	106-47-8	N	ug/l	--	--	--	--	--	--
Pentachlorophenol	87-86-5	N	ug/l	--	--	--	--	2.5	Yes
Phenanthrene	85-01-8	N	ug/l	46	No	3.7	No	--	--
Phenol	108-95-2	N	ug/l	--	--	--	--	--	--
Pyrene	129-00-0	N	ug/l	--	--	--	--	3500	No
Volatile Organic Compounds									
1,1,1-Trichloroethane	71-55-6	N	ug/l	4900	No	390	No	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	1800	No	140	No	3.2	No
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	19000	No	4400	No	12	No
1,1-Dichloroethane	75-34-3	N	ug/l	20000	No	2000	No	--	--
1,1-Dichloroethene	75-35-4	N	ug/l	3000	No	240	No	120	No
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	370	No	72	No	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	210	No	170	No	--	--
1,2-Dichloroethane	107-06-2	N	ug/l	25000	No	4500	No	23	No
1,2-Dichloropropane	78-87-5	N	ug/l	4800	No	380	No	--	--
1,3-Dichlorobenzene	541-73-1	N	ug/l	500	No	200	No	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	1800	No	620	No	--	--
2-Butanone (MEK)	78-93-3	N	ug/l	320000	No	26000	No	--	--
4-Methyl-2-Pentanone	108-10-1	N	ug/l	46000	No	1400	No	--	--
Acetone	67-64-1	N	ug/l	1500000	No	120000	No	--	--
Benzene	71-43-2	N	ug/l	3900	No	800	No	--	--
Bromodichloromethane	75-27-4	N	ug/l	10	No	1	No	14.9	No
Bromoform	75-25-2	N	ug/l	--	--	--	--	50	No
Bromomethane	74-83-9	N	ug/l	--	--	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	200	No	20	No	--	--
Carbon Tetrachloride	56-23-5	N	ug/l	3500	No	280	No	1.4	No
CFC-11	75-69-4	N	ug/l	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	990	No	79	No	4500	No
Chlorodibromomethane	124-48-1	N	ug/l	--	--	--	--	11	No
Chloroethane	75-00-3	N	ug/l	13000	No	1000	No	--	--
Chloroform	67-66-3	N	ug/l	1900	No	150	No	130	No
Chloromethane	74-87-3	N	ug/l	16000	No	1300	No	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	--	--	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	--	--	--	--	--	--
Isopropylbenzene	98-82-8	N	ug/l	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	12000	No	950	No	--	--
Methylcyclohexane	108-87-2	N	ug/l	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	67000	No	5400	No	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	--	--	--	--	--
Tetrachloroethene	127-18-4	N	ug/l	--	--	--	--	--	--
Toluene	108-88-3	N	ug/l	--	--	--	--	--	--
Total Xylenes	1330-20-7	N	ug/l	--	--	--	--	--	--
trans-1,2-Dichloroethene	156-60-5	N	ug/l	--	--	--	--	34000	No
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	12000	No	940	No	25	No
Vinyl chloride	75-01-4	N	ug/l	8400	No	930	No	2	Yes

Notes:

[1] Average calculated using half reporting limit for non-detects.

-- = not available or not applicable

Table 3. Screening of Average LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	USEPA Ambient Water Quality Criteria							
				Human Health Criteria, Water and Organism	Exceedance (Yes/No)	Human Health Criteria, Organism Only	Exceedance (Yes/No)	Acute Aquatic Life Criteria	Exceedance (Yes/No)	Chronic Aquatic Life Criteria	Exceedance (Yes/No)
Semivolatile Organic Compounds											
1,1-Biphenyl	92-52-4	N	ug/l	--	--	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	200	No	4000	No	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	300	No	600	No	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	N	ug/l	1.5	Yes	2.8	Yes	--	--	--	--
2,4-Dichlorophenol	120-83-2	N	ug/l	10	Yes	60	No	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	100	No	3000	No	--	--	--	--
2,4-Dinitrophenol	51-28-5	N	ug/l	10	Yes	300	No	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	0.049	Yes	1.7	No	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	--	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	N	ug/l	800	No	1000	No	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	30	No	800	No	--	--	--	--
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	2	Yes	30	No	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	--	--	--	--	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	--	--	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	--	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	0.049	Yes	0.15	Yes	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	--	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	--	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	500	No	2000	No	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	--	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	--	--	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	--	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	--	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	70	No	90	No	--	--	--	--
Acenaphthylene	208-96-8	N	ug/l	--	--	--	--	--	--	--	--
Acetophenone	98-86-2	N	ug/l	--	--	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	300	No	400	No	--	--	--	--
Atrazine	1912-24-9	N	ug/l	--	--	--	--	--	--	--	--
Benzaldehyde	100-52-7	N	ug/l	--	--	--	--	--	--	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	0.0012	Yes	0.0013	Yes	--	--	--	--
Benzo(a)pyrene	50-32-8	N	ug/l	0.00012	Yes	0.00013	Yes	--	--	--	--
Benzo(b)fluoranthene	205-99-2	N	ug/l	0.0012	Yes	0.0013	Yes	--	--	--	--
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	0.012	Yes	0.013	Yes	--	--	--	--
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	--	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	0.03	Yes	2.2	Yes	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	0.32	Yes	0.37	Yes	--	--	--	--
Butyl benzyl phthalate	85-68-7	N	ug/l	0.1	Yes	0.1	Yes	--	--	--	--
Caprolactam	105-60-2	N	ug/l	--	--	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	--	--	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	0.12	Yes	0.13	Yes	--	--	--	--
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	0.00012	Yes	0.00013	Yes	--	--	--	--
Dibenzofuran	132-64-9	N	ug/l	--	--	--	--	--	--	--	--
Diethyl phthalate	84-66-2	N	ug/l	600	No	600	No	--	--	--	--
Dimethyl phthalate	131-11-3	N	ug/l	2000	No	2000	No	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	20	No	30	No	--	--	--	--
Di-n-octyl phthalate	117-84-0	N	ug/l	--	--	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	20	No	20	No	--	--	--	--
Fluorene	86-73-7	N	ug/l	50	No	70	No	--	--	--	--
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	0.01	Yes	0.01	Yes	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	0.000079	Yes	0.000079	Yes	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	4	Yes	4	Yes	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	0.1	Yes	0.1	Yes	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	0.0012	Yes	0.0013	Yes	--	--	--	--
Isophorone	78-59-1	N	ug/l	34	No	1800	No	--	--	--	--
Naphthalene	91-20-3	N	ug/l	--	--	--	--	--	--	--	--
Nitrobenzene	98-95-3	N	ug/l	10	No	600	No	--	--	--	--
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	0.005	Yes	0.51	Yes	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	3.3	No	6	No	--	--	--	--
p-Chloroaniline	106-47-8	N	ug/l	--	--	--	--	--	--	--	--
Pentachlorophenol	87-86-5	N	ug/l	0.03	Yes	0.04	Yes	19	Yes	15	Yes
Phenanthrene	85-01-8	N	ug/l	--	--	--	--	--	--	--	--
Phenol	108-95-2	N	ug/l	4000	No	300000	No	--	--	--	--
Pyrene	129-00-0	N	ug/l	20	No	30	No	--	--	--	--
Volatile Organic Compounds											
1,1,1-Trichloroethane	71-55-6	N	ug/l	10000	No	200000	No	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	0.2	Yes	3	No	--	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	0.55	No	8.9	No	--	--	--	--
1,1-Dichloroethane	75-34-3	N	ug/l	--	--	--	--	--	--	--	--
1,1-Dichloroethene	75-35-4	N	ug/l	300	No	20000	No	--	--	--	--
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	0.071	Yes	0.076	Yes	--	--	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	--	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	1000	No	3000	No	--	--	--	--
1,2-Dichloroethane	107-06-2	N	ug/l	9.9	No	650	No	--	--	--	--
1,2-Dichloropropane	78-87-5	N	ug/l	0.9	No	31	No	--	--	--	--
1,3-Dichlorobenzene	541-73-1	N	ug/l	7	No	10	No	--	--	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	300	No	900	No	--	--	--	--
2-Butanone (MEK)	78-93-3	N	ug/l	--	--	--	--	--	--	--	--
4-Methyl-2-Pentanone	108-10-1	N	ug/l	--	--	--	--	--	--	--	--
Acetone	67-64-1	N	ug/l	--	--	--	--	--	--	--	--
Benzene	71-43-2	N	ug/l	0.58	Yes	16	Yes	--	--	--	--
Bromodichloromethane	75-27-4	N	ug/l	0.95	No	27	No	--	--	--	--
Bromoform	75-25-2	N	ug/l	7	No	120	No	--	--	--	--
Bromomethane	74-83-9	N	ug/l	100	No	10000	No	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	--	--	--	--	--	--	--	--
Carbon Tetrachloride	56-23-5	N	ug/l	0.4	Yes	5	No	--	--	--	--
CFC-11	75-69-4	N	ug/l	--	--	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	--	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	100	No	800	No	--	--	--	--
Chlorodibromomethane	124-48-1	N	ug/l	0.8	No	21	No	--	--	--	--
Chloroethane	75-00-3	N	ug/l	--	--	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	60	No	2000	No	--	--	--	--
Chloromethane	74-87-3	N	ug/l	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	--	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	--	--	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	20	No	1000	No	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	68	No	130	No	--	--	--	--
Isopropylbenzene	98-82-8	N	ug/l	--	--	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	--	--	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	--	--	--	--	--	--	--
Methylcyclohexane	108-87-2	N	ug/l	--	--	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	--	--	--	--	--	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	--	--	--	--	--	--	--
Tetrachloroethene	127-18-4	N	ug/l	10	No	29	No	--	--	--	--
Toluene	108-88-3	N	ug/l	57	Yes	520	No	--	--	--	--
Total Xylenes	1330-20-7	N	ug/l	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	156-60-5	N	ug/l	100	No	4000	No	--	--	--	--
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	--	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	0.6	No	7	No	--	--	--	--
Vinyl chloride	75-01-4	N	ug/l	0.022	Yes	1.6	Yes	--	--	--	--

Notes:

[1] Average calculated using half reporting limit for non-detects.

-- = not available or not applicable

Table 3. Screening of Average LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Calumet Open Space Reserve						Recreator Surface Water Benchmark	
				Surface Water Background	Exceedance (Yes/No)	Surface Water Threshold	Exceedance (Yes/No)	Surface Water Benchmark	Exceedance (Yes/No)	Benchmark	Exceedance (Yes/No)
Semivolatile Organic Compounds											
1,1-Biphenyl	92-52-4	N	ug/l	--	--	--	--	--	--	102	No
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	N	ug/l	--	--	--	--	--	--	36.9	No
2,4-Dichlorophenol	120-83-2	N	ug/l	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	--	--	--	--	--	--	2040	No
2,4-Dinitrophenol	51-28-5	N	ug/l	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	--	--	--	--	--	5.8	No
2-Chloronaphthalene	91-58-7	N	ug/l	--	--	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	--	--	--	--	--	--	576	No
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	--	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	--	--	--	--	--	--	85.9	No
2-Methylphenol	95-48-7	N	ug/l	--	--	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	--	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	--	--	--	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	--	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	--	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	--	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	--	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	--	--	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	--	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	--	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	--	--	62	No	120	No	1260	No
Acenaphthylene	208-96-8	N	ug/l	--	--	15	No	190	No	1260	No
Acetophenone	98-86-2	N	ug/l	--	--	--	--	--	--	14700	No
Anthracene	120-12-7	N	ug/l	--	--	4	No	35	No	3550	No
Atrazine	1912-24-9	N	ug/l	--	--	--	--	--	--	--	--
Benzaldehyde	100-52-7	N	ug/l	--	--	--	--	--	--	2510	No
Benzo(a)anthracene	56-55-3	N	ug/l	--	--	0.03	Yes	0.2	Yes	36.5	No
Benzo(a)pyrene	50-32-8	N	ug/l	--	--	0.02	Yes	8.1	No	3.65	No
Benzo(b)fluoranthene	205-99-2	N	ug/l	--	--	9.1	No	5.7	No	36.5	No
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	--	7.6	No	13.2	No	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	--	--	--	--	--	--	365	No
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	--	--	--	--	--	507	No
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	--	--	--	--	--	--	11	No
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	--	--	--	--	--	--	1160	No
Butyl benzyl phthalate	85-68-7	N	ug/l	--	--	--	--	--	--	433	No
Caprolactam	105-60-2	N	ug/l	--	--	--	--	--	--	88300	No
Carbazole	86-74-8	N	ug/l	--	--	--	--	--	--	644	No
Chrysene	218-01-9	N	ug/l	--	--	3.6	No	17.6	No	3650	No
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	--	0.5	No	2.5	No	--	--
Dibenzofuran	132-64-9	N	ug/l	--	--	--	--	--	--	17.8	No
Diethyl phthalate	84-66-2	N	ug/l	--	--	--	--	--	--	101000	No
Dimethyl phthalate	131-11-3	N	ug/l	--	--	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	--	--	--	--	--	--	2200	No
Di-n-octyl phthalate	117-84-0	N	ug/l	--	--	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	--	--	4.4	No	199	No	7600	No
Fluorene	86-73-7	N	ug/l	--	--	19	No	336.8	No	644	No
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	--	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	--	--	--	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	--	--	4.3	No	5	No	36.5	No
Isophorone	78-59-1	N	ug/l	--	--	--	--	--	--	10300	No
Naphthalene	91-20-3	N	ug/l	--	--	68	No	510	No	812	No
Nitrobenzene	98-95-3	N	ug/l	--	--	--	--	--	--	--	--
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	--	--	--	--	--	--	697	No
p-Chloroaniline	106-47-8	N	ug/l	--	--	--	--	--	--	43.4	No
Pentachlorophenol	87-86-5	N	ug/l	--	--	--	--	--	--	0.866	Yes
Phenanthrene	85-01-8	N	ug/l	--	--	3.7	No	46	No	3550	No
Phenol	108-95-2	N	ug/l	--	--	--	--	--	--	43600	No
Pyrene	129-00-0	N	ug/l	--	--	0.3	Yes	87.6	No	220	No
Volatile Organic Compounds											
1,1,1-Trichloroethane	71-55-6	N	ug/l	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	--	--	--	--	--	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	--	--	--	--	--	--	--	--
1,1-Dichloroethane	75-34-3	N	ug/l	--	--	--	--	--	--	1390	No
1,1-Dichloroethene	75-35-4	N	ug/l	--	--	--	--	--	--	5190	No
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	--	--	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	--	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	--	--	--	--	--	--	3460	No
1,2-Dichloroethane	107-06-2	N	ug/l	--	--	--	--	--	--	108	No
1,2-Dichloropropane	78-87-5	N	ug/l	--	--	--	--	--	--	197	No
1,3-Dichlorobenzene	541-73-1	N	ug/l	--	--	--	--	--	--	313	No
1,4-Dichlorobenzene	106-46-7	N	ug/l	--	--	--	--	--	--	313	No
2-Butanone (MEK)	78-93-3	N	ug/l	--	--	--	--	--	--	107000	No
4-Methyl-2-Pentanone	108-10-1	N	ug/l	--	--	--	--	--	--	107000	No
Acetone	67-64-1	N	ug/l	--	--	--	--	--	--	--	--
Benzene	71-43-2	N	ug/l	--	--	--	--	--	--	--	--
Bromodichloromethane	75-27-4	N	ug/l	--	--	--	--	--	--	--	--
Bromoform	75-25-2	N	ug/l	--	--	--	--	--	--	--	--
Bromomethane	74-83-9	N	ug/l	--	--	--	--	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	--	--	--	--	--	--	10800	No
Carbon Tetrachloride	56-23-5	N	ug/l	--	--	--	--	--	--	--	--
CFC-11	75-69-4	N	ug/l	--	--	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	--	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	--	--	--	--	--	--	1230	No
Chlorodibromomethane	124-48-1	N	ug/l	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	N	ug/l	--	--	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	--	--	--	--	--	--	244	No
Chloromethane	74-87-3	N	ug/l	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	--	--	--	--	--	--	213	No
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	--	--	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	--	--	--	--	--	--	175	No
Isopropylbenzene	98-82-8	N	ug/l	--	--	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	--	--	--	--	--	--	180000	No
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	--	--	--	--	--	--	--
Methylcyclohexane	108-87-2	N	ug/l	--	--	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	--	--	--	--	--	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	--	--	--	--	--	10500	No
Tetrachloroethene	127-18-4	N	ug/l	--	--	--	--	--	--	267	No
Toluene	108-88-3	N	ug/l	--	--	--	--	--	--	4880	No
Total Xylenes	1330-20-7	N	ug/l	--	--	--	--	--	--	8410	No
trans-1,2-Dichloroethene	156-60-5	N	ug/l	--	--	--	--	--	--	2130	No
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	--	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	--	--	--	--	--	--	48.6	No
Vinyl chloride	75-01-4	N	ug/l	--	--	--	--	--	--	0.056	Yes

Notes:

[1] Average calculated using half reporting limit for non-detects.

-- = not available or not applicable

Table 4. Screening of Maximum Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	Illinois Numeric Water Quality Standards (35 IAC 302.208 and 302.535)							
						Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)	Standards for Open Waters of Lake Michigan	Exceedance (Yes/No)
Anions													
Ammonia Nitrogen	7664-41-7	T	mg/l	78.5	--	--	--	--	--	--	--	15	Yes
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	0.042	0.02	--	--	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	0.042	0.01	--	--	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	0.0035	0.01	--	--	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	64	5	--	--	--	--	--	--	--	--
Gases													
Carbon Dioxide	124-38-9	N	mg/l	32	0.5	--	--	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	3100	--	--	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	2.3	--	--	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	0.59	0.05	--	--	--	--	--	--	--	--
General Chemistry													
Total Suspended Solids	ARC-TSS	T	mg/l	7.2	0.5	--	--	--	--	--	--	--	--
Metals													
Aluminum	7429-90-5	D	mg/l	0.14	0.1	--	--	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	0.19	0.02	--	--	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	0.0011	0.01	--	--	--	--	--	--	--	--
Antimony	7440-36-0	T	mg/l	0.0017	0.01	--	--	--	--	--	--	--	--
Arsenic	7440-38-2	D	mg/l	0.0052	0.001	0.36	No	0.19	No	--	--	--	--
Arsenic	7440-38-2	T	mg/l	0.0058	0.001	--	--	--	--	--	--	--	--
Barium	7440-39-3	D	mg/l	0.097	--	--	--	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	0.096	--	5	No	--	--	--	--	--	--
Beryllium	7440-41-7	D	mg/l	0.000085	0.002	--	--	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	0.00011	0.002	--	--	--	--	--	--	--	--
Cadmium	7440-43-9	D	mg/l	0.00061	0.001	0.030	No	0.0024	No	--	--	--	--
Cadmium	7440-43-9	T	mg/l	0.0008	0.001	--	--	--	--	--	--	--	--
Calcium	7440-70-2	D	mg/l	24	--	--	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	24	--	--	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	0.048	0.001	1.3	No	0.44	No	--	--	--	--
Chromium	7440-47-3	T	mg/l	0.05	0.001	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	D	mg/l	0.0045	0.0005	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	T	mg/l	0.0044	0.0005	--	--	--	--	--	--	--	--
Copper	7440-50-8	D	mg/l	0.0052	0.005	0.048	No	0.029	No	--	--	--	--
Copper	7440-50-8	T	mg/l	0.0082	0.001	--	--	--	--	--	--	--	--
Iron	7439-89-6	D	mg/l	2.6	0.02	1	Yes	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	2.8	0.02	--	--	--	--	--	--	--	--
Lead	7439-92-1	D	mg/l	0.039	0.0005	0.24	No	0.051	No	--	--	--	--
Lead	7439-92-1	T	mg/l	0.071	0.0005	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	D	mg/l	11	--	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	11	--	--	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	0.22	0.005	9.5	No	4.0	No	--	--	--	--
Manganese	7439-96-5	T	mg/l	0.22	0.005	--	--	--	--	--	--	--	--
Mercury	7439-97-6	D	mg/l	0.000063	0.00005	0.0022	No	0.0011	No	--	--	--	--
Mercury	7439-97-6	T	mg/l	0.00013	0.000023	--	--	--	--	0.012	No	--	--
Nickel	7440-02-0	D	mg/l	0.017	0.001	0.21	No	0.013	Yes	--	--	--	--
Nickel	7440-02-0	T	mg/l	0.016	0.001	--	--	--	--	--	--	--	--
Potassium	7440-09-7	D	mg/l	70	--	--	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	68	--	--	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	0.0039	0.005	--	--	--	--	--	--	--	--
Selenium	7782-49-2	T	mg/l	0.0011	0.005	1	No	--	--	--	--	--	--
Silver	7440-22-4	D	mg/l	0.00016	0.0025	--	--	--	--	--	--	--	--
Silver	7440-22-4	T	mg/l	0.00026	0.0025	5	No	--	--	--	--	--	--
Sodium	7440-23-5	D	mg/l	360	--	--	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	360	--	--	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	--	0.005	--	--	--	--	--	--	--	--
Thallium	7440-28-0	T	mg/l	--	0.005	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	D	mg/l	0.0076	0.0005	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	T	mg/l	0.0081	0.0005	--	--	--	--	--	--	--	--
Zinc	7440-66-6	D	mg/l	0.067	0.002	0.30	No	0.079	No	--	--	--	--
Zinc	7440-66-6	T	mg/l	0.11	0.002	--	--	--	--	--	--	--	--
Organochlorine Pesticides													
4,4-DDD	72-54-8	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
4,4-DDE	72-55-9	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
4,4-DDT	50-29-3	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Aldrin	309-00-2	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Alpha-BHC	319-84-6	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Endosulfan I	959-98-8	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Endrin aldehyde	7421-93-4	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Heptachlor	76-44-8	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Heptachlor epoxide	1024-57-3	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Methoxychlor	72-43-5	N	ug/l	--	0.039	--	--	--	--	--	--	--	--
Toxaphene	8001-35-2	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
trans-chlordane	5103-74-2	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Other													
Sulfide	18496-25-8	N/T	mg/l	1.2	0.1	--	--	--	--	--	--	--	--
Total Organic Carbon													
Total Organic Carbon	ARC-TOC	N	mg/l	65	--	--	--	--	--	--	--	--	--
Polychorinated Biphenyls													
Aroclor 1016	12674-11-2	N	ug/l	--	0.043	--	--	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	0.093	0.043	--	--	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	0.445	0.042	--	--	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	0.81	0.043	--	--	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	0.35	0.043	--	--	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	0.24	0.043	--	--	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	--	0.043	--	--	--	--	--	--	--	--

Table 4. Screening of Maximum Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	Illinois Numeric Water Quality Standards for the Chicago Area Waterway System (35 IAC 302.407)					
						Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Anions											
Ammonia Nitrogen	7664-41-7	T	mg/l	78.5	--	--	--	--	--	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	0.042	0.02	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	0.042	0.01	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	0.0035	0.01	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	64	5	--	--	--	--	--	--
Gases											
Carbon Dioxide	124-38-9	N	mg/l	32	0.5	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	3100	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	2.3	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	0.59	0.05	--	--	--	--	--	--
General Chemistry											
Total Suspended Solids	ARC-TSS	T	mg/l	7.2	0.5	--	--	--	--	--	--
Metals											
Aluminum	7429-90-5	D	mg/l	0.14	0.1	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	0.19	0.02	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	0.0011	0.01	--	--	--	--	--	--
Antimony	7440-36-0	T	mg/l	0.0017	0.01	--	--	--	--	--	--
Arsenic	7440-38-2	D	mg/l	0.0052	0.001	0.34	No	0.15	No	--	--
Arsenic	7440-38-2	T	mg/l	0.0058	0.001	--	--	--	--	--	--
Barium	7440-39-3	D	mg/l	0.097	--	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	0.096	--	--	--	--	--	--	--
Beryllium	7440-41-7	D	mg/l	0.000085	0.002	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	0.00011	0.002	--	--	--	--	--	--
Cadmium	7440-43-9	D	mg/l	0.00061	0.001	0.030	No	0.0023	No	--	--
Cadmium	7440-43-9	T	mg/l	0.0008	0.001	--	--	--	--	--	--
Calcium	7440-70-2	D	mg/l	24	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	24	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	0.048	0.001	1.4	No	0.18	No	--	--
Chromium	7440-47-3	T	mg/l	0.05	0.001	--	--	--	--	--	--
Cobalt	7440-48-4	D	mg/l	0.0045	0.0005	--	--	--	--	--	--
Cobalt	7440-48-4	T	mg/l	0.0044	0.0005	--	--	--	--	--	--
Copper	7440-50-8	D	mg/l	0.0052	0.005	0.040	No	0.024	No	--	--
Copper	7440-50-8	T	mg/l	0.0082	0.001	--	--	--	--	--	--
Iron	7439-89-6	D	mg/l	2.6	0.02	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	2.8	0.02	--	--	--	--	--	--
Lead	7439-92-1	D	mg/l	0.039	0.0005	0.24	No	0.051	No	--	--
Lead	7439-92-1	T	mg/l	0.071	0.0005	--	--	--	--	--	--
Magnesium	7439-95-4	D	mg/l	11	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	11	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	0.22	0.005	9.5	No	4.0	No	--	--
Manganese	7439-96-5	T	mg/l	0.22	0.005	--	--	--	--	--	--
Mercury	7439-97-6	D	mg/l	0.000063	0.00005	0.0012	No	0.00065	No	--	--
Mercury	7439-97-6	T	mg/l	0.00013	0.000023	--	--	--	--	0.012	No
Nickel	7440-02-0	D	mg/l	0.017	0.001	0.21	No	0.013	Yes	--	--
Nickel	7440-02-0	T	mg/l	0.016	0.001	--	--	--	--	--	--
Potassium	7440-09-7	D	mg/l	70	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	68	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	0.0039	0.005	--	--	--	--	--	--
Selenium	7782-49-2	T	mg/l	0.0011	0.005	--	--	--	--	--	--
Silver	7440-22-4	D	mg/l	0.00016	0.0025	--	--	--	--	--	--
Silver	7440-22-4	T	mg/l	0.00026	0.0025	--	--	--	--	--	--
Sodium	7440-23-5	D	mg/l	360	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	360	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	--	0.005	--	--	--	--	--	--
Thallium	7440-28-0	T	mg/l	--	0.005	--	--	--	--	--	--
Vanadium	7440-62-2	D	mg/l	0.0076	0.0005	--	--	--	--	--	--
Vanadium	7440-62-2	T	mg/l	0.0081	0.0005	--	--	--	--	--	--
Zinc	7440-66-6	D	mg/l	0.067	0.002	0.30	No	0.079	No	--	--
Zinc	7440-66-6	T	mg/l	0.11	0.002	--	--	--	--	--	--
Organochlorine Pesticides											
4,4-DDD	72-54-8	N	ug/l	--	0.019	--	--	--	--	--	--
4,4-DDE	72-55-9	N	ug/l	--	0.019	--	--	--	--	--	--
4,4-DDT	50-29-3	N	ug/l	--	0.019	--	--	--	--	--	--
Aldrin	309-00-2	N	ug/l	--	0.019	--	--	--	--	--	--
Alpha-BHC	319-84-6	N	ug/l	--	0.019	--	--	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	0.019	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	0.019	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	0.019	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	0.019	--	--	--	--	--	--
Endosulfan I	959-98-8	N	ug/l	--	0.019	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	--	0.019	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	--	0.019	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	--	0.019	--	--	--	--	--	--
Endrin aldehyde	7421-93-4	N	ug/l	--	0.019	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	0.019	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	0.019	--	--	--	--	--	--
Heptachlor	76-44-8	N	ug/l	--	0.019	--	--	--	--	--	--
Heptachlor epoxide	1024-57-3	N	ug/l	--	0.019	--	--	--	--	--	--
Methoxychlor	72-43-5	N	ug/l	--	0.039	--	--	--	--	--	--
Toxaphene	8001-35-2	N	ug/l	--	0.19	--	--	--	--	--	--
trans-chlordane	5103-74-2	N	ug/l	--	0.019	--	--	--	--	--	--
Other											
Sulfide	18496-25-8	N/T	mg/l	1.2	0.1	--	--	--	--	--	--
Total Organic Carbon											
Total Organic Carbon	ARC-TOC	N	mg/l	65	--	--	--	--	--	--	--
Polychorinated Biphenyls											
Aroclor 1016	12674-11-2	N	ug/l	--	0.043	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	0.093	0.043	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	0.445	0.042	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	0.81	0.043	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	0.35	0.043	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	0.24	0.043	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	--	0.043	--	--	--	--	--	--

Table 4. Screening of Maximum Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	Illinois Derived Water Quality Standards (35 IAC 302.210)					
						Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Anions											
Ammonia Nitrogen	7664-41-7	T	mg/l	78.5	--	--	--	--	--	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	0.042	0.02	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	0.042	0.01	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	0.0035	0.01	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	64	5	--	--	--	--	--	--
Gases											
Carbon Dioxide	124-38-9	N	mg/l	32	0.5	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	3100	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	2.3	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	0.59	0.05	--	--	--	--	--	--
General Chemistry											
Total Suspended Solids	ARC-TSS	T	mg/l	7.2	0.5	--	--	--	--	--	--
Metals											
Aluminum	7429-90-5	D	mg/l	0.14	0.1	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	0.19	0.02	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	0.0011	0.01	--	--	--	--	12000	No
Antimony	7440-36-0	T	mg/l	0.0017	0.01	--	--	--	--	--	--
Arsenic	7440-38-2	D	mg/l	0.0052	0.001	--	--	--	--	--	--
Arsenic	7440-38-2	T	mg/l	0.0058	0.001	--	--	--	--	--	--
Barium	7440-39-3	D	mg/l	0.097	--	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	0.096	--	--	--	--	--	--	--
Beryllium	7440-41-7	D	mg/l	0.000085	0.002	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	0.00011	0.002	--	--	--	--	--	--
Cadmium	7440-43-9	D	mg/l	0.00061	0.001	--	--	--	--	--	--
Cadmium	7440-43-9	T	mg/l	0.0008	0.001	--	--	--	--	--	--
Calcium	7440-70-2	D	mg/l	24	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	24	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	0.048	0.001	--	--	--	--	--	--
Chromium	7440-47-3	T	mg/l	0.05	0.001	--	--	--	--	--	--
Cobalt	7440-48-4	D	mg/l	0.0045	0.0005	--	--	--	--	--	--
Cobalt	7440-48-4	T	mg/l	0.0044	0.0005	--	--	--	--	--	--
Copper	7440-50-8	D	mg/l	0.0052	0.005	--	--	--	--	--	--
Copper	7440-50-8	T	mg/l	0.0082	0.001	--	--	--	--	--	--
Iron	7439-89-6	D	mg/l	2.6	0.02	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	2.8	0.02	--	--	--	--	--	--
Lead	7439-92-1	D	mg/l	0.039	0.0005	--	--	--	--	--	--
Lead	7439-92-1	T	mg/l	0.071	0.0005	--	--	--	--	--	--
Magnesium	7439-95-4	D	mg/l	11	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	11	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	0.22	0.005	--	--	--	--	--	--
Manganese	7439-96-5	T	mg/l	0.22	0.005	--	--	--	--	--	--
Mercury	7439-97-6	D	mg/l	0.000063	0.00005	--	--	--	--	--	--
Mercury	7439-97-6	T	mg/l	0.00013	0.000023	--	--	--	--	--	--
Nickel	7440-02-0	D	mg/l	0.017	0.001	--	--	--	--	--	--
Nickel	7440-02-0	T	mg/l	0.016	0.001	--	--	--	--	--	--
Potassium	7440-09-7	D	mg/l	70	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	68	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	0.0039	0.005	--	--	--	--	--	--
Selenium	7782-49-2	T	mg/l	0.0011	0.005	--	--	--	--	--	--
Silver	7440-22-4	D	mg/l	0.00016	0.0025	--	--	--	--	--	--
Silver	7440-22-4	T	mg/l	0.00026	0.0025	--	--	--	--	--	--
Sodium	7440-23-5	D	mg/l	360	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	360	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	--	0.005	--	--	--	--	0.003	Yes
Thallium	7440-28-0	T	mg/l	--	0.005	--	--	--	--	--	--
Vanadium	7440-62-2	D	mg/l	0.0076	0.0005	--	--	--	--	--	--
Vanadium	7440-62-2	T	mg/l	0.0081	0.0005	--	--	--	--	--	--
Zinc	7440-66-6	D	mg/l	0.067	0.002	--	--	--	--	--	--
Zinc	7440-66-6	T	mg/l	0.11	0.002	--	--	--	--	--	--
Organochlorine Pesticides											
4,4-DDD	72-54-8	N	ug/l	--	0.019	--	--	--	--	0.00027	Yes
4,4-DDE	72-55-9	N	ug/l	--	0.019	--	--	--	--	0.00019	Yes
4,4-DDT	50-29-3	N	ug/l	--	0.019	--	--	--	--	0.00019	Yes
Aldrin	309-00-2	N	ug/l	--	0.019	--	--	--	--	0.000046	Yes
Alpha-BHC	319-84-6	N	ug/l	--	0.019	--	--	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	0.019	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	0.019	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	0.019	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	0.019	--	--	--	--	--	--
Endosulfan I	959-98-8	N	ug/l	--	0.019	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	--	0.019	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	--	0.019	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	--	0.019	--	--	--	--	--	--
Endrin aldehyde	7421-93-4	N	ug/l	--	0.019	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	0.019	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	0.019	--	--	--	--	--	--
Heptachlor	76-44-8	N	ug/l	--	0.019	--	--	--	--	--	--
Heptachlor epoxide	1024-57-3	N	ug/l	--	0.019	--	--	--	--	--	--
Methoxychlor	72-43-5	N	ug/l	--	0.039	--	--	--	--	--	--
Toxaphene	8001-35-2	N	ug/l	--	0.19	--	--	--	--	0.00024	Yes
trans-chlordane	5103-74-2	N	ug/l	--	0.019	--	--	--	--	--	--
Other											
Sulfide	18496-25-8	N/T	mg/l	1.2	0.1	--	--	--	--	--	--
Total Organic Carbon											
Total Organic Carbon	ARC-TOC	N	mg/l	65	--	--	--	--	--	--	--
Polychorinated Biphenyls											
Aroclor 1016	12674-11-2	N	ug/l	--	0.043	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	0.093	0.043	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	0.445	0.042	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	0.81	0.043	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	0.35	0.043	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	0.24	0.043	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	--	0.043	--	--	--	--	--	--

Table 4. Screening of Maximum Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	USEPA Ambient Water Quality Criteria							
						Human Health Criteria, Water and Organism	Exceedance (Yes/No)	Human Health Criteria, Organism Only	Exceedance (Yes/No)	Acute Aquatic Life Criteria	Exceedance (Yes/No)	Chronic Aquatic Life Criteria	Exceedance (Yes/No)
Anions													
Ammonia Nitrogen	7664-41-7	T	mg/l	78.5	--	--	--	--	--	--	--	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	0.042	0.02	--	--	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	0.042	0.01	10	No	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	0.0035	0.01	--	--	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	64	5	--	--	--	--	--	--	--	--
Gases													
Carbon Dioxide	124-38-9	N	mg/l	32	0.5	--	--	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	3100	--	--	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	2.3	--	--	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	0.59	0.05	--	--	--	--	--	--	--	--
General Chemistry													
Total Suspended Solids	ARC-TSS	T	mg/l	7.2	0.5	--	--	--	--	--	--	--	--
Metals													
Aluminum	7429-90-5	D	mg/l	0.14	0.1	--	--	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	0.19	0.02	--	--	--	--	0.75	No	0.087	Yes
Antimony	7440-36-0	D	mg/l	0.0011	0.01	0.0056	No	0.64	No	--	--	--	--
Antimony	7440-36-0	T	mg/l	0.0017	0.01	0.0056	No	0.64	No	--	--	--	--
Arsenic	7440-38-2	D	mg/l	0.0052	0.001	0.000018	Yes	0.00014	Yes	0.34	No	0.15	No
Arsenic	7440-38-2	T	mg/l	0.0058	0.001	0.000018	Yes	0.00014	Yes	--	--	--	--
Barium	7440-39-3	D	mg/l	0.097	--	1	No	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	0.096	--	1	No	--	--	--	--	--	--
Beryllium	7440-41-7	D	mg/l	0.000085	0.002	--	--	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	0.00011	0.002	--	--	--	--	--	--	--	--
Cadmium	7440-43-9	D	mg/l	0.00061	0.001	--	--	--	--	0.0050	No	0.0016	No
Cadmium	7440-43-9	T	mg/l	0.0008	0.001	--	--	--	--	--	--	--	--
Calcium	7440-70-2	D	mg/l	24	--	--	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	24	--	--	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	0.048	0.001	--	--	--	--	1.4	No	0.18	No
Chromium	7440-47-3	T	mg/l	0.05	0.001	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	D	mg/l	0.0045	0.0005	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	T	mg/l	0.0044	0.0005	--	--	--	--	--	--	--	--
Copper	7440-50-8	D	mg/l	0.0052	0.005	1.3	No	--	--	--	--	--	--
Copper	7440-50-8	T	mg/l	0.0082	0.001	1.3	No	--	--	--	--	--	--
Iron	7439-89-6	D	mg/l	2.6	0.02	--	--	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	2.8	0.02	--	--	--	--	--	--	1	Yes
Lead	7439-92-1	D	mg/l	0.039	0.0005	--	--	--	--	0.21	No	0.0081	Yes
Lead	7439-92-1	T	mg/l	0.071	0.0005	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	D	mg/l	11	--	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	11	--	--	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	0.22	0.005	0.05	Yes	0.1	Yes	--	--	--	--
Manganese	7439-96-5	T	mg/l	0.22	0.005	0.05	Yes	0.1	Yes	--	--	--	--
Mercury	7439-97-6	D	mg/l	0.000063	0.00005	--	--	--	--	0.0014	No	0.00077	No
Mercury	7439-97-6	T	mg/l	0.00013	0.000023	--	--	--	--	--	--	--	--
Nickel	7440-02-0	D	mg/l	0.017	0.001	0.61	No	4.6	No	1.2	No	0.13	No
Nickel	7440-02-0	T	mg/l	0.016	0.001	0.61	No	4.6	No	--	--	--	--
Potassium	7440-09-7	D	mg/l	70	--	--	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	68	--	--	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	0.0039	0.005	0.17	No	4.2	No	--	--	--	--
Selenium	7782-49-2	T	mg/l	0.0011	0.005	0.17	No	4.2	No	--	--	--	--
Silver	7440-22-4	D	mg/l	0.00016	0.0025	--	--	--	--	0.021	No	--	--
Silver	7440-22-4	T	mg/l	0.00026	0.0025	--	--	--	--	--	--	--	--
Sodium	7440-23-5	D	mg/l	360	--	--	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	360	--	--	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	--	0.005	0.00024	Yes	0.00047	Yes	--	--	--	--
Thallium	7440-28-0	T	mg/l	--	0.005	0.00024	Yes	0.00047	Yes	--	--	--	--
Vanadium	7440-62-2	D	mg/l	0.0076	0.0005	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	T	mg/l	0.0081	0.0005	--	--	--	--	--	--	--	--
Zinc	7440-66-6	D	mg/l	0.067	0.002	7.4	No	26	No	0.3	No	0.3	No
Zinc	7440-66-6	T	mg/l	0.11	0.002	7.4	No	26	No	--	--	--	--
Organochlorine Pesticides													
4,4-DDD	72-54-8	N	ug/l	--	0.019	0.00012	Yes	0.00012	Yes	--	--	--	--
4,4-DDE	72-55-9	N	ug/l	--	0.019	0.000018	Yes	0.000018	Yes	--	--	--	--
4,4-DDT	50-29-3	N	ug/l	--	0.019	0.00003	Yes	0.00003	Yes	1.1	No	0.001	Yes
Aldrin	309-00-2	N	ug/l	--	0.019	0.00000077	Yes	0.00000077	Yes	3	No	--	--
Alpha-BHC	319-84-6	N	ug/l	--	0.019	0.00036	Yes	0.00039	Yes	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	0.019	0.008	Yes	0.014	Yes	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	0.019	0.0000012	Yes	0.0000012	Yes	0.24	No	0.056	No
Endosulfan I	959-98-8	N	ug/l	--	0.019	20	No	30	No	0.22	No	0.056	No
Endosulfan II	33213-65-9	N	ug/l	--	0.019	20	No	40	No	0.22	No	0.056	No
Endosulfan sulfate	1031-07-8	N	ug/l	--	0.019	20	No	40	No	--	--	--	--
Endrin	72-20-8	N	ug/l	--	0.019	0.03	No	0.03	No	0.086	No	0.036	No
Endrin aldehyde	7421-93-4	N	ug/l	--	0.019	1	No	1	No	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	0.019	4.2	No	4.4	No	0.95	No	--	--
Heptachlor	76-44-8	N	ug/l	--	0.019	0.0000059	Yes	0.0000059	Yes	0.52	No	0.0038	Yes
Heptachlor epoxide	1024-57-3	N	ug/l	--	0.019	0.000032	Yes	0.000032	Yes	0.52	No	0.0038	Yes
Methoxychlor	72-43-5	N	ug/l	--	0.039	0.02	Yes	0.02	Yes	--	--	0.03	Yes
Toxaphene	8001-35-2	N	ug/l	--	0.19	0.0007	Yes	0.00071	Yes	0.73	No	0.0002	Yes
trans-chlordane	5103-74-2	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Other													
Sulfide	18496-25-8	N/T	mg/l	1.2	0.1	--	--	--	--	--	--	--	--
Total Organic Carbon													
Total Organic Carbon	ARC-TOC	N	mg/l	65	--	--	--	--	--	--	--	--	--
Polychorinated Biphenyls													
Aroclor 1016	12674-11-2	N	ug/l	--	0.043	--	--	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	0.093	0.043	--	--	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	0.445	0.042	--	--	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	0.81	0.043	--	--	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	0.35	0.043	--	--	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	0.24	0.043	--	--	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	--	0.043	--	--	--	--	--	--	--	--

Table 4. Screening of Maximum Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	Calumet Open Space Reserve						Recreator Surface Water Benchmark	
						Surface Water Background	Exceedance (Yes/No)	Surface Water Threshold	Exceedance (Yes/No)	Surface Water Benchmark	Exceedance (Yes/No)	Benchmark	Exceedance (Yes/No)
Anions													
Ammonia Nitrogen	7664-41-7	T	mg/l	78.5	--	--	--	25	Yes	140	No	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	0.042	0.02	--	--	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	0.042	0.01	--	--	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	0.0035	0.01	--	--	--	--	--	--	18.1	No
Sulfate	14808-79-8	T	mg/l	64	5	--	--	--	--	--	--	--	--
Gases													
Carbon Dioxide	124-38-9	N	mg/l	32	0.5	--	--	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	3100	--	--	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	2.3	--	--	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	0.59	0.05	--	--	--	--	--	--	--	--
General Chemistry													
Total Suspended Solids	ARC-TSS	T	mg/l	7.2	0.5	--	--	--	--	--	--	--	--
Metals													
Aluminum	7429-90-5	D	mg/l	0.14	0.1	0.14	No	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	0.19	0.02	0.14	Yes	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	0.0011	0.01	< 0.008	No	0.03	No	0.088	No	0.0562	No
Antimony	7440-36-0	T	mg/l	0.0017	0.01	< 0.008	No	0.03	No	0.088	No	0.0562	No
Arsenic	7440-38-2	D	mg/l	0.0052	0.001	0.0025	Yes	0.048	No	0.34	No	0.00969	No
Arsenic	7440-38-2	T	mg/l	0.0058	0.001	0.0025	Yes	0.048	No	0.34	No	0.00969	No
Barium	7440-39-3	D	mg/l	0.097	--	0.05	Yes	5	No	5	No	21.6	No
Barium	7440-39-3	T	mg/l	0.096	--	0.05	Yes	5	No	5	No	21.6	No
Beryllium	7440-41-7	D	mg/l	0.000085	0.002	< 0.004	No	--	--	--	--	0.0443	No
Beryllium	7440-41-7	T	mg/l	0.00011	0.002	< 0.004	No	--	--	--	--	0.0443	No
Cadmium	7440-43-9	D	mg/l	0.00061	0.001	< 0.002	No	0.0051	No	0.0143	No	0.0461	No
Cadmium	7440-43-9	T	mg/l	0.0008	0.001	< 0.002	No	0.0051	No	0.0143	No	0.0461	No
Calcium	7440-70-2	D	mg/l	24	--	--	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	24	--	--	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	0.048	0.001	< 0.008	Yes	--	--	--	--	561	No
Chromium	7440-47-3	T	mg/l	0.05	0.001	< 0.008	Yes	--	--	--	--	561	No
Cobalt	7440-48-4	D	mg/l	0.0045	0.0005	< 0.008	No	0.024	No	0.11	No	0.0558	No
Cobalt	7440-48-4	T	mg/l	0.0044	0.0005	< 0.008	No	0.024	No	0.11	No	0.0558	No
Copper	7440-50-8	D	mg/l	0.0052	0.005	0.0051	Yes	0.0232	No	0.0364	No	7.22	No
Copper	7440-50-8	T	mg/l	0.0082	0.001	0.0051	Yes	0.0232	No	0.0364	No	7.22	No
Iron	7439-89-6	D	mg/l	2.6	0.02	0.71	Yes	1	Yes	1	Yes	126	No
Iron	7439-89-6	T	mg/l	2.8	0.02	0.71	Yes	1	Yes	1	Yes	126	No
Lead	7439-92-1	D	mg/l	0.039	0.0005	< 0.002	Yes	0.0167	Yes	0.3182	No	--	--
Lead	7439-92-1	T	mg/l	0.071	0.0005	< 0.002	Yes	0.0167	Yes	0.3182	No	--	--
Magnesium	7439-95-4	D	mg/l	11	--	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	11	--	--	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	0.22	0.005	0.042	Yes	1	No	1	No	1.96	No
Manganese	7439-96-5	T	mg/l	0.22	0.005	0.042	Yes	1	No	1	No	1.96	No
Mercury	7439-97-6	D	mg/l	0.000063	0.00005	0.000017	Yes	0.0009	No	0.0017	No	--	--
Mercury	7439-97-6	T	mg/l	0.00013	0.000023	0.000017	Yes	0.0009	No	0.0017	No	--	--
Nickel	7440-02-0	D	mg/l	0.017	0.001	< 0.02	No	0.1336	No	1.2028	No	3.01	No
Nickel	7440-02-0	T	mg/l	0.016	0.001	< 0.02	No	0.1336	No	1.2028	No	3.01	No
Potassium	7440-09-7	D	mg/l	70	--	--	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	68	--	--	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	0.0039	0.005	< 0.002	Yes	0.005	No	0.01	No	0.903	No
Selenium	7782-49-2	T	mg/l	0.0011	0.005	< 0.002	No	0.005	No	0.01	No	0.903	No
Silver	7440-22-4	D	mg/l	0.00016	0.0025	< 0.002	No	0.005	No	0.005	No	0.529	No
Silver	7440-22-4	T	mg/l	0.00026	0.0025	< 0.002	No	0.005	No	0.005	No	0.529	No
Sodium	7440-23-5	D	mg/l	360	--	--	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	360	--	--	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	--	0.005	< 0.002	Yes	0.01	No	0.02	No	--	--
Thallium	7440-28-0	T	mg/l	--	0.005	< 0.002	Yes	0.01	No	0.02	No	--	--
Vanadium	7440-62-2	D	mg/l	0.0076	0.0005	< 0.002	Yes	0.012	No	0.19	No	0.315	No
Vanadium	7440-62-2	T	mg/l	0.0081	0.0005	< 0.002	Yes	0.012	No	0.19	No	0.315	No
Zinc	7440-66-6	D	mg/l	0.067	0.002	0.012	Yes	0.3039	No	0.3014	No	55.3	No
Zinc	7440-66-6	T	mg/l	0.11	0.002	0.012	Yes	0.3039	No	0.3014	No	55.3	No
Organochlorine Pesticides													
4,4-DDD	72-54-8	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
4,4-DDE	72-55-9	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
4,4-DDT	50-29-3	N	ug/l	--	0.019	--	--	0.000001	Yes	0.000001	Yes	--	--
Aldrin	309-00-2	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Alpha-BHC	319-84-6	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	0.019	--	--	0.06	No	0.24	No	--	--
Endosulfan I	959-98-8	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	--	0.019	--	--	0.03	No	0.16	No	--	--
Endrin aldehyde	7421-93-4	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Heptachlor	76-44-8	N	ug/l	--	0.019	--	--	0.004	Yes	0.52	No	--	--
Heptachlor epoxide	1024-57-3	N	ug/l	--	0.019	--	--	0.004	Yes	0.52	No	--	--
Methoxychlor	72-43-5	N	ug/l	--	0.039	--	--	--	--	--	--	--	--
Toxaphene	8001-35-2	N	ug/l	--	0.19	--	--	--	--	--	--	--	--
trans-chlordane	5103-74-2	N	ug/l	--	0.019	--	--	--	--	--	--	--	--
Other													
Sulfide	18496-25-8	N/T	mg/l	1.2	0.1	--	--	--	--	--	--	--	--
Total Organic Carbon													
Total Organic Carbon	ARC-TOC	N	mg/l	65	--	--	--	--	--	--	--	--	--
Polychorinated Biphenyls													
Aroclor 1016	12674-11-2	N	ug/l	--	0.043	--	--	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	0.093	0.043	--	--	--	--	--	--	0.194	No
Aroclor 1232	11141-16-5	N	ug/l	0.445	0.042	--	--	--	--	--	--	0.194	Yes
Aroclor 1242	53469-21-9	N	ug/l	0.81	0.043	--	--	--	--	--	--	8.1	No
Aroclor 1248	12672-29-6	N	ug/l	0.35	0.043	--	--	--	--	--	--	8.1	No
Aroclor 1254	11097-69-1	N	ug/l	0.24	0.043	--	--	--	--	--	--	3.8	No
Aroclor 1260	11096-82-5	N	ug/l	--	0.043	--	--	--	--	--	--	--	--

Table 4. Screening of Maximum Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	Illinois Numeric Water Quality Standards (35 IAC 302.208 and 302.535)							
						Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)	Standards for Open Waters of Lake Michigan	Exceedance (Yes/No)
Semivolatile Organic Compounds													
1,1-Biphenyl	92-52-4	N	ug/l	0.22	4.25	--	--	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	0.032	1.7	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	120-83-2	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	47	3.65	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	51-28-5	N	ug/l	--	17	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	0.85	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	0.74	--	--	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	N	ug/l	0.31	1.7	--	--	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	17	--	--	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	0.94	0.73	--	--	--	--	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	8.8	0.17	--	--	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	4.1	8.5	--	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	29	0.16	--	--	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	17	--	--	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	0.43	0.85	--	--	--	--	--	--	--	--
Acenaphthylene	208-96-8	N	ug/l	--	0.85	--	--	--	--	--	--	--	--
Acetophenone	98-86-2	N	ug/l	1.7	4.25	--	--	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	0.33	0.85	--	--	--	--	--	--	--	--
Atrazine	1912-24-9	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
Benzaldehyde	100-52-7	N	ug/l	4	30	--	--	--	--	--	--	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	0.15	0.17	--	--	--	--	--	--	--	--
Benzo(a)pyrene	50-32-8	N	ug/l	0.32	0.17	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	205-99-2	N	ug/l	0.36	0.17	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	0.85	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	0.062	0.17	--	--	--	--	--	--	--	--
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	1.7	--	--	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	--	1.7	--	--	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	29	3.6	--	--	--	--	--	--	--	--
Butyl benzyl phthalate	85-68-7	N	ug/l	--	1.7	--	--	--	--	--	--	--	--
Caprolactam	105-60-2	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	0.57	4.25	--	--	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	0.33	0.425	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	0.255	--	--	--	--	--	--	--	--
Dibenzofuran	132-64-9	N	ug/l	--	1.7	--	--	--	--	--	--	--	--
Diethyl phthalate	84-66-2	N	ug/l	--	1.7	--	--	--	--	--	--	--	--
Dimethyl phthalate	131-11-3	N	ug/l	--	1.7	--	--	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	0.14	4.25	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	117-84-0	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	1.2	0.85	--	--	--	--	--	--	--	--
Fluorene	86-73-7	N	ug/l	0.32	0.85	--	--	--	--	--	--	--	--
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	0.425	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	17	--	--	--	--	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	0.2	0.17	--	--	--	--	--	--	--	--
Isophorone	78-59-1	N	ug/l	--	1.7	--	--	--	--	--	--	--	--
Naphthalene	91-20-3	N	ug/l	4.8	0.36	--	--	--	--	--	--	--	--
Nitrobenzene	98-95-3	N	ug/l	--	0.85	--	--	--	--	--	--	--	--
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	0.425	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	0.54	0.85	--	--	--	--	--	--	--	--
p-Chloroaniline	106-47-8	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
Pentachlorophenol	87-86-5	N	ug/l	--	17	--	--	--	--	--	--	--	--
Phenanthrene	85-01-8	N	ug/l	1.6	0.85	--	--	--	--	--	--	--	--
Phenol	108-95-2	N	ug/l	4.55	4.2	100	No	--	--	--	--	--	--
Pyrene	129-00-0	N	ug/l	1	0.85	--	--	--	--	--	--	--	--
Volatile Organic Compounds													
1,1,1-Trichloroethane	71-55-6	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
1,1-Dichloroethane	75-34-3	N	ug/l	2.4	0.1	--	--	--	--	--	--	--	--
1,1-Dichloroethene	75-35-4	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	0.5	--	--	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	0.89	0.1	--	--	--	--	--	--	--	--
1,2-Dichloroethane	107-06-2	N	ug/l	5.8	0.1	--	--	--	--	--	--	--	--
1,2-Dichloropropane	78-87-5	N	ug/l	0.17	0.1	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	541-73-1	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	1.7	0.1	--	--	--	--	--	--	--	--
2-Butanone (MEK)	78-93-3	N	ug/l	2.4	0.5	--	--	--	--	--	--	--	--
4-Methyl-2-Pentanone	108-10-1	N	ug/l	10	0.5	--	--	--	--	--	--	--	--
Acetone	67-64-1	N	ug/l	5.6	0.5	--	--	--	--	--	--	--	--
Benzene	71-43-2	N	ug/l	53	0.05	4200	No	860	No	310	No	--	--
Bromodichloromethane	75-27-4	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Bromoform	75-25-2	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Bromomethane	74-83-9	N	ug/l	--	0.2	--	--	--	--	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	3.3	0.2	--	--	--	--	--	--	--	--
Carbon Tetrachloride	56-23-5	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
CFC-11	75-69-4	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	0.2	--	--	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	0.46	0.1	--	--	--	--	--	--	--	--
Chlorodibromomethane	124-48-1	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	0.065	0.2	--	--	--	--	--	--	--	--
Chloromethane	74-87-3	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	1.1	0.1	--	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	0.22	0.1	--	--	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	0.69	0.5	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	18	0.05	150	No	14	Yes	--	--	--	--
Isopropylbenzene	98-82-8	N	ug/l	4	0.1	--	--	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	11	0.5	--	--	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	0.5	--	--	--	--	--	--	--	--
Methylcyclohexane	108-87-2	N	ug/l	0.14	0.1	--	--	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Tetrachloroethene	127-18-4	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Toluene	108-88-3	N	ug/l	42	0.05	2000	No	600	No	--	--	--	--
Total Xylenes	1330-20-7	N	ug/l	91	0.1	920	No	360	No	--	--	--	--
trans-1,2-Dichloroethene	156-60-5	N	ug/l	0.11	0.1	--	--	--	--	--	--	--	--
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	0.24	0.05	--	--	--	--	--	--	--	--
Vinyl chloride	75-01-4	N	ug/l	1.3	0.05	--	--	--	--	--	--	--	--

Notes:

[1] Maximum detect was used to screen criteria if available. If maximum detect not available (i.e., constituent not detected in any samples), the maximum non-detect was used. All concentrations divided by 10 to account for dilution.

-- = not available or not applicable

Table 4. Screening of Maximum Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	Illinois Numeric Water Quality Standards for the Chicago Area Waterway System (35 IAC 302.407)					
						Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Semivolatile Organic Compounds											
1,1-Biphenyl	92-52-4	N	ug/l	0.22	4.25	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	0.032	1.7	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	8.5	--	--	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	N	ug/l	--	4.25	--	--	--	--	--	--
2,4-Dichlorophenol	120-83-2	N	ug/l	--	8.5	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	47	3.65	--	--	--	--	--	--
2,4-Dinitrophenol	51-28-5	N	ug/l	--	17	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	0.85	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	0.74	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	N	ug/l	0.31	1.7	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	--	4.25	--	--	--	--	--	--
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	17	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	0.94	0.73	--	--	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	8.8	0.17	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	4.25	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	8.5	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	4.25	--	--	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	8.5	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	4.25	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	4.1	8.5	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	4.25	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	29	0.16	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	8.5	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	17	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	0.43	0.85	--	--	--	--	--	--
Acenaphthylene	208-96-8	N	ug/l	--	0.85	--	--	--	--	--	--
Acetophenone	98-86-2	N	ug/l	1.7	4.25	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	0.33	0.85	--	--	--	--	--	--
Atrazine	1912-24-9	N	ug/l	--	4.25	--	--	--	--	--	--
Benzaldehyde	100-52-7	N	ug/l	4	30	--	--	--	--	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	0.15	0.17	--	--	--	--	--	--
Benzo(a)pyrene	50-32-8	N	ug/l	0.32	0.17	--	--	--	--	--	--
Benzo(b)fluoranthene	205-99-2	N	ug/l	0.36	0.17	--	--	--	--	--	--
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	0.85	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	0.062	0.17	--	--	--	--	--	--
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	1.7	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	--	1.7	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	29	3.6	--	--	--	--	--	--
Butyl benzyl phthalate	85-68-7	N	ug/l	--	1.7	--	--	--	--	--	--
Caprolactam	105-60-2	N	ug/l	--	8.5	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	0.57	4.25	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	0.33	0.425	--	--	--	--	--	--
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	0.255	--	--	--	--	--	--
Dibenzofuran	132-64-9	N	ug/l	--	1.7	--	--	--	--	--	--
Diethyl phthalate	84-66-2	N	ug/l	--	1.7	--	--	--	--	--	--
Dimethyl phthalate	131-11-3	N	ug/l	--	1.7	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	0.14	4.25	--	--	--	--	--	--
Di-n-octyl phthalate	117-84-0	N	ug/l	--	8.5	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	1.2	0.85	--	--	--	--	--	--
Fluorene	86-73-7	N	ug/l	0.32	0.85	--	--	--	--	--	--
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	4.25	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	0.425	--	--	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	17	--	--	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	--	4.25	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	0.2	0.17	--	--	--	--	--	--
Isophorone	78-59-1	N	ug/l	--	1.7	--	--	--	--	--	--
Naphthalene	91-20-3	N	ug/l	4.8	0.36	--	--	--	--	--	--
Nitrobenzene	98-95-3	N	ug/l	--	0.85	--	--	--	--	--	--
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	0.425	--	--	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	0.54	0.85	--	--	--	--	--	--
p-Chloroaniline	106-47-8	N	ug/l	--	8.5	--	--	--	--	--	--
Pentachlorophenol	87-86-5	N	ug/l	--	17	--	--	--	--	--	--
Phenanthrene	85-01-8	N	ug/l	1.6	0.85	--	--	--	--	--	--
Phenol	108-95-2	N	ug/l	4.55	4.2	--	--	--	--	860000	No
Pyrene	129-00-0	N	ug/l	1	0.85	--	--	--	--	--	--
Volatile Organic Compounds											
1,1,1-Trichloroethane	71-55-6	N	ug/l	--	0.1	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	--	0.1	--	--	--	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	0.1	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	--	0.1	--	--	--	--	--	--
1,1-Dichloroethane	75-34-3	N	ug/l	2.4	0.1	--	--	--	--	--	--
1,1-Dichloroethene	75-35-4	N	ug/l	--	0.1	--	--	--	--	--	--
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	--	0.1	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	0.5	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	0.1	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	0.89	0.1	--	--	--	--	--	--
1,2-Dichloroethane	107-06-2	N	ug/l	5.8	0.1	--	--	--	--	--	--
1,2-Dichloropropane	78-87-5	N	ug/l	0.17	0.1	--	--	--	--	--	--
1,3-Dichlorobenzene	541-73-1	N	ug/l	--	0.1	--	--	--	--	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	1.7	0.1	--	--	--	--	--	--
2-Butanone (MEK)	78-93-3	N	ug/l	2.4	0.5	--	--	--	--	--	--
4-Methyl-2-Pentanone	108-10-1	N	ug/l	10	0.5	--	--	--	--	--	--
Acetone	67-64-1	N	ug/l	5.6	0.5	--	--	--	--	--	--
Benzene	71-43-2	N	ug/l	53	0.05	4200	No	860	No	310	No
Bromodichloromethane	75-27-4	N	ug/l	--	0.1	--	--	--	--	--	--
Bromoform	75-25-2	N	ug/l	--	0.1	--	--	--	--	--	--
Bromomethane	74-83-9	N	ug/l	--	0.2	--	--	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	3.3	0.2	--	--	--	--	--	--
Carbon Tetrachloride	56-23-5	N	ug/l	--	0.1	--	--	--	--	--	--
CFC-11	75-69-4	N	ug/l	--	0.1	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	0.2	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	0.46	0.1	--	--	--	--	--	--
Chlorodibromomethane	124-48-1	N	ug/l	--	0.1	--	--	--	--	--	--
Chloroethane	75-00-3	N	ug/l	--	0.1	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	0.065	0.2	--	--	--	--	--	--
Chloromethane	74-87-3	N	ug/l	--	0.1	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	1.1	0.1	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	0.1	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	0.22	0.1	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	0.69	0.5	--	--	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	18	0.05	150	No	14	Yes	--	--
Isopropylbenzene	98-82-8	N	ug/l	4	0.1	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	11	0.5	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	0.5	--	--	--	--	--	--
Methylcyclohexane	108-87-2	N	ug/l	0.14	0.1	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	0.1	--	--	--	--	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	0.1	--	--	--	--	--	--
Tetrachloroethene	127-18-4	N	ug/l	--	0.1	--	--	--	--	--	--
Toluene	108-88-3	N	ug/l	42	0.05	2000	No	600	No	--	--
Total Xylenes	1330-20-7	N	ug/l	91	0.1	920	No	360	No	--	--
trans-1,2-Dichloroethene	156-60-5	N	ug/l	0.11	0.1	--	--	--	--	--	--
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	0.1	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	0.24	0.05	--	--	--	--	--	--
Vinyl chloride	75-01-4	N	ug/l	1.3	0.05	--	--	--	--	--	--

Notes:

[1] Maximum detect was used to screen criteria if available. If maximum detect not available (i.e., constituent not de

-- = not available or not applicable

Table 4. Screening of Maximum Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	Illinois Derived Water Quality Standards (35 IAC 302.210)					
						Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Semivolatile Organic Compounds											
1,1-Biphenyl	92-52-4	N	ug/l	0.22	4.25	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	0.032	1.7	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	8.5	--	--	--	--	0.0032	Yes
2,4,6-Trichlorophenol	88-06-2	N	ug/l	--	4.25	--	--	--	--	2.1	Yes
2,4-Dichlorophenol	120-83-2	N	ug/l	--	8.5	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	47	3.65	--	--	--	--	--	--
2,4-Dinitrophenol	51-28-5	N	ug/l	--	17	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	0.85	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	0.74	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	N	ug/l	0.31	1.7	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	--	4.25	--	--	--	--	--	--
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	17	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	0.94	0.73	--	--	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	8.8	0.17	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	4.25	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	8.5	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	4.25	--	--	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	8.5	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	4.25	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	4.1	8.5	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	4.25	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	29	0.16	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	8.5	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	17	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	0.43	0.85	120	No	62	No	--	--
Acenaphthylene	208-96-8	N	ug/l	--	0.85	190	No	15	No	--	--
Acetophenone	98-86-2	N	ug/l	1.7	4.25	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	0.33	0.85	0.66	No	0.53	No	0.035	Yes
Atrazine	1912-24-9	N	ug/l	--	4.25	82	No	9	No	--	--
Benzaldehyde	100-52-7	N	ug/l	4	30	180	No	14	No	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	0.15	0.17	--	--	--	--	0.16	No
Benzo(a)pyrene	50-32-8	N	ug/l	0.32	0.17	--	--	--	--	0.016	Yes
Benzo(b)fluoranthene	205-99-2	N	ug/l	0.36	0.17	--	--	--	--	0.16	Yes
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	0.85	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	0.062	0.17	--	--	--	--	1.6	No
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	1.7	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	--	1.7	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	29	3.6	76	No	17	Yes	1.9	Yes
Butyl benzyl phthalate	85-68-7	N	ug/l	--	1.7	--	--	--	--	--	--
Caprolactam	105-60-2	N	ug/l	--	8.5	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	0.57	4.25	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	0.33	0.425	--	--	--	--	16	No
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	0.255	--	--	--	--	16	No
Dibenzofuran	132-64-9	N	ug/l	--	1.7	190	No	15	No	--	--
Diethyl phthalate	84-66-2	N	ug/l	--	1.7	--	--	--	--	--	--
Dimethyl phthalate	131-11-3	N	ug/l	--	1.7	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	0.14	4.25	--	--	--	--	--	--
Di-n-octyl phthalate	117-84-0	N	ug/l	--	8.5	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	1.2	0.85	4.3	No	1.8	No	120	No
Fluorene	86-73-7	N	ug/l	0.32	0.85	59	No	16	No	4500	No
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	4.25	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	0.425	--	--	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	17	--	--	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	--	4.25	--	--	--	--	2.9	Yes
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	0.2	0.17	--	--	--	--	0.16	Yes
Isophorone	78-59-1	N	ug/l	--	1.7	--	--	--	--	760	No
Naphthalene	91-20-3	N	ug/l	4.8	0.36	510	No	68	No	--	--
Nitrobenzene	98-95-3	N	ug/l	--	0.85	15000	No	8500	No	530	No
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	0.425	--	--	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	0.54	0.85	--	--	--	--	--	--
p-Chloroaniline	106-47-8	N	ug/l	--	8.5	--	--	--	--	--	--
Pentachlorophenol	87-86-5	N	ug/l	--	17	--	--	--	--	2.5	Yes
Phenanthrene	85-01-8	N	ug/l	1.6	0.85	46	No	3.7	No	--	--
Phenol	108-95-2	N	ug/l	4.55	4.2	--	--	--	--	--	--
Pyrene	129-00-0	N	ug/l	1	0.85	--	--	--	--	3500	No
Volatile Organic Compounds											
1,1,1-Trichloroethane	71-55-6	N	ug/l	--	0.1	4900	No	390	No	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	--	0.1	1800	No	140	No	3.2	No
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	0.1	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	--	0.1	19000	No	4400	No	12	No
1,1-Dichloroethane	75-34-3	N	ug/l	2.4	0.1	20000	No	2000	No	--	--
1,1-Dichloroethene	75-35-4	N	ug/l	--	0.1	3000	No	240	No	120	No
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	--	0.1	370	No	72	No	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	0.5	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	0.1	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	0.89	0.1	210	No	170	No	--	--
1,2-Dichloroethane	107-06-2	N	ug/l	5.8	0.1	25000	No	4500	No	23	No
1,2-Dichloropropane	78-87-5	N	ug/l	0.17	0.1	4800	No	380	No	--	--
1,3-Dichlorobenzene	541-73-1	N	ug/l	--	0.1	500	No	200	No	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	1.7	0.1	1800	No	620	No	--	--
2-Butanone (MEK)	78-93-3	N	ug/l	2.4	0.5	320000	No	26000	No	--	--
4-Methyl-2-Pentanone	108-10-1	N	ug/l	10	0.5	46000	No	1400	No	--	--
Acetone	67-64-1	N	ug/l	5.6	0.5	1500000	No	120000	No	--	--
Benzene	71-43-2	N	ug/l	53	0.05	3900	No	800	No	--	--
Bromodichloromethane	75-27-4	N	ug/l	--	0.1	10	No	1	No	14.9	No
Bromoform	75-25-2	N	ug/l	--	0.1	--	--	--	--	50	No
Bromomethane	74-83-9	N	ug/l	--	0.2	--	--	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	3.3	0.2	200	No	20	No	--	--
Carbon Tetrachloride	56-23-5	N	ug/l	--	0.1	3500	No	280	No	1.4	No
CFC-11	75-69-4	N	ug/l	--	0.1	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	0.2	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	0.46	0.1	990	No	79	No	4500	No
Chlorodibromomethane	124-48-1	N	ug/l	--	0.1	--	--	--	--	11	No
Chloroethane	75-00-3	N	ug/l	--	0.1	13000	No	1000	No	--	--
Chloroform	67-66-3	N	ug/l	0.065	0.2	1900	No	150	No	130	No
Chloromethane	74-87-3	N	ug/l	--	0.1	16000	No	1300	No	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	1.1	0.1	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	0.1	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	0.22	0.1	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	0.69	0.5	--	--	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	18	0.05	--	--	--	--	--	--
Isopropylbenzene	98-82-8	N	ug/l	4	0.1	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	11	0.5	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	0.5	12000	No	950	No	--	--
Methylcyclohexane	108-87-2	N	ug/l	0.14	0.1	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	0.1	67000	No	5400	No	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	0.1	--	--	--	--	--	--
Tetrachloroethene	127-18-4	N	ug/l	--	0.1	--	--	--	--	--	--
Toluene	108-88-3	N	ug/l	42	0.05	--	--	--	--	--	--
Total Xylenes	1330-20-7	N	ug/l	91	0.1	--	--	--	--	--	--
trans-1,2-Dichloroethene	156-60-5	N	ug/l	0.11	0.1	--	--	--	--	34000	No
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	0.1	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	0.24	0.05	12000	No	940	No	25	No
Vinyl chloride	75-01-4	N	ug/l	1.3	0.05	8400	No	930	No	2	No

Notes:

[1] Maximum detect was used to screen criteria if available. If maximum detect not available (i.e., constituent not de

-- = not available or not applicable

Table 4. Screening of Maximum Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	USEPA Ambient Water Quality Criteria							
						Human Health Criteria, Water and Organism	Exceedance (Yes/No)	Human Health Criteria, Organism Only	Exceedance (Yes/No)	Acute Aquatic Life Criteria	Exceedance (Yes/No)	Chronic Aquatic Life Criteria	Exceedance (Yes/No)
Semivolatile Organic Compounds													
1,1-Biphenyl	92-52-4	N	ug/l	0.22	4.25	--	--	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	0.032	1.7	200	No	4000	No	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	8.5	300	No	600	No	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	N	ug/l	--	4.25	1.5	Yes	2.8	Yes	--	--	--	--
2,4-Dichlorophenol	120-83-2	N	ug/l	--	8.5	10	No	60	No	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	47	3.65	100	No	3000	No	--	--	--	--
2,4-Dinitrophenol	51-28-5	N	ug/l	--	17	10	Yes	300	No	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	0.85	0.049	Yes	1.7	No	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	0.74	--	--	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	N	ug/l	0.31	1.7	800	No	1000	No	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	--	4.25	30	No	800	No	--	--	--	--
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	17	2	Yes	30	No	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	0.94	0.73	--	--	--	--	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	8.8	0.17	--	--	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	4.25	0.049	Yes	0.15	Yes	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	4.1	8.5	500	No	2000	No	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	29	0.16	--	--	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	17	--	--	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	0.43	0.85	70	No	90	No	--	--	--	--
Acenaphthylene	208-96-8	N	ug/l	--	0.85	--	--	--	--	--	--	--	--
Acetophenone	98-86-2	N	ug/l	1.7	4.25	--	--	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	0.33	0.85	300	No	400	No	--	--	--	--
Atrazine	1912-24-9	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
Benzaldehyde	100-52-7	N	ug/l	4	30	--	--	--	--	--	--	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	0.15	0.17	0.0012	Yes	0.0013	Yes	--	--	--	--
Benzo(a)pyrene	50-32-8	N	ug/l	0.32	0.17	0.00012	Yes	0.00013	Yes	--	--	--	--
Benzo(b)fluoranthene	205-99-2	N	ug/l	0.36	0.17	0.0012	Yes	0.0013	Yes	--	--	--	--
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	0.85	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	0.062	0.17	0.012	Yes	0.013	Yes	--	--	--	--
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	1.7	--	--	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	--	1.7	0.03	Yes	2.2	No	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	29	3.6	0.32	Yes	0.37	Yes	--	--	--	--
Butyl benzyl phthalate	85-68-7	N	ug/l	--	1.7	0.1	Yes	0.1	Yes	--	--	--	--
Caprolactam	105-60-2	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	0.57	4.25	--	--	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	0.33	0.425	0.12	Yes	0.13	Yes	--	--	--	--
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	0.255	0.00012	Yes	0.00013	Yes	--	--	--	--
Dibenzofuran	132-64-9	N	ug/l	--	1.7	--	--	--	--	--	--	--	--
Diethyl phthalate	84-66-2	N	ug/l	--	1.7	600	No	600	No	--	--	--	--
Dimethyl phthalate	131-11-3	N	ug/l	--	1.7	2000	No	2000	No	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	0.14	4.25	20	No	30	No	--	--	--	--
Di-n-octyl phthalate	117-84-0	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	1.2	0.85	20	No	20	No	--	--	--	--
Fluorene	86-73-7	N	ug/l	0.32	0.85	50	No	70	No	--	--	--	--
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	4.25	0.01	Yes	0.01	Yes	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	0.425	0.000079	Yes	0.000079	Yes	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	17	4	Yes	4	Yes	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	--	4.25	0.1	Yes	0.1	Yes	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	0.2	0.17	0.0012	Yes	0.0013	Yes	--	--	--	--
Isophorone	78-59-1	N	ug/l	--	1.7	34	No	1800	No	--	--	--	--
Naphthalene	91-20-3	N	ug/l	4.8	0.36	--	--	--	--	--	--	--	--
Nitrobenzene	98-95-3	N	ug/l	--	0.85	10	No	600	No	--	--	--	--
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	0.425	0.005	Yes	0.51	No	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	0.54	0.85	3.3	No	6	No	--	--	--	--
p-Chloroaniline	106-47-8	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
Pentachlorophenol	87-86-5	N	ug/l	--	17	0.03	Yes	0.04	Yes	19	No	15	Yes
Phenanthrene	85-01-8	N	ug/l	1.6	0.85	--	--	--	--	--	--	--	--
Phenol	108-95-2	N	ug/l	4.55	4.2	4000	No	300000	No	--	--	--	--
Pyrene	129-00-0	N	ug/l	1	0.85	20	No	30	No	--	--	--	--
Volatile Organic Compounds													
1,1,1-Trichloroethane	71-55-6	N	ug/l	--	0.1	10000	No	200000	No	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	--	0.1	0.2	No	3	No	--	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	--	0.1	0.55	No	8.9	No	--	--	--	--
1,1-Dichloroethane	75-34-3	N	ug/l	2.4	0.1	--	--	--	--	--	--	--	--
1,1-Dichloroethene	75-35-4	N	ug/l	--	0.1	300	No	20000	No	--	--	--	--
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	--	0.1	0.071	Yes	0.076	Yes	--	--	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	0.5	--	--	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	0.89	0.1	1000	No	3000	No	--	--	--	--
1,2-Dichloroethane	107-06-2	N	ug/l	5.8	0.1	9.9	No	650	No	--	--	--	--
1,2-Dichloropropane	78-87-5	N	ug/l	0.17	0.1	0.9	No	31	No	--	--	--	--
1,3-Dichlorobenzene	541-73-1	N	ug/l	--	0.1	7	No	10	No	--	--	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	1.7	0.1	300	No	900	No	--	--	--	--
2-Butanone (MEK)	78-93-3	N	ug/l	2.4	0.5	--	--	--	--	--	--	--	--
4-Methyl-2-Pentanone	108-10-1	N	ug/l	10	0.5	--	--	--	--	--	--	--	--
Acetone	67-64-1	N	ug/l	5.6	0.5	--	--	--	--	--	--	--	--
Benzene	71-43-2	N	ug/l	53	0.05	0.58	Yes	16	Yes	--	--	--	--
Bromodichloromethane	75-27-4	N	ug/l	--	0.1	0.95	No	27	No	--	--	--	--
Bromoform	75-25-2	N	ug/l	--	0.1	7	No	120	No	--	--	--	--
Bromomethane	74-83-9	N	ug/l	--	0.2	100	No	10000	No	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	3.3	0.2	--	--	--	--	--	--	--	--
Carbon Tetrachloride	56-23-5	N	ug/l	--	0.1	0.4	No	5	No	--	--	--	--
CFC-11	75-69-4	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	0.2	--	--	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	0.46	0.1	100	No	800	No	--	--	--	--
Chlorodibromomethane	124-48-1	N	ug/l	--	0.1	0.8	No	21	No	--	--	--	--
Chloroethane	75-00-3	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	0.065	0.2	60	No	2000	No	--	--	--	--
Chloromethane	74-87-3	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	1.1	0.1	--	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	0.22	0.1	--	--	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	0.69	0.5	20	No	1000	No	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	18	0.05	68	No	130	No	--	--	--	--
Isopropylbenzene	98-82-8	N	ug/l	4	0.1	--	--	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	11	0.5	--	--	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	0.5	--	--	--	--	--	--	--	--
Methylcyclohexane	108-87-2	N	ug/l	0.14	0.1	--	--	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Tetrachloroethene	127-18-4	N	ug/l	--	0.1	10	No	29	No	--	--	--	--
Toluene	108-88-3	N	ug/l	42	0.05	57	No	520	No	--	--	--	--
Total Xylenes	1330-20-7	N	ug/l	91	0.1	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	156-60-5	N	ug/l	0.11	0.1	100	No	4000	No	--	--	--	--
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	0.24	0.05	0.6	No	7	No	--	--	--	--
Vinyl chloride	75-01-4	N	ug/l	1.3	0.05	0.022	Yes	1.6	No	--	--	--	--

Notes:

[1] Maximum detect was used to screen criteria if available. If maximum detect not available (i.e., constituent not de

-- = not available or not applicable

Table 4. Screening of Maximum Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect, MW-4 through MW-8[1]	Maximum Non-Detect, MW-4 through MW-8[1]	Calumet Open Space Reserve						Recreator Surface Water Benchmark	
						Surface Water Background	Exceedance (Yes/No)	Surface Water Threshold	Exceedance (Yes/No)	Surface Water Benchmark	Exceedance (Yes/No)	Benchmark	Exceedance (Yes/No)
Semivolatile Organic Compounds													
1,1-Biphenyl	92-52-4	N	ug/l	0.22	4.25	--	--	--	--	--	--	102	No
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	0.032	1.7	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	N	ug/l	--	4.25	--	--	--	--	--	--	36.9	No
2,4-Dichlorophenol	120-83-2	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	47	3.65	--	--	--	--	--	--	2040	No
2,4-Dinitrophenol	51-28-5	N	ug/l	--	17	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	0.85	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	0.74	--	--	--	--	--	--	5.8	No
2-Chloronaphthalene	91-58-7	N	ug/l	0.31	1.7	--	--	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	--	4.25	--	--	--	--	--	--	576	No
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	17	--	--	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	0.94	0.73	--	--	--	--	--	--	85.9	No
2-Methylphenol	95-48-7	N	ug/l	8.8	0.17	--	--	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	4.1	8.5	--	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	29	0.16	--	--	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	17	--	--	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	0.43	0.85	--	--	62	No	120	No	1260	No
Acenaphthylene	208-96-8	N	ug/l	--	0.85	--	--	15	No	190	No	1260	No
Acetophenone	98-86-2	N	ug/l	1.7	4.25	--	--	--	--	--	--	14700	No
Anthracene	120-12-7	N	ug/l	0.33	0.85	--	--	4	No	35	No	3550	No
Atrazine	1912-24-9	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
Benzaldehyde	100-52-7	N	ug/l	4	30	--	--	--	--	--	--	2510	No
Benzo(a)anthracene	56-55-3	N	ug/l	0.15	0.17	--	--	0.03	Yes	0.2	No	36.5	No
Benzo(a)pyrene	50-32-8	N	ug/l	0.32	0.17	--	--	0.02	Yes	8.1	No	3.65	No
Benzo(b)fluoranthene	205-99-2	N	ug/l	0.36	0.17	--	--	9.1	No	5.7	No	36.5	No
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	0.85	--	--	7.6	No	13.2	No	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	0.062	0.17	--	--	--	--	--	--	365	No
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	1.7	--	--	--	--	--	--	507	No
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	--	1.7	--	--	--	--	--	--	11	No
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	29	3.6	--	--	--	--	--	--	1160	No
Butyl benzyl phthalate	85-68-7	N	ug/l	--	1.7	--	--	--	--	--	--	433	No
Caprolactam	105-60-2	N	ug/l	--	8.5	--	--	--	--	--	--	88300	No
Carbazole	86-74-8	N	ug/l	0.57	4.25	--	--	--	--	--	--	644	No
Chrysene	218-01-9	N	ug/l	0.33	0.425	--	--	3.6	No	17.6	No	3650	No
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	0.255	--	--	0.5	No	2.5	No	--	--
Dibenzofuran	132-64-9	N	ug/l	--	1.7	--	--	--	--	--	--	17.8	No
Diethyl phthalate	84-66-2	N	ug/l	--	1.7	--	--	--	--	--	--	101000	No
Dimethyl phthalate	131-11-3	N	ug/l	--	1.7	--	--	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	0.14	4.25	--	--	--	--	--	--	2200	No
Di-n-octyl phthalate	117-84-0	N	ug/l	--	8.5	--	--	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	1.2	0.85	--	--	4.4	No	199	No	7600	No
Fluorene	86-73-7	N	ug/l	0.32	0.85	--	--	19	No	336.8	No	644	No
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	0.425	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	17	--	--	--	--	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	--	4.25	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	0.2	0.17	--	--	4.3	No	5	No	36.5	No
Isophorone	78-59-1	N	ug/l	--	1.7	--	--	--	--	--	--	10300	No
Naphthalene	91-20-3	N	ug/l	4.8	0.36	--	--	68	No	510	No	812	No
Nitrobenzene	98-95-3	N	ug/l	--	0.85	--	--	--	--	--	--	--	--
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	0.425	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	0.54	0.85	--	--	--	--	--	--	697	No
p-Chloroaniline	106-47-8	N	ug/l	--	8.5	--	--	--	--	--	--	43.4	No
Pentachlorophenol	87-86-5	N	ug/l	--	17	--	--	--	--	--	--	0.866	Yes
Phenanthrene	85-01-8	N	ug/l	1.6	0.85	--	--	3.7	No	46	No	3550	No
Phenol	108-95-2	N	ug/l	4.55	4.2	--	--	--	--	--	--	43600	No
Pyrene	129-00-0	N	ug/l	1	0.85	--	--	0.3	Yes	87.6	No	220	No
Volatile Organic Compounds													
1,1,1-Trichloroethane	71-55-6	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
1,1-Dichloroethane	75-34-3	N	ug/l	2.4	0.1	--	--	--	--	--	--	1390	No
1,1-Dichloroethene	75-35-4	N	ug/l	--	0.1	--	--	--	--	--	--	5190	No
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	0.5	--	--	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	0.89	0.1	--	--	--	--	--	--	3460	No
1,2-Dichloroethane	107-06-2	N	ug/l	5.8	0.1	--	--	--	--	--	--	108	No
1,2-Dichloropropane	78-87-5	N	ug/l	0.17	0.1	--	--	--	--	--	--	197	No
1,3-Dichlorobenzene	541-73-1	N	ug/l	--	0.1	--	--	--	--	--	--	313	No
1,4-Dichlorobenzene	106-46-7	N	ug/l	1.7	0.1	--	--	--	--	--	--	313	No
2-Butanone (MEK)	78-93-3	N	ug/l	2.4	0.5	--	--	--	--	--	--	107000	No
4-Methyl-2-Pentanone	108-10-1	N	ug/l	10	0.5	--	--	--	--	--	--	107000	No
Acetone	67-64-1	N	ug/l	5.6	0.5	--	--	--	--	--	--	--	--
Benzene	71-43-2	N	ug/l	53	0.05	--	--	--	--	--	--	--	--
Bromodichloromethane	75-27-4	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Bromoform	75-25-2	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Bromomethane	74-83-9	N	ug/l	--	0.2	--	--	--	--	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	3.3	0.2	--	--	--	--	--	--	10800	No
Carbon Tetrachloride	56-23-5	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
CFC-11	75-69-4	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	0.2	--	--	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	0.46	0.1	--	--	--	--	--	--	1230	No
Chlorodibromomethane	124-48-1	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	0.065	0.2	--	--	--	--	--	--	244	No
Chloromethane	74-87-3	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	1.1	0.1	--	--	--	--	--	--	213	No
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	0.22	0.1	--	--	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	0.69	0.5	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	18	0.05	--	--	--	--	--	--	175	No
Isopropylbenzene	98-82-8	N	ug/l	4	0.1	--	--	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	11	0.5	--	--	--	--	--	--	180000	No
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	0.5	--	--	--	--	--	--	--	--
Methylcyclohexane	108-87-2	N	ug/l	0.14	0.1	--	--	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	0.1	--	--	--	--	--	--	10500	No
Tetrachloroethene	127-18-4	N	ug/l	--	0.1	--	--	--	--	--	--	267	No
Toluene	108-88-3	N	ug/l	42	0.05	--	--	--	--	--	--	4880	No
Total Xylenes	1330-20-7	N	ug/l	91	0.1	--	--	--	--	--	--	8410	No
trans-1,2-Dichloroethene	156-60-5	N	ug/l	0.11	0.1	--	--	--	--	--	--	2130	No
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	0.1	--	--	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	0.24	0.05	--	--	--	--	--	--	48.6	No
Vinyl chloride	75-01-4	N	ug/l	1.3	0.05	--	--	--	--	--	--	0.056	Yes

Notes:

[1] Maximum detect was used to screen criteria if available. If maximum detect not available (i.e., constituent not de

-- = not available or not applicable

Table 5. Screening of Average Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Arithmetic Average[1]	Illinois Numeric Water Quality Standards (35 IAC 302.208 and 302.535)							
					Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)	Standards for Open Waters of Lake Michigan	Exceedance (Yes/No)
Anions												
Ammonia Nitrogen	7664-41-7	T	mg/l	28	--	--	--	--	--	--	15	Yes
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	0.00796	--	--	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	0.00746	--	--	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	0.00147	--	--	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	10.4	--	--	--	--	--	--	--	--
Gases												
Carbon Dioxide	124-38-9	N	mg/l	12.4	--	--	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	1840	--	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	0.982	--	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	0.229	--	--	--	--	--	--	--	--
General Chemistry												
Total Suspended Solids	ARC-TSS	T	mg/l	1.93	--	--	--	--	--	--	--	--
Metals												
Aluminum	7429-90-5	D	mg/l	0.0344	--	--	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	0.0485	--	--	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	0.00138	--	--	--	--	--	--	--	--
Antimony	7440-36-0	T	mg/l	0.00148	--	--	--	--	--	--	--	--
Arsenic	7440-38-2	D	mg/l	0.00165	0.36	No	0.19	No	--	--	--	--
Arsenic	7440-38-2	T	mg/l	0.00181	--	--	--	--	--	--	--	--
Barium	7440-39-3	D	mg/l	0.0481	--	--	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	0.0492	5	No	--	--	--	--	--	--
Beryllium	7440-41-7	D	mg/l	0.000274	--	--	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	0.000276	--	--	--	--	--	--	--	--
Cadmium	7440-43-9	D	mg/l	0.000201	0.030	No	0.0024	No	--	--	--	--
Cadmium	7440-43-9	T	mg/l	0.000262	--	--	--	--	--	--	--	--
Calcium	7440-70-2	D	mg/l	7.44	--	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	7.29	--	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	0.0113	1.3	No	0.44	No	--	--	--	--
Chromium	7440-47-3	T	mg/l	0.0121	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	D	mg/l	0.00162	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	T	mg/l	0.00163	--	--	--	--	--	--	--	--
Copper	7440-50-8	D	mg/l	0.00105	0.048	No	0.029	No	--	--	--	--
Copper	7440-50-8	T	mg/l	0.00177	--	--	--	--	--	--	--	--
Iron	7439-89-6	D	mg/l	0.743	1	No	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	0.772	--	--	--	--	--	--	--	--
Lead	7439-92-1	D	mg/l	0.00597	0.24	No	0.051	No	--	--	--	--
Lead	7439-92-1	T	mg/l	0.0159	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	D	mg/l	5.61	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	5.53	--	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	0.0262	9.5	No	4.0	No	--	--	--	--
Manganese	7439-96-5	T	mg/l	0.0259	--	--	--	--	--	--	--	--
Mercury	7439-97-6	D	mg/l	0.0000169	0.0022	No	0.0011	No	--	--	--	--
Mercury	7439-97-6	T	mg/l	0.0000304	--	--	--	--	0.012	No	--	--
Nickel	7440-02-0	D	mg/l	0.00588	0.21	No	0.013	No	--	--	--	--
Nickel	7440-02-0	T	mg/l	0.0059	--	--	--	--	--	--	--	--
Potassium	7440-09-7	D	mg/l	26.3	--	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	26.2	--	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	0.000802	--	--	--	--	--	--	--	--
Selenium	7782-49-2	T	mg/l	0.000773	1	No	--	--	--	--	--	--
Silver	7440-22-4	D	mg/l	0.000346	--	--	--	--	--	--	--	--
Silver	7440-22-4	T	mg/l	0.000347	5	No	--	--	--	--	--	--
Sodium	7440-23-5	D	mg/l	149	--	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	148	--	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	0.0007	--	--	--	--	--	--	--	--
Thallium	7440-28-0	T	mg/l	0.0007	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	D	mg/l	0.00242	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	T	mg/l	0.00271	--	--	--	--	--	--	--	--
Zinc	7440-66-6	D	mg/l	0.0119	0.30	No	0.079	No	--	--	--	--
Zinc	7440-66-6	T	mg/l	0.024	--	--	--	--	--	--	--	--
Organochlorine Pesticides												
4,4-DDD	72-54-8	N	ug/l	0.00327	--	--	--	--	--	--	--	--
4,4-DDE	72-55-9	N	ug/l	0.00327	--	--	--	--	--	--	--	--
4,4-DDT	50-29-3	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Aldrin	309-00-2	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Alpha-BHC	319-84-6	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Endosulfan I	959-98-8	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Endrin aldehyde	7421-93-4	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Heptachlor	76-44-8	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Heptachlor epoxide	1024-57-3	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Methoxychlor	72-43-5	N	ug/l	0.00657	--	--	--	--	--	--	--	--
Toxaphene	8001-35-2	N	ug/l	0.0327	--	--	--	--	--	--	--	--
trans-chlordane	5103-74-2	N	ug/l	0.00327	--	--	--	--	--	--	--	--
Other												
Sulfide	18496-25-8	N/T	mg/l	0.436	--	--	--	--	--	--	--	--
Total Organic Carbon												
Total Organic Carbon	ARC-TOC	N	mg/l	20.1	--	--	--	--	--	--	--	--
Polychorinated Biphenyls												
Aroclor 1016	12674-11-2	N	ug/l	0.019	--	--	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	0.0226	--	--	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	0.0482	--	--	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	0.143	--	--	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	0.0356	--	--	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	0.0446	--	--	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	0.019	--	--	--	--	--	--	--	--

Table 5. Screening of Average Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Illinois Numeric Water Quality Standards for the Chicago Area Waterway System (35 IAC 302.407)					
				Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Anions									
Ammonia Nitrogen	7664-41-7	T	mg/l	--	--	--	--	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	--	--	--	--	--	--
Gases									
Carbon Dioxide	124-38-9	N	mg/l	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	--	--	--	--	--	--
General Chemistry									
Total Suspended Solids	ARC-TSS	T	mg/l	--	--	--	--	--	--
Metals									
Aluminum	7429-90-5	D	mg/l	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	--	--	--	--	--	--
Antimony	7440-36-0	T	mg/l	--	--	--	--	--	--
Arsenic	7440-38-2	D	mg/l	0.34	No	0.15	No	--	--
Arsenic	7440-38-2	T	mg/l	--	--	--	--	--	--
Barium	7440-39-3	D	mg/l	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	--	--	--	--	--	--
Beryllium	7440-41-7	D	mg/l	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	--	--	--	--	--	--
Cadmium	7440-43-9	D	mg/l	0.030	No	0.0023	No	--	--
Cadmium	7440-43-9	T	mg/l	--	--	--	--	--	--
Calcium	7440-70-2	D	mg/l	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	1.4	No	0.18	No	--	--
Chromium	7440-47-3	T	mg/l	--	--	--	--	--	--
Cobalt	7440-48-4	D	mg/l	--	--	--	--	--	--
Cobalt	7440-48-4	T	mg/l	--	--	--	--	--	--
Copper	7440-50-8	D	mg/l	0.040	No	0.024	No	--	--
Copper	7440-50-8	T	mg/l	--	--	--	--	--	--
Iron	7439-89-6	D	mg/l	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	--	--	--	--	--	--
Lead	7439-92-1	D	mg/l	0.24	No	0.051	No	--	--
Lead	7439-92-1	T	mg/l	--	--	--	--	--	--
Magnesium	7439-95-4	D	mg/l	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	9.5	No	4.0	No	--	--
Manganese	7439-96-5	T	mg/l	--	--	--	--	--	--
Mercury	7439-97-6	D	mg/l	0.0012	No	0.00065	No	--	--
Mercury	7439-97-6	T	mg/l	--	--	--	--	0.012	No
Nickel	7440-02-0	D	mg/l	0.21	No	0.013	No	--	--
Nickel	7440-02-0	T	mg/l	--	--	--	--	--	--
Potassium	7440-09-7	D	mg/l	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	--	--	--	--	--	--
Selenium	7782-49-2	T	mg/l	--	--	--	--	--	--
Silver	7440-22-4	D	mg/l	--	--	--	--	--	--
Silver	7440-22-4	T	mg/l	--	--	--	--	--	--
Sodium	7440-23-5	D	mg/l	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	--	--	--	--	--	--
Thallium	7440-28-0	T	mg/l	--	--	--	--	--	--
Vanadium	7440-62-2	D	mg/l	--	--	--	--	--	--
Vanadium	7440-62-2	T	mg/l	--	--	--	--	--	--
Zinc	7440-66-6	D	mg/l	0.30	No	0.079	No	--	--
Zinc	7440-66-6	T	mg/l	--	--	--	--	--	--
Organochlorine Pesticides									
4,4-DDD	72-54-8	N	ug/l	--	--	--	--	--	--
4,4-DDE	72-55-9	N	ug/l	--	--	--	--	--	--
4,4-DDT	50-29-3	N	ug/l	--	--	--	--	--	--
Aldrin	309-00-2	N	ug/l	--	--	--	--	--	--
Alpha-BHC	319-84-6	N	ug/l	--	--	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	--	--	--	--	--
Endosulfan I	959-98-8	N	ug/l	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	--	--	--	--	--	--
Endrin aldehyde	7421-93-4	N	ug/l	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	--	--	--	--	--
Heptachlor	76-44-8	N	ug/l	--	--	--	--	--	--
Heptachlor epoxide	1024-57-3	N	ug/l	--	--	--	--	--	--
Methoxychlor	72-43-5	N	ug/l	--	--	--	--	--	--
Toxaphene	8001-35-2	N	ug/l	--	--	--	--	--	--
trans-chlordane	5103-74-2	N	ug/l	--	--	--	--	--	--
Other									
Sulfide	18496-25-8	N/T	mg/l	--	--	--	--	--	--
Total Organic Carbon									
Total Organic Carbon	ARC-TOC	N	mg/l	--	--	--	--	--	--
Polychorinated Biphenyls									
Aroclor 1016	12674-11-2	N	ug/l	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	--	--	--	--	--	--

Table 5. Screening of Average Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Illinois Derived Water Quality Standards (35 IAC 302.210)					
				Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Anions									
Ammonia Nitrogen	7664-41-7	T	mg/l	--	--	--	--	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	--	--	--	--	--	--
Gases									
Carbon Dioxide	124-38-9	N	mg/l	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	--	--	--	--	--	--
General Chemistry									
Total Suspended Solids	ARC-TSS	T	mg/l	--	--	--	--	--	--
Metals									
Aluminum	7429-90-5	D	mg/l	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	--	--	--	--	12000	No
Antimony	7440-36-0	T	mg/l	--	--	--	--	--	--
Arsenic	7440-38-2	D	mg/l	--	--	--	--	--	--
Arsenic	7440-38-2	T	mg/l	--	--	--	--	--	--
Barium	7440-39-3	D	mg/l	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	--	--	--	--	--	--
Beryllium	7440-41-7	D	mg/l	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	--	--	--	--	--	--
Cadmium	7440-43-9	D	mg/l	--	--	--	--	--	--
Cadmium	7440-43-9	T	mg/l	--	--	--	--	--	--
Calcium	7440-70-2	D	mg/l	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	--	--	--	--	--	--
Chromium	7440-47-3	T	mg/l	--	--	--	--	--	--
Cobalt	7440-48-4	D	mg/l	--	--	--	--	--	--
Cobalt	7440-48-4	T	mg/l	--	--	--	--	--	--
Copper	7440-50-8	D	mg/l	--	--	--	--	--	--
Copper	7440-50-8	T	mg/l	--	--	--	--	--	--
Iron	7439-89-6	D	mg/l	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	--	--	--	--	--	--
Lead	7439-92-1	D	mg/l	--	--	--	--	--	--
Lead	7439-92-1	T	mg/l	--	--	--	--	--	--
Magnesium	7439-95-4	D	mg/l	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	--	--	--	--	--	--
Manganese	7439-96-5	T	mg/l	--	--	--	--	--	--
Mercury	7439-97-6	D	mg/l	--	--	--	--	--	--
Mercury	7439-97-6	T	mg/l	--	--	--	--	--	--
Nickel	7440-02-0	D	mg/l	--	--	--	--	--	--
Nickel	7440-02-0	T	mg/l	--	--	--	--	--	--
Potassium	7440-09-7	D	mg/l	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	--	--	--	--	--	--
Selenium	7782-49-2	T	mg/l	--	--	--	--	--	--
Silver	7440-22-4	D	mg/l	--	--	--	--	--	--
Silver	7440-22-4	T	mg/l	--	--	--	--	--	--
Sodium	7440-23-5	D	mg/l	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	--	--	--	--	0.003	No
Thallium	7440-28-0	T	mg/l	--	--	--	--	--	--
Vanadium	7440-62-2	D	mg/l	--	--	--	--	--	--
Vanadium	7440-62-2	T	mg/l	--	--	--	--	--	--
Zinc	7440-66-6	D	mg/l	--	--	--	--	--	--
Zinc	7440-66-6	T	mg/l	--	--	--	--	--	--
Organochlorine Pesticides									
4,4-DDD	72-54-8	N	ug/l	--	--	--	--	0.00027	Yes
4,4-DDE	72-55-9	N	ug/l	--	--	--	--	0.00019	Yes
4,4-DDT	50-29-3	N	ug/l	--	--	--	--	0.00019	Yes
Aldrin	309-00-2	N	ug/l	--	--	--	--	0.000046	Yes
Alpha-BHC	319-84-6	N	ug/l	--	--	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	--	--	--	--	--
Endosulfan I	959-98-8	N	ug/l	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	--	--	--	--	--	--
Endrin aldehyde	7421-93-4	N	ug/l	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	--	--	--	--	--
Heptachlor	76-44-8	N	ug/l	--	--	--	--	--	--
Heptachlor epoxide	1024-57-3	N	ug/l	--	--	--	--	--	--
Methoxychlor	72-43-5	N	ug/l	--	--	--	--	--	--
Toxaphene	8001-35-2	N	ug/l	--	--	--	--	0.00024	Yes
trans-chlordane	5103-74-2	N	ug/l	--	--	--	--	--	--
Other									
Sulfide	18496-25-8	N/T	mg/l	--	--	--	--	--	--
Total Organic Carbon									
Total Organic Carbon	ARC-TOC	N	mg/l	--	--	--	--	--	--
Polychorinated Biphenyls									
Aroclor 1016	12674-11-2	N	ug/l	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	--	--	--	--	--	--

Table 5. Screening of Average Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	USEPA Ambient Water Quality Criteria							
				Human Health Criteria, Water and Organism	Exceedance (Yes/No)	Human Health Criteria, Organism Only	Exceedance (Yes/No)	Acute Aquatic Life Criteria	Exceedance (Yes/No)	Chronic Aquatic Life Criteria	Exceedance (Yes/No)
Anions											
Ammonia Nitrogen	7664-41-7	T	mg/l	--	--	--	--	--	--	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	--	--	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	10	No	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	--	--	--	--	--	--	--	--
Sulfate	14808-79-8	T	mg/l	--	--	--	--	--	--	--	--
Gases											
Carbon Dioxide	124-38-9	N	mg/l	--	--	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	--	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	--	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	--	--	--	--	--	--	--	--
General Chemistry											
Total Suspended Solids	ARC-TSS	T	mg/l	--	--	--	--	--	--	--	--
Metals											
Aluminum	7429-90-5	D	mg/l	--	--	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	--	--	--	--	0.75	No	0.087	No
Antimony	7440-36-0	D	mg/l	0.0056	No	0.64	No	--	--	--	--
Antimony	7440-36-0	T	mg/l	0.0056	No	0.64	No	--	--	--	--
Arsenic	7440-38-2	D	mg/l	0.000018	Yes	0.00014	Yes	0.34	No	0.15	No
Arsenic	7440-38-2	T	mg/l	0.000018	Yes	0.00014	Yes	--	--	--	--
Barium	7440-39-3	D	mg/l	1	No	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	1	No	--	--	--	--	--	--
Beryllium	7440-41-7	D	mg/l	--	--	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	--	--	--	--	--	--	--	--
Cadmium	7440-43-9	D	mg/l	--	--	--	--	0.0050	No	0.0016	No
Cadmium	7440-43-9	T	mg/l	--	--	--	--	--	--	--	--
Calcium	7440-70-2	D	mg/l	--	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	--	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	--	--	--	--	1.4	No	0.18	No
Chromium	7440-47-3	T	mg/l	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	D	mg/l	--	--	--	--	--	--	--	--
Cobalt	7440-48-4	T	mg/l	--	--	--	--	--	--	--	--
Copper	7440-50-8	D	mg/l	1.3	No	--	--	--	--	--	--
Copper	7440-50-8	T	mg/l	1.3	No	--	--	--	--	--	--
Iron	7439-89-6	D	mg/l	--	--	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	--	--	--	--	--	--	1	No
Lead	7439-92-1	D	mg/l	--	--	--	--	0.21	No	0.0081	No
Lead	7439-92-1	T	mg/l	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	D	mg/l	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	--	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	0.05	No	0.1	No	--	--	--	--
Manganese	7439-96-5	T	mg/l	0.05	No	0.1	No	--	--	--	--
Mercury	7439-97-6	D	mg/l	--	--	--	--	0.0014	No	0.00077	No
Mercury	7439-97-6	T	mg/l	--	--	--	--	--	--	--	--
Nickel	7440-02-0	D	mg/l	0.61	No	4.6	No	1.2	No	0.13	No
Nickel	7440-02-0	T	mg/l	0.61	No	4.6	No	--	--	--	--
Potassium	7440-09-7	D	mg/l	--	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	--	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	0.17	No	4.2	No	--	--	--	--
Selenium	7782-49-2	T	mg/l	0.17	No	4.2	No	--	--	--	--
Silver	7440-22-4	D	mg/l	--	--	--	--	0.021	No	--	--
Silver	7440-22-4	T	mg/l	--	--	--	--	--	--	--	--
Sodium	7440-23-5	D	mg/l	--	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	--	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	0.00024	Yes	0.00047	Yes	--	--	--	--
Thallium	7440-28-0	T	mg/l	0.00024	Yes	0.00047	Yes	--	--	--	--
Vanadium	7440-62-2	D	mg/l	--	--	--	--	--	--	--	--
Vanadium	7440-62-2	T	mg/l	--	--	--	--	--	--	--	--
Zinc	7440-66-6	D	mg/l	7.4	No	26	No	0.3	No	0.3	No
Zinc	7440-66-6	T	mg/l	7.4	No	26	No	--	--	--	--
Organochlorine Pesticides											
4,4-DDD	72-54-8	N	ug/l	0.00012	Yes	0.00012	Yes	--	--	--	--
4,4-DDE	72-55-9	N	ug/l	0.000018	Yes	0.000018	Yes	--	--	--	--
4,4-DDT	50-29-3	N	ug/l	0.00003	Yes	0.00003	Yes	1.1	No	0.001	Yes
Aldrin	309-00-2	N	ug/l	0.00000077	Yes	0.00000077	Yes	3	No	--	--
Alpha-BHC	319-84-6	N	ug/l	0.00036	Yes	0.00039	Yes	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	--	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	0.008	No	0.014	No	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	--	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	0.0000012	Yes	0.0000012	Yes	0.24	No	0.056	No
Endosulfan I	959-98-8	N	ug/l	20	No	30	No	0.22	No	0.056	No
Endosulfan II	33213-65-9	N	ug/l	20	No	40	No	0.22	No	0.056	No
Endosulfan sulfate	1031-07-8	N	ug/l	20	No	40	No	--	--	--	--
Endrin	72-20-8	N	ug/l	0.03	No	0.03	No	0.086	No	0.036	No
Endrin aldehyde	7421-93-4	N	ug/l	1	No	1	No	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	--	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	4.2	No	4.4	No	0.95	No	--	--
Heptachlor	76-44-8	N	ug/l	0.0000059	Yes	0.0000059	Yes	0.52	No	0.0038	No
Heptachlor epoxide	1024-57-3	N	ug/l	0.000032	Yes	0.000032	Yes	0.52	No	0.0038	No
Methoxychlor	72-43-5	N	ug/l	0.02	No	0.02	No	--	--	0.03	No
Toxaphene	8001-35-2	N	ug/l	0.0007	Yes	0.00071	Yes	0.73	No	0.0002	Yes
trans-chlordane	5103-74-2	N	ug/l	--	--	--	--	--	--	--	--
Other											
Sulfide	18496-25-8	N/T	mg/l	--	--	--	--	--	--	--	--
Total Organic Carbon											
Total Organic Carbon	ARC-TOC	N	mg/l	--	--	--	--	--	--	--	--
Polychorinated Biphenyls											
Aroclor 1016	12674-11-2	N	ug/l	--	--	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	--	--	--	--	--	--	--	--
Aroclor 1232	11141-16-5	N	ug/l	--	--	--	--	--	--	--	--
Aroclor 1242	53469-21-9	N	ug/l	--	--	--	--	--	--	--	--
Aroclor 1248	12672-29-6	N	ug/l	--	--	--	--	--	--	--	--
Aroclor 1254	11097-69-1	N	ug/l	--	--	--	--	--	--	--	--
Aroclor 1260	11096-82-5	N	ug/l	--	--	--	--	--	--	--	--

Table 5. Screening of Average Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Calumet Open Space Reserve						Recreator Surface Water Benchmark	
				Surface Water Background	Exceedance (Yes/No)	Surface Water Threshold	Exceedance (Yes/No)	Surface Water Benchmark	Exceedance (Yes/No)	Benchmark	Exceedance (Yes/No)
Anions											
Ammonia Nitrogen	7664-41-7	T	mg/l	--	--	25	Yes	140	No	--	--
Nitrate/Nitrite	ARC-NO3NO2N	N/T	mg/l	--	--	--	--	--	--	--	--
Nitrate-N	14797-55-8	T	mg/l	--	--	--	--	--	--	--	--
Nitrite	14797-65-0	T	mg/l	--	--	--	--	--	--	18.1	No
Sulfate	14808-79-8	T	mg/l	--	--	--	--	--	--	--	--
Gases											
Carbon Dioxide	124-38-9	N	mg/l	--	--	--	--	--	--	--	--
Methane	74-82-8	N	ug/l	--	--	--	--	--	--	--	--
Nitrogen	7727-37-9	N	mg/l	--	--	--	--	--	--	--	--
Oxygen	7782-44-7	N	mg/l	--	--	--	--	--	--	--	--
General Chemistry											
Total Suspended Solids	ARC-TSS	T	mg/l	--	--	--	--	--	--	--	--
Metals											
Aluminum	7429-90-5	D	mg/l	0.14	No	--	--	--	--	--	--
Aluminum	7429-90-5	T	mg/l	0.14	No	--	--	--	--	--	--
Antimony	7440-36-0	D	mg/l	< 0.008	No	0.03	No	0.088	No	0.0562	No
Antimony	7440-36-0	T	mg/l	< 0.008	No	0.03	No	0.088	No	0.0562	No
Arsenic	7440-38-2	D	mg/l	0.0025	No	0.048	No	0.34	No	0.00969	No
Arsenic	7440-38-2	T	mg/l	0.0025	No	0.048	No	0.34	No	0.00969	No
Barium	7440-39-3	D	mg/l	0.05	No	5	No	5	No	21.6	No
Barium	7440-39-3	T	mg/l	0.05	No	5	No	5	No	21.6	No
Beryllium	7440-41-7	D	mg/l	< 0.004	No	--	--	--	--	0.0443	No
Beryllium	7440-41-7	T	mg/l	< 0.004	No	--	--	--	--	0.0443	No
Cadmium	7440-43-9	D	mg/l	< 0.002	No	0.0051	No	0.0143	No	0.0461	No
Cadmium	7440-43-9	T	mg/l	< 0.002	No	0.0051	No	0.0143	No	0.0461	No
Calcium	7440-70-2	D	mg/l	--	--	--	--	--	--	--	--
Calcium	7440-70-2	T	mg/l	--	--	--	--	--	--	--	--
Chromium	7440-47-3	D	mg/l	< 0.008	Yes	--	--	--	--	561	No
Chromium	7440-47-3	T	mg/l	< 0.008	Yes	--	--	--	--	561	No
Cobalt	7440-48-4	D	mg/l	< 0.008	No	0.024	No	0.11	No	0.0558	No
Cobalt	7440-48-4	T	mg/l	< 0.008	No	0.024	No	0.11	No	0.0558	No
Copper	7440-50-8	D	mg/l	0.0051	No	0.0232	No	0.0364	No	7.22	No
Copper	7440-50-8	T	mg/l	0.0051	No	0.0232	No	0.0364	No	7.22	No
Iron	7439-89-6	D	mg/l	0.71	Yes	1	No	1	No	126	No
Iron	7439-89-6	T	mg/l	0.71	Yes	1	No	1	No	126	No
Lead	7439-92-1	D	mg/l	< 0.002	Yes	0.0167	No	0.3182	No	--	--
Lead	7439-92-1	T	mg/l	< 0.002	Yes	0.0167	No	0.3182	No	--	--
Magnesium	7439-95-4	D	mg/l	--	--	--	--	--	--	--	--
Magnesium	7439-95-4	T	mg/l	--	--	--	--	--	--	--	--
Manganese	7439-96-5	D	mg/l	0.042	No	1	No	1	No	1.96	No
Manganese	7439-96-5	T	mg/l	0.042	No	1	No	1	No	1.96	No
Mercury	7439-97-6	D	mg/l	0.000017	No	0.0009	No	0.0017	No	--	--
Mercury	7439-97-6	T	mg/l	0.000017	Yes	0.0009	No	0.0017	No	--	--
Nickel	7440-02-0	D	mg/l	< 0.02	No	0.1336	No	1.2028	No	3.01	No
Nickel	7440-02-0	T	mg/l	< 0.02	No	0.1336	No	1.2028	No	3.01	No
Potassium	7440-09-7	D	mg/l	--	--	--	--	--	--	--	--
Potassium	7440-09-7	T	mg/l	--	--	--	--	--	--	--	--
Selenium	7782-49-2	D	mg/l	< 0.002	No	0.005	No	0.01	No	0.903	No
Selenium	7782-49-2	T	mg/l	< 0.002	No	0.005	No	0.01	No	0.903	No
Silver	7440-22-4	D	mg/l	< 0.002	No	0.005	No	0.005	No	0.529	No
Silver	7440-22-4	T	mg/l	< 0.002	No	0.005	No	0.005	No	0.529	No
Sodium	7440-23-5	D	mg/l	--	--	--	--	--	--	--	--
Sodium	7440-23-5	T	mg/l	--	--	--	--	--	--	--	--
Thallium	7440-28-0	D	mg/l	< 0.002	No	0.01	No	0.02	No	--	--
Thallium	7440-28-0	T	mg/l	< 0.002	No	0.01	No	0.02	No	--	--
Vanadium	7440-62-2	D	mg/l	< 0.002	Yes	0.012	No	0.19	No	0.315	No
Vanadium	7440-62-2	T	mg/l	< 0.002	Yes	0.012	No	0.19	No	0.315	No
Zinc	7440-66-6	D	mg/l	0.012	No	0.3039	No	0.3014	No	55.3	No
Zinc	7440-66-6	T	mg/l	0.012	Yes	0.3039	No	0.3014	No	55.3	No
Organochlorine Pesticides											
4,4-DDD	72-54-8	N	ug/l	--	--	--	--	--	--	--	--
4,4-DDE	72-55-9	N	ug/l	--	--	--	--	--	--	--	--
4,4-DDT	50-29-3	N	ug/l	--	--	0.000001	Yes	0.000001	Yes	--	--
Aldrin	309-00-2	N	ug/l	--	--	--	--	--	--	--	--
Alpha-BHC	319-84-6	N	ug/l	--	--	--	--	--	--	--	--
Alpha-chlordane	5103-71-9	N	ug/l	--	--	--	--	--	--	--	--
Beta-BHC	319-85-7	N	ug/l	--	--	--	--	--	--	--	--
Delta-BHC	319-86-8	N	ug/l	--	--	--	--	--	--	--	--
Dieldrin	60-57-1	N	ug/l	--	--	0.06	No	0.24	No	--	--
Endosulfan I	959-98-8	N	ug/l	--	--	--	--	--	--	--	--
Endosulfan II	33213-65-9	N	ug/l	--	--	--	--	--	--	--	--
Endosulfan sulfate	1031-07-8	N	ug/l	--	--	--	--	--	--	--	--
Endrin	72-20-8	N	ug/l	--	--	0.03	No	0.16	No	--	--
Endrin aldehyde	7421-93-4	N	ug/l	--	--	--	--	--	--	--	--
Endrin ketone	53494-70-5	N	ug/l	--	--	--	--	--	--	--	--
Gamma-BHC	58-89-9	N	ug/l	--	--	--	--	--	--	--	--
Heptachlor	76-44-8	N	ug/l	--	--	0.004	No	0.52	No	--	--
Heptachlor epoxide	1024-57-3	N	ug/l	--	--	0.004	No	0.52	No	--	--
Methoxychlor	72-43-5	N	ug/l	--	--	--	--	--	--	--	--
Toxaphene	8001-35-2	N	ug/l	--	--	--	--	--	--	--	--
trans-chlordane	5103-74-2	N	ug/l	--	--	--	--	--	--	--	--
Other											
Sulfide	18496-25-8	N/T	mg/l	--	--	--	--	--	--	--	--
Total Organic Carbon											
Total Organic Carbon	ARC-TOC	N	mg/l	--	--	--	--	--	--	--	--
Polychorinated Biphenyls											
Aroclor 1016	12674-11-2	N	ug/l	--	--	--	--	--	--	--	--
Aroclor 1221	11104-28-2	N	ug/l	--	--	--	--	--	--	0.194	No
Aroclor 1232	11141-16-5	N	ug/l	--	--	--	--	--	--	0.194	No
Aroclor 1242	53469-21-9	N	ug/l	--	--	--	--	--	--	8.1	No
Aroclor 1248	12672-29-6	N	ug/l	--	--	--	--	--	--	8.1	No
Aroclor 1254	11097-69-1	N	ug/l	--	--	--	--	--	--	3.8	No
Aroclor 1260	11096-82-5	N	ug/l	--	--	--	--	--	--	--	--

Table 5. Screening of Average Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Arithmetic Average[1]	Illinois Numeric Water Quality Standards (35 IAC 302.208 and 302.535)							
					Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)	Standards for Open Waters of Lake Michigan	Exceedance (Yes/No)
Semivolatile Organic Compounds												
1,1-Biphenyl	92-52-4	N	ug/l	0.706	--	--	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	0.282	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	1.41	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	N	ug/l	0.706	--	--	--	--	--	--	--	--
2,4-Dichlorophenol	120-83-2	N	ug/l	1.41	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	9.58	--	--	--	--	--	--	--	--
2,4-Dinitrophenol	51-28-5	N	ug/l	2.84	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	0.141	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	0.0997	--	--	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	N	ug/l	0.29	--	--	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	0.706	--	--	--	--	--	--	--	--
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	2.84	--	--	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	0.242	--	--	--	--	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	1.98	--	--	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	0.706	--	--	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	1.41	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	0.706	--	--	--	--	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	1.41	--	--	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	0.706	--	--	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	1.63	--	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	0.706	--	--	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	6.42	--	--	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	1.41	--	--	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	2.84	--	--	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	0.16	--	--	--	--	--	--	--	--
Acenaphthylene	208-96-8	N	ug/l	0.141	--	--	--	--	--	--	--	--
Acetophenone	98-86-2	N	ug/l	0.632	--	--	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	0.142	--	--	--	--	--	--	--	--
Atrazine	1912-24-9	N	ug/l	0.706	--	--	--	--	--	--	--	--
Benzaldehyde	100-52-7	N	ug/l	4.64	--	--	--	--	--	--	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	0.0355	--	--	--	--	--	--	--	--
Benzo(a)pyrene	50-32-8	N	ug/l	0.0463	--	--	--	--	--	--	--	--
Benzo(b)fluoranthene	205-99-2	N	ug/l	0.0549	--	--	--	--	--	--	--	--
Benzo(g,h,i)perylene	191-24-2	N	ug/l	0.152	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	0.0314	--	--	--	--	--	--	--	--
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	0.284	--	--	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	0.284	--	--	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	6.56	--	--	--	--	--	--	--	--
Butyl benzyl phthalate	85-68-7	N	ug/l	0.284	--	--	--	--	--	--	--	--
Caprolactam	105-60-2	N	ug/l	1.41	--	--	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	0.503	--	--	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	0.0822	--	--	--	--	--	--	--	--
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	0.0458	--	--	--	--	--	--	--	--
Dibenzofuran	132-64-9	N	ug/l	0.284	--	--	--	--	--	--	--	--
Diethyl phthalate	84-66-2	N	ug/l	0.284	--	--	--	--	--	--	--	--
Dimethyl phthalate	131-11-3	N	ug/l	0.284	--	--	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	0.703	--	--	--	--	--	--	--	--
Di-n-octyl phthalate	117-84-0	N	ug/l	1.41	--	--	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	0.214	--	--	--	--	--	--	--	--
Fluorene	86-73-7	N	ug/l	0.148	--	--	--	--	--	--	--	--
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	0.706	--	--	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	0.0706	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	3.35	--	--	--	--	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	0.706	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	0.0377	--	--	--	--	--	--	--	--
Isophorone	78-59-1	N	ug/l	0.284	--	--	--	--	--	--	--	--
Naphthalene	91-20-3	N	ug/l	1.17	--	--	--	--	--	--	--	--
Nitrobenzene	98-95-3	N	ug/l	0.141	--	--	--	--	--	--	--	--
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	0.0706	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	0.157	--	--	--	--	--	--	--	--
p-Chloroaniline	106-47-8	N	ug/l	1.41	--	--	--	--	--	--	--	--
Pentachlorophenol	87-86-5	N	ug/l	2.84	--	--	--	--	--	--	--	--
Phenanthrene	85-01-8	N	ug/l	0.324	--	--	--	--	--	--	--	--
Phenol	108-95-2	N	ug/l	1.04	100	No	--	--	--	--	--	--
Pyrene	129-00-0	N	ug/l	0.247	--	--	--	--	--	--	--	--
Volatile Organic Compounds												
1,1,1-Trichloroethane	71-55-6	N	ug/l	0.05	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	0.05	--	--	--	--	--	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	0.05	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	0.05	--	--	--	--	--	--	--	--
1,1-Dichloroethane	75-34-3	N	ug/l	0.415	--	--	--	--	--	--	--	--
1,1-Dichloroethene	75-35-4	N	ug/l	0.05	--	--	--	--	--	--	--	--
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	0.05	--	--	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	0.25	--	--	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	0.05	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	0.212	--	--	--	--	--	--	--	--
1,2-Dichloroethane	107-06-2	N	ug/l	0.776	--	--	--	--	--	--	--	--
1,2-Dichloropropane	78-87-5	N	ug/l	0.06	--	--	--	--	--	--	--	--
1,3-Dichlorobenzene	541-73-1	N	ug/l	0.05	--	--	--	--	--	--	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	0.652	--	--	--	--	--	--	--	--
2-Butanone (MEK)	78-93-3	N	ug/l	0.789	--	--	--	--	--	--	--	--
4-Methyl-2-Pentanone	108-10-1	N	ug/l	2.33	--	--	--	--	--	--	--	--
Acetone	67-64-1	N	ug/l	2.22	--	--	--	--	--	--	--	--
Benzene	71-43-2	N	ug/l	10.7	4200	No	860	No	310	No	--	--
Bromodichloromethane	75-27-4	N	ug/l	0.05	--	--	--	--	--	--	--	--
Bromoform	75-25-2	N	ug/l	0.05	--	--	--	--	--	--	--	--
Bromomethane	74-83-9	N	ug/l	0.1	--	--	--	--	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	0.445	--	--	--	--	--	--	--	--
Carbon Tetrachloride	56-23-5	N	ug/l	0.05	--	--	--	--	--	--	--	--
CFC-11	75-69-4	N	ug/l	0.05	--	--	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	0.1	--	--	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	0.132	--	--	--	--	--	--	--	--
Chlorodibromomethane	124-48-1	N	ug/l	0.05	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	N	ug/l	0.05	--	--	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	0.0608	--	--	--	--	--	--	--	--
Chloromethane	74-87-3	N	ug/l	0.05	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	0.393	--	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	0.05	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	0.0963	--	--	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	0.272	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	4.8	150	No	14	No	--	--	--	--
Isopropylbenzene	98-82-8	N	ug/l	1.05	--	--	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	0.788	--	--	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	0.25	--	--	--	--	--	--	--	--
Methylcyclohexane	108-87-2	N	ug/l	0.0679	--	--	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	0.05	--	--	--	--	--	--	--	--
Styrene (Monomer)	100-42-5	N	ug/l	0.05	--	--	--	--	--	--	--	--
Tetrachloroethene	127-18-4	N	ug/l	0.05	--	--	--	--	--	--	--	--
Toluene	108-88-3	N	ug/l	11.1	2000	No	600	No	--	--	--	--
Total Xylenes	1330-20-7	N	ug/l	21.1	920	No	360	No	--	--	--	--
trans-1,2-Dichloroethene	156-60-5	N	ug/l	0.0555	--	--	--	--	--	--	--	--
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	0.05	--	--	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	0.0419	--	--	--	--	--	--	--	--
Vinyl chloride	75-01-4	N	ug/l	0.426	--	--	--	--	--	--	--	--

Notes:

[1] Average calculated using half reporting limit for non-detects. All concentrations divided by 10 to account for dilution.

-- = not available or not applicable

Table 5. Screening of Average Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Illinois Numeric Water Quality Standards for the Chicago Area Waterway System (35 IAC 302.407)					
				Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Semivolatile Organic Compounds									
1,1-Biphenyl	92-52-4	N	ug/l	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	--	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	N	ug/l	--	--	--	--	--	--
2,4-Dichlorophenol	120-83-2	N	ug/l	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	--	--	--	--	--	--
2,4-Dinitrophenol	51-28-5	N	ug/l	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	N	ug/l	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	--	--	--	--	--	--
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	--	--	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	--	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	--	--	--	--	--	--
Acenaphthylene	208-96-8	N	ug/l	--	--	--	--	--	--
Acetophenone	98-86-2	N	ug/l	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	--	--	--	--	--	--
Atrazine	1912-24-9	N	ug/l	--	--	--	--	--	--
Benzaldehyde	100-52-7	N	ug/l	--	--	--	--	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	--	--	--	--	--	--
Benzo(a)pyrene	50-32-8	N	ug/l	--	--	--	--	--	--
Benzo(b)fluoranthene	205-99-2	N	ug/l	--	--	--	--	--	--
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	--	--	--	--	--	--
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	--	--	--	--	--	--
Butyl benzyl phthalate	85-68-7	N	ug/l	--	--	--	--	--	--
Caprolactam	105-60-2	N	ug/l	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	--	--	--	--	--	--
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	--	--	--	--	--
Dibenzofuran	132-64-9	N	ug/l	--	--	--	--	--	--
Diethyl phthalate	84-66-2	N	ug/l	--	--	--	--	--	--
Dimethyl phthalate	131-11-3	N	ug/l	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	--	--	--	--	--	--
Di-n-octyl phthalate	117-84-0	N	ug/l	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	--	--	--	--	--	--
Fluorene	86-73-7	N	ug/l	--	--	--	--	--	--
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	--	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	--	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	--	--	--	--	--	--
Isophorone	78-59-1	N	ug/l	--	--	--	--	--	--
Naphthalene	91-20-3	N	ug/l	--	--	--	--	--	--
Nitrobenzene	98-95-3	N	ug/l	--	--	--	--	--	--
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	--	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	--	--	--	--	--	--
p-Chloroaniline	106-47-8	N	ug/l	--	--	--	--	--	--
Pentachlorophenol	87-86-5	N	ug/l	--	--	--	--	--	--
Phenanthrene	85-01-8	N	ug/l	--	--	--	--	--	--
Phenol	108-95-2	N	ug/l	--	--	--	--	860000	No
Pyrene	129-00-0	N	ug/l	--	--	--	--	--	--
Volatile Organic Compounds									
1,1,1-Trichloroethane	71-55-6	N	ug/l	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	--	--	--	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	--	--	--	--	--	--
1,1-Dichloroethane	75-34-3	N	ug/l	--	--	--	--	--	--
1,1-Dichloroethene	75-35-4	N	ug/l	--	--	--	--	--	--
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	--	--	--	--	--	--
1,2-Dichloroethane	107-06-2	N	ug/l	--	--	--	--	--	--
1,2-Dichloropropane	78-87-5	N	ug/l	--	--	--	--	--	--
1,3-Dichlorobenzene	541-73-1	N	ug/l	--	--	--	--	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	--	--	--	--	--	--
2-Butanone (MEK)	78-93-3	N	ug/l	--	--	--	--	--	--
4-Methyl-2-Pentanone	108-10-1	N	ug/l	--	--	--	--	--	--
Acetone	67-64-1	N	ug/l	--	--	--	--	--	--
Benzene	71-43-2	N	ug/l	4200	No	860	No	310	No
Bromodichloromethane	75-27-4	N	ug/l	--	--	--	--	--	--
Bromoform	75-25-2	N	ug/l	--	--	--	--	--	--
Bromomethane	74-83-9	N	ug/l	--	--	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	--	--	--	--	--	--
Carbon Tetrachloride	56-23-5	N	ug/l	--	--	--	--	--	--
CFC-11	75-69-4	N	ug/l	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	--	--	--	--	--	--
Chlorodibromomethane	124-48-1	N	ug/l	--	--	--	--	--	--
Chloroethane	75-00-3	N	ug/l	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	--	--	--	--	--	--
Chloromethane	74-87-3	N	ug/l	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	--	--	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	150	No	14	No	--	--
Isopropylbenzene	98-82-8	N	ug/l	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	--	--	--	--	--
Methylcyclohexane	108-87-2	N	ug/l	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	--	--	--	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	--	--	--	--	--
Tetrachloroethene	127-18-4	N	ug/l	--	--	--	--	--	--
Toluene	108-88-3	N	ug/l	2000	No	600	No	--	--
Total Xylenes	1330-20-7	N	ug/l	920	No	360	No	--	--
trans-1,2-Dichloroethene	156-60-5	N	ug/l	--	--	--	--	--	--
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	--	--	--	--	--	--
Vinyl chloride	75-01-4	N	ug/l	--	--	--	--	--	--

Notes:

[1] Average calculated using half reporting limit for non-detects. All concentrations c

-- = not available or not applicable

Table 5. Screening of Average Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Illinois Derived Water Quality Standards (35 IAC 302.210)					
				Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Semivolatile Organic Compounds									
1,1-Biphenyl	92-52-4	N	ug/l	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	--	--	--	0.0032	Yes
2,4,6-Trichlorophenol	88-06-2	N	ug/l	--	--	--	--	2.1	No
2,4-Dichlorophenol	120-83-2	N	ug/l	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	--	--	--	--	--	--
2,4-Dinitrophenol	51-28-5	N	ug/l	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	N	ug/l	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	--	--	--	--	--	--
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	--	--	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	--	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	120	No	62	No	--	--
Acenaphthylene	208-96-8	N	ug/l	190	No	15	No	--	--
Acetophenone	98-86-2	N	ug/l	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	0.66	No	0.53	No	0.035	Yes
Atrazine	1912-24-9	N	ug/l	82	No	9	No	--	--
Benzaldehyde	100-52-7	N	ug/l	180	No	14	No	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	--	--	--	--	0.16	No
Benzo(a)pyrene	50-32-8	N	ug/l	--	--	--	--	0.016	Yes
Benzo(b)fluoranthene	205-99-2	N	ug/l	--	--	--	--	0.16	No
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	--	--	--	--	1.6	No
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	--	--	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	76	No	17	No	1.9	Yes
Butyl benzyl phthalate	85-68-7	N	ug/l	--	--	--	--	--	--
Caprolactam	105-60-2	N	ug/l	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	--	--	--	--	16	No
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	--	--	--	16	No
Dibenzofuran	132-64-9	N	ug/l	190	No	15	No	--	--
Diethyl phthalate	84-66-2	N	ug/l	--	--	--	--	--	--
Dimethyl phthalate	131-11-3	N	ug/l	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	--	--	--	--	--	--
Di-n-octyl phthalate	117-84-0	N	ug/l	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	4.3	No	1.8	No	120	No
Fluorene	86-73-7	N	ug/l	59	No	16	No	4500	No
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	--	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	--	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	--	--	--	--	2.9	No
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	--	--	--	--	0.16	No
Isophorone	78-59-1	N	ug/l	--	--	--	--	760	No
Naphthalene	91-20-3	N	ug/l	510	No	68	No	--	--
Nitrobenzene	98-95-3	N	ug/l	15000	No	8500	No	530	No
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	--	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	--	--	--	--	--	--
p-Chloroaniline	106-47-8	N	ug/l	--	--	--	--	--	--
Pentachlorophenol	87-86-5	N	ug/l	--	--	--	--	2.5	Yes
Phenanthrene	85-01-8	N	ug/l	46	No	3.7	No	--	--
Phenol	108-95-2	N	ug/l	--	--	--	--	--	--
Pyrene	129-00-0	N	ug/l	--	--	--	--	3500	No
Volatile Organic Compounds									
1,1,1-Trichloroethane	71-55-6	N	ug/l	4900	No	390	No	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	1800	No	140	No	3.2	No
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	19000	No	4400	No	12	No
1,1-Dichloroethane	75-34-3	N	ug/l	20000	No	2000	No	--	--
1,1-Dichloroethene	75-35-4	N	ug/l	3000	No	240	No	120	No
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	370	No	72	No	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	210	No	170	No	--	--
1,2-Dichloroethane	107-06-2	N	ug/l	25000	No	4500	No	23	No
1,2-Dichloropropane	78-87-5	N	ug/l	4800	No	380	No	--	--
1,3-Dichlorobenzene	541-73-1	N	ug/l	500	No	200	No	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	1800	No	620	No	--	--
2-Butanone (MEK)	78-93-3	N	ug/l	320000	No	26000	No	--	--
4-Methyl-2-Pentanone	108-10-1	N	ug/l	46000	No	1400	No	--	--
Acetone	67-64-1	N	ug/l	1500000	No	120000	No	--	--
Benzene	71-43-2	N	ug/l	3900	No	800	No	--	--
Bromodichloromethane	75-27-4	N	ug/l	10	No	1	No	14.9	No
Bromoform	75-25-2	N	ug/l	--	--	--	--	50	No
Bromomethane	74-83-9	N	ug/l	--	--	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	200	No	20	No	--	--
Carbon Tetrachloride	56-23-5	N	ug/l	3500	No	280	No	1.4	No
CFC-11	75-69-4	N	ug/l	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	990	No	79	No	4500	No
Chlorodibromomethane	124-48-1	N	ug/l	--	--	--	--	11	No
Chloroethane	75-00-3	N	ug/l	13000	No	1000	No	--	--
Chloroform	67-66-3	N	ug/l	1900	No	150	No	130	No
Chloromethane	74-87-3	N	ug/l	16000	No	1300	No	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	--	--	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	--	--	--	--	--	--
Isopropylbenzene	98-82-8	N	ug/l	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	12000	No	950	No	--	--
Methylcyclohexane	108-87-2	N	ug/l	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	67000	No	5400	No	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	--	--	--	--	--
Tetrachloroethene	127-18-4	N	ug/l	--	--	--	--	--	--
Toluene	108-88-3	N	ug/l	--	--	--	--	--	--
Total Xylenes	1330-20-7	N	ug/l	--	--	--	--	--	--
trans-1,2-Dichloroethene	156-60-5	N	ug/l	--	--	--	--	34000	No
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	12000	No	940	No	25	No
Vinyl chloride	75-01-4	N	ug/l	8400	No	930	No	2	No

Notes:

[1] Average calculated using half reporting limit for non-detects. All concentrations c

-- = not available or not applicable

Table 5. Screening of Average Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	USEPA Ambient Water Quality Criteria							
				Human Health Criteria, Water and Organism	Exceedance (Yes/No)	Human Health Criteria, Organism Only	Exceedance (Yes/No)	Acute Aquatic Life Criteria	Exceedance (Yes/No)	Chronic Aquatic Life Criteria	Exceedance (Yes/No)
Semivolatile Organic Compounds											
1,1-Biphenyl	92-52-4	N	ug/l	--	--	--	--	--	--	--	--
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	200	No	4000	No	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	300	No	600	No	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	N	ug/l	1.5	No	2.8	No	--	--	--	--
2,4-Dichlorophenol	120-83-2	N	ug/l	10	No	60	No	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	100	No	3000	No	--	--	--	--
2,4-Dinitrophenol	51-28-5	N	ug/l	10	No	300	No	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	0.049	Yes	1.7	No	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	--	--	--	--	--	--	--
2-Chloronaphthalene	91-58-7	N	ug/l	800	No	1000	No	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	30	No	800	No	--	--	--	--
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	2	Yes	30	No	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	--	--	--	--	--	--	--	--
2-Methylphenol	95-48-7	N	ug/l	--	--	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	--	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	0.049	Yes	0.15	Yes	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	--	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	--	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	500	No	2000	No	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	--	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	--	--	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	--	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	--	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	70	No	90	No	--	--	--	--
Acenaphthylene	208-96-8	N	ug/l	--	--	--	--	--	--	--	--
Acetophenone	98-86-2	N	ug/l	--	--	--	--	--	--	--	--
Anthracene	120-12-7	N	ug/l	300	No	400	No	--	--	--	--
Atrazine	1912-24-9	N	ug/l	--	--	--	--	--	--	--	--
Benzaldehyde	100-52-7	N	ug/l	--	--	--	--	--	--	--	--
Benzo(a)anthracene	56-55-3	N	ug/l	0.0012	Yes	0.0013	Yes	--	--	--	--
Benzo(a)pyrene	50-32-8	N	ug/l	0.00012	Yes	0.00013	Yes	--	--	--	--
Benzo(b)fluoranthene	205-99-2	N	ug/l	0.0012	Yes	0.0013	Yes	--	--	--	--
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	--	--	--	--	--	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	0.012	Yes	0.013	Yes	--	--	--	--
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	--	--	--	--	--	--	--
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	0.03	Yes	2.2	No	--	--	--	--
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	0.32	Yes	0.37	Yes	--	--	--	--
Butyl benzyl phthalate	85-68-7	N	ug/l	0.1	Yes	0.1	Yes	--	--	--	--
Caprolactam	105-60-2	N	ug/l	--	--	--	--	--	--	--	--
Carbazole	86-74-8	N	ug/l	--	--	--	--	--	--	--	--
Chrysene	218-01-9	N	ug/l	0.12	No	0.13	No	--	--	--	--
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	0.00012	Yes	0.00013	Yes	--	--	--	--
Dibenzofuran	132-64-9	N	ug/l	--	--	--	--	--	--	--	--
Diethyl phthalate	84-66-2	N	ug/l	600	No	600	No	--	--	--	--
Dimethyl phthalate	131-11-3	N	ug/l	2000	No	2000	No	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	20	No	30	No	--	--	--	--
Di-n-octyl phthalate	117-84-0	N	ug/l	--	--	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	20	No	20	No	--	--	--	--
Fluorene	86-73-7	N	ug/l	50	No	70	No	--	--	--	--
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	0.01	Yes	0.01	Yes	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	0.000079	Yes	0.000079	Yes	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	4	No	4	No	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	0.1	Yes	0.1	Yes	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	0.0012	Yes	0.0013	Yes	--	--	--	--
Isophorone	78-59-1	N	ug/l	34	No	1800	No	--	--	--	--
Naphthalene	91-20-3	N	ug/l	--	--	--	--	--	--	--	--
Nitrobenzene	98-95-3	N	ug/l	10	No	600	No	--	--	--	--
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	0.005	Yes	0.51	No	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	3.3	No	6	No	--	--	--	--
p-Chloroaniline	106-47-8	N	ug/l	--	--	--	--	--	--	--	--
Pentachlorophenol	87-86-5	N	ug/l	0.03	Yes	0.04	Yes	19	No	15	No
Phenanthrene	85-01-8	N	ug/l	--	--	--	--	--	--	--	--
Phenol	108-95-2	N	ug/l	4000	No	300000	No	--	--	--	--
Pyrene	129-00-0	N	ug/l	20	No	30	No	--	--	--	--
Volatile Organic Compounds											
1,1,1-Trichloroethane	71-55-6	N	ug/l	10000	No	200000	No	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	0.2	No	3	No	--	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	0.55	No	8.9	No	--	--	--	--
1,1-Dichloroethane	75-34-3	N	ug/l	--	--	--	--	--	--	--	--
1,1-Dichloroethene	75-35-4	N	ug/l	300	No	20000	No	--	--	--	--
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	0.071	No	0.076	No	--	--	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	--	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	1000	No	3000	No	--	--	--	--
1,2-Dichloroethane	107-06-2	N	ug/l	9.9	No	650	No	--	--	--	--
1,2-Dichloropropane	78-87-5	N	ug/l	0.9	No	31	No	--	--	--	--
1,3-Dichlorobenzene	541-73-1	N	ug/l	7	No	10	No	--	--	--	--
1,4-Dichlorobenzene	106-46-7	N	ug/l	300	No	900	No	--	--	--	--
2-Butanone (MEK)	78-93-3	N	ug/l	--	--	--	--	--	--	--	--
4-Methyl-2-Pentanone	108-10-1	N	ug/l	--	--	--	--	--	--	--	--
Acetone	67-64-1	N	ug/l	--	--	--	--	--	--	--	--
Benzene	71-43-2	N	ug/l	0.58	Yes	16	No	--	--	--	--
Bromodichloromethane	75-27-4	N	ug/l	0.95	No	27	No	--	--	--	--
Bromoform	75-25-2	N	ug/l	7	No	120	No	--	--	--	--
Bromomethane	74-83-9	N	ug/l	100	No	10000	No	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	--	--	--	--	--	--	--	--
Carbon Tetrachloride	56-23-5	N	ug/l	0.4	No	5	No	--	--	--	--
CFC-11	75-69-4	N	ug/l	--	--	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	--	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	100	No	800	No	--	--	--	--
Chlorodibromomethane	124-48-1	N	ug/l	0.8	No	21	No	--	--	--	--
Chloroethane	75-00-3	N	ug/l	--	--	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	60	No	2000	No	--	--	--	--
Chloromethane	74-87-3	N	ug/l	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	--	--	--	--	--	--	--	--
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	--	--	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	20	No	1000	No	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	68	No	130	No	--	--	--	--
Isopropylbenzene	98-82-8	N	ug/l	--	--	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	--	--	--	--	--	--	--	--
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	--	--	--	--	--	--	--
Methylcyclohexane	108-87-2	N	ug/l	--	--	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	--	--	--	--	--	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	--	--	--	--	--	--	--
Tetrachloroethene	127-18-4	N	ug/l	10	No	29	No	--	--	--	--
Toluene	108-88-3	N	ug/l	57	No	520	No	--	--	--	--
Total Xylenes	1330-20-7	N	ug/l	--	--	--	--	--	--	--	--
trans-1,2-Dichloroethene	156-60-5	N	ug/l	100	No	4000	No	--	--	--	--
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	--	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	0.6	No	7	No	--	--	--	--
Vinyl chloride	75-01-4	N	ug/l	0.022	Yes	1.6	No	--	--	--	--

Notes:

[1] Average calculated using half reporting limit for non-detects. All concentrations c

-- = not available or not applicable

Table 5. Screening of Average Diluted LCCS Groundwater Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Calumet Open Space Reserve						Recreator Surface Water Benchmark	
				Surface Water Background	Exceedance (Yes/No)	Surface Water Threshold	Exceedance (Yes/No)	Surface Water Benchmark	Exceedance (Yes/No)	Benchmark	Exceedance (Yes/No)
Semivolatile Organic Compounds											
1,1-Biphenyl	92-52-4	N	ug/l	--	--	--	--	--	--	102	No
2,2-Oxybis(1-Chloropropane)	108-60-1	N	ug/l	--	--	--	--	--	--	--	--
2,4,5-Trichlorophenol	95-95-4	N	ug/l	--	--	--	--	--	--	--	--
2,4,6-Trichlorophenol	88-06-2	N	ug/l	--	--	--	--	--	--	36.9	No
2,4-Dichlorophenol	120-83-2	N	ug/l	--	--	--	--	--	--	--	--
2,4-Dimethylphenol	105-67-9	N	ug/l	--	--	--	--	--	--	2040	No
2,4-Dinitrophenol	51-28-5	N	ug/l	--	--	--	--	--	--	--	--
2,4-Dinitrotoluene	121-14-2	N	ug/l	--	--	--	--	--	--	--	--
2,6-Dinitrotoluene	606-20-2	N	ug/l	--	--	--	--	--	--	5.8	No
2-Chloronaphthalene	91-58-7	N	ug/l	--	--	--	--	--	--	--	--
2-Chlorophenol	95-57-8	N	ug/l	--	--	--	--	--	--	576	No
2-Methyl-4,6-dinitrophenol	534-52-1	N	ug/l	--	--	--	--	--	--	--	--
2-Methylnaphthalene	91-57-6	N	ug/l	--	--	--	--	--	--	85.9	No
2-Methylphenol	95-48-7	N	ug/l	--	--	--	--	--	--	--	--
2-Nitroaniline	88-74-4	N	ug/l	--	--	--	--	--	--	--	--
2-Nitrophenol	88-75-5	N	ug/l	--	--	--	--	--	--	--	--
3,3-Dichlorobenzidine	91-94-1	N	ug/l	--	--	--	--	--	--	--	--
3-Nitroaniline	99-09-2	N	ug/l	--	--	--	--	--	--	--	--
4-Bromophenyl phenyl ether	101-55-3	N	ug/l	--	--	--	--	--	--	--	--
4-Chloro-3-Methylphenol	59-50-7	N	ug/l	--	--	--	--	--	--	--	--
4-Chlorophenyl phenyl ether	7005-72-3	N	ug/l	--	--	--	--	--	--	--	--
4-Methylphenol	106-44-5	N	ug/l	--	--	--	--	--	--	--	--
4-Nitroaniline	100-01-6	N	ug/l	--	--	--	--	--	--	--	--
4-Nitrophenol	100-02-7	N	ug/l	--	--	--	--	--	--	--	--
Acenaphthene	83-32-9	N	ug/l	--	--	62	No	120	No	1260	No
Acenaphthylene	208-96-8	N	ug/l	--	--	15	No	190	No	1260	No
Acetophenone	98-86-2	N	ug/l	--	--	--	--	--	--	14700	No
Anthracene	120-12-7	N	ug/l	--	--	4	No	35	No	3550	No
Atrazine	1912-24-9	N	ug/l	--	--	--	--	--	--	--	--
Benzaldehyde	100-52-7	N	ug/l	--	--	--	--	--	--	2510	No
Benzo(a)anthracene	56-55-3	N	ug/l	--	--	0.03	Yes	0.2	No	36.5	No
Benzo(a)pyrene	50-32-8	N	ug/l	--	--	0.02	Yes	8.1	No	3.65	No
Benzo(b)fluoranthene	205-99-2	N	ug/l	--	--	9.1	No	5.7	No	36.5	No
Benzo(g,h,i)perylene	191-24-2	N	ug/l	--	--	7.6	No	13.2	No	--	--
Benzo(k)fluoranthene	207-08-9	N	ug/l	--	--	--	--	--	--	365	No
bis(2-Chloroethoxy)methane	111-91-1	N	ug/l	--	--	--	--	--	--	507	No
bis(2-Chloroethyl)ether	111-44-4	N	ug/l	--	--	--	--	--	--	11	No
bis(2-Ethylhexyl)phthalate	117-81-7	N	ug/l	--	--	--	--	--	--	1160	No
Butyl benzyl phthalate	85-68-7	N	ug/l	--	--	--	--	--	--	433	No
Caprolactam	105-60-2	N	ug/l	--	--	--	--	--	--	88300	No
Carbazole	86-74-8	N	ug/l	--	--	--	--	--	--	644	No
Chrysene	218-01-9	N	ug/l	--	--	3.6	No	17.6	No	3650	No
Dibenzo(a,h)anthracene	53-70-3	N	ug/l	--	--	0.5	No	2.5	No	--	--
Dibenzofuran	132-64-9	N	ug/l	--	--	--	--	--	--	17.8	No
Diethyl phthalate	84-66-2	N	ug/l	--	--	--	--	--	--	101000	No
Dimethyl phthalate	131-11-3	N	ug/l	--	--	--	--	--	--	--	--
Di-n-butyl phthalate	84-74-2	N	ug/l	--	--	--	--	--	--	2200	No
Di-n-octyl phthalate	117-84-0	N	ug/l	--	--	--	--	--	--	--	--
Fluoranthene	206-44-0	N	ug/l	--	--	4.4	No	199	No	7600	No
Fluorene	86-73-7	N	ug/l	--	--	19	No	336.8	No	644	No
Hexachloro-1,3-butadiene	87-68-3	N	ug/l	--	--	--	--	--	--	--	--
Hexachlorobenzene	118-74-1	N	ug/l	--	--	--	--	--	--	--	--
Hexachlorocyclopentadiene	77-47-4	N	ug/l	--	--	--	--	--	--	--	--
Hexachloroethane	67-72-1	N	ug/l	--	--	--	--	--	--	--	--
Indeno(1,2,3-cd)pyrene	193-39-5	N	ug/l	--	--	4.3	No	5	No	36.5	No
Isophorone	78-59-1	N	ug/l	--	--	--	--	--	--	10300	No
Naphthalene	91-20-3	N	ug/l	--	--	68	No	510	No	812	No
Nitrobenzene	98-95-3	N	ug/l	--	--	--	--	--	--	--	--
N-Nitrosodi-n-propylamine	621-64-7	N	ug/l	--	--	--	--	--	--	--	--
N-Nitrosodiphenylamine	86-30-6	N	ug/l	--	--	--	--	--	--	697	No
p-Chloroaniline	106-47-8	N	ug/l	--	--	--	--	--	--	43.4	No
Pentachlorophenol	87-86-5	N	ug/l	--	--	--	--	--	--	0.866	Yes
Phenanthrene	85-01-8	N	ug/l	--	--	3.7	No	46	No	3550	No
Phenol	108-95-2	N	ug/l	--	--	--	--	--	--	43600	No
Pyrene	129-00-0	N	ug/l	--	--	0.3	No	87.6	No	220	No
Volatile Organic Compounds											
1,1,1-Trichloroethane	71-55-6	N	ug/l	--	--	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	79-34-5	N	ug/l	--	--	--	--	--	--	--	--
1,1,2-trichloro-1,2,2-trifluoroethan	76-13-1	N	ug/l	--	--	--	--	--	--	--	--
1,1,2-Trichloroethane	79-00-5	N	ug/l	--	--	--	--	--	--	--	--
1,1-Dichloroethane	75-34-3	N	ug/l	--	--	--	--	--	--	1390	No
1,1-Dichloroethene	75-35-4	N	ug/l	--	--	--	--	--	--	5190	No
1,2,4-Trichlorobenzene	120-82-1	N	ug/l	--	--	--	--	--	--	--	--
1,2-Dibromo-3-chloropropane	96-12-8	N	ug/l	--	--	--	--	--	--	--	--
1,2-Dibromoethane	106-93-4	N	ug/l	--	--	--	--	--	--	--	--
1,2-Dichlorobenzene	95-50-1	N	ug/l	--	--	--	--	--	--	3460	No
1,2-Dichloroethane	107-06-2	N	ug/l	--	--	--	--	--	--	108	No
1,2-Dichloropropane	78-87-5	N	ug/l	--	--	--	--	--	--	197	No
1,3-Dichlorobenzene	541-73-1	N	ug/l	--	--	--	--	--	--	313	No
1,4-Dichlorobenzene	106-46-7	N	ug/l	--	--	--	--	--	--	313	No
2-Butanone (MEK)	78-93-3	N	ug/l	--	--	--	--	--	--	107000	No
4-Methyl-2-Pentanone	108-10-1	N	ug/l	--	--	--	--	--	--	107000	No
Acetone	67-64-1	N	ug/l	--	--	--	--	--	--	--	--
Benzene	71-43-2	N	ug/l	--	--	--	--	--	--	--	--
Bromodichloromethane	75-27-4	N	ug/l	--	--	--	--	--	--	--	--
Bromoform	75-25-2	N	ug/l	--	--	--	--	--	--	--	--
Bromomethane	74-83-9	N	ug/l	--	--	--	--	--	--	--	--
Carbon Disulfide	75-15-0	N	ug/l	--	--	--	--	--	--	10800	No
Carbon Tetrachloride	56-23-5	N	ug/l	--	--	--	--	--	--	--	--
CFC-11	75-69-4	N	ug/l	--	--	--	--	--	--	--	--
CFC-12	75-71-8	N	ug/l	--	--	--	--	--	--	--	--
Chlorobenzene	108-90-7	N	ug/l	--	--	--	--	--	--	1230	No
Chlorodibromomethane	124-48-1	N	ug/l	--	--	--	--	--	--	--	--
Chloroethane	75-00-3	N	ug/l	--	--	--	--	--	--	--	--
Chloroform	67-66-3	N	ug/l	--	--	--	--	--	--	244	No
Chloromethane	74-87-3	N	ug/l	--	--	--	--	--	--	--	--
cis-1,2-Dichloroethene	156-59-2	N	ug/l	--	--	--	--	--	--	213	No
cis-1,3-Dichloropropene	10061-01-5	N	ug/l	--	--	--	--	--	--	--	--
Cyclohexane	110-82-7	N	ug/l	--	--	--	--	--	--	--	--
Dichloromethane	75-09-2	N	ug/l	--	--	--	--	--	--	--	--
Ethylbenzene	100-41-4	N	ug/l	--	--	--	--	--	--	175	No
Isopropylbenzene	98-82-8	N	ug/l	--	--	--	--	--	--	--	--
Methyl Acetate	79-20-9	N	ug/l	--	--	--	--	--	--	180000	No
Methyl N-Butyl Ketone (2-Hexano	591-78-6	N	ug/l	--	--	--	--	--	--	--	--
Methylcyclohexane	108-87-2	N	ug/l	--	--	--	--	--	--	--	--
Methyl-tert-butylether	1634-04-4	N	ug/l	--	--	--	--	--	--	--	--
Styrene (Monomer)	100-42-5	N	ug/l	--	--	--	--	--	--	10500	No
Tetrachloroethene	127-18-4	N	ug/l	--	--	--	--	--	--	267	No
Toluene	108-88-3	N	ug/l	--	--	--	--	--	--	4880	No
Total Xylenes	1330-20-7	N	ug/l	--	--	--	--	--	--	8410	No
trans-1,2-Dichloroethene	156-60-5	N	ug/l	--	--	--	--	--	--	2130	No
trans-1,3-Dichloropropene	10061-02-6	N	ug/l	--	--	--	--	--	--	--	--
Trichloroethene	79-01-6	N	ug/l	--	--	--	--	--	--	48.6	No
Vinyl chloride	75-01-4	N	ug/l	--	--	--	--	--	--	0.056	Yes

Notes:

[1] Average calculated using half reporting limit for non-detects. All concentrations c

-- = not available or not applicable

Table 6. Screening of Maximum IRM Surface Water Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect	Maximum Non-Detect	Illinois Numeric Water Quality Standards (35 IAC 302.208 and 302.535)							
						Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)	Standards for Open Waters of Lake Michigan	Exceedance (Yes/No)
Anions													
Antimony	7440-36-0	T	mg/l	0.0016	--	--	--	--	--	--	--	--	--
Arsenic	7440-38-2	T	mg/l	0.0024	--	0.36	No	0.19	No	--	--	--	--
Barium	7440-39-3	T	mg/l	0.0811	--	5	No	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	0.000076	0.001	--	--	--	--	--	--	--	--
Boron	7440-42-8	T	mg/l	0.446	--	40.1	No	7.6	No	--	--	--	--
Cadmium	7440-43-9	T	mg/l	--	0.001	0.030	No	0.0024	No	--	--	--	--
Chromium	7440-47-3	T	mg/l	0.0065	--	1.349	No	0.438	No	--	--	--	--
Copper	7440-50-8	T	mg/l	0.0027	0.0024	0.048	No	0.029	No	--	--	--	--
Iron	7439-89-6	T	mg/l	2.22	--	1	Yes	--	--	--	--	--	--
Lead	7439-92-1	T	mg/l	0.0082	--	0.24	No	0.051	No	--	--	--	--
Manganese	7439-96-5	T	mg/l	0.315	--	9.5	No	4.0	No	--	--	--	--
Mercury	7439-97-6	T	mg/l	--	0.0002	0.0022	No	0.0011	No	0.012	No	--	--
Nickel	7440-02-0	T	mg/l	0.0049	--	0.21	No	0.013	No	--	--	--	--
Selenium	7782-49-2	T	mg/l	--	0.0017	1	No	--	--	--	--	--	--
Silver	7440-22-4	T	mg/l	--	0.001	5	No	--	--	--	--	--	--
Thallium	7440-28-0	T	mg/l	0.001	--	--	--	--	--	--	--	--	--
Zinc	7440-66-6	T	mg/l	0.0224	--	0.30	No	0.079	No	--	--	--	--
Total Ammonia-Nitrogen	7664-41-7	T	mg/l	4.5	0.6	--	--	--	--	--	--	15	No

Notes:

-- = not available or not applicable

Green shading indicates criterion is intended for dissolved concentrations.

Table 6. Screening of Maximum IRM Surface Water Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect	Maximum Non-Detect	Illinois Numeric Water Quality Standards for the Chicago Area Waterway System (35 IAC 302.407)					
						Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Anions											
Antimony	7440-36-0	T	mg/l	0.0016	--	--	--	--	--	--	--
Arsenic	7440-38-2	T	mg/l	0.0024	--	0.34	No	0.15	No	--	--
Barium	7440-39-3	T	mg/l	0.0811	--	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	0.000076	0.001	--	--	--	--	--	--
Boron	7440-42-8	T	mg/l	0.446	--	40.1	No	7.6	No	--	--
Cadmium	7440-43-9	T	mg/l	--	0.001	0.030	No	0.0023	No	--	--
Chromium	7440-47-3	T	mg/l	0.0065	--	1.401	No	0.182	No	--	--
Copper	7440-50-8	T	mg/l	0.0027	0.0024	0.040	No	0.024	No	--	--
Iron	7439-89-6	T	mg/l	2.22	--	--	--	--	--	--	--
Lead	7439-92-1	T	mg/l	0.0082	--	0.24	No	0.051	No	--	--
Manganese	7439-96-5	T	mg/l	0.315	--	9.5	No	4.0	No	--	--
Mercury	7439-97-6	T	mg/l	--	0.0002	0.0012	No	0.00065	No	0.012	No
Nickel	7440-02-0	T	mg/l	0.0049	--	0.21	No	0.013	No	--	--
Selenium	7782-49-2	T	mg/l	--	0.0017	--	--	--	--	--	--
Silver	7440-22-4	T	mg/l	--	0.001	--	--	--	--	--	--
Thallium	7440-28-0	T	mg/l	0.001	--	--	--	--	--	--	--
Zinc	7440-66-6	T	mg/l	0.0224	--	0.30	No	0.079	No	--	--
Total Ammonia-Nitrogen	7664-41-7	T	mg/l	4.5	0.6	--	--	--	--	--	--

Notes:

-- = not available or not applicable

Green shading indicates criterion is intended for dissolved concentrations.

Table 6. Screening of Maximum IRM Surface Water Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect	Maximum Non-Detect	Illinois Derived Water Quality Standards (35 IAC 302.210)					
						Acute Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Chronic Standards for the Protection of Aquatic Organisms	Exceedance (Yes/No)	Standards for the Protection of Human Health	Exceedance (Yes/No)
Anions											
Antimony	7440-36-0	T	mg/l	0.0016	--	--	--	--	--	12000	No
Arsenic	7440-38-2	T	mg/l	0.0024	--	--	--	--	--	--	--
Barium	7440-39-3	T	mg/l	0.0811	--	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	0.000076	0.001	--	--	--	--	--	--
Boron	7440-42-8	T	mg/l	0.446	--	--	--	--	--	--	--
Cadmium	7440-43-9	T	mg/l	--	0.001	--	--	--	--	--	--
Chromium	7440-47-3	T	mg/l	0.0065	--	--	--	--	--	--	--
Copper	7440-50-8	T	mg/l	0.0027	0.0024	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	2.22	--	--	--	--	--	--	--
Lead	7439-92-1	T	mg/l	0.0082	--	--	--	--	--	--	--
Manganese	7439-96-5	T	mg/l	0.315	--	--	--	--	--	--	--
Mercury	7439-97-6	T	mg/l	--	0.0002	--	--	--	--	--	--
Nickel	7440-02-0	T	mg/l	0.0049	--	--	--	--	--	--	--
Selenium	7782-49-2	T	mg/l	--	0.0017	--	--	--	--	--	--
Silver	7440-22-4	T	mg/l	--	0.001	--	--	--	--	--	--
Thallium	7440-28-0	T	mg/l	0.001	--	--	--	--	--	0.003	No
Zinc	7440-66-6	T	mg/l	0.0224	--	--	--	--	--	--	--
Total Ammonia-Nitrogen	7664-41-7	T	mg/l	4.5	0.6	--	--	--	--	--	--

Notes:

-- = not available or not applicable

Green shading indicates criterion is intended for dissolved concentrations.

Table 6. Screening of Maximum IRM Surface Water Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect	Maximum Non-Detect	USEPA Ambient Water Quality Criteria							
						Human Health Criteria, Water and Organism	Exceedance (Yes/No)	Human Health Criteria, Organism Only	Exceedance (Yes/No)	Acute Aquatic Life Criteria	Exceedance (Yes/No)	Chronic Aquatic Life Criteria	Exceedance (Yes/No)
Anions													
Antimony	7440-36-0	T	mg/l	0.0016	--	0.0056	No	0.64	No	--	--	--	--
Arsenic	7440-38-2	T	mg/l	0.0024	--	0.000018	Yes	0.00014	Yes	0.34	No	0.15	No
Barium	7440-39-3	T	mg/l	0.0811	--	1	No	--	--	--	--	--	--
Beryllium	7440-41-7	T	mg/l	0.000076	0.001	--	--	--	--	--	--	--	--
Boron	7440-42-8	T	mg/l	0.446	--	--	--	--	--	--	--	--	--
Cadmium	7440-43-9	T	mg/l	--	0.001	--	--	--	--	0.0050	No	0.0016	No
Chromium	7440-47-3	T	mg/l	0.0065	--	--	--	--	--	1.4	No	0.18	No
Copper	7440-50-8	T	mg/l	0.0027	0.0024	1.3	No	--	--	--	--	--	--
Iron	7439-89-6	T	mg/l	2.22	--	--	--	--	--	--	--	1	Yes
Lead	7439-92-1	T	mg/l	0.0082	--	--	--	--	--	0.21	No	0.0081	Yes
Manganese	7439-96-5	T	mg/l	0.315	--	0.05	Yes	0.1	Yes	--	--	--	--
Mercury	7439-97-6	T	mg/l	--	0.0002	--	--	--	--	0.0014	No	0.00077	No
Nickel	7440-02-0	T	mg/l	0.0049	--	0.61	No	4.6	No	1.2	No	0.13	No
Selenium	7782-49-2	T	mg/l	--	0.0017	0.17	No	4.2	No	--	--	--	--
Silver	7440-22-4	T	mg/l	--	0.001	--	--	--	--	0.021	No	--	--
Thallium	7440-28-0	T	mg/l	0.001	--	0.00024	Yes	0.00047	Yes	--	--	--	--
Zinc	7440-66-6	T	mg/l	0.0224	--	7.4	No	26	No	0.3	No	0.3	No
Total Ammonia-Nitrogen	7664-41-7	T	mg/l	4.5	0.6	--	--	--	--	--	--	--	--

Notes:

-- = not available or not applicable

Green shading indicates criterion is intended for dissolved concentrations.

Table 6. Screening of Maximum IRM Surface Water Data Against Surface Water Benchmarks

Analyte	CAS	Fraction	Units	Maximum Detect	Maximum Non-Detect	Calumet Open Space Reserve						Recreator Surface Water Benchmark	
						Surface Water Background	Exceedance (Yes/No)	Surface Water Threshold	Exceedance (Yes/No)	Surface Water Benchmark	Exceedance (Yes/No)	Benchmark	Exceedance (Yes/No)
Anions													
Antimony	7440-36-0	T	mg/l	0.0016	--	< 0.008	No	0.03	No	0.088	No	0.0562	No
Arsenic	7440-38-2	T	mg/l	0.0024	--	0.0025	No	0.048	No	0.34	No	0.00969	No
Barium	7440-39-3	T	mg/l	0.0811	--	0.05	Yes	5	No	5	No	21.6	No
Beryllium	7440-41-7	T	mg/l	0.000076	0.001	< 0.004	No	--	--	--	--	0.0443	No
Boron	7440-42-8	T	mg/l	0.446	--	--	--	--	--	--	--	361	No
Cadmium	7440-43-9	T	mg/l	--	0.001	< 0.002	No	0.0051	No	0.0143	No	0.0461	No
Chromium	7440-47-3	T	mg/l	0.0065	--	< 0.008	No	--	--	--	--	561	No
Copper	7440-50-8	T	mg/l	0.0027	0.0024	0.0051	No	0.0232	No	0.0364	No	7.22	No
Iron	7439-89-6	T	mg/l	2.22	--	0.71	Yes	1	Yes	1	Yes	126	No
Lead	7439-92-1	T	mg/l	0.0082	--	< 0.002	Yes	0.0167	No	0.3182	No	--	--
Manganese	7439-96-5	T	mg/l	0.315	--	0.042	Yes	1	No	1	No	1.96	No
Mercury	7439-97-6	T	mg/l	--	0.0002	0.000017	Yes	0.0009	No	0.0017	No	--	--
Nickel	7440-02-0	T	mg/l	0.0049	--	< 0.02	No	0.1336	No	1.2028	No	3.01	No
Selenium	7782-49-2	T	mg/l	--	0.0017	< 0.002	No	0.005	No	0.01	No	0.903	No
Silver	7440-22-4	T	mg/l	--	0.001	< 0.002	No	0.005	No	0.005	No	0.529	No
Thallium	7440-28-0	T	mg/l	0.001	--	< 0.002	No	0.01	No	0.02	No	--	--
Zinc	7440-66-6	T	mg/l	0.0224	--	0.012	Yes	0.3039	No	0.3014	No	55.3	No
Total Ammonia-Nitrogen	7664-41-7	T	mg/l	4.5	0.6	--	--	25	No	140	No	--	--

Notes:

-- = not available or not applicable

Green shading indicates criterion is intended for dissolved concentrations.

Table 7. Screening of IRM Sediment Data Against Human Health Benchmarks

Analyte	Units	Residential Soil SL	Recreational Sediment SL	SD-02	SD-06
Total Organic Carbon	percent	--	--	11.1	32.9
Polynuclear Aromatics					
Acenaphthene	mg/kg	360	10500	0.47 J	ND
Acenaphthylene	mg/kg	360	10500	ND	ND
Anthracene	mg/kg	1800	52300	0.57 J	ND
Benzo(a)anthracene	mg/kg	0.16	32.5	2.4	0.64 J
Benzo(a)pyrene	mg/kg	0.016	3.35	3.7	0.59 J
Benzo(b)fluoranthene	mg/kg	0.16	33.5	6.4	5.8
Benzo(g,h,i)perylene	mg/kg	1800	52300	2.8	0.5 J
Benzo(k)fluoranthene	mg/kg	1.6	335	2.2	0.51 J
Carbazole	mg/kg	240	6970	0.27 J	ND
Chrysene	mg/kg	16	3350	3.2	0.65 J
Dibenzo(a,h)anthracene	mg/kg	0.016	3.35	0.79 J	ND
Dibenzofuran	mg/kg	7.3	213	0.33 J	ND
Diethyl phthalate	mg/kg	5100	147000	ND	0.5 J
Fluoranthene	mg/kg	240	6970	3.1	0.9 J
Fluorene	mg/kg	240	6970	0.4 J	ND
Indeno(1,2,3-c,d)pyrene	mg/kg	0.16	33.5	2.1	0.37 J
2-Methylnaphthalene	mg/kg	24	697	0.61 J	ND
Naphthalene	mg/kg	3.8	2960	0.9 J	ND
Phenanthrene	mg/kg	1800	52300	2.1	0.46 J
Pyrene	mg/kg	180	5230	3.1	0.77 J
Pesticides/PCBs					
Chlordane	mg/kg	1.7	50.6	ND	ND
4,4´-DDD	mg/kg	2.3	65.9	0.97	ND
4,4´-DDE	mg/kg	2	57.7	ND	ND
4,4´-DDT	mg/kg	1.9	55	ND	ND
Dieldrin	mg/kg	0.034	0.989	ND	ND
Endrin	mg/kg	1.9	55.3	ND	ND
Heptachlor	mg/kg	0.13	4.36	ND	ND
Heptachlor epoxide	mg/kg	0.07	2.16	ND	ND
PCBs	mg/kg	0.23	7.11	ND	ND
Metals					
Antimony	mg/kg	3.1	91.3	4.5	1.2 J
Arsenic	mg/kg	0.68	19.8	34.9	8.8
Beryllium	mg/kg	16	456	1.9	0.91 U
Cadmium	mg/kg	7.1	208	9	2.1
Chromium	mg/kg	12000	342000	157	36.8
Copper	mg/kg	310	9130	182	57.2
Lead	mg/kg	400	--	689	131
Mercury	mg/kg	1.1	1960	0.71 J	0.31 J
Nickel	mg/kg	150	4560	62.4	22.4
Selenium	mg/kg	39	1140	3.2	1.7
Silver	mg/kg	39	1140	3.2	1.1
Thallium	mg/kg	0.078	2.28	7.6 U	2.3 U
Zinc	mg/kg	2300	68400	2190	561

Notes:

Shaded values exceed residential soil SL.
Underlined values exceed recreational sediment SL.

-- = not available
mg/kg = milligrams per kilogram
ND = not detected
SL = screening level
J = estimated result
U = not detected

APPENDIX L

Site-Specific Screening Level Development

Recreator Screening Levels for Surface Water

To conduct a human health screening evaluation that better represents the potential exposures that might be associated with IRM, the concentration of each analyte detected in the surface water data set was compared to a risk-based concentration protective of recreators contacting surface water, calculated using the Regional Screening Level (RSL) calculator from the USEPA (https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search). The input parameter values used to calculate surface water screening levels are summarized in the attached **Table 1**. The resulting surface water screening levels from the RSL Calculator are shown in **Appendix I**. Analytes with concentrations above these surface water screening levels are also identified in **Appendix I**.

For some analytes for which no toxicity values are available based on the USEPA hierarchy for selecting toxicity values in risk assessment (USEPA 2003), the screening level for a structurally similar compound was used to represent the potential toxicity of that analyte solely for identifying COPCs. These representative analytes are listed in **Table 2** below.

Table 2. Structurally Similar Analytes for Surface Water Screening Levels

Analyte Without Toxicity Value	Represented by Screening Level for
Acenaphthylene	Acenaphthene
Carbazole	Fluorene
Dichlorobenzene, 1,3-	Dichlorobenzene, 1,4-
Ethyl Chloride	1,2-Dichloroethane
Methyl Isobutyl Ketone	Methyl Ethyl Ketone
Phenanthrene	Anthracene

Recreator Screening Levels for Sediment

To conduct a human health screening evaluation that better represents the potential exposures that might be associated with IRM, the concentration of each analyte detected in the sediment data set was compared to a risk-based concentration protective of recreators contacting sediment, calculated using the Regional Screening Level (RSL) calculator from the USEPA (https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search). The input parameter values used to calculate sediment screening levels are summarized in the attached **Table 3**. The resulting sediment screening levels from the RSL Calculator are shown in **Appendix I**. Analytes with concentrations above these sediment screening levels are also identified in **Appendix I**.

For some analytes for which no toxicity values are available based on the USEPA hierarchy for selecting toxicity values in risk assessment (USEPA 2003), the screening level for a structurally similar compound

was used to represent the potential toxicity of that analyte solely for identifying COPCs. These representative analytes are listed in **Table 4** below.

Table 4. Structurally Similar Analytes for Sediment Screening Levels

Analyte Without Toxicity Value	Represented by Screening Level for
Acenaphthylene	Acenaphthene
Benzo(ghi)perylene	Anthracene
Carbazole	Fluorene
Endosulfan I, II, Endosulfan Sulfate	Endosulfan
Hexachlorocyclohexane, Delta-	Hexachlorocyclohexane, Gamma-
Phenanthrene	Anthracene

1 REFERENCES

USEPA. 2003. Human Health Toxicity Values in Superfund Risk Assessments. OSWER Directive 9285.7-53. December 5.

Table 1. Recreator Equation Inputs for Surface Water Screening Levels

Site-specific Screening Levels Recreator Equation Inputs for Surface Water	
Variable	**Value**
TR (target cancer risk) unitless	0.000001
THQ (target hazard quotient) unitless	0.1
ED_{rec} (exposure duration - recreator) year	26
$ED_{rec\text{-}c}$ (exposure duration - child) year	6
$ED_{rec\text{-}a}$ (exposure duration - adult) year	20
$ED_{0\text{-}2}$ (mutagenic exposure duration) year	2
$ED_{2\text{-}6}$ (mutagenic exposure duration) year	4
$ED_{6\text{-}16}$ (mutagenic exposure duration) year	10
$ED_{16\text{-}30}$ (mutagenic exposure duration) year	10
LT (lifetime - recreator) year	70
EF (exposure frequency) day/year	12
$EF_{rec\text{-}c}$ (exposure frequency - child) day/year	12
$EF_{rec\text{-}a}$ (exposure frequency - adult) day/year	12
$EF_{0\text{-}2}$ (mutagenic exposure frequency) day/year	12
$EF_{2\text{-}6}$ (mutagenic exposure frequency) day/year	12
$EF_{6\text{-}16}$ (mutagenic exposure frequency) day/year	12
$EF_{16\text{-}30}$ (mutagenic exposure frequency) day/year	12
$ET_{rec\text{-}adj}$ (age-adjusted exposure time) hour/event	2
$ET_{rec\text{-}madj}$ (mutagenic age-adjusted exposure time) hour/event	2
$ET_{rec\text{-}c}$ (exposure time - child) hour/event	2
$ET_{rec\text{-}a}$ (exposure time - adult) hour/event	2
$ET_{0\text{-}2}$ (mutagenic exposure time) hour/event	2
$ET_{2\text{-}6}$ (mutagenic exposure time) hour/event	2
$ET_{6\text{-}16}$ (mutagenic exposure time) hour/event	2
$ET_{16\text{-}30}$ (mutagenic exposure time) hour/event	2
$EV_{rec\text{-}c}$ (child) events/day	1
$EV_{rec\text{-}a}$ (adult) events/day	1
$EV_{0\text{-}2}$ (mutagenic) events/day	1
$EV_{2\text{-}6}$ (mutagenic) events/day	1
$EV_{6\text{-}16}$ (mutagenic) events/day	1
$EV_{16\text{-}30}$ (mutagenic) events/day	1
$BW_{rec\text{-}c}$ (body weight - child) kg	15
$BW_{rec\text{-}a}$ (body weight - adult) kg	80
$BW_{0\text{-}2}$ (mutagenic body weight) kg	15
$BW_{2\text{-}6}$ (mutagenic body weight) kg	15
$BW_{6\text{-}16}$ (mutagenic body weight) kg	80
$BW_{16\text{-}30}$ (mutagenic body weight) kg	80
$SA_{rec\text{-}c}$ (skin surface area - child) cm^2	6365
$SA_{rec\text{-}a}$ (skin surface area - adult) cm^2	6365
$SA_{0\text{-}2}$ (mutagenic skin surface area) cm^2	6365
$SA_{2\text{-}6}$ (mutagenic skin surface area) cm^2	6365
$SA_{6\text{-}16}$ (mutagenic skin surface area) cm^2	19652
$SA_{16\text{-}30}$ (mutagenic skin surface area) cm^2	19652
$IFW_{rec\text{-}adj}$ (age-adjusted water intake rate) L/kg	1.578
$IFWM_{rec\text{-}adj}$ (mutagenic age-adjusted water intake rate) L/kg	6.996
$DFW_{rec\text{-}adj}$ (age-adjusted dermal factor) cm^2-event/kg	89508
$DFWM_{rec\text{-}adj}$ (mutagenic age-adjusted dermal factor) cm^2-event/kg	280856
$IRW_{rec\text{-}c}$ (water intake rate - child) L/hr	0.12
$IRW_{rec\text{-}a}$ (water intake rate - adult) L/hr	0.071
$IRW_{0\text{-}2}$ (mutagenic water intake rate) L/hr	0.12
$IRW_{2\text{-}6}$ (mutagenic water intake rate) L/hr	0.12
$IRW_{6\text{-}16}$ (mutagenic water intake rate) L/hr	0.071
$IRW_{16\text{-}30}$ (mutagenic water intake rate) L/hr	0.071
l_{sc} (apparent thickness of stratum corneum) cm	0.001

Table 3. Recreator Equation Inputs for Sediment Screening Levels

Site-specific Screening Levels Recreator Equation Inputs for Sediment (USEPA uses soil exposure assumptions to evaluate sediment contact by a recreator)	
Variable	**Value**
TR (target cancer risk) unitless	0.000001
THQ (target hazard quotient) unitless	0.1
SA_{rec-c} (skin surface area - child) cm^2/day	2373
SA_{rec-a} (skin surface area - adult) cm^2/day	6032
SA_{0-2} (skin surface area - mutagenic) cm^2/day	2373
SA_{2-6} (skin surface area - mutagenic) cm^2/day	2373
SA_{6-16} (skin surface area - mutagenic) cm^2/day	6032
SA_{16-30} (skin surface area - mutagenic) cm^2/day	6032
LT (lifetime - recreator) year	70
$IFS_{rec-adj}$ (age-adjusted soil ingestion factor) mg/kg	1260
$DFS_{rec-adj}$ (age-adjusted soil dermal factor) mg/kg	3544.8
$IFSM_{rec-adj}$ (mutagenic age-adjusted soil ingestion factor) mg/kg	5720
$DFSM_{rec-adj}$ (mutagenic age-adjusted soil dermal factor) mg/kg	14683.2
EF_{0-2} (exposure frequency) day/year	12
EF_{2-6} (exposure frequency) day/year	12
EF_{6-16} (exposure frequency) day/year	12
EF_{16-30} (exposure frequency) day/year	12
EF_{rec-c} (exposure frequency - child) day/year	12
EF_{rec-a} (exposure frequency - adult) day/year	12
EF_{rec} (exposure frequency - recreator) day/year	12
IRS_{0-2} (soil intake rate) mg/day	200
IRS_{2-6} (soil intake rate) mg/day	200
IRS_{6-16} (soil intake rate) mg/day	100
IRS_{16-30} (soil intake rate) mg/day	100
IRS_{rec-c} (soil intake rate - child) mg/day	200
IRS_{rec-a} (soil intake rate - adult) mg/day	100
ED_{0-2} (exposure duration) year	2
ED_{2-6} (exposure duration) year	4
ED_{6-16} (exposure duration) year	10
ED_{16-30} (exposure duration) year	10
ED_{rec-c} (exposure duration - child) year	6
ED_{rec-a} (exposure duration - adult) year	20
ED_{rec} (exposure duration - recreator) year	26
ET_{0-2} (exposure time) hr/day	2
ET_{2-6} (exposure time) hr/day	2
ET_{6-16} (exposure time) hr/day	2
ET_{16-30} (exposure time) hr/day	2
ET_{rec-c} (exposure time - child) hr/day	2
ET_{rec-a} (exposure time - adult) hr/day	2
ET_{rec} (exposure time - recreator) hr/day	2
BW_{0-2} (body weight) kg	15
BW_{2-6} (body weight) kg	15
BW_{6-16} (body weight) kg	80
BW_{16-30} (body weight) kg	80
BW_{rec-c} (body weight - child) kg	15
BW_{rec-a} (body weight - adult) kg	80
AF_{0-2} (skin adherence factor) mg/cm^2	0.2
AF_{2-6} (skin adherence factor) mg/cm^2	0.2
AF_{6-16} (skin adherence factor) mg/cm^2	0.07
AF_{16-30} (skin adherence factor) mg/cm^2	0.07
AF_{rec-c} (skin adherence factor - child) mg/cm^2	0.2
AF_{rec-a} (skin adherence factor - adult) mg/cm^2	0.07
$City_{PEF}$ (Climate Zone) Selection	Chicago, IL (7)
A_s (acres)	0.5
Q/C_{wp} (inverse of the ratio of the geometric mean air concentration to the emission flu	98.43071437
PEF (particulate emission factor) m^3/kg	1560521177
A (PEF Dispersion Constant)	16.8653
B (PEF Dispersion Constant)	18.7848
C (PEF Dispersion Constant)	215.0624
V (fraction of vegetative cover) unitless	0.5
U_m (mean annual wind speed) m/s	4.65
U_t (equivalent threshold value)	11.32
F(x) (function dependant on U_m/U_t) unitless	0.182
$City_{VF}$ (Climate Zone) Selection	Chicago, IL (7)
A_s (acres)	0.5
Q/C_{vol}(inverse of the ratio of the geometric mean air concentration to the emission flu	98.43071437
foc (fraction organic carbon in soil) g/g	0.006
p_b (dry soil bulk density) g/cm^3	1.5
p_s (soil particle density) g/cm^3	2.65
n (total soil porosity) L_{pore}/L_{soil}	0.43396
$_a$ (air-filled soil porosity) L_{air}/L_{soil}	0.28396
$_w$ (water-filled soil porosity) L_{water}/L_{soil}	0.15
T (exposure interval) s	819936000
A (VF Dispersion Constant)	16.8653
B (VF Dispersion Constant)	18.7848
C (VF Dispersion Constant)	215.0624
$City_{VF\ mass\text{-}loading}$ (Climate Zone) Selection	Chicago, IL (7)
VF_{ml} (volitization factor - mass-limit) m^3/kg	179348.636
Q/C_{vol} (inverse of the ratio of the geometric mean air concentration to the emission fl	98.43071437
A_s (acres)	0.5
T (exposure interval) yr	26
d_s (depth of source) m	0.3
p_b (dry soil bulk density) g/cm^3	1.5
A (VF Dispersion Constant - Mass Limit)	16.8653
B (VF Dispersion Constant - Mass Limit)	18.7848
C (VF Dispersion Constant - Mass Limit)	215.0624

Arcadis U.S., Inc.

200 South Michigan Avenue

Suite 2000

Chicago, Illinois 60604

Tel 312 917 1000

Fax 312 917 1572

www.arcadis.com