APPENDIX F
LABORATORY ANALYTICAL REPORT

Parameter	Result	Det. Limit	Units
TURBIDITY	401.2		ntu

FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P130.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P129.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

BARIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:24 Instrument: ICP Test: M104.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BARIUM	78	10	ug/L

BERYLLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:28 Instrument: ICP/MS Test: V105.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	2.0	ug/L

1:5 Dilution.

CHROMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:28 Instrument: ICP/MS Test: V110.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	5.0	ug/L

1:5 Dilution.

COBALT ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:24 Instrument: ICP Test: M111.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COBALT	BDL	5.0	ug/L

COPPER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:28 Instrument: ICP/MS Test: V112.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
COPPER	BDL	5.0	ug/L

1:5 Dilution.

NICKEL ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:24 Instrument: ICP Test: M122.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
NICKEL	BDL	10	ug/L

SILVER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:28 Instrument: ICP/MS Test: V130.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	5.0	ug/L

1:5 Dilution.

THALLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:28 Instrument: ICP/MS Test: V134.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	2.0	ug/L

1:5 Dilution.

TIN ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:24 Instrument: ICP Test: M135.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
TIN	BDL	50	ug/L

VANADIUM ICP SW846-6010B NELAC:N

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:24 Instrument: ICP Test: M138.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	10	ug/L

ZINC ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:24 Instrument: ICP Test: M139.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ZINC	BDL	20	ug/L

ARSENIC ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:28 Instrument: ICP/MS Test: V103.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	5.0	ug/L

1:5 Dilution.

CADMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:28 Instrument: ICP/MS Test: V108.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.20	ug/L

1:5 Dilution.

LEAD ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:28 Instrument: ICP/MS Test: V116.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
LEAD	BDL	5.0	ug/L

1:5 Dilution.

ANTIMONY ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:28 Instrument: ICP/MS Test: V102.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	5.0	ug/L

1:5 Dilution.

SELENIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:28 Instrument: ICP/MS Test: V128.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	5.0	ug/L

1:5 Dilution.

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 08:00 Instrument: PREP Test: P131.6.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	40		mL
FINAL VOLUME	40		mL

MERCURY CVAA SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 21:26 Instrument: CVAA Test: M120.1.0

Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A P131.6.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.20	ug/L

APPENDIX IX VOLATILE ORGANICS, CAPILLARY COLUMN TECHNIQUE SW846-8260B NELAC:Y

Analyst: H. WILLIAMS Analysis Date: 28-SEP-14 16:02 Instrument: GC/MS VOA Test: O509.3.0

Parameter	Result	Det. Limit	Units
ACETONE	BDL	10	ug/L
ACETONITRILE	BDL	50	ug/L
ACROLEIN	BDL	50	ug/L
ACRYLONITRILE	BDL	100	ug/L
BENZENE	BDL	5.0	ug/L
BROMODICHLOROMETHANE	BDL	5.0	ug/L
BROMOCHLOROMETHANE	BDL	5.0	ug/L
BROMOFORM	BDL	5.0	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	10	ug/L
CARBON TETRACHLORIDE	BDL	5.0	ug/L
CHLOROBENZENE	BDL	5.0	ug/L
CHLORODIBROMOMETHANE	BDL	5.0	ug/L
1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	BDL	5.0	ug/L
1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	BDL	5.0	ug/L
1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	BDL	5.0	ug/L
CHLOROETHANE	BDL	10	ug/L
2-CHLORO-1,3-BUTADIENE (CHLOROPRENE)	BDL	5.0	ug/L
CHLOROFORM	BDL	5.0	ug/L
CHLOROMETHANE	BDL	10	ug/L
1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	BDL	5.0	ug/L
3-CHLOROPROPENE (ALLYL CHLORIDE)	BDL	10	ug/L
1,2-DIBROMOETHANE (EDB)	BDL	5.0	ug/L
DIBROMOMETHANE	BDL	10	ug/L
TRANS-1,4-DICHLORO-2-BUTENE	BDL	10	ug/L
DICHLORODIFLUOROMETHANE	BDL	10	ug/L
1,1-DICHLOROETHANE	BDL	5.0	ug/L
1,2-DICHLOROETHANE	BDL	5.0	ug/L
CIS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
TRANS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
1,1-DICHLOROETHENE	BDL	5.0	ug/L
1,2-DICHLOROPROPANE	BDL	5.0	ug/L
1,3-DICHLOROPROPANE	BDL	5.0	ug/L
1,1-DICHLOROPROPENE	BDL	5.0	ug/L
2,2-DICHLOROPROPANE	BDL	5.0	ug/L
DICHLOROMETHANE (METHYLENE CHLORIDE)	BDL	5.0	ug/L

Parameter	Result	Det. Limit	Units
CIS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
ETHYL BENZENE	BDL	5.0	ug/L
ETHYL CYANIDE (PROPIONITRILE)	BDL	5.0	ug/L
ETHYL METHACRYLATE	BDL	5.0	ug/L
2-HEXANONE	BDL	10	ug/L
IODOMETHANE	BDL	5.0	ug/L
ISOBUTANOL (ISOBUTYL ALCOHOL)	BDL	1000	ug/L
METHYL ISOBUTYL KETONE	BDL	10	ug/L
METHACRYLONITRILE	BDL	20	ug/L
METHYL ETHYL KETONE	BDL	10	ug/L
METHYL METHACRYLATE	BDL	5.0	ug/L
STYRENE	BDL	5.0	ug/L
1,1,1,2-TETRACHLOROETHANE	BDL	5.0	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5.0	ug/L
TETRACHLOROETHENE	BDL	5.0	ug/L
TOLUENE	BDL	5.0	ug/L
1,1,1-TRICHLOROETHANE	BDL	5.0	ug/L
1,1,2-TRICHLOROETHANE	BDL	5.0	ug/L
TRICHLOROETHENE	BDL	5.0	ug/L
TRICHLOROFLUOROMETHANE	BDL	10	ug/L
1,2,3-TRICHLOROPROPANE	BDL	5.0	ug/L
VINYL ACETATE	BDL	10	ug/L
VINYL CHLORIDE	BDL	2.0	ug/L
XYLENES (O/M/P-XYLENE)	BDL	5.0	ug/L
METHYL-T-BUTYL ETHER (MTBE)	BDL	10	ug/L
1,2,4-TRIMETHYLBENZENE	BDL	5.0	ug/L
1,3,5-TRIMETHYLBENZENE	BDL	5.0	ug/L
ISOPROPYLBENZENE (CUMENE)	BDL	10	ug/L
TETRAHYDROFURAN	BDL	25	ug/L
4-ISOPROPYLTOLUENE (P-ISOPROPYLTOLUENE)	BDL	10	ug/L
CHLOROBUTANE	*		ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	103		% Rec
TOLUENE-D8	91		% Rec
4-BROMOFLUOROBENZENE	93		% Rec

Note: * Compound searched for but not detected. Standard was unavailable to determine retention time and detection limit.

Prep Method SW846-5030B Purge and Trap

APPENDIX IX SEMIVOLATILE ORGANICS SW846-8270C NELAC:Y

Analyst: T. PINCKERT Analysis Date: 02-OCT-14 19:55 Instrument: GC/MS SVOA Test: O508.3.0

Prep: GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P233.4.0

Parameter	Result	Det. Limit	Units
ACENAPHTHENE	BDL	10	ug/L
ACENAPHTHYLENE	BDL	10	ug/L
ACETOPHENONE	BDL	10	ug/L
2-ACETYLAMINOFLUORENE	BDL	10	ug/L
4-AMINOBIPHENYL	BDL	10	ug/L
ANTHRACENE	BDL	10	ug/L
BENZO(A)ANTHRACENE	BDL	10	ug/L
BENZO(B)FLUORANTHENE	BDL	10	ug/L
BENZO(K)FLUORANTHENE	BDL	10	ug/L
BENZO(G,H,I)PERYLENE	BDL	10	ug/L
BENZO(A)PYRENE	BDL	10	ug/L
BENZYL ALCOHOL	BDL	10	ug/L
BIS(2-CHLOROETHOXY)METHANE	BDL	10	ug/L
BIS(2-CHLOROETHYL)ETHER	BDL	10	ug/L
BIS(2-CHLOROISOPROPYL)ETHER	BDL	10	ug/L
BIS(2-ETHYLHEXYL)PHTHALATE	BDL	10	ug/L
4-BROMODIPHENYL ETHER	BDL	10	ug/L
(BENZYLBUTYLPHTHALATE) BUTYLBENZYLPHTHALATE	BDL	10	ug/L
4-CHLOROANILINE	BDL	10	ug/L
CHLOROBENZILATE	BDL	10	ug/L
2-CHLORONAPHTHALENE	BDL	10	ug/L
4-CHLOROPHENYL-PHENYLETHER	BDL	10	ug/L
CHRYSENE	BDL	10	ug/L
DIALLATE	BDL	10	ug/L
DIBENZ(A,H)ANTHRACENE	BDL	10	ug/L
DIBENZOFURAN	BDL	10	ug/L
DI-N-BUTYLPHTHALATE	BDL	10	ug/L
3,3'-DICHLOROBENZIDINE	BDL	20	ug/L
DIETHYLPHTHALATE	BDL	10	ug/L
DIMETHOATE	BDL	10	ug/L
4-(DIMETHYLAMINO)AZOBENZENE	BDL	10	ug/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	BDL	20	ug/L
3,3'-DIMETHYLBENZIDINE	BDL MR	20	ug/L
DIMETHYLPHTHALATE	BDL	10	ug/L
1,3-DINITROBENZENE (M-DINITROBENZENE)	BDL	50	ug/L
2,4-DINITROTOLUENE	BDL	10	ug/L
2,6-DINITROTOLUENE	BDL	10	ug/L
DI-N-OCTYLPHTHALATE	BDL	10	ug/L
DI-N-PROPYLNITROSOAMINE	BDL	50	ug/L
ETHYL METHANESULFONATE	BDL	10	ug/L
FLUORANTHENE	BDL	10	ug/L

Parameter	Result	Det. Limit	Units
FLUORENE	BDL	10	ug/L
HEXACHLOROBENZENE	BDL	10	ug/L
HEXACHLOROBUTADIENE	BDL	10	ug/L
HEXACHLOROCYCLOPENTADIENE	BDL	10	ug/L
HEXACHLOROETHANE	BDL	10	ug/L
HEXACHLOROPROPENE	BDL	10	ug/L
INDENO(1,2,3-CD)PYRENE	BDL	10	ug/L
2-METHYLNAPHTHALENE	BDL	10	ug/L
METHAPYRILENE	BDL MR	10	ug/L
3-METHYLCHOLANTHRENE	BDL	10	ug/L
METHYL METHANESULFONATE	BDL	10	ug/L
NAPHTHALENE	BDL	10	ug/L
1,4-NAPHTHOQUINONE	BDL	50	ug/L
1-NAPHTHYLAMINE	BDL	50	ug/L
2-NAPHTHYLAMINE	BDL	10	ug/L
3-NITROANILINE (M-NITROANILINE)	BDL	50	ug/L
2-NITROANILINE (O-NITROANILINE)	BDL	50	ug/L
4-NITROANILINE (P-NITROANILINE)	BDL	50	ug/L
NITROBENZENE	BDL	10	ug/L
N-NITROSODI-N-BUTYLAMINE	BDL	10	ug/L
N-NITROSODIETHYLAMINE	BDL	10	ug/L
N-NITROSODIMETHYLAMINE	BDL	10	ug/L
N-NITROSODIPHENYLAMINE	BDL	10	ug/L
N-NITROSOMETHYLETHYLAMINE	BDL	10	ug/L
N-NITROSOPIPERIDINE	BDL	10	ug/L
N-NITROSOPYRROLIDINE	BDL	10	ug/L
5-NITRO-O-TOLUIDINE	BDL	10	ug/L
PENTACHLOROBENZENE	BDL	10	ug/L
PENTACHLORONITROBENZENE	BDL	10	ug/L
PHENACETIN	BDL	10	ug/L
PHENANTHRENE	BDL	10	ug/L
PYRENE	BDL	10	ug/L
1,2,4,5-TETRACHLOROBENZENE	BDL	10	ug/L
1,2,4-TRICHLOROBENZENE	BDL	10	ug/L
THIONAZIN	BDL	10	ug/L
O,O,O-TRIETHYL PHOSPHOROTHIOATE	BDL	10	ug/L
SYM-(1,3,5)-TRINITROBENZENE	BDL	20	ug/L
O-TOLUIDINE	BDL	10	ug/L
P-PHENYLENEDIAMINE	BDL	20	ug/L
2-SEC-BUTYL-4,6-DINITROPHENOL (DINOSEB)	BDL	10	ug/L
DIPHENYLAMINE	BDL	10	ug/L
4-CHLORO-3-METHYLPHENOL	BDL	10	ug/L
2-CHLOROPHENOL	BDL	10	ug/L
2-METHYLPHENOL (O-CRESOL)	BDL	10	ug/L

Parameter	Result	Det. Limit	Units
4-METHYLPHENOL (P-CRESOL)	BDL	10	ug/L
2,4-DICHLOROPHENOL	BDL	10	ug/L
2,6-DICHLOROPHENOL	BDL	10	ug/L
2,4-DIMETHYLPHENOL	BDL	10	ug/L
4,6-DINITRO-O-CRESOL	BDL	50	ug/L
2,4-DINITROPHENOL	BDL	50	ug/L
3-METHYLPHENOL (M-CRESOL)	BDL	10	ug/L
2-NITROPHENOL	BDL	10	ug/L
4-NITROPHENOL	BDL	50	ug/L
PENTACHLOROPHENOL	BDL	50	ug/L
PHENOL	BDL	10	ug/L
2,3,4,6-TETRACHLOROPHENOL	BDL	10	ug/L
2,4,5-TRICHLOROPHENOL	BDL	10	ug/L
2,4,6-TRICHLOROPHENOL	BDL	10	ug/L
DISULFOTON	BDL	10	ug/L
FAMPHUR	BDL MR	200	ug/L
ISODRIN	BDL	10	ug/L
ISOPHORONE	BDL	10	ug/L
ISOSAFROLE	BDL	10	ug/L
KEPONE	BDL MR	200	ug/L
PARATHION	BDL	10	ug/L
METHYL PARATHION	BDL	10	ug/L
PHORATE	BDL	10	ug/L
PRONAMIDE	BDL	10	ug/L
SAFROLE	BDL	10	ug/L
...			
SURROGATE RECOVERY			

2-FLUOROPHENOL	52		% Rec
PHENOL-D5	32		% Rec
NITROBENZENE-D5	98		% Rec
2-FLUOROBIPHENYL	91		% Rec
2,4,6-TRIBROMOPHENOL	102		% Rec
TERPHENYL-D14	93		% Rec

GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

Analyst: J. MINNIEAR, II | Analysis Date: 01-OCT-14 | Instrument: PREP | Test: P233.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	1		mL

ORGANOCHLORINE PESTICIDES BY GC:ECD SW846-8081 NELAC:Y

Analyst: T. WATSON | Analysis Date: 30-SEP-14 16:57 | Instrument: GC/ECD | Test: O164.1.0

Prep: GC PESTICIDE SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P233.1.0

Parameter	Result	Det. Limit	Units
ALPHA-BHC	BDL	0.05	ug/L
BETA-BHC	BDL	0.05	ug/L
DELTA-BHC	BDL	0.05	ug/L
GAMMA-BHC (LINDANE)	BDL	0.05	ug/L
HEPTACHLOR	BDL	0.05	ug/L
ALDRIN	BDL	0.05	ug/L
HEPTACHLOR EPOXIDE	BDL	0.05	ug/L
ENDOSULFAN I	BDL	0.05	ug/L
DIELDRIN	BDL	0.1	ug/L
4,4'-DDE	BDL	0.1	ug/L
ENDRIN	BDL	0.1	ug/L
ENDOSULFAN II	BDL	0.1	ug/L
4,4'-DDD	BDL	0.1	ug/L
ENDOSULFAN SULFATE	BDL	0.1	ug/L
4,4'-DDT	BDL	0.1	ug/L
METHOXYCHLOR	BDL	0.5	ug/L
ENDRIN ALDEHYDE	BDL	0.1	ug/L
ALPHA-CHLORDANE	BDL	0.5	ug/L
GAMMA-CHLORDANE	BDL	0.5	ug/L
CHLORDANE	BDL	0.5	ug/L
TOXAPHENE	BDL	1	ug/L
...			
SURROGATE RECOVERY			

DECACHLOROBIPHENYL (DCB)	22.4		% Rec

Matrix interference may mask low level analytes.

GC PESTICIDE SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

Analyst: K. VEST | Analysis Date: 29-SEP-14 | Instrument: PREP | Test: P233.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	5		mL

CYANIDE, TOTAL (AUTOMATED) SW846-9012B NELAC:Y

Analyst: E. SKALA | Analysis Date: 02-OCT-14 14:42 | Instrument: AUTO-ANALYZER | Test: G101.4.0

Prep: CYANIDE DISTILLATION SW846-9012B P101.4.0

Parameter	Result	Det. Limit	Units
CYANIDE	BDL	0.005	mg/L

CYANIDE DISTILLATION SW846-9012B

Analyst: E. SKALA | Analysis Date: 02-OCT-14 10:20 | Instrument: PREP | Test: P101.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	6		mL

Parameter	Result	Det. Limit	Units
FINAL VOLUME	6		mL

CHLORINATED HERBICIDES (2,4 D, SILVEX AND 2,4,5-T) SW846-8151A NELAC:Y

Analyst: B. WOOD Analysis Date: 29-SEP-14 17:52 Instrument: GC/ECD Test: O253.1.0

Prep: DIAZOMETHANE HERBICIDE DERIVATIZATION SW846-8151A P201.4.0

Parameter	Result	Det. Limit	Units
2,4-DICHLOROPHENOXYACETIC ACID	BDL	10	ug/L
SILVEX (2,4,5-TP)	BDL	1	ug/L
2,4,5-TRICHLOROPHENOXYACETIC ACID (2,4,5-T)	BDL	1	ug/L
...			
SURROGATE RECOVERY			

DCAA	104.3		% Rec

DIAZOMETHANE HERBICIDE DERIVATIZATION SW846-8151A

Analyst: T. DAHN Analysis Date: 29-SEP-14 Instrument: PREP Test: P201.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	10		mL

PCB AROCLORS BY GAS CHROMATOGRAPHY/ECD SW846-8082A NELAC:Y

Analyst: C. HIPSKIND Analysis Date: 29-SEP-14 14:40 Instrument: GC/ECD Test: O301.7.0

Prep: PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P230.1.0

Parameter	Result	Det. Limit	Units
PCB AROCLOR 1016	BDL	0.10	ug/L
PCB AROCLOR 1221	BDL	0.10	ug/L
PCB AROCLOR 1232	BDL	0.10	ug/L
PCB AROCLOR 1242	BDL	0.10	ug/L
PCB AROCLOR 1248	BDL	0.10	ug/L
PCB AROCLOR 1254	BDL	0.10	ug/L
PCB AROCLOR 1260	BDL	0.10	ug/L
...			
SURROGATE RECOVERY			

DECACHLOROBIPHENYL (DCB)	38.0		% Rec

PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

Analyst: K. VEST Analysis Date: 29-SEP-14 Instrument: PREP Test: P230.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	5		mL

SULFIDE, IODOMETRIC METHOD SM4500-S F 2000 NELAC:N

Analyst: S. MCNEAL Analysis Date: 29-SEP-14 07:30 Test: G110.1.0

Parameter	Result	Det. Limit	Units
SULFIDE	BDL	1.0	mg/L

ALKALINITY TOTAL (AUTOMATED) EPA 310.2 NELAC:N

Analyst: E. SKALA Analysis Date: 06-OCT-14 11:58 Instrument: AUTO-ANALYZER Test: G605.3.0

Parameter	Result	Det. Limit	Units
ALKALINITY	350	50	mg/L

1:5 Dilution.

ALKALINITY BICARBONATE (AUTOMATED) EPA 310.2 NELAC:N

Analyst: E. SKALA Analysis Date: 06-OCT-14 11:58 Instrument: AUTO-ANALYZER Test: G610.3.0

Parameter	Result	Det. Limit	Units
ALKALINITY, BICARBONATE	350	50	mg/L

1:5 Dilution.

ALKALINITY CARBONATE (AUTOMATED) EPA 310.2 NELAC:N

Analyst: E. SKALA Analysis Date: 06-OCT-14 11:58 Instrument: AUTO-ANALYZER Test: G611.3.0

Parameter	Result	Det. Limit	Units
ALKALINITY, CARBONATE	BDL	10	mg/L

POTASSIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:24 Instrument: ICP Test: M126.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
POTASSIUM	1900	100	ug/L

Sample Comments

* See Note for Parameter
BDL Below Detection Limit
MR Initial Calibration > 15 % RSD

Sample was received on ice at temperature 2.4 C.
Sample chain of custody number 1804343.

This Certificate shall not be reproduced, except in full, without the written approval of the lab. The sample results relate only to the analytes of interest tested or to the sample as received by the lab. Pace Analytical Services, INC. certifies that the test results indicated as NELAP (National Environmental Laboratory Accreditation Program) accredited (Yes for NELAP) meet all requirements of NELAP and Kansas (KDHE) unless otherwise explained or justified as to the the exact nature of the deviations.
KS ELAP / NELAP Accreditation # E-10177 Indiana SDWA C-49-01

Approved by: CHRISTINE SARKAN 13-OCT-14

Pace Analytical
Pace Analytical Services, Inc.

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
PACE ANALYTICAL SERVICES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	26-SEP-14	AA28618
	Completed 10-OCT-14	PO Number NEED PO
	Printed 15-OCT-14	Sampled 25-SEP-14 09:11

Report To	Bill To
JON WILKINSON HERST AND ASSOCIATES 4630 SOUTH HIGHWAY 94 NORTH OUTER ROAD ST. CHARLES, MO 63304	DAVE VASBINDER ALLIED WASTE SYSTEMS 13570 ST. CHARLES ROCK ROAD BRIDGETON, MO 63044

Sample Description

CLIENT ID: PZ-209-SD
MATRIX TYPE: NON-SPECIFIC WATER
SUBMITTER: 8945 - MO-ALLIED-BRIDGETON LANDFILL
PROJECT NAME: GROUNDWATER - BRIDGETON LANDFILL
DATA PACKAGE #: 66865
LOCATION: BRIDGETON LANDFILL
DESCRIPTION: APPENDIX I/II TESTING - ADDITIONAL VOLS/NO INORG

GROUNDWATER MONITORING WELL DATA SAS

Analysis Date: 25-SEP-14 09:11 Instrument: FIELD Test: G600.0.0

Parameter	Result	Det. Limit	Units
TOTAL WELL DEPTH	101.44		ft
INITIAL WATER LEVEL	24.75		ft
ELEVATION OF GROUNDWATER SURFACE	464.83		Feet/MSL

FIELD TEMPERATURE SM2550 B 2000 NELAC:N

Analysis Date: 25-SEP-14 09:11 Instrument: FIELD Test: G603.1.0

Parameter	Result	Det. Limit	Units
TEMPERATURE	15.1		Degrees C

FIELD PH (AQUEOUS) SW846-9040C NELAC:Y

Analysis Date: 25-SEP-14 09:11 Instrument: FIELD Test: G607.0.0

Parameter	Result	Det. Limit	Units
PH	7.30	0.1	Std. Units

FIELD SPECIFIC CONDUCTANCE SW846-9050A NELAC:Y

Analysis Date: 25-SEP-14 09:11 Instrument: FIELD Test: G604.0.0

Parameter	Result	Det. Limit	Units
CONDUCTIVITY	886	1.0	umHOS/cm

FIELD TURBIDITY EPA 180.1 NELAC:Y

Analysis Date: 25-SEP-14 09:11 Instrument: FIELD Test: G602.0.0

Parameter	Result	Det. Limit	Units
TURBIDITY	> 1100		ntu

FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P130.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P129.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

BARIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:27 Instrument: ICP Test: M104.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BARIUM	85	10	ug/L

BERYLLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:32 Instrument: ICP/MS Test: V105.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	2.0	ug/L

1:5 Dilution.

CHROMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:32 Instrument: ICP/MS Test: V110.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	5.0	ug/L

1:5 Dilution.

COBALT ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:27 Instrument: ICP Test: M111.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COBALT	BDL	5.0	ug/L

COPPER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:32 Instrument: ICP/MS Test: V112.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
COPPER	BDL	5.0	ug/L

1:5 Dilution.

NICKEL ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:27 Instrument: ICP Test: M122.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
NICKEL	BDL	10	ug/L

SILVER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:32 Instrument: ICP/MS Test: V130.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	5.0	ug/L

1:5 Dilution.

THALLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:32 Instrument: ICP/MS Test: V134.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	2.0	ug/L

1:5 Dilution.

TIN ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:27 Instrument: ICP Test: M135.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
TIN	BDL	50	ug/L

VANADIUM ICP SW846-6010B NELAC:N

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:27 Instrument: ICP Test: M138.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	10	ug/L

ZINC ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:27 Instrument: ICP Test: M139.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ZINC	23	20	ug/L

ARSENIC ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:32 Instrument: ICP/MS Test: V103.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	5.0	ug/L

1:5 Dilution.

CADMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:32 Instrument: ICP/MS Test: V108.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.20	ug/L

1:5 Dilution.

LEAD ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:32 Instrument: ICP/MS Test: V116.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
LEAD	5.2	5.0	ug/L

1:5 Dilution.

ANTIMONY ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:32 Instrument: ICP/MS Test: V102.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	5.0	ug/L

1:5 Dilution.

SELENIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:32 Instrument: ICP/MS Test: V128.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	5.0	ug/L

1:5 Dilution.

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 08:00 Instrument: PREP Test: P131.6.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	40		mL
FINAL VOLUME	40		mL

MERCURY CVAA SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 21:28 Instrument: CVAA Test: M120.1.0

Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A P131.6.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.20	ug/L

APPENDIX IX VOLATILE ORGANICS, CAPILLARY COLUMN TECHNIQUE SW846-8260B NELAC:Y

Analyst: H. WILLIAMS Analysis Date: 28-SEP-14 16:28 Instrument: GC/MS VOA Test: O509.3.0

Parameter	Result	Det. Limit	Units
ACETONE	BDL	10	ug/L
ACETONITRILE	BDL	50	ug/L
ACROLEIN	BDL	50	ug/L
ACRYLONITRILE	BDL	100	ug/L
BENZENE	BDL	5.0	ug/L
BROMODICHLOROMETHANE	BDL	5.0	ug/L
BROMOCHLOROMETHANE	BDL	5.0	ug/L
BROMOFORM	BDL	5.0	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	10	ug/L
CARBON TETRACHLORIDE	BDL	5.0	ug/L
CHLOROBENZENE	BDL	5.0	ug/L
CHLORODIBROMOMETHANE	BDL	5.0	ug/L
1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	BDL	5.0	ug/L
1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	BDL	5.0	ug/L
1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	BDL	5.0	ug/L
CHLOROETHANE	BDL	10	ug/L
2-CHLORO-1,3-BUTADIENE (CHLOROPRENE)	BDL	5.0	ug/L
CHLOROFORM	BDL	5.0	ug/L
CHLOROMETHANE	BDL	10	ug/L
1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	BDL	5.0	ug/L
3-CHLOROPROPENE (ALLYL CHLORIDE)	BDL	10	ug/L
1,2-DIBROMOETHANE (EDB)	BDL	5.0	ug/L
DIBROMOMETHANE	BDL	10	ug/L
TRANS-1,4-DICHLORO-2-BUTENE	BDL	10	ug/L
DICHLORODIFLUOROMETHANE	BDL	10	ug/L
1,1-DICHLOROETHANE	BDL	5.0	ug/L
1,2-DICHLOROETHANE	BDL	5.0	ug/L
CIS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
TRANS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
1,1-DICHLOROETHENE	BDL	5.0	ug/L
1,2-DICHLOROPROPANE	BDL	5.0	ug/L
1,3-DICHLOROPROPANE	BDL	5.0	ug/L
1,1-DICHLOROPROPENE	BDL	5.0	ug/L
2,2-DICHLOROPROPANE	BDL	5.0	ug/L
DICHLOROMETHANE (METHYLENE CHLORIDE)	BDL	5.0	ug/L

Parameter	Result	Det. Limit	Units
CIS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
ETHYL BENZENE	BDL	5.0	ug/L
ETHYL CYANIDE (PROPIONITRILE)	BDL	5.0	ug/L
ETHYL METHACRYLATE	BDL	5.0	ug/L
2-HEXANONE	BDL	10	ug/L
IODOMETHANE	BDL	5.0	ug/L
ISOBUTANOL (ISOBUTYL ALCOHOL)	BDL	1000	ug/L
METHYL ISOBUTYL KETONE	BDL	10	ug/L
METHACRYLONITRILE	BDL	20	ug/L
METHYL ETHYL KETONE	BDL	10	ug/L
METHYL METHACRYLATE	BDL	5.0	ug/L
STYRENE	BDL	5.0	ug/L
1,1,1,2-TETRACHLOROETHANE	BDL	5.0	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5.0	ug/L
TETRACHLOROETHENE	BDL	5.0	ug/L
TOLUENE	BDL	5.0	ug/L
1,1,1-TRICHLOROETHANE	BDL	5.0	ug/L
1,1,2-TRICHLOROETHANE	BDL	5.0	ug/L
TRICHLOROETHENE	BDL	5.0	ug/L
TRICHLOROFLUOROMETHANE	BDL	10	ug/L
1,2,3-TRICHLOROPROPANE	BDL	5.0	ug/L
VINYL ACETATE	BDL	10	ug/L
VINYL CHLORIDE	BDL	2.0	ug/L
XYLENES (O/M/P-XYLENE)	BDL	5.0	ug/L
METHYL-T-BUTYL ETHER (MTBE)	BDL	10	ug/L
1,2,4-TRIMETHYLBENZENE	BDL	5.0	ug/L
1,3,5-TRIMETHYLBENZENE	BDL	5.0	ug/L
ISOPROPYLBENZENE (CUMENE)	BDL	10	ug/L
TETRAHYDROFURAN	BDL	25	ug/L
4-ISOPROPYLTOLUENE (P-ISOPROPYLTOLUENE)	BDL	10	ug/L
CHLOROBUTANE	*		ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	104		% Rec
TOLUENE-D8	90		% Rec
4-BROMOFLUOROBENZENE	91		% Rec

Note: * Compound searched for but not detected. Standard was unavailable to determine retention time and detection limit.

Prep Method SW846-5030B Purge and Trap

APPENDIX IX SEMIVOLATILE ORGANICS SW846-8270C NELAC:Y

Analyst: T. PINCKERT Analysis Date: 02-OCT-14 20:17 Instrument: GC/MS SVOA Test: O508.3.0

Prep: GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P233.4.0

Parameter	Result	Det. Limit	Units
ACENAPHTHENE	BDL	10	ug/L
ACENAPHTHYLENE	BDL	10	ug/L
ACETOPHENONE	BDL	10	ug/L
2-ACETYLAMINOFLUORENE	BDL	10	ug/L
4-AMINOBIPHENYL	BDL	10	ug/L
ANTHRACENE	BDL	10	ug/L
BENZO(A)ANTHRACENE	BDL	10	ug/L
BENZO(B)FLUORANTHENE	BDL	10	ug/L
BENZO(K)FLUORANTHENE	BDL	10	ug/L
BENZO(G,H,I)PERYLENE	BDL	10	ug/L
BENZO(A)PYRENE	BDL	10	ug/L
BENZYL ALCOHOL	BDL	10	ug/L
BIS(2-CHLOROETHOXY)METHANE	BDL	10	ug/L
BIS(2-CHLOROETHYL)ETHER	BDL	10	ug/L
BIS(2-CHLOROISOPROPYL)ETHER	BDL	10	ug/L
BIS(2-ETHYLHEXYL)PHTHALATE	BDL	10	ug/L
4-BROMODIPHENYL ETHER	BDL	10	ug/L
(BENZYLBUTYLPHTHALATE) BUTYLBENZYLPHTHALATE	BDL	10	ug/L
4-CHLOROANILINE	BDL	10	ug/L
CHLOROBENZILATE	BDL	10	ug/L
2-CHLORONAPHTHALENE	BDL	10	ug/L
4-CHLOROPHENYL-PHENYLETHER	BDL	10	ug/L
CHRYSENE	BDL	10	ug/L
DIALLATE	BDL	10	ug/L
DIBENZ(A,H)ANTHRACENE	BDL	10	ug/L
DIBENZOFURAN	BDL	10	ug/L
DI-N-BUTYLPHTHALATE	BDL	10	ug/L
3,3'-DICHLOROBENZIDINE	BDL	20	ug/L
DIETHYLPHTHALATE	BDL	10	ug/L
DIMETHOATE	BDL	10	ug/L
4-(DIMETHYLAMINO)AZOBENZENE	BDL	10	ug/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	BDL	20	ug/L
3,3'-DIMETHYLBENZIDINE	BDL MR	20	ug/L
DIMETHYLPHTHALATE	BDL	10	ug/L
1,3-DINITROBENZENE (M-DINITROBENZENE)	BDL	50	ug/L
2,4-DINITROTOLUENE	BDL	10	ug/L
2,6-DINITROTOLUENE	BDL	10	ug/L
DI-N-OCTYLPHTHALATE	BDL	10	ug/L
DI-N-PROPYLNITROSOAMINE	BDL	50	ug/L
ETHYL METHANESULFONATE	BDL	10	ug/L
FLUORANTHENE	BDL	10	ug/L

Parameter	Result	Det. Limit	Units
FLUORENE	BDL	10	ug/L
HEXACHLOROBENZENE	BDL	10	ug/L
HEXACHLOROBUTADIENE	BDL	10	ug/L
HEXACHLOROCYCLOPENTADIENE	BDL	10	ug/L
HEXACHLOROETHANE	BDL	10	ug/L
HEXACHLOROPROPENE	BDL	10	ug/L
INDENO(1,2,3-CD)PYRENE	BDL	10	ug/L
2-METHYLNAPHTHALENE	BDL	10	ug/L
METHAPYRILENE	BDL MR	10	ug/L
3-METHYLCHOLANTHRENE	BDL	10	ug/L
METHYL METHANESULFONATE	BDL	10	ug/L
NAPHTHALENE	BDL	10	ug/L
1,4-NAPHTHOQUINONE	BDL	50	ug/L
1-NAPHTHYLAMINE	BDL	50	ug/L
2-NAPHTHYLAMINE	BDL	10	ug/L
3-NITROANILINE (M-NITROANILINE)	BDL	50	ug/L
2-NITROANILINE (O-NITROANILINE)	BDL	50	ug/L
4-NITROANILINE (P-NITROANILINE)	BDL	50	ug/L
NITROBENZENE	BDL	10	ug/L
N-NITROSODI-N-BUTYLAMINE	BDL	10	ug/L
N-NITROSODIETHYLAMINE	BDL	10	ug/L
N-NITROSODIMETHYLAMINE	BDL	10	ug/L
N-NITROSODIPHENYLAMINE	BDL	10	ug/L
N-NITROSOMETHYLETHYLAMINE	BDL	10	ug/L
N-NITROSOPIPERIDINE	BDL	10	ug/L
N-NITROSOPYRROLIDINE	BDL	10	ug/L
5-NITRO-O-TOLUIDINE	BDL	10	ug/L
PENTACHLOROBENZENE	BDL	10	ug/L
PENTACHLORONITROBENZENE	BDL	10	ug/L
PHENACETIN	BDL	10	ug/L
PHENANTHRENE	BDL	10	ug/L
PYRENE	BDL	10	ug/L
1,2,4,5-TETRACHLOROBENZENE	BDL	10	ug/L
1,2,4-TRICHLOROBENZENE	BDL	10	ug/L
THIONAZIN	BDL	10	ug/L
O,O,O-TRIETHYL PHOSPHOROTHIOATE	BDL	10	ug/L
SYM-(1,3,5)-TRINITROBENZENE	BDL	20	ug/L
O-TOLUIDINE	BDL	10	ug/L
P-PHENYLENEDIAMINE	BDL	20	ug/L
2-SEC-BUTYL-4,6-DINITROPHENOL (DINOSEB)	BDL	10	ug/L
DIPHENYLAMINE	BDL	10	ug/L
4-CHLORO-3-METHYLPHENOL	BDL	10	ug/L
2-CHLOROPHENOL	BDL	10	ug/L
2-METHYLPHENOL (O-CRESOL)	BDL	10	ug/L

Parameter	Result	Det. Limit	Units
4-METHYLPHENOL (P-CRESOL)	BDL	10	ug/L
2,4-DICHLOROPHENOL	BDL	10	ug/L
2,6-DICHLOROPHENOL	BDL	10	ug/L
2,4-DIMETHYLPHENOL	BDL	10	ug/L
4,6-DINITRO-O-CRESOL	BDL	50	ug/L
2,4-DINITROPHENOL	BDL	50	ug/L
3-METHYLPHENOL (M-CRESOL)	BDL	10	ug/L
2-NITROPHENOL	BDL	10	ug/L
4-NITROPHENOL	BDL	50	ug/L
PENTACHLOROPHENOL	BDL	50	ug/L
PHENOL	BDL	10	ug/L
2,3,4,6-TETRACHLOROPHENOL	BDL	10	ug/L
2,4,5-TRICHLOROPHENOL	BDL	10	ug/L
2,4,6-TRICHLOROPHENOL	BDL	10	ug/L
DISULFOTON	BDL	10	ug/L
FAMPHUR	BDL MR	200	ug/L
ISODRIN	BDL	10	ug/L
ISOPHORONE	BDL	10	ug/L
ISOSAFROLE	BDL	10	ug/L
KEPONE	BDL MR	200	ug/L
PARATHION	BDL	10	ug/L
METHYL PARATHION	BDL	10	ug/L
PHORATE	BDL	10	ug/L
PRONAMIDE	BDL	10	ug/L
SAFROLE	BDL	10	ug/L
...			
SURROGATE RECOVERY			

2-FLUOROPHENOL	38		% Rec
PHENOL-D5	23		% Rec
NITROBENZENE-D5	90		% Rec
2-FLUOROBIPHENYL	83		% Rec
2,4,6-TRIBROMOPHENOL	79		% Rec
TERPHENYL-D14	75		% Rec

GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

Analyst: J. MINNIEAR, II | Analysis Date: 01-OCT-14 | Instrument: PREP | Test: P233.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	1		mL

ORGANOCHLORINE PESTICIDES BY GC:ECD SW846-8081 NELAC:Y

Analyst: T. WATSON | Analysis Date: 29-SEP-14 22:44 | Instrument: GC/ECD | Test: O164.1.0

Prep: GC PESTICIDE SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P233.1.0

Parameter	Result	Det. Limit	Units
ALPHA-BHC	BDL	0.05	ug/L
BETA-BHC	BDL	0.05	ug/L
DELTA-BHC	BDL	0.05	ug/L
GAMMA-BHC (LINDANE)	BDL	0.05	ug/L
HEPTACHLOR	BDL	0.05	ug/L
ALDRIN	BDL	0.05	ug/L
HEPTACHLOR EPOXIDE	BDL	0.05	ug/L
ENDOSULFAN I	BDL	0.05	ug/L
DIELDRIN	BDL	0.1	ug/L
4,4'-DDE	BDL	0.1	ug/L
ENDRIN	BDL	0.1	ug/L
ENDOSULFAN II	BDL	0.1	ug/L
4,4'-DDD	BDL	0.1	ug/L
ENDOSULFAN SULFATE	BDL	0.1	ug/L
4,4'-DDT	BDL	0.1	ug/L
METHOXYCHLOR	BDL	0.5	ug/L
ENDRIN ALDEHYDE	BDL	0.1	ug/L
ALPHA-CHLORDANE	BDL	0.5	ug/L
GAMMA-CHLORDANE	BDL	0.5	ug/L
CHLORDANE	BDL	0.5	ug/L
TOXAPHENE	BDL	1	ug/L
...			
SURROGATE RECOVERY			

DECACHLOROBIPHENYL (DCB)	33.6		% Rec

GC PESTICIDE SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

Analyst: K. VEST | Analysis Date: 29-SEP-14 | Instrument: PREP | Test: P233.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	5		mL

CYANIDE, TOTAL (AUTOMATED) SW846-9012B NELAC:Y

Analyst: E. SKALA | Analysis Date: 02-OCT-14 14:43 | Instrument: AUTO-ANALYZER | Test: G101.4.0

Prep: CYANIDE DISTILLATION SW846-9012B P101.4.0

Parameter	Result	Det. Limit	Units
CYANIDE	BDL	0.005	mg/L

CYANIDE DISTILLATION SW846-9012B

Analyst: E. SKALA | Analysis Date: 02-OCT-14 10:20 | Instrument: PREP | Test: P101.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	6		mL
FINAL VOLUME	6		mL

CHLORINATED HERBICIDES (2,4 D, SILVEX AND 2,4,5-T) SW846-8151A NELAC:Y

Analyst: B. WOOD Analysis Date: 29-SEP-14 17:52 Instrument: GC/ECD Test: O253.1.0

Prep: DIAZOMETHANE HERBICIDE DERIVATIZATION SW846-8151A P201.4.0

Parameter	Result	Det. Limit	Units
2,4-DICHLOROPHENOXYACETIC ACID	BDL	10	ug/L
SILVEX (2,4,5-TP)	BDL	1	ug/L
2,4,5-TRICHLOROPHENOXYACETIC ACID (2,4,5-T)	BDL	1	ug/L
...			
SURROGATE RECOVERY			

DCAA	124.0		% Rec

DIAZOMETHANE HERBICIDE DERIVATIZATION SW846-8151A

Analyst: T. DAHN Analysis Date: 29-SEP-14 Instrument: PREP Test: P201.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	10		mL

PCB AROCLORS BY GAS CHROMATOGRAPHY/ECD SW846-8082A NELAC:Y

Analyst: C. HIPSKIND Analysis Date: 29-SEP-14 14:40 Instrument: GC/ECD Test: O301.7.0

Prep: PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P230.1.0

Parameter	Result	Det. Limit	Units
PCB AROCLOR 1016	BDL	0.10	ug/L
PCB AROCLOR 1221	BDL	0.10	ug/L
PCB AROCLOR 1232	BDL	0.10	ug/L
PCB AROCLOR 1242	BDL	0.10	ug/L
PCB AROCLOR 1248	BDL	0.10	ug/L
PCB AROCLOR 1254	BDL	0.10	ug/L
PCB AROCLOR 1260	BDL	0.10	ug/L
...			
SURROGATE RECOVERY			

DECACHLOROBIPHENYL (DCB)	36.0		% Rec

PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

Analyst: K. VEST Analysis Date: 29-SEP-14 Instrument: PREP Test: P230.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	5		mL

SULFIDE, IODOMETRIC METHOD SM4500-S F 2000 NELAC:N

Analyst: S. MCNEAL Analysis Date: 29-SEP-14 07:30 Test: G110.1.0

Parameter	Result	Det. Limit	Units
SULFIDE	BDL	1.0	mg/L

ALKALINITY TOTAL (AUTOMATED) EPA 310.2 NELAC:N

Analyst: E. SKALA Analysis Date: 06-OCT-14 11:59 Instrument: AUTO-ANALYZER Test: G605.3.0

Parameter	Result	Det. Limit	Units
ALKALINITY	460	50	mg/L

1:5 Dilution.

ALKALINITY BICARBONATE (AUTOMATED) EPA 310.2 NELAC:N

Analyst: E. SKALA Analysis Date: 06-OCT-14 11:59 Instrument: AUTO-ANALYZER Test: G610.3.0

Parameter	Result	Det. Limit	Units
ALKALINITY, BICARBONATE	460	50	mg/L

1:5 Dilution.

ALKALINITY CARBONATE (AUTOMATED) EPA 310.2 NELAC:N

Analyst: E. SKALA Analysis Date: 06-OCT-14 11:59 Instrument: AUTO-ANALYZER Test: G611.3.0

Parameter	Result	Det. Limit	Units
ALKALINITY, CARBONATE	BDL	10	mg/L

POTASSIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:27 Instrument: ICP Test: M126.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
POTASSIUM	2700	100	ug/L

Sample Comments

* See Note for Parameter
> Greater Than
BDL Below Detection Limit
MR Initial Calibration > 15 % RSD

Sample was received on ice at temperature 2.4 C.
Sample chain of custody number 1804343.

This Certificate shall not be reproduced, except in full, without the written approval of the lab. The sample results relate only to the analytes of interest tested or to the sample as received by the lab. Pace Analytical Services, INC. certifies that the test results indicated as NELAP (National Environmental Laboratory Accreditation Program) accredited (Yes for NELAP) meet all requirements of NELAP and Kansas (KDHE) unless otherwise explained or justified as to the the exact nature of the deviations.
KS ELAP / NELAP Accreditation # E-10177 Indiana SDWA C-49-01

Approved by: CHRISTINE SARKAN 13-OCT-14

Pace Analytical
Pace Analytical Services, Inc.

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
PACE ANALYTICAL SERVICES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	26-SEP-14	AA28619
	Completed 10-OCT-14	PO Number NEED PO
	Printed 15-OCT-14	Sampled 25-SEP-14 09:32

Report To

JON WILKINSON
HERST AND ASSOCIATES
4630 SOUTH HIGHWAY 94
NORTH OUTER ROAD
ST. CHARLES, MO 63304

Bill To

DAVE VASBINDER
ALLIED WASTE SYSTEMS
13570 ST. CHARLES ROCK ROAD
BRIDGETON, MO 63044

Sample Description

CLIENT ID: PZ-209-SS
MATRIX TYPE: NON-SPECIFIC WATER
SUBMITTER: 8945 - MO-ALLIED-BRIDGETON LANDFILL
PROJECT NAME: GROUNDWATER - BRIDGETON LANDFILL
DATA PACKAGE #: 66865
LOCATION: BRIDGETON LANDFILL
DESCRIPTION: APPENDIX I/II TESTING - ADDITIONAL VOLS/NO INORG

GROUNDWATER MONITORING WELL DATA SAS

Analysis Date: 25-SEP-14 09:32 Instrument: FIELD Test: G600.0.0

Parameter	Result	Det. Limit	Units
TOTAL WELL DEPTH	99.91		ft
INITIAL WATER LEVEL	21.69		ft
ELEVATION OF GROUNDWATER SURFACE	467.99		Feet/MSL

FIELD TEMPERATURE SM2550 B 2000 NELAC:N

Analysis Date: 25-SEP-14 09:32 Instrument: FIELD Test: G603.1.0

Parameter	Result	Det. Limit	Units
TEMPERATURE	15.0		Degrees C

FIELD PH (AQUEOUS) SW846-9040C NELAC:Y

Analysis Date: 25-SEP-14 09:32 Instrument: FIELD Test: G607.0.0

Parameter	Result	Det. Limit	Units
PH	7.25	0.1	Std. Units

FIELD SPECIFIC CONDUCTANCE SW846-9050A NELAC:Y

Analysis Date: 25-SEP-14 09:32 Instrument: FIELD Test: G604.0.0

Parameter	Result	Det. Limit	Units
CONDUCTIVITY	744	1.0	umHOS/cm

FIELD TURBIDITY EPA 180.1 NELAC:Y

Analysis Date: 25-SEP-14 09:32 Instrument: FIELD Test: G602.0.0

Parameter	Result	Det. Limit	Units
TURBIDITY	6.97		ntu

FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P130.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P129.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

BARIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:31 Instrument: ICP Test: M104.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BARIUM	88	10	ug/L

BERYLLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:37 Instrument: ICP/MS Test: V105.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	2.0	ug/L

1:5 Dilution.

CHROMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:37 Instrument: ICP/MS Test: V110.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	5.0	ug/L

1:5 Dilution.

COBALT ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:31 Instrument: ICP Test: M111.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COBALT	BDL	5.0	ug/L

COPPER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:37 Instrument: ICP/MS Test: V112.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
COPPER	BDL	5.0	ug/L

1:5 Dilution.

NICKEL ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:31 Instrument: ICP Test: M122.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
NICKEL	BDL	10	ug/L

SILVER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:37 Instrument: ICP/MS Test: V130.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	5.0	ug/L

1:5 Dilution.

THALLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:37 Instrument: ICP/MS Test: V134.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	2.0	ug/L

1:5 Dilution.

TIN ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:31 Instrument: ICP Test: M135.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
TIN	BDL	50	ug/L

VANADIUM ICP SW846-6010B NELAC:N

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:31 Instrument: ICP Test: M138.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	10	ug/L

ZINC ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:31 Instrument: ICP Test: M139.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ZINC	BDL	20	ug/L

ARSENIC ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:37 Instrument: ICP/MS Test: V103.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	5.0	ug/L

1:5 Dilution.

CADMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:37 Instrument: ICP/MS Test: V108.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CADMIUM	0.22	0.20	ug/L

1:5 Dilution.

LEAD ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:37 Instrument: ICP/MS Test: V116.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
LEAD	BDL	5.0	ug/L

1:5 Dilution.

ANTIMONY ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:37 Instrument: ICP/MS Test: V102.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	5.0	ug/L

1:5 Dilution.

SELENIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:37 Instrument: ICP/MS Test: V128.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	5.0	ug/L

1:5 Dilution.

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 08:00 Instrument: PREP Test: P131.6.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	40		mL
FINAL VOLUME	40		mL

MERCURY CVAA SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 21:31 Instrument: CVAA Test: M120.1.0

Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A P131.6.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.20	ug/L

APPENDIX IX VOLATILE ORGANICS, CAPILLARY COLUMN TECHNIQUE SW846-8260B NELAC:Y

Analyst: H. WILLIAMS Analysis Date: 28-SEP-14 16:53 Instrument: GC/MS VOA Test: O509.3.0

Parameter	Result	Det. Limit	Units
ACETONE	BDL	10	ug/L
ACETONITRILE	BDL	50	ug/L
ACROLEIN	BDL	50	ug/L
ACRYLONITRILE	BDL	100	ug/L
BENZENE	BDL	5.0	ug/L
BROMODICHLOROMETHANE	BDL	5.0	ug/L
BROMOCHLOROMETHANE	BDL	5.0	ug/L
BROMOFORM	BDL	5.0	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	10	ug/L
CARBON TETRACHLORIDE	BDL	5.0	ug/L
CHLOROBENZENE	BDL	5.0	ug/L
CHLORODIBROMOMETHANE	BDL	5.0	ug/L
1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	BDL	5.0	ug/L
1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	BDL	5.0	ug/L
1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	BDL	5.0	ug/L
CHLOROETHANE	BDL	10	ug/L
2-CHLORO-1,3-BUTADIENE (CHLOROPRENE)	BDL	5.0	ug/L
CHLOROFORM	BDL	5.0	ug/L
CHLOROMETHANE	BDL	10	ug/L
1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	BDL	5.0	ug/L
3-CHLOROPROPENE (ALLYL CHLORIDE)	BDL	10	ug/L
1,2-DIBROMOETHANE (EDB)	BDL	5.0	ug/L
DIBROMOMETHANE	BDL	10	ug/L
TRANS-1,4-DICHLORO-2-BUTENE	BDL	10	ug/L
DICHLORODIFLUOROMETHANE	BDL	10	ug/L
1,1-DICHLOROETHANE	BDL	5.0	ug/L
1,2-DICHLOROETHANE	BDL	5.0	ug/L
CIS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
TRANS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
1,1-DICHLOROETHENE	BDL	5.0	ug/L
1,2-DICHLOROPROPANE	BDL	5.0	ug/L
1,3-DICHLOROPROPANE	BDL	5.0	ug/L
1,1-DICHLOROPROPENE	BDL	5.0	ug/L
2,2-DICHLOROPROPANE	BDL	5.0	ug/L
DICHLOROMETHANE (METHYLENE CHLORIDE)	BDL	5.0	ug/L

Parameter	Result	Det. Limit	Units
CIS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
ETHYL BENZENE	BDL	5.0	ug/L
ETHYL CYANIDE (PROPIONITRILE)	BDL	5.0	ug/L
ETHYL METHACRYLATE	BDL	5.0	ug/L
2-HEXANONE	BDL	10	ug/L
IODOMETHANE	BDL	5.0	ug/L
ISOBUTANOL (ISOBUTYL ALCOHOL)	BDL	1000	ug/L
METHYL ISOBUTYL KETONE	BDL	10	ug/L
METHACRYLONITRILE	BDL	20	ug/L
METHYL ETHYL KETONE	BDL	10	ug/L
METHYL METHACRYLATE	BDL	5.0	ug/L
STYRENE	BDL	5.0	ug/L
1,1,1,2-TETRACHLOROETHANE	BDL	5.0	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5.0	ug/L
TETRACHLOROETHENE	BDL	5.0	ug/L
TOLUENE	BDL	5.0	ug/L
1,1,1-TRICHLOROETHANE	BDL	5.0	ug/L
1,1,2-TRICHLOROETHANE	BDL	5.0	ug/L
TRICHLOROETHENE	BDL	5.0	ug/L
TRICHLOROFLUOROMETHANE	BDL	10	ug/L
1,2,3-TRICHLOROPROPANE	BDL	5.0	ug/L
VINYL ACETATE	BDL	10	ug/L
VINYL CHLORIDE	BDL	2.0	ug/L
XYLENES (O/M/P-XYLENE)	BDL	5.0	ug/L
METHYL-T-BUTYL ETHER (MTBE)	BDL	10	ug/L
1,2,4-TRIMETHYLBENZENE	BDL	5.0	ug/L
1,3,5-TRIMETHYLBENZENE	BDL	5.0	ug/L
ISOPROPYLBENZENE (CUMENE)	BDL	10	ug/L
TETRAHYDROFURAN	BDL	25	ug/L
4-ISOPROPYLTOLUENE (P-ISOPROPYLTOLUENE)	BDL	10	ug/L
CHLOROBUTANE	*		ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	104		% Rec
TOLUENE-D8	93		% Rec
4-BROMOFLUOROBENZENE	89		% Rec

Note: * Compound searched for but not detected. Standard was unavailable to determine retention time and detection limit.

Prep Method SW846-5030B Purge and Trap

APPENDIX IX SEMIVOLATILE ORGANICS SW846-8270C NELAC:Y

Analyst: T. PINCKERT Analysis Date: 02-OCT-14 20:39 Instrument: GC/MS SVOA Test: O508.3.0

Prep: GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P233.4.0

Parameter	Result	Det. Limit	Units
ACENAPHTHENE	BDL	10	ug/L
ACENAPHTHYLENE	BDL	10	ug/L
ACETOPHENONE	BDL	10	ug/L
2-ACETYLAMINOFLUORENE	BDL	10	ug/L
4-AMINOBIPHENYL	BDL	10	ug/L
ANTHRACENE	BDL	10	ug/L
BENZO(A)ANTHRACENE	BDL	10	ug/L
BENZO(B)FLUORANTHENE	BDL	10	ug/L
BENZO(K)FLUORANTHENE	BDL	10	ug/L
BENZO(G,H,I)PERYLENE	BDL	10	ug/L
BENZO(A)PYRENE	BDL	10	ug/L
BENZYL ALCOHOL	BDL	10	ug/L
BIS(2-CHLOROETHOXY)METHANE	BDL	10	ug/L
BIS(2-CHLOROETHYL)ETHER	BDL	10	ug/L
BIS(2-CHLOROISOPROPYL)ETHER	BDL	10	ug/L
BIS(2-ETHYLHEXYL)PHTHALATE	BDL	10	ug/L
4-BROMODIPHENYL ETHER	BDL	10	ug/L
(BENZYLBUTYLPHTHALATE) BUTYLBENZYLPHTHALATE	BDL	10	ug/L
4-CHLOROANILINE	BDL	10	ug/L
CHLOROBENZILATE	BDL	10	ug/L
2-CHLORONAPHTHALENE	BDL	10	ug/L
4-CHLOROPHENYL-PHENYLETHER	BDL	10	ug/L
CHRYSENE	BDL	10	ug/L
DIALLATE	BDL	10	ug/L
DIBENZ(A,H)ANTHRACENE	BDL	10	ug/L
DIBENZOFURAN	BDL	10	ug/L
DI-N-BUTYLPHTHALATE	BDL	10	ug/L
3,3'-DICHLOROBENZIDINE	BDL	20	ug/L
DIETHYLPHTHALATE	BDL	10	ug/L
DIMETHOATE	BDL	10	ug/L
4-(DIMETHYLAMINO)AZOBENZENE	BDL	10	ug/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	BDL	20	ug/L
3,3'-DIMETHYLBENZIDINE	BDL MR	20	ug/L
DIMETHYLPHTHALATE	BDL	10	ug/L
1,3-DINITROBENZENE (M-DINITROBENZENE)	BDL	50	ug/L
2,4-DINITROTOLUENE	BDL	10	ug/L
2,6-DINITROTOLUENE	BDL	10	ug/L
DI-N-OCTYLPHTHALATE	BDL	10	ug/L
DI-N-PROPYLNITROSOAMINE	BDL	50	ug/L
ETHYL METHANESULFONATE	BDL	10	ug/L
FLUORANTHENE	BDL	10	ug/L

Parameter	Result	Det. Limit	Units
FLUORENE	BDL	10	ug/L
HEXACHLOROBENZENE	BDL	10	ug/L
HEXACHLOROBUTADIENE	BDL	10	ug/L
HEXACHLOROCYCLOPENTADIENE	BDL	10	ug/L
HEXACHLOROETHANE	BDL	10	ug/L
HEXACHLOROPROPENE	BDL	10	ug/L
INDENO(1,2,3-CD)PYRENE	BDL	10	ug/L
2-METHYLNAPHTHALENE	BDL	10	ug/L
METHAPYRILENE	BDL MR	10	ug/L
3-METHYLCHOLANTHRENE	BDL	10	ug/L
METHYL METHANESULFONATE	BDL	10	ug/L
NAPHTHALENE	BDL	10	ug/L
1,4-NAPHTHOQUINONE	BDL	50	ug/L
1-NAPHTHYLAMINE	BDL	50	ug/L
2-NAPHTHYLAMINE	BDL	10	ug/L
3-NITROANILINE (M-NITROANILINE)	BDL	50	ug/L
2-NITROANILINE (O-NITROANILINE)	BDL	50	ug/L
4-NITROANILINE (P-NITROANILINE)	BDL	50	ug/L
NITROBENZENE	BDL	10	ug/L
N-NITROSODI-N-BUTYLAMINE	BDL	10	ug/L
N-NITROSODIETHYLAMINE	BDL	10	ug/L
N-NITROSODIMETHYLAMINE	BDL	10	ug/L
N-NITROSODIPHENYLAMINE	BDL	10	ug/L
N-NITROSOMETHYLETHYLAMINE	BDL	10	ug/L
N-NITROSOPIPERIDINE	BDL	10	ug/L
N-NITROSOPYRROLIDINE	BDL	10	ug/L
5-NITRO-O-TOLUIDINE	BDL	10	ug/L
PENTACHLOROBENZENE	BDL	10	ug/L
PENTACHLORONITROBENZENE	BDL	10	ug/L
PHENACETIN	BDL	10	ug/L
PHENANTHRENE	BDL	10	ug/L
PYRENE	BDL	10	ug/L
1,2,4,5-TETRACHLOROBENZENE	BDL	10	ug/L
1,2,4-TRICHLOROBENZENE	BDL	10	ug/L
THIONAZIN	BDL	10	ug/L
O,O,O-TRIETHYL PHOSPHOROTHIOATE	BDL	10	ug/L
SYM-(1,3,5)-TRINITROBENZENE	BDL	20	ug/L
O-TOLUIDINE	BDL	10	ug/L
P-PHENYLENEDIAMINE	BDL	20	ug/L
2-SEC-BUTYL-4,6-DINITROPHENOL (DINOSEB)	BDL	10	ug/L
DIPHENYLAMINE	BDL	10	ug/L
4-CHLORO-3-METHYLPHENOL	BDL	10	ug/L
2-CHLOROPHENOL	BDL	10	ug/L
2-METHYLPHENOL (O-CRESOL)	BDL	10	ug/L

Parameter	Result	Det. Limit	Units
4-METHYLPHENOL (P-CRESOL)	BDL	10	ug/L
2,4-DICHLOROPHENOL	BDL	10	ug/L
2,6-DICHLOROPHENOL	BDL	10	ug/L
2,4-DIMETHYLPHENOL	BDL	10	ug/L
4,6-DINITRO-O-CRESOL	BDL	50	ug/L
2,4-DINITROPHENOL	BDL	50	ug/L
3-METHYLPHENOL (M-CRESOL)	BDL	10	ug/L
2-NITROPHENOL	BDL	10	ug/L
4-NITROPHENOL	BDL	50	ug/L
PENTACHLOROPHENOL	BDL	50	ug/L
PHENOL	BDL	10	ug/L
2,3,4,6-TETRACHLOROPHENOL	BDL	10	ug/L
2,4,5-TRICHLOROPHENOL	BDL	10	ug/L
2,4,6-TRICHLOROPHENOL	BDL	10	ug/L
DISULFOTON	BDL	10	ug/L
FAMPHUR	BDL MR	200	ug/L
ISODRIN	BDL	10	ug/L
ISOPHORONE	BDL	10	ug/L
ISOSAFROLE	BDL	10	ug/L
KEPONE	BDL MR	200	ug/L
PARATHION	BDL	10	ug/L
METHYL PARATHION	BDL	10	ug/L
PHORATE	BDL	10	ug/L
PRONAMIDE	BDL	10	ug/L
SAFROLE	BDL	10	ug/L
...			
SURROGATE RECOVERY			

2-FLUOROPHENOL	53		% Rec
PHENOL-D5	34		% Rec
NITROBENZENE-D5	98		% Rec
2-FLUOROBIPHENYL	91		% Rec
2,4,6-TRIBROMOPHENOL	103		% Rec
TERPHENYL-D14	87		% Rec

GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

Analyst: J. MINNIEAR, II | Analysis Date: 01-OCT-14 | Instrument: PREP | Test: P233.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	1		mL

ORGANOCHLORINE PESTICIDES BY GC:ECD SW846-8081 NELAC:Y

Analyst: T. WATSON | Analysis Date: 30-SEP-14 17:10 | Instrument: GC/ECD | Test: O164.1.0

Prep: GC PESTICIDE SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P233.1.0

Parameter	Result	Det. Limit	Units
ALPHA-BHC	BDL	0.05	ug/L
BETA-BHC	BDL	0.05	ug/L
DELTA-BHC	BDL	0.05	ug/L
GAMMA-BHC (LINDANE)	BDL	0.05	ug/L
HEPTACHLOR	BDL	0.05	ug/L
ALDRIN	BDL	0.05	ug/L
HEPTACHLOR EPOXIDE	BDL	0.05	ug/L
ENDOSULFAN I	BDL	0.05	ug/L
DIELDRIN	BDL	0.1	ug/L
4,4'-DDE	BDL	0.1	ug/L
ENDRIN	BDL	0.1	ug/L
ENDOSULFAN II	BDL	0.1	ug/L
4,4'-DDD	BDL	0.1	ug/L
ENDOSULFAN SULFATE	BDL	0.1	ug/L
4,4'-DDT	BDL	0.1	ug/L
METHOXYCHLOR	BDL	0.5	ug/L
ENDRIN ALDEHYDE	BDL	0.1	ug/L
ALPHA-CHLORDANE	BDL	0.5	ug/L
GAMMA-CHLORDANE	BDL	0.5	ug/L
CHLORDANE	BDL	0.5	ug/L
TOXAPHENE	BDL	1	ug/L
...			
SURROGATE RECOVERY			

DECACHLOROBIPHENYL (DCB)	76.7		% Rec

GC PESTICIDE SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

Analyst: K. VEST Analysis Date: 29-SEP-14 Instrument: PREP Test: P233.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	5		mL

CYANIDE, TOTAL (AUTOMATED) SW846-9012B NELAC:Y

Analyst: E. SKALA Analysis Date: 02-OCT-14 16:13 Instrument: AUTO-ANALYZER Test: G101.4.0

Prep: CYANIDE DISTILLATION SW846-9012B P101.4.0

Parameter	Result	Det. Limit	Units
CYANIDE	BDL	0.005	mg/L

CYANIDE DISTILLATION SW846-9012B

Analysis Date: 02-OCT-14 11:20 Instrument: PREP Test: P101.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	6		mL
FINAL VOLUME	6		mL

CHLORINATED HERBICIDES (2,4 D, SILVEX AND 2,4,5-T) SW846-8151A NELAC:Y

Analyst: B. WOOD | Analysis Date: 29-SEP-14 17:52 | Instrument: GC/ECD | Test: O253.1.0

Prep: DIAZOMETHANE HERBICIDE DERIVATIZATION SW846-8151A P201.4.0

Parameter	Result	Det. Limit	Units
2,4-DICHLOROPHENOXYACETIC ACID	BDL	10	ug/L
SILVEX (2,4,5-TP)	BDL	1	ug/L
2,4,5-TRICHLOROPHENOXYACETIC ACID (2,4,5-T)	BDL	1	ug/L
...			
SURROGATE RECOVERY			

DCAA	135.0		% Rec

DIAZOMETHANE HERBICIDE DERIVATIZATION SW846-8151A

Analyst: T. DAHN | Analysis Date: 29-SEP-14 | Instrument: PREP | Test: P201.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	10		mL

PCB AROCLORS BY GAS CHROMATOGRAPHY/ECD SW846-8082A NELAC:Y

Analyst: C. HIPSKIND | Analysis Date: 29-SEP-14 14:40 | Instrument: GC/ECD | Test: O301.7.0

Prep: PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P230.1.0

Parameter	Result	Det. Limit	Units
PCB AROCLOR 1016	BDL	0.10	ug/L
PCB AROCLOR 1221	BDL	0.10	ug/L
PCB AROCLOR 1232	BDL	0.10	ug/L
PCB AROCLOR 1242	BDL	0.10	ug/L
PCB AROCLOR 1248	BDL	0.10	ug/L
PCB AROCLOR 1254	BDL	0.10	ug/L
PCB AROCLOR 1260	BDL	0.10	ug/L
...			
SURROGATE RECOVERY			

DECACHLOROBIPHENYL (DCB)	90.0		% Rec

PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

Analyst: K. VEST | Analysis Date: 29-SEP-14 | Instrument: PREP | Test: P230.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	5		mL

SULFIDE, IODOMETRIC METHOD SM4500-S F 2000 NELAC:N

Analyst: S. MCNEAL | Analysis Date: 29-SEP-14 07:30 | Test: G110.1.0

Parameter	Result	Det. Limit	Units
SULFIDE	BDL	1.0	mg/L

ALKALINITY TOTAL (AUTOMATED) EPA 310.2 NELAC:N

Analyst: E. SKALA Analysis Date: 06-OCT-14 12:03 Instrument: AUTO-ANALYZER Test: G605.3.0

Parameter	Result	Det. Limit	Units
ALKALINITY	420	50	mg/L

1:5 Dilution.

ALKALINITY BICARBONATE (AUTOMATED) EPA 310.2 NELAC:N

Analyst: E. SKALA Analysis Date: 06-OCT-14 12:03 Instrument: AUTO-ANALYZER Test: G610.3.0

Parameter	Result	Det. Limit	Units
ALKALINITY, BICARBONATE	420	50	mg/L

1:5 Dilution.

ALKALINITY CARBONATE (AUTOMATED) EPA 310.2 NELAC:N

Analyst: E. SKALA Analysis Date: 06-OCT-14 12:03 Instrument: AUTO-ANALYZER Test: G611.3.0

Parameter	Result	Det. Limit	Units
ALKALINITY, CARBONATE	BDL	10	mg/L

POTASSIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:31 Instrument: ICP Test: M126.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
POTASSIUM	3400	100	ug/L

Sample Comments

* See Note for Parameter
BDL Below Detection Limit
MR Initial Calibration > 15 % RSD

Sample was received on ice at temperature 2.4 C.
Sample chain of custody number 1804343.

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KS ELAP / NELAP Accreditation # E-10177 Indiana SDWA C-49-01

Approved by: CHRISTINE SARKAN 13-OCT-14

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CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
PACE ANALYTICAL SERVICES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	26-SEP-14	AA28620
	Completed 10-OCT-14	PO Number NEED PO
	Printed 15-OCT-14	Sampled 25-SEP-14 10:21

Report To	Bill To
JON WILKINSON HERST AND ASSOCIATES 4630 SOUTH HIGHWAY 94 NORTH OUTER ROAD ST. CHARLES, MO 63304	DAVE VASBINDER ALLIED WASTE SYSTEMS 13570 ST. CHARLES ROCK ROAD BRIDGETON, MO 63044

Sample Description

CLIENT ID: PZ-211-SD
MATRIX TYPE: NON-SPECIFIC WATER
SUBMITTER: 8945 - MO-ALLIED-BRIDGETON LANDFILL
PROJECT NAME: GROUNDWATER - BRIDGETON LANDFILL
DATA PACKAGE #: 66865
LOCATION: BRIDGETON LANDFILL
DESCRIPTION: APPENDIX I/II TESTING - ADDITIONAL VOLS/NO INORG

GROUNDWATER MONITORING WELL DATA SAS

Analysis Date: 25-SEP-14 10:21 Instrument: FIELD Test: G600.0.0

Parameter	Result	Det. Limit	Units
TOTAL WELL DEPTH	99.40		ft
INITIAL WATER LEVEL	23.16		ft
ELEVATION OF GROUNDWATER SURFACE	464.30		Feet/MSL

FIELD TEMPERATURE SM2550 B 2000 NELAC:N

Analysis Date: 25-SEP-14 10:21 Instrument: FIELD Test: G603.1.0

Parameter	Result	Det. Limit	Units
TEMPERATURE	20.9		Degrees C

FIELD PH (AQUEOUS) SW846-9040C NELAC:Y

Analysis Date: 25-SEP-14 10:21 Instrument: FIELD Test: G607.0.0

Parameter	Result	Det. Limit	Units
PH	7.37	0.1	Std. Units

FIELD SPECIFIC CONDUCTANCE SW846-9050A NELAC:Y

Analysis Date: 25-SEP-14 10:21 Instrument: FIELD Test: G604.0.0

Parameter	Result	Det. Limit	Units
CONDUCTIVITY	920	1.0	umHOS/cm

FIELD TURBIDITY EPA 180.1 NELAC:Y

Analysis Date: 25-SEP-14 10:21 Instrument: FIELD Test: G602.0.0

Parameter	Result	Det. Limit	Units
TURBIDITY	6.50		ntu

FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P130.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P129.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

BARIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:34 Instrument: ICP Test: M104.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BARIUM	320	10	ug/L

BERYLLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:41 Instrument: ICP/MS Test: V105.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	4.8	2.0	ug/L

1:5 Dilution.

CHROMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:41 Instrument: ICP/MS Test: V110.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CHROMIUM	6.5	5.0	ug/L

1:5 Dilution.

COBALT ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:34 Instrument: ICP Test: M111.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COBALT	BDL	5.0	ug/L

COPPER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:41 Instrument: ICP/MS Test: V112.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
COPPER	7.3	5.0	ug/L

1:5 Dilution.

NICKEL ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:34 Instrument: ICP Test: M122.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
NICKEL	21	10	ug/L

SILVER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:41 Instrument: ICP/MS Test: V130.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	5.0	ug/L

1:5 Dilution.

THALLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:41 Instrument: ICP/MS Test: V134.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	2.0	ug/L

1:5 Dilution.

TIN ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:34 Instrument: ICP Test: M135.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
TIN	BDL	50	ug/L

VANADIUM ICP SW846-6010B NELAC:N

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:34 Instrument: ICP Test: M138.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	10	ug/L

ZINC ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:34 Instrument: ICP Test: M139.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ZINC	230	20	ug/L

ARSENIC ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:41 Instrument: ICP/MS Test: V103.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ARSENIC	10	5.0	ug/L

1:5 Dilution.

CADMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:41 Instrument: ICP/MS Test: V108.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CADMIUM	0.56	0.20	ug/L

1:5 Dilution.

LEAD ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:41 Instrument: ICP/MS Test: V116.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
LEAD	50	5.0	ug/L

1:5 Dilution.

ANTIMONY ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:41 Instrument: ICP/MS Test: V102.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	5.0	ug/L

1:5 Dilution.

SELENIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:41 Instrument: ICP/MS Test: V128.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SELENIUM	5.2	5.0	ug/L

1:5 Dilution.

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 08:00 Instrument: PREP Test: P131.6.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	40		mL
FINAL VOLUME	40		mL

MERCURY CVAA SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 21:33 Instrument: CVAA Test: M120.1.0

Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A P131.6.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.20	ug/L

APPENDIX IX VOLATILE ORGANICS, CAPILLARY COLUMN TECHNIQUE SW846-8260B NELAC:Y

Analyst: H. WILLIAMS Analysis Date: 28-SEP-14 17:19 Instrument: GC/MS VOA Test: O509.3.0

Parameter	Result	Det. Limit	Units
ACETONE	BDL	10	ug/L
ACETONITRILE	BDL	50	ug/L
ACROLEIN	BDL	50	ug/L
ACRYLONITRILE	BDL	100	ug/L
BENZENE	BDL	5.0	ug/L
BROMODICHLOROMETHANE	BDL	5.0	ug/L
BROMOCHLOROMETHANE	BDL	5.0	ug/L
BROMOFORM	BDL	5.0	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	10	ug/L
CARBON TETRACHLORIDE	BDL	5.0	ug/L
CHLOROBENZENE	BDL	5.0	ug/L
CHLORODIBROMOMETHANE	BDL	5.0	ug/L
1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	BDL	5.0	ug/L
1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	BDL	5.0	ug/L
1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	BDL	5.0	ug/L
CHLOROETHANE	BDL	10	ug/L
2-CHLORO-1,3-BUTADIENE (CHLOROPRENE)	BDL	5.0	ug/L
CHLOROFORM	BDL	5.0	ug/L
CHLOROMETHANE	BDL	10	ug/L
1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	BDL	5.0	ug/L
3-CHLOROPROPENE (ALLYL CHLORIDE)	BDL	10	ug/L
1,2-DIBROMOETHANE (EDB)	BDL	5.0	ug/L
DIBROMOMETHANE	BDL	10	ug/L
TRANS-1,4-DICHLORO-2-BUTENE	BDL	10	ug/L
DICHLORODIFLUOROMETHANE	BDL	10	ug/L
1,1-DICHLOROETHANE	BDL	5.0	ug/L
1,2-DICHLOROETHANE	BDL	5.0	ug/L
CIS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
TRANS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
1,1-DICHLOROETHENE	BDL	5.0	ug/L
1,2-DICHLOROPROPANE	BDL	5.0	ug/L
1,3-DICHLOROPROPANE	BDL	5.0	ug/L
1,1-DICHLOROPROPENE	BDL	5.0	ug/L
2,2-DICHLOROPROPANE	BDL	5.0	ug/L
DICHLOROMETHANE (METHYLENE CHLORIDE)	BDL	5.0	ug/L

Parameter	Result	Det. Limit	Units
CIS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
ETHYL BENZENE	BDL	5.0	ug/L
ETHYL CYANIDE (PROPIONITRILE)	BDL	5.0	ug/L
ETHYL METHACRYLATE	BDL	5.0	ug/L
2-HEXANONE	BDL	10	ug/L
IODOMETHANE	BDL	5.0	ug/L
ISOBUTANOL (ISOBUTYL ALCOHOL)	BDL	1000	ug/L
METHYL ISOBUTYL KETONE	BDL	10	ug/L
METHACRYLONITRILE	BDL	20	ug/L
METHYL ETHYL KETONE	BDL	10	ug/L
METHYL METHACRYLATE	BDL	5.0	ug/L
STYRENE	BDL	5.0	ug/L
1,1,1,2-TETRACHLOROETHANE	BDL	5.0	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5.0	ug/L
TETRACHLOROETHENE	BDL	5.0	ug/L
TOLUENE	BDL	5.0	ug/L
1,1,1-TRICHLOROETHANE	BDL	5.0	ug/L
1,1,2-TRICHLOROETHANE	BDL	5.0	ug/L
TRICHLOROETHENE	BDL	5.0	ug/L
TRICHLOROFLUOROMETHANE	BDL	10	ug/L
1,2,3-TRICHLOROPROPANE	BDL	5.0	ug/L
VINYL ACETATE	BDL	10	ug/L
VINYL CHLORIDE	BDL	2.0	ug/L
XYLENES (O/M/P-XYLENE)	BDL	5.0	ug/L
METHYL-T-BUTYL ETHER (MTBE)	BDL	10	ug/L
1,2,4-TRIMETHYLBENZENE	BDL	5.0	ug/L
1,3,5-TRIMETHYLBENZENE	BDL	5.0	ug/L
ISOPROPYLBENZENE (CUMENE)	BDL	10	ug/L
TETRAHYDROFURAN	BDL	25	ug/L
4-ISOPROPYLTOLUENE (P-ISOPROPYLTOLUENE)	BDL	10	ug/L
CHLOROBUTANE	*		ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	104		% Rec
TOLUENE-D8	92		% Rec
4-BROMOFLUOROBENZENE	92		% Rec

Note: * Compound searched for but not detected. Standard was unavailable to determine retention time and detection limit.

Prep Method SW846-5030B Purge and Trap

APPENDIX IX SEMIVOLATILE ORGANICS SW846-8270C NELAC:Y

Analyst: T. PINCKERT Analysis Date: 02-OCT-14 21:01 Instrument: GC/MS SVOA Test: O508.3.0

Prep: GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P233.4.0

Parameter	Result	Det. Limit	Units
ACENAPHTHENE	BDL	10	ug/L
ACENAPHTHYLENE	BDL	10	ug/L
ACETOPHENONE	BDL	10	ug/L
2-ACETYLAMINOFLUORENE	BDL	10	ug/L
4-AMINOBIPHENYL	BDL	10	ug/L
ANTHRACENE	BDL	10	ug/L
BENZO(A)ANTHRACENE	BDL	10	ug/L
BENZO(B)FLUORANTHENE	BDL	10	ug/L
BENZO(K)FLUORANTHENE	BDL	10	ug/L
BENZO(G,H,I)PERYLENE	BDL	10	ug/L
BENZO(A)PYRENE	BDL	10	ug/L
BENZYL ALCOHOL	BDL	10	ug/L
BIS(2-CHLOROETHOXY)METHANE	BDL	10	ug/L
BIS(2-CHLOROETHYL)ETHER	BDL	10	ug/L
BIS(2-CHLOROISOPROPYL)ETHER	BDL	10	ug/L
BIS(2-ETHYLHEXYL)PHTHALATE	BDL	10	ug/L
4-BROMODIPHENYL ETHER	BDL	10	ug/L
(BENZYLBUTYLPHTHALATE) BUTYLBENZYLPHTHALATE	BDL	10	ug/L
4-CHLOROANILINE	BDL	10	ug/L
CHLOROBENZILATE	BDL	10	ug/L
2-CHLORONAPHTHALENE	BDL	10	ug/L
4-CHLOROPHENYL-PHENYLETHER	BDL	10	ug/L
CHRYSENE	BDL	10	ug/L
DIALLATE	BDL	10	ug/L
DIBENZ(A,H)ANTHRACENE	BDL	10	ug/L
DIBENZOFURAN	BDL	10	ug/L
DI-N-BUTYLPHTHALATE	BDL	10	ug/L
3,3'-DICHLOROBENZIDINE	BDL	20	ug/L
DIETHYLPHTHALATE	BDL	10	ug/L
DIMETHOATE	BDL	10	ug/L
4-(DIMETHYLAMINO)AZOBENZENE	BDL	10	ug/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	BDL	20	ug/L
3,3'-DIMETHYLBENZIDINE	BDL MR	20	ug/L
DIMETHYLPHTHALATE	BDL	10	ug/L
1,3-DINITROBENZENE (M-DINITROBENZENE)	BDL	50	ug/L
2,4-DINITROTOLUENE	BDL	10	ug/L
2,6-DINITROTOLUENE	BDL	10	ug/L
DI-N-OCTYLPHTHALATE	BDL	10	ug/L
DI-N-PROPYLNITROSOAMINE	BDL	50	ug/L
ETHYL METHANESULFONATE	BDL	10	ug/L
FLUORANTHENE	BDL	10	ug/L

Parameter	Result	Det. Limit	Units
FLUORENE	BDL	10	ug/L
HEXACHLOROBENZENE	BDL	10	ug/L
HEXACHLOROBUTADIENE	BDL	10	ug/L
HEXACHLOROCYCLOPENTADIENE	BDL	10	ug/L
HEXACHLOROETHANE	BDL	10	ug/L
HEXACHLOROPROPENE	BDL	10	ug/L
INDENO(1,2,3-CD)PYRENE	BDL	10	ug/L
2-METHYLNAPHTHALENE	BDL	10	ug/L
METHAPYRILENE	BDL MR	10	ug/L
3-METHYLCHOLANTHRENE	BDL	10	ug/L
METHYL METHANESULFONATE	BDL	10	ug/L
NAPHTHALENE	BDL	10	ug/L
1,4-NAPHTHOQUINONE	BDL	50	ug/L
1-NAPHTHYLAMINE	BDL	50	ug/L
2-NAPHTHYLAMINE	BDL	10	ug/L
3-NITROANILINE (M-NITROANILINE)	BDL	50	ug/L
2-NITROANILINE (O-NITROANILINE)	BDL	50	ug/L
4-NITROANILINE (P-NITROANILINE)	BDL	50	ug/L
NITROBENZENE	BDL	10	ug/L
N-NITROSODI-N-BUTYLAMINE	BDL	10	ug/L
N-NITROSODIETHYLAMINE	BDL	10	ug/L
N-NITROSODIMETHYLAMINE	BDL	10	ug/L
N-NITROSODIPHENYLAMINE	BDL	10	ug/L
N-NITROSOMETHYLETHYLAMINE	BDL	10	ug/L
N-NITROSOPIPERIDINE	BDL	10	ug/L
N-NITROSOPYRROLIDINE	BDL	10	ug/L
5-NITRO-O-TOLUIDINE	BDL	10	ug/L
PENTACHLOROBENZENE	BDL	10	ug/L
PENTACHLORONITROBENZENE	BDL	10	ug/L
PHENACETIN	BDL	10	ug/L
PHENANTHRENE	BDL	10	ug/L
PYRENE	BDL	10	ug/L
1,2,4,5-TETRACHLOROBENZENE	BDL	10	ug/L
1,2,4-TRICHLOROBENZENE	BDL	10	ug/L
THIONAZIN	BDL	10	ug/L
O,O,O-TRIETHYL PHOSPHOROTHIOATE	BDL	10	ug/L
SYM-(1,3,5)-TRINITROBENZENE	BDL	20	ug/L
O-TOLUIDINE	BDL	10	ug/L
P-PHENYLENEDIAMINE	BDL	20	ug/L
2-SEC-BUTYL-4,6-DINITROPHENOL (DINOSEB)	BDL	10	ug/L
DIPHENYLAMINE	BDL	10	ug/L
4-CHLORO-3-METHYLPHENOL	BDL	10	ug/L
2-CHLOROPHENOL	BDL	10	ug/L
2-METHYLPHENOL (O-CRESOL)	BDL	10	ug/L

Parameter	Result	Det. Limit	Units
4-METHYLPHENOL (P-CRESOL)	BDL	10	ug/L
2,4-DICHLOROPHENOL	BDL	10	ug/L
2,6-DICHLOROPHENOL	BDL	10	ug/L
2,4-DIMETHYLPHENOL	BDL	10	ug/L
4,6-DINITRO-O-CRESOL	BDL	50	ug/L
2,4-DINITROPHENOL	BDL	50	ug/L
3-METHYLPHENOL (M-CRESOL)	BDL	10	ug/L
2-NITROPHENOL	BDL	10	ug/L
4-NITROPHENOL	BDL	50	ug/L
PENTACHLOROPHENOL	BDL	50	ug/L
PHENOL	BDL	10	ug/L
2,3,4,6-TETRACHLOROPHENOL	BDL	10	ug/L
2,4,5-TRICHLOROPHENOL	BDL	10	ug/L
2,4,6-TRICHLOROPHENOL	BDL	10	ug/L
DISULFOTON	BDL	10	ug/L
FAMPHUR	BDL MR	200	ug/L
ISODRIN	BDL	10	ug/L
ISOPHORONE	BDL	10	ug/L
ISOSAFROLE	BDL	10	ug/L
KEPONE	BDL MR	200	ug/L
PARATHION	BDL	10	ug/L
METHYL PARATHION	BDL	10	ug/L
PHORATE	BDL	10	ug/L
PRONAMIDE	BDL	10	ug/L
SAFROLE	BDL	10	ug/L
...			
SURROGATE RECOVERY			

2-FLUOROPHENOL	30		% Rec
PHENOL-D5	21		% Rec
NITROBENZENE-D5	66		% Rec
2-FLUOROBIPHENYL	62		% Rec
2,4,6-TRIBROMOPHENOL	58		% Rec
TERPHENYL-D14	53		% Rec

GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

Analyst: J. MINNIEAR, II | Analysis Date: 01-OCT-14 | Instrument: PREP | Test: P233.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	1		mL

ORGANOCHLORINE PESTICIDES BY GC:ECD SW846-8081 NELAC:Y

Analyst: T. WATSON | Analysis Date: 29-SEP-14 23:10 | Instrument: GC/ECD | Test: O164.1.0

Prep: GC PESTICIDE SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P233.1.0

Parameter	Result	Det. Limit	Units
ALPHA-BHC	BDL	0.05	ug/L
BETA-BHC	BDL	0.05	ug/L
DELTA-BHC	BDL	0.05	ug/L
GAMMA-BHC (LINDANE)	BDL	0.05	ug/L
HEPTACHLOR	BDL	0.05	ug/L
ALDRIN	BDL	0.05	ug/L
HEPTACHLOR EPOXIDE	BDL	0.05	ug/L
ENDOSULFAN I	BDL	0.05	ug/L
DIELDRIN	BDL	0.1	ug/L
4,4'-DDE	BDL	0.1	ug/L
ENDRIN	BDL	0.1	ug/L
ENDOSULFAN II	BDL	0.1	ug/L
4,4'-DDD	BDL	0.1	ug/L
ENDOSULFAN SULFATE	BDL	0.1	ug/L
4,4'-DDT	BDL	0.1	ug/L
METHOXYCHLOR	BDL	0.5	ug/L
ENDRIN ALDEHYDE	BDL	0.1	ug/L
ALPHA-CHLORDANE	BDL	0.5	ug/L
GAMMA-CHLORDANE	BDL	0.5	ug/L
CHLORDANE	BDL	0.5	ug/L
TOXAPHENE	BDL	1	ug/L
...			
SURROGATE RECOVERY			

DECACHLOROBIPHENYL (DCB)	55.1		% Rec

GC PESTICIDE SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

Analyst: K. VEST Analysis Date: 29-SEP-14 Instrument: PREP Test: P233.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	600		mL
FINAL VOLUME	5		mL

CYANIDE, TOTAL (AUTOMATED) SW846-9012B NELAC:Y

Analyst: E. SKALA Analysis Date: 02-OCT-14 16:15 Instrument: AUTO-ANALYZER Test: G101.4.0

Prep: CYANIDE DISTILLATION SW846-9012B P101.4.0

Parameter	Result	Det. Limit	Units
CYANIDE	BDL	0.005	mg/L

CYANIDE DISTILLATION SW846-9012B

Analysis Date: 02-OCT-14 11:20 Instrument: PREP Test: P101.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	6		mL
FINAL VOLUME	6		mL

CHLORINATED HERBICIDES (2,4 D, SILVEX AND 2,4,5-T) SW846-8151A NELAC:Y

Analyst: B. WOOD Analysis Date: 29-SEP-14 17:52 Instrument: GC/ECD Test: O253.1.0

Prep: DIAZOMETHANE HERBICIDE DERIVATIZATION SW846-8151A P201.4.0

Parameter	Result	Det. Limit	Units
2,4-DICHLOROPHENOXYACETIC ACID	BDL	10	ug/L
SILVEX (2,4,5-TP)	BDL	1	ug/L
2,4,5-TRICHLOROPHENOXYACETIC ACID (2,4,5-T)	BDL	1	ug/L
...			
SURROGATE RECOVERY			

DCAA	100.9		% Rec

DIAZOMETHANE HERBICIDE DERIVATIZATION SW846-8151A

Analyst: T. DAHN Analysis Date: 29-SEP-14 Instrument: PREP Test: P201.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	990		mL
FINAL VOLUME	10		mL

Sample was decanted from solids at bottom of container, sample bottle could not be solvent rinsed. Sample contained 2 cm settled solids.

PCB AROCLORS BY GAS CHROMATOGRAPHY/ECD SW846-8082A NELAC:Y

Analyst: C. HIPSKIND Analysis Date: 29-SEP-14 14:40 Instrument: GC/ECD Test: O301.7.0

Prep: PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P230.1.0

Parameter	Result	Det. Limit	Units
PCB AROCLOR 1016	BDL	0.10	ug/L
PCB AROCLOR 1221	BDL	0.10	ug/L
PCB AROCLOR 1232	BDL	0.10	ug/L
PCB AROCLOR 1242	BDL	0.10	ug/L
PCB AROCLOR 1248	BDL	0.10	ug/L
PCB AROCLOR 1254	BDL	0.10	ug/L
PCB AROCLOR 1260	BDL	0.10	ug/L
...			
SURROGATE RECOVERY			

DECACHLOROBIPHENYL (DCB)	62.0		% Rec

PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

Analyst: K. VEST Analysis Date: 29-SEP-14 Instrument: PREP Test: P230.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	600		mL
FINAL VOLUME	5		mL

SULFIDE, IODOMETRIC METHOD SM4500-S F 2000 NELAC:N

Analyst: S. MCNEAL Analysis Date: 29-SEP-14 07:30 Test: G110.1.0

Parameter	Result	Det. Limit	Units
SULFIDE	2.6	1.0	mg/L

ALKALINITY TOTAL (AUTOMATED) EPA 310.2 NELAC:N

Analyst: E. SKALA Analysis Date: 06-OCT-14 12:03 Instrument: AUTO-ANALYZER Test: G605.3.0

Parameter	Result	Det. Limit	Units
ALKALINITY	420	50	mg/L

1:5 Dilution.

ALKALINITY BICARBONATE (AUTOMATED) EPA 310.2 NELAC:N

Analyst: E. SKALA Analysis Date: 06-OCT-14 12:03 Instrument: AUTO-ANALYZER Test: G610.3.0

Parameter	Result	Det. Limit	Units
ALKALINITY, BICARBONATE	420	50	mg/L

1:5 Dilution.

ALKALINITY CARBONATE (AUTOMATED) EPA 310.2 NELAC:N

Analyst: E. SKALA Analysis Date: 06-OCT-14 12:03 Instrument: AUTO-ANALYZER Test: G611.3.0

Parameter	Result	Det. Limit	Units
ALKALINITY, CARBONATE	BDL	10	mg/L

POTASSIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:34 Instrument: ICP Test: M126.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
POTASSIUM	11000	100	ug/L

Sample Comments

* See Note for Parameter
BDL Below Detection Limit
MR Initial Calibration > 15 % RSD

Sample was received on ice at temperature 2.4 C.
Sample chain of custody number 1804343.

This Certificate shall not be reproduced, except in full, without the written approval of the lab. The sample results relate only to the analytes of interest tested or to the sample as received by the lab. Pace Analytical Services, INC. certifies that the test results indicated as NELAP (National Environmental Laboratory Accreditation Program) accredited (Yes for NELAP) meet all requirements of NELAP and Kansas (KDHE) unless otherwise explained or justified as to the the exact nature of the deviations.
KS ELAP / NELAP Accreditation # E-10177 Indiana SDWA C-49-01

Approved by: CHRISTINE SARKAN 13-OCT-14

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CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
PACE ANALYTICAL SERVICES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	26-SEP-14	AA28621
	Completed 10-OCT-14	PO Number NEED PO
	Printed 15-OCT-14	Sampled 25-SEP-14 10:49

Report To	Bill To
JON WILKINSON HERST AND ASSOCIATES 4630 SOUTH HIGHWAY 94 NORTH OUTER ROAD ST. CHARLES, MO 63304	DAVE VASBINDER ALLIED WASTE SYSTEMS 13570 ST. CHARLES ROCK ROAD BRIDGETON, MO 63044

Sample Description

CLIENT ID: PZ-211-SS
MATRIX TYPE: NON-SPECIFIC WATER
SUBMITTER: 8945 - MO-ALLIED-BRIDGETON LANDFILL
PROJECT NAME: GROUNDWATER - BRIDGETON LANDFILL
DATA PACKAGE #: 66865
LOCATION: BRIDGETON LANDFILL
DESCRIPTION: APPENDIX I/II TESTING - ADDITIONAL VOLS/NO INORG

GROUNDWATER MONITORING WELL DATA SAS

Analysis Date: 25-SEP-14 10:49 Instrument: FIELD Test: G600.0.0

Parameter	Result	Det. Limit	Units
TOTAL WELL DEPTH	98.16		ft
INITIAL WATER LEVEL	19.44		ft
ELEVATION OF GROUNDWATER SURFACE	467.97		Feet/MSL

FIELD TEMPERATURE SM2550 B 2000 NELAC:N

Analysis Date: 25-SEP-14 10:49 Instrument: FIELD Test: G603.1.0

Parameter	Result	Det. Limit	Units
TEMPERATURE	15.7		Degrees C

FIELD PH (AQUEOUS) SW846-9040C NELAC:Y

Analysis Date: 25-SEP-14 10:49 Instrument: FIELD Test: G607.0.0

Parameter	Result	Det. Limit	Units
PH	6.97	0.1	Std. Units

FIELD SPECIFIC CONDUCTANCE SW846-9050A NELAC:Y

Analysis Date: 25-SEP-14 10:49 Instrument: FIELD Test: G604.0.0

Parameter	Result	Det. Limit	Units
CONDUCTIVITY	726	1.0	umHOS/cm

FIELD TURBIDITY EPA 180.1 NELAC:Y

Analysis Date: 25-SEP-14 10:49 Instrument: FIELD Test: G602.0.0

Parameter	Result	Det. Limit	Units
TURBIDITY	19.33		ntu

FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

Analyst: K. KAMARA Analysis Date: 01-OCT-14 09:00 Instrument: PREP Test: P130.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

Analyst: K. KAMARA Analysis Date: 01-OCT-14 09:00 Instrument: PREP Test: P129.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

BARIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 02-OCT-14 06:43 Instrument: ICP Test: M104.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BARIUM	78	10	ug/L

BERYLLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 04-OCT-14 01:05 Instrument: ICP/MS Test: V105.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	2.0	ug/L

1:5 Dilution.

CHROMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 04-OCT-14 01:05 Instrument: ICP/MS Test: V110.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	5.0	ug/L

1:5 Dilution.

COBALT ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 02-OCT-14 06:43 Instrument: ICP Test: M111.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COBALT	BDL	5.0	ug/L

COPPER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 04-OCT-14 01:05 Instrument: ICP/MS Test: V112.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
COPPER	BDL	5.0	ug/L

1:5 Dilution.

NICKEL ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 02-OCT-14 06:43 Instrument: ICP Test: M122.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
NICKEL	BDL	10	ug/L

SILVER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 04-OCT-14 01:05 Instrument: ICP/MS Test: V130.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	5.0	ug/L

1:5 Dilution.

THALLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 04-OCT-14 01:05 Instrument: ICP/MS Test: V134.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	2.0	ug/L

1:5 Dilution.

TIN ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 02-OCT-14 06:43 Instrument: ICP Test: M135.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
TIN	BDL	50	ug/L

VANADIUM ICP SW846-6010B NELAC:N

Analyst: J. KRAMER Analysis Date: 02-OCT-14 06:43 Instrument: ICP Test: M138.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	10	ug/L

ZINC ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 02-OCT-14 06:43 Instrument: ICP Test: M139.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ZINC	BDL	20	ug/L

ARSENIC ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 04-OCT-14 01:05 Instrument: ICP/MS Test: V103.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	5.0	ug/L

1:5 Dilution.

CADMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 04-OCT-14 01:05 Instrument: ICP/MS Test: V108.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.20	ug/L

1:5 Dilution.

LEAD ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 04-OCT-14 01:05 Instrument: ICP/MS Test: V116.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
LEAD	BDL	5.0	ug/L

1:5 Dilution.

ANTIMONY ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 04-OCT-14 01:05 Instrument: ICP/MS Test: V102.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	5.0	ug/L

1:5 Dilution.

SELENIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 04-OCT-14 01:05 Instrument: ICP/MS Test: V128.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	5.0	ug/L

1:5 Dilution.

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 08:00 Instrument: PREP Test: P131.6.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	40		mL
FINAL VOLUME	40		mL

MERCURY CVAA SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 21:35 Instrument: CVAA Test: M120.1.0

Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A P131.6.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.20	ug/L

APPENDIX IX VOLATILE ORGANICS, CAPILLARY COLUMN TECHNIQUE SW846-8260B NELAC:Y

Analyst: H. WILLIAMS Analysis Date: 28-SEP-14 17:44 Instrument: GC/MS VOA Test: O509.3.0

Parameter	Result	Det. Limit	Units
ACETONE	BDL	10	ug/L
ACETONITRILE	BDL	50	ug/L
ACROLEIN	BDL	50	ug/L
ACRYLONITRILE	BDL	100	ug/L
BENZENE	BDL	5.0	ug/L
BROMODICHLOROMETHANE	BDL	5.0	ug/L
BROMOCHLOROMETHANE	BDL	5.0	ug/L
BROMOFORM	BDL	5.0	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	10	ug/L
CARBON TETRACHLORIDE	BDL	5.0	ug/L
CHLOROBENZENE	BDL	5.0	ug/L
CHLORODIBROMOMETHANE	BDL	5.0	ug/L
1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	BDL	5.0	ug/L
1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	BDL	5.0	ug/L
1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	BDL	5.0	ug/L
CHLOROETHANE	BDL	10	ug/L
2-CHLORO-1,3-BUTADIENE (CHLOROPRENE)	BDL	5.0	ug/L
CHLOROFORM	BDL	5.0	ug/L
CHLOROMETHANE	BDL	10	ug/L
1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	BDL	5.0	ug/L
3-CHLOROPROPENE (ALLYL CHLORIDE)	BDL	10	ug/L
1,2-DIBROMOETHANE (EDB)	BDL	5.0	ug/L
DIBROMOMETHANE	BDL	10	ug/L
TRANS-1,4-DICHLORO-2-BUTENE	BDL	10	ug/L
DICHLORODIFLUOROMETHANE	BDL	10	ug/L
1,1-DICHLOROETHANE	BDL	5.0	ug/L
1,2-DICHLOROETHANE	BDL	5.0	ug/L
CIS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
TRANS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
1,1-DICHLOROETHENE	BDL	5.0	ug/L
1,2-DICHLOROPROPANE	BDL	5.0	ug/L
1,3-DICHLOROPROPANE	BDL	5.0	ug/L
1,1-DICHLOROPROPENE	BDL	5.0	ug/L
2,2-DICHLOROPROPANE	BDL	5.0	ug/L
DICHLOROMETHANE (METHYLENE CHLORIDE)	BDL	5.0	ug/L

Parameter	Result	Det. Limit	Units
CIS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
ETHYL BENZENE	BDL	5.0	ug/L
ETHYL CYANIDE (PROPIONITRILE)	BDL	5.0	ug/L
ETHYL METHACRYLATE	BDL	5.0	ug/L
2-HEXANONE	BDL	10	ug/L
IODOMETHANE	BDL	5.0	ug/L
ISOBUTANOL (ISOBUTYL ALCOHOL)	BDL	1000	ug/L
METHYL ISOBUTYL KETONE	BDL	10	ug/L
METHACRYLONITRILE	BDL	20	ug/L
METHYL ETHYL KETONE	BDL	10	ug/L
METHYL METHACRYLATE	BDL	5.0	ug/L
STYRENE	BDL	5.0	ug/L
1,1,1,2-TETRACHLOROETHANE	BDL	5.0	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5.0	ug/L
TETRACHLOROETHENE	BDL	5.0	ug/L
TOLUENE	BDL	5.0	ug/L
1,1,1-TRICHLOROETHANE	BDL	5.0	ug/L
1,1,2-TRICHLOROETHANE	BDL	5.0	ug/L
TRICHLOROETHENE	BDL	5.0	ug/L
TRICHLOROFLUOROMETHANE	BDL	10	ug/L
1,2,3-TRICHLOROPROPANE	BDL	5.0	ug/L
VINYL ACETATE	BDL	10	ug/L
VINYL CHLORIDE	BDL	2.0	ug/L
XYLENES (O/M/P-XYLENE)	BDL	5.0	ug/L
METHYL-T-BUTYL ETHER (MTBE)	BDL	10	ug/L
1,2,4-TRIMETHYLBENZENE	BDL	5.0	ug/L
1,3,5-TRIMETHYLBENZENE	BDL	5.0	ug/L
ISOPROPYLBENZENE (CUMENE)	BDL	10	ug/L
TETRAHYDROFURAN	BDL	25	ug/L
4-ISOPROPYLTOLUENE (P-ISOPROPYLTOLUENE)	BDL	10	ug/L
CHLOROBUTANE	*		ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	107		% Rec
TOLUENE-D8	91		% Rec
4-BROMOFLUOROBENZENE	94		% Rec

Note: * Compound searched for but not detected. Standard was unavailable to determine retention time and detection limit.

Prep Method SW846-5030B Purge and Trap

APPENDIX IX SEMIVOLATILE ORGANICS SW846-8270C NELAC:Y

Analyst: T. PINCKERT Analysis Date: 02-OCT-14 21:23 Instrument: GC/MS SVOA Test: O508.3.0

Prep: GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P233.4.0

Parameter	Result	Det. Limit	Units
ACENAPHTHENE	BDL	10	ug/L
ACENAPHTHYLENE	BDL	10	ug/L
ACETOPHENONE	BDL	10	ug/L
2-ACETYLAMINOFLUORENE	BDL	10	ug/L
4-AMINOBIPHENYL	BDL	10	ug/L
ANTHRACENE	BDL	10	ug/L
BENZO(A)ANTHRACENE	BDL	10	ug/L
BENZO(B)FLUORANTHENE	BDL	10	ug/L
BENZO(K)FLUORANTHENE	BDL	10	ug/L
BENZO(G,H,I)PERYLENE	BDL	10	ug/L
BENZO(A)PYRENE	BDL	10	ug/L
BENZYL ALCOHOL	BDL	10	ug/L
BIS(2-CHLOROETHOXY)METHANE	BDL	10	ug/L
BIS(2-CHLOROETHYL)ETHER	BDL	10	ug/L
BIS(2-CHLOROISOPROPYL)ETHER	BDL	10	ug/L
BIS(2-ETHYLHEXYL)PHTHALATE	BDL	10	ug/L
4-BROMODIPHENYL ETHER	BDL	10	ug/L
(BENZYLBUTYLPHTHALATE) BUTYLBENZYLPHTHALATE	BDL	10	ug/L
4-CHLOROANILINE	BDL	10	ug/L
CHLOROBENZILATE	BDL	10	ug/L
2-CHLORONAPHTHALENE	BDL	10	ug/L
4-CHLOROPHENYL-PHENYLETHER	BDL	10	ug/L
CHRYSENE	BDL	10	ug/L
DIALLATE	BDL	10	ug/L
DIBENZ(A,H)ANTHRACENE	BDL	10	ug/L
DIBENZOFURAN	BDL	10	ug/L
DI-N-BUTYLPHTHALATE	BDL	10	ug/L
3,3'-DICHLOROBENZIDINE	BDL	20	ug/L
DIETHYLPHTHALATE	BDL	10	ug/L
DIMETHOATE	BDL	10	ug/L
4-(DIMETHYLAMINO)AZOBENZENE	BDL	10	ug/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	BDL	20	ug/L
3,3'-DIMETHYLBENZIDINE	BDL MR	20	ug/L
DIMETHYLPHTHALATE	BDL	10	ug/L
1,3-DINITROBENZENE (M-DINITROBENZENE)	BDL	50	ug/L
2,4-DINITROTOLUENE	BDL	10	ug/L
2,6-DINITROTOLUENE	BDL	10	ug/L
DI-N-OCTYLPHTHALATE	BDL	10	ug/L
DI-N-PROPYLNITROSOAMINE	BDL	50	ug/L
ETHYL METHANESULFONATE	BDL	10	ug/L
FLUORANTHENE	BDL	10	ug/L

Parameter	Result	Det. Limit	Units
FLUORENE	BDL	10	ug/L
HEXACHLOROBENZENE	BDL	10	ug/L
HEXACHLOROBUTADIENE	BDL	10	ug/L
HEXACHLOROCYCLOPENTADIENE	BDL	10	ug/L
HEXACHLOROETHANE	BDL	10	ug/L
HEXACHLOROPROPENE	BDL	10	ug/L
INDENO(1,2,3-CD)PYRENE	BDL	10	ug/L
2-METHYLNAPHTHALENE	BDL	10	ug/L
METHAPYRILENE	BDL MR	10	ug/L
3-METHYLCHOLANTHRENE	BDL	10	ug/L
METHYL METHANESULFONATE	BDL	10	ug/L
NAPHTHALENE	BDL	10	ug/L
1,4-NAPHTHOQUINONE	BDL	50	ug/L
1-NAPHTHYLAMINE	BDL	50	ug/L
2-NAPHTHYLAMINE	BDL	10	ug/L
3-NITROANILINE (M-NITROANILINE)	BDL	50	ug/L
2-NITROANILINE (O-NITROANILINE)	BDL	50	ug/L
4-NITROANILINE (P-NITROANILINE)	BDL	50	ug/L
NITROBENZENE	BDL	10	ug/L
N-NITROSODI-N-BUTYLAMINE	BDL	10	ug/L
N-NITROSODIETHYLAMINE	BDL	10	ug/L
N-NITROSODIMETHYLAMINE	BDL	10	ug/L
N-NITROSODIPHENYLAMINE	BDL	10	ug/L
N-NITROSOMETHYLETHYLAMINE	BDL	10	ug/L
N-NITROSOPIPERIDINE	BDL	10	ug/L
N-NITROSOPYRROLIDINE	BDL	10	ug/L
5-NITRO-O-TOLUIDINE	BDL	10	ug/L
PENTACHLOROBENZENE	BDL	10	ug/L
PENTACHLORONITROBENZENE	BDL	10	ug/L
PHENACETIN	BDL	10	ug/L
PHENANTHRENE	BDL	10	ug/L
PYRENE	BDL	10	ug/L
1,2,4,5-TETRACHLOROBENZENE	BDL	10	ug/L
1,2,4-TRICHLOROBENZENE	BDL	10	ug/L
THIONAZIN	BDL	10	ug/L
O,O,O-TRIETHYL PHOSPHOROTHIOATE	BDL	10	ug/L
SYM-(1,3,5)-TRINITROBENZENE	BDL	20	ug/L
O-TOLUIDINE	BDL	10	ug/L
P-PHENYLENEDIAMINE	BDL	20	ug/L
2-SEC-BUTYL-4,6-DINITROPHENOL (DINOSEB)	BDL	10	ug/L
DIPHENYLAMINE	BDL	10	ug/L
4-CHLORO-3-METHYLPHENOL	BDL	10	ug/L
2-CHLOROPHENOL	BDL	10	ug/L
2-METHYLPHENOL (O-CRESOL)	BDL	10	ug/L

Parameter	Result	Det. Limit	Units
4-METHYLPHENOL (P-CRESOL)	BDL	10	ug/L
2,4-DICHLOROPHENOL	BDL	10	ug/L
2,6-DICHLOROPHENOL	BDL	10	ug/L
2,4-DIMETHYLPHENOL	BDL	10	ug/L
4,6-DINITRO-O-CRESOL	BDL	50	ug/L
2,4-DINITROPHENOL	BDL	50	ug/L
3-METHYLPHENOL (M-CRESOL)	BDL	10	ug/L
2-NITROPHENOL	BDL	10	ug/L
4-NITROPHENOL	BDL	50	ug/L
PENTACHLOROPHENOL	BDL	50	ug/L
PHENOL	BDL	10	ug/L
2,3,4,6-TETRACHLOROPHENOL	BDL	10	ug/L
2,4,5-TRICHLOROPHENOL	BDL	10	ug/L
2,4,6-TRICHLOROPHENOL	BDL	10	ug/L
DISULFOTON	BDL	10	ug/L
FAMPHUR	BDL MR	200	ug/L
ISODRIN	BDL	10	ug/L
ISOPHORONE	BDL	10	ug/L
ISOSAFROLE	BDL	10	ug/L
KEPONE	BDL MR	200	ug/L
PARATHION	BDL	10	ug/L
METHYL PARATHION	BDL	10	ug/L
PHORATE	BDL	10	ug/L
PRONAMIDE	BDL	10	ug/L
SAFROLE	BDL	10	ug/L
...			
SURROGATE RECOVERY			

2-FLUOROPHENOL	47		% Rec
PHENOL-D5	29		% Rec
NITROBENZENE-D5	100		% Rec
2-FLUOROBIPHENYL	95		% Rec
2,4,6-TRIBROMOPHENOL	100		% Rec
TERPHENYL-D14	98		% Rec

GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

Analyst: J. MINNIEAR, II | Analysis Date: 01-OCT-14 | Instrument: PREP | Test: P233.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	1		mL

ORGANOCHLORINE PESTICIDES BY GC:ECD SW846-8081 NELAC:Y

Analyst: T. WATSON | Analysis Date: 29-SEP-14 23:23 | Instrument: GC/ECD | Test: O164.1.0

Prep: GC PESTICIDE SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P233.1.0

Parameter	Result	Det. Limit	Units
ALPHA-BHC	BDL	0.05	ug/L
BETA-BHC	BDL	0.05	ug/L
DELTA-BHC	BDL	0.05	ug/L
GAMMA-BHC (LINDANE)	BDL	0.05	ug/L
HEPTACHLOR	BDL	0.05	ug/L
ALDRIN	BDL	0.05	ug/L
HEPTACHLOR EPOXIDE	BDL	0.05	ug/L
ENDOSULFAN I	BDL	0.05	ug/L
DIELDRIN	BDL	0.1	ug/L
4,4'-DDE	BDL	0.1	ug/L
ENDRIN	BDL	0.1	ug/L
ENDOSULFAN II	BDL	0.1	ug/L
4,4'-DDD	BDL	0.1	ug/L
ENDOSULFAN SULFATE	BDL	0.1	ug/L
4,4'-DDT	BDL	0.1	ug/L
METHOXYCHLOR	BDL	0.5	ug/L
ENDRIN ALDEHYDE	BDL	0.1	ug/L
ALPHA-CHLORDANE	BDL	0.5	ug/L
GAMMA-CHLORDANE	BDL	0.5	ug/L
CHLORDANE	BDL	0.5	ug/L
TOXAPHENE	BDL	1	ug/L
...			
SURROGATE RECOVERY			

DECACHLOROBIPHENYL (DCB)	64.1		% Rec

GC PESTICIDE SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

Analyst: K. VEST | Analysis Date: 29-SEP-14 | Instrument: PREP | Test: P233.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	5		mL

CYANIDE, TOTAL (AUTOMATED) SW846-9012B NELAC:Y

Analyst: E. SKALA | Analysis Date: 02-OCT-14 16:16 | Instrument: AUTO-ANALYZER | Test: G101.4.0

Prep: CYANIDE DISTILLATION SW846-9012B P101.4.0

Parameter	Result	Det. Limit	Units
CYANIDE	BDL	0.005	mg/L

CYANIDE DISTILLATION SW846-9012B

Analysis Date: 02-OCT-14 11:20 | Instrument: PREP | Test: P101.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	6		mL
FINAL VOLUME	6		mL

CHLORINATED HERBICIDES (2,4 D, SILVEX AND 2,4,5-T) SW846-8151A NELAC:Y

Analyst: B. WOOD Analysis Date: 29-SEP-14 17:52 Instrument: GC/ECD Test: O253.1.0

Prep: DIAZOMETHANE HERBICIDE DERIVATIZATION SW846-8151A P201.4.0

Parameter	Result	Det. Limit	Units
2,4-DICHLOROPHENOXYACETIC ACID	BDL	10	ug/L
SILVEX (2,4,5-TP)	BDL	1	ug/L
2,4,5-TRICHLOROPHENOXYACETIC ACID (2,4,5-T)	BDL	1	ug/L
...			
SURROGATE RECOVERY			

DCAA	108.9		% Rec

DIAZOMETHANE HERBICIDE DERIVATIZATION SW846-8151A

Analyst: T. DAHN Analysis Date: 29-SEP-14 Instrument: PREP Test: P201.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	10		mL

PCB AROCLORS BY GAS CHROMATOGRAPHY/ECD SW846-8082A NELAC:Y

Analyst: C. HIPSKIND Analysis Date: 29-SEP-14 14:40 Instrument: GC/ECD Test: O301.7.0

Prep: PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P230.1.0

Parameter	Result	Det. Limit	Units
PCB AROCLOR 1016	BDL	0.10	ug/L
PCB AROCLOR 1221	BDL	0.10	ug/L
PCB AROCLOR 1232	BDL	0.10	ug/L
PCB AROCLOR 1242	BDL	0.10	ug/L
PCB AROCLOR 1248	BDL	0.10	ug/L
PCB AROCLOR 1254	BDL	0.10	ug/L
PCB AROCLOR 1260	BDL	0.10	ug/L
...			
SURROGATE RECOVERY			

DECACHLOROBIPHENYL (DCB)	79.0		% Rec

PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

Analyst: K. VEST Analysis Date: 29-SEP-14 Instrument: PREP Test: P230.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	5		mL

SULFIDE, IODOMETRIC METHOD SM4500-S F 2000 NELAC:N

Analyst: S. MCNEAL Analysis Date: 29-SEP-14 07:30 Test: G110.1.0

Parameter	Result	Det. Limit	Units
SULFIDE	BDL	1.0	mg/L

ALKALINITY TOTAL (AUTOMATED) EPA 310.2 NELAC:N

Analyst: E. SKALA Analysis Date: 06-OCT-14 12:04 Instrument: AUTO-ANALYZER Test: G605.3.0

Parameter	Result	Det. Limit	Units
ALKALINITY	360	50	mg/L

1:5 Dilution.

ALKALINITY BICARBONATE (AUTOMATED) EPA 310.2 NELAC:N

Analyst: E. SKALA Analysis Date: 06-OCT-14 12:04 Instrument: AUTO-ANALYZER Test: G610.3.0

Parameter	Result	Det. Limit	Units
ALKALINITY, BICARBONATE	360	50	mg/L

1:5 Dilution.

ALKALINITY CARBONATE (AUTOMATED) EPA 310.2 NELAC:N

Analyst: E. SKALA Analysis Date: 06-OCT-14 12:04 Instrument: AUTO-ANALYZER Test: G611.3.0

Parameter	Result	Det. Limit	Units
ALKALINITY, CARBONATE	BDL	10	mg/L

POTASSIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 02-OCT-14 06:43 Instrument: ICP Test: M126.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
POTASSIUM	4900	100	ug/L

Sample Comments

* See Note for Parameter
BDL Below Detection Limit
MR Initial Calibration > 15 % RSD

Sample was received on ice at temperature 2.4 C.
Sample chain of custody number 1804343.

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KS ELAP / NELAP Accreditation # E-10177 Indiana SDWA C-49-01

Approved by: CHRISTINE SARKAN 13-OCT-14

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CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
PACE ANALYTICAL SERVICES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	26-SEP-14	AA28622
	Completed 10-OCT-14	PO Number NEED PO
	Printed 15-OCT-14	Sampled 25-SEP-14 11:44

Report To	Bill To
JON WILKINSON HERST AND ASSOCIATES 4630 SOUTH HIGHWAY 94 NORTH OUTER ROAD ST. CHARLES, MO 63304	DAVE VASBINDER ALLIED WASTE SYSTEMS 13570 ST. CHARLES ROCK ROAD BRIDGETON, MO 63044

Sample Description

CLIENT ID: PZ-210-SD
MATRIX TYPE: NON-SPECIFIC WATER
SUBMITTER: 8945 - MO-ALLIED-BRIDGETON LANDFILL
PROJECT NAME: GROUNDWATER - BRIDGETON LANDFILL
DATA PACKAGE #: 66865
LOCATION: BRIDGETON LANDFILL
DESCRIPTION: APPENDIX I/II TESTING - ADDITIONAL VOLS/NO INORG

GROUNDWATER MONITORING WELL DATA SAS

Analysis Date: 25-SEP-14 11:44 Instrument: FIELD Test: G600.0.0

Parameter	Result	Det. Limit	Units
TOTAL WELL DEPTH	101.82		ft
INITIAL WATER LEVEL	28.23		ft
ELEVATION OF GROUNDWATER SURFACE	458.78		Feet/MSL

FIELD TEMPERATURE SM2550 B 2000 NELAC:N

Analysis Date: 25-SEP-14 11:44 Instrument: FIELD Test: G603.1.0

Parameter	Result	Det. Limit	Units
TEMPERATURE	16.4		Degrees C

FIELD PH (AQUEOUS) SW846-9040C NELAC:Y

Analysis Date: 25-SEP-14 11:44 Instrument: FIELD Test: G607.0.0

Parameter	Result	Det. Limit	Units
PH	6.96	0.1	Std. Units

FIELD SPECIFIC CONDUCTANCE SW846-9050A NELAC:Y

Analysis Date: 25-SEP-14 11:44 Instrument: FIELD Test: G604.0.0

Parameter	Result	Det. Limit	Units
CONDUCTIVITY	1207	1.0	umHOS/cm

FIELD TURBIDITY EPA 180.1 NELAC:Y

Analysis Date: 25-SEP-14 11:44 Instrument: FIELD Test: G602.0.0

Parameter	Result	Det. Limit	Units
TURBIDITY	295.4		ntu

FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

Analyst: K. KAMARA Analysis Date: 01-OCT-14 09:00 Instrument: PREP Test: P130.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

Analyst: K. KAMARA Analysis Date: 01-OCT-14 09:00 Instrument: PREP Test: P129.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

BARIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 02-OCT-14 06:46 Instrument: ICP Test: M104.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BARIUM	210	10	ug/L

BERYLLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 04-OCT-14 01:30 Instrument: ICP/MS Test: V105.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	2.3	2.0	ug/L

1:5 Dilution.

CHROMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 04-OCT-14 01:30 Instrument: ICP/MS Test: V110.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CHROMIUM	6.0	5.0	ug/L

1:5 Dilution.

COBALT ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 02-OCT-14 06:46 Instrument: ICP Test: M111.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COBALT	BDL	5.0	ug/L

COPPER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 04-OCT-14 01:30 Instrument: ICP/MS Test: V112.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
COPPER	6.3	5.0	ug/L

1:5 Dilution.

NICKEL ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 02-OCT-14 06:46 Instrument: ICP Test: M122.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
NICKEL	21	10	ug/L

SILVER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 04-OCT-14 01:30 Instrument: ICP/MS Test: V130.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	5.0	ug/L

1:5 Dilution.

THALLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 04-OCT-14 01:30 Instrument: ICP/MS Test: V134.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	2.0	ug/L

1:5 Dilution.

TIN ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 02-OCT-14 06:46 Instrument: ICP Test: M135.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
TIN	BDL	50	ug/L

VANADIUM ICP SW846-6010B NELAC:N

Analyst: J. KRAMER Analysis Date: 02-OCT-14 06:46 Instrument: ICP Test: M138.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	10	ug/L

ZINC ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 02-OCT-14 06:46 Instrument: ICP Test: M139.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ZINC	37	20	ug/L

ARSENIC ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 04-OCT-14 01:30 Instrument: ICP/MS Test: V103.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ARSENIC	9.5	5.0	ug/L

1:5 Dilution.

CADMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 04-OCT-14 01:30 Instrument: ICP/MS Test: V108.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CADMIUM	0.24	0.20	ug/L

1:5 Dilution.

LEAD ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 04-OCT-14 01:30 Instrument: ICP/MS Test: V116.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
LEAD	29	5.0	ug/L

1:5 Dilution.

ANTIMONY ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 04-OCT-14 01:30 Instrument: ICP/MS Test: V102.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	5.0	ug/L

1:5 Dilution.

SELENIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 04-OCT-14 01:30 Instrument: ICP/MS Test: V128.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	5.0	ug/L

1:5 Dilution.

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 08:00 Instrument: PREP Test: P131.6.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	40		mL
FINAL VOLUME	40		mL

MERCURY CVAA SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 21:37 Instrument: CVAA Test: M120.1.0

Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A P131.6.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.20	ug/L

APPENDIX IX VOLATILE ORGANICS, CAPILLARY COLUMN TECHNIQUE SW846-8260B NELAC:Y

Analyst: H. WILLIAMS Analysis Date: 28-SEP-14 18:10 Instrument: GC/MS VOA Test: O509.3.0

Parameter	Result	Det. Limit	Units
ACETONE	BDL	10	ug/L
ACETONITRILE	BDL	50	ug/L
ACROLEIN	BDL	50	ug/L
ACRYLONITRILE	BDL	100	ug/L
BENZENE	12	5.0	ug/L
BROMODICHLOROMETHANE	BDL	5.0	ug/L
BROMOCHLOROMETHANE	BDL	5.0	ug/L
BROMOFORM	BDL	5.0	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	10	ug/L
CARBON TETRACHLORIDE	BDL	5.0	ug/L
CHLOROBENZENE	BDL	5.0	ug/L
CHLORODIBROMOMETHANE	BDL	5.0	ug/L
1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	BDL	5.0	ug/L
1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	BDL	5.0	ug/L
1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	BDL	5.0	ug/L
CHLOROETHANE	BDL	10	ug/L
2-CHLORO-1,3-BUTADIENE (CHLOROPRENE)	BDL	5.0	ug/L
CHLOROFORM	BDL	5.0	ug/L
CHLOROMETHANE	BDL	10	ug/L
1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	BDL	5.0	ug/L
3-CHLOROPROPENE (ALLYL CHLORIDE)	BDL	10	ug/L
1,2-DIBROMOETHANE (EDB)	BDL	5.0	ug/L
DIBROMOMETHANE	BDL	10	ug/L
TRANS-1,4-DICHLORO-2-BUTENE	BDL	10	ug/L
DICHLORODIFLUOROMETHANE	BDL	10	ug/L
1,1-DICHLOROETHANE	BDL	5.0	ug/L
1,2-DICHLOROETHANE	BDL	5.0	ug/L
CIS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
TRANS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
1,1-DICHLOROETHENE	BDL	5.0	ug/L
1,2-DICHLOROPROPANE	BDL	5.0	ug/L
1,3-DICHLOROPROPANE	BDL	5.0	ug/L
1,1-DICHLOROPROPENE	BDL	5.0	ug/L
2,2-DICHLOROPROPANE	BDL	5.0	ug/L
DICHLOROMETHANE (METHYLENE CHLORIDE)	BDL	5.0	ug/L

Parameter	Result	Det. Limit	Units
CIS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
ETHYL BENZENE	BDL	5.0	ug/L
ETHYL CYANIDE (PROPIONITRILE)	BDL	5.0	ug/L
ETHYL METHACRYLATE	BDL	5.0	ug/L
2-HEXANONE	BDL	10	ug/L
IODOMETHANE	BDL	5.0	ug/L
ISOBUTANOL (ISOBUTYL ALCOHOL)	BDL	1000	ug/L
METHYL ISOBUTYL KETONE	BDL	10	ug/L
METHACRYLONITRILE	BDL	20	ug/L
METHYL ETHYL KETONE	BDL	10	ug/L
METHYL METHACRYLATE	BDL	5.0	ug/L
STYRENE	BDL	5.0	ug/L
1,1,1,2-TETRACHLOROETHANE	BDL	5.0	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5.0	ug/L
TETRACHLOROETHENE	BDL	5.0	ug/L
TOLUENE	BDL	5.0	ug/L
1,1,1-TRICHLOROETHANE	BDL	5.0	ug/L
1,1,2-TRICHLOROETHANE	BDL	5.0	ug/L
TRICHLOROETHENE	BDL	5.0	ug/L
TRICHLOROFLUOROMETHANE	BDL	10	ug/L
1,2,3-TRICHLOROPROPANE	BDL	5.0	ug/L
VINYL ACETATE	BDL	10	ug/L
VINYL CHLORIDE	BDL	2.0	ug/L
XYLENES (O/M/P-XYLENE)	BDL	5.0	ug/L
METHYL-T-BUTYL ETHER (MTBE)	BDL	10	ug/L
1,2,4-TRIMETHYLBENZENE	BDL	5.0	ug/L
1,3,5-TRIMETHYLBENZENE	BDL	5.0	ug/L
ISOPROPYLBENZENE (CUMENE)	BDL	10	ug/L
TETRAHYDROFURAN	BDL	25	ug/L
4-ISOPROPYLTOLUENE (P-ISOPROPYLTOLUENE)	BDL	10	ug/L
CHLOROBUTANE	*		ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	103		% Rec
TOLUENE-D8	89		% Rec
4-BROMOFLUOROBENZENE	96		% Rec

Note: * Compound searched for but not detected. Standard was unavailable to determine retention time and detection limit.

Prep Method SW846-5030B Purge and Trap

APPENDIX IX SEMIVOLATILE ORGANICS SW846-8270C NELAC:Y

Analyst: T. PINCKERT Analysis Date: 02-OCT-14 22:29 Instrument: GC/MS SVOA Test: O508.3.0

Prep: GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P233.4.0

Parameter	Result	Det. Limit	Units
ACENAPHTHENE	BDL	10	ug/L
ACENAPHTHYLENE	BDL	10	ug/L
ACETOPHENONE	BDL	10	ug/L
2-ACETYLAMINOFLUORENE	BDL	10	ug/L
4-AMINOBIPHENYL	BDL	10	ug/L
ANTHRACENE	BDL	10	ug/L
BENZO(A)ANTHRACENE	BDL	10	ug/L
BENZO(B)FLUORANTHENE	BDL	10	ug/L
BENZO(K)FLUORANTHENE	BDL	10	ug/L
BENZO(G,H,I)PERYLENE	BDL	10	ug/L
BENZO(A)PYRENE	BDL	10	ug/L
BENZYL ALCOHOL	BDL	10	ug/L
BIS(2-CHLOROETHOXY)METHANE	BDL	10	ug/L
BIS(2-CHLOROETHYL)ETHER	BDL	10	ug/L
BIS(2-CHLOROISOPROPYL)ETHER	BDL	10	ug/L
BIS(2-ETHYLHEXYL)PHTHALATE	BDL	10	ug/L
4-BROMODIPHENYL ETHER	BDL	10	ug/L
(BENZYLBUTYLPHTHALATE) BUTYLBENZYLPHTHALATE	BDL	10	ug/L
4-CHLOROANILINE	BDL	10	ug/L
CHLOROBENZILATE	BDL	10	ug/L
2-CHLORONAPHTHALENE	BDL	10	ug/L
4-CHLOROPHENYL-PHENYLETHER	BDL	10	ug/L
CHRYSENE	BDL	10	ug/L
DIALLATE	BDL	10	ug/L
DIBENZ(A,H)ANTHRACENE	BDL	10	ug/L
DIBENZOFURAN	BDL	10	ug/L
DI-N-BUTYLPHTHALATE	BDL	10	ug/L
3,3'-DICHLOROBENZIDINE	BDL	20	ug/L
DIETHYLPHTHALATE	BDL	10	ug/L
DIMETHOATE	BDL	10	ug/L
4-(DIMETHYLAMINO)AZOBENZENE	BDL	10	ug/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	BDL	20	ug/L
3,3'-DIMETHYLBENZIDINE	BDL MR	20	ug/L
DIMETHYLPHTHALATE	BDL	10	ug/L
1,3-DINITROBENZENE (M-DINITROBENZENE)	BDL	50	ug/L
2,4-DINITROTOLUENE	BDL	10	ug/L
2,6-DINITROTOLUENE	BDL	10	ug/L
DI-N-OCTYLPHTHALATE	BDL	10	ug/L
DI-N-PROPYLNITROSOAMINE	BDL	50	ug/L
ETHYL METHANESULFONATE	BDL	10	ug/L
FLUORANTHENE	BDL	10	ug/L

Parameter	Result	Det. Limit	Units
FLUORENE	BDL	10	ug/L
HEXACHLOROBENZENE	BDL	10	ug/L
HEXACHLOROBUTADIENE	BDL	10	ug/L
HEXACHLOROCYCLOPENTADIENE	BDL	10	ug/L
HEXACHLOROETHANE	BDL	10	ug/L
HEXACHLOROPROPENE	BDL	10	ug/L
INDENO(1,2,3-CD)PYRENE	BDL	10	ug/L
2-METHYLNAPHTHALENE	BDL	10	ug/L
METHAPYRILENE	BDL MR	10	ug/L
3-METHYLCHOLANTHRENE	BDL	10	ug/L
METHYL METHANESULFONATE	BDL	10	ug/L
NAPHTHALENE	BDL	10	ug/L
1,4-NAPHTHOQUINONE	BDL	50	ug/L
1-NAPHTHYLAMINE	BDL	50	ug/L
2-NAPHTHYLAMINE	BDL	10	ug/L
3-NITROANILINE (M-NITROANILINE)	BDL	50	ug/L
2-NITROANILINE (O-NITROANILINE)	BDL	50	ug/L
4-NITROANILINE (P-NITROANILINE)	BDL	50	ug/L
NITROBENZENE	BDL	10	ug/L
N-NITROSODI-N-BUTYLAMINE	BDL	10	ug/L
N-NITROSODIETHYLAMINE	BDL	10	ug/L
N-NITROSODIMETHYLAMINE	BDL	10	ug/L
N-NITROSODIPHENYLAMINE	BDL	10	ug/L
N-NITROSOMETHYLETHYLAMINE	BDL	10	ug/L
N-NITROSOPIPERIDINE	BDL	10	ug/L
N-NITROSOPYRROLIDINE	BDL	10	ug/L
5-NITRO-O-TOLUIDINE	BDL	10	ug/L
PENTACHLOROBENZENE	BDL	10	ug/L
PENTACHLORONITROBENZENE	BDL	10	ug/L
PHENACETIN	BDL	10	ug/L
PHENANTHRENE	BDL	10	ug/L
PYRENE	BDL	10	ug/L
1,2,4,5-TETRACHLOROBENZENE	BDL	10	ug/L
1,2,4-TRICHLOROBENZENE	BDL	10	ug/L
THIONAZIN	BDL	10	ug/L
O,O,O-TRIETHYL PHOSPHOROTHIOATE	BDL	10	ug/L
SYM-(1,3,5)-TRINITROBENZENE	BDL	20	ug/L
O-TOLUIDINE	BDL	10	ug/L
P-PHENYLENEDIAMINE	BDL	20	ug/L
2-SEC-BUTYL-4,6-DINITROPHENOL (DINOSEB)	BDL	10	ug/L
DIPHENYLAMINE	BDL	10	ug/L
4-CHLORO-3-METHYLPHENOL	BDL	10	ug/L
2-CHLOROPHENOL	BDL	10	ug/L
2-METHYLPHENOL (O-CRESOL)	BDL	10	ug/L

Parameter	Result	Det. Limit	Units
4-METHYLPHENOL (P-CRESOL)	BDL	10	ug/L
2,4-DICHLOROPHENOL	BDL	10	ug/L
2,6-DICHLOROPHENOL	BDL	10	ug/L
2,4-DIMETHYLPHENOL	BDL	10	ug/L
4,6-DINITRO-O-CRESOL	BDL	50	ug/L
2,4-DINITROPHENOL	BDL	50	ug/L
3-METHYLPHENOL (M-CRESOL)	BDL	10	ug/L
2-NITROPHENOL	BDL	10	ug/L
4-NITROPHENOL	BDL	50	ug/L
PENTACHLOROPHENOL	BDL	50	ug/L
PHENOL	BDL	10	ug/L
2,3,4,6-TETRACHLOROPHENOL	BDL	10	ug/L
2,4,5-TRICHLOROPHENOL	BDL	10	ug/L
2,4,6-TRICHLOROPHENOL	BDL	10	ug/L
DISULFOTON	BDL	10	ug/L
FAMPHUR	BDL MR	200	ug/L
ISODRIN	BDL	10	ug/L
ISOPHORONE	BDL	10	ug/L
ISOSAFROLE	BDL	10	ug/L
KEPONE	BDL MR	200	ug/L
PARATHION	BDL	10	ug/L
METHYL PARATHION	BDL	10	ug/L
PHORATE	BDL	10	ug/L
PRONAMIDE	BDL	10	ug/L
SAFROLE	BDL	10	ug/L
...			
SURROGATE RECOVERY			

2-FLUOROPHENOL	44		% Rec
PHENOL-D5	28		% Rec
NITROBENZENE-D5	78		% Rec
2-FLUOROBIPHENYL	74		% Rec
2,4,6-TRIBROMOPHENOL	82		% Rec
TERPHENYL-D14	68		% Rec

GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

Analyst: J. MINNIEAR, II | Analysis Date: 01-OCT-14 | Instrument: PREP | Test: P233.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	1		mL

ORGANOCHLORINE PESTICIDES BY GC:ECD SW846-8081 NELAC:Y

Analyst: T. WATSON | Analysis Date: 30-SEP-14 17:23 | Instrument: GC/ECD | Test: O164.1.0

Prep: GC PESTICIDE SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P233.1.0

Parameter	Result	Det. Limit	Units
ALPHA-BHC	BDL	0.05	ug/L
BETA-BHC	BDL	0.05	ug/L
DELTA-BHC	BDL	0.05	ug/L
GAMMA-BHC (LINDANE)	BDL	0.05	ug/L
HEPTACHLOR	BDL	0.05	ug/L
ALDRIN	BDL	0.05	ug/L
HEPTACHLOR EPOXIDE	BDL	0.05	ug/L
ENDOSULFAN I	BDL	0.05	ug/L
DIELDRIN	BDL	0.1	ug/L
4,4'-DDE	BDL	0.1	ug/L
ENDRIN	BDL	0.1	ug/L
ENDOSULFAN II	BDL	0.1	ug/L
4,4'-DDD	BDL	0.1	ug/L
ENDOSULFAN SULFATE	BDL	0.1	ug/L
4,4'-DDT	BDL	0.1	ug/L
METHOXYCHLOR	BDL	0.5	ug/L
ENDRIN ALDEHYDE	BDL	0.1	ug/L
ALPHA-CHLORDANE	BDL	0.5	ug/L
GAMMA-CHLORDANE	BDL	0.5	ug/L
CHLORDANE	BDL	0.5	ug/L
TOXAPHENE	BDL	1	ug/L
...			
SURROGATE RECOVERY			

DECACHLOROBIPHENYL (DCB)	25.9		% Rec

Matrix interference may mask low level analytes.

GC PESTICIDE SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

Analyst: K. VEST Analysis Date: 29-SEP-14 Instrument: PREP Test: P233.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	5		mL

CYANIDE, TOTAL (AUTOMATED) SW846-9012B NELAC:Y

Analyst: E. SKALA Analysis Date: 02-OCT-14 16:18 Instrument: AUTO-ANALYZER Test: G101.4.0

Prep: CYANIDE DISTILLATION SW846-9012B P101.4.0

Parameter	Result	Det. Limit	Units
CYANIDE	BDL	0.005	mg/L

CYANIDE DISTILLATION SW846-9012B

Analysis Date: 02-OCT-14 11:20 Instrument: PREP Test: P101.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	6		mL

Parameter	Result	Det. Limit	Units
FINAL VOLUME	6		mL

CHLORINATED HERBICIDES (2,4 D, SILVEX AND 2,4,5-T) SW846-8151A NELAC:Y

Analyst: B. WOOD Analysis Date: 29-SEP-14 17:52 Instrument: GC/ECD Test: O253.1.0

Prep: DIAZOMETHANE HERBICIDE DERIVATIZATION SW846-8151A P201.4.0

Parameter	Result	Det. Limit	Units
2,4-DICHLOROPHENOXYACETIC ACID	BDL	10	ug/L
SILVEX (2,4,5-TP)	BDL	1	ug/L
2,4,5-TRICHLOROPHENOXYACETIC ACID (2,4,5-T)	BDL	1	ug/L
...			
SURROGATE RECOVERY			

DCAA	107.5		% Rec

DIAZOMETHANE HERBICIDE DERIVATIZATION SW846-8151A

Analyst: T. DAHN Analysis Date: 29-SEP-14 Instrument: PREP Test: P201.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	10		mL

PCB AROCLORS BY GAS CHROMATOGRAPHY/ECD SW846-8082A NELAC:Y

Analyst: C. HIPSKIND Analysis Date: 29-SEP-14 14:40 Instrument: GC/ECD Test: O301.7.0

Prep: PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P230.1.0

Parameter	Result	Det. Limit	Units
PCB AROCLOR 1016	BDL	0.10	ug/L
PCB AROCLOR 1221	BDL	0.10	ug/L
PCB AROCLOR 1232	BDL	0.10	ug/L
PCB AROCLOR 1242	BDL	0.10	ug/L
PCB AROCLOR 1248	BDL	0.10	ug/L
PCB AROCLOR 1254	BDL	0.10	ug/L
PCB AROCLOR 1260	BDL	0.10	ug/L
...			
SURROGATE RECOVERY			

DECACHLOROBIPHENYL (DCB)	30.0		% Rec

PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

Analyst: K. VEST Analysis Date: 29-SEP-14 Instrument: PREP Test: P230.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	5		mL

SULFIDE, IODOMETRIC METHOD SM4500-S F 2000 NELAC:N

Analyst: S. MCNEAL Analysis Date: 29-SEP-14 07:30 Test: G110.1.0

Parameter	Result	Det. Limit	Units
SULFIDE	3.4	1.0	mg/L

ALKALINITY TOTAL (AUTOMATED) EPA 310.2 NELAC:N

Analyst: E. SKALA Analysis Date: 06-OCT-14 12:06 Instrument: AUTO-ANALYZER Test: G605.3.0

Parameter	Result	Det. Limit	Units
ALKALINITY	510	50	mg/L

1:5 Dilution.

ALKALINITY BICARBONATE (AUTOMATED) EPA 310.2 NELAC:N

Analyst: E. SKALA Analysis Date: 06-OCT-14 12:06 Instrument: AUTO-ANALYZER Test: G610.3.0

Parameter	Result	Det. Limit	Units
ALKALINITY, BICARBONATE	510	50	mg/L

1:5 Dilution.

ALKALINITY CARBONATE (AUTOMATED) EPA 310.2 NELAC:N

Analyst: E. SKALA Analysis Date: 06-OCT-14 12:06 Instrument: AUTO-ANALYZER Test: G611.3.0

Parameter	Result	Det. Limit	Units
ALKALINITY, CARBONATE	BDL	10	mg/L

POTASSIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 02-OCT-14 06:46 Instrument: ICP Test: M126.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
POTASSIUM	10000	100	ug/L

Sample Comments

* See Note for Parameter
BDL Below Detection Limit
MR Initial Calibration > 15 % RSD

Sample was received on ice at temperature 2.4 C.
Sample chain of custody number 1804343.

This Certificate shall not be reproduced, except in full, without the written approval of the lab. The sample results relate only to the analytes of interest tested or to the sample as received by the lab. Pace Analytical Services, INC. certifies that the test results indicated as NELAP (National Environmental Laboratory Accreditation Program) accredited (Yes for NELAP) meet all requirements of NELAP and Kansas (KDHE) unless otherwise explained or justified as to the the exact nature of the deviations.
KS ELAP / NELAP Accreditation # E-10177 Indiana SDWA C-49-01

Approved by: CHRISTINE SARKAN 13-OCT-14

Pace Analytical
Pace Analytical Services, Inc.

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
PACE ANALYTICAL SERVICES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	26-SEP-14	AA28623
	Completed 10-OCT-14	PO Number NEED PO
	Printed 15-OCT-14	Sampled 25-SEP-14 12:04

Report To	Bill To
JON WILKINSON HERST AND ASSOCIATES 4630 SOUTH HIGHWAY 94 NORTH OUTER ROAD ST. CHARLES, MO 63304	DAVE VASBINDER ALLIED WASTE SYSTEMS 13570 ST. CHARLES ROCK ROAD BRIDGETON, MO 63044

Sample Description

CLIENT ID: PZ-210-SS
MATRIX TYPE: NON-SPECIFIC WATER
SUBMITTER: 8945 - MO-ALLIED-BRIDGETON LANDFILL
PROJECT NAME: GROUNDWATER - BRIDGETON LANDFILL
DATA PACKAGE #: 66865
LOCATION: BRIDGETON LANDFILL
DESCRIPTION: APPENDIX I/II TESTING - ADDITIONAL VOLS/NO INORG

GROUNDWATER MONITORING WELL DATA SAS

Analysis Date: 25-SEP-14 12:04 Instrument: FIELD Test: G600.0.0

Parameter	Result	Det. Limit	Units
TOTAL WELL DEPTH	101.50		ft
INITIAL WATER LEVEL	24.02		ft
ELEVATION OF GROUNDWATER SURFACE	462.88		Feet/MSL

FIELD TEMPERATURE SM2550 B 2000 NELAC:N

Analysis Date: 25-SEP-14 12:04 Instrument: FIELD Test: G603.1.0

Parameter	Result	Det. Limit	Units
TEMPERATURE	16.3		Degrees C

FIELD PH (AQUEOUS) SW846-9040C NELAC:Y

Analysis Date: 25-SEP-14 12:04 Instrument: FIELD Test: G607.0.0

Parameter	Result	Det. Limit	Units
PH	7.06	0.1	Std. Units

FIELD SPECIFIC CONDUCTANCE SW846-9050A NELAC:Y

Analysis Date: 25-SEP-14 12:04 Instrument: FIELD Test: G604.0.0

Parameter	Result	Det. Limit	Units
CONDUCTIVITY	807	1.0	umHOS/cm

FIELD TURBIDITY EPA 180.1 NELAC:Y

Analysis Date: 25-SEP-14 12:04 Instrument: FIELD Test: G602.0.0

Parameter	Result	Det. Limit	Units
TURBIDITY	7.87		ntu

FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

Analyst: K. KAMARA Analysis Date: 01-OCT-14 09:00 Instrument: PREP Test: P130.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

Analyst: K. KAMARA Analysis Date: 01-OCT-14 09:00 Instrument: PREP Test: P129.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

BARIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 02-OCT-14 06:26 Instrument: ICP Test: M104.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BARIUM	83	10	ug/L

BERYLLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 04-OCT-14 01:35 Instrument: ICP/MS Test: V105.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	2.0	ug/L

1:5 Dilution.

CHROMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 04-OCT-14 01:35 Instrument: ICP/MS Test: V110.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	5.0	ug/L

1:5 Dilution.

COBALT ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 02-OCT-14 06:26 Instrument: ICP Test: M111.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COBALT	BDL	5.0	ug/L

COPPER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 04-OCT-14 01:35 Instrument: ICP/MS Test: V112.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
COPPER	BDL	5.0	ug/L

1:5 Dilution.

NICKEL ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 02-OCT-14 06:26 Instrument: ICP Test: M122.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
NICKEL	BDL	10	ug/L

SILVER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 04-OCT-14 01:35 Instrument: ICP/MS Test: V130.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	5.0	ug/L

1:5 Dilution.

THALLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 04-OCT-14 01:35 Instrument: ICP/MS Test: V134.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	2.0	ug/L

1:5 Dilution.

TIN ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 02-OCT-14 06:26 Instrument: ICP Test: M135.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
TIN	BDL	50	ug/L

VANADIUM ICP SW846-6010B NELAC:N

Analyst: J. KRAMER Analysis Date: 02-OCT-14 06:26 Instrument: ICP Test: M138.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	10	ug/L

ZINC ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 02-OCT-14 06:26 Instrument: ICP Test: M139.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ZINC	BDL	20	ug/L

ARSENIC ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 04-OCT-14 01:35 Instrument: ICP/MS Test: V103.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	5.0	ug/L

1:5 Dilution.

CADMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 04-OCT-14 01:35 Instrument: ICP/MS Test: V108.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.20	ug/L

1:5 Dilution.

LEAD ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 04-OCT-14 01:35 Instrument: ICP/MS Test: V116.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
LEAD	BDL	5.0	ug/L

1:5 Dilution.

ANTIMONY ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 04-OCT-14 01:35 Instrument: ICP/MS Test: V102.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	5.0	ug/L

1:5 Dilution.

SELENIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 04-OCT-14 01:35 Instrument: ICP/MS Test: V128.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	5.0	ug/L

1:5 Dilution.

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 08:00 Instrument: PREP Test: P131.6.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	40		mL
FINAL VOLUME	40		mL

MERCURY CVAA SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 21:39 Instrument: CVAA Test: M120.1.0

Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A P131.6.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.20	ug/L

APPENDIX IX VOLATILE ORGANICS, CAPILLARY COLUMN TECHNIQUE SW846-8260B NELAC:Y

Analyst: H. WILLIAMS Analysis Date: 28-SEP-14 18:35 Instrument: GC/MS VOA Test: O509.3.0

Parameter	Result	Det. Limit	Units
ACETONE	BDL	10	ug/L
ACETONITRILE	BDL	50	ug/L
ACROLEIN	BDL	50	ug/L
ACRYLONITRILE	BDL	100	ug/L
BENZENE	10	5.0	ug/L
BROMODICHLOROMETHANE	BDL	5.0	ug/L
BROMOCHLOROMETHANE	BDL	5.0	ug/L
BROMOFORM	BDL	5.0	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	10	ug/L
CARBON TETRACHLORIDE	BDL	5.0	ug/L
CHLOROBENZENE	BDL	5.0	ug/L
CHLORODIBROMOMETHANE	BDL	5.0	ug/L
1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	BDL	5.0	ug/L
1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	BDL	5.0	ug/L
1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	BDL	5.0	ug/L
CHLOROETHANE	BDL	10	ug/L
2-CHLORO-1,3-BUTADIENE (CHLOROPRENE)	BDL	5.0	ug/L
CHLOROFORM	BDL	5.0	ug/L
CHLOROMETHANE	BDL	10	ug/L
1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	BDL	5.0	ug/L
3-CHLOROPROPENE (ALLYL CHLORIDE)	BDL	10	ug/L
1,2-DIBROMOETHANE (EDB)	BDL	5.0	ug/L
DIBROMOMETHANE	BDL	10	ug/L
TRANS-1,4-DICHLORO-2-BUTENE	BDL	10	ug/L
DICHLORODIFLUOROMETHANE	BDL	10	ug/L
1,1-DICHLOROETHANE	BDL	5.0	ug/L
1,2-DICHLOROETHANE	BDL	5.0	ug/L
CIS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
TRANS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
1,1-DICHLOROETHENE	BDL	5.0	ug/L
1,2-DICHLOROPROPANE	BDL	5.0	ug/L
1,3-DICHLOROPROPANE	BDL	5.0	ug/L
1,1-DICHLOROPROPENE	BDL	5.0	ug/L
2,2-DICHLOROPROPANE	BDL	5.0	ug/L
DICHLOROMETHANE (METHYLENE CHLORIDE)	BDL	5.0	ug/L

Parameter	Result	Det. Limit	Units
CIS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
ETHYL BENZENE	BDL	5.0	ug/L
ETHYL CYANIDE (PROPIONITRILE)	BDL	5.0	ug/L
ETHYL METHACRYLATE	BDL	5.0	ug/L
2-HEXANONE	BDL	10	ug/L
IODOMETHANE	BDL	5.0	ug/L
ISOBUTANOL (ISOBUTYL ALCOHOL)	BDL	1000	ug/L
METHYL ISOBUTYL KETONE	BDL	10	ug/L
METHACRYLONITRILE	BDL	20	ug/L
METHYL ETHYL KETONE	BDL	10	ug/L
METHYL METHACRYLATE	BDL	5.0	ug/L
STYRENE	BDL	5.0	ug/L
1,1,1,2-TETRACHLOROETHANE	BDL	5.0	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5.0	ug/L
TETRACHLOROETHENE	BDL	5.0	ug/L
TOLUENE	BDL	5.0	ug/L
1,1,1-TRICHLOROETHANE	BDL	5.0	ug/L
1,1,2-TRICHLOROETHANE	BDL	5.0	ug/L
TRICHLOROETHENE	BDL	5.0	ug/L
TRICHLOROFLUOROMETHANE	BDL	10	ug/L
1,2,3-TRICHLOROPROPANE	BDL	5.0	ug/L
VINYL ACETATE	BDL	10	ug/L
VINYL CHLORIDE	BDL	2.0	ug/L
XYLENES (O/M/P-XYLENE)	BDL	5.0	ug/L
METHYL-T-BUTYL ETHER (MTBE)	BDL	10	ug/L
1,2,4-TRIMETHYLBENZENE	BDL	5.0	ug/L
1,3,5-TRIMETHYLBENZENE	BDL	5.0	ug/L
ISOPROPYLBENZENE (CUMENE)	BDL	10	ug/L
TETRAHYDROFURAN	27	25	ug/L
4-ISOPROPYLTOLUENE (P-ISOPROPYLTOLUENE)	BDL	10	ug/L
CHLOROBUTANE	*		ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	103		% Rec
TOLUENE-D8	91		% Rec
4-BROMOFLUOROBENZENE	92		% Rec

Note: * Compound searched for but not detected. Standard was unavailable to determine retention time and detection limit.

Prep Method SW846-5030B Purge and Trap

APPENDIX IX SEMIVOLATILE ORGANICS SW846-8270C NELAC:Y

Analyst: T. PINCKERT Analysis Date: 02-OCT-14 22:51 Instrument: GC/MS SVOA Test: O508.3.0

Prep: GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P233.4.0

Parameter	Result	Det. Limit	Units
ACENAPHTHENE	BDL	10	ug/L
ACENAPHTHYLENE	BDL	10	ug/L
ACETOPHENONE	BDL	10	ug/L
2-ACETYLAMINOFLUORENE	BDL	10	ug/L
4-AMINOBIPHENYL	BDL	10	ug/L
ANTHRACENE	BDL	10	ug/L
BENZO(A)ANTHRACENE	BDL	10	ug/L
BENZO(B)FLUORANTHENE	BDL	10	ug/L
BENZO(K)FLUORANTHENE	BDL	10	ug/L
BENZO(G,H,I)PERYLENE	BDL	10	ug/L
BENZO(A)PYRENE	BDL	10	ug/L
BENZYL ALCOHOL	BDL	10	ug/L
BIS(2-CHLOROETHOXY)METHANE	BDL	10	ug/L
BIS(2-CHLOROETHYL)ETHER	BDL	10	ug/L
BIS(2-CHLOROISOPROPYL)ETHER	BDL	10	ug/L
BIS(2-ETHYLHEXYL)PHTHALATE	BDL	10	ug/L
4-BROMODIPHENYL ETHER	BDL	10	ug/L
(BENZYLBUTYLPHTHALATE) BUTYLBENZYLPHTHALATE	BDL	10	ug/L
4-CHLOROANILINE	BDL	10	ug/L
CHLOROBENZILATE	BDL	10	ug/L
2-CHLORONAPHTHALENE	BDL	10	ug/L
4-CHLOROPHENYL-PHENYLETHER	BDL	10	ug/L
CHRYSENE	BDL	10	ug/L
DIALLATE	BDL	10	ug/L
DIBENZ(A,H)ANTHRACENE	BDL	10	ug/L
DIBENZOFURAN	BDL	10	ug/L
DI-N-BUTYLPHTHALATE	BDL	10	ug/L
3,3'-DICHLOROBENZIDINE	BDL	20	ug/L
DIETHYLPHTHALATE	BDL	10	ug/L
DIMETHOATE	BDL	10	ug/L
4-(DIMETHYLAMINO)AZOBENZENE	BDL	10	ug/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	BDL	20	ug/L
3,3'-DIMETHYLBENZIDINE	BDL MR	20	ug/L
DIMETHYLPHTHALATE	BDL	10	ug/L
1,3-DINITROBENZENE (M-DINITROBENZENE)	BDL	50	ug/L
2,4-DINITROTOLUENE	BDL	10	ug/L
2,6-DINITROTOLUENE	BDL	10	ug/L
DI-N-OCTYLPHTHALATE	BDL	10	ug/L
DI-N-PROPYLNITROSOAMINE	BDL	50	ug/L
ETHYL METHANESULFONATE	BDL	10	ug/L
FLUORANTHENE	BDL	10	ug/L

Parameter	Result	Det. Limit	Units
FLUORENE	BDL	10	ug/L
HEXACHLOROBENZENE	BDL	10	ug/L
HEXACHLOROBUTADIENE	BDL	10	ug/L
HEXACHLOROCYCLOPENTADIENE	BDL	10	ug/L
HEXACHLOROETHANE	BDL	10	ug/L
HEXACHLOROPROPENE	BDL	10	ug/L
INDENO(1,2,3-CD)PYRENE	BDL	10	ug/L
2-METHYLNAPHTHALENE	BDL	10	ug/L
METHAPYRILENE	BDL MR	10	ug/L
3-METHYLCHOLANTHRENE	BDL	10	ug/L
METHYL METHANESULFONATE	BDL	10	ug/L
NAPHTHALENE	BDL	10	ug/L
1,4-NAPHTHOQUINONE	BDL	50	ug/L
1-NAPHTHYLAMINE	BDL	50	ug/L
2-NAPHTHYLAMINE	BDL	10	ug/L
3-NITROANILINE (M-NITROANILINE)	BDL	50	ug/L
2-NITROANILINE (O-NITROANILINE)	BDL	50	ug/L
4-NITROANILINE (P-NITROANILINE)	BDL	50	ug/L
NITROBENZENE	BDL	10	ug/L
N-NITROSODI-N-BUTYLAMINE	BDL	10	ug/L
N-NITROSODIETHYLAMINE	BDL	10	ug/L
N-NITROSODIMETHYLAMINE	BDL	10	ug/L
N-NITROSODIPHENYLAMINE	BDL	10	ug/L
N-NITROSOMETHYLETHYLAMINE	BDL	10	ug/L
N-NITROSOPIPERIDINE	BDL	10	ug/L
N-NITROSOPYRROLIDINE	BDL	10	ug/L
5-NITRO-O-TOLUIDINE	BDL	10	ug/L
PENTACHLOROBENZENE	BDL	10	ug/L
PENTACHLORONITROBENZENE	BDL	10	ug/L
PHENACETIN	BDL	10	ug/L
PHENANTHRENE	BDL	10	ug/L
PYRENE	BDL	10	ug/L
1,2,4,5-TETRACHLOROBENZENE	BDL	10	ug/L
1,2,4-TRICHLOROBENZENE	BDL	10	ug/L
THIONAZIN	BDL	10	ug/L
O,O,O-TRIETHYL PHOSPHOROTHIOATE	BDL	10	ug/L
SYM-(1,3,5)-TRINITROBENZENE	BDL	20	ug/L
O-TOLUIDINE	BDL	10	ug/L
P-PHENYLENEDIAMINE	BDL	20	ug/L
2-SEC-BUTYL-4,6-DINITROPHENOL (DINOSEB)	BDL	10	ug/L
DIPHENYLAMINE	BDL	10	ug/L
4-CHLORO-3-METHYLPHENOL	BDL	10	ug/L
2-CHLOROPHENOL	BDL	10	ug/L
2-METHYLPHENOL (O-CRESOL)	BDL	10	ug/L

Parameter	Result	Det. Limit	Units
4-METHYLPHENOL (P-CRESOL)	BDL	10	ug/L
2,4-DICHLOROPHENOL	BDL	10	ug/L
2,6-DICHLOROPHENOL	BDL	10	ug/L
2,4-DIMETHYLPHENOL	BDL	10	ug/L
4,6-DINITRO-O-CRESOL	BDL	50	ug/L
2,4-DINITROPHENOL	BDL	50	ug/L
3-METHYLPHENOL (M-CRESOL)	BDL	10	ug/L
2-NITROPHENOL	BDL	10	ug/L
4-NITROPHENOL	BDL	50	ug/L
PENTACHLOROPHENOL	BDL	50	ug/L
PHENOL	BDL	10	ug/L
2,3,4,6-TETRACHLOROPHENOL	BDL	10	ug/L
2,4,5-TRICHLOROPHENOL	BDL	10	ug/L
2,4,6-TRICHLOROPHENOL	BDL	10	ug/L
DISULFOTON	BDL	10	ug/L
FAMPHUR	BDL MR	200	ug/L
ISODRIN	BDL	10	ug/L
ISOPHORONE	BDL	10	ug/L
ISOSAFROLE	BDL	10	ug/L
KEPONE	BDL MR	200	ug/L
PARATHION	BDL	10	ug/L
METHYL PARATHION	BDL	10	ug/L
PHORATE	BDL	10	ug/L
PRONAMIDE	BDL	10	ug/L
SAFROLE	BDL	10	ug/L
...			
SURROGATE RECOVERY			

2-FLUOROPHENOL	54		% Rec
PHENOL-D5	34		% Rec
NITROBENZENE-D5	95		% Rec
2-FLUOROBIPHENYL	90		% Rec
2,4,6-TRIBROMOPHENOL	102		% Rec
TERPHENYL-D14	85		% Rec

GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

Analyst: J. MINNIEAR, II | Analysis Date: 01-OCT-14 | Instrument: PREP | Test: P233.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	1		mL

ORGANOCHLORINE PESTICIDES BY GC:ECD SW846-8081 NELAC:Y

Analyst: T. WATSON | Analysis Date: 30-SEP-14 17:36 | Instrument: GC/ECD | Test: O164.1.0

Prep: GC PESTICIDE SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P233.1.0

Parameter	Result	Det. Limit	Units
ALPHA-BHC	BDL	0.05	ug/L
BETA-BHC	BDL	0.05	ug/L
DELTA-BHC	BDL	0.05	ug/L
GAMMA-BHC (LINDANE)	BDL	0.05	ug/L
HEPTACHLOR	BDL	0.05	ug/L
ALDRIN	BDL	0.05	ug/L
HEPTACHLOR EPOXIDE	BDL	0.05	ug/L
ENDOSULFAN I	BDL	0.05	ug/L
DIELDRIN	BDL	0.1	ug/L
4,4'-DDE	BDL	0.1	ug/L
ENDRIN	BDL	0.1	ug/L
ENDOSULFAN II	BDL	0.1	ug/L
4,4'-DDD	BDL	0.1	ug/L
ENDOSULFAN SULFATE	BDL	0.1	ug/L
4,4'-DDT	BDL	0.1	ug/L
METHOXYCHLOR	BDL	0.5	ug/L
ENDRIN ALDEHYDE	BDL	0.1	ug/L
ALPHA-CHLORDANE	BDL	0.5	ug/L
GAMMA-CHLORDANE	BDL	0.5	ug/L
CHLORDANE	BDL	0.5	ug/L
TOXAPHENE	BDL	1	ug/L
...			
SURROGATE RECOVERY			

DECACHLOROBIPHENYL (DCB)	76.3		% Rec

Matrix interference may mask low level analytes.

GC PESTICIDE SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

Analyst: K. VEST | Analysis Date: 29-SEP-14 | Instrument: PREP | Test: P233.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	5		mL

CYANIDE, TOTAL (AUTOMATED) SW846-9012B NELAC:Y

Analyst: E. SKALA | Analysis Date: 02-OCT-14 16:21 | Instrument: AUTO-ANALYZER | Test: G101.4.0

Prep: CYANIDE DISTILLATION SW846-9012B P101.4.0

Parameter	Result	Det. Limit	Units
CYANIDE	BDL	0.005	mg/L

CYANIDE DISTILLATION SW846-9012B

Analysis Date: 02-OCT-14 11:20 | Instrument: PREP | Test: P101.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	6		mL

Parameter	Result	Det. Limit	Units
FINAL VOLUME	6		mL

CHLORINATED HERBICIDES (2,4 D, SILVEX AND 2,4,5-T) SW846-8151A NELAC:Y

Analyst: B. WOOD Analysis Date: 29-SEP-14 17:52 Instrument: GC/ECD Test: O253.1.0

Prep: DIAZOMETHANE HERBICIDE DERIVATIZATION SW846-8151A P201.4.0

Parameter	Result	Det. Limit	Units
2,4-DICHLOROPHENOXYACETIC ACID	BDL	10	ug/L
SILVEX (2,4,5-TP)	BDL	1	ug/L
2,4,5-TRICHLOROPHENOXYACETIC ACID (2,4,5-T)	BDL	1	ug/L
...			
SURROGATE RECOVERY			

DCAA	129.8		% Rec

DIAZOMETHANE HERBICIDE DERIVATIZATION SW846-8151A

Analyst: T. DAHN Analysis Date: 29-SEP-14 Instrument: PREP Test: P201.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	10		mL

PCB AROCLORS BY GAS CHROMATOGRAPHY/ECD SW846-8082A NELAC:Y

Analyst: C. HIPSKIND Analysis Date: 29-SEP-14 14:40 Instrument: GC/ECD Test: O301.7.0

Prep: PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P230.1.0

Parameter	Result	Det. Limit	Units
PCB AROCLOR 1016	BDL	0.10	ug/L
PCB AROCLOR 1221	BDL	0.10	ug/L
PCB AROCLOR 1232	BDL	0.10	ug/L
PCB AROCLOR 1242	BDL	0.10	ug/L
PCB AROCLOR 1248	BDL	0.10	ug/L
PCB AROCLOR 1254	BDL	0.10	ug/L
PCB AROCLOR 1260	BDL	0.10	ug/L
...			
SURROGATE RECOVERY			

DECACHLOROBIPHENYL (DCB)	86.0		% Rec

PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

Analyst: K. VEST Analysis Date: 29-SEP-14 Instrument: PREP Test: P230.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	5		mL

SULFIDE, IODOMETRIC METHOD SM4500-S F 2000 NELAC:N

Analyst: S. MCNEAL Analysis Date: 29-SEP-14 07:30 Test: G110.1.0

Parameter	Result	Det. Limit	Units
SULFIDE	BDL	1.0	mg/L

ALKALINITY TOTAL (AUTOMATED) EPA 310.2 NELAC:N

Analyst: E. SKALA Analysis Date: 06-OCT-14 12:07 Instrument: AUTO-ANALYZER Test: G605.3.0

Parameter	Result	Det. Limit	Units
ALKALINITY	420	50	mg/L

1:5 Dilution.

ALKALINITY BICARBONATE (AUTOMATED) EPA 310.2 NELAC:N

Analyst: E. SKALA Analysis Date: 06-OCT-14 12:07 Instrument: AUTO-ANALYZER Test: G610.3.0

Parameter	Result	Det. Limit	Units
ALKALINITY, BICARBONATE	420	50	mg/L

1:5 Dilution.

ALKALINITY CARBONATE (AUTOMATED) EPA 310.2 NELAC:N

Analyst: E. SKALA Analysis Date: 06-OCT-14 12:07 Instrument: AUTO-ANALYZER Test: G611.3.0

Parameter	Result	Det. Limit	Units
ALKALINITY, CARBONATE	BDL	10	mg/L

POTASSIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 02-OCT-14 06:26 Instrument: ICP Test: M126.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
POTASSIUM	2600	100	ug/L

Sample Comments

* See Note for Parameter
BDL Below Detection Limit
MR Initial Calibration > 15 % RSD

Sample was received on ice at temperature 2.4 C.
Sample chain of custody number 1804343.

This Certificate shall not be reproduced, except in full, without the written approval of the lab. The sample results relate only to the analytes of interest tested or to the sample as received by the lab. Pace Analytical Services, INC. certifies that the test results indicated as NELAP (National Environmental Laboratory Accreditation Program) accredited (Yes for NELAP) meet all requirements of NELAP and Kansas (KDHE) unless otherwise explained or justified as to the the exact nature of the deviations.
KS ELAP / NELAP Accreditation # E-10177 Indiana SDWA C-49-01

Approved by: CHRISTINE SARKAN 13-OCT-14

Pace Analytical
Pace Analytical Services, Inc.

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
PACE ANALYTICAL SERVICES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	26-SEP-14	AA28624
	Completed 10-OCT-14	PO Number NEED PO
	Printed 15-OCT-14	Sampled 25-SEP-14

Report To	Bill To
JON WILKINSON HERST AND ASSOCIATES 4630 SOUTH HIGHWAY 94 NORTH OUTER ROAD ST. CHARLES, MO 63304	DAVE VASBINDER ALLIED WASTE SYSTEMS 13570 ST. CHARLES ROCK ROAD BRIDGETON, MO 63044

Sample Description

CLIENT ID: TRIP BLANK
MATRIX TYPE: NON-SPECIFIC WATER
SUBMITTER: 8945 - MO-ALLIED-BRIDGETON LANDFILL
PROJECT NAME: GROUNDWATER - BRIDGETON LANDFILL
DATA PACKAGE #: 66865
LOCATION: BRIDGETON LANDFILL
DESCRIPTION: APPENDIX I/II TESTING - ADDITIONAL VOLS

APPENDIX IX VOLATILE ORGANICS, CAPILLARY COLUMN TECHNIQUE SW846-8260B NELAC:Y

Analyst: H. WILLIAMS Analysis Date: 28-SEP-14 19:01 Instrument: GC/MS VOA Test: O509.3.0

Parameter	Result	Det. Limit	Units
ACETONE	BDL	10	ug/L
ACETONITRILE	BDL	50	ug/L
ACROLEIN	BDL	50	ug/L
ACRYLONITRILE	BDL	100	ug/L
BENZENE	BDL	5.0	ug/L
BROMODICHLOROMETHANE	BDL	5.0	ug/L
BROMOCHLOROMETHANE	BDL	5.0	ug/L
BROMOFORM	BDL	5.0	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	10	ug/L
CARBON TETRACHLORIDE	BDL	5.0	ug/L
CHLOROBENZENE	BDL	5.0	ug/L
CHLORODIBROMOMETHANE	BDL	5.0	ug/L
1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	BDL	5.0	ug/L
1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	BDL	5.0	ug/L
1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	BDL	5.0	ug/L
CHLOROETHANE	BDL	10	ug/L
2-CHLORO-1,3-BUTADIENE (CHLOROPRENE)	BDL	5.0	ug/L
CHLOROFORM	BDL	5.0	ug/L
CHLOROMETHANE	BDL	10	ug/L
1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	BDL	5.0	ug/L

Sample ID: AA28624 TRIP BLANK

Parameter	Result	Det. Limit	Units
3-CHLOROPROPENE (ALLYL CHLORIDE)	BDL	10	ug/L
1,2-DIBROMOETHANE (EDB)	BDL	5.0	ug/L
DIBROMOMETHANE	BDL	10	ug/L
TRANS-1,4-DICHLORO-2-BUTENE	BDL	10	ug/L
DICHLORODIFLUOROMETHANE	BDL	10	ug/L
1,1-DICHLOROETHANE	BDL	5.0	ug/L
1,2-DICHLOROETHANE	BDL	5.0	ug/L
CIS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
TRANS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
1,1-DICHLOROETHENE	BDL	5.0	ug/L
1,2-DICHLOROPROPANE	BDL	5.0	ug/L
1,3-DICHLOROPROPANE	BDL	5.0	ug/L
1,1-DICHLOROPROPENE	BDL	5.0	ug/L
2,2-DICHLOROPROPANE	BDL	5.0	ug/L
DICHLOROMETHANE (METHYLENE CHLORIDE)	BDL	5.0	ug/L
CIS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
ETHYL BENZENE	BDL	5.0	ug/L
ETHYL CYANIDE (PROPIONITRILE)	BDL	5.0	ug/L
ETHYL METHACRYLATE	BDL	5.0	ug/L
2-HEXANONE	BDL	10	ug/L
IODOMETHANE	BDL	5.0	ug/L
ISOBUTANOL (ISOBUTYL ALCOHOL)	BDL	1000	ug/L
METHYL ISOBUTYL KETONE	BDL	10	ug/L
METHACRYLONITRILE	BDL	20	ug/L
METHYL ETHYL KETONE	BDL	10	ug/L
METHYL METHACRYLATE	BDL	5.0	ug/L
STYRENE	BDL	5.0	ug/L
1,1,1,2-TETRACHLOROETHANE	BDL	5.0	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5.0	ug/L
TETRACHLOROETHENE	BDL	5.0	ug/L
TOLUENE	BDL	5.0	ug/L
1,1,1-TRICHLOROETHANE	BDL	5.0	ug/L
1,1,2-TRICHLOROETHANE	BDL	5.0	ug/L
TRICHLOROETHENE	BDL	5.0	ug/L
TRICHLOROFLUOROMETHANE	BDL	10	ug/L
1,2,3-TRICHLOROPROPANE	BDL	5.0	ug/L
VINYL ACETATE	BDL	10	ug/L
VINYL CHLORIDE	BDL	2.0	ug/L
XYLENES (O/M/P-XYLENE)	BDL	5.0	ug/L
METHYL-T-BUTYL ETHER (MTBE)	BDL	10	ug/L
1,2,4-TRIMETHYLBENZENE	BDL	5.0	ug/L
1,3,5-TRIMETHYLBENZENE	BDL	5.0	ug/L
ISOPROPYLBENZENE (CUMENE)	BDL	10	ug/L

Sample ID: AA28624 TRIP BLANK

Parameter	Result	Det. Limit	Units
TETRAHYDROFURAN	BDL	25	ug/L
4-ISOPROPYLTOLUENE (P-ISOPROPYLTOLUENE)	BDL	10	ug/L
CHLOROBUTANE	*		ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	113		% Rec
TOLUENE-D8	91		% Rec
4-BROMOFLUOROBENZENE	91		% Rec

Note: * Compound searched for but not detected. Standard was unavailable to determine retention time and detection limit.

Prep Method SW846-5030B Purge and Trap

Sample Comments

* See Note for Parameter
BDL Below Detection Limit

Sample was received on ice at temperature 2.4 C.
Sample chain of custody number 1804344.

This Certificate shall not be reproduced, except in full, without the written approval of the lab. The sample results relate only to the analytes of interest tested or to the sample as received by the lab. Pace Analytical Services, INC. certifies that the test results indicated as NELAP (National Environmental Laboratory Accreditation Program) accredited (Yes for NELAP) meet all requirements of NELAP and Kansas (KDHE) unless otherwise explained or justified as to the the exact nature of the deviations.
KS ELAP / NELAP Accreditation # E-10177 Indiana SDWA C-49-01

Approved by: CHRISTINE SARKAN 13-OCT-14

297

01108488

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 1 of 3

1737795

Section B Required Project Information:

Company: Bridgeton Landfill

Address:

Email To:

Phone: Fax:

Requested Due Date/TAT:

Report To: Hest + Associates, Inc.

Copy To:

Purchase Order No.:

Project Name: Bridgeton 32294 GW

Project Number:

Section C Invoice Information:

Attention:

Company Name: Bridgeton Landfill

Address:

Pace Quote Reference:

Pace Project Manager: Chris Bayle

Pace Profile #:

REGULATORY AGENCY

NPDES X GROUND WATER DRINKING WATER

UST RCRA OTHER

Site Location STATE: MO

Requested Analysis Filtered (Y/N)

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION °C	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Y/N	Analysis Test: Z139500	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	PZ-201A-SS	WT	G			9/23/14	1313	18	7	1	1	1	4						X	N	AA28600
2	PZ-100-SS	WT	G			"	1344	17	7	1	1	1	4						X	A	601
3	PZ-100-SD	WT	G				1409	17	7	1	1	1	4						X		602
4	PZ-115-SS	WT	G				1438	16	7	1	1	1	4						X		603
5	PZ-114-AS	WT	G				1515	16	7	1	1	1	4						X		604
6	PZ-110-SS	WT	G			9/23/14	1545	17	7	1	1	1	4						X		605
7	PZ-106-SD	WT	G			9/24/14	0942	22	7	5	1	1							X		*VOCs unpreserved - 7day hold 606
8	PZ-106-SS	WT	G			"	1008	22	7	1	1	1	4						X		AA28607
9	PZ-105-SS	WT	G				1044	18	7	1	1	1	4						X		608
10	PZ-105-SS DUP	WT	G				1044	18	7	1	1	1	4						X		609
11	PZ-205-SS	WT	G				1123	19	7	1	1	1	4						X		610
12	PZ-109-SS	WT	G			9/24/14	1149	21	7	1	1	1	4						X	N	611

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
	Hest + Assoc	9/25/14	1530	Jeff Express	9/25/14	1530	
					9/26/14	0800	2.4 / Y / Y / Y

Temp in °C; Received on Ice (Y/N); Custody Sealed Cooler (Y/N); Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Wilkinson

SIGNATURE of SAMPLER:

DATE Signed (MM/DD/YY): 09/25/14

ORIGINAL

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Sample Receiving Check Sheet

COC ID: 0105488

	Sulfuric plastic <2	Sulfuric Diss Plastic<2	Sulfuric Jars <2	Nitric plastic <2	Nitric Diss Plastic <2	NaOH/ZnAOC <12	NaOH plastic >12	preservative added?	preservative solution	Residual Cl2 present Y/N	Headspace Y/N	Sample is UNP or other than aqueous	HCl preserved Containers*	Comments
Line 1 on COC	2			2									X	
Line 2 on COC	2			2									X	
Line 3 on COC	2			2									X	
Line 4 on COC	2			2									X	
Line 5 on COC	2			2									X	
Line 6 on COC	2			2									X	
Line 7 on COC	2			2									X	
Line 8 on COC	2			2									X	
Line 9 on COC	2			2									X	
Line 10 on COC	2			2									X	
Line 11 on COC	2			2									X	
Line 12 on COC	2			2									X	
Line 13 on COC														
Line 14 on COC														
Line 15 on COC														
Line 16 on COC														
Line 17 on COC														
Line 18 on COC														
Line 19 on COC														
Line 20 on COC														
Line 21 on COC														
Line 22 on COC														
Line 23 on COC														
Line 24 on COC														
Line 25 on COC														

Aqueous samples: For each sample and container type, check the box if pH is acceptable. If pH is not acceptable for any sample container then record the pH in the box. If approved by the project chemist then add acid or base to the sample to achieve the correct pH. Add up to two times the volume initially added to the sample container. Record pH after the addition of this preservative.

Preservative sizes for addition:

120ml NaOH	1 mL
500ml H2SO4	2 mL
1000ml H2SO4	4 mL
500ml HNO3	2 mL
1000ml HNO3	4 mL

Drop Off FedEx UPS Courier: STAT

Tracking #

Checked by:

*pH of HCL preserved containers checked by analysts

Comments:

299

01108489

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

Page: 2 of 3

1804343

Section B Required Project Information:

Company: Bridgeton Landfill
Address:
Email To:
Phone: Fax:
Requested Due Date/TAT:

Report To: Hart + Associates, Inc.
Copy To:
Purchase Order No.:
Project Name: Bridgeton 3Q2014 GW
Project Number:

Section C Invoice Information:

Attention:
Company Name: Bridgeton Landfill
Address:
Pace Quote Reference:
Pace Project Manager: Chris Boyle
Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☒ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: MO

Section D Required Client Information

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Matrix Codes (MATRIX / CODE): Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Tissue TS; Other OT

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE	COLLECTED COMPOSITE START DATE	COMPOSITE START TIME	COMPOSITE END/GRAB DATE	COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION °C	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test Y/N	Z139520	Z161364	Z161387	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	PZ-111-SD	WT	G			9/24/14	1216	20	7	1	1	1	4						X			N	AA28612
2	FB@PZ-104-SD	WT	G			"	1310	N/A	17	9	1	1	4	2					X			A	613
3	PZ-104-SD	WT	G				1340	20	17	9	1	1	4	2					X				614
4	PZ-104-SD DUP	WT	G				1340	20	17	9	1	1	4	2					X				615
5	PZ-104-SS	WT	G				1406	20	17	9	1	1	4	2					X				616
6	PZ-104-KS	WT	G			9/24/14	1449	22	15	8		1	4	2						X			617
7	PZ-209-SD	WT	G			9/25/14	0911	15	15	8		1	4	2						X			618
8	PZ-209-SS	WT	G			"	0932	15	15	8		1	4	2						X			619
9	PZ-211-SD	WT	G				1021	21	15	8		1	4	2						X			620
10	PZ-211-SS	WT	G				1049	16	15	8		1	4	2						X			621
11	PZ-210-SD	WT	G				1144	16	15	8		1	4	2						X			622
12	PZ-210-SS	WT	G			9/25/14	1204	16	15	8		1	4	2						X			623

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
	[signature] / Hart+Assoc	9/25/14	1530	Fed Express	9/25/14	1530				
				[signature]	9/26/14	0800	2.4	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathon Wilkinson

SIGNATURE of SAMPLER: [signature] DATE Signed (MM/DD/YY): 09/25/14

Temp in °C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

ORIGINAL

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

Sample Receiving Check Sheet

COC ID: 07608489

	Sulfuric plastic <2	Sulfuric Diss Plastic<2	Sulfuric glass <2	Nitric plastic <2	Nitric Diss Plastic <2	NaOH/ZnAOC <12	NaOH plastic >12	preservative added?	pH after addition	Residual C12 present Y/N	Headspace >1/4"	Sample is UNP or other than aqueous	HCL Preserved Containers*	Comments
Line 1 on COC	2			2									X	
Line 2 on COC	2			2		12	12						X	
Line 3 on COC	2			2		12	12						X	
Line 4 on COC	2			2		12	12						X	
Line 5 on COC	2			2		12	12						X	
Line 6 on COC				2		12	12						X	
Line 7 on COC				2		12	12						X	
Line 8 on COC				2		12	12						X	
Line 9 on COC				2		12	12						X	
Line 10 on COC				2		12	12						X	
Line 11 on COC				2		12	12						X	
Line 12 on COC				2		12	12						X	
Line 13 on COC														
Line 14 on COC														
Line 15 on COC														
Line 16 on COC														
Line 17 on COC														
Line 18 on COC														
Line 19 on COC														
Line 20 on COC														
Line 21 on COC														
Line 22 on COC														
Line 23 on COC														
Line 24 on COC														
Line 25 on COC														

Aqueous samples: For each sample and container type, check the box if pH is acceptable. If pH is not acceptable for any sample container then record the pH in the box. If approved by the project chemist then add acid or base to the sample to achieve the correct pH. Add up to two times the volume initially added to the sample container. Record pH after the addition of this preservative.

Preservative sizes for addition:

120ml NaOH	1 mL
500ml H2SO4	2 mL
1000ml H2SO4	4 mL
500ml HNO3	2 mL
1000ml HNO3	4 mL

Drop Off FedEx UPS Courier SEST

Tracking #

Checked by

*pH of HCL preserved containers checked by analysts

Comments:

301

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

01108490

Page: 3 of 3

1804344

Section B Required Project Information:		Section C Invoice Information:
Company: Bridgeton Landfill	Report To: Herst + Associates, Inc.	Attention:
Address:	Copy To:	Company Name: Bridgeton Landfill
		Address:
Email To:	Purchase Order No.:	Pace Quote Reference:
Phone: Fax:	Project Name: Bridgeton 322014 GW	Pace Project Manager: Chris Boyle
Requested Due Date/TAT:	Project Number:	Pace Profile #:

REGULATORY AGENCY

☐ NPDES ☒ GROUND WATER ☐ DRINKING WATER

☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: Mo

Section D Required Client Information

Matrix Codes MATRIX / CODE: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Tissue TS, Other OT

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED COMPOSITE START DATE	COLLECTED COMPOSITE START TIME	COLLECTED COMPOSITE END/GRAB DATE	COLLECTED COMPOSITE END/GRAB TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N)	Z 161364	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
1	Trip Blank	WT	G			9/25/14	N/A	N/A	2				2						X		AA28624
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
	Herst + Assoc	9/25/14	1530	Jeff Express	9/25/14	1530				
					9/26/14	0800	2.4	Y	Y	Y

ORIGINAL

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Jonathan Wilkinson

SIGNATURE of SAMPLER:

DATE Signed (MM/DD/YY): 09/25/14

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.07, 15-May-2007

302

Sample Receiving Check Sheet

COC ID: 210490

	Sulfuric plastic <2	Sulfuric Diss Plastic<2	Sulfuric glass <2	Nitric plastic <2	Nitric Diss plastic <2	NaOH/ZnAOC <12	NaOH plastic >12	preservative added?	Diss. w/ additional preservative added?	Residual C12 present Y/N	Residual C12 present >2?	Sample is UNP or other than aqueous	Acid preserved Containers?	Comments
Line 1 on COC													X	
Line 2 on COC														
Line 3 on COC														
Line 4 on COC														
Line 5 on COC														
Line 6 on COC														
Line 7 on COC														
Line 8 on COC														
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Line 17 on COC														
Line 18 on COC														
Line 19 on COC														
Line 20 on COC														
Line 21 on COC														
Line 22 on COC														
Line 23 on COC														
Line 24 on COC														
Line 25 on COC														

Aqueous samples: For each sample and container type, check the box if pH is acceptable. If pH is not acceptable for any sample container then record the pH in the box. If approved by the project chemist then add acid or base to the sample to achieve the correct pH. Add up to two times the volume initially added to the sample container. Record pH after the addition of this preservative.

Preservative sizes for addition:

120ml NaOH	1 mL
500ml H2SO4	2 mL
1000ml H2SO4	4 mL
500ml HNO3	2 mL
1000ml HNO3	4 mL

Drop Off FedEx UPS Courier

Tracking #

Checked by:

*pH of HCL preserved containers checked by analysts

Comments:

Pace Analytical®

Pace Analytical Services, Inc.

Quality Assurance Report

66865

15-OCT-14

Service Location	Submitter
Pace Analytical Services, INC. 7901 West Morris Street Indianapolis, IN 46231 (317) 243-8304	JON WILKINSON HERST AND ASSOCIATES 4630 SOUTH HIGHWAY 94 ST. CHARLES, MO 63304

Sample ID	Client ID	Date/Time Sampled	Date Received	Date Released
AA28600	PZ-201A-SS	23-Sep-14 13:13	26-Sep-14	13-Oct-2014
	LOCATION :	BRIDGETON LANDFILL		
	DESCRIPTION :	SEMI-ANNUAL GROUNDWATER TESTING		
AA28601	PZ-100-SS	23-Sep-14 13:44	26-Sep-14	13-Oct-2014
	LOCATION :	BRIDGETON LANDFILL		
	DESCRIPTION :	SEMI-ANNUAL GROUNDWATER TESTING		
AA28602	PZ-100-SD	23-Sep-14 14:09	26-Sep-14	13-Oct-2014
	LOCATION :	BRIDGETON LANDFILL		
	DESCRIPTION :	SEMI-ANNUAL GROUNDWATER TESTING		
AA28603	PZ-115-SS	23-Sep-14 14:38	26-Sep-14	13-Oct-2014
	LOCATION :	BRIDGETON LANDFILL		
	DESCRIPTION :	SEMI-ANNUAL GROUNDWATER TESTING		
AA28604	PZ-114-AS	23-Sep-14 15:15	26-Sep-14	13-Oct-2014
	LOCATION :	BRIDGETON LANDFILL		
	DESCRIPTION :	SEMI-ANNUAL GROUNDWATER TESTING		
AA28605	PZ-110-SS	23-Sep-14 15:45	26-Sep-14	13-Oct-2014
	LOCATION :	BRIDGETON LANDFILL		
	DESCRIPTION :	SEMI-ANNUAL GROUNDWATER TESTING		
AA28606	PZ-106-SD	24-Sep-14 09:42	26-Sep-14	13-Oct-2014
	LOCATION :	BRIDGETON LANDFILL		
	DESCRIPTION :	SEMI-ANNUAL GROUNDWATER TESTING		
AA28607	PZ-106-SS	24-Sep-14 10:08	26-Sep-14	13-Oct-2014
	LOCATION :	BRIDGETON LANDFILL		
	DESCRIPTION :	SEMI-ANNUAL GROUNDWATER TESTING		
AA28608	PZ-105-SS	24-Sep-14 10:44	26-Sep-14	13-Oct-2014
	LOCATION :	BRIDGETON LANDFILL		
	DESCRIPTION :	SEMI-ANNUAL GROUNDWATER TESTING		
AA28609	PZ-105-SS DUP	24-Sep-14 10:44	26-Sep-14	13-Oct-2014
	LOCATION :	BRIDGETON LANDFILL		
	DESCRIPTION :	SEMI-ANNUAL GROUNDWATER TESTING		
AA28610	PZ-205-SS	24-Sep-14 11:23	26-Sep-14	13-Oct-2014
	LOCATION :	BRIDGETON LANDFILL		
	DESCRIPTION :	SEMI-ANNUAL GROUNDWATER TESTING		
AA28611	PZ-109-SS	24-Sep-14 11:49	26-Sep-14	13-Oct-2014
	LOCATION :	BRIDGETON LANDFILL		
	DESCRIPTION :	SEMI-ANNUAL GROUNDWATER TESTING		

Pace Analytical®

Pace Analytical Services, Inc.

Quality Assurance Report

66865

15-OCT-14

Sample ID	Client ID	Date/Time Sampled	Date Received	Date Released
AA28612	PZ-111-SD	24-Sep-14 12:16	26-Sep-14	13-Oct-2014
	LOCATION :	BRIDGETON LANDFILL		
	DESCRIPTION :	SEMI-ANNUAL GROUNDWATER TESTING		
AA28613	FB @ PZ-104-SD	24-Sep-14 13:10	26-Sep-14	13-Oct-2014
	LOCATION :	BRIDGETON LANDFILL		
	DESCRIPTION :	APPENDIX I/II TESTING - ADDITIONAL VOLS		
AA28614	PZ-104-SD	24-Sep-14 13:40	26-Sep-14	13-Oct-2014
	LOCATION :	BRIDGETON LANDFILL		
	DESCRIPTION :	APPENDIX I/II TESTING - ADDITIONAL VOLS		
AA28615	PZ-104-SD DUP	24-Sep-14 13:40	26-Sep-14	13-Oct-2014
	LOCATION :	BRIDGETON LANDFILL		
	DESCRIPTION :	APPENDIX I/II TESTING - ADDITIONAL VOLS		
AA28616	PZ-104-SS	24-Sep-14 14:06	26-Sep-14	15-Oct-2014
	LOCATION :	BRIDGETON LANDFILL		
	DESCRIPTION :	APPENDIX I/II TESTING - ADDITIONAL VOLS		
AA28617	PZ-104-KS	24-Sep-14 14:49	26-Sep-14	13-Oct-2014
	LOCATION :	BRIDGETON LANDFILL		
	DESCRIPTION :	APPENDIX I/II TESTING - ADDITIONAL VOLS/NO INORG		
AA28618	PZ-209-SD	25-Sep-14 09:11	26-Sep-14	13-Oct-2014
	LOCATION :	BRIDGETON LANDFILL		
	DESCRIPTION :	APPENDIX I/II TESTING - ADDITIONAL VOLS/NO INORG		
AA28619	PZ-209-SS	25-Sep-14 09:32	26-Sep-14	13-Oct-2014
	LOCATION :	BRIDGETON LANDFILL		
	DESCRIPTION :	APPENDIX I/II TESTING - ADDITIONAL VOLS/NO INORG		
AA28620	PZ-211-SD	25-Sep-14 10:21	26-Sep-14	13-Oct-2014
	LOCATION :	BRIDGETON LANDFILL		
	DESCRIPTION :	APPENDIX I/II TESTING - ADDITIONAL VOLS/NO INORG		
AA28621	PZ-211-SS	25-Sep-14 10:49	26-Sep-14	13-Oct-2014
	LOCATION :	BRIDGETON LANDFILL		
	DESCRIPTION :	APPENDIX I/II TESTING - ADDITIONAL VOLS/NO INORG		
AA28622	PZ-210-SD	25-Sep-14 11:44	26-Sep-14	13-Oct-2014
	LOCATION :	BRIDGETON LANDFILL		
	DESCRIPTION :	APPENDIX I/II TESTING - ADDITIONAL VOLS/NO INORG		
AA28623	PZ-210-SS	25-Sep-14 12:04	26-Sep-14	13-Oct-2014
	LOCATION :	BRIDGETON LANDFILL		
	DESCRIPTION :	APPENDIX I/II TESTING - ADDITIONAL VOLS/NO INORG		
AA28624	TRIP BLANK	25-Sep-14	26-Sep-14	13-Oct-2014
	LOCATION :	BRIDGETON LANDFILL		
	DESCRIPTION :	APPENDIX I/II TESTING - ADDITIONAL VOLS		

ALKALINITY BICARBONATE (AUTOMATED) EPA 310.2 — G610.3

R631201 Analytical — Analyst: E SKALA — Reviewer: P SPENCE — Run Date: 06-Oct-14 — Review Date: 06-Oct-14 — Instrument: AUTO-ANALYZER

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA01	Q2867515		ALKALINITY, BICARBONATE			BDL	4.2	mg/L		
CCVH	Q2867516		ALKALINITY, BICARBONATE	125			127	mg/L	101.6	
CCVL	Q2867517		ALKALINITY, BICARBONATE	75.0			73.5	mg/L	98.0	
CDL01	Q2867518		ALKALINITY, BICARBONATE	10.0			11.3	mg/L	113.0	
ICV01	Q2867519		ALKALINITY, BICARBONATE	100			103	mg/L	103.0	
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SPI01	Q2867520	AA28616	ALKALINITY, BICARBONATE	415	250		679	mg/L	105.6	
DPS01	Q2867521	AA28616	ALKALINITY, BICARBONATE	415	250		683	mg/L	107.2	1.5
CCVH	Q2867522		ALKALINITY, BICARBONATE	125			129	mg/L	103.2	
CCVL	Q2867523		ALKALINITY, BICARBONATE	75.0			74.2	mg/L	98.9	
BLA01	Q2867524		ALKALINITY, BICARBONATE			BDL	4.2	mg/L		
CCVH	Q2867530		ALKALINITY, BICARBONATE	125			129	mg/L	103.2	
CCVL	Q2867531		ALKALINITY, BICARBONATE	75.0			73.0	mg/L	97.3	
BLA01	Q2867532		ALKALINITY, BICARBONATE			BDL	10	mg/L		
SAMPLE	AA28617		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28618		See Certificate of Analysis, Rep: 0							
CCVH	Q2867533		ALKALINITY, BICARBONATE	125			128	mg/L	102.4	
CCVL	Q2867534		ALKALINITY, BICARBONATE	75.0			73.7	mg/L	98.3	
BLA01	Q2867535		ALKALINITY, BICARBONATE			BDL	10	mg/L		
SAMPLE	AA28619		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28620		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28621		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28622		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28623		See Certificate of Analysis, Rep: 0							
CCVH	Q2867536		ALKALINITY, BICARBONATE	125			128	mg/L	102.4	
CCVL	Q2867537		ALKALINITY, BICARBONATE	75.0			73.7	mg/L	98.3	
BLA01	Q2867538		ALKALINITY, BICARBONATE			BDL	10	mg/L		

Q2867520 1:5 Dilution
Q2867521 1:5 Dilution

ALKALINITY CARBONATE (AUTOMATED) EPA 310.2 — G611.3

R631201 Analytical — Analyst: E SKALA — Reviewer: P SPENCE — Run Date: 06-Oct-14 — Review Date: 06-Oct-14 — Instrument: AUTO-ANALYZER

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA01	Q2867515		ALKALINITY, CARBONATE			BDL	4.2	mg/L		
CCVH	Q2867516		ALKALINITY, CARBONATE	125			127	mg/L	101.6	
CCVL	Q2867517		ALKALINITY, CARBONATE	75.0			73.5	mg/L	98.0	
CDL01	Q2867518		ALKALINITY, CARBONATE	10.0			11.3	mg/L	113.0	
ICV01	Q2867519		ALKALINITY, CARBONATE	100			103	mg/L	103.0	
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							

ALKALINITY CARBONATE (AUTOMATED) EPA 310.2

G611.3

R631201 Analytical — Analyst: E SKALA — Reviewer: P SPENCE — Run Date: 06-Oct-14 — Review Date: 06-Oct-14 — Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
CCVH	Q2867522		ALKALINITY, CARBONATE	125			129	mg/L	103.2	
CCVL	Q2867523		ALKALINITY, CARBONATE	75.0			74.2	mg/L	98.9	
BLA01	Q2867524		ALKALINITY, CARBONATE			BDL	4.2	mg/L		
CCVH	Q2867530		ALKALINITY, CARBONATE	125			129	mg/L	103.2	
CCVL	Q2867531		ALKALINITY, CARBONATE	75.0			73.0	mg/L	97.3	
BLA01	Q2867532		ALKALINITY, CARBONATE			BDL	10	mg/L		
SAMPLE	AA28617		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28618		See Certificate of Analysis, Rep: 0							
CCVH	Q2867533		ALKALINITY, CARBONATE	125			128	mg/L	102.4	
CCVL	Q2867534		ALKALINITY, CARBONATE	75.0			73.7	mg/L	98.3	
BLA01	Q2867535		ALKALINITY, CARBONATE			BDL	10	mg/L		
SAMPLE	AA28619		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28620		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28621		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28622		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28623		See Certificate of Analysis, Rep: 0							
CCVH	Q2867536		ALKALINITY, CARBONATE	125			128	mg/L	102.4	
CCVL	Q2867537		ALKALINITY, CARBONATE	75.0			73.7	mg/L	98.3	
BLA01	Q2867538		ALKALINITY, CARBONATE			BDL	10	mg/L		

ALKALINITY TOTAL (AUTOMATED) EPA 310.2

G605.3

R631201 Analytical — Analyst: E SKALA — Reviewer: P SPENCE — Run Date: 06-Oct-14 — Review Date: 06-Oct-14 — Instrument: AUTO-ANALYZER

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA01	Q2867515		ALKALINITY			BDL	4.2	mg/L		
CCVH	Q2867516		ALKALINITY	125			127	mg/L	101.6	
CCVL	Q2867517		ALKALINITY	75.0			73.5	mg/L	98.0	
CDL01	Q2867518		ALKALINITY	10.0			11.3	mg/L	113.0	
ICV01	Q2867519		ALKALINITY	100			103	mg/L	103.0	
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SPI01	Q2867520	AA28616	ALKALINITY	415	250		679	mg/L	105.6	
DPS01	Q2867521	AA28616	ALKALINITY	415	250		683	mg/L	107.2	1.5
CCVH	Q2867522		ALKALINITY	125			129	mg/L	103.2	
CCVL	Q2867523		ALKALINITY	75.0			74.2	mg/L	98.9	
BLA01	Q2867524		ALKALINITY			BDL	4.2	mg/L		
CCVH	Q2867530		ALKALINITY	125			129	mg/L	103.2	
CCVL	Q2867531		ALKALINITY	75.0			73.0	mg/L	97.3	
BLA01	Q2867532		ALKALINITY			BDL	10	mg/L		
SAMPLE	AA28617		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28618		See Certificate of Analysis, Rep: 0							
CCVH	Q2867533		ALKALINITY	125			128	mg/L	102.4	

Pace Analytical®

Pace Analytical Services, Inc.

Quality Assurance Report 66865

ALKALINITY TOTAL (AUTOMATED) EPA 310.2 G605.3

R631201 Analyst: E SKALA
Analytical Reviewer: P SPENCE
Run Date: 06-Oct-14
Review Date: 06-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CCVL	Q2867534		ALKALINITY	75.0			73.7	mg/L	98.3	
BLA01	Q2867535		ALKALINITY			BDL	10	mg/L		
SAMPLE	AA28619		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28620		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28621		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28622		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28623		See Certificate of Analysis, Rep: 0							
CCVH	Q2867536		ALKALINITY	125			128	mg/L	102.4	
CCVL	Q2867537		ALKALINITY	75.0			73.7	mg/L	98.3	
BLA01	Q2867538		ALKALINITY			BDL	10	mg/L		
Q2867520	1:5 Dilution									
Q2867521	1:5 Dilution									

AMMONIA BY AUTOMATED PHENATE SM4500-NH3 G 1997 G204.6

R631238 Analyst: T DRIGGERS
Analytical Reviewer: P SPENCE
Run Date: 06-Oct-14
Review Date: 07-Oct-14
Instrument: AUTO-ANALYZER

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CDL01	Q2867899		NITROGEN, AMMONIA	0.100			0.118	mg/L	118.0	
ICV01	Q2867900		NITROGEN, AMMONIA	1.50			1.57	mg/L	104.7	
CCVL	Q2867925		NITROGEN, AMMONIA	0.400			0.412	mg/L	103.0	
CCVH	Q2867926		NITROGEN, AMMONIA	1.00			1.01	mg/L	101.0	
BLA01	Q2867927		NITROGEN, AMMONIA			BDL	0.009	mg/L		
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
CCVL	Q2867928		NITROGEN, AMMONIA	0.400			0.415	mg/L	103.8	
CCVH	Q2867929		NITROGEN, AMMONIA	1.00			1.02	mg/L	102.0	
BLA01	Q2867930		NITROGEN, AMMONIA			BDL	0.10	mg/L		
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28609		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
CCVL	Q2867931		NITROGEN, AMMONIA	0.400			0.436	mg/L	109.0	
CCVH	Q2867932		NITROGEN, AMMONIA	1.00			1.04	mg/L	104.0	
BLA01	Q2867933		NITROGEN, AMMONIA			BDL	0.10	mg/L		
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
CCVL	Q2867936		NITROGEN, AMMONIA	0.400			0.415	mg/L	103.8	
CCVH	Q2867937		NITROGEN, AMMONIA	1.00			1.02	mg/L	102.0	
BLA01	Q2867938		NITROGEN, AMMONIA			BDL	0.10	mg/L		
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
CCVL	Q2867939		NITROGEN, AMMONIA	0.400			0.417	mg/L	104.3	
CCVH	Q2867940		NITROGEN, AMMONIA	1.00			1.05	mg/L	105.0	

AMMONIA BY AUTOMATED PHENATE SM4500-NH3 G 1997 **G204.6**

R631238 Analyst: T DRIGGERS Run Date: 06-Oct-14
Analytical Reviewer: P SPENCE Review Date: 07-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA01	Q2867941		NITROGEN, AMMONIA			BDL	0.10	mg/L		
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
SPI01	Q2867942	AA28600	NITROGEN, AMMONIA	0	0.4		0.386	mg/L	96.5	
DPS01	Q2867943	AA28600	NITROGEN, AMMONIA	0	0.4		0.379	mg/L	94.8	1.8
SPI01	Q2867944	AA28602	NITROGEN, AMMONIA	0.334	0.4		0.775	mg/L	110.2	
DPS01	Q2867945	AA28602	NITROGEN, AMMONIA	0.334	0.4		0.771	mg/L	109.2	0.9
CCVL	Q2867948		NITROGEN, AMMONIA	0.400			0.419	mg/L	104.8	
CCVH	Q2867949		NITROGEN, AMMONIA	1.00			1.03	mg/L	103.0	
BLA01	Q2867950		NITROGEN, AMMONIA			BDL	0.10	mg/L		
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SPI02	Q2867953	AA29023	NITROGEN, AMMONIA	0.138	4.00		4.26	mg/L	103.0	
CCVL	Q2867954		NITROGEN, AMMONIA	0.400			0.419	mg/L	104.8	
CCVH	Q2867955		NITROGEN, AMMONIA	1.00			1.03	mg/L	103.0	
BLA01	Q2867956		NITROGEN, AMMONIA			BDL	0.10	mg/L		
DPS02	Q2867957	AA29023	NITROGEN, AMMONIA	0.138	4.00		4.25	mg/L	102.8	0.2
DUP02	Q2868056	AA28856	NITROGEN, AMMONIA	32.7			32.7	mg/L		0

Q2867899	1:20 Dilution
Q2867900	1:2 Dilution
Q2867925	1:5 Dilution
Q2867926	1:2 Dilution
Q2867928	1:5 Dilution
Q2867929	1:2 Dilution
Q2867931	1:5 Dilution
Q2867932	1:2 Dilution
Q2867936	1:5 Dilution
Q2867937	1:2 Dilution
Q2867939	1:5 Dilution
Q2867940	1:2 Dilution
Q2867948	1:5 Dilution
Q2867949	1:2 Dilution
Q2867953	1:10 Dilution
Q2867954	1:5 Dilution
Q2867955	1:2 Dilution
Q2867957	1:10 Dilution
Q2868056	1:50 Dilution.

R631497 Analyst: C ANYANWUTAKU Run Date: 13-Oct-14 Instrument: AUTO-ANALYZER
Analytical Reviewer: T DRIGGERS Review Date: 15-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CDL01	Q2870078		NITROGEN, AMMONIA	0.100			0.109	mg/L	109.0	
ICV01	Q2870079		NITROGEN, AMMONIA	1.50			1.50	mg/L	100.0	
SPI02	Q2870085	AA29072	NITROGEN, AMMONIA	0.0791	4		3.89	mg/L	95.3	
DPS02	Q2870086	AA29072	NITROGEN, AMMONIA	0.0791	4		4.02	mg/L	98.5	3.3
CCVL	Q2870087		NITROGEN, AMMONIA	0.400			0.405	mg/L	101.3	

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AMMONIA BY AUTOMATED PHENATE SM4500-NH3 G 1997 G204.6

R631497 Analyst: C ANYANWUTAKU Run Date: 13-Oct-14
Analytical Reviewer: T DRIGGERS Review Date: 15-Oct-14 Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CCVH	Q2870088		NITROGEN, AMMONIA	1.00			1.00	mg/L	100.0	
BLA01	Q2870089		NITROGEN, AMMONIA			BDL	0.10	mg/L		
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
CCVL	Q2870090		NITROGEN, AMMONIA	0.400			0.403	mg/L	100.8	
CCVH	Q2870091		NITROGEN, AMMONIA	1.00			0.989	mg/L	98.9	
BLA01	Q2870092		NITROGEN, AMMONIA			BDL	0.10	mg/L		
SPI01	Q2870104	AA29094	NITROGEN, AMMONIA	0	0.4		0.316	mg/L	79	
DPS01	Q2870105	AA29094	NITROGEN, AMMONIA	0	0.4		0.315	mg/L	78.7	0.4

Q2870078 1:20 Dilution
Q2870079 1:2 Dilution
Q2870085 1:10 Dilution
Q2870086 1:10 Dilution
Q2870087 1:5 Dilution
Q2870088 1:2 Dilution
Q2870090 1:5 Dilution
Q2870091 1:2 Dilution
Q2870104 MS and/or MSD do not meet control limits. Results for this sample are
Q2870104 estimated.
Q2870105 MS and/or MSD do not meet control limits. Results for this sample are
Q2870105 estimated.

ANTIMONY ICP/MS SW846-6020 V102.3
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R630907 Analyst: K KAMARA Run Date: 29-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 29-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28600	Rep: 0	Analytical Run: R631019							
BLA02	Q2864829		Analytical Run: R631019							
LCS	Q2864830		Analytical Run: R631019							
DUP02	Q2864831		Analytical Run: R631019							
SPI02	Q2864832		Analytical Run: R631019							

Q2864832 1:5 Dilution.

R630945 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865189		Analytical Run: R631089							
LCS	Q2865190		Analytical Run: R631089							
DUP02	Q2865191		Analytical Run: R631089							
SPI02	Q2865192		Analytical Run: R631089							
SAMPLE	AA28601	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28602	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28603	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28604	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28605	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28606	Rep: 0	Analytical Run: R631089							

ANTIMONY ICP/MS SW846-6020 V102.3
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R630945 Analyst: K KAMARA Run Date: 30-Sep-14
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14 Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28607	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28608	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28609	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28610	Rep: 0	Analytical Run: R631089							

R630946 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865193		Analytical Run: R631089							
LCS	Q2865194		Analytical Run: R631089							
DUP02	Q2865195		Analytical Run: R631089							
SPI02	Q2865196		Analytical Run: R631089							
SAMPLE	AA28611	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28612	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28613	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28614	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28615	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28616	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28617	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28618	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28619	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28620	Rep: 0	Analytical Run: R631089							

Q2865196 1:5 Dilution.

R631004 Analyst: K KAMARA Run Date: 01-Oct-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28621	Rep: 0	Analytical Run: R631187							
SAMPLE	AA28622	Rep: 0	Analytical Run: R631187							
SAMPLE	AA28623	Rep: 0	Analytical Run: R631187							
BLA02	Q2865788		Analytical Run: R631187							
LCS	Q2865789		Analytical Run: R631187							
DUP02	Q2865790		Analytical Run: R631187							
SPI02	Q2865791		Analytical Run: R631187							

Q2865790 1:5 Dilution.
Q2865791 1:5 Dilution.

R631019 Analyst: C WILLHITE Run Date: 30-Sep-14 Instrument: ICP/MS
Analytical Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2865890		ANTIMONY	50			51.2	ug/L	102.4	
ICS-A	Q2865906		ANTIMONY	40			42.7	ug/L	106.8	
BLA02	Q2864829		ANTIMONY			<	0.0800	ug/L		
LCS	Q2864830		ANTIMONY	40			40.6	ug/L	101.5	
SER01	Q2865934	AA28233	ANTIMONY	0		BDL		ug/L		

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ANTIMONY ICP/MS SW846-6020 **V102.3**
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R631019 Analyst: C WILLHITE Run Date: 30-Sep-14
Analytical Reviewer: S ENDERSEN Review Date: 01-Oct-14 Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
DUP02	Q2864831	AA28233	ANTIMONY	0		BDL		ug/L		
SPI02	Q2864832	AA28233	ANTIMONY	0	40		44.0	ug/L	110.0	
CCV	Q2865919		ANTIMONY	20			21.9	ug/L	109.5	
BLA01	Q2865910		ANTIMONY			<	0.0800	ug/L		
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
CCV	Q2865920		ANTIMONY	20			21.1	ug/L	105.5	
BLA01	Q2865911		ANTIMONY			<	0.0800	ug/L		
SER01	Q2865935	AA28261	ANTIMONY	0		BDL		ug/L		
ICS-A	Q2865933		ANTIMONY	40			46.4	ug/L	116.0	

Q2864832 1:5 Dilution.
Q2865906 1:5 Dilution.
Q2865933 1:5 Dilution.
Q2865935 1:25 Dilution.

R631089 Analyst: C WILLHITE Run Date: 01-Oct-14 Instrument: ICP/MS
Analytical Reviewer: S ENDERSEN Review Date: 02-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2866399		ANTIMONY	50			52.4	ug/L	104.8	
CDL01	Q2866439		ANTIMONY	0.2			0.259	ug/L	129.5	
ICS-A	Q2866443		ANTIMONY	40			49.2	ug/L	123.0	
CCV	Q2866427		ANTIMONY	20			20.9	ug/L	104.5	
BLA01	Q2866412		ANTIMONY				0.138	ug/L		
BLA02	Q2865189		ANTIMONY				0.208	ug/L		
LCS	Q2865190		ANTIMONY	40			41.1	ug/L	102.8	
SER01	Q2866448	AA28601	ANTIMONY	0.545		CNA	1.72	ug/L		
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
DUP02	Q2865191	AA28601	ANTIMONY	0		BDL		ug/L		
SPI02	Q2865192	AA28601	ANTIMONY	0	40		42.5	ug/L	106.2	
CCV	Q2866428		ANTIMONY	20			20.7	ug/L	103.5	
BLA01	Q2866413		ANTIMONY				0.139	ug/L		
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28609		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
CCV	Q2866429		ANTIMONY	20			20.7	ug/L	103.5	
BLA01	Q2866414		ANTIMONY				0.135	ug/L		
BLA02	Q2865193		ANTIMONY				0.205	ug/L		
LCS	Q2865194		ANTIMONY	40			40.3	ug/L	100.8	
SER01	Q2866449	AA28611	ANTIMONY	0.385		CNA	1.55	ug/L		
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
DUP02	Q2865195	AA28611	ANTIMONY	0		BDL		ug/L		

ANTIMONY ICP/MS SW846-6020 **V102.3**
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R631089 Analytical — Analyst: C WILLHITE — Reviewer: S ENDERSEN — Run Date: 01-Oct-14 — Review Date: 02-Oct-14 — Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SPI02	Q2865196	AA28611	ANTIMONY	0	40		41.3	ug/L	103.2	
CCV	Q2866430		ANTIMONY	20			20.8	ug/L	104.0	
BLA01	Q2866454		ANTIMONY				0.149	ug/L		
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28617		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28618		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28619		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28620		See Certificate of Analysis, Rep: 0							
CCV	Q2866459		ANTIMONY	20			20.6	ug/L	103.0	
BLA01	Q2866455		ANTIMONY				0.137	ug/L		
SER01	Q2866465	AA28642	ANTIMONY	21.0		CNA	265	ug/kg		
CDL01	Q2866466		ANTIMONY	0.1			0.132	ug/L	132.0	
ICS-A	Q2866464		ANTIMONY	40			48.2	ug/L	120.5	

Q2864832 1:5 Dilution.
Q2865196 1:5 Dilution.
Q2866443 1:5 Dilution.
Q2866449 1:25 Dilution.
Q2866464 1:5 Dilution.
Q2866465 1:5000 Dilution.

R631187 Analytical — Analyst: C WILLHITE — Reviewer: S ENDERSEN — Run Date: 03-Oct-14 — Review Date: 06-Oct-14 — Instrument: ICP/MS

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2867384		ANTIMONY	50			48.5	ug/L	97.0	
CDL01	Q2867419		ANTIMONY	0.2			0.0410	ug/L	20.5	
ICS-A	Q2867425		ANTIMONY	40			43.7	ug/L	109.2	
CCV	Q2867443		ANTIMONY	20			19.7	ug/L	98.5	
BLA01	Q2867435		ANTIMONY			<	0.200	ug/L		
BLA02	Q2865788		ANTIMONY			<	0.200	ug/L		
LCS	Q2865789		ANTIMONY	40			40.2	ug/L	100.5	
SER01	Q2867455	AA28621	ANTIMONY	0		BDL		ug/L		
SAMPLE	AA28621		See Certificate of Analysis, Rep: 0							
DUP02	Q2865790	AA28621	ANTIMONY	0		BDL		ug/L		
SPI02	Q2865791	AA28621	ANTIMONY	0	40		42.3	ug/L	105.8	
CCV	Q2867444		ANTIMONY	20			20.3	ug/L	101.5	
BLA01	Q2867436		ANTIMONY			<	0.200	ug/L		
SAMPLE	AA28622		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28623		See Certificate of Analysis, Rep: 0							
CCV	Q2867445		ANTIMONY	20			20.3	ug/L	101.5	
BLA01	Q2867437		ANTIMONY			<	0.200	ug/L		
SER01	Q2867457	AA28767	ANTIMONY	0		BDL		ug/L		
ICS-A	Q2867454		ANTIMONY	40			43.8	ug/L	109.5	

ANTIMONY ICP/MS SW846-6020 V102.3
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R631187 Analyst: C WILLHITE Run Date: 03-Oct-14
Analytical Reviewer: S ENDERSEN Review Date: 06-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
Q2865790	1:5 Dilution.									
Q2865791	1:5 Dilution.									
Q2867425	1:5 Dilution.									
Q2867454	1:5 Dilution.									
Q2867455	1:25 Dilution.									
Q2867457	1:25 Dilution.									

APPENDIX IX SEMIVOLATILE ORGANICS SW846-8270C O508.3
Prep : GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

R631056 Analyst: J MINNIEAR, II Run Date: 01-Oct-14 Instrument: PREP
Prep Reviewer: T PINCKERT Review Date: 02-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2866149		Analytical Run: R631170							
LCS	Q2866150		Analytical Run: R631170							
SPI02	Q2866151		Analytical Run: R631170							
DPS02	Q2866152		Analytical Run: R631170							
SAMPLE	AA28613	Rep: 0	Analytical Run: R631170							
SAMPLE	AA28614	Rep: 0	Analytical Run: R631170							
SAMPLE	AA28615	Rep: 0	Analytical Run: R631170							
SAMPLE	AA28615	Rep: 1	Analytical Run: R631178							
SAMPLE	AA28616	Rep: 0	Analytical Run: R631170							
SAMPLE	AA28617	Rep: 0	Analytical Run: R631170							
SAMPLE	AA28618	Rep: 0	Analytical Run: R631170							
SAMPLE	AA28619	Rep: 0	Analytical Run: R631170							
SAMPLE	AA28620	Rep: 0	Analytical Run: R631170							
SAMPLE	AA28621	Rep: 0	Analytical Run: R631170							
SAMPLE	AA28622	Rep: 0	Analytical Run: R631170							
SAMPLE	AA28623	Rep: 0	Analytical Run: R631170							

R631170 Analyst: T PINCKERT Run Date: 02-Oct-14 Instrument: GC/MS SVOA
Analytical Reviewer: J MINNIEAR, II Review Date: 06-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CAL01	Q2867183		Analysis Date/Time: 02-Oct-14 12:30							
CAL01	Q2867183		ACENAPHTHENE	1.1031						0.8
CAL01	Q2867183		ACENAPHTHYLENE	1.7892						1.1
CAL01	Q2867183		ACETOPHENONE	2.2461						1
CAL01	Q2867183		ANTHRACENE	1.1394						0.8
CAL01	Q2867183		BENZO(A)ANTHRACENE	1.1279						0.9
CAL01	Q2867183		BENZO(B)FLUORANTHENE (3,4-BENZOFLUORANTHENE)	1.0065						4.6
CAL01	Q2867183		BENZO(K)FLUORANTHENE	1.0541						2.7
CAL01	Q2867183		BENZO(G,H,I)PERYLENE	1.0575						0.8
CAL01	Q2867183		BENZO(A)PYRENE	1.0144						3.1
CAL01	Q2867183		BENZYL ALCOHOL	1.6934						3.4
CAL01	Q2867183		BIS(2-CHLOROETHOXY)METHANE	0.3891						6.5
CAL01	Q2867183		BIS(2-CHLOROETHYL)ETHER	1.4970						4.8
CAL01	Q2867183		BIS(2-CHLOROISOPROPYL)ETHER	2.0534						1.4

APPENDIX IX SEMIVOLATILE ORGANICS SW846-8270C **O508.3**
Prep : GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

R631170 Analyst: T PINCKERT Run Date: 02-Oct-14
Analytical Reviewer: J MINNIEAR, II Review Date: 06-Oct-14 Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CAL01	Q2867183		BIS(2-ETHYLHEXYL)PHTHALATE	0.8590						3.2
CAL01	Q2867183		4-BROMODIPHENYL ETHER	0.1886						1.4
CAL01	Q2867183		BENZYLBUTYLPHTHALATE (BUTYLBENZYLPHTHALATE)	0.5559						3.4
CAL01	Q2867183		4-CHLOROANILINE	0.3809						5.8
CAL01	Q2867183		2-CHLORONAPHTHALENE	1.0146						1.3
CAL01	Q2867183		4-CHLOROPHENYL-PHENYLETHER	0.6189						1.2
CAL01	Q2867183		CHRYSENE	1.0505						1.3
CAL01	Q2867183		DIBENZ(A,H)ANTHRACENE	1.0347						2.9
CAL01	Q2867183		DIBENZOFURAN	1.5626						0.9
CAL01	Q2867183		DI-N-BUTYLPHTHALATE	1.6928		LIN				0.993
CAL01	Q2867183		3,3'-DICHLOROBENZIDINE	0.4315						5.4
CAL01	Q2867183		DIETHYLPHTHALATE	1.2819						0.9
CAL01	Q2867183		DIMETHYLPHTHALATE	1.2607						1.4
CAL01	Q2867183		1,3-DINITROBENZENE (M-DINITROBENZENE)	0.2800						6.6
CAL01	Q2867183		2,4-DINITROTOLUENE	0.4269						5.9
CAL01	Q2867183		2,6-DINITROTOLUENE	0.3090						3.6
CAL01	Q2867183		DI-N-OCTYLPHTHALATE	1.2953						7.7
CAL01	Q2867183		DI-N-PROPYLNITROSOAMINE	1.2471						2.4
CAL01	Q2867183		FLUORANTHENE	1.2502						0.9
CAL01	Q2867183		FLUORENE	1.3173						1.2
CAL01	Q2867183		HEXACHLOROBENZENE	0.1879						1.9
CAL01	Q2867183		HEXACHLOROBUTADIENE	0.1390						7
CAL01	Q2867183		HEXACHLOROCYCLOPENTADIENE	0.2499						10.9
CAL01	Q2867183		HEXACHLOROETHANE	0.6032						0.9
CAL01	Q2867183		INDENO(1,2,3-CD)PYRENE	1.2456						2
CAL01	Q2867183		2-METHYLNAPHTHALENE	0.6251						6.2
CAL01	Q2867183		NAPHTHALENE	0.9514						6.4
CAL01	Q2867183		3-NITROANILINE (M-NITROANILINE)	0.4514						1.6
CAL01	Q2867183		2-NITROANILINE (O-NITROANILINE)	0.3610						3.9
CAL01	Q2867183		4-NITROANILINE (P-NITROANILINE)	0.4341						4.6
CAL01	Q2867183		NITROBENZENE	0.3820						6.4
CAL01	Q2867183		N-NITROSODIMETHYLAMINE	0.7934						1.3
CAL01	Q2867183		N-NITROSODIPHENYLAMINE	0.5418						0.7
CAL01	Q2867183		PHENANTHRENE	1.0773						1.1
CAL01	Q2867183		PYRENE	1.1792						1.2
CAL01	Q2867183		1,2,4,5-TETRACHLOROBENZENE	0.4558						1.9
CAL01	Q2867183		1,2,4-TRICHLOROBENZENE	0.2654						6.6
CAL01	Q2867183		4-CHLORO-3-METHYLPHENOL (P-CHLORO-M-CRESOL)	0.2843						5.8
CAL01	Q2867183		2-CHLOROPHENOL	1.4066						2.2
CAL01	Q2867183		2-METHYLPHENOL (O-CRESOL)	1.4063						1.8
CAL01	Q2867183		4-METHYLPHENOL (P-CRESOL)	1.8202						3.4
CAL01	Q2867183		2,4-DICHLOROPHENOL	0.2412						6.4
CAL01	Q2867183		2,4-DIMETHYLPHENOL	0.2925						6.7
CAL01	Q2867183		4,6-DINITRO-O-CRESOL(2-METHYL-4,6-DINITROPHEN	0.1339						14.9
CAL01	Q2867183		2,4-DINITROPHENOL	0.1763						12.1

APPENDIX IX SEMIVOLATILE ORGANICS SW846-8270C **O508.3**
Prep : GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

R631170 Analyst: T PINCKERT Run Date: 02-Oct-14
Analytical Reviewer: J MINNIEAR, II Review Date: 06-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CAL01	Q2867183		2-NITROPHENOL	0.1609						7.2
CAL01	Q2867183		4-NITROPHENOL	0.1819						9.6
CAL01	Q2867183		PENTACHLOROPHENOL	0.1192						12.6
CAL01	Q2867183		PHENOL	2.1213						2.1
CAL01	Q2867183		2,3,4,6-TETRACHLOROPHENOL	0.2746						6.5
CAL01	Q2867183		2,4,5-TRICHLOROPHENOL	0.3309						4.9
CAL01	Q2867183		2,4,6-TRICHLOROPHENOL	0.3131						5
CAL01	Q2867183		ISOPHORONE	0.7426						5.8
CAL01	Q2867183		2-FLUOROPHENOL	1.3978						2.7
CAL01	Q2867183		PHENOL-D5	1.9469						2.7
CAL01	Q2867183		NITROBENZENE-D5	0.3814						6.1
CAL01	Q2867183		2-FLUOROBIPHENYL	1.3174						1.2
CAL01	Q2867183		2,4,6-TRIBROMOPHENOL	0.0909						6.5
CAL01	Q2867183		TERPHENYL-D14	0.8541						2.2
ICV01	Q2867184		Analysis Date/Time: 02-Oct-14 15:09							
ICV01	Q2867184		ACENAPHTHENE	50			52	ug/L	104	
ICV01	Q2867184		ACENAPHTHYLENE	50			50.4	ug/L	100.8	
ICV01	Q2867184		ACETOPHENONE	50			52.1	ug/L	104.2	
ICV01	Q2867184		ANTHRACENE	50			51.9	ug/L	103.8	
ICV01	Q2867184		BENZO(A)ANTHRACENE	50			46.4	ug/L	92.8	
ICV01	Q2867184		BENZO(B)FLUORANTHENE (3,4-BENZOFLUORANTHENE)	50			57.6	ug/L	115.2	
ICV01	Q2867184		BENZO(K)FLUORANTHENE	50			51.5	ug/L	103	
ICV01	Q2867184		BENZO(G,H,I)PERYLENE	50			50	ug/L	100	
ICV01	Q2867184		BENZO(A)PYRENE	50			53.5	ug/L	107	
ICV01	Q2867184		BENZYL ALCOHOL	50			42.9	ug/L	85.8	
ICV01	Q2867184		BIS(2-CHLOROETHOXY)METHANE	50			55.8	ug/L	111.6	
ICV01	Q2867184		BIS(2-CHLOROETHYL)ETHER	50			50.5	ug/L	101	
ICV01	Q2867184		BIS(2-CHLOROISOPROPYL)ETHER	50			43.6	ug/L	87.2	
ICV01	Q2867184		BIS(2-ETHYLHEXYL)PHTHALATE	50			53.4	ug/L	106.8	
ICV01	Q2867184		4-BROMODIPHENYL ETHER	50			51.8	ug/L	103.6	
ICV01	Q2867184		BENZYLBUTYLPHTHALATE (BUTYLBENZYLPHTHALATE)	50			56	ug/L	112	
ICV01	Q2867184		4-CHLOROANILINE	50			55.3	ug/L	110.6	
ICV01	Q2867184		2-CHLORONAPHTHALENE	50			60.4	ug/L	120.8	
ICV01	Q2867184		4-CHLOROPHENYL-PHENYLETHER	50			52.3	ug/L	104.6	
ICV01	Q2867184		CHRYSENE	50			52	ug/L	104	
ICV01	Q2867184		DIBENZ(A,H)ANTHRACENE	50			52.2	ug/L	104.4	
ICV01	Q2867184		DIBENZOFURAN	50			52.1	ug/L	104.2	
ICV01	Q2867184		DI-N-BUTYLPHTHALATE	50			50.6	ug/L	101.2	
ICV01	Q2867184		3,3'-DICHLOROBENZIDINE	50			53.4	ug/L	106.8	
ICV01	Q2867184		DIETHYLPHTHALATE	50			52.2	ug/L	104.4	
ICV01	Q2867184		DIMETHYLPHTHALATE	50			51.8	ug/L	103.6	
ICV01	Q2867184		1,3-DINITROBENZENE (M-DINITROBENZENE)	50			47.5	ug/L	95	
ICV01	Q2867184		2,4-DINITROTOLUENE	50			49.8	ug/L	99.6	
ICV01	Q2867184		2,6-DINITROTOLUENE	50			50.3	ug/L	100.6	
ICV01	Q2867184		DI-N-OCTYLPHTHALATE	50			56.9	ug/L	113.8	
ICV01	Q2867184		DI-N-PROPYLNITROSOAMINE	50			49.1	ug/L	98.2	

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Quality Assurance Report

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APPENDIX IX SEMIVOLATILE ORGANICS SW846-8270C O508.3
Prep : GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

R631170 Analyst: T PINCKERT Run Date: 02-Oct-14
Analytical Reviewer: J MINNIEAR, II Review Date: 06-Oct-14

Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2867184		FLUORANTHENE	50			50.8	ug/L	101.6	
ICV01	Q2867184		FLUORENE	50			52.4	ug/L	104.8	
ICV01	Q2867184		HEXACHLOROBENZENE	50			53.1	ug/L	106.2	
ICV01	Q2867184		HEXACHLOROBUTADIENE	50			54.9	ug/L	109.8	
ICV01	Q2867184		HEXACHLOROCYCLOPENTADIENE	50			37	ug/L	74	
ICV01	Q2867184		HEXACHLOROETHANE	50			50.7	ug/L	101.4	
ICV01	Q2867184		INDENO(1,2,3-CD)PYRENE	50			49.7	ug/L	99.4	
ICV01	Q2867184		2-METHYLNAPHTHALENE	50			59.1	ug/L	118.2	
ICV01	Q2867184		NAPHTHALENE	50			54.9	ug/L	109.8	
ICV01	Q2867184		3-NITROANILINE (M-NITROANILINE)	50			52.1	ug/L	104.2	
ICV01	Q2867184		2-NITROANILINE (O-NITROANILINE)	50			52.4	ug/L	104.8	
ICV01	Q2867184		4-NITROANILINE (P-NITROANILINE)	50			52.9	ug/L	105.8	
ICV01	Q2867184		NITROBENZENE	50			52.1	ug/L	104.2	
ICV01	Q2867184		N-NITROSODIMETHYLAMINE	50			47	ug/L	94	
ICV01	Q2867184		N-NITROSODIPHENYLAMINE	100			104	ug/L	104	
ICV01	Q2867184		PHENANTHRENE	50			51.7	ug/L	103.4	
ICV01	Q2867184		PYRENE	50			54.2	ug/L	108.4	
ICV01	Q2867184		1,2,4,5-TETRACHLOROBENZENE	50			52.7	ug/L	105.4	
ICV01	Q2867184		1,2,4-TRICHLOROBENZENE	50			56.2	ug/L	112.4	
ICV01	Q2867184		4-CHLORO-3-METHYLPHENOL (P-CHLORO-M-CRESOL)	50			59.7	ug/L	119.4	
ICV01	Q2867184		2-CHLOROPHENOL	50			52.2	ug/L	104.4	
ICV01	Q2867184		2-METHYLPHENOL (O-CRESOL)	50			53.4	ug/L	106.8	
ICV01	Q2867184		4-METHYLPHENOL (P-CRESOL)	50			54.4	ug/L	108.8	
ICV01	Q2867184		2,4-DICHLOROPHENOL	50			60.1	ug/L	120.2	
ICV01	Q2867184		2,4-DIMETHYLPHENOL	50			62.4	ug/L	124.8	
ICV01	Q2867184		4,6-DINITRO-O-CRESOL(2-METHYL-4,6-DINITROPHEN	50			52.4	ug/L	104.8	
ICV01	Q2867184		2,4-DINITROPHENOL	50			50.7	ug/L	101.4	
ICV01	Q2867184		2-NITROPHENOL	50			58.1	ug/L	116.2	
ICV01	Q2867184		4-NITROPHENOL	50			61.4	ug/L	122.8	
ICV01	Q2867184		PENTACHLOROPHENOL	50			54.5	ug/L	109	
ICV01	Q2867184		PHENOL	50			53.1	ug/L	106.2	
ICV01	Q2867184		2,3,4,6-TETRACHLOROPHENOL	50			54.2	ug/L	108.4	
ICV01	Q2867184		2,4,5-TRICHLOROPHENOL	50			55.7	ug/L	111.4	
ICV01	Q2867184		2,4,6-TRICHLOROPHENOL	50			55	ug/L	110	
ICV01	Q2867184		ISOPHORONE	50			51.7	ug/L	103.4	
CAL01	Q2867185		Analysis Date/Time: 02-Oct-14 15:31							
CAL01	Q2867185		2-ACETYLAMINOFLUORENE	0.5929						2.7
CAL01	Q2867185		4-AMINOBIPHENYL	1.6678						3.3
CAL01	Q2867185		CHLOROBENZILATE	0.4543						5.8
CAL01	Q2867185		DIALLATE	0.6491						6.5
CAL01	Q2867185		DIMETHOATE	0.4897						12.9
CAL01	Q2867185		4-(DIMETHYLAMINO)AZOBENZENE	0.4026						4.7
CAL01	Q2867185		7,12-DIMETHYLBENZ(A)ANTHRACENE	0.6036						2.2
CAL01	Q2867185		3,3'-DIMETHYLBENZIDINE	0.7502		MR				15.9
CAL01	Q2867185		ETHYL METHANESULFONATE	0.8124						2.8

APPENDIX IX SEMIVOLATILE ORGANICS SW846-8270C **O508.3**
Prep : GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

R631170 Analyst: T PINCKERT Run Date: 02-Oct-14
Analytical Reviewer: J MINNIEAR, II Review Date: 06-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CAL01	Q2867185		HEXACHLOROPROPENE	0.1896						3.5
CAL01	Q2867185		METHAPYRILENE	0.2820		MR				20.4
CAL01	Q2867185		3-METHYLCHOLANTHRENE	0.6321						2.5
CAL01	Q2867185		METHYL METHANESULFONATE	0.3093						5
CAL01	Q2867185		1,4-NAPHTHOQUINONE	0.2748						5.1
CAL01	Q2867185		1-NAPHTHYLAMINE	1.3279						5.4
CAL01	Q2867185		2-NAPHTHYLAMINE	1.2412						4
CAL01	Q2867185		N-NITROSODI-N-BUTYLAMINE	0.2847						2.2
CAL01	Q2867185		N-NITROSODIETHYLAMINE	0.5397						1.4
CAL01	Q2867185		N-NITROSOMETHYLETHYLAMINE	0.5050						1.7
CAL01	Q2867185		N-NITROSOPIPERIDINE	0.7855						5
CAL01	Q2867185		N-NITROSOPYRROLIDINE	0.6546						2.5
CAL01	Q2867185		5-NITRO-O-TOLUIDINE	0.4541						1.9
CAL01	Q2867185		PENTACHLOROBENZENE	0.4638						4.3
CAL01	Q2867185		PENTACHLORONITROBENZENE	0.1640						2.1
CAL01	Q2867185		PHENACETIN	0.8478						1.9
CAL01	Q2867185		THIONAZIN	0.2899						3.7
CAL01	Q2867185		O,O,O-TRIETHYL PHOSPHOROTHIOATE	0.5717						4.8
CAL01	Q2867185		SYM-(1,3,5)-TRINITROBENZENE	0.4017						13.7
CAL01	Q2867185		O-TOLUIDINE	1.7906						3
CAL01	Q2867185		P-PHENYLENEDIAMINE	0.4285						10.4
CAL01	Q2867185		2-SEC-BUTYL-4,6-DINITROPHENOL (DINOSEB)	0.8027						7.7
CAL01	Q2867185		DIPHENYLAMINE	1.3007						4.9
CAL01	Q2867185		2,6-DICHLOROPHENOL	0.3024						3.4
CAL01	Q2867185		DISULFOTON	0.8329						7.3
CAL01	Q2867185		FAMPHUR	0.0261		MR				34.3
CAL01	Q2867185		ISODRIN	0.1321						7.1
CAL01	Q2867185		ISOSAFROLE	0.3227						2.4
CAL01	Q2867185		KEPONE	0.0100		MR				25.4
CAL01	Q2867185		ETHYL PARATHION (PARATHION)	0.1734						3.2
CAL01	Q2867185		METHYL PARATHION	0.2580						10.8
CAL01	Q2867185		PHORATE	0.2694						4.4
CAL01	Q2867185		PRONAMIDE	0.6912						2.5
CAL01	Q2867185		SAFROLE	0.2847						4.1
BLA02	Q2866149		Analysis Date/Time: 02-Oct-14 17:43							
BLA02	Q2866149		ACENAPHTHENE			BDL	10.	ug/L		
BLA02	Q2866149		ACENAPHTHYLENE			BDL	10.	ug/L		
BLA02	Q2866149		ACETOPHENONE			BDL	10.	ug/L		
BLA02	Q2866149		2-ACETYLAMINOFLUORENE			BDL	10.	ug/L		
BLA02	Q2866149		4-AMINOBIPHENYL			BDL	10.	ug/L		
BLA02	Q2866149		ANTHRACENE			BDL	10.	ug/L		
BLA02	Q2866149		BENZO(A)ANTHRACENE			BDL	10.	ug/L		
BLA02	Q2866149		BENZO(B)FLUORANTHENE (3,4-BENZOFLUORANTHENE)			BDL	10.	ug/L		
BLA02	Q2866149		BENZO(K)FLUORANTHENE			BDL	10.	ug/L		
BLA02	Q2866149		BENZO(G,H,I)PERYLENE			BDL	10.	ug/L		
BLA02	Q2866149		BENZO(A)PYRENE			BDL	10.	ug/L		

APPENDIX IX SEMIVOLATILE ORGANICS SW846-8270C **O508.3**
Prep : GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

R631170 Analyst: T PINCKERT Run Date: 02-Oct-14
Analytical Reviewer: J MINNIEAR, II Review Date: 06-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2866149		BENZYL ALCOHOL			BDL	10.	ug/L		
BLA02	Q2866149		BIS(2-CHLOROETHOXY)METHANE			BDL	10.	ug/L		
BLA02	Q2866149		BIS(2-CHLOROETHYL)ETHER			BDL	10.	ug/L		
BLA02	Q2866149		BIS(2-CHLOROISOPROPYL)ETHER			BDL	10.	ug/L		
BLA02	Q2866149		BIS(2-ETHYLHEXYL)PHTHALATE			BDL	10.	ug/L		
BLA02	Q2866149		4-BROMODIPHENYL ETHER			BDL	10.	ug/L		
BLA02	Q2866149		BENZYLBUTYLPHTHALATE (BUTYLBENZYLPHTHALATE)			BDL	10.	ug/L		
BLA02	Q2866149		4-CHLOROANILINE			BDL	10.	ug/L		
BLA02	Q2866149		CHLOROBENZILATE			BDL	10.	ug/L		
BLA02	Q2866149		2-CHLORONAPHTHALENE			BDL	10.	ug/L		
BLA02	Q2866149		4-CHLOROPHENYL-PHENYLETHER			BDL	10.	ug/L		
BLA02	Q2866149		CHRYSENE			BDL	10.	ug/L		
BLA02	Q2866149		DIALLATE			BDL	10.	ug/L		
BLA02	Q2866149		DIBENZ(A,H)ANTHRACENE			BDL	10.	ug/L		
BLA02	Q2866149		DIBENZOFURAN			BDL	10.	ug/L		
BLA02	Q2866149		DI-N-BUTYLPHTHALATE			BDL	10.	ug/L		
BLA02	Q2866149		3,3'-DICHLOROBENZIDINE			BDL	20.	ug/L		
BLA02	Q2866149		DIETHYLPHTHALATE			BDL	10.	ug/L		
BLA02	Q2866149		DIMETHOATE			BDL	10.	ug/L		
BLA02	Q2866149		4-(DIMETHYLAMINO)AZOBENZENE			BDL	10.	ug/L		
BLA02	Q2866149		7,12-DIMETHYLBENZ(A)ANTHRACENE			BDL	10.	ug/L		
BLA02	Q2866149		3,3'-DIMETHYLBENZIDINE			BDL MR	10.	ug/L		
BLA02	Q2866149		DIMETHYLPHTHALATE			BDL	10.	ug/L		
BLA02	Q2866149		1,3-DINITROBENZENE (M-DINITROBENZENE)			BDL	50.	ug/L		
BLA02	Q2866149		2,4-DINITROTOLUENE			BDL	10.	ug/L		
BLA02	Q2866149		2,6-DINITROTOLUENE			BDL	10.	ug/L		
BLA02	Q2866149		DI-N-OCTYLPHTHALATE			BDL	10.	ug/L		
BLA02	Q2866149		DI-N-PROPYLNITROSOAMINE			BDL	10.	ug/L		
BLA02	Q2866149		ETHYL METHANESULFONATE			BDL	10.	ug/L		
BLA02	Q2866149		FLUORANTHENE			BDL	10.	ug/L		
BLA02	Q2866149		FLUORENE			BDL	10.	ug/L		
BLA02	Q2866149		HEXACHLOROBENZENE			BDL	10.	ug/L		
BLA02	Q2866149		HEXACHLOROBUTADIENE			BDL	10.	ug/L		
BLA02	Q2866149		HEXACHLOROCYCLOPENTADIENE			BDL	10.	ug/L		
BLA02	Q2866149		HEXACHLOROETHANE			BDL	10.	ug/L		
BLA02	Q2866149		HEXACHLOROPROPENE			BDL	10.	ug/L		
BLA02	Q2866149		INDENO(1,2,3-CD)PYRENE			BDL	10.	ug/L		
BLA02	Q2866149		2-METHYLNAPHTHALENE			BDL	10.	ug/L		
BLA02	Q2866149		METHAPYRILENE			BDL MR	10.	ug/L		
BLA02	Q2866149		3-METHYLCHOLANTHRENE			BDL	10.	ug/L		
BLA02	Q2866149		METHYL METHANESULFONATE			BDL	10.	ug/L		
BLA02	Q2866149		NAPHTHALENE			BDL	10.	ug/L		
BLA02	Q2866149		1,4-NAPHTHOQUINONE			BDL	50.	ug/L		
BLA02	Q2866149		1-NAPHTHYLAMINE			BDL	50.	ug/L		
BLA02	Q2866149		2-NAPHTHYLAMINE			BDL	50.	ug/L		
BLA02	Q2866149		3-NITROANILINE (M-			BDL	50.	ug/L		

APPENDIX IX SEMIVOLATILE ORGANICS SW846-8270C **O508.3**
Prep : GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

R631170 Analyst: T PINCKERT Run Date: 02-Oct-14
Analytical Reviewer: J MINNIEAR, II Review Date: 06-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
			NITROANILINE)							
BLA02	Q2866149		2-NITROANILINE (O-NITROANILINE)			BDL	50.	ug/L		
BLA02	Q2866149		4-NITROANILINE (P-NITROANILINE)			BDL	50.	ug/L		
BLA02	Q2866149		NITROBENZENE			BDL	1.6	ug/L		
BLA02	Q2866149		N-NITROSODI-N-BUTYLAMINE			BDL	10.	ug/L		
BLA02	Q2866149		N-NITROSODIETHYLAMINE			BDL	10.	ug/L		
BLA02	Q2866149		N-NITROSODIMETHYLAMINE			BDL	10.	ug/L		
BLA02	Q2866149		N-NITROSODIPHENYLAMINE			BDL	10.	ug/L		
BLA02	Q2866149		N-NITROSOMETHYLETHYLAMINE			BDL	10.	ug/L		
BLA02	Q2866149		N-NITROSOPIPERIDINE			BDL	10.	ug/L		
BLA02	Q2866149		N-NITROSOPYRROLIDINE			BDL	10.	ug/L		
BLA02	Q2866149		5-NITRO-O-TOLUIDINE			BDL	10.	ug/L		
BLA02	Q2866149		PENTACHLOROBENZENE			BDL	10.	ug/L		
BLA02	Q2866149		PENTACHLORONITROBENZENE			BDL	10.	ug/L		
BLA02	Q2866149		PHENACETIN			BDL	10.	ug/L		
BLA02	Q2866149		PHENANTHRENE			BDL	10.	ug/L		
BLA02	Q2866149		PYRENE			BDL	10.	ug/L		
BLA02	Q2866149		1,2,4,5-TETRACHLOROBENZENE			BDL	10.	ug/L		
BLA02	Q2866149		1,2,4-TRICHLOROBENZENE			BDL	10.	ug/L		
BLA02	Q2866149		THIONAZIN			BDL	10.	ug/L		
BLA02	Q2866149		O,O,O-TRIETHYL PHOSPHOROTHIOATE			BDL	10.	ug/L		
BLA02	Q2866149		SYM-(1,3,5)-TRINITROBENZENE			BDL	20.	ug/L		
BLA02	Q2866149		O-TOLUIDINE			BDL	10.	ug/L		
BLA02	Q2866149		P-PHENYLENEDIAMINE			BDL	20.	ug/L		
BLA02	Q2866149		2-SEC-BUTYL-4,6-DINITROPHENOL (DINOSEB)			BDL	10.	ug/L		
BLA02	Q2866149		DIPHENYLAMINE			BDL	10.	ug/L		
BLA02	Q2866149		4-CHLORO-3-METHYLPHENOL (P-CHLORO-M-CRESOL)			BDL	10.	ug/L		
BLA02	Q2866149		2-CHLOROPHENOL			BDL	10.	ug/L		
BLA02	Q2866149		2-METHYLPHENOL (O-CRESOL)			BDL	10.	ug/L		
BLA02	Q2866149		4-METHYLPHENOL (P-CRESOL)			BDL	10.	ug/L		
BLA02	Q2866149		2,4-DICHLOROPHENOL			BDL	10.	ug/L		
BLA02	Q2866149		2,6-DICHLOROPHENOL			BDL	10.	ug/L		
BLA02	Q2866149		2,4-DIMETHYLPHENOL			BDL	10.	ug/L		
BLA02	Q2866149		4,6-DINITRO-O-CRESOL(2-METHYL-4,6-DINITROPHEN			BDL	50.	ug/L		
BLA02	Q2866149		2,4-DINITROPHENOL			BDL	50.	ug/L		
BLA02	Q2866149		2-NITROPHENOL			BDL	10.	ug/L		
BLA02	Q2866149		4-NITROPHENOL			BDL	50.	ug/L		
BLA02	Q2866149		PENTACHLOROPHENOL			BDL	50.	ug/L		
BLA02	Q2866149		PHENOL			BDL	10.	ug/L		
BLA02	Q2866149		2,3,4,6-TETRACHLOROPHENOL			BDL	10.	ug/L		
BLA02	Q2866149		2,4,5-TRICHLOROPHENOL			BDL	50.	ug/L		
BLA02	Q2866149		2,4,6-TRICHLOROPHENOL			BDL	10.	ug/L		
BLA02	Q2866149		DISULFOTON			BDL	10.	ug/L		
BLA02	Q2866149		FAMPHUR			BDL MR	200	ug/L		
BLA02	Q2866149		ISODRIN			BDL	10.	ug/L		

APPENDIX IX SEMIVOLATILE ORGANICS SW846-8270C **O508.3**
Prep : GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

R631170 Analyst: T PINCKERT Run Date: 02-Oct-14
Analytical Reviewer: J MINNIEAR, II Review Date: 06-Oct-14 Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2866149		ISOPHORONE			BDL	10.	ug/L		
BLA02	Q2866149		ISOSAFROLE			BDL	10.	ug/L		
BLA02	Q2866149		KEPONE			BDL MR	200	ug/L		
BLA02	Q2866149		ETHYL PARATHION (PARATHION)			BDL	10.	ug/L		
BLA02	Q2866149		METHYL PARATHION			BDL	10.	ug/L		
BLA02	Q2866149		PHORATE			BDL	10.	ug/L		
BLA02	Q2866149		PRONAMIDE			BDL	10.	ug/L		
BLA02	Q2866149		SAFROLE			BDL	10.	ug/L		
BLA02	Q2866149		2-FLUOROPHENOL						55	
BLA02	Q2866149		PHENOL-D5						34	
BLA02	Q2866149		NITROBENZENE-D5						89	
BLA02	Q2866149		2-FLUOROBIPHENYL						88	
BLA02	Q2866149		2,4,6-TRIBROMOPHENOL						92	
BLA02	Q2866149		TERPHENYL-D14						103	
LCS	Q2866150		Analysis Date/Time: 02-Oct-14 18:05							
LCS	Q2866150		ACENAPHTHENE	50			45.9	ug/L	91.8	
LCS	Q2866150		ACENAPHTHYLENE	50			46.3	ug/L	92.6	
LCS	Q2866150		ANTHRACENE	50			46.1	ug/L	92.2	
LCS	Q2866150		BENZO(A)ANTHRACENE	50			46.3	ug/L	92.6	
LCS	Q2866150		BENZO(B)FLUORANTHENE (3,4-BENZOFLUORANTHENE)	50			51	ug/L	102	
LCS	Q2866150		BENZO(K)FLUORANTHENE	50			50.5	ug/L	101	
LCS	Q2866150		BENZO(G,H,I)PERYLENE	50			46.7	ug/L	93.4	
LCS	Q2866150		BENZO(A)PYRENE	50			50.3	ug/L	100.6	
LCS	Q2866150		BENZYL ALCOHOL	50			27.8	ug/L	55.6	
LCS	Q2866150		BIS(2-CHLOROETHOXY)METHANE	50			53.9	ug/L	107.8	
LCS	Q2866150		BIS(2-CHLOROETHYL)ETHER	50			47.4	ug/L	94.8	
LCS	Q2866150		BIS(2-CHLOROISOPROPYL)ETHER	50			48.4	ug/L	96.8	
LCS	Q2866150		BIS(2-ETHYLHEXYL)PHTHALATE	50			53.2	ug/L	106.4	
LCS	Q2866150		4-BROMODIPHENYL ETHER	50			52.1	ug/L	104.2	
LCS	Q2866150		BENZYLBUTYLPHTHALATE (BUTYLBENZYLPHTHALATE)	50			53.9	ug/L	107.8	
LCS	Q2866150		4-CHLOROANILINE	50			45.9	ug/L	91.8	
LCS	Q2866150		2-CHLORONAPHTHALENE	50			49.1	ug/L	98.2	
LCS	Q2866150		4-CHLOROPHENYL-PHENYLETHER	50			51.8	ug/L	103.6	
LCS	Q2866150		CHRYSENE	50			49.2	ug/L	98.4	
LCS	Q2866150		DIBENZ(A,H)ANTHRACENE	50			51.1	ug/L	102.2	
LCS	Q2866150		DIBENZOFURAN	50			52.8	ug/L	105.6	
LCS	Q2866150		DI-N-BUTYLPHTHALATE	50			49.8	ug/L	99.6	
LCS	Q2866150		3,3'-DICHLOROBENZIDINE	50			53.6	ug/L	107.2	
LCS	Q2866150		DIETHYLPHTHALATE	50			52.5	ug/L	105	
LCS	Q2866150		DIMETHYLPHTHALATE	50			51.6	ug/L	103.2	
LCS	Q2866150		1,3-DINITROBENZENE (M-DINITROBENZENE)	50			42.3	ug/L	84.6	
LCS	Q2866150		2,4-DINITROTOLUENE	50			48.3	ug/L	96.6	
LCS	Q2866150		2,6-DINITROTOLUENE	50			48.7	ug/L	97.4	
LCS	Q2866150		DI-N-OCTYLPHTHALATE	50			56.1	ug/L	112.2	
LCS	Q2866150		DI-N-PROPYLNITROSOAMINE	50			49.2	ug/L	98.4	
LCS	Q2866150		FLUORANTHENE	50			46.6	ug/L	93.2	

APPENDIX IX SEMIVOLATILE ORGANICS SW846-8270C **O508.3**
Prep : GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

R631170 Analyst: T PINCKERT Run Date: 02-Oct-14
Analytical Reviewer: J MINNIEAR, II Review Date: 06-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
LCS	Q2866150		FLUORENE	50			47.4	ug/L	94.8	
LCS	Q2866150		HEXACHLOROBENZENE	50			52.2	ug/L	104.4	
LCS	Q2866150		HEXACHLOROBUTADIENE	50			46	ug/L	92	
LCS	Q2866150		HEXACHLOROCYCLOPENTADIENE	50			47.8	ug/L	95.6	
LCS	Q2866150		HEXACHLOROETHANE	50			41.7	ug/L	83.4	
LCS	Q2866150		INDENO(1,2,3-CD)PYRENE	50			50.1	ug/L	100.2	
LCS	Q2866150		2-METHYLNAPHTHALENE	50			55	ug/L	110	
LCS	Q2866150		NAPHTHALENE	50			45	ug/L	90	
LCS	Q2866150		3-NITROANILINE (M-NITROANILINE)	50			45.5	ug/L	91	
LCS	Q2866150		2-NITROANILINE (O-NITROANILINE)	50			53.7	ug/L	107.4	
LCS	Q2866150		4-NITROANILINE (P-NITROANILINE)	50			49.6	ug/L	99.2	
LCS	Q2866150		NITROBENZENE	50			48.6	ug/L	97.2	
LCS	Q2866150		N-NITROSODIPHENYLAMINE	50			52.9	ug/L	105.8	
LCS	Q2866150		PHENANTHRENE	50			49.1	ug/L	98.2	
LCS	Q2866150		PYRENE	50			46.8	ug/L	93.6	
LCS	Q2866150		1,2,4,5-TETRACHLOROBENZENE	50			49	ug/L	98	
LCS	Q2866150		1,2,4-TRICHLOROBENZENE	50			48.4	ug/L	96.8	
LCS	Q2866150		4-CHLORO-3-METHYLPHENOL (P-CHLORO-M-CRESOL)	50			50.6	ug/L	101.2	
LCS	Q2866150		2-CHLOROPHENOL	50			43.1	ug/L	86.2	
LCS	Q2866150		2-METHYLPHENOL (O-CRESOL)	50			33.1	ug/L	66.2	
LCS	Q2866150		4-METHYLPHENOL (P-CRESOL)	50			26.6	ug/L	53.2	
LCS	Q2866150		2,4-DICHLOROPHENOL	50			55.6	ug/L	111.2	
LCS	Q2866150		2,4-DIMETHYLPHENOL	50			48.2	ug/L	96.4	
LCS	Q2866150		4,6-DINITRO-O-CRESOL(2-METHYL-4,6-DINITROPHEN	50			53.1	ug/L	106.2	
LCS	Q2866150		2,4-DINITROPHENOL	50			42.2	ug/L	84.4	
LCS	Q2866150		2-NITROPHENOL	50			57	ug/L	114	
LCS	Q2866150		4-NITROPHENOL	50			14.4	ug/L	28.8	
LCS	Q2866150		PENTACHLOROPHENOL	50			58.2	ug/L	116.4	
LCS	Q2866150		PHENOL	50			16.3	ug/L	32.6	
LCS	Q2866150		2,3,4,6-TETRACHLOROPHENOL	50			43.7	ug/L	87.4	
LCS	Q2866150		2,4,5-TRICHLOROPHENOL	50			50.2	ug/L	100.4	
LCS	Q2866150		2,4,6-TRICHLOROPHENOL	50			53.7	ug/L	107.4	
LCS	Q2866150		ISOPHORONE	50			47.4	ug/L	94.8	
SAMPLE	AA28613		Analysis Date/Time: 02-Oct-14 18:27							
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		Analysis Date/Time: 02-Oct-14 18:49							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		Analysis Date/Time: 02-Oct-14 19:11							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		Analysis Date/Time: 02-Oct-14 19:33							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28617		Analysis Date/Time: 02-Oct-14 19:55							
SAMPLE	AA28617		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28618		Analysis Date/Time: 02-Oct-14 20:17							
SAMPLE	AA28618		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28619		Analysis Date/Time: 02-Oct-14 20:39							

APPENDIX IX SEMIVOLATILE ORGANICS SW846-8270C **O508.3**
Prep : GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

R631170 Analyst: T PINCKERT Run Date: 02-Oct-14
Analytical Reviewer: J MINNIEAR, II Review Date: 06-Oct-14 Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28619		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28620		Analysis Date/Time: 02-Oct-14 21:01							
SAMPLE	AA28620		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28621		Analysis Date/Time: 02-Oct-14 21:23							
SAMPLE	AA28621		See Certificate of Analysis, Rep: 0							
SPI02	Q2866151	AA28621	Analysis Date/Time: 02-Oct-14 21:45							
SPI02	Q2866151	AA28621	ACENAPHTHENE	0	50		43.2	ug/L	86.4	
SPI02	Q2866151	AA28621	ACENAPHTHYLENE	0	50		44.2	ug/L	88.4	
SPI02	Q2866151	AA28621	ANTHRACENE	0	50		43.6	ug/L	87.2	
SPI02	Q2866151	AA28621	BENZO(A)ANTHRACENE	0	50		44.1	ug/L	88.2	
SPI02	Q2866151	AA28621	BENZO(B)FLUORANTHENE (3,4-BENZOFLUORANTHENE)	0	50		48.3	ug/L	96.6	
SPI02	Q2866151	AA28621	BENZO(K)FLUORANTHENE	0	50		48.7	ug/L	97.4	
SPI02	Q2866151	AA28621	BENZO(G,H,I)PERYLENE	0	50		44.1	ug/L	88.2	
SPI02	Q2866151	AA28621	BENZO(A)PYRENE	0	50		47.4	ug/L	94.8	
SPI02	Q2866151	AA28621	BENZYL ALCOHOL	0	50		25.7	ug/L	51.4	
SPI02	Q2866151	AA28621	BIS(2-CHLOROETHOXY)METHANE	0	50		51.3	ug/L	102.6	
SPI02	Q2866151	AA28621	BIS(2-CHLOROETHYL)ETHER	0	50		50	ug/L	100	
SPI02	Q2866151	AA28621	BIS(2-CHLOROISOPROPYL)ETHER	0	50		46.5	ug/L	93	
SPI02	Q2866151	AA28621	BIS(2-ETHYLHEXYL)PHTHALATE	0	50		50.1	ug/L	100.2	
SPI02	Q2866151	AA28621	4-BROMODIPHENYL ETHER	0	50		48.1	ug/L	96.2	
SPI02	Q2866151	AA28621	BENZYLBUTYLPHTHALATE (BUTYLBENZYLPHTHALATE)	0	50		50.7	ug/L	101.4	
SPI02	Q2866151	AA28621	4-CHLOROANILINE	0	50		43.2	ug/L	86.4	
SPI02	Q2866151	AA28621	2-CHLORONAPHTHALENE	0	50		47.1	ug/L	94.2	
SPI02	Q2866151	AA28621	4-CHLOROPHENYL-PHENYLETHER	0	50		49.4	ug/L	98.8	
SPI02	Q2866151	AA28621	CHRYSENE	0	50		45.8	ug/L	91.6	
SPI02	Q2866151	AA28621	DIBENZ(A,H)ANTHRACENE	0	50		48.2	ug/L	96.4	
SPI02	Q2866151	AA28621	DIBENZOFURAN	0	50		50.4	ug/L	100.8	
SPI02	Q2866151	AA28621	DI-N-BUTYLPHTHALATE	0	50		46.9	ug/L	93.8	
SPI02	Q2866151	AA28621	3,3'-DICHLOROBENZIDINE	0	50		45.2	ug/L	90.4	
SPI02	Q2866151	AA28621	DIETHYLPHTHALATE	0	50		50.3	ug/L	100.6	
SPI02	Q2866151	AA28621	DIMETHYLPHTHALATE	0	50		49.3	ug/L	98.6	
SPI02	Q2866151	AA28621	1,3-DINITROBENZENE (M-DINITROBENZENE)	0	50		39.4	ug/L	78.8	
SPI02	Q2866151	AA28621	2,4-DINITROTOLUENE	0	50		46	ug/L	92	
SPI02	Q2866151	AA28621	2,6-DINITROTOLUENE	0	50		46	ug/L	92	
SPI02	Q2866151	AA28621	DI-N-OCTYLPHTHALATE	0	50		53.5	ug/L	107	
SPI02	Q2866151	AA28621	DI-N-PROPYLNITROSOAMINE	0	50		46.8	ug/L	93.6	
SPI02	Q2866151	AA28621	FLUORANTHENE	0	50		45.7	ug/L	91.4	
SPI02	Q2866151	AA28621	FLUORENE	0	50		45.6	ug/L	91.2	
SPI02	Q2866151	AA28621	HEXACHLOROBENZENE	0	50		49	ug/L	98	
SPI02	Q2866151	AA28621	HEXACHLOROBUTADIENE	0	50		45.1	ug/L	90.2	
SPI02	Q2866151	AA28621	HEXACHLOROCYCLOPENTADIENE	0	50		49.5	ug/L	99	
SPI02	Q2866151	AA28621	HEXACHLOROETHANE	0	50		41	ug/L	82	
SPI02	Q2866151	AA28621	INDENO(1,2,3-CD)PYRENE	0	50		47.2	ug/L	94.4	
SPI02	Q2866151	AA28621	2-METHYLNAPHTHALENE	0	50		53.8	ug/L	107.6	
SPI02	Q2866151	AA28621	NAPHTHALENE	0	50		44.8	ug/L	89.6	
SPI02	Q2866151	AA28621	3-NITROANILINE (M-	0	50		42.7	ug/L	85.4	

APPENDIX IX SEMIVOLATILE ORGANICS SW846-8270C **O508.3**
Prep : GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

R631170 Analyst: T PINCKERT Run Date: 02-Oct-14
Analytical Reviewer: J MINNIEAR, II Review Date: 06-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
			NITROANILINE)							
SPI02	Q2866151	AA28621	2-NITROANILINE (O-NITROANILINE)	0	50		51.8	ug/L	103.6	
SPI02	Q2866151	AA28621	4-NITROANILINE (P-NITROANILINE)	0	50		48.8	ug/L	97.6	
SPI02	Q2866151	AA28621	NITROBENZENE	0	50		47.7	ug/L	95.4	
SPI02	Q2866151	AA28621	N-NITROSODIPHENYLAMINE	0	50		49.4	ug/L	98.8	
SPI02	Q2866151	AA28621	PHENANTHRENE	0	50		45.9	ug/L	91.8	
SPI02	Q2866151	AA28621	PYRENE	0	50		43.2	ug/L	86.4	
SPI02	Q2866151	AA28621	1,2,4,5-TETRACHLOROBENZENE	0	50		46.2	ug/L	92.4	
SPI02	Q2866151	AA28621	1,2,4-TRICHLOROBENZENE	0	50		48.4	ug/L	96.8	
SPI02	Q2866151	AA28621	4-CHLORO-3-METHYLPHENOL (P-CHLORO-M-CRESOL)	0	50		47.7	ug/L	95.4	
SPI02	Q2866151	AA28621	2-CHLOROPHENOL	0	50		38.8	ug/L	77.6	
SPI02	Q2866151	AA28621	2-METHYLPHENOL (O-CRESOL)	0	50		30.1	ug/L	60.2	
SPI02	Q2866151	AA28621	4-METHYLPHENOL (P-CRESOL)	0	50		24.2	ug/L	48.4	
SPI02	Q2866151	AA28621	2,4-DICHLOROPHENOL	0	50		50.9	ug/L	101.8	
SPI02	Q2866151	AA28621	2,4-DIMETHYLPHENOL	0	50		53.2	ug/L	106.4	
SPI02	Q2866151	AA28621	4,6-DINITRO-O-CRESOL(2-METHYL-4,6-DINITROPHEN	0	50		46	ug/L	92	
SPI02	Q2866151	AA28621	2,4-DINITROPHENOL	0	50		33.4	ug/L	66.8	
SPI02	Q2866151	AA28621	2-NITROPHENOL	0	50		52.6	ug/L	105.2	
SPI02	Q2866151	AA28621	4-NITROPHENOL	0	50		14.1	ug/L	28.2	
SPI02	Q2866151	AA28621	PENTACHLOROPHENOL	0	50		51.3	ug/L	102.6	
SPI02	Q2866151	AA28621	PHENOL	0	50		14.4	ug/L	28.8	
SPI02	Q2866151	AA28621	2,3,4,6-TETRACHLOROPHENOL	0	50		40.1	ug/L	80.2	
SPI02	Q2866151	AA28621	2,4,5-TRICHLOROPHENOL	0	50		46	ug/L	92	
SPI02	Q2866151	AA28621	2,4,6-TRICHLOROPHENOL	0	50		49.5	ug/L	99	
SPI02	Q2866151	AA28621	ISOPHORONE	0	50		45.7	ug/L	91.4	
DPS02	Q2866152	AA28621	Analysis Date/Time: 02-Oct-14 22:07							
DPS02	Q2866152	AA28621	ACENAPHTHENE	0	50		43.6	ug/L	87.2	0.9
DPS02	Q2866152	AA28621	ACENAPHTHYLENE	0	50		44.1	ug/L	88.2	0.2
DPS02	Q2866152	AA28621	ANTHRACENE	0	50		43.1	ug/L	86.2	1
DPS02	Q2866152	AA28621	BENZO(A)ANTHRACENE	0	50		43.2	ug/L	86.3	2.1
DPS02	Q2866152	AA28621	BENZO(B)FLUORANTHENE (3,4-BENZOFLUORANTHENE)	0	50		49.3	ug/L	98.5	1.9
DPS02	Q2866152	AA28621	BENZO(K)FLUORANTHENE	0	50		47.5	ug/L	94.9	2.5
DPS02	Q2866152	AA28621	BENZO(G,H,I)PERYLENE	0	50		44	ug/L	87.9	0.3
DPS02	Q2866152	AA28621	BENZO(A)PYRENE	0	50		47.5	ug/L	95	0.2
DPS02	Q2866152	AA28621	BENZYL ALCOHOL	0	50		27.4	ug/L	54.8	6.4
DPS02	Q2866152	AA28621	BIS(2-CHLOROETHOXY)METHANE	0	50		50.7	ug/L	101.4	1.3
DPS02	Q2866152	AA28621	BIS(2-CHLOROETHYL)ETHER	0	50		50	ug/L	99.9	0.2
DPS02	Q2866152	AA28621	BIS(2-CHLOROISOPROPYL)ETHER	0	50		46.4	ug/L	92.8	0.2
DPS02	Q2866152	AA28621	BIS(2-ETHYLHEXYL)PHTHALATE	0	50		49.6	ug/L	99.2	0.9
DPS02	Q2866152	AA28621	4-BROMODIPHENYL ETHER	0	50		48	ug/L	95.9	0.3
DPS02	Q2866152	AA28621	BENZYLBUTYLPHTHALATE (BUTYLBENZYLPHTHALATE)	0	50		50.3	ug/L	100.7	0.6
DPS02	Q2866152	AA28621	4-CHLOROANILINE	0	50		46.7	ug/L	93.5	8
DPS02	Q2866152	AA28621	2-CHLORONAPHTHALENE	0	50		48.2	ug/L	96.3	2.3
DPS02	Q2866152	AA28621	4-CHLOROPHENYL-PHENYLETHER	0	50		48.8	ug/L	97.6	1.2
DPS02	Q2866152	AA28621	CHRYSENE	0	50		45.5	ug/L	91.1	0.4

APPENDIX IX SEMIVOLATILE ORGANICS SW846-8270C **O508.3**
Prep : GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

R631170 Analyst: T PINCKERT Run Date: 02-Oct-14
Analytical Reviewer: J MINNIEAR, II Review Date: 06-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
DPS02	Q2866152	AA28621	DIBENZ(A,H)ANTHRACENE	0	50		47.9	ug/L	95.8	0.5
DPS02	Q2866152	AA28621	DIBENZOFURAN	0	50		49.9	ug/L	99.8	1
DPS02	Q2866152	AA28621	DI-N-BUTYLPHTHALATE	0	50		45.6	ug/L	91.2	2.8
DPS02	Q2866152	AA28621	3,3'-DICHLOROBENZIDINE	0	50		46.9	ug/L	93.8	3.7
DPS02	Q2866152	AA28621	DIETHYLPHTHALATE	0	50		49.5	ug/L	98.9	1.6
DPS02	Q2866152	AA28621	DIMETHYLPHTHALATE	0	50		49	ug/L	98	0.5
DPS02	Q2866152	AA28621	1,3-DINITROBENZENE (M-DINITROBENZENE)	0	50		39.7	ug/L	79.4	0.6
DPS02	Q2866152	AA28621	2,4-DINITROTOLUENE	0	50		46.2	ug/L	92.3	0.4
DPS02	Q2866152	AA28621	2,6-DINITROTOLUENE	0	50		46	ug/L	91.9	0
DPS02	Q2866152	AA28621	DI-N-OCTYLPHTHALATE	0	50		53.7	ug/L	107.3	0.4
DPS02	Q2866152	AA28621	DI-N-PROPYLNITROSOAMINE	0	50		46.8	ug/L	93.6	0.1
DPS02	Q2866152	AA28621	FLUORANTHENE	0	50		43.9	ug/L	87.8	3.9
DPS02	Q2866152	AA28621	FLUORENE	0	50		45.2	ug/L	90.5	0.8
DPS02	Q2866152	AA28621	HEXACHLOROBENZENE	0	50		49.2	ug/L	98.4	0.4
DPS02	Q2866152	AA28621	HEXACHLOROBUTADIENE	0	50		45.9	ug/L	91.7	1.6
DPS02	Q2866152	AA28621	HEXACHLOROCYCLOPENTADIENE	0	50		50	ug/L	100	1
DPS02	Q2866152	AA28621	HEXACHLOROETHANE	0	50		40.5	ug/L	80.9	1.2
DPS02	Q2866152	AA28621	INDENO(1,2,3-CD)PYRENE	0	50		47.1	ug/L	94.1	0.3
DPS02	Q2866152	AA28621	2-METHYLNAPHTHALENE	0	50		52.8	ug/L	105.7	1.8
DPS02	Q2866152	AA28621	NAPHTHALENE	0	50		44.5	ug/L	88.9	0.8
DPS02	Q2866152	AA28621	3-NITROANILINE (M-NITROANILINE)	0	50		45.5	ug/L	90.9	6.1
DPS02	Q2866152	AA28621	2-NITROANILINE (O-NITROANILINE)	0	50		50.7	ug/L	101.4	2.1
DPS02	Q2866152	AA28621	4-NITROANILINE (P-NITROANILINE)	0	50		48	ug/L	95.9	1.7
DPS02	Q2866152	AA28621	NITROBENZENE	0	50		47.2	ug/L	94.4	1.2
DPS02	Q2866152	AA28621	N-NITROSODIPHENYLAMINE	0	50		49.7	ug/L	99.3	0.4
DPS02	Q2866152	AA28621	PHENANTHRENE	0	50		45.6	ug/L	91.2	0.7
DPS02	Q2866152	AA28621	PYRENE	0	50		43.8	ug/L	87.5	1.4
DPS02	Q2866152	AA28621	1,2,4,5-TETRACHLOROBENZENE	0	50		46.8	ug/L	93.6	1.3
DPS02	Q2866152	AA28621	1,2,4-TRICHLOROBENZENE	0	50		48.1	ug/L	96.2	0.5
DPS02	Q2866152	AA28621	4-CHLORO-3-METHYLPHENOL (P-CHLORO-M-CRESOL)	0	50		46.5	ug/L	93	2.4
DPS02	Q2866152	AA28621	2-CHLOROPHENOL	0	50		38.6	ug/L	77.2	0.6
DPS02	Q2866152	AA28621	2-METHYLPHENOL (O-CRESOL)	0	50		31.1	ug/L	62.2	3.3
DPS02	Q2866152	AA28621	4-METHYLPHENOL (P-CRESOL)	0	50		25.3	ug/L	50.6	4.2
DPS02	Q2866152	AA28621	2,4-DICHLOROPHENOL	0	50		49.1	ug/L	98.1	3.8
DPS02	Q2866152	AA28621	2,4-DIMETHYLPHENOL	0	50		53	ug/L	106	0.3
DPS02	Q2866152	AA28621	4,6-DINITRO-O-CRESOL(2-METHYL-4,6-DINITROPHEN	0	50		43.7	ug/L	87.4	5.1
DPS02	Q2866152	AA28621	2,4-DINITROPHENOL	0	50		34.3	ug/L	68.6	2.5
DPS02	Q2866152	AA28621	2-NITROPHENOL	0	50		50.8	ug/L	101.7	3.3
DPS02	Q2866152	AA28621	4-NITROPHENOL	0	50		15	ug/L	30.1	6.5
DPS02	Q2866152	AA28621	PENTACHLOROPHENOL	0	50		48.9	ug/L	97.8	4.9
DPS02	Q2866152	AA28621	PHENOL	0	50		16	ug/L	31.9	9.9
DPS02	Q2866152	AA28621	2,3,4,6-TETRACHLOROPHENOL	0	50		39	ug/L	77.9	2.9
DPS02	Q2866152	AA28621	2,4,5-TRICHLOROPHENOL	0	50		45.4	ug/L	90.9	1.1
DPS02	Q2866152	AA28621	2,4,6-TRICHLOROPHENOL	0	50		47.4	ug/L	94.8	4.3
DPS02	Q2866152	AA28621	ISOPHORONE	0	50		45	ug/L	90	1.4

APPENDIX IX SEMIVOLATILE ORGANICS SW846-8270C **O508.3**
Prep : GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

R631170 Analyst: T PINCKERT Run Date: 02-Oct-14
Analytical Reviewer: J MINNIEAR, II Review Date: 06-Oct-14 Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28622		Analysis Date/Time: 02-Oct-14 22:29							
SAMPLE	AA28622		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28623		Analysis Date/Time: 02-Oct-14 22:51							
SAMPLE	AA28623		See Certificate of Analysis, Rep: 0							
Q2867183	Value reported for analytes calibrated by linear (LIN) or									
Q2867183	quadratic (QDR) equations is r2 (Coef. of Determination).									

R631178 Analyst: T PINCKERT Run Date: 03-Oct-14 Instrument: GC/MS SVOA
Analytical Reviewer: J MINNIEAR, II Review Date: 07-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CAL01	Q2861618		Analysis Date/Time: 17-Sep-14 10:03							
CAL01	Q2861618		4-METHYLPHENOL (P-CRESOL)	1.5144						12.8
CAL01	Q2861618		2-FLUOROPHENOL	1.2325						14.9
CAL01	Q2861618		PHENOL-D5	1.9582						8.3
CAL01	Q2861618		NITROBENZENE-D5	0.3688						9.5
CAL01	Q2861618		2-FLUOROBIPHENYL	1.2868						6.8
CAL01	Q2861618		2,4,6-TRIBROMOPHENOL	0.0829						3.8
CAL01	Q2861618		TERPHENYL-D14	0.8138						5.7
ICV01	Q2861619		Analysis Date/Time: 17-Sep-14 12:14							
ICV01	Q2861619		4-METHYLPHENOL (P-CRESOL)	50			54.2	ug/L	108.4	
CCVD	Q2867252		Analysis Date/Time: 03-Oct-14 15:56							
CCVD	Q2867252		4-METHYLPHENOL (P-CRESOL)	1.5144			1.5686			3.6
CCVD	Q2867252		2-FLUOROPHENOL	1.2325			1.3012			5.6
CCVD	Q2867252		PHENOL-D5	1.9582			1.9111			2.4
CCVD	Q2867252		NITROBENZENE-D5	0.3688			0.3539			4
CCVD	Q2867252		2-FLUOROBIPHENYL	1.2868			1.2180			5.3
CCVD	Q2867252		2,4,6-TRIBROMOPHENOL	0.0829			0.0966			16.5
CCVD	Q2867252		TERPHENYL-D14	0.8138			0.8199			0.7
SAMPLE	AA28615		Analysis Date/Time: 03-Oct-14 17:51							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 1							
Q2867252	CCV Recovery was above method acceptance limits. This target analyte was									
Q2867252	not detected in the sample.									

APPENDIX IX VOLATILE ORGANICS, CAPILLARY COLUMN TECHNIQUE SW846-8260B **O509.3**

R631022 Analyst: H WILLIAMS Run Date: 28-Sep-14 Instrument: GC/MS VOA
Analytical Reviewer: R SHAMP Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CAL01	Q2864793		Analysis Date/Time: 24-Sep-14 09:15							
CAL01	Q2864793		ACETONE (2-PROPANONE)	0.1914						11.8
CAL01	Q2864793		ACETONITRILE	0.0626						7.3
CAL01	Q2864793		ACROLEIN	0.0143						11.7
CAL01	Q2864793		ACRYLONITRILE	0.1151						9.1
CAL01	Q2864793		BENZENE	0.9738						4.8
CAL01	Q2864793		BROMODICHLOROMETHANE	0.3057						5.1
CAL01	Q2864793		BROMOCHLOROMETHANE	0.1043						6.1

APPENDIX IX VOLATILE ORGANICS, CAPILLARY COLUMN TECHNIQUE SW846-8260B **O509.3**

R631022 Analyst: H WILLIAMS Run Date: 28-Sep-14
Analytical Reviewer: R SHAMP Review Date: 01-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CAL01	Q2864793		BROMOFORM	0.4033						4.8
CAL01	Q2864793		BROMOMETHANE			LIN				0.995
CAL01	Q2864793		CARBON DISULFIDE	0.5904						5.3
CAL01	Q2864793		CARBON TETRACHLORIDE	0.2454						9
CAL01	Q2864793		CHLOROBENZENE	1.7275						3
CAL01	Q2864793		CHLORODIBROMOMETHANE	0.6044						3.6
CAL01	Q2864793		1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	1.3814						2.1
CAL01	Q2864793		1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	1.4058						2.8
CAL01	Q2864793		1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	1.4091						2.2
CAL01	Q2864793		CHLOROETHANE	0.1860						6.3
CAL01	Q2864793		2-CHLORO-1,3-BUTADIENE (CHLOROPRENE)	0.4849						7.7
CAL01	Q2864793		CHLOROFORM	0.4107						2.9
CAL01	Q2864793		CHLOROMETHANE	0.4608						7
CAL01	Q2864793		1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	0.2390						9.4
CAL01	Q2864793		3-CHLOROPROPENE (ALLYL CHLORIDE)	1.3876						8.6
CAL01	Q2864793		1,2-DIBROMOETHANE (EDB)	0.2023						7.1
CAL01	Q2864793		DIBROMOMETHANE	0.1374						3.9
CAL01	Q2864793		TRANS-1,4-DICHLORO-2-BUTENE	0.5625						8.1
CAL01	Q2864793		DICHLORODIFLUOROMETHANE	0.1701						12.9
CAL01	Q2864793		1,1-DICHLOROETHANE	0.5098						3.5
CAL01	Q2864793		1,2-DICHLOROETHANE	0.5082						3.4
CAL01	Q2864793		CIS-1,2-DICHLOROETHENE	0.2438						4.9
CAL01	Q2864793		TRANS-1,2-DICHLOROETHENE	0.2275						4.8
CAL01	Q2864793		1,1-DICHLOROETHENE	0.2044						3.4
CAL01	Q2864793		1,2-DICHLOROPROPANE	0.2970						7.2
CAL01	Q2864793		1,3-DICHLOROPROPANE	1.0333						3.3
CAL01	Q2864793		1,1-DICHLOROPROPENE	0.1106						4.9
CAL01	Q2864793		2,2-DICHLOROPROPANE	0.1680						7.8
CAL01	Q2864793		DICHLOROMETHANE (METHYLENE CHLORIDE)			LIN				1.000
CAL01	Q2864793		CIS-1,3-DICHLOROPROPENE	0.3636						12.2
CAL01	Q2864793		TRANS-1,3-DICHLOROPROPENE	0.3048						14
CAL01	Q2864793		ETHYL BENZENE	0.8512						11.5
CAL01	Q2864793		ETHYL CYANIDE (PROPIONITRILE)	0.0974						11.4
CAL01	Q2864793		ETHYL METHACRYLATE			LIN				1.000
CAL01	Q2864793		2-HEXANONE	1.1677						11.3
CAL01	Q2864793		IODOMETHANE	0.2934						1.8
CAL01	Q2864793		ISOBUTANOL (ISOBUTYL ALCOHOL)			LIN				0.999
CAL01	Q2864793		METHYL ISOBUTYL KETONE	0.6055						13.3
CAL01	Q2864793		METHACRYLONITRILE	0.4974						8.4
CAL01	Q2864793		METHYL ETHYL KETONE	0.0433						13.1
CAL01	Q2864793		METHYL METHACRYLATE	0.4580						6.8
CAL01	Q2864793		STYRENE	1.7917						12
CAL01	Q2864793		1,1,1,2-TETRACHLOROETHANE	0.6059						2.2
CAL01	Q2864793		1,1,2,2-TETRACHLOROETHANE	0.9642						2.7

APPENDIX IX VOLATILE ORGANICS, CAPILLARY COLUMN TECHNIQUE SW846-8260B **O509.3**

R631022 Analyst: H WILLIAMS Run Date: 28-Sep-14
Analytical Reviewer: R SHAMP Review Date: 01-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CAL01	Q2864793		TETRACHLOROETHENE	0.5820						2.6
CAL01	Q2864793		TOLUENE	0.9494						7.8
CAL01	Q2864793		1,1,1-TRICHLOROETHANE	0.3079						4.1
CAL01	Q2864793		1,1,2-TRICHLOROETHANE	0.1980						4.8
CAL01	Q2864793		TRICHLOROETHENE	0.2455						4.8
CAL01	Q2864793		TRICHLOROFLUOROMETHANE	0.2921						4.9
CAL01	Q2864793		1,2,3-TRICHLOROPROPANE	0.3116						1.8
CAL01	Q2864793		VINYL ACETATE	0.7347						13
CAL01	Q2864793		VINYL CHLORIDE	0.4017						7.8
CAL01	Q2864793		METHYL-T-BUTYL ETHER (MTBE)	0.6550						7.4
CAL01	Q2864793		1,2,4-TRIMETHYLBENZENE	2.4777						10.4
CAL01	Q2864793		1,3,5-TRIMETHYLBENZENE	2.4874						11
CAL01	Q2864793		ISOPROPYLBENZENE (CUMENE)	2.8501						11.4
CAL01	Q2864793		TETRAHYDROFURAN	0.1869						11.1
CAL01	Q2864793		4-ISOPROPYLTOLUENE (P-ISOPROPYLTOLUENE)	2.3925						12.5
CAL01	Q2864793		DICHLOROETHANE-D4	0.3949						4.8
CAL01	Q2864793		TOLUENE-D8	0.9177						2.1
CAL01	Q2864793		4-BROMOFLUOROBENZENE	0.7377						1.3
ICV01	Q2864794		Analysis Date/Time: 24-Sep-14 12:12							
ICV01	Q2864794		ACETONE (2-PROPANONE)	50			53.3	ug/L	106.6	
ICV01	Q2864794		ACROLEIN	100			108	ug/L	108	
ICV01	Q2864794		ACRYLONITRILE	100			104	ug/L	104	
ICV01	Q2864794		BENZENE	10			10.5	ug/L	105	
ICV01	Q2864794		BROMODICHLOROMETHANE	10			10.7	ug/L	107	
ICV01	Q2864794		BROMOCHLOROMETHANE	10			11.6	ug/L	116	
ICV01	Q2864794		BROMOFORM	10			11	ug/L	110	
ICV01	Q2864794		BROMOMETHANE	10			10.4	ug/L	104	
ICV01	Q2864794		CARBON DISULFIDE	10			10.7	ug/L	107	
ICV01	Q2864794		CARBON TETRACHLORIDE	10			11.6	ug/L	116	
ICV01	Q2864794		CHLOROBENZENE	10			9.77	ug/L	97.7	
ICV01	Q2864794		CHLORODIBROMOMETHANE	10			11	ug/L	110	
ICV01	Q2864794		1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	10			9.97	ug/L	99.7	
ICV01	Q2864794		1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	10			10.2	ug/L	102	
ICV01	Q2864794		1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	10			10.7	ug/L	107	
ICV01	Q2864794		CHLOROETHANE	10			11.8	ug/L	118	
ICV01	Q2864794		CHLOROFORM	10			11.3	ug/L	113	
ICV01	Q2864794		CHLOROMETHANE	10			10.4	ug/L	104	
ICV01	Q2864794		1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	10			10.4	ug/L	104	
ICV01	Q2864794		3-CHLOROPROPENE (ALLYL CHLORIDE)	10			10.9	ug/L	109	
ICV01	Q2864794		1,2-DIBROMOETHANE (EDB)	10			10.3	ug/L	103	
ICV01	Q2864794		DIBROMOMETHANE	10			11.4	ug/L	114	
ICV01	Q2864794		TRANS-1,4-DICHLORO-2-BUTENE	20			19.4	ug/L	97	
ICV01	Q2864794		DICHLORODIFLUOROMETHANE	10			10.3	ug/L	103	
ICV01	Q2864794		1,1-DICHLOROETHANE	10			11.6	ug/L	116	

APPENDIX IX VOLATILE ORGANICS, CAPILLARY COLUMN TECHNIQUE SW846-8260B **O509.3**

R631022 Analyst: H WILLIAMS Run Date: 28-Sep-14
Analytical Reviewer: R SHAMP Review Date: 01-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2864794		1,2-DICHLOROETHANE	10			10.7	ug/L	107	
ICV01	Q2864794		CIS-1,2-DICHLOROETHENE	10			10.6	ug/L	106	
ICV01	Q2864794		TRANS-1,2-DICHLOROETHENE	10			10.7	ug/L	107	
ICV01	Q2864794		1,1-DICHLOROETHENE	10			11.3	ug/L	113	
ICV01	Q2864794		1,2-DICHLOROPROPANE	10			10.3	ug/L	103	
ICV01	Q2864794		1,3-DICHLOROPROPANE	10			10.1	ug/L	101	
ICV01	Q2864794		1,1-DICHLOROPROPENE	10			10.8	ug/L	108	
ICV01	Q2864794		2,2-DICHLOROPROPANE	10			10.8	ug/L	108	
ICV01	Q2864794		DICHLOROMETHANE (METHYLENE CHLORIDE)	10			10.4	ug/L	104	
ICV01	Q2864794		CIS-1,3-DICHLOROPROPENE	10			9.5	ug/L	95	
ICV01	Q2864794		TRANS-1,3-DICHLOROPROPENE	10			10.2	ug/L	102	
ICV01	Q2864794		ETHYL BENZENE	10			10.8	ug/L	108	
ICV01	Q2864794		ETHYL CYANIDE (PROPIONITRILE)	100			111	ug/L	111	
ICV01	Q2864794		ETHYL METHACRYLATE	10			10.3	ug/L	103	
ICV01	Q2864794		2-HEXANONE	50			51.5	ug/L	103	
ICV01	Q2864794		IODOMETHANE	10			10.5	ug/L	105	
ICV01	Q2864794		ISOBUTANOL (ISOBUTYL ALCOHOL)	825.0			873	ug/L	105.8	
ICV01	Q2864794		METHYL ISOBUTYL KETONE	50			51.4	ug/L	102.8	
ICV01	Q2864794		METHACRYLONITRILE	100			108	ug/L	108	
ICV01	Q2864794		METHYL ETHYL KETONE	50			53.5	ug/L	107	
ICV01	Q2864794		METHYL METHACRYLATE	10			9.94	ug/L	99.4	
ICV01	Q2864794		STYRENE	10			10.8	ug/L	108	
ICV01	Q2864794		1,1,1,2-TETRACHLOROETHANE	10			10.6	ug/L	106	
ICV01	Q2864794		1,1,2,2-TETRACHLOROETHANE	10			10.6	ug/L	106	
ICV01	Q2864794		TETRACHLOROETHENE	10			11.6	ug/L	116	
ICV01	Q2864794		TOLUENE	10			10.3	ug/L	103	
ICV01	Q2864794		1,1,1-TRICHLOROETHANE	10			11.6	ug/L	116	
ICV01	Q2864794		1,1,2-TRICHLOROETHANE	10			10.5	ug/L	105	
ICV01	Q2864794		TRICHLOROETHENE	10			10.3	ug/L	103	
ICV01	Q2864794		TRICHLOROFLUOROMETHANE	10			10.8	ug/L	108	
ICV01	Q2864794		1,2,3-TRICHLOROPROPANE	10			11.2	ug/L	112	
ICV01	Q2864794		VINYL ACETATE	10			12.8	ug/L	128	
ICV01	Q2864794		VINYL CHLORIDE	10			9.9	ug/L	99	
ICV01	Q2864794		METHYL-T-BUTYL ETHER (MTBE)	10			10	ug/L	100	
ICV01	Q2864794		1,2,4-TRIMETHYLBENZENE	10			10.8	ug/L	108	
ICV01	Q2864794		1,3,5-TRIMETHYLBENZENE	10			10.5	ug/L	105	
ICV01	Q2864794		ISOPROPYLBENZENE (CUMENE)	10			10.4	ug/L	104	
ICV01	Q2864794		TETRAHYDROFURAN	125			131	ug/L	104.8	
ICV01	Q2864794		4-ISOPROPYLTOLUENE (P-ISOPROPYLTOLUENE)	10			11.4	ug/L	114	
CCVD	Q2865951		Analysis Date/Time: 28-Sep-14 08:59							
CCVD	Q2865951		ACETONITRILE	0.0626			0.0655			4.6
CCVD	Q2865951		2-CHLORO-1,3-BUTADIENE (CHLOROPRENE)	0.4849			0.6113			26.1
BLA01	Q2865952		Analysis Date/Time: 28-Sep-14 09:34							
BLA01	Q2865952		ACETONE (2-PROPANONE)			BDL	1.6	ug/L		
BLA01	Q2865952		ACROLEIN			BDL	10	ug/L		
BLA01	Q2865952		ACRYLONITRILE			BDL	5.0	ug/L		

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R631022 Analyst: H WILLIAMS Run Date: 28-Sep-14
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QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA01	Q2865952		BENZENE			BDL	0.24	ug/L		
BLA01	Q2865952		BROMODICHLOROMETHANE			BDL	0.28	ug/L		
BLA01	Q2865952		BROMOCHLOROMETHANE			BDL	0.35	ug/L		
BLA01	Q2865952		BROMOFORM			BDL	0.33	ug/L		
BLA01	Q2865952		BROMOMETHANE			BDL	0.48	ug/L		
BLA01	Q2865952		CARBON DISULFIDE			BDL	0.31	ug/L		
BLA01	Q2865952		CARBON TETRACHLORIDE			BDL	0.33	ug/L		
BLA01	Q2865952		CHLOROBENZENE			BDL	0.28	ug/L		
BLA01	Q2865952		CHLORODIBROMOMETHANE			BDL	0.32	ug/L		
BLA01	Q2865952		1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)			BDL	0.28	ug/L		
BLA01	Q2865952		1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)			BDL	0.33	ug/L		
BLA01	Q2865952		1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)			BDL	0.29	ug/L		
BLA01	Q2865952		CHLOROETHANE			BDL	0.45	ug/L		
BLA01	Q2865952		CHLOROFORM			BDL	0.22	ug/L		
BLA01	Q2865952		CHLOROMETHANE			BDL	1.0	ug/L		
BLA01	Q2865952		1,2-DIBROMO-3-CHLOROPROPANE (DBCP)			BDL	0.31	ug/L		
BLA01	Q2865952		3-CHLOROPROPENE (ALLYL CHLORIDE)			BDL	0.25	ug/L		
BLA01	Q2865952		1,2-DIBROMOETHANE (EDB)			BDL	0.25	ug/L		
BLA01	Q2865952		DIBROMOMETHANE			BDL	0.27	ug/L		
BLA01	Q2865952		TRANS-1,4-DICHLORO-2-BUTENE			BDL	0.65	ug/L		
BLA01	Q2865952		DICHLORODIFLUOROMETHANE			BDL	0.42	ug/L		
BLA01	Q2865952		1,1-DICHLOROETHANE			BDL	0.31	ug/L		
BLA01	Q2865952		1,2-DICHLOROETHANE			BDL	0.30	ug/L		
BLA01	Q2865952		CIS-1,2-DICHLOROETHENE			BDL	0.24	ug/L		
BLA01	Q2865952		TRANS-1,2-DICHLOROETHENE			BDL	0.40	ug/L		
BLA01	Q2865952		1,1-DICHLOROETHENE			BDL	0.39	ug/L		
BLA01	Q2865952		1,2-DICHLOROPROPANE			BDL	0.26	ug/L		
BLA01	Q2865952		1,3-DICHLOROPROPANE			BDL	0.36	ug/L		
BLA01	Q2865952		1,1-DICHLOROPROPENE			BDL	0.45	ug/L		
BLA01	Q2865952		2,2-DICHLOROPROPANE			BDL	0.68	ug/L		
BLA01	Q2865952		DICHLOROMETHANE (METHYLENE CHLORIDE)			BDL	1.0	ug/L		
BLA01	Q2865952		CIS-1,3-DICHLOROPROPENE			BDL	0.28	ug/L		
BLA01	Q2865952		TRANS-1,3-DICHLOROPROPENE			BDL	0.20	ug/L		
BLA01	Q2865952		ETHYL BENZENE			BDL	0.26	ug/L		
BLA01	Q2865952		ETHYL CYANIDE (PROPIONITRILE)			BDL	2.6	ug/L		
BLA01	Q2865952		ETHYL METHACRYLATE			BDL	0.18	ug/L		
BLA01	Q2865952		2-HEXANONE			BDL	1.2	ug/L		
BLA01	Q2865952		IODOMETHANE			BDL	0.45	ug/L		
BLA01	Q2865952		ISOBUTANOL (ISOBUTYL ALCOHOL)			BDL	100	ug/L		
BLA01	Q2865952		METHYL ISOBUTYL KETONE			BDL	0.92	ug/L		
BLA01	Q2865952		METHACRYLONITRILE			BDL	1.0	ug/L		
BLA01	Q2865952		METHYL ETHYL KETONE			BDL	1.3	ug/L		
BLA01	Q2865952		METHYL METHACRYLATE			BDL	0.28	ug/L		
BLA01	Q2865952		STYRENE			BDL	0.21	ug/L		

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R631022 Analytical | Analyst: H WILLIAMS | Reviewer: R SHAMP | Run Date: 28-Sep-14 | Review Date: 01-Oct-14 | Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA01	Q2865952		1,1,1,2-TETRACHLOROETHANE			BDL	0.29	ug/L		
BLA01	Q2865952		1,1,2,2-TETRACHLOROETHANE			BDL	0.34	ug/L		
BLA01	Q2865952		TETRACHLOROETHENE			BDL	0.60	ug/L		
BLA01	Q2865952		TOLUENE			BDL	0.22	ug/L		
BLA01	Q2865952		1,1,1-TRICHLOROETHANE			BDL	0.40	ug/L		
BLA01	Q2865952		1,1,2-TRICHLOROETHANE			BDL	0.29	ug/L		
BLA01	Q2865952		TRICHLOROETHENE			BDL	0.41	ug/L		
BLA01	Q2865952		TRICHLOROFLUOROMETHANE			BDL	0.50	ug/L		
BLA01	Q2865952		1,2,3-TRICHLOROPROPANE			BDL	0.46	ug/L		
BLA01	Q2865952		VINYL ACETATE			BDL	0.18	ug/L		
BLA01	Q2865952		VINYL CHLORIDE			BDL	0.26	ug/L		
BLA01	Q2865952		XYLENES (O/M/P-XYLENE)			BDL	0.81	ug/L		
BLA01	Q2865952		METHYL-T-BUTYL ETHER (MTBE)			BDL	0.23	ug/L		
BLA01	Q2865952		1,2,4-TRIMETHYLBENZENE			BDL	0.27	ug/L		
BLA01	Q2865952		1,3,5-TRIMETHYLBENZENE			BDL	0.27	ug/L		
BLA01	Q2865952		ISOPROPYLBENZENE (CUMENE)			BDL	0.27	ug/L		
BLA01	Q2865952		TETRAHYDROFURAN			BDL	3.2	ug/L		
BLA01	Q2865952		4-ISOPROPYLTOLUENE (P-ISOPROPYLTOLUENE)			BDL	0.28	ug/L		
BLA01	Q2865952		DICHLOROETHANE-D4						108	
BLA01	Q2865952		TOLUENE-D8						95	
BLA01	Q2865952		4-BROMOFLUOROBENZENE						95	
LCS01	Q2865953		Analysis Date/Time: 28-Sep-14 10:02							
LCS01	Q2865953		ACETONE (2-PROPANONE)	50			42	ug/L	84	
LCS01	Q2865953		ACROLEIN	100			43.9	ug/L	43.9	
LCS01	Q2865953		ACRYLONITRILE	100			74.3	ug/L	74.3	
LCS01	Q2865953		BENZENE	10			10	ug/L	100	
LCS01	Q2865953		BROMODICHLOROMETHANE	10			10.6	ug/L	106	
LCS01	Q2865953		BROMOCHLOROMETHANE	10			11.1	ug/L	111	
LCS01	Q2865953		BROMOFORM	10			11.9	ug/L	119	
LCS01	Q2865953		BROMOMETHANE	10			9.84	ug/L	98.4	
LCS01	Q2865953		CARBON DISULFIDE	10			10.2	ug/L	102	
LCS01	Q2865953		CARBON TETRACHLORIDE	10		!	13.5	ug/L	135	
LCS01	Q2865953		CHLOROBENZENE	10			10.1	ug/L	101	
LCS01	Q2865953		CHLORODIBROMOMETHANE	10			11.2	ug/L	112	
LCS01	Q2865953		1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	10			10.4	ug/L	104	
LCS01	Q2865953		1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	10			10.6	ug/L	106	
LCS01	Q2865953		1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	10			11.1	ug/L	111	
LCS01	Q2865953		CHLOROETHANE	10			11.2	ug/L	112	
LCS01	Q2865953		CHLOROFORM	10			10.8	ug/L	108	
LCS01	Q2865953		CHLOROMETHANE	10			9.06	ug/L	90.6	
LCS01	Q2865953		1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	10			9.45	ug/L	94.5	
LCS01	Q2865953		3-CHLOROPROPENE (ALLYL CHLORIDE)	10			9.28	ug/L	92.8	
LCS01	Q2865953		1,2-DIBROMOETHANE (EDB)	10			10.2	ug/L	102	
LCS01	Q2865953		DIBROMOMETHANE	10			11	ug/L	110	

APPENDIX IX VOLATILE ORGANICS, CAPILLARY COLUMN TECHNIQUE SW846-8260B **O509.3**

R631022 Analyst: H WILLIAMS Run Date: 28-Sep-14
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QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
LCS01	Q2865953		TRANS-1,4-DICHLORO-2-BUTENE	20			18.4	ug/L	92	
LCS01	Q2865953		DICHLORODIFLUOROMETHANE	10			8.94	ug/L	89.4	
LCS01	Q2865953		1,1-DICHLOROETHANE	10			10.8	ug/L	108	
LCS01	Q2865953		1,2-DICHLOROETHANE	10			10	ug/L	100	
LCS01	Q2865953		CIS-1,2-DICHLOROETHENE	10			9.69	ug/L	96.9	
LCS01	Q2865953		TRANS-1,2-DICHLOROETHENE	10			10.1	ug/L	101	
LCS01	Q2865953		1,1-DICHLOROETHENE	10			10.2	ug/L	102	
LCS01	Q2865953		1,2-DICHLOROPROPANE	10			9.69	ug/L	96.9	
LCS01	Q2865953		1,3-DICHLOROPROPANE	10			10.5	ug/L	105	
LCS01	Q2865953		1,1-DICHLOROPROPENE	10			9.94	ug/L	99.4	
LCS01	Q2865953		2,2-DICHLOROPROPANE	10			10.6	ug/L	106	
LCS01	Q2865953		DICHLOROMETHANE (METHYLENE CHLORIDE)	10			9.92	ug/L	99.2	
LCS01	Q2865953		CIS-1,3-DICHLOROPROPENE	10			9.06	ug/L	90.6	
LCS01	Q2865953		TRANS-1,3-DICHLOROPROPENE	10			9.71	ug/L	97.1	
LCS01	Q2865953		ETHYL BENZENE	10			10.9	ug/L	109	
LCS01	Q2865953		ETHYL CYANIDE (PROPIONITRILE)	100			94.3	ug/L	94.3	
LCS01	Q2865953		ETHYL METHACRYLATE	10			10	ug/L	100	
LCS01	Q2865953		2-HEXANONE	50			50.3	ug/L	100.6	
LCS01	Q2865953		IODOMETHANE	10			9.79	ug/L	97.9	
LCS01	Q2865953		METHYL ISOBUTYL KETONE	50			46.3	ug/L	92.6	
LCS01	Q2865953		METHACRYLONITRILE	100			96.5	ug/L	96.5	
LCS01	Q2865953		METHYL ETHYL KETONE	50			49	ug/L	98	
LCS01	Q2865953		METHYL METHACRYLATE	10			9.44	ug/L	94.4	
LCS01	Q2865953		STYRENE	10			10.7	ug/L	107	
LCS01	Q2865953		1,1,1,2-TETRACHLOROETHANE	10			10.7	ug/L	107	
LCS01	Q2865953		1,1,2,2-TETRACHLOROETHANE	10			10.6	ug/L	106	
LCS01	Q2865953		TETRACHLOROETHENE	10			11.5	ug/L	115	
LCS01	Q2865953		TOLUENE	10			9.77	ug/L	97.7	
LCS01	Q2865953		1,1,1-TRICHLOROETHANE	10			11.4	ug/L	114	
LCS01	Q2865953		1,1,2-TRICHLOROETHANE	10			9.86	ug/L	98.6	
LCS01	Q2865953		TRICHLOROETHENE	10			9.66	ug/L	96.6	
LCS01	Q2865953		TRICHLOROFLUOROMETHANE	10			10	ug/L	100	
LCS01	Q2865953		1,2,3-TRICHLOROPROPANE	10			10.9	ug/L	109	
LCS01	Q2865953		VINYL ACETATE	10		!	11.8	ug/L	118	
LCS01	Q2865953		VINYL CHLORIDE	10			8.94	ug/L	89.4	
LCS01	Q2865953		XYLENES (O/M/P-XYLENE)	30			31.2	ug/L	104.0	
LCS01	Q2865953		METHYL-T-BUTYL ETHER (MTBE)	10			9.38	ug/L	93.8	
LCS01	Q2865953		1,2,4-TRIMETHYLBENZENE	10			10.8	ug/L	108	
LCS01	Q2865953		1,3,5-TRIMETHYLBENZENE	10			10.4	ug/L	104	
LCS01	Q2865953		ISOPROPYLBENZENE (CUMENE)	10			10.2	ug/L	102	
LCS01	Q2865953		TETRAHYDROFURAN	125			117	ug/L	93.6	
LCS01	Q2865953		4-ISOPROPYLTOLUENE (P-ISOPROPYLTOLUENE)	10			11.4	ug/L	114	
SAMPLE	AA28613		Analysis Date/Time: 28-Sep-14 13:30							
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		Analysis Date/Time: 28-Sep-14 13:55							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							

APPENDIX IX VOLATILE ORGANICS, CAPILLARY COLUMN TECHNIQUE SW846-8260B **O509.3**

R631022 Analyst: H WILLIAMS Run Date: 28-Sep-14
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QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28615		Analysis Date/Time: 28-Sep-14 14:20							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		Analysis Date/Time: 28-Sep-14 14:46							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28617		Analysis Date/Time: 28-Sep-14 16:02							
SAMPLE	AA28617		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28618		Analysis Date/Time: 28-Sep-14 16:28							
SAMPLE	AA28618		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28619		Analysis Date/Time: 28-Sep-14 16:53							
SAMPLE	AA28619		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28620		Analysis Date/Time: 28-Sep-14 17:19							
SAMPLE	AA28620		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28621		Analysis Date/Time: 28-Sep-14 17:44							
SAMPLE	AA28621		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28622		Analysis Date/Time: 28-Sep-14 18:10							
SAMPLE	AA28622		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28623		Analysis Date/Time: 28-Sep-14 18:35							
SAMPLE	AA28623		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28624		Analysis Date/Time: 28-Sep-14 19:01							
SAMPLE	AA28624		See Certificate of Analysis, Rep: 0							
SPI01	Q2865985	AA28616	Analysis Date/Time: 28-Sep-14 15:12							
SPI01	Q2865985	AA28616	ACETONE (2-PROPANONE)	11.2	50		53.6	ug/L	84.8	
SPI01	Q2865985	AA28616	ACROLEIN	0	100		60.3	ug/L	60.3	
SPI01	Q2865985	AA28616	ACRYLONITRILE	0	100		67.6	ug/L	67.6	
SPI01	Q2865985	AA28616	BENZENE	654	10	NQR	617	ug/L		
SPI01	Q2865985	AA28616	BROMODICHLOROMETHANE	0	10		8.42	ug/L	84.2	
SPI01	Q2865985	AA28616	BROMOCHLOROMETHANE	0	10		8.65	ug/L	86.5	
SPI01	Q2865985	AA28616	BROMOFORM	0	10		6.83	ug/L	68.3	
SPI01	Q2865985	AA28616	BROMOMETHANE	0	10		5.11	ug/L	51.1	
SPI01	Q2865985	AA28616	CARBON DISULFIDE	0	10		8.92	ug/L	89.2	
SPI01	Q2865985	AA28616	CARBON TETRACHLORIDE	0	10		7.83	ug/L	78.3	
SPI01	Q2865985	AA28616	CHLOROBENZENE	3.3	10		13	ug/L	97	
SPI01	Q2865985	AA28616	CHLORODIBROMOMETHANE	0	10		7.97	ug/L	79.7	
SPI01	Q2865985	AA28616	1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	0	10		9.48	ug/L	94.8	
SPI01	Q2865985	AA28616	1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	0	10		9.47	ug/L	94.7	
SPI01	Q2865985	AA28616	1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	5.45	10		14.8	ug/L	93.5	
SPI01	Q2865985	AA28616	CHLOROETHANE	3.25	10		12	ug/L	87.5	
SPI01	Q2865985	AA28616	CHLOROFORM	0	10		8.63	ug/L	86.3	
SPI01	Q2865985	AA28616	CHLOROMETHANE	0	10		6.45	ug/L	64.5	
SPI01	Q2865985	AA28616	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	0	10		8.27	ug/L	82.7	
SPI01	Q2865985	AA28616	3-CHLOROPROPENE (ALLYL CHLORIDE)	0	10		8.91	ug/L	89.1	
SPI01	Q2865985	AA28616	1,2-DIBROMOETHANE (EDB)	0	10		9.01	ug/L	90.1	
SPI01	Q2865985	AA28616	DIBROMOMETHANE	0	10		8.94	ug/L	89.4	
SPI01	Q2865985	AA28616	TRANS-1,4-DICHLORO-2-BUTENE	0	20		4.96	ug/L	24.8	
SPI01	Q2865985	AA28616	DICHLORODIFLUOROMETHANE	0	10		6.94	ug/L	69.4	

APPENDIX IX VOLATILE ORGANICS, CAPILLARY COLUMN TECHNIQUE SW846-8260B **O509.3**

R631022 Analyst: H WILLIAMS Run Date: 28-Sep-14
Analytical Reviewer: R SHAMP Review Date: 01-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SPI01	Q2865985	AA28616	1,1-DICHLOROETHANE	0	10		8.76	ug/L	87.6	
SPI01	Q2865985	AA28616	1,2-DICHLOROETHANE	36.5	10	!	42	ug/L	55	
SPI01	Q2865985	AA28616	CIS-1,2-DICHLOROETHENE	0	10		9.28	ug/L	92.8	
SPI01	Q2865985	AA28616	TRANS-1,2-DICHLOROETHENE	0	10		8.68	ug/L	86.8	
SPI01	Q2865985	AA28616	1,1-DICHLOROETHENE	0	10		8.86	ug/L	88.6	
SPI01	Q2865985	AA28616	1,2-DICHLOROPROPANE	0	10		9.99	ug/L	99.9	
SPI01	Q2865985	AA28616	1,3-DICHLOROPROPANE	0	10		9.65	ug/L	96.5	
SPI01	Q2865985	AA28616	1,1-DICHLOROPROPENE	0	10		8.82	ug/L	88.2	
SPI01	Q2865985	AA28616	2,2-DICHLOROPROPANE	5.21	10		14.1	ug/L	88.9	
SPI01	Q2865985	AA28616	DICHLOROMETHANE (METHYLENE CHLORIDE)	0	10		8.29	ug/L	82.9	
SPI01	Q2865985	AA28616	CIS-1,3-DICHLOROPROPENE	0	10		7.66	ug/L	76.6	
SPI01	Q2865985	AA28616	TRANS-1,3-DICHLOROPROPENE	0	10		7.19	ug/L	71.9	
SPI01	Q2865985	AA28616	ETHYL BENZENE	28.5	10		38	ug/L	95	
SPI01	Q2865985	AA28616	ETHYL CYANIDE (PROPIONITRILE)	0	100		83.3	ug/L	83.3	
SPI01	Q2865985	AA28616	ETHYL METHACRYLATE	0	10		8.49	ug/L	84.9	
SPI01	Q2865985	AA28616	2-HEXANONE	0	50		46.4	ug/L	92.8	
SPI01	Q2865985	AA28616	IODOMETHANE	0	10		8.33	ug/L	83.3	
SPI01	Q2865985	AA28616	METHYL ISOBUTYL KETONE	0	50		44.6	ug/L	89.2	
SPI01	Q2865985	AA28616	METHACRYLONITRILE	456	100		512	ug/L	56	
SPI01	Q2865985	AA28616	METHYL ETHYL KETONE	0	50		48.7	ug/L	97.4	
SPI01	Q2865985	AA28616	METHYL METHACRYLATE	0	10		8.3	ug/L	83	
SPI01	Q2865985	AA28616	STYRENE	0	10		8.1	ug/L	81	
SPI01	Q2865985	AA28616	1,1,1,2-TETRACHLOROETHANE	0	10		8.28	ug/L	82.8	
SPI01	Q2865985	AA28616	1,1,2,2-TETRACHLOROETHANE	0	10		8.94	ug/L	89.4	
SPI01	Q2865985	AA28616	TETRACHLOROETHENE	0	10		10.1	ug/L	101	
SPI01	Q2865985	AA28616	TOLUENE	163	10	NQR	164	ug/L		
SPI01	Q2865985	AA28616	1,1,1-TRICHLOROETHANE	0	10		9	ug/L	90	
SPI01	Q2865985	AA28616	1,1,2-TRICHLOROETHANE	5.62	10		15.3	ug/L	96.8	
SPI01	Q2865985	AA28616	TRICHLOROETHENE	0	10		10.2	ug/L	102	
SPI01	Q2865985	AA28616	TRICHLOROFLUOROMETHANE	0	10		6.79	ug/L	67.9	
SPI01	Q2865985	AA28616	1,2,3-TRICHLOROPROPANE	0	10		9.13	ug/L	91.3	
SPI01	Q2865985	AA28616	VINYL ACETATE	0	10		7.21	ug/L	72.1	
SPI01	Q2865985	AA28616	VINYL CHLORIDE	0	10		8.26	ug/L	82.6	
SPI01	Q2865985	AA28616	XYLENES (O/M/P-XYLENE)	65.2	30		93.1	ug/L	93.0	
SPI01	Q2865985	AA28616	METHYL-T-BUTYL ETHER (MTBE)	4.95	10		14.2	ug/L	92.5	
SPI01	Q2865985	AA28616	1,2,4-TRIMETHYLBENZENE	6.27	10		15.5	ug/L	92.3	
SPI01	Q2865985	AA28616	1,3,5-TRIMETHYLBENZENE	1.51	10		11.2	ug/L	96.9	
SPI01	Q2865985	AA28616	ISOPROPYLBENZENE (CUMENE)	2.05	10		12.1	ug/L	100.5	
SPI01	Q2865985	AA28616	TETRAHYDROFURAN	2220	125	NQR	2130	ug/L		
SPI01	Q2865985	AA28616	4-ISOPROPYLTOLUENE (P-ISOPROPYLTOLUENE)	10.2	10		19.4	ug/L	92	
DPS01	Q2865986	AA28616	Analysis Date/Time: 28-Sep-14 15:37							
DPS01	Q2865986	AA28616	ACETONE (2-PROPANONE)	11.2	50		64.8	ug/L	107.2	23.4
DPS01	Q2865986	AA28616	ACROLEIN	0	100	!	14.3	ug/L	14.3	123.3
DPS01	Q2865986	AA28616	ACRYLONITRILE	0	100		67	ug/L	67	0.9
DPS01	Q2865986	AA28616	BENZENE	654	10	NQR	611	ug/L		
DPS01	Q2865986	AA28616	BROMODICHLOROMETHANE	0	10		8.67	ug/L	86.7	2.9

APPENDIX IX VOLATILE ORGANICS, CAPILLARY COLUMN TECHNIQUE SW846-8260B **O509.3**

R631022 Analyst: H WILLIAMS Run Date: 28-Sep-14
Analytical Reviewer: R SHAMP Review Date: 01-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
DPS01	Q2865986	AA28616	BROMOCHLOROMETHANE	0	10		9.02	ug/L	90.2	4.2
DPS01	Q2865986	AA28616	BROMOFORM	0	10		6.84	ug/L	68.4	0.1
DPS01	Q2865986	AA28616	BROMOMETHANE	0	10		5.81	ug/L	58.1	12.8
DPS01	Q2865986	AA28616	CARBON DISULFIDE	0	10		8.61	ug/L	86.1	3.5
DPS01	Q2865986	AA28616	CARBON TETRACHLORIDE	0	10		7.68	ug/L	76.8	1.9
DPS01	Q2865986	AA28616	CHLOROBENZENE	3.3	10		13.2	ug/L	99	1.6
DPS01	Q2865986	AA28616	CHLORODIBROMOMETHANE	0	10		7.87	ug/L	78.7	1.3
DPS01	Q2865986	AA28616	1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	0	10		9.98	ug/L	99.8	5.1
DPS01	Q2865986	AA28616	1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	0	10		9.74	ug/L	97.4	2.8
DPS01	Q2865986	AA28616	1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	5.45	10		15	ug/L	95.5	2.5
DPS01	Q2865986	AA28616	CHLOROETHANE	3.25	10		12.5	ug/L	92.1	5.5
DPS01	Q2865986	AA28616	CHLOROFORM	0	10		9.04	ug/L	90.4	4.6
DPS01	Q2865986	AA28616	CHLOROMETHANE	0	10		6.75	ug/L	67.5	4.5
DPS01	Q2865986	AA28616	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	0	10		9.09	ug/L	90.9	9.4
DPS01	Q2865986	AA28616	3-CHLOROPROPENE (ALLYL CHLORIDE)	0	10		10.1	ug/L	100.9	12.4
DPS01	Q2865986	AA28616	1,2-DIBROMOETHANE (EDB)	0	10		9.67	ug/L	96.7	7.1
DPS01	Q2865986	AA28616	DIBROMOMETHANE	0	10		9.66	ug/L	96.6	7.7
DPS01	Q2865986	AA28616	TRANS-1,4-DICHLORO-2-BUTENE	0	20		3.59	ug/L	18	31.8
DPS01	Q2865986	AA28616	DICHLORODIFLUOROMETHANE	0	10		7.5	ug/L	75	7.8
DPS01	Q2865986	AA28616	1,1-DICHLOROETHANE	0	10		9.15	ug/L	91.5	4.4
DPS01	Q2865986	AA28616	1,2-DICHLOROETHANE	36.5	10	!	41.6	ug/L	51.4	6.6
DPS01	Q2865986	AA28616	CIS-1,2-DICHLOROETHENE	0	10		9.75	ug/L	97.5	4.9
DPS01	Q2865986	AA28616	TRANS-1,2-DICHLOROETHENE	0	10		9.17	ug/L	91.7	5.5
DPS01	Q2865986	AA28616	1,1-DICHLOROETHENE	0	10		9.31	ug/L	93.1	5
DPS01	Q2865986	AA28616	1,2-DICHLOROPROPANE	0	10		10.2	ug/L	101.5	1.6
DPS01	Q2865986	AA28616	1,3-DICHLOROPROPANE	0	10		10.1	ug/L	101	4.6
DPS01	Q2865986	AA28616	1,1-DICHLOROPROPENE	0	10		9.44	ug/L	94.4	6.8
DPS01	Q2865986	AA28616	2,2-DICHLOROPROPANE	5.21	10		15.3	ug/L	101.2	13.4
DPS01	Q2865986	AA28616	DICHLOROMETHANE (METHYLENE CHLORIDE)	0	10		8.75	ug/L	87.5	5.4
DPS01	Q2865986	AA28616	CIS-1,3-DICHLOROPROPENE	0	10		7.38	ug/L	73.8	3.7
DPS01	Q2865986	AA28616	TRANS-1,3-DICHLOROPROPENE	0	10		7.09	ug/L	70.9	1.4
DPS01	Q2865986	AA28616	ETHYL BENZENE	28.5	10		36.7	ug/L	81.1	14.9
DPS01	Q2865986	AA28616	ETHYL CYANIDE (PROPIONITRILE)	0	100		103	ug/L	102.9	21.1
DPS01	Q2865986	AA28616	ETHYL METHACRYLATE	0	10		9.15	ug/L	91.5	7.5
DPS01	Q2865986	AA28616	2-HEXANONE	0	50		51.5	ug/L	103	10.4
DPS01	Q2865986	AA28616	IODOMETHANE	0	10		8.59	ug/L	85.9	3.1
DPS01	Q2865986	AA28616	METHYL ISOBUTYL KETONE	0	50		50.9	ug/L	101.7	13.1
DPS01	Q2865986	AA28616	METHACRYLONITRILE	456	100	!	565	ug/L	109	64.2
DPS01	Q2865986	AA28616	METHYL ETHYL KETONE	0	50		60.1	ug/L	120.1	21
DPS01	Q2865986	AA28616	METHYL METHACRYLATE	0	10		8.79	ug/L	87.9	5.7
DPS01	Q2865986	AA28616	STYRENE	0	10		8.24	ug/L	82.4	1.7
DPS01	Q2865986	AA28616	1,1,1,2-TETRACHLOROETHANE	0	10		8.48	ug/L	84.8	2.4
DPS01	Q2865986	AA28616	1,1,2,2-TETRACHLOROETHANE	0	10		9.94	ug/L	99.4	10.6
DPS01	Q2865986	AA28616	TETRACHLOROETHENE	0	10		10.1	ug/L	101.2	0.3

APPENDIX IX VOLATILE ORGANICS, CAPILLARY COLUMN TECHNIQUE SW846-8260B **O509.3**

R631022 Analyst: H WILLIAMS Run Date: 28-Sep-14
Analytical Reviewer: R SHAMP Review Date: 01-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
DPS01	Q2865986	AA28616	TOLUENE	163	10	NQR	157	ug/L		
DPS01	Q2865986	AA28616	1,1,1-TRICHLOROETHANE	0	10		9.28	ug/L	92.8	3.1
DPS01	Q2865986	AA28616	1,1,2-TRICHLOROETHANE	5.62	10		15.4	ug/L	97.7	1.4
DPS01	Q2865986	AA28616	TRICHLOROETHENE	0	10		10.7	ug/L	106.7	4.5
DPS01	Q2865986	AA28616	TRICHLOROFLUOROMETHANE	0	10		7.34	ug/L	73.4	7.8
DPS01	Q2865986	AA28616	1,2,3-TRICHLOROPROPANE	0	10		10	ug/L	100	9.1
DPS01	Q2865986	AA28616	VINYL ACETATE	0	10		7.73	ug/L	77.3	7
DPS01	Q2865986	AA28616	VINYL CHLORIDE	0	10		8.71	ug/L	87.1	5.3
DPS01	Q2865986	AA28616	XYLENES (O/M/P-XYLENE)	65.2	30		90.7	ug/L	85.0	9.0
DPS01	Q2865986	AA28616	METHYL-T-BUTYL ETHER (MTBE)	4.95	10		14.8	ug/L	98.8	6.4
DPS01	Q2865986	AA28616	1,2,4-TRIMETHYLBENZENE	6.27	10		15.9	ug/L	96.2	3.9
DPS01	Q2865986	AA28616	1,3,5-TRIMETHYLBENZENE	1.51	10		11.6	ug/L	100.4	3.3
DPS01	Q2865986	AA28616	ISOPROPYLBENZENE (CUMENE)	2.05	10		12.3	ug/L	102	1.2
DPS01	Q2865986	AA28616	TETRAHYDROFURAN	2220	125	NQR	2210	ug/L		
DPS01	Q2865986	AA28616	4-ISOPROPYLTOLUENE (P-ISOPROPYLTOLUENE)	10.2	10		19.9	ug/L	96.6	4.9

Q2864793 Value reported for analytes calibrated by linear (LIN) or
Q2864793 quadratic (QDR) equations is r2 (Coef. of Determination).
Q2865985 2-Chloroethyl vinyl ether degrades under acidic conditions. No recovery
Q2865985 possible. Unacidified sample not available.
Q2865986 2-Chloroethyl vinyl ether degrades under acidic conditions. No recovery
Q2865986 possible. Unacidified sample not available.

R631054 Analyst: H WILLIAMS Run Date: 29-Sep-14 Instrument: GC/MS VOA
Analytical Reviewer: R SHAMP Review Date: 02-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CAL01	Q2864793		Analysis Date/Time: 24-Sep-14 09:15							
CAL01	Q2864793		BENZENE	0.9738						4.8
CAL01	Q2864793		DICHLOROETHANE-D4	0.3949						4.8
CAL01	Q2864793		TOLUENE-D8	0.9177						2.1
CAL01	Q2864793		4-BROMOFLUOROBENZENE	0.7377						1.3
ICV01	Q2864794		Analysis Date/Time: 24-Sep-14 12:12							
ICV01	Q2864794		BENZENE	10			10.5	ug/L	105	
CCVD	Q2866284		Analysis Date/Time: 29-Sep-14 06:44							
CCVD	Q2866284		BENZENE	0.9738			0.9093			6.6
CCVD	Q2866284		DICHLOROETHANE-D4	0.3949			0.4112			4.1
CCVD	Q2866284		TOLUENE-D8	0.9177			0.9031			1.6
CCVD	Q2866284		4-BROMOFLUOROBENZENE	0.7377			0.7461			1.1
BLA01	Q2866297		Analysis Date/Time: 29-Sep-14 07:42							
BLA01	Q2866297		BENZENE			BDL	1.0	ug/L		
BLA01	Q2866297		DICHLOROETHANE-D4						112	
BLA01	Q2866297		TOLUENE-D8						94	
BLA01	Q2866297		4-BROMOFLUOROBENZENE						90	
LCS01	Q2866298		Analysis Date/Time: 29-Sep-14 08:11							
LCS01	Q2866298		BENZENE	10			10.4	ug/L	104	
SAMPLE	AA28614		Analysis Date/Time: 29-Sep-14 09:12							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 1							

APPENDIX IX VOLATILE ORGANICS, CAPILLARY COLUMN TECHNIQUE SW846-8260B **O509.3**

R631054 Analyst: H WILLIAMS Run Date: 29-Sep-14
Analytical Reviewer: R SHAMP Review Date: 02-Oct-14 Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28615		Analysis Date/Time: 29-Sep-14 09:38							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 1							
SPI01	Q2866299	AA28255	Analysis Date/Time: 29-Sep-14 13:51							
SPI01	Q2866299	AA28255	BENZENE	0	10		7.57	ug/L	75.7	
DPS01	Q2866300	AA28255	Analysis Date/Time: 29-Sep-14 14:17							
DPS01	Q2866300	AA28255	BENZENE	0	10		9.26	ug/L	92.6	20.1

Q2864793 Value reported for analytes calibrated by linear (LIN) or
Q2864793 quadratic (QDR) equations is r2 (Coef. of Determination).
Q2866284 Value reported for analytes calibrated by linear (LIN) or quadratic (QDR)
Q2866284 equations is concentration.(UG/L MG/KG)
Q2866297 Analytes present greater than 1/2 of the detection limit are reported.

R631184 Analyst: H WILLIAMS Run Date: 30-Sep-14 Instrument: GC/MS VOA
Analytical Reviewer: R SHAMP Review Date: 07-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CAL01	Q2864793		Analysis Date/Time: 24-Sep-14 09:15							
CAL01	Q2864793		TOLUENE	0.9494						7.8
CAL01	Q2864793		BENZENE	0.9738						4.8
CAL01	Q2864793		TETRAHYDROFURAN	0.1869						11.1
CAL01	Q2864793		DICHLOROETHANE-D4	0.3949						4.8
CAL01	Q2864793		TOLUENE-D8	0.9177						2.1
CAL01	Q2864793		4-BROMOFLUOROBENZENE	0.7377						1.3
ICV01	Q2864794		Analysis Date/Time: 24-Sep-14 12:12							
ICV01	Q2864794		TOLUENE	10			10.3	ug/L	103	
ICV01	Q2864794		BENZENE	10			10.5	ug/L	105	
ICV01	Q2864794		TETRAHYDROFURAN	125			131	ug/L	104.8	
CCVD	Q2867368		Analysis Date/Time: 30-Sep-14 07:01							
CCVD	Q2867368		TOLUENE	0.9494			1.0126			6.7
CCVD	Q2867368		BENZENE	0.9738			1.0387			6.7
CCVD	Q2867368		TETRAHYDROFURAN	0.1869			0.1993			6.6
CCVD	Q2867368		DICHLOROETHANE-D4	0.3949			0.4116			4.2
CCVD	Q2867368		TOLUENE-D8	0.9177			0.9392			2.3
CCVD	Q2867368		4-BROMOFLUOROBENZENE	0.7377			0.7635			3.5
BLA01	Q2867375		Analysis Date/Time: 30-Sep-14 07:26							
BLA01	Q2867375		TOLUENE			BDL	1.0	ug/L		
BLA01	Q2867375		BENZENE			BDL	1.0	ug/L		
BLA01	Q2867375		TETRAHYDROFURAN			BDL	15.	ug/L		
BLA01	Q2867375		DICHLOROETHANE-D4						106	
BLA01	Q2867375		TOLUENE-D8						95	
BLA01	Q2867375		4-BROMOFLUOROBENZENE						93	
LCS01	Q2867380		Analysis Date/Time: 30-Sep-14 08:03							
LCS01	Q2867380		TOLUENE	10			10.2	ug/L	102	
LCS01	Q2867380		BENZENE	10			10.3	ug/L	103	
LCS01	Q2867380		TETRAHYDROFURAN	125			115	ug/L	92	
SAMPLE	AA28616		Analysis Date/Time: 30-Sep-14 08:36							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 1							

APPENDIX IX VOLATILE ORGANICS, CAPILLARY COLUMN TECHNIQUE SW846-8260B **O509.3**

R631184 Analyst: H WILLIAMS Run Date: 30-Sep-14
Analytical Reviewer: R SHAMP Review Date: 07-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SPI01	Q2867381	AA28600	Analysis Date/Time: 30-Sep-14 14:31							
SPI01	Q2867381	AA28600	TOLUENE	0	10		9.54	ug/L	95.4	
SPI01	Q2867381	AA28600	BENZENE	0	10		10.3	ug/L	103	
SPI01	Q2867381	AA28600	TETRAHYDROFURAN	0	125		124	ug/L	99.2	
DPS01	Q2867382	AA28600	Analysis Date/Time: 30-Sep-14 14:57							
DPS01	Q2867382	AA28600	TOLUENE	0	10		9.35	ug/L	93.5	2
DPS01	Q2867382	AA28600	BENZENE	0	10		9.87	ug/L	98.7	3.9
DPS01	Q2867382	AA28600	TETRAHYDROFURAN	0	125		108	ug/L	86.4	13.9

Q2864793 Value reported for analytes calibrated by linear (LIN) or
Q2864793 quadratic (QDR) equations is r2 (Coef. of Determination).
Q2867368 Value reported for analytes calibrated by linear (LIN) or quadratic (QDR)
Q2867368 equations is concentration.(UG/L)
Q2867381 2-Chloroethyl vinyl ether degrades under acidic conditions. No recovery
Q2867381 possible. Unacidified sample not available.
Q2867382 2-Chloroethyl vinyl ether degrades under acidic conditions. No recovery
Q2867382 possible. Unacidified sample not available.

ARSENIC ICP/MS SW846-6020 **V103.3**
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R630907 Analyst: K KAMARA Run Date: 29-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 29-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28600	Rep: 0	Analytical Run: R631019							
BLA02	Q2864829		Analytical Run: R631019							
LCS	Q2864830		Analytical Run: R631019							
DUP02	Q2864831		Analytical Run: R631019							
SPI02	Q2864832		Analytical Run: R631019							

Q2864832 1:5 Dilution.

R630945 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865189		Analytical Run: R631089							
LCS	Q2865190		Analytical Run: R631089							
DUP02	Q2865191		Analytical Run: R631089							
SPI02	Q2865192		Analytical Run: R631089							
SAMPLE	AA28601	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28602	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28603	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28604	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28605	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28606	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28607	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28608	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28609	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28610	Rep: 0	Analytical Run: R631089							

ARSENIC ICP/MS SW846-6020 V103.3
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R630946 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865193		Analytical Run: R631089							
LCS	Q2865194		Analytical Run: R631089							
DUP02	Q2865195		Analytical Run: R631089							
SPI02	Q2865196		Analytical Run: R631089							
SAMPLE	AA28611	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28612	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28613	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28614	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28615	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28616	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28617	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28618	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28619	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28620	Rep: 0	Analytical Run: R631089							
Q2865196	1:5 Dilution.									

R631004 Analyst: K KAMARA Run Date: 01-Oct-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28621	Rep: 0	Analytical Run: R631187							
SAMPLE	AA28622	Rep: 0	Analytical Run: R631187							
SAMPLE	AA28623	Rep: 0	Analytical Run: R631187							
BLA02	Q2865788		Analytical Run: R631187							
LCS	Q2865789		Analytical Run: R631187							
DUP02	Q2865790		Analytical Run: R631187							
SPI02	Q2865791		Analytical Run: R631187							
Q2865790	1:5 Dilution.									
Q2865791	1:5 Dilution.									

R631019 Analyst: C WILLHITE Run Date: 30-Sep-14 Instrument: ICP/MS
Analytical Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2865890		ARSENIC	50			48.0	ug/L	96.0	
CDL01	Q2865905		ARSENIC	2			1.96	ug/L	98.0	
ICS-A	Q2865906		ARSENIC	40			40.9	ug/L	102.2	
BLA02	Q2864829		ARSENIC			<	0.400	ug/L		
LCS	Q2864830		ARSENIC	40			37.0	ug/L	92.5	
SER01	Q2865934	AA28233	ARSENIC	0		BDL		ug/L		
DUP02	Q2864831	AA28233	ARSENIC	0		BDL		ug/L		
SPI02	Q2864832	AA28233	ARSENIC	0	40		45.0	ug/L	112.5	
CCV	Q2865919		ARSENIC	20			21.8	ug/L	109.0	
BLA01	Q2865910		ARSENIC			<	0.400	ug/L		
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
CCV	Q2865920		ARSENIC	20			21.3	ug/L	106.5	
BLA01	Q2865911		ARSENIC			<	0.400	ug/L		
SER01	Q2865935	AA28261	ARSENIC	3.58		CNA	2.72	ug/L		

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ARSENIC ICP/MS SW846-6020 V103.3

Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R631019 Analytical — Analyst: C WILLHITE — Reviewer: S ENDERSEN — Run Date: 30-Sep-14 — Review Date: 01-Oct-14 — Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CDL01	Q2865937		ARSENIC	1			0.871	ug/L	87.1	
ICS-A	Q2865933		ARSENIC	40			45.9	ug/L	114.8	

Q2864832 1:5 Dilution.
Q2865906 1:5 Dilution.
Q2865933 1:5 Dilution.
Q2865935 1:25 Dilution.

R631089 Analytical — Analyst: C WILLHITE — Reviewer: S ENDERSEN — Run Date: 01-Oct-14 — Review Date: 02-Oct-14 — Instrument: ICP/MS

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2866399		ARSENIC	50			49.0	ug/L	98.0	
CDL01	Q2866439		ARSENIC	2			2.09	ug/L	104.5	
ICS-A	Q2866443		ARSENIC	40			44.9	ug/L	112.2	
CCV	Q2866427		ARSENIC	20			24.1	ug/L	120.5	
BLA01	Q2866412		ARSENIC			<	0.400	ug/L		
BLA02	Q2865189		ARSENIC			<	0.400	ug/L		
LCS	Q2865190		ARSENIC	40			37.1	ug/L	92.8	
SER01	Q2866448	AA28601	ARSENIC	0		BDL		ug/L		
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
DUP02	Q2865191	AA28601	ARSENIC	0		BDL		ug/L		
SPI02	Q2865192	AA28601	ARSENIC	0	40		37.6	ug/L	94.0	
CCV	Q2866428		ARSENIC	20			20.5	ug/L	102.5	
BLA01	Q2866413		ARSENIC			<	0.400	ug/L		
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28609		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
CCV	Q2866429		ARSENIC	20			20.4	ug/L	102.0	
BLA01	Q2866414		ARSENIC			<	0.400	ug/L		
BLA02	Q2865193		ARSENIC			<	0.400	ug/L		
LCS	Q2865194		ARSENIC	40			37.0	ug/L	92.5	
SER01	Q2866449	AA28611	ARSENIC	1.27		CNA	1.60	ug/L		
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
DUP02	Q2865195	AA28611	ARSENIC	0		BDL		ug/L		
SPI02	Q2865196	AA28611	ARSENIC	0	40		39.2	ug/L	98.0	
CCV	Q2866430		ARSENIC	20			20.5	ug/L	102.5	
BLA01	Q2866454		ARSENIC			<	0.400	ug/L		
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							

ARSENIC ICP/MS SW846-6020 **V103.3**
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R631089 Analytical — Analyst: C WILLHITE, Reviewer: S ENDERSEN — Run Date: 01-Oct-14, Review Date: 02-Oct-14 — Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28617		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28618		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28619		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28620		See Certificate of Analysis, Rep: 0							
CCV	Q2866459		ARSENIC	20			21.2	ug/L	106.0	
BLA01	Q2866455		ARSENIC			<	0.400	ug/L		
SER01	Q2866465	AA28642	ARSENIC	1230			1260	ug/kg		2.4
CDL01	Q2866466		ARSENIC	1			0.902	ug/L	90.2	
ICS-A	Q2866464		ARSENIC	40			46.2	ug/L	115.5	

Q2864832 1:5 Dilution.
Q2865196 1:5 Dilution.
Q2866443 1:5 Dilution.
Q2866449 1:25 Dilution.
Q2866464 1:5 Dilution.
Q2866465 1:5000 Dilution.

R631187 Analytical — Analyst: C WILLHITE, Reviewer: S ENDERSEN — Run Date: 03-Oct-14, Review Date: 06-Oct-14 — Instrument: ICP/MS

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2867384		ARSENIC	50			46.7	ug/L	93.4	
CDL01	Q2867420		ARSENIC	2			2.00	ug/L	100.0	
ICS-A	Q2867425		ARSENIC	40			41.9	ug/L	104.8	
CCV	Q2867443		ARSENIC	20			20.1	ug/L	100.5	
BLA01	Q2867435		ARSENIC			<	0.400	ug/L		
BLA02	Q2865788		ARSENIC			<	0.400	ug/L		
LCS	Q2865789		ARSENIC	40			38.5	ug/L	96.2	
SER01	Q2867455	AA28621	ARSENIC	1.72		CNA	1.95	ug/L		
SAMPLE	AA28621		See Certificate of Analysis, Rep: 0							
DUP02	Q2865790	AA28621	ARSENIC	0		BDL		ug/L		
SPI02	Q2865791	AA28621	ARSENIC	0	40		42.8	ug/L	107.0	
CCV	Q2867444		ARSENIC	20			20.8	ug/L	104.0	
BLA01	Q2867436		ARSENIC			<	0.400	ug/L		
SAMPLE	AA28622		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28623		See Certificate of Analysis, Rep: 0							
CCV	Q2867445		ARSENIC	20			20.7	ug/L	103.5	
BLA01	Q2867437		ARSENIC			<	0.400	ug/L		
SER01	Q2867457	AA28767	ARSENIC	1.28		CNA	2.45	ug/L		
CDL01	Q2867458		ARSENIC	1			0.860	ug/L	86.0	
ICS-A	Q2867454		ARSENIC	40			43.8	ug/L	109.5	

Q2865790 1:5 Dilution.
Q2865791 1:5 Dilution.
Q2867425 1:5 Dilution.
Q2867454 1:5 Dilution.
Q2867455 1:25 Dilution.
Q2867457 1:25 Dilution.

BARIUM ICP SW846-6010B M104.3
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R630909 Analyst: K KAMARA Run Date: 29-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 29-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2864845		Analytical Run: R630959							
LCS	Q2864846		Analytical Run: R630959							
DUP02	Q2864847		Analytical Run: R630959							
SPI02	Q2864848		Analytical Run: R630959							
SAMPLE	AA28600	Rep: 0	Analytical Run: R630959							

R630947 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865197		Analytical Run: R631006							
LCS	Q2865198		Analytical Run: R631006							
DUP02	Q2865199		Analytical Run: R631006							
SPI02	Q2865200		Analytical Run: R631006							
SAMPLE	AA28601	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28602	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28603	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28604	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28605	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28606	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28607	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28608	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28609	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28610	Rep: 0	Analytical Run: R631006							

R630948 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865206		Analytical Run: R631006							
LCS	Q2865207		Analytical Run: R631006							
DUP02	Q2865208		Analytical Run: R631006							
SPI02	Q2865209		Analytical Run: R631006							
SAMPLE	AA28611	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28612	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28613	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28614	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28615	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28616	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28617	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28618	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28619	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28620	Rep: 0	Analytical Run: R631006							

R630959 Analyst: J KRAMER Run Date: 29-Sep-14 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2865245		BARIUM	1			1.03	mg/L	103.0	

BARIUM ICP SW846-6010B **M104.3**
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R630959 Analyst: J KRAMER Run Date: 29-Sep-14
Analytical Reviewer: S ENDERSEN Review Date: 30-Sep-14 Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CDL01	Q2865290		BARIUM	0.0100			0.0103	mg/L	103.0	
ICS-AB	Q2865300		BARIUM	3			2.96	mg/L	98.7	
BLA02	Q2864845		BARIUM			<	0.000800	mg/L		
LCS	Q2864846		BARIUM	2			1.98	mg/L	99.0	
SER01	Q2865295	AA28491	BARIUM	0.0580			0.0566	mg/L		2.4
DUP02	Q2864847	AA28491	BARIUM	0.0580			0.0620	mg/L		6.7
SPI02	Q2864848	AA28491	BARIUM	0.0580	2.00		1.98	mg/L	96.1	
CCV	Q2865275		BARIUM	5.00			4.79	mg/L	95.8	
BLA01	Q2865253		BARIUM			<	0.000800	mg/L		
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
CCV	Q2865276		BARIUM	5.00			5.08	mg/L	101.6	
BLA01	Q2865254		BARIUM			<	0.000800	mg/L		
SER01	Q2865297	AA28572	BARIUM	0.776			0.798	mg/L		2.8
CDL01	Q2865291		BARIUM	0.0100			0.0101	mg/L	101.0	
ICS-AB	Q2865267		BARIUM	0.500			0.473	mg/L	94.6	

Q2865295 1:5 Dilution.
Q2865295 There was possible matrix interference for K and Na
Q2865295 as indicated by the serial dilution results.

R631006 Analyst: J KRAMER Run Date: 30-Sep-14 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2865702		BARIUM	1			1.02	mg/L	102.0	
CDL01	Q2865697		BARIUM	10			9.99	mg/L	99.9	
ICS-AB	Q2865691		BARIUM	0.500			0.499	mg/L	99.8	
CCV	Q2865720		BARIUM	5.00			4.79	mg/L	95.8	
BLA01	Q2865706		BARIUM			<	0.000800	mg/L		
BLA02	Q2865197		BARIUM			<	0.000800	mg/L		
LCS	Q2865198		BARIUM	2			2.06	mg/L	103.0	
SER01	Q2865734	AA28603	BARIUM	0.436			0.445	mg/L		2.0
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
DUP02	Q2865199	AA28603	BARIUM	0.436			0.456	mg/L		4.5
SPI02	Q2865200	AA28603	BARIUM	0.436	2.00		2.38	mg/L	97.2	
CCV	Q2865721		BARIUM	5.00			4.90	mg/L	98.0	
BLA01	Q2865707		BARIUM			<	0.000800	mg/L		
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28609		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
CCV	Q2865722		BARIUM	5.00			4.91	mg/L	98.2	
BLA01	Q2865708		BARIUM			<	0.000800	mg/L		

BARIUM ICP SW846-6010B **M104.3**
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R631006 Analyst: J KRAMER Run Date: 30-Sep-14
Analytical Reviewer: S ENDERSEN Review Date: 01-Oct-14

Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865206		BARIUM			<	0.000800	mg/L		
LCS	Q2865207		BARIUM	2			2.01	mg/L	100.5	
SER01	Q2865735	AA28612	BARIUM	0.109			0.111	mg/L		1.8
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
DUP02	Q2865208	AA28612	BARIUM	0.109			0.114	mg/L		4.5
SPI02	Q2865209	AA28612	BARIUM	0.109	2.00		2.04	mg/L	96.6	
CCV	Q2865723		BARIUM	5.00			4.84	mg/L	96.8	
BLA01	Q2865709		BARIUM			<	0.000800	mg/L		
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28617		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28618		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28619		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28620		See Certificate of Analysis, Rep: 0							
CCV	Q2865724		BARIUM	5.00			4.99	mg/L	99.8	
BLA01	Q2865710		BARIUM			<	0.000800	mg/L		
CDL01	Q2865731		BARIUM	0.0100			0.0103	mg/L	103.0	
ICS-AB	Q2865715		BARIUM	0.500			0.491	mg/L	98.2	

Q2865734 1:5 Dilution.
Q2865734 There was possible matrix interference for K
Q2865734 as indicated by the serial dilution results.
Q2865735 1:5 Dilution.

R631012 Analyst: K KAMARA Run Date: 01-Oct-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865816		Analytical Run: R631069							
LCS	Q2865817		Analytical Run: R631069							
DUP02	Q2865818		Analytical Run: R631069							
SPI02	Q2865819		Analytical Run: R631069							
SAMPLE	AA28621	Rep: 0	Analytical Run: R631069							
SAMPLE	AA28622	Rep: 0	Analytical Run: R631069							
SAMPLE	AA28623	Rep: 0	Analytical Run: R631069							

R631069 Analyst: J KRAMER Run Date: 01-Oct-14 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 02-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2866199		BARIUM	1			1.03	mg/L	103.0	
CDL01	Q2866242		BARIUM	0.0100			0.0105	mg/L	105.0	
ICS-AB	Q2866219		BARIUM	0.500			0.504	mg/L	100.8	
CCV	Q2866231		BARIUM	5.00			4.96	mg/L	99.2	
BLA01	Q2866210		BARIUM			<	0.000800	mg/L		
BLA02	Q2865816		BARIUM			<	0.000800	mg/L		

BARIUM ICP SW846-6010B M104.3
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R631069 Analytical — Analyst: J KRAMER, Reviewer: S ENDERSEN — Run Date: 01-Oct-14, Review Date: 02-Oct-14 — Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
LCS	Q2865817		BARIUM	2			2.15	mg/L	107.5	
SER01	Q2866249	AA28623	BARIUM	0.0832			0.0876	mg/L		5.2
SAMPLE	AA28623		See Certificate of Analysis, Rep: 0							
DUP02	Q2865818	AA28623	BARIUM	0.0832			0.0891	mg/L		6.8
SPI02	Q2865819	AA28623	BARIUM	0.0832	2.00		2.15	mg/L	103.3	
CCV	Q2866232		BARIUM	5.00			5.10	mg/L	102.0	
BLA01	Q2866211		BARIUM			<	0.000800	mg/L		
SAMPLE	AA28621		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28622		See Certificate of Analysis, Rep: 0							
CCV	Q2866233		BARIUM	5.00			4.88	mg/L	97.6	
BLA01	Q2866212		BARIUM			<	0.000800	mg/L		
CDL01	Q2866243		BARIUM	0.0100			0.0103	mg/L	103.0	
ICS-AB	Q2866220		BARIUM	0.500			0.492	mg/L	98.4	

Q2866249 1:5 Dilution.

BERYLLIUM ICP/MS SW846-6020 V105.3
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R630907 Prep — Analyst: K KAMARA, Reviewer: S ENDERSEN — Run Date: 29-Sep-14, Review Date: 29-Sep-14 — Instrument: PREP

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28600	Rep: 0	Analytical Run: R631019							
BLA02	Q2864829		Analytical Run: R631019							
LCS	Q2864830		Analytical Run: R631019							
DUP02	Q2864831		Analytical Run: R631019							
SPI02	Q2864832		Analytical Run: R631019							

Q2864832 1:5 Dilution.

R630945 Prep — Analyst: K KAMARA, Reviewer: S ENDERSEN — Run Date: 30-Sep-14, Review Date: 30-Sep-14 — Instrument: PREP

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865189		Analytical Run: R631089							
LCS	Q2865190		Analytical Run: R631089							
DUP02	Q2865191		Analytical Run: R631089							
SPI02	Q2865192		Analytical Run: R631089							
SAMPLE	AA28601	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28602	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28603	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28604	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28605	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28606	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28607	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28608	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28609	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28610	Rep: 0	Analytical Run: R631089							

R630946 Analyst: K KAMARA — Run Date: 30-Sep-14 — Instrument: PREP

BERYLLIUM ICP/MS SW846-6020 V105.3
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R630946 Analyst: K KAMARA Run Date: 30-Sep-14
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865193		Analytical Run: R631089							
LCS	Q2865194		Analytical Run: R631089							
DUP02	Q2865195		Analytical Run: R631089							
SPI02	Q2865196		Analytical Run: R631089							
SAMPLE	AA28611	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28612	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28613	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28614	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28615	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28616	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28617	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28618	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28619	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28620	Rep: 0	Analytical Run: R631089							
Q2865196	1:5 Dilution.									

R631004 Analyst: K KAMARA Run Date: 01-Oct-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28621	Rep: 0	Analytical Run: R631187							
SAMPLE	AA28622	Rep: 0	Analytical Run: R631187							
SAMPLE	AA28623	Rep: 0	Analytical Run: R631187							
BLA02	Q2865788		Analytical Run: R631187							
LCS	Q2865789		Analytical Run: R631187							
DUP02	Q2865790		Analytical Run: R631187							
SPI02	Q2865791		Analytical Run: R631187							
Q2865790	1:5 Dilution.									
Q2865791	1:5 Dilution.									

R631019 Analyst: C WILLHITE Run Date: 30-Sep-14 Instrument: ICP/MS
Analytical Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2865890		BERYLLIUM	50			49.2	ug/L	98.4	
CDL01	Q2865905		BERYLLIUM	0.4			0.386	ug/L	96.5	
ICS-A	Q2865906		BERYLLIUM	40			41.8	ug/L	104.5	
BLA02	Q2864829		BERYLLIUM			<	0.160	ug/L		
LCS	Q2864830		BERYLLIUM	40			35.8	ug/L	89.5	
SER01	Q2865934	AA28233	BERYLLIUM	0		BDL		ug/L		
DUP02	Q2864831	AA28233	BERYLLIUM	0		BDL		ug/L		
SPI02	Q2864832	AA28233	BERYLLIUM	0	40		43.6	ug/L	109.0	
CCV	Q2865919		BERYLLIUM	20			21.2	ug/L	106.0	
BLA01	Q2865910		BERYLLIUM			<	0.160	ug/L		
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
CCV	Q2865920		BERYLLIUM	20			20.6	ug/L	103.0	
BLA01	Q2865911		BERYLLIUM			<	0.160	ug/L		
SER01	Q2865935	AA28261	BERYLLIUM	0		BDL		ug/L		

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Quality Assurance Report

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BERYLLIUM ICP/MS SW846-6020 V105.3

Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R631019 Analytical — Analyst: C WILLHITE — Reviewer: S ENDERSEN — Run Date: 30-Sep-14 — Review Date: 01-Oct-14 — Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CDL01	Q2865937		BERYLLIUM	0.05			0.0130	ug/L	26.0	
ICS-A	Q2865933		BERYLLIUM	40			43.2	ug/L	108.0	

Q2864832 1:5 Dilution.
Q2865906 1:5 Dilution.
Q2865933 1:5 Dilution.
Q2865935 1:25 Dilution.

R631089 Analytical — Analyst: C WILLHITE — Reviewer: S ENDERSEN — Run Date: 01-Oct-14 — Review Date: 02-Oct-14 — Instrument: ICP/MS

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2866399		BERYLLIUM	50			50.5	ug/L	101.0	
CDL01	Q2866439		BERYLLIUM	0.4			0.458	ug/L	114.5	
ICS-A	Q2866443		BERYLLIUM	40			46.7	ug/L	116.8	
CCV	Q2866427		BERYLLIUM	20			19.9	ug/L	99.5	
BLA01	Q2866412		BERYLLIUM			<	0.120	ug/L		
BLA02	Q2865189		BERYLLIUM			<	0.120	ug/L		
LCS	Q2865190		BERYLLIUM	40			37.5	ug/L	93.8	
SER01	Q2866448	AA28601	BERYLLIUM	0		BDL		ug/L		
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
DUP02	Q2865191	AA28601	BERYLLIUM	0		BDL		ug/L		
SPI02	Q2865192	AA28601	BERYLLIUM	0	40		39.0	ug/L	97.5	
CCV	Q2866428		BERYLLIUM	20			20.4	ug/L	102.0	
BLA01	Q2866413		BERYLLIUM			<	0.120	ug/L		
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28609		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
CCV	Q2866429		BERYLLIUM	20			20.0	ug/L	100.0	
BLA01	Q2866414		BERYLLIUM			<	0.120	ug/L		
BLA02	Q2865193		BERYLLIUM			<	0.120	ug/L		
LCS	Q2865194		BERYLLIUM	40			36.6	ug/L	91.5	
SER01	Q2866449	AA28611	BERYLLIUM	0		CNA	0.500	ug/L		
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
DUP02	Q2865195	AA28611	BERYLLIUM	0		BDL		ug/L		
SPI02	Q2865196	AA28611	BERYLLIUM	0	40		38.3	ug/L	95.8	
CCV	Q2866430		BERYLLIUM	20			19.8	ug/L	99.0	
BLA01	Q2866454		BERYLLIUM			<	0.120	ug/L		
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							

BERYLLIUM ICP/MS SW846-6020 V105.3
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R631089 Analyst: C WILLHITE Run Date: 01-Oct-14
Analytical Reviewer: S ENDERSEN Review Date: 02-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28617		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28618		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28619		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28620		See Certificate of Analysis, Rep: 0							
CCV	Q2866459		BERYLLIUM	20			19.8	ug/L	99.0	
BLA01	Q2866455		BERYLLIUM			<	0.120	ug/L		
SER01	Q2866465	AA28642	BERYLLIUM	3.00		CNA	65.0	ug/kg		
CDL01	Q2866466		BERYLLIUM	0.05			0.0470	ug/L	94.0	
ICS-A	Q2866464		BERYLLIUM	40			45.1	ug/L	112.8	

Q2864832 1:5 Dilution.
Q2865196 1:5 Dilution.
Q2866443 1:5 Dilution.
Q2866449 1:25 Dilution.
Q2866464 1:5 Dilution.
Q2866465 1:5000 Dilution.

R631187 Analyst: C WILLHITE Run Date: 03-Oct-14 Instrument: ICP/MS
Analytical Reviewer: S ENDERSEN Review Date: 06-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2867384		BERYLLIUM	50			47.7	ug/L	95.4	
CDL01	Q2867420		BERYLLIUM	0.4			0.423	ug/L	105.8	
ICS-A	Q2867425		BERYLLIUM	40			44.4	ug/L	111.0	
CCV	Q2867443		BERYLLIUM	20			19.9	ug/L	99.5	
BLA01	Q2867435		BERYLLIUM			<	0.160	ug/L		
BLA02	Q2865788		BERYLLIUM			<	0.160	ug/L		
LCS	Q2865789		BERYLLIUM	40			36.4	ug/L	91.0	
SER01	Q2867455	AA28621	BERYLLIUM	0		CNA	0.525	ug/L		
SAMPLE	AA28621		See Certificate of Analysis, Rep: 0							
DUP02	Q2865790	AA28621	BERYLLIUM	0		BDL		ug/L		
SPI02	Q2865791	AA28621	BERYLLIUM	0	40		42.0	ug/L	105.0	
CCV	Q2867444		BERYLLIUM	20			20.7	ug/L	103.5	
BLA01	Q2867436		BERYLLIUM			<	0.160	ug/L		
SAMPLE	AA28622		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28623		See Certificate of Analysis, Rep: 0							
CCV	Q2867445		BERYLLIUM	20			20.5	ug/L	102.5	
BLA01	Q2867437		BERYLLIUM			<	0.160	ug/L		
SER01	Q2867457	AA28767	BERYLLIUM	0		BDL		ug/L		
CDL01	Q2867458		BERYLLIUM	0.05			0.0360	ug/L	72.0	
ICS-A	Q2867454		BERYLLIUM	40			43.4	ug/L	108.5	

Q2865790 1:5 Dilution.
Q2865791 1:5 Dilution.
Q2867425 1:5 Dilution.
Q2867454 1:5 Dilution.
Q2867455 1:25 Dilution.
Q2867457 1:25 Dilution.

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Quality Assurance Report

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BORON ICP SW846-6010B M107.3
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R630909 Analyst: K KAMARA Run Date: 29-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 29-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2864845		Analytical Run: R630959							
LCS	Q2864846		Analytical Run: R630959							
DUP02	Q2864847		Analytical Run: R630959							
SPI02	Q2864848		Analytical Run: R630959							
SAMPLE	AA28600	Rep: 0	Analytical Run: R630959							

R630947 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865197		Analytical Run: R631006							
LCS	Q2865198		Analytical Run: R631006							
DUP02	Q2865199		Analytical Run: R631006							
SPI02	Q2865200		Analytical Run: R631006							
SAMPLE	AA28601	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28602	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28603	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28604	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28605	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28606	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28607	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28608	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28609	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28610	Rep: 0	Analytical Run: R631006							

R630948 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865206		Analytical Run: R631006							
LCS	Q2865207		Analytical Run: R631006							
DUP02	Q2865208		Analytical Run: R631006							
SPI02	Q2865209		Analytical Run: R631006							
SAMPLE	AA28611	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28612	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28613	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28614	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28615	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28616	Rep: 0	Analytical Run: R631006							

R630959 Analyst: J KRAMER Run Date: 29-Sep-14 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2865245		BORON	1			1.02	mg/L	102.0	
CDL01	Q2865290		BORON	0.05			0.0480	mg/L	96.0	
ICS-AB	Q2865300		BORON	5			5.34	mg/L	106.8	
BLA02	Q2864845		BORON			<	0.0200	mg/L		
LCS	Q2864846		BORON	1.00			1.02	mg/L	102.0	

BORON ICP SW846-6010B **M107.3**
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R630959 Analyst: J KRAMER Run Date: 29-Sep-14
Analytical Reviewer: S ENDERSEN Review Date: 30-Sep-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SER01	Q2865295	AA28491	BORON	0.374		CNA	0.380	mg/L		
DUP02	Q2864847	AA28491	BORON	0.374			0.392	mg/L		4.7
SPI02	Q2864848	AA28491	BORON	0.374	1		1.37	mg/L	99.6	
CCV	Q2865275		BORON	2			1.96	mg/L	98.0	
BLA01	Q2865253		BORON			<	0.0200	mg/L		
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
CCV	Q2865276		BORON	2			2.08	mg/L	104.0	
BLA01	Q2865254		BORON			<	0.0200	mg/L		
SER01	Q2865297	AA28572	BORON	0.512		CNA	0.535	mg/L		

Q2865295 1:5 Dilution.
Q2865295 There was possible matrix interference for K and Na
Q2865295 as indicated by the serial dilution results.

R631006 Analyst: J KRAMER Run Date: 30-Sep-14 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2865702		BORON	1			1.03	mg/L	103.0	
CDL01	Q2865697		BORON	10			10.0	mg/L	100.0	
CCV	Q2865720		BORON	2			2.00	mg/L	100.0	
BLA01	Q2865706		BORON			<	0.0200	mg/L		
BLA02	Q2865197		BORON			<	0.0200	mg/L		
LCS	Q2865198		BORON	1.00			1.06	mg/L	106.0	
SER01	Q2865734	AA28603	BORON	0.378		CNA	0.358	mg/L		
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
DUP02	Q2865199	AA28603	BORON	0.378			0.393	mg/L		3.9
SPI02	Q2865200	AA28603	BORON	0.378	1		1.46	mg/L	108.2	
CCV	Q2865721		BORON	2			2.05	mg/L	102.5	
BLA01	Q2865707		BORON			<	0.0200	mg/L		
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28609		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
CCV	Q2865722		BORON	2			2.04	mg/L	102.0	
BLA01	Q2865708		BORON			<	0.0200	mg/L		
BLA02	Q2865206		BORON			<	0.0200	mg/L		
LCS	Q2865207		BORON	1.00			1.06	mg/L	106.0	
SER01	Q2865735	AA28612	BORON	0.0509		BDL		mg/L		
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
DUP02	Q2865208	AA28612	BORON	0.0509		BDL		mg/L		
SPI02	Q2865209	AA28612	BORON	0.0509	1		1.09	mg/L	103.9	
CCV	Q2865723		BORON	2			2.03	mg/L	101.5	

BORON ICP SW846-6010B **M107.3**
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R631006 Analyst: J KRAMER Run Date: 30-Sep-14
Analytical Reviewer: S ENDERSEN Review Date: 01-Oct-14 Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA01	Q2865709		BORON			<	0.0200	mg/L		
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
CCV	Q2865724		BORON	2			2.07	mg/L	103.5	
BLA01	Q2865710		BORON			<	0.0200	mg/L		

Q2865734 1:5 Dilution.
Q2865734 There was possible matrix interference for K
Q2865734 as indicated by the serial dilution results.
Q2865735 1:5 Dilution.

CADMIUM ICP/MS SW846-6020 **V108.3**
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R630907 Analyst: K KAMARA Run Date: 29-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 29-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28600	Rep: 0	Analytical Run: R631019							
BLA02	Q2864829		Analytical Run: R631019							
LCS	Q2864830		Analytical Run: R631019							
DUP02	Q2864831		Analytical Run: R631019							
SPI02	Q2864832		Analytical Run: R631019							

Q2864832 1:5 Dilution.

R630945 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865189		Analytical Run: R631089							
LCS	Q2865190		Analytical Run: R631089							
DUP02	Q2865191		Analytical Run: R631089							
SPI02	Q2865192		Analytical Run: R631089							
SAMPLE	AA28601	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28602	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28603	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28604	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28605	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28606	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28607	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28608	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28609	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28610	Rep: 0	Analytical Run: R631089							

R630946 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	RQL	Observed	Units	Rec	RPD

CADMIUM ICP/MS SW846-6020 V108.3
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R630946 Analyst: K KAMARA Run Date: 30-Sep-14
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865193		Analytical Run: R631089							
LCS	Q2865194		Analytical Run: R631089							
DUP02	Q2865195		Analytical Run: R631089							
SPI02	Q2865196		Analytical Run: R631089							
SAMPLE	AA28611	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28612	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28613	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28614	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28615	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28616	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28617	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28618	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28619	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28620	Rep: 0	Analytical Run: R631089							
Q2865196	1:5 Dilution.									

R631004 Analyst: K KAMARA Run Date: 01-Oct-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28621	Rep: 0	Analytical Run: R631187							
SAMPLE	AA28622	Rep: 0	Analytical Run: R631187							
SAMPLE	AA28623	Rep: 0	Analytical Run: R631187							
BLA02	Q2865788		Analytical Run: R631187							
LCS	Q2865789		Analytical Run: R631187							
DUP02	Q2865790		Analytical Run: R631187							
SPI02	Q2865791		Analytical Run: R631187							
Q2865790	1:5 Dilution.									
Q2865791	1:5 Dilution.									

R631019 Analyst: C WILLHITE Run Date: 30-Sep-14 Instrument: ICP/MS
Analytical Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2865890		CADMIUM	50			50.4	ug/L	100.8	
CDL01	Q2865905		CADMIUM	0.2			0.219	ug/L	109.5	
ICS-A	Q2865906		CADMIUM	40			43.1	ug/L	107.8	
BLA02	Q2864829		CADMIUM			<	0.0160	ug/L		
LCS	Q2864830		CADMIUM	40			37.0	ug/L	92.5	
SER01	Q2865934	AA28233	CADMIUM	0		BDL		ug/L		
DUP02	Q2864831	AA28233	CADMIUM	0		BDL		ug/L		
SPI02	Q2864832	AA28233	CADMIUM	0	40		40.7	ug/L	101.8	
CCV	Q2865919		CADMIUM	20			21.4	ug/L	107.0	
BLA01	Q2865910		CADMIUM			<	0.0160	ug/L		
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
CCV	Q2865920		CADMIUM	20			20.1	ug/L	100.5	
BLA01	Q2865911		CADMIUM			<	0.0160	ug/L		
SER01	Q2865935	AA28261	CADMIUM	0		BDL		ug/L		

CADMIUM ICP/MS SW846-6020 **V108.3**
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R631019 Analytical — Analyst: C WILLHITE, Reviewer: S ENDERSEN — Run Date: 30-Sep-14, Review Date: 01-Oct-14 — Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CDL01	Q2865929		CADMIUM	0.2			0.208	ug/L	104.0	
ICS-A	Q2865933		CADMIUM	40			44.1	ug/L	110.2	

Q2864832 1:5 Dilution.
Q2865906 1:5 Dilution.
Q2865933 1:5 Dilution.
Q2865935 1:25 Dilution.

R631089 Analytical — Analyst: C WILLHITE, Reviewer: S ENDERSEN — Run Date: 01-Oct-14, Review Date: 02-Oct-14 — Instrument: ICP/MS

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2866399		CADMIUM	50			51.1	ug/L	102.2	
CDL01	Q2866439		CADMIUM	0.2			0.297	ug/L	148.5	
ICS-A	Q2866443		CADMIUM	40			47.6	ug/L	119.0	
CCV	Q2866427		CADMIUM	20			20.3	ug/L	101.5	
BLA01	Q2866412		CADMIUM			<	0.0160	ug/L		
BLA02	Q2865189		CADMIUM			<	0.0160	ug/L		
LCS	Q2865190		CADMIUM	40			38.2	ug/L	95.5	
SER01	Q2866448	AA28601	CADMIUM	0.0450		CNA	0.225	ug/L		
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
DUP02	Q2865191	AA28601	CADMIUM	0		BDL		ug/L		
SPI02	Q2865192	AA28601	CADMIUM	0	40		38.8	ug/L	97.0	
CCV	Q2866428		CADMIUM	20			20.2	ug/L	101.0	
BLA01	Q2866413		CADMIUM			<	0.0160	ug/L		
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28609		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
CCV	Q2866429		CADMIUM	20			20.1	ug/L	100.5	
BLA01	Q2866414		CADMIUM			<	0.0160	ug/L		
BLA02	Q2865193		CADMIUM			<	0.0160	ug/L		
LCS	Q2865194		CADMIUM	40			37.3	ug/L	93.2	
SER01	Q2866449	AA28611	CADMIUM	0.0850		CNA	0.400	ug/L		
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
DUP02	Q2865195	AA28611	CADMIUM	0		BDL		ug/L		
SPI02	Q2865196	AA28611	CADMIUM	0	40		37.8	ug/L	94.5	
CCV	Q2866430		CADMIUM	20			20.0	ug/L	100.0	
BLA01	Q2866454		CADMIUM			<	0.0160	ug/L		
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							

CADMIUM ICP/MS SW846-6020 **V108.3**
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R631089 Analyst: C WILLHITE Run Date: 01-Oct-14
Analytical Reviewer: S ENDERSEN Review Date: 02-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28617		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28618		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28619		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28620		See Certificate of Analysis, Rep: 0							
CCV	Q2866459		CADMIUM	20			19.9	ug/L	99.5	
BLA01	Q2866455		CADMIUM			<	0.0160	ug/L		
SER01	Q2866465	AA28642	CADMIUM	40.0		CNA	125	ug/kg		
CDL01	Q2866466		CADMIUM	0.05			0.0530	ug/L	106.0	
ICS-A	Q2866464		CADMIUM	40			46.2	ug/L	115.5	

Q2864832 1:5 Dilution.
Q2865196 1:5 Dilution.
Q2866443 1:5 Dilution.
Q2866449 1:25 Dilution.
Q2866464 1:5 Dilution.
Q2866465 1:5000 Dilution.

R631187 Analyst: C WILLHITE Run Date: 03-Oct-14 Instrument: ICP/MS
Analytical Reviewer: S ENDERSEN Review Date: 06-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2867384		CADMIUM	50			47.9	ug/L	95.8	
CDL01	Q2867420		CADMIUM	0.2			0.236	ug/L	118.0	
ICS-A	Q2867425		CADMIUM	40			42.6	ug/L	106.5	
CCV	Q2867443		CADMIUM	20			19.0	ug/L	95.0	
BLA01	Q2867435		CADMIUM			<	0.0160	ug/L		
BLA02	Q2865788		CADMIUM			<	0.0160	ug/L		
LCS	Q2865789		CADMIUM	40			36.6	ug/L	91.5	
SER01	Q2867455	AA28621	CADMIUM	0		BDL		ug/L		
SAMPLE	AA28621		See Certificate of Analysis, Rep: 0							
DUP02	Q2865790	AA28621	CADMIUM	0		BDL		ug/L		
SPI02	Q2865791	AA28621	CADMIUM	0	40		39.5	ug/L	98.8	
CCV	Q2867444		CADMIUM	20			19.3	ug/L	96.5	
BLA01	Q2867436		CADMIUM			<	0.0160	ug/L		
SAMPLE	AA28622		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28623		See Certificate of Analysis, Rep: 0							
CCV	Q2867445		CADMIUM	20			19.6	ug/L	98.0	
BLA01	Q2867437		CADMIUM			<	0.0160	ug/L		
SER01	Q2867457	AA28767	CADMIUM	0		BDL		ug/L		
CDL01	Q2867458		CADMIUM	0.05			0.0360	ug/L	72.0	
ICS-A	Q2867454		CADMIUM	40			41.5	ug/L	103.8	

Q2865790 1:5 Dilution.
Q2865791 1:5 Dilution.
Q2867425 1:5 Dilution.
Q2867454 1:5 Dilution.
Q2867455 1:25 Dilution.
Q2867457 1:25 Dilution.

CALCIUM ICP SW846-6010B M109.3
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R630909 Analyst: K KAMARA Run Date: 29-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 29-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2864845		Analytical Run: R630959							
LCS	Q2864846		Analytical Run: R630959							
DUP02	Q2864847		Analytical Run: R630959							
SPI02	Q2864848		Analytical Run: R630959							
SAMPLE	AA28600	Rep: 0	Analytical Run: R630959							

R630947 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865197		Analytical Run: R631006							
LCS	Q2865198		Analytical Run: R631006							
DUP02	Q2865199		Analytical Run: R631006							
SPI02	Q2865200		Analytical Run: R631006							
SAMPLE	AA28601	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28602	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28603	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28604	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28605	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28606	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28607	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28608	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28609	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28610	Rep: 0	Analytical Run: R631006							

R630948 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865206		Analytical Run: R631006							
LCS	Q2865207		Analytical Run: R631006							
DUP02	Q2865208		Analytical Run: R631006							
SPI02	Q2865209		Analytical Run: R631006							
SAMPLE	AA28611	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28612	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28613	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28614	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28615	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28616	Rep: 0	Analytical Run: R631006							

R630959 Analyst: J KRAMER Run Date: 29-Sep-14 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2865245		CALCIUM	20			21.8	mg/L	109.0	
CDL01	Q2865290		CALCIUM	0.1			0.104	mg/L	104.0	
ICS-A	Q2865292		CALCIUM	500			495	mg/L	99.0	
ICS-AB	Q2865300		CALCIUM	300			308	mg/L	102.7	
BLA02	Q2864845		CALCIUM			<	0.0400	mg/L		

CALCIUM ICP SW846-6010B M109.3
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R630959 Analyst: J KRAMER Run Date: 29-Sep-14
Analytical Reviewer: S ENDERSEN Review Date: 30-Sep-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
LCS	Q2864846		CALCIUM	100			102	mg/L	102.0	
SER01	Q2865295	AA28491	CALCIUM	219			219	mg/L		0
DUP02	Q2864847	AA28491	CALCIUM	219			231	mg/L		5.3
SPI02	Q2864848	AA28491	CALCIUM	219	100		311	mg/L	92.0	
CCV	Q2865275		CALCIUM	50.0			50.8	mg/L	101.6	
BLA01	Q2865253		CALCIUM			<	0.0400	mg/L		
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
CCV	Q2865276		CALCIUM	50.0			54.0	mg/L	108.0	
BLA01	Q2865254		CALCIUM			<	0.0400	mg/L		
SER01	Q2865297	AA28572	CALCIUM	124			128	mg/L		3.2
CDL01	Q2865291		CALCIUM	0.1			0.0993	mg/L	99.3	
ICS-A	Q2865293		CALCIUM	500			471	mg/L	94.2	
ICS-AB	Q2865267		CALCIUM	500			458	mg/L	91.6	

Q2865295 1:5 Dilution.
Q2865295 There was possible matrix interference for K and Na
Q2865295 as indicated by the serial dilution results.

R631006 Analyst: J KRAMER Run Date: 30-Sep-14 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2865702		CALCIUM	20			21.0	mg/L	105.0	
CDL01	Q2865696		CALCIUM	0.1			0.101	mg/L	101.0	
ICS-A	Q2865699		CALCIUM	500			476	mg/L	95.2	
ICS-AB	Q2865691		CALCIUM	500			467	mg/L	93.4	
CCV	Q2865720		CALCIUM	50.0			49.6	mg/L	99.2	
BLA01	Q2865706		CALCIUM			<	0.0400	mg/L		
BLA02	Q2865197		CALCIUM			<	0.0400	mg/L		
LCS	Q2865198		CALCIUM	100			103	mg/L	103.0	
SER01	Q2865734	AA28603	CALCIUM	219			227	mg/L		3.6
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
DUP02	Q2865199	AA28603	CALCIUM	219			229	mg/L		4.5
SPI02	Q2865200	AA28603	CALCIUM	219	100		314	mg/L	95.0	
CCV	Q2865721		CALCIUM	50.0			50.7	mg/L	101.4	
BLA01	Q2865707		CALCIUM			<	0.0400	mg/L		
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28609		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
CCV	Q2865722		CALCIUM	50.0			50.8	mg/L	101.6	
BLA01	Q2865708		CALCIUM			<	0.0400	mg/L		
BLA02	Q2865206		CALCIUM			<	0.0400	mg/L		

CALCIUM ICP SW846-6010B **M109.3**
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R631006 Analyst: J KRAMER Run Date: 30-Sep-14
Analytical Reviewer: S ENDERSEN Review Date: 01-Oct-14 Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
LCS	Q2865207		CALCIUM	100			100	mg/L	100.0	
SER01	Q2865735	AA28612	CALCIUM	88.0			90.0	mg/L		2.2
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
DUP02	Q2865208	AA28612	CALCIUM	88.0			91.5	mg/L		3.9
SPI02	Q2865209	AA28612	CALCIUM	88.0	100		186	mg/L	98.0	
CCV	Q2865723		CALCIUM	50.0			50.1	mg/L	100.2	
BLA01	Q2865709		CALCIUM			<	0.0400	mg/L		
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
CCV	Q2865724		CALCIUM	50.0			51.5	mg/L	103.0	
BLA01	Q2865710		CALCIUM			<	0.0400	mg/L		
CDL01	Q2865731		CALCIUM	0.1			0.101	mg/L	101.0	
ICS-A	Q2865732		CALCIUM	500			468	mg/L	93.6	
ICS-AB	Q2865715		CALCIUM	500			459	mg/L	91.8	

Q2865734 1:5 Dilution.
Q2865734 There was possible matrix interference for K
Q2865734 as indicated by the serial dilution results.
Q2865735 1:5 Dilution.

CHEMICAL OXYGEN DEMAND (COLORIMETRIC) EPA 410.4 REV. 2.0 (1993) **G301.1**

R630988 Analyst: B LEDFORD Run Date: 30-Sep-14
Analytical Reviewer: P SPENCE Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CDL01	Q2865559		CHEMICAL OXYGEN DEMAND	10.0			7.03	mg/L	70.3	
ICV01	Q2865560		CHEMICAL OXYGEN DEMAND	100			97.3	mg/L	97.3	
CCV	Q2865564		CHEMICAL OXYGEN DEMAND	100			104	mg/L	104.0	
BLA01	Q2865565		CHEMICAL OXYGEN DEMAND			BDL	5.2	mg/L		
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
SPI01	Q2865566	AA28600	CHEMICAL OXYGEN DEMAND	0	50.0		57.2	mg/L	114.4	
DPS01	Q2865567	AA28600	CHEMICAL OXYGEN DEMAND	0	50.0		51.9	mg/L	103.8	9.7
ICV01	Q2865568		CHEMICAL OXYGEN DEMAND	100			102	mg/L	102.0	
CCV	Q2865569		CHEMICAL OXYGEN DEMAND	100			108	mg/L	108.0	
BLA01	Q2865570		CHEMICAL OXYGEN DEMAND			BDL	10	mg/L		
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SPI01	Q2865571	AA28608	CHEMICAL OXYGEN DEMAND	0	50.0		53.3	mg/L	106.6	
DPS01	Q2865572	AA28608	CHEMICAL OXYGEN DEMAND	0	50.0		55.3	mg/L	110.6	3.7

CHEMICAL OXYGEN DEMAND (COLORIMETRIC) EPA 410.4 REV. 2.0 (1993) **G301.1**

R630988 Analyst: B LEDFORD Run Date: 30-Sep-14
Analytical Reviewer: P SPENCE Review Date: 30-Sep-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CCV	Q2865573		CHEMICAL OXYGEN DEMAND	100			101	mg/L	101.0	
BLA01	Q2865574		CHEMICAL OXYGEN DEMAND			BDL	10	mg/L		
SAMPLE	AA28609		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
ICV01	Q2865575		CHEMICAL OXYGEN DEMAND	100			105	mg/L	105.0	
CCV	Q2865576		CHEMICAL OXYGEN DEMAND	100			108	mg/L	108.0	
BLA01	Q2865577		CHEMICAL OXYGEN DEMAND			BDL	10	mg/L		

Q2865566 MS and/or MSD do not meet control limits. Results for this sample are
Q2865566 estimated.
Q2865572 MS and/or MSD do not meet control limits. Results for this sample are
Q2865572 estimated.

R630989 Analyst: B LEDFORD Run Date: 30-Sep-14
Analytical Reviewer: P SPENCE Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA01	Q2865578		CHEMICAL OXYGEN DEMAND			BDL	10	mg/L		
ICV01	Q2865579		CHEMICAL OXYGEN DEMAND	500			514	mg/L	102.8	
CCV	Q2865580		CHEMICAL OXYGEN DEMAND	500			547	mg/L	109.4	
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SPI01	Q2865581	AA28606	CHEMICAL OXYGEN DEMAND	848	100		933	mg/L	85.0	
DPS01	Q2865582	AA28606	CHEMICAL OXYGEN DEMAND	848	100		942	mg/L	94.0	10.0
CCV	Q2865583		CHEMICAL OXYGEN DEMAND	500			549	mg/L	109.8	
BLA01	Q2865584		CHEMICAL OXYGEN DEMAND			BDL	10	mg/L		

Q2865581 MS and/or MSD do not meet control limits. Results for this sample are
Q2865581 estimated.

R631100 Analyst: B LEDFORD Run Date: 02-Oct-14
Analytical Reviewer: P SPENCE Review Date: 03-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA01	Q2866538		CHEMICAL OXYGEN DEMAND			BDL	5	mg/L		
CDL01	Q2866539		CHEMICAL OXYGEN DEMAND	10.0			10.6	mg/L	106.0	
ICV01	Q2866540		CHEMICAL OXYGEN DEMAND	100			97.9	mg/L	97.9	
CCV	Q2866541		CHEMICAL OXYGEN DEMAND	100			104	mg/L	104.0	
SPI01	Q2866542	AA28494	CHEMICAL OXYGEN DEMAND	9.00	50.0		58.7	mg/L	99.4	
DPS01	Q2866543	AA28494	CHEMICAL OXYGEN DEMAND	9.00	50.0		59.7	mg/L	101.4	2.0
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
CCV	Q2866548		CHEMICAL OXYGEN DEMAND	100			99.9	mg/L	99.9	
BLA01	Q2866549		CHEMICAL OXYGEN DEMAND			BDL	5	mg/L		
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
ICV01	Q2866550		CHEMICAL OXYGEN DEMAND	100			94.4	mg/L	94.4	
CCV	Q2866551		CHEMICAL OXYGEN DEMAND	100			101	mg/L	101.0	
BLA01	Q2866552		CHEMICAL OXYGEN DEMAND			BDL	5	mg/L		
ICV01	Q2866561		CHEMICAL OXYGEN DEMAND	100			95.3	mg/L	95.3	

CHEMICAL OXYGEN DEMAND (COLORIMETRIC) EPA 410.4 REV. 2.0 (1993) G301.1

R631262 Analyst: B LEDFORD Run Date: 07-Oct-14
Analytical Reviewer: P SPENCE Review Date: 07-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA01	Q2868116		CHEMICAL OXYGEN DEMAND			BDL	10	mg/L		
ICV01	Q2868118		CHEMICAL OXYGEN DEMAND	500			517	mg/L	103.4	
CCV	Q2868119		CHEMICAL OXYGEN DEMAND	500			505	mg/L	101.0	
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SPI01	Q2868120	AA28370	CHEMICAL OXYGEN DEMAND	344	100		444	mg/L	100.0	
DPS01	Q2868121	AA28370	CHEMICAL OXYGEN DEMAND	344	100		442	mg/L	98.0	2.0
CCV	Q2868122		CHEMICAL OXYGEN DEMAND	500			521	mg/L	104.2	
BLA01	Q2868123		CHEMICAL OXYGEN DEMAND			BDL	10	mg/L		

CHLORIDE BY ION CHROMATOGRAPHY SW846-9056 G310.2

R630926 Analyst: R DALAL Run Date: 26-Sep-14 Instrument: IC
Analytical Reviewer: E WERNZ Review Date: 29-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
LFB01H	Q2865038		CHLORIDE	12.5			12.0	mg/L	96.0	
LFB01L	Q2865049		CHLORIDE	1.25			1.23	mg/L	98.4	
CCVL	Q2865052		CHLORIDE	1.25			1.27	mg/L	101.6	
CCVH	Q2865053		CHLORIDE	5.00			4.77	mg/L	95.4	
BLA01	Q2865054		CHLORIDE			BDL	0.05	mg/L		
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
SPI01	Q2865055	AA28600	CHLORIDE	3.38	1.25		4.42	mg/L	83.2	
DPS01	Q2865056	AA28600	CHLORIDE	3.38	1.25		4.42	mg/L	83.2	0
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
CCVL	Q2865057		CHLORIDE	1.25			1.28	mg/L	102.4	
CCVH	Q2865058		CHLORIDE	5.00			4.79	mg/L	95.8	
BLA01	Q2865059		CHLORIDE			BDL	0.05	mg/L		
LFB01L	Q2865060		CHLORIDE	1.25			1.24	mg/L	99.2	
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SPI01	Q2865061	AA28602	CHLORIDE	1.58	1.25		2.93	mg/L	108.0	
DPS01	Q2865062	AA28602	CHLORIDE	1.58	1.25		2.81	mg/L	98.4	9.3
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
CCVL	Q2865063		CHLORIDE	1.25			1.29	mg/L	103.2	
CCVH	Q2865064		CHLORIDE	5.00			5.12	mg/L	102.4	
BLA01	Q2865065		CHLORIDE			BDL	0.05	mg/L		
LFB01L	Q2865071		CHLORIDE	1.25			1.23	mg/L	98.4	

R630965 Analyst: R DALAL Run Date: 29-Sep-14 Instrument: IC
Analytical Reviewer: E WERNZ Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA01	Q2865365		CHLORIDE			BDL	0.05	mg/L		
CCVL	Q2865366		CHLORIDE	1.25			1.24	mg/L	99.2	
CCVH	Q2865367		CHLORIDE	5.00			4.80	mg/L	96.0	
LFB01L	Q2865368		CHLORIDE	1.25			1.24	mg/L	99.2	

CHLORIDE BY ION CHROMATOGRAPHY SW846-9056 G310.2

R630965 Analyst: R DALAL
Analytical Reviewer: E WERNZ
Run Date: 29-Sep-14
Review Date: 30-Sep-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
LFB01H	Q2865369		CHLORIDE	12.5			12.0	mg/L	96.0	
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SPI01	Q2865370	AA28608	CHLORIDE	70.6	12.5		82.3	mg/L	93.6	
DPS01	Q2865371	AA28608	CHLORIDE	70.6	12.5		81.3	mg/L	85.6	8.9
CCVL	Q2865372		CHLORIDE	1.25			1.26	mg/L	100.8	
CCVH	Q2865373		CHLORIDE	5.00			4.80	mg/L	96.0	
BLA01	Q2865374		CHLORIDE			BDL	0.05	mg/L		
SAMPLE	AA28609		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
CCVL	Q2865376		CHLORIDE	1.25			1.26	mg/L	100.8	
CCVH	Q2865377		CHLORIDE	5.00			4.84	mg/L	96.8	
BLA01	Q2865378		CHLORIDE			BDL	0.05	mg/L		
LFB01L	Q2865379		CHLORIDE	1.25			1.24	mg/L	99.2	
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SPI01	Q2865382	AA28616	CHLORIDE	3.68	1.25		4.70	mg/L	81.6	
DPS01	Q2865383	AA28616	CHLORIDE	3.68	1.25		4.70	mg/L	81.6	0
CCVL	Q2865384		CHLORIDE	1.25			1.26	mg/L	100.8	
CCVH	Q2865385		CHLORIDE	5.00			4.83	mg/L	96.6	
BLA01	Q2865386		CHLORIDE			BDL	0.05	mg/L		
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
CCVL	Q2865387		CHLORIDE	1.25			1.29	mg/L	103.2	
CCVH	Q2865388		CHLORIDE	5.00			4.83	mg/L	96.6	
BLA01	Q2865389		CHLORIDE			BDL	0.05	mg/L		
LFB01L	Q2865390		CHLORIDE	1.25			1.24	mg/L	99.2	

Q2865370 1:10 Dilution.
Q2865371 1:10 Dilution.

CHLORINATED HERBICIDES (2,4 D, SILVEX AND 2,4,5-T) SW846-8151A O253.1
Prep : DIAZOMETHANE HERBICIDE DERIVATIZATION SW846-8151A

R630937 Analyst: T DAHN
Prep Reviewer: K VEST
Run Date: 29-Sep-14
Review Date: 29-Sep-14
Instrument: PREP

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865110		Analytical Run: R630973							
LCS	Q2865111		Analytical Run: R630973							
SPI02	Q2865112		Analytical Run: R630973							
DPS02	Q2865113		Analytical Run: R630973							
SAMPLE	AA28614	Rep: 0	Analytical Run: R630973							
SAMPLE	AA28613	Rep: 0	Analytical Run: R630973							
SAMPLE	AA28615	Rep: 0	Analytical Run: R630973							
SAMPLE	AA28616	Rep: 0	Analytical Run: R630973							

CHLORINATED HERBICIDES (2,4 D, SILVEX AND 2,4,5-T) SW846-8151A **O253.1**
Prep : DIAZOMETHANE HERBICIDE DERIVATIZATION SW846-8151A

R630937 Analyst: T DAHN Run Date: 29-Sep-14
Prep Reviewer: K VEST Review Date: 29-Sep-14 Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28617	Rep: 0	Analytical Run: R630973							
SAMPLE	AA28618	Rep: 0	Analytical Run: R630973							
SAMPLE	AA28619	Rep: 0	Analytical Run: R630973							
SAMPLE	AA28620	Rep: 0	Analytical Run: R630973							
SAMPLE	AA28621	Rep: 0	Analytical Run: R630973							
SAMPLE	AA28622	Rep: 0	Analytical Run: R630973							
SAMPLE	AA28623	Rep: 0	Analytical Run: R630973							
Q2865112	Interference peak in sample, MS/MSD recoveries for silvex not reported.									
Q2865113	Interference peak in sample, MS/MSD recoveries for silvex not reported.									

R630973 Analyst: B WOOD Run Date: 29-Sep-14 Instrument: GC/ECD
Analytical Reviewer: E WERNZ Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CAL01	Q2865486		2,4-DICHLOROPHENOXYACETIC ACID							8.31
CAL01	Q2865486		SILVEX (2,4,5-TP)							6.22
CAL01	Q2865486		2,4,5-TRICHLOROPHENOXYACETIC ACID (2,4,5-T)							5.24
CAL01	Q2865486		DCAA							11.9
ICV01	Q2865487		2,4-DICHLOROPHENOXYACETIC ACID	500			532	ug/L	106.4	
ICV01	Q2865487		SILVEX (2,4,5-TP)	500			540	ug/L	108.0	
ICV01	Q2865487		2,4,5-TRICHLOROPHENOXYACETIC ACID (2,4,5-T)	500			570	ug/L	114.0	
ICV01	Q2865487		DCAA						122.2	
BLA02	Q2865110		2,4-DICHLOROPHENOXYACETIC ACID			BDL	10	ug/L		
BLA02	Q2865110		SILVEX (2,4,5-TP)			BDL	1	ug/L		
BLA02	Q2865110		2,4,5-TRICHLOROPHENOXYACETIC ACID (2,4,5-T)			BDL	1	ug/L		
BLA02	Q2865110		DCAA						74.0	
LCS	Q2865111		2,4-DICHLOROPHENOXYACETIC ACID	2.50			2.47	ug/L	98.8	
LCS	Q2865111		SILVEX (2,4,5-TP)	2.50			2.48	ug/L	99.2	
LCS	Q2865111		2,4,5-TRICHLOROPHENOXYACETIC ACID (2,4,5-T)	2.50			2.84	ug/L	113.6	
SPI02	Q2865112	AA28614	2,4-DICHLOROPHENOXYACETIC ACID	0.86	2.50		3.08	ug/L	88.8	
SPI02	Q2865112	AA28614	SILVEX (2,4,5-TP)	0	2.50	NQR	5.02	ug/L		
SPI02	Q2865112	AA28614	2,4,5-TRICHLOROPHENOXYACETIC ACID (2,4,5-T)	0.72	2.50		3.21	ug/L	99.6	
DPS02	Q2865113	AA28614	2,4-DICHLOROPHENOXYACETIC ACID	0.86	2.50		3.38	ug/L	100.8	12.6
DPS02	Q2865113	AA28614	SILVEX (2,4,5-TP)	0	2.50	NQR	4.66	ug/L		
DPS02	Q2865113	AA28614	2,4,5-TRICHLOROPHENOXYACETIC ACID (2,4,5-T)	0.72	2.50		3.12	ug/L	96.0	3.7
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28617		See Certificate of Analysis, Rep: 0							
CCV	Q2865488		2,4-DICHLOROPHENOXYACETIC ACID	500			509	ug/L	101.8	

CHLORINATED HERBICIDES (2,4 D, SILVEX AND 2,4,5-T) SW846-8151A **O253.1**
Prep : DIAZOMETHANE HERBICIDE DERIVATIZATION SW846-8151A

R630973 Analyst: B WOOD Run Date: 29-Sep-14
Analytical Reviewer: E WERNZ Review Date: 01-Oct-14

Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CCV	Q2865488		SILVEX (2,4,5-TP)	500			514	ug/L	102.8	
CCV	Q2865488		2,4,5-TRICHLOROPHENOXYACETIC ACID (2,4,5-T)	500			517	ug/L	103.4	
CCV	Q2865488		DCAA						100.0	
SAMPLE	AA28618		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28619		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28620		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28621		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28622		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28623		See Certificate of Analysis, Rep: 0							
CCV	Q2865489		2,4-DICHLOROPHENOXYACETIC ACID	500			513	ug/L	102.6	
CCV	Q2865489		SILVEX (2,4,5-TP)	500			515	ug/L	103.0	
CCV	Q2865489		2,4,5-TRICHLOROPHENOXYACETIC ACID (2,4,5-T)	500			521	ug/L	104.2	
CCV	Q2865489		DCAA						100.7	

Q2865112 Interference peak in sample, MS/MSD recoveries for silvex not reported.
Q2865113 Interference peak in sample, MS/MSD recoveries for silvex not reported.

CHROMIUM ICP/MS SW846-6020 **V110.3**
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R630907 Analyst: K KAMARA Run Date: 29-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 29-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28600	Rep: 0	Analytical Run: R631019							
BLA02	Q2864829		Analytical Run: R631019							
LCS	Q2864830		Analytical Run: R631019							
DUP02	Q2864831		Analytical Run: R631019							
SPI02	Q2864832		Analytical Run: R631019							

Q2864832 1:5 Dilution.

R630945 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865189		Analytical Run: R631089							
LCS	Q2865190		Analytical Run: R631089							
DUP02	Q2865191		Analytical Run: R631089							
SPI02	Q2865192		Analytical Run: R631089							
SAMPLE	AA28601	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28602	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28603	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28604	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28605	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28606	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28607	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28608	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28609	Rep: 0	Analytical Run: R631089							

CHROMIUM ICP/MS SW846-6020 **V110.3**
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R630945 Analyst: K KAMARA Run Date: 30-Sep-14
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14 Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28610	Rep: 0	Analytical Run: R631089							

R630946 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865193		Analytical Run: R631089							
LCS	Q2865194		Analytical Run: R631089							
DUP02	Q2865195		Analytical Run: R631089							
SPI02	Q2865196		Analytical Run: R631089							
SAMPLE	AA28611	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28612	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28613	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28614	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28615	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28616	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28617	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28618	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28619	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28620	Rep: 0	Analytical Run: R631089							

Q2865196 1:5 Dilution.

R631004 Analyst: K KAMARA Run Date: 01-Oct-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28621	Rep: 0	Analytical Run: R631187							
SAMPLE	AA28622	Rep: 0	Analytical Run: R631187							
SAMPLE	AA28623	Rep: 0	Analytical Run: R631187							
BLA02	Q2865788		Analytical Run: R631187							
LCS	Q2865789		Analytical Run: R631187							
DUP02	Q2865790		Analytical Run: R631187							
SPI02	Q2865791		Analytical Run: R631187							

Q2865790 1:5 Dilution.
Q2865791 1:5 Dilution.

R631019 Analyst: C WILLHITE Run Date: 30-Sep-14 Instrument: ICP/MS
Analytical Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2865890		CHROMIUM	50			49.4	ug/L	98.8	
CDL01	Q2865905		CHROMIUM	2			2.11	ug/L	105.5	
ICS-A	Q2865906		CHROMIUM	40			42.0	ug/L	105.0	
BLA02	Q2864829		CHROMIUM				0.879	ug/L		
LCS	Q2864830		CHROMIUM	40			38.2	ug/L	95.5	
SER01	Q2865934	AA28233	CHROMIUM	2.78		CNA	2.98	ug/L		
DUP02	Q2864831	AA28233	CHROMIUM	0		BDL		ug/L		
SPI02	Q2864832	AA28233	CHROMIUM	0	40		42.7	ug/L	106.8	

CHROMIUM ICP/MS SW846-6020 **V110.3**
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R631019 Analytical — Analyst: C WILLHITE — Reviewer: S ENDERSEN — Run Date: 30-Sep-14 — Review Date: 01-Oct-14 — Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CCV	Q2865919		CHROMIUM	20			20.4	ug/L	102.0	
BLA01	Q2865910		CHROMIUM			<	0.400	ug/L		
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
CCV	Q2865920		CHROMIUM	20			19.5	ug/L	97.5	
BLA01	Q2865911		CHROMIUM			<	0.400	ug/L		
SER01	Q2865935	AA28261	CHROMIUM	0		BDL		ug/L		
CDL01	Q2865937		CHROMIUM	2			1.75	ug/L	87.5	
ICS-A	Q2865933		CHROMIUM	40			42.5	ug/L	106.2	

Q2864832 1:5 Dilution.
Q2865906 1:5 Dilution.
Q2865933 1:5 Dilution.
Q2865935 1:25 Dilution.

R631089 Analytical — Analyst: C WILLHITE — Reviewer: S ENDERSEN — Run Date: 01-Oct-14 — Review Date: 02-Oct-14 — Instrument: ICP/MS

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2866399		CHROMIUM	50			51.7	ug/L	103.4	
CDL01	Q2866439		CHROMIUM	2			2.30	ug/L	115.0	
ICS-A	Q2866443		CHROMIUM	40			46.9	ug/L	117.2	
CCV	Q2866427		CHROMIUM	20			23.6	ug/L	118.0	
BLA01	Q2866412		CHROMIUM			<	0.400	ug/L		
BLA02	Q2865189		CHROMIUM				0.698	ug/L		
LCS	Q2865190		CHROMIUM	40			40.0	ug/L	100.0	
SER01	Q2866448	AA28601	CHROMIUM	1.07		CNA	1.32	ug/L		
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
DUP02	Q2865191	AA28601	CHROMIUM	0		BDL		ug/L		
SPI02	Q2865192	AA28601	CHROMIUM	0	40		39.4	ug/L	98.5	
CCV	Q2866428		CHROMIUM	20			20.1	ug/L	100.5	
BLA01	Q2866413		CHROMIUM			<	0.400	ug/L		
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28609		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
CCV	Q2866429		CHROMIUM	20			20.0	ug/L	100.0	
BLA01	Q2866414		CHROMIUM			<	0.400	ug/L		
BLA02	Q2865193		CHROMIUM				0.773	ug/L		
LCS	Q2865194		CHROMIUM	40			39.5	ug/L	98.8	
SER01	Q2866449	AA28611	CHROMIUM	1.48		CNA	1.82	ug/L		
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
DUP02	Q2865195	AA28611	CHROMIUM	0		BDL		ug/L		
SPI02	Q2865196	AA28611	CHROMIUM	0	40		38.7	ug/L	96.8	

CHROMIUM ICP/MS SW846-6020 **V110.3**
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R631089 Analytical — Analyst: C WILLHITE, Reviewer: S ENDERSEN — Run Date: 01-Oct-14, Review Date: 02-Oct-14 — Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CCV	Q2866430		CHROMIUM	20			19.7	ug/L	98.5	
BLA01	Q2866454		CHROMIUM			<	0.400	ug/L		
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28617		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28618		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28619		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28620		See Certificate of Analysis, Rep: 0							
CCV	Q2866459		CHROMIUM	20			20.0	ug/L	100.0	
BLA01	Q2866455		CHROMIUM			<	0.400	ug/L		
SER01	Q2866465	AA28642	CHROMIUM	115		CNA	160	ug/kg		
CDL01	Q2866466		CHROMIUM	2			1.77	ug/L	88.5	
ICS-A	Q2866464		CHROMIUM	40			46.2	ug/L	115.5	

Q2864832 1:5 Dilution.
Q2865196 1:5 Dilution.
Q2866443 1:5 Dilution.
Q2866449 1:25 Dilution.
Q2866464 1:5 Dilution.
Q2866465 1:5000 Dilution.

R631187 Analytical — Analyst: C WILLHITE, Reviewer: S ENDERSEN — Run Date: 03-Oct-14, Review Date: 06-Oct-14 — Instrument: ICP/MS

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2867384		CHROMIUM	50			48.3	ug/L	96.6	
CDL01	Q2867420		CHROMIUM	2			2.10	ug/L	105.0	
ICS-A	Q2867425		CHROMIUM	40			42.1	ug/L	105.2	
CCV	Q2867443		CHROMIUM	20			18.8	ug/L	94.0	
BLA01	Q2867435		CHROMIUM			<	0.400	ug/L		
BLA02	Q2865788		CHROMIUM				0.991	ug/L		
LCS	Q2865789		CHROMIUM	40			39.4	ug/L	98.5	
SER01	Q2867455	AA28621	CHROMIUM	2.18		CNA	2.30	ug/L		
SAMPLE	AA28621		See Certificate of Analysis, Rep: 0							
DUP02	Q2865790	AA28621	CHROMIUM	0		BDL		ug/L		
SPI02	Q2865791	AA28621	CHROMIUM	0	40		42.0	ug/L	105.0	
CCV	Q2867444		CHROMIUM	20			19.4	ug/L	97.0	
BLA01	Q2867436		CHROMIUM			<	0.400	ug/L		
SAMPLE	AA28622		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28623		See Certificate of Analysis, Rep: 0							
CCV	Q2867445		CHROMIUM	20			19.7	ug/L	98.5	
BLA01	Q2867437		CHROMIUM			<	0.400	ug/L		
SER01	Q2867457	AA28767	CHROMIUM	4.50		CNA	5.35	ug/L		
CDL01	Q2867458		CHROMIUM	2			1.77	ug/L	88.5	
ICS-A	Q2867454		CHROMIUM	40			42.5	ug/L	106.2	

CHROMIUM ICP/MS SW846-6020 V110.3
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R631187 Analytical — Analyst: C WILLHITE, Reviewer: S ENDERSEN — Run Date: 03-Oct-14, Review Date: 06-Oct-14 — Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
Q2865790	1:5 Dilution.									
Q2865791	1:5 Dilution.									
Q2867425	1:5 Dilution.									
Q2867454	1:5 Dilution.									
Q2867455	1:25 Dilution.									
Q2867457	1:25 Dilution.									

COBALT ICP SW846-6010B M111.3
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R630909 Prep — Analyst: K KAMARA, Reviewer: S ENDERSEN — Run Date: 29-Sep-14, Review Date: 29-Sep-14 — Instrument: PREP

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2864845		Analytical Run: R630959							
LCS	Q2864846		Analytical Run: R630959							
DUP02	Q2864847		Analytical Run: R630959							
SPI02	Q2864848		Analytical Run: R630959							
SAMPLE	AA28600	Rep: 0	Analytical Run: R630959							

R630947 Prep — Analyst: K KAMARA, Reviewer: S ENDERSEN — Run Date: 30-Sep-14, Review Date: 30-Sep-14 — Instrument: PREP

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865197		Analytical Run: R631006							
LCS	Q2865198		Analytical Run: R631006							
DUP02	Q2865199		Analytical Run: R631006							
SPI02	Q2865200		Analytical Run: R631006							
SAMPLE	AA28601	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28602	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28603	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28604	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28605	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28606	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28607	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28608	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28609	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28610	Rep: 0	Analytical Run: R631006							

R630948 Prep — Analyst: K KAMARA, Reviewer: S ENDERSEN — Run Date: 30-Sep-14, Review Date: 30-Sep-14 — Instrument: PREP

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865206		Analytical Run: R631006							
LCS	Q2865207		Analytical Run: R631006							
DUP02	Q2865208		Analytical Run: R631006							
SPI02	Q2865209		Analytical Run: R631006							
SAMPLE	AA28611	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28612	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28613	Rep: 0	Analytical Run: R631006							

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COBALT ICP SW846-6010B M111.3

Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R630948 Analyst: K KAMARA Run Date: 30-Sep-14
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14 Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28614	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28615	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28616	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28617	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28618	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28619	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28620	Rep: 0	Analytical Run: R631006							

R630959 Analyst: J KRAMER Run Date: 29-Sep-14 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2865245		COBALT	1			1.03	mg/L	103.0	
CDL01	Q2865288		COBALT	0.100			0.0983	mg/L	98.3	
ICS-AB	Q2865300		COBALT	3			2.92	mg/L	97.3	
BLA02	Q2864845		COBALT			<	0.000800	mg/L		
LCS	Q2864846		COBALT	0.5			0.493	mg/L	98.6	
SER01	Q2865295	AA28491	COBALT	0.0111		CNA	0.00958	mg/L		
DUP02	Q2864847	AA28491	COBALT	0.0111			0.0115	mg/L		3.5
SPI02	Q2864848	AA28491	COBALT	0.0111	0.500		0.481	mg/L	94.0	
CCV	Q2865275		COBALT	5.00			4.79	mg/L	95.8	
BLA01	Q2865253		COBALT			<	0.000800	mg/L		
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
CCV	Q2865276		COBALT	5.00			5.08	mg/L	101.6	
BLA01	Q2865254		COBALT			<	0.000800	mg/L		
SER01	Q2865297	AA28572	COBALT	0.00519		CNA	0.00344	mg/L		
CDL01	Q2865291		COBALT	0.0100			0.00875	mg/L	87.5	
ICS-AB	Q2865267		COBALT	0.500			0.447	mg/L	89.4	

Q2865295 1:5 Dilution.
Q2865295 There was possible matrix interference for K and Na
Q2865295 as indicated by the serial dilution results.

R631006 Analyst: J KRAMER Run Date: 30-Sep-14 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2865702		COBALT	1			1.02	mg/L	102.0	
CDL01	Q2865697		COBALT	10			9.96	mg/L	99.6	
ICS-AB	Q2865691		COBALT	0.500			0.475	mg/L	95.0	
CCV	Q2865720		COBALT	5.00			4.82	mg/L	96.4	
BLA01	Q2865706		COBALT			<	0.000800	mg/L		
BLA02	Q2865197		COBALT			<	0.000800	mg/L		
LCS	Q2865198		COBALT	0.5			0.514	mg/L	102.8	
SER01	Q2865734	AA28603	COBALT	0.0274		CNA	0.0256	mg/L		
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
DUP02	Q2865199	AA28603	COBALT	0.0274			0.0281	mg/L		2.5
SPI02	Q2865200	AA28603	COBALT	0.0274	0.500		0.518	mg/L	98.1	
CCV	Q2865721		COBALT	5.00			4.92	mg/L	98.4	

COBALT ICP SW846-6010B **M111.3**
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R631006 Analyst: J KRAMER Run Date: 30-Sep-14
Analytical Reviewer: S ENDERSEN Review Date: 01-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA01	Q2865707		COBALT			<	0.000800	mg/L		
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28609		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
CCV	Q2865722		COBALT	5.00			4.93	mg/L	98.6	
BLA01	Q2865708		COBALT			<	0.000800	mg/L		
BLA02	Q2865206		COBALT			<	0.000800	mg/L		
LCS	Q2865207		COBALT	0.5			0.501	mg/L	100.2	
SER01	Q2865735	AA28612	COBALT	0		BDL		mg/L		
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
DUP02	Q2865208	AA28612	COBALT	0		BDL		mg/L		
SPI02	Q2865209	AA28612	COBALT	0	0.500		0.482	mg/L	96.4	
CCV	Q2865723		COBALT	5.00			4.87	mg/L	97.4	
BLA01	Q2865709		COBALT			<	0.000800	mg/L		
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28617		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28618		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28619		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28620		See Certificate of Analysis, Rep: 0							
CCV	Q2865724		COBALT	5.00			5.00	mg/L	100.0	
BLA01	Q2865710		COBALT			<	0.000800	mg/L		
CDL01	Q2865731		COBALT	0.0100			0.00993	mg/L	99.3	
ICS-AB	Q2865715		COBALT	0.500			0.466	mg/L	93.2	

Q2865734 1:5 Dilution.
Q2865734 There was possible matrix interference for K
Q2865734 as indicated by the serial dilution results.
Q2865735 1:5 Dilution.

R631012 Analyst: K KAMARA Run Date: 01-Oct-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865816		Analytical Run: R631069							
LCS	Q2865817		Analytical Run: R631069							
DUP02	Q2865818		Analytical Run: R631069							
SPI02	Q2865819		Analytical Run: R631069							
SAMPLE	AA28621	Rep: 0	Analytical Run: R631069							

COBALT ICP SW846-6010B **M111.3**
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R631012 Analyst: K KAMARA Run Date: 01-Oct-14
Prep Reviewer: S ENDERSEN Review Date: 01-Oct-14 Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28622	Rep: 0	Analytical Run: R631069							
SAMPLE	AA28623	Rep: 0	Analytical Run: R631069							

R631069 Analyst: J KRAMER Run Date: 01-Oct-14 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 02-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2866199		COBALT	1			1.03	mg/L	103.0	
CDL01	Q2866240		COBALT	0.100			0.102	mg/L	102.0	
ICS-AB	Q2866219		COBALT	0.500			0.481	mg/L	96.2	
CCV	Q2866231		COBALT	5.00			4.95	mg/L	99.0	
BLA01	Q2866210		COBALT			<	0.000800	mg/L		
BLA02	Q2865816		COBALT			<	0.000800	mg/L		
LCS	Q2865817		COBALT	0.5			0.529	mg/L	105.8	
SER01	Q2866249	AA28623	COBALT	0		BDL		mg/L		
SAMPLE	AA28623		See Certificate of Analysis, Rep: 0							
DUP02	Q2865818	AA28623	COBALT	0		BDL		mg/L		
SPI02	Q2865819	AA28623	COBALT	0	0.500		0.507	mg/L	101.4	
CCV	Q2866232		COBALT	5.00			5.09	mg/L	101.8	
BLA01	Q2866211		COBALT			<	0.000800	mg/L		
SAMPLE	AA28621		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28622		See Certificate of Analysis, Rep: 0							
CCV	Q2866233		COBALT	5.00			4.87	mg/L	97.4	
BLA01	Q2866212		COBALT			<	0.000800	mg/L		
CDL01	Q2866243		COBALT	0.0100			0.0104	mg/L	104.0	
ICS-AB	Q2866220		COBALT	0.500			0.467	mg/L	93.4	

Q2866249 1:5 Dilution.

COPPER ICP/MS SW846-6020 **V112.3**
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R630907 Analyst: K KAMARA Run Date: 29-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 29-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28600	Rep: 0	Analytical Run: R631089							
BLA02	Q2864829		Analytical Run: R631089							
LCS	Q2864830		Analytical Run: R631019							
DUP02	Q2864831		Analytical Run: R631019							
SPI02	Q2864832		Analytical Run: R631089							

Q2864832 1:5 Dilution.

R630945 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865189		Analytical Run: R631089							
LCS	Q2865190		Analytical Run: R631089							
DUP02	Q2865191		Analytical Run: R631089							

COPPER ICP/MS SW846-6020 V112.3
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R630945 Analyst: K KAMARA Run Date: 30-Sep-14
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SPI02	Q2865192		Analytical Run: R631089							
SAMPLE	AA28601	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28602	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28603	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28604	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28605	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28606	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28607	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28608	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28609	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28610	Rep: 0	Analytical Run: R631089							

R630946 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865193		Analytical Run: R631089							
LCS	Q2865194		Analytical Run: R631089							
DUP02	Q2865195		Analytical Run: R631089							
SPI02	Q2865196		Analytical Run: R631089							
SAMPLE	AA28611	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28612	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28613	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28614	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28615	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28616	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28617	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28618	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28619	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28620	Rep: 0	Analytical Run: R631089							
Q2865196	1:5 Dilution.									

R631004 Analyst: K KAMARA Run Date: 01-Oct-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28621	Rep: 0	Analytical Run: R631187							
SAMPLE	AA28622	Rep: 0	Analytical Run: R631187							
SAMPLE	AA28623	Rep: 0	Analytical Run: R631187							
BLA02	Q2865788		Analytical Run: R631187							
LCS	Q2865789		Analytical Run: R631187							
DUP02	Q2865790		Analytical Run: R631187							
SPI02	Q2865791		Analytical Run: R631187							
Q2865790	1:5 Dilution.									
Q2865791	1:5 Dilution.									

R631019 Analyst: C WILLHITE Run Date: 30-Sep-14 Instrument: ICP/MS
Analytical Reviewer: S ENDERSEN Review Date: 01-Oct-14

COPPER ICP/MS SW846-6020 **V112.3**
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R631019 Analytical — Analyst: C WILLHITE, Reviewer: S ENDERSEN — Run Date: 30-Sep-14, Review Date: 01-Oct-14 — Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
LCS	Q2864830		COPPER	40			45.8	ug/L	114.5	
DUP02	Q2864831	AA28233	COPPER	0		BDL		ug/L		
Q2864832	1:5 Dilution.									

R631089 Analytical — Analyst: C WILLHITE, Reviewer: S ENDERSEN — Run Date: 01-Oct-14, Review Date: 02-Oct-14 — Instrument: ICP/MS

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2866399		COPPER	50			51.2	ug/L	102.4	
CDL01	Q2866439		COPPER	0.4			0.720	ug/L	180.0	
ICS-A	Q2866443		COPPER	40			45.9	ug/L	114.8	
SER01	Q2866445	AA28274	COPPER	0		BDL		ug/L		
CCV	Q2866425		COPPER	20			20.6	ug/L	103.0	
BLA01	Q2866410		COPPER			<	0.400	ug/L		
BLA02	Q2864829		COPPER			<	0.400	ug/L		
SPI02	Q2864832	AA28233	COPPER	6.46	40		40.1	ug/L	84.1	
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
CCV	Q2866426		COPPER	20			20.5	ug/L	102.5	
BLA01	Q2866411		COPPER			<	0.400	ug/L		
CCV	Q2866427		COPPER	20			20.9	ug/L	104.5	
BLA01	Q2866412		COPPER			<	0.400	ug/L		
BLA02	Q2865189		COPPER			<	0.400	ug/L		
LCS	Q2865190		COPPER	40			38.5	ug/L	96.2	
SER01	Q2866448	AA28601	COPPER	0		BDL		ug/L		
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
DUP02	Q2865191	AA28601	COPPER	0		BDL		ug/L		
SPI02	Q2865192	AA28601	COPPER	0	40		37.7	ug/L	94.2	
CCV	Q2866428		COPPER	20			20.8	ug/L	104.0	
BLA01	Q2866413		COPPER			<	0.400	ug/L		
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28609		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
CCV	Q2866429		COPPER	20			20.4	ug/L	102.0	
BLA01	Q2866414		COPPER			<	0.400	ug/L		
BLA02	Q2865193		COPPER			<	0.400	ug/L		
LCS	Q2865194		COPPER	40			38.2	ug/L	95.5	
SER01	Q2866449	AA28611	COPPER	1.22		BDL		ug/L		
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
DUP02	Q2865195	AA28611	COPPER	0		BDL		ug/L		
SPI02	Q2865196	AA28611	COPPER	0	40		37.9	ug/L	94.8	
CCV	Q2866430		COPPER	20			20.5	ug/L	102.5	

COPPER ICP/MS SW846-6020 **V112.3**
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R631089 Analyst: C WILLHITE Run Date: 01-Oct-14
Analytical Reviewer: S ENDERSEN Review Date: 02-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA01	Q2866454		COPPER			<	0.400	ug/L		
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28617		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28618		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28619		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28620		See Certificate of Analysis, Rep: 0							
CCV	Q2866459		COPPER	20			20.3	ug/L	101.5	
BLA01	Q2866455		COPPER			<	0.400	ug/L		
SER01	Q2866465	AA28642	COPPER	4110		CNA	3160	ug/kg		
CDL01	Q2866466		COPPER	0.5			0.283	ug/L	56.6	
ICS-A	Q2866464		COPPER	40			45.4	ug/L	113.5	

Q2864832 1:5 Dilution.
Q2865196 1:5 Dilution.
Q2866443 1:5 Dilution.
Q2866449 1:25 Dilution.
Q2866464 1:5 Dilution.
Q2866465 1:5000 Dilution.

R631187 Analyst: C WILLHITE Run Date: 03-Oct-14 Instrument: ICP/MS
Analytical Reviewer: S ENDERSEN Review Date: 06-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2867384		COPPER	50			48.2	ug/L	96.4	
CDL01	Q2867420		COPPER	0.4			0.727	ug/L	181.8	
ICS-A	Q2867425		COPPER	40			42.3	ug/L	105.8	
CCV	Q2867443		COPPER	20			19.4	ug/L	97.0	
BLA01	Q2867435		COPPER			<	0.400	ug/L		
BLA02	Q2865788		COPPER			<	0.400	ug/L		
LCS	Q2865789		COPPER	40			37.1	ug/L	92.8	
SER01	Q2867455	AA28621	COPPER	1.10		CNA	2.98	ug/L		
SAMPLE	AA28621		See Certificate of Analysis, Rep: 0							
DUP02	Q2865790	AA28621	COPPER	0		BDL		ug/L		
SPI02	Q2865791	AA28621	COPPER	0	40		40.1	ug/L	100.2	
CCV	Q2867444		COPPER	20			19.8	ug/L	99.0	
BLA01	Q2867436		COPPER			<	0.400	ug/L		
SAMPLE	AA28622		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28623		See Certificate of Analysis, Rep: 0							
CCV	Q2867445		COPPER	20			20.2	ug/L	101.0	
BLA01	Q2867437		COPPER			<	0.400	ug/L		
SER01	Q2867457	AA28767	COPPER	9.06		CNA	10.0	ug/L		
CDL01	Q2867458		COPPER	0.5			0.496	ug/L	99.2	
ICS-A	Q2867454		COPPER	40			41.3	ug/L	103.2	

Q2865790 1:5 Dilution.

COPPER ICP/MS SW846-6020 V112.3
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R631187 Analytical — Analyst: C WILLHITE, Reviewer: S ENDERSEN — Run Date: 03-Oct-14, Review Date: 06-Oct-14 — Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
Q2865791	1:5 Dilution.									
Q2867425	1:5 Dilution.									
Q2867454	1:5 Dilution.									
Q2867455	1:25 Dilution.									
Q2867457	1:25 Dilution.									

CYANIDE, TOTAL (AUTOMATED) SW846-9012B G101.4
Prep : CYANIDE DISTILLATION SW846-9012B

R631106 Analytical — Analyst: E SKALA, Reviewer: P SPENCE — Run Date: 02-Oct-14, Review Date: 03-Oct-14 — Instrument: AUTO-ANALYZER

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CDL01	Q2866614		CYANIDE	0.00500			0.00700	mg/L	140.0	
ICV01	Q2866615		CYANIDE	0.150			0.154	mg/L	102.7	
BLA02	Q2866623		CYANIDE			BDL	0.005	mg/L		
LFB02L	Q2866624		CYANIDE	0.100			0.0976	mg/L	97.6	
LFB02H	Q2866625		CYANIDE	0.250			0.246	mg/L	98.4	
SPI02	Q2866628	AA28389	CYANIDE	0	0.25		0.251	mg/L	100.4	
DPS02	Q2866629	AA28389	CYANIDE	0	0.25		0.249	mg/L	99.6	0.8
CCV	Q2866632		CYANIDE	0.100			0.0986	mg/L	98.6	
BLA01	Q2866633		CYANIDE			BDL	0.005	mg/L		
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28617		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28618		See Certificate of Analysis, Rep: 0							
CCV	Q2866637		CYANIDE	0.100			0.0981	mg/L	98.1	
BLA01	Q2866638		CYANIDE			BDL	0.005	mg/L		
BLA02	Q2866651		CYANIDE			BDL	0.005	mg/L		
LFB02L	Q2866652		CYANIDE	0.100			0.0962	mg/L	96.2	
LFB02H	Q2866653		CYANIDE	0.250			0.249	mg/L	99.6	
SPI02	Q2866654	AA28788	CYANIDE	0	0.25		0.259	mg/L	103.6	
DPS02	Q2866655	AA28788	CYANIDE	0	0.25		0.258	mg/L	103.2	0.4
CCV	Q2866656		CYANIDE	0.100			0.0955	mg/L	95.5	
BLA01	Q2866657		CYANIDE			BDL	0.005	mg/L		
SAMPLE	AA28619		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28620		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28621		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28622		See Certificate of Analysis, Rep: 0							
CCV	Q2866658		CYANIDE	0.100			0.0939	mg/L	93.9	
BLA01	Q2866659		CYANIDE			BDL	0.005	mg/L		
SAMPLE	AA28623		See Certificate of Analysis, Rep: 0							
CCV	Q2866660		CYANIDE	0.100			0.0927	mg/L	92.7	
BLA01	Q2866661		CYANIDE			BDL	0.005	mg/L		

R631140 Prep — Analyst: E SKALA, Reviewer: P SPENCE — Run Date: 02-Oct-14, Review Date: 03-Oct-14 — Instrument: PREP

CYANIDE, TOTAL (AUTOMATED) SW846-9012B **G101.4**
Prep : CYANIDE DISTILLATION SW846-9012B

R631140 Analyst: E SKALA Run Date: 02-Oct-14
Prep Reviewer: P SPENCE Review Date: 03-Oct-14

Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2866623		Analytical Run: R631106							
LFB02L	Q2866624		Analytical Run: R631106							
LFB02H	Q2866625		Analytical Run: R631106							
SPI02	Q2866628		Analytical Run: R631106							
DPS02	Q2866629		Analytical Run: R631106							
SAMPLE	AA28613	Rep: 0	Analytical Run: R631106							
SAMPLE	AA28614	Rep: 0	Analytical Run: R631106							
SAMPLE	AA28615	Rep: 0	Analytical Run: R631106							
SAMPLE	AA28616	Rep: 0	Analytical Run: R631106							
SAMPLE	AA28617	Rep: 0	Analytical Run: R631106							
SAMPLE	AA28618	Rep: 0	Analytical Run: R631106							

R631143 Analyst: Run Date: 02-Oct-14 Instrument: PREP
Prep Reviewer: P SPENCE Review Date: 03-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2866651		Analytical Run: R631106							
LFB02L	Q2866652		Analytical Run: R631106							
LFB02H	Q2866653		Analytical Run: R631106							
SPI02	Q2866654		Analytical Run: R631106							
DPS02	Q2866655		Analytical Run: R631106							
SAMPLE	AA28619	Rep: 0	Analytical Run: R631106							
SAMPLE	AA28620	Rep: 0	Analytical Run: R631106							
SAMPLE	AA28621	Rep: 0	Analytical Run: R631106							
SAMPLE	AA28622	Rep: 0	Analytical Run: R631106							
SAMPLE	AA28623	Rep: 0	Analytical Run: R631106							

FIELD PH (AQUEOUS) SW846-9040C **G607.0**

R630990 Analyst: Run Date: 23-Sep-14 Instrument: FIELD
Analytical Reviewer: Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28617		See Certificate of Analysis, Rep: 0							

FIELD PH (AQUEOUS) SW846-9040C G607.0

R630990 Analytical | Analyst: Reviewer: | Run Date: 23-Sep-14 Review Date: 30-Sep-14 | Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28618		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28619		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28620		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28621		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28622		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28623		See Certificate of Analysis, Rep: 0							

FIELD SPECIFIC CONDUCTANCE SW846-9050A G604.0

R630990 Analytical | Analyst: Reviewer: | Run Date: 23-Sep-14 Review Date: 30-Sep-14 | Instrument: FIELD

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28617		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28618		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28619		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28620		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28621		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28622		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28623		See Certificate of Analysis, Rep: 0							

FIELD TEMPERATURE SM2550 B 2000 G603.1

R630990 Analytical | Analyst: Reviewer: | Run Date: 23-Sep-14 Review Date: 30-Sep-14 | Instrument: FIELD

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							

FIELD TEMPERATURE SM2550 B 2000 **G603.1**

R630990 Analyst: Run Date: 23-Sep-14
Analytical Reviewer: Review Date: 30-Sep-14

Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28617		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28618		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28619		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28620		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28621		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28622		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28623		See Certificate of Analysis, Rep: 0							

FIELD TURBIDITY EPA 180.1 **G602.0**

R630990 Analyst: Run Date: 23-Sep-14 Instrument: FIELD
Analytical Reviewer: Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28617		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28618		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28619		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28620		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28621		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28622		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28623		See Certificate of Analysis, Rep: 0							

FLUORIDE BY ION CHROMATOGRAPHY SW846-9056 — **G310.1**

R630926 Analytical — Analyst: R DALAL, Reviewer: E WERNZ — Run Date: 26-Sep-14, Review Date: 29-Sep-14 — Instrument: IC

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
LFB01H	Q2865038		FLUORIDE	5.00			5.01	mg/L	100.2	
LFB01L	Q2865049		FLUORIDE	0.500			0.511	mg/L	102.2	
CCVL	Q2865052		FLUORIDE	0.500			0.504	mg/L	100.8	
CCVH	Q2865053		FLUORIDE	2.00			1.93	mg/L	96.5	
BLA01	Q2865054		FLUORIDE			BDL	0.02	mg/L		
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
SPI01	Q2865055	AA28600	FLUORIDE	0.344	0.500		0.821	mg/L	95.4	
DPS01	Q2865056	AA28600	FLUORIDE	0.344	0.500		0.792	mg/L	89.6	6.3
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
CCVL	Q2865057		FLUORIDE	0.500			0.547	mg/L	109.4	
CCVH	Q2865058		FLUORIDE	2.00			1.95	mg/L	97.5	
BLA01	Q2865059		FLUORIDE			BDL	0.02	mg/L		
LFB01L	Q2865060		FLUORIDE	0.500			0.504	mg/L	100.8	
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
CCVL	Q2865063		FLUORIDE	0.500			0.547	mg/L	109.4	
CCVH	Q2865064		FLUORIDE	2.00			1.80	mg/L	90.0	
BLA01	Q2865065		FLUORIDE			BDL	0.02	mg/L		
LFB01L	Q2865071		FLUORIDE	0.500			0.490	mg/L	98.0	

R631023 Analytical — Analyst: R DALAL, Reviewer: E WERNZ — Run Date: 30-Sep-14, Review Date: 01-Oct-14 — Instrument: IC

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA01	Q2865954		FLUORIDE			BDL	0.02	mg/L		
CCVL	Q2865955		FLUORIDE	0.500			0.510	mg/L	102.0	
CCVH	Q2865956		FLUORIDE	2.00			1.87	mg/L	93.5	
LFB01L	Q2865957		FLUORIDE	0.500			0.526	mg/L	105.2	
LFB01H	Q2865958		FLUORIDE	5.00			4.94	mg/L	98.8	
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28609		See Certificate of Analysis, Rep: 0							
SPI01	Q2865959	AA28609	FLUORIDE	0.469	0.500		1.06	mg/L	118.2	
DPS01	Q2865960	AA28609	FLUORIDE	0.469	0.500		1.06	mg/L	118.2	0
CCVL	Q2865961		FLUORIDE	0.500			0.521	mg/L	104.2	
CCVH	Q2865962		FLUORIDE	2.00			1.87	mg/L	93.5	
BLA01	Q2865963		FLUORIDE			BDL	0.02	mg/L		
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SPI01	Q2865964	AA28616	FLUORIDE	0.662	0.500		1.22	mg/L	111.6	
DPS01	Q2865965	AA28616	FLUORIDE	0.662	0.500		1.21	mg/L	109.6	1.8

FLUORIDE BY ION CHROMATOGRAPHY SW846-9056 — **G310.1**

R631023 Analytical — Analyst: R DALAL, Reviewer: E WERNZ — Run Date: 30-Sep-14, Review Date: 01-Oct-14

Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CCVL	Q2865966		FLUORIDE	0.500			0.526	mg/L	105.2	
CCVH	Q2865967		FLUORIDE	2.00			1.86	mg/L	93.0	
BLA01	Q2865968		FLUORIDE			BDL	0.02	mg/L		
LFB01L	Q2865969		FLUORIDE	0.500			0.537	mg/L	107.4	
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SPI01	Q2865970	AA28602	FLUORIDE	1.82	0.500		2.27	mg/L	90.0	
DPS01	Q2865971	AA28602	FLUORIDE	1.82	0.500		2.27	mg/L	90.0	0
CCVL	Q2865972		FLUORIDE	0.500			0.532	mg/L	106.4	
CCVH	Q2865973		FLUORIDE	2.00			1.87	mg/L	93.5	
BLA01	Q2865974		FLUORIDE			BDL	0.02	mg/L		

GROUNDWATER MONITORING WELL DATA SAS — **G600.0**

R630990 Analytical — Analyst: , Reviewer: — Run Date: 23-Sep-14, Review Date: 30-Sep-14 — Instrument: FIELD

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28617		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28618		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28619		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28620		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28621		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28622		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28623		See Certificate of Analysis, Rep: 0							

HARDNESS SM2340 B 1997 — **G608.0**
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R630909 Prep — Analyst: K KAMARA, Reviewer: S ENDERSEN — Run Date: 29-Sep-14, Review Date: 29-Sep-14 — Instrument: PREP

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28600	Rep: 0	Analytical Run: R630959							

R630947 — Analyst: K KAMARA — Run Date: 30-Sep-14 — Instrument: PREP

HARDNESS SM2340 B 1997 **G608.0**
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R630947 Analyst: K KAMARA Run Date: 30-Sep-14
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14 Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28601	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28602	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28603	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28604	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28605	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28606	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28607	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28608	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28609	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28610	Rep: 0	Analytical Run: R631006							

R630948 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28611	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28612	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28613	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28614	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28615	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28616	Rep: 0	Analytical Run: R631006							

R630959 Analyst: J KRAMER Run Date: 29-Sep-14 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							

R631006 Analyst: J KRAMER Run Date: 30-Sep-14 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28609		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							

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Quality Assurance Report

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IRON ICP SW846-6010B M115.3

Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R630909 Analyst: K KAMARA Run Date: 29-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 29-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2864845		Analytical Run: R630959							
LCS	Q2864846		Analytical Run: R630959							
DUP02	Q2864847		Analytical Run: R630959							
SPI02	Q2864848		Analytical Run: R630959							
SAMPLE	AA28600	Rep: 0	Analytical Run: R630959							

R630947 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865197		Analytical Run: R631006							
LCS	Q2865198		Analytical Run: R631006							
DUP02	Q2865199		Analytical Run: R631006							
SPI02	Q2865200		Analytical Run: R631006							
SAMPLE	AA28601	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28602	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28603	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28604	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28605	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28606	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28607	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28608	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28609	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28610	Rep: 0	Analytical Run: R631006							

R630948 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865206		Analytical Run: R631006							
LCS	Q2865207		Analytical Run: R631006							
DUP02	Q2865208		Analytical Run: R631006							
SPI02	Q2865209		Analytical Run: R631006							
SAMPLE	AA28611	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28612	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28613	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28614	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28615	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28616	Rep: 0	Analytical Run: R631006							

R630959 Analyst: J KRAMER Run Date: 29-Sep-14 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2865245		IRON	1			1.03	mg/L	103.0	
CDL01	Q2865290		IRON	0.02			0.0242	mg/L	121.0	
ICS-A	Q2865292		IRON	200			187	mg/L	93.5	
ICS-AB	Q2865300		IRON	250			235	mg/L	94.0	
BLA02	Q2864845		IRON			<	0.00800	mg/L		

IRON ICP SW846-6010B **M115.3**
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R630959 Analytical — Analyst: J KRAMER, Reviewer: S ENDERSEN — Run Date: 29-Sep-14, Review Date: 30-Sep-14 — Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
LCS	Q2864846		IRON	1			0.974	mg/L	97.4	
SER01	Q2865295	AA28491	IRON	2.82			2.88	mg/L		2.1
DUP02	Q2864847	AA28491	IRON	2.82			2.97	mg/L		5.2
SPI02	Q2864848	AA28491	IRON	2.82	1.00		3.69	mg/L	87.0	
CCV	Q2865275		IRON	5.00			4.76	mg/L	95.2	
BLA01	Q2865253		IRON			<	0.00800	mg/L		
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
CCV	Q2865276		IRON	5.00			5.05	mg/L	101.0	
BLA01	Q2865254		IRON			<	0.00800	mg/L		
SER01	Q2865297	AA28572	IRON	2.45			2.55	mg/L		4.0
CDL01	Q2865291		IRON	0.02			0.0232	mg/L	116.0	
ICS-A	Q2865293		IRON	200			173	mg/L	86.5	
ICS-AB	Q2865267		IRON	200			172	mg/L	86.0	

Q2865295 1:5 Dilution.
Q2865295 There was possible matrix interference for K and Na
Q2865295 as indicated by the serial dilution results.

R631006 Analytical — Analyst: J KRAMER, Reviewer: S ENDERSEN — Run Date: 30-Sep-14, Review Date: 01-Oct-14 — Instrument: ICP

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2865702		IRON	1			1.02	mg/L	102.0	
CDL01	Q2865697		IRON	10			10.0	mg/L	100.0	
ICS-A	Q2865699		IRON	200			185	mg/L	92.5	
ICS-AB	Q2865691		IRON	200			181	mg/L	90.5	
CCV	Q2865720		IRON	5.00			4.76	mg/L	95.2	
BLA01	Q2865706		IRON			<	0.00400	mg/L		
BLA02	Q2865197		IRON			<	0.00800	mg/L		
LCS	Q2865198		IRON	1			1.01	mg/L	101.0	
SER01	Q2865734	AA28603	IRON	2.72			2.81	mg/L		3.2
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
DUP02	Q2865199	AA28603	IRON	2.72			2.84	mg/L		4.3
SPI02	Q2865200	AA28603	IRON	2.72	1.00		3.62	mg/L	90.0	
CCV	Q2865721		IRON	5.00			4.87	mg/L	97.4	
BLA01	Q2865707		IRON			<	0.00800	mg/L		
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28609		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
CCV	Q2865722		IRON	5.00			4.87	mg/L	97.4	
BLA01	Q2865708		IRON			<	0.00800	mg/L		
BLA02	Q2865206		IRON			<	0.00800	mg/L		

IRON ICP SW846-6010B **M115.3**
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R631006 Analyst: J KRAMER Run Date: 30-Sep-14
Analytical Reviewer: S ENDERSEN Review Date: 01-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
LCS	Q2865207		IRON	1			0.986	mg/L	98.6	
SER01	Q2865735	AA28612	IRON	1.06			1.08	mg/L		1.9
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
DUP02	Q2865208	AA28612	IRON	1.06			1.10	mg/L		3.7
SPI02	Q2865209	AA28612	IRON	1.06	1.00		2.03	mg/L	97.0	
CCV	Q2865723		IRON	5.00			4.81	mg/L	96.2	
BLA01	Q2865709		IRON			<	0.00800	mg/L		
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
CCV	Q2865724		IRON	5.00			4.95	mg/L	99.0	
BLA01	Q2865710		IRON			<	0.00800	mg/L		
CDL01	Q2865731		IRON	0.02			0.0280	mg/L	140.0	
ICS-A	Q2865732		IRON	200			182	mg/L	91.0	
ICS-AB	Q2865715		IRON	200			178	mg/L	89.0	

Q2865734 1:5 Dilution.
Q2865734 There was possible matrix interference for K
Q2865734 as indicated by the serial dilution results.
Q2865735 1:5 Dilution.

LEAD ICP/MS SW846-6020 **V116.3**
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R630907 Analyst: K KAMARA Run Date: 29-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 29-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28600	Rep: 0	Analytical Run: R631019							
BLA02	Q2864829		Analytical Run: R631019							
LCS	Q2864830		Analytical Run: R631019							
DUP02	Q2864831		Analytical Run: R631019							
SPI02	Q2864832		Analytical Run: R631019							

Q2864832 1:5 Dilution.

R630945 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865189		Analytical Run: R631089							
LCS	Q2865190		Analytical Run: R631089							
DUP02	Q2865191		Analytical Run: R631089							
SPI02	Q2865192		Analytical Run: R631089							
SAMPLE	AA28601	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28602	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28603	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28604	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28605	Rep: 0	Analytical Run: R631089							

LEAD ICP/MS SW846-6020 V116.3
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R630945 Analyst: K KAMARA Run Date: 30-Sep-14
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14 Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28606	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28607	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28608	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28609	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28610	Rep: 0	Analytical Run: R631089							

R630946 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865193		Analytical Run: R631089							
LCS	Q2865194		Analytical Run: R631089							
DUP02	Q2865195		Analytical Run: R631089							
SPI02	Q2865196		Analytical Run: R631089							
SAMPLE	AA28611	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28612	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28613	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28614	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28615	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28616	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28617	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28618	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28619	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28620	Rep: 0	Analytical Run: R631089							

Q2865196 1:5 Dilution.

R631004 Analyst: K KAMARA Run Date: 01-Oct-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28621	Rep: 0	Analytical Run: R631187							
SAMPLE	AA28622	Rep: 0	Analytical Run: R631187							
SAMPLE	AA28623	Rep: 0	Analytical Run: R631187							
BLA02	Q2865788		Analytical Run: R631187							
LCS	Q2865789		Analytical Run: R631187							
DUP02	Q2865790		Analytical Run: R631187							
SPI02	Q2865791		Analytical Run: R631187							

Q2865790 1:5 Dilution.
Q2865791 1:5 Dilution.

R631019 Analyst: C WILLHITE Run Date: 30-Sep-14 Instrument: ICP/MS
Analytical Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2865890		LEAD	50			50.0	ug/L	100.0	
CDL01	Q2865905		LEAD	0.2			0.108	ug/L	54.0	
ICS-A	Q2865906		LEAD	40			42.6	ug/L	106.5	
BLA02	Q2864829		LEAD			<	0.0800	ug/L		

LEAD ICP/MS SW846-6020 **V116.3**
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R631019 Analyst: C WILLHITE Run Date: 30-Sep-14
Analytical Reviewer: S ENDERSEN Review Date: 01-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
LCS	Q2864830		LEAD	40			38.4	ug/L	96.0	
SER01	Q2865934	AA28233	LEAD	0		BDL		ug/L		
DUP02	Q2864831	AA28233	LEAD	0		BDL		ug/L		
SPI02	Q2864832	AA28233	LEAD	0	40		42.3	ug/L	105.8	
CCV	Q2865919		LEAD	20			22.1	ug/L	110.5	
BLA01	Q2865910		LEAD			<	0.0800	ug/L		
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
CCV	Q2865920		LEAD	20			21.1	ug/L	105.5	
BLA01	Q2865911		LEAD			<	0.0800	ug/L		
SER01	Q2865935	AA28261	LEAD	0		BDL		ug/L		
CDL01	Q2865929		LEAD	0.2			0.0940	ug/L	47.0	
ICS-A	Q2865933		LEAD	40			44.8	ug/L	112.0	

Q2864832 1:5 Dilution.
Q2865906 1:5 Dilution.
Q2865933 1:5 Dilution.
Q2865935 1:25 Dilution.

R631089 Analyst: C WILLHITE Run Date: 01-Oct-14 Instrument: ICP/MS
Analytical Reviewer: S ENDERSEN Review Date: 02-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2866399		LEAD	50			51.8	ug/L	103.6	
CDL01	Q2866439		LEAD	0.2			0.248	ug/L	124.0	
ICS-A	Q2866443		LEAD	40			47.8	ug/L	119.5	
CCV	Q2866427		LEAD	20			21.2	ug/L	106.0	
BLA01	Q2866412		LEAD			<	0.0400	ug/L		
BLA02	Q2865189		LEAD				0.0420	ug/L		
LCS	Q2865190		LEAD	40			39.3	ug/L	98.2	
SER01	Q2866448	AA28601	LEAD	0.190		CNA	0.825	ug/L		
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
DUP02	Q2865191	AA28601	LEAD	0		BDL		ug/L		
SPI02	Q2865192	AA28601	LEAD	0	40		39.8	ug/L	99.5	
CCV	Q2866428		LEAD	20			21.1	ug/L	105.5	
BLA01	Q2866413		LEAD			<	0.0400	ug/L		
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28609		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
CCV	Q2866429		LEAD	20			21.2	ug/L	106.0	
BLA01	Q2866414		LEAD			<	0.0400	ug/L		
BLA02	Q2865193		LEAD			<	0.0400	ug/L		
LCS	Q2865194		LEAD	40			38.9	ug/L	97.2	

LEAD ICP/MS SW846-6020 **V116.3**
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R631089 Analytical — Analyst: C WILLHITE, Reviewer: S ENDERSEN — Run Date: 01-Oct-14, Review Date: 02-Oct-14 — Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SER01	Q2866449	AA28611	LEAD	0.305		CNA	0.875	ug/L		
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
DUP02	Q2865195	AA28611	LEAD	0		BDL		ug/L		
SPI02	Q2865196	AA28611	LEAD	0	40		38.9	ug/L	97.2	
CCV	Q2866430		LEAD	20			20.6	ug/L	103.0	
BLA01	Q2866454		LEAD			<	0.0400	ug/L		
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28617		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28618		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28619		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28620		See Certificate of Analysis, Rep: 0							
CCV	Q2866459		LEAD	20			20.5	ug/L	102.5	
BLA01	Q2866455		LEAD			<	0.0400	ug/L		
SER01	Q2866465	AA28642	LEAD	5100			4910	ug/kg		3.8
CDL01	Q2866466		LEAD	0.05			0.0740	ug/L	148.0	
ICS-A	Q2866464		LEAD	40			46.8	ug/L	117.0	

Q2864832 1:5 Dilution.
Q2865196 1:5 Dilution.
Q2866443 1:5 Dilution.
Q2866449 1:25 Dilution.
Q2866464 1:5 Dilution.
Q2866465 1:5000 Dilution.

R631187 Analytical — Analyst: C WILLHITE, Reviewer: S ENDERSEN — Run Date: 03-Oct-14, Review Date: 06-Oct-14 — Instrument: ICP/MS

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2867384		LEAD	50			49.3	ug/L	98.6	
CDL01	Q2867420		LEAD	0.2			0.153	ug/L	76.5	
ICS-A	Q2867425		LEAD	40			43.1	ug/L	107.8	
CCV	Q2867443		LEAD	20			19.7	ug/L	98.5	
BLA01	Q2867435		LEAD			<	0.0400	ug/L		
BLA02	Q2865788		LEAD			<	0.0400	ug/L		
LCS	Q2865789		LEAD	40			38.8	ug/L	97.0	
SER01	Q2867455	AA28621	LEAD	0.275		BDL		ug/L		
SAMPLE	AA28621		See Certificate of Analysis, Rep: 0							
DUP02	Q2865790	AA28621	LEAD	0		BDL		ug/L		
SPI02	Q2865791	AA28621	LEAD	0	40		41.6	ug/L	104.0	
CCV	Q2867444		LEAD	20			20.2	ug/L	101.0	
BLA01	Q2867436		LEAD			<	0.0400	ug/L		
SAMPLE	AA28622		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28623		See Certificate of Analysis, Rep: 0							
CCV	Q2867445		LEAD	20			20.5	ug/L	102.5	

LEAD ICP/MS SW846-6020 V116.3
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R631187 Analyst: C WILLHITE Run Date: 03-Oct-14
Analytical Reviewer: S ENDERSEN Review Date: 06-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA01	Q2867437		LEAD			<	0.0400	ug/L		
SER01	Q2867457	AA28767	LEAD	1.06		CNA	0.325	ug/L		
CDL01	Q2867450		LEAD	0.2			0.154	ug/L	77.0	
ICS-A	Q2867454		LEAD	40			42.6	ug/L	106.5	

Q2865790 1:5 Dilution.
Q2865791 1:5 Dilution.
Q2867425 1:5 Dilution.
Q2867454 1:5 Dilution.
Q2867455 1:25 Dilution.
Q2867457 1:25 Dilution.

MAGNESIUM ICP SW846-6010B M118.3
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R630909 Analyst: K KAMARA Run Date: 29-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 29-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2864845		Analytical Run: R630959							
LCS	Q2864846		Analytical Run: R630959							
DUP02	Q2864847		Analytical Run: R630959							
SPI02	Q2864848		Analytical Run: R630959							
SAMPLE	AA28600	Rep: 0	Analytical Run: R630959							

R630947 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865197		Analytical Run: R631006							
LCS	Q2865198		Analytical Run: R631006							
DUP02	Q2865199		Analytical Run: R631006							
SPI02	Q2865200		Analytical Run: R631006							
SAMPLE	AA28601	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28602	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28603	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28604	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28605	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28606	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28607	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28608	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28609	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28610	Rep: 0	Analytical Run: R631006							

R630948 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865206		Analytical Run: R631006							
LCS	Q2865207		Analytical Run: R631006							

MAGNESIUM ICP SW846-6010B **M118.3**
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R630948 Analyst: K KAMARA Run Date: 30-Sep-14
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14 Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
DUP02	Q2865208		Analytical Run: R631006							
SPI02	Q2865209		Analytical Run: R631006							
SAMPLE	AA28611	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28612	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28613	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28614	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28615	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28616	Rep: 0	Analytical Run: R631006							

R630959 Analyst: J KRAMER Run Date: 29-Sep-14 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2865245		MAGNESIUM	20			21.2	mg/L	106.0	
CDL01	Q2865290		MAGNESIUM	0.1			0.102	mg/L	102.0	
ICS-A	Q2865292		MAGNESIUM	500			511	mg/L	102.2	
ICS-AB	Q2865300		MAGNESIUM	150			155	mg/L	103.3	
BLA02	Q2864845		MAGNESIUM			<	0.0400	mg/L		
LCS	Q2864846		MAGNESIUM	100			102	mg/L	102.0	
SER01	Q2865295	AA28491	MAGNESIUM	23.1			22.3	mg/L		3.5
DUP02	Q2864847	AA28491	MAGNESIUM	23.1			24.4	mg/L		5.5
SPI02	Q2864848	AA28491	MAGNESIUM	23.1	100		122	mg/L	98.9	
CCV	Q2865275		MAGNESIUM	50.0			48.3	mg/L	96.6	
BLA01	Q2865253		MAGNESIUM			<	0.0400	mg/L		
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
CCV	Q2865276		MAGNESIUM	50.0			51.3	mg/L	102.6	
BLA01	Q2865254		MAGNESIUM			<	0.0400	mg/L		
SER01	Q2865297	AA28572	MAGNESIUM	41.4			42.7	mg/L		3.1
CDL01	Q2865291		MAGNESIUM	0.1			0.0967	mg/L	96.7	
ICS-A	Q2865293		MAGNESIUM	500			485	mg/L	97.0	
ICS-AB	Q2865267		MAGNESIUM	500			476	mg/L	95.2	

Q2865295 1:5 Dilution.
Q2865295 There was possible matrix interference for K and Na
Q2865295 as indicated by the serial dilution results.

R631006 Analyst: J KRAMER Run Date: 30-Sep-14 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2865702		MAGNESIUM	20			20.3	mg/L	101.5	
CDL01	Q2865696		MAGNESIUM	0.1			0.0982	mg/L	98.2	
ICS-A	Q2865699		MAGNESIUM	500			492	mg/L	98.4	
ICS-AB	Q2865691		MAGNESIUM	500			488	mg/L	97.6	
CCV	Q2865720		MAGNESIUM	50.0			47.0	mg/L	94.0	
BLA01	Q2865706		MAGNESIUM			<	0.0400	mg/L		
BLA02	Q2865197		MAGNESIUM			<	0.0400	mg/L		
LCS	Q2865198		MAGNESIUM	100			104	mg/L	104.0	
SER01	Q2865734	AA28603	MAGNESIUM	100			98.9	mg/L		1.1

MAGNESIUM ICP SW846-6010B **M118.3**
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R631006 Analyst: J KRAMER Run Date: 30-Sep-14
Analytical Reviewer: S ENDERSEN Review Date: 01-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
DUP02	Q2865199	AA28603	MAGNESIUM	100			105	mg/L		4.9
SPI02	Q2865200	AA28603	MAGNESIUM	100	100		205	mg/L	105.0	
CCV	Q2865721		MAGNESIUM	50.0			48.0	mg/L	96.0	
BLA01	Q2865707		MAGNESIUM			<	0.0400	mg/L		
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28609		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
CCV	Q2865722		MAGNESIUM	50.0			48.0	mg/L	96.0	
BLA01	Q2865708		MAGNESIUM			<	0.0400	mg/L		
BLA02	Q2865206		MAGNESIUM			<	0.0400	mg/L		
LCS	Q2865207		MAGNESIUM	100			101	mg/L	101.0	
SER01	Q2865735	AA28612	MAGNESIUM	50.4			50.5	mg/L		0.2
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
DUP02	Q2865208	AA28612	MAGNESIUM	50.4			52.4	mg/L		3.9
SPI02	Q2865209	AA28612	MAGNESIUM	50.4	100		153	mg/L	102.6	
CCV	Q2865723		MAGNESIUM	50.0			47.4	mg/L	94.8	
BLA01	Q2865709		MAGNESIUM			<	0.0400	mg/L		
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
CCV	Q2865724		MAGNESIUM	50.0			48.7	mg/L	97.4	
BLA01	Q2865710		MAGNESIUM			<	0.0400	mg/L		
CDL01	Q2865731		MAGNESIUM	0.1			0.0978	mg/L	97.8	
ICS-A	Q2865732		MAGNESIUM	500			484	mg/L	96.8	
ICS-AB	Q2865715		MAGNESIUM	500			479	mg/L	95.8	

Q2865734 1:5 Dilution.
Q2865734 There was possible matrix interference for K
Q2865734 as indicated by the serial dilution results.
Q2865735 1:5 Dilution.

MANGANESE ICP SW846-6010B **M119.3**
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R630909 Analyst: K KAMARA Run Date: 29-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 29-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2864845		Analytical Run: R630959							
LCS	Q2864846		Analytical Run: R630959							

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MANGANESE ICP SW846-6010B M119.3

Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R630909 Analyst: K KAMARA Run Date: 29-Sep-14
Prep Reviewer: S ENDERSEN Review Date: 29-Sep-14 Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
DUP02	Q2864847		Analytical Run: R630959							
SPI02	Q2864848		Analytical Run: R630959							
SAMPLE	AA28600	Rep: 0	Analytical Run: R630959							

R630947 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865197		Analytical Run: R631006							
LCS	Q2865198		Analytical Run: R631006							
DUP02	Q2865199		Analytical Run: R631006							
SPI02	Q2865200		Analytical Run: R631006							
SAMPLE	AA28601	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28602	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28603	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28604	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28605	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28606	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28607	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28608	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28609	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28610	Rep: 0	Analytical Run: R631006							

R630948 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865206		Analytical Run: R631006							
LCS	Q2865207		Analytical Run: R631006							
DUP02	Q2865208		Analytical Run: R631006							
SPI02	Q2865209		Analytical Run: R631006							
SAMPLE	AA28611	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28612	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28613	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28614	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28615	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28616	Rep: 0	Analytical Run: R631006							

R630959 Analyst: J KRAMER Run Date: 29-Sep-14 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2865245		MANGANESE	1			1.03	mg/L	103.0	
CDL01	Q2865288		MANGANESE	0.030			0.0307	mg/L	102.3	
ICS-AB	Q2865300		MANGANESE	2			1.97	mg/L	98.5	
BLA02	Q2864845		MANGANESE			<	0.000800	mg/L		
LCS	Q2864846		MANGANESE	0.5			0.487	mg/L	97.4	
SER01	Q2865295	AA28491	MANGANESE	3.17			3.11	mg/L		1.9
DUP02	Q2864847	AA28491	MANGANESE	3.17			3.35	mg/L		5.5

MANGANESE ICP SW846-6010B M119.3
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R630959 Analyst: J KRAMER Run Date: 29-Sep-14
Analytical Reviewer: S ENDERSEN Review Date: 30-Sep-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SPI02	Q2864848	AA28491	MANGANESE	3.17	0.500	NQR	3.46	mg/L		
CCV	Q2865275		MANGANESE	5.00			4.73	mg/L	94.6	
BLA01	Q2865253		MANGANESE			<	0.000800	mg/L		
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
CCV	Q2865276		MANGANESE	5.00			5.02	mg/L	100.4	
BLA01	Q2865254		MANGANESE			<	0.000800	mg/L		
SER01	Q2865297	AA28572	MANGANESE	0.980			1.02	mg/L		4.0
CDL01	Q2865291		MANGANESE	0.0100			0.00975	mg/L	97.5	
ICS-AB	Q2865267		MANGANESE	0.500			0.453	mg/L	90.6	

Q2865295 1:5 Dilution.
Q2865295 There was possible matrix interference for K and Na
Q2865295 as indicated by the serial dilution results.

R631006 Analyst: J KRAMER Run Date: 30-Sep-14 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2865702		MANGANESE	1			1.02	mg/L	102.0	
CDL01	Q2865697		MANGANESE	10			10.0	mg/L	100.0	
ICS-AB	Q2865691		MANGANESE	0.500			0.476	mg/L	95.2	
CCV	Q2865720		MANGANESE	5.00			4.70	mg/L	94.0	
BLA01	Q2865706		MANGANESE			<	0.000800	mg/L		
BLA02	Q2865197		MANGANESE			<	0.000800	mg/L		
LCS	Q2865198		MANGANESE	0.5			0.500	mg/L	100.0	
SER01	Q2865734	AA28603	MANGANESE	0.0734			0.0742	mg/L		1.1
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
DUP02	Q2865199	AA28603	MANGANESE	0.0734			0.0760	mg/L		3.5
SPI02	Q2865200	AA28603	MANGANESE	0.0734	0.500		0.551	mg/L	95.5	
CCV	Q2865721		MANGANESE	5.00			4.82	mg/L	96.4	
BLA01	Q2865707		MANGANESE			<	0.000800	mg/L		
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28609		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
CCV	Q2865722		MANGANESE	5.00			4.82	mg/L	96.4	
BLA01	Q2865708		MANGANESE			<	0.000800	mg/L		
BLA02	Q2865206		MANGANESE			<	0.000800	mg/L		
LCS	Q2865207		MANGANESE	0.5			0.490	mg/L	98.0	
SER01	Q2865735	AA28612	MANGANESE	0.00744		CNA	0.00812	mg/L		
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
DUP02	Q2865208	AA28612	MANGANESE	0.00744		CNA	0.00764	mg/L		
SPI02	Q2865209	AA28612	MANGANESE	0.00744	0.500		0.480	mg/L	94.5	

MANGANESE ICP SW846-6010B **M119.3**
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R631006 Analyst: J KRAMER Run Date: 30-Sep-14
Analytical Reviewer: S ENDERSEN Review Date: 01-Oct-14 Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CCV	Q2865723		MANGANESE	5.00			4.75	mg/L	95.0	
BLA01	Q2865709		MANGANESE			<	0.000800	mg/L		
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
CCV	Q2865724		MANGANESE	5.00			4.90	mg/L	98.0	
BLA01	Q2865710		MANGANESE			<	0.000800	mg/L		
CDL01	Q2865731		MANGANESE	0.0100			0.0100	mg/L	100.0	
ICS-AB	Q2865715		MANGANESE	0.500			0.467	mg/L	93.4	

Q2865734 1:5 Dilution.
Q2865734 There was possible matrix interference for K
Q2865734 as indicated by the serial dilution results.
Q2865735 1:5 Dilution.

MERCURY CVAA SW846-7470A **M120.1**
Prep : MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A

R631081 Analyst: S O'NEAL Run Date: 02-Oct-14 Instrument: PREP
Prep Reviewer: W WATNESS Review Date: 02-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
LCS	Q2866339		Analytical Run: R631119							
BLA02	Q2866340		Analytical Run: R631119							
SPI02	Q2866342		Analytical Run: R631119							
DPS02	Q2866343		Analytical Run: R631119							
SPI01	Q2866344		Analytical Run: R631119							
SAMPLE	AA28600	Rep: 0	Analytical Run: R631119							
SAMPLE	AA28601	Rep: 0	Analytical Run: R631119							
SAMPLE	AA28602	Rep: 0	Analytical Run: R631119							
SAMPLE	AA28603	Rep: 0	Analytical Run: R631119							
SAMPLE	AA28604	Rep: 0	Analytical Run: R631119							

R631082 Analyst: S O'NEAL Run Date: 02-Oct-14 Instrument: PREP
Prep Reviewer: W WATNESS Review Date: 02-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
LCS	Q2866345		Analytical Run: R631119							
BLA02	Q2866346		Analytical Run: R631119							
SAMPLE	AA28605	Rep: 0	Analytical Run: R631119							
SPI02	Q2866348		Analytical Run: R631119							
DPS02	Q2866349		Analytical Run: R631119							
SPI01	Q2866350		Analytical Run: R631119							
SAMPLE	AA28606	Rep: 0	Analytical Run: R631119							
SAMPLE	AA28607	Rep: 0	Analytical Run: R631119							
SAMPLE	AA28608	Rep: 0	Analytical Run: R631119							
SAMPLE	AA28609	Rep: 0	Analytical Run: R631119							
SAMPLE	AA28610	Rep: 0	Analytical Run: R631119							

MERCURY CVAA SW846-7470A M120.1
Prep : MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A

R631082 Analyst: S O'NEAL Run Date: 02-Oct-14
Prep Reviewer: W WATNESS Review Date: 02-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28611	Rep: 0	Analytical Run: R631119							
SAMPLE	AA28612	Rep: 0	Analytical Run: R631119							
SAMPLE	AA28613	Rep: 0	Analytical Run: R631119							
SAMPLE	AA28614	Rep: 0	Analytical Run: R631119							

R631084 Analyst: S O'NEAL Run Date: 02-Oct-14 Instrument: PREP
Prep Reviewer: W WATNESS Review Date: 02-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
LCS	Q2866372		Analytical Run: R631119							
BLA02	Q2866373		Analytical Run: R631119							
SAMPLE	AA28616	Rep: 0	Analytical Run: R631119							
SPI02	Q2866375		Analytical Run: R631119							
DPS02	Q2866376		Analytical Run: R631119							
SPI01	Q2866377		Analytical Run: R631119							
SAMPLE	AA28615	Rep: 0	Analytical Run: R631119							
SAMPLE	AA28617	Rep: 0	Analytical Run: R631119							
SAMPLE	AA28618	Rep: 0	Analytical Run: R631119							
SAMPLE	AA28619	Rep: 0	Analytical Run: R631119							
SAMPLE	AA28620	Rep: 0	Analytical Run: R631119							
SAMPLE	AA28621	Rep: 0	Analytical Run: R631119							
SAMPLE	AA28622	Rep: 0	Analytical Run: R631119							
SAMPLE	AA28623	Rep: 0	Analytical Run: R631119							

R631119 Analyst: S O'NEAL Run Date: 02-Oct-14 Instrument: CVAA
Analytical Reviewer: S ENDERSEN Review Date: 03-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2866787		MERCURY	0.002			0.00199	mg/L	99.5	
CDL01	Q2866816		MERCURY	0.0002			0.000245	mg/L	122.5	
LCS	Q2866339		MERCURY	0.002			0.00235	mg/L	117.5	
BLA02	Q2866340		MERCURY			<	0.000080	mg/L		
SER01	Q2866341	AA28496	MERCURY	0		BDL		mg/L		
SPI02	Q2866342	AA28496	MERCURY	0	0.001		0.00121	mg/L	121.0	
DPS02	Q2866343	AA28496	MERCURY	0	0.001		0.00116	mg/L	116.0	4.2
SPI01	Q2866344	AA28496	MERCURY	0	0.002		0.00229	mg/L	114.5	
CCV	Q2866794		MERCURY	0.003			0.00339	mg/L	113.0	
BLA01	Q2866807		MERCURY			<	0.000080	mg/L		
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
CDL01	Q2866817		MERCURY	0.0002			0.000272	mg/L	136.0	
CCV	Q2866795		MERCURY	0.003			0.00343	mg/L	114.3	
BLA01	Q2866808		MERCURY			<	0.000080	mg/L		
LCS	Q2866345		MERCURY	0.002			0.00226	mg/L	113.0	
BLA02	Q2866346		MERCURY			<	0.000080	mg/L		

MERCURY CVAA SW846-7470A M120.1
Prep : MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A

R631119 Analyst: S O'NEAL Run Date: 02-Oct-14
Analytical Reviewer: S ENDERSEN Review Date: 03-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SER01	Q2866347	AA28605	MERCURY	0		BDL		mg/L		
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SPI02	Q2866348	AA28605	MERCURY	0	0.001		0.00116	mg/L	116.0	
DPS02	Q2866349	AA28605	MERCURY	0	0.001		0.00113	mg/L	113.0	2.6
SPI01	Q2866350	AA28605	MERCURY	0	0.002		0.00211	mg/L	105.5	
CCV	Q2866796		MERCURY	0.003			0.00342	mg/L	114.0	
BLA01	Q2866809		MERCURY			<	0.000080	mg/L		
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28609		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
CDL01	Q2866818		MERCURY	0.0002			0.000250	mg/L	125.0	
CCV	Q2866797		MERCURY	0.003			0.00343	mg/L	114.3	
BLA01	Q2866810		MERCURY			<	0.000080	mg/L		
LCS	Q2866372		MERCURY	0.002			0.00232	mg/L	116.0	
BLA02	Q2866373		MERCURY			<	0.000080	mg/L		
SER01	Q2866374	AA28616	MERCURY	0		BDL		mg/L		
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SPI02	Q2866375	AA28616	MERCURY	0.000026	0.001		0.00127	mg/L	124.4	
DPS02	Q2866376	AA28616	MERCURY	0.000026	0.001		0.00122	mg/L	119.4	4.1
SPI01	Q2866377	AA28616	MERCURY	0.000026	0.002		0.00221	mg/L	109.2	
CCV	Q2866798		MERCURY	0.003			0.00336	mg/L	112.0	
BLA01	Q2866811		MERCURY			<	0.000080	mg/L		
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28617		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28618		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28619		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28620		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28621		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28622		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28623		See Certificate of Analysis, Rep: 0							
CDL01	Q2866819		MERCURY	0.0002			0.000249	mg/L	124.5	
CCV	Q2866799		MERCURY	0.003			0.00334	mg/L	111.3	
BLA01	Q2866812		MERCURY			<	0.000080	mg/L		

NICKEL ICP SW846-6010B M122.3
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R630909 Analyst: K KAMARA Run Date: 29-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 29-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2864845		Analytical Run: R630959							
LCS	Q2864846		Analytical Run: R630959							
DUP02	Q2864847		Analytical Run: R630959							
SPI02	Q2864848		Analytical Run: R630959							
SAMPLE	AA28600	Rep: 0	Analytical Run: R630959							

R630947 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865197		Analytical Run: R631006							
LCS	Q2865198		Analytical Run: R631006							
DUP02	Q2865199		Analytical Run: R631006							
SPI02	Q2865200		Analytical Run: R631006							
SAMPLE	AA28601	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28602	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28603	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28604	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28605	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28606	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28607	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28608	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28609	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28610	Rep: 0	Analytical Run: R631006							

R630948 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865206		Analytical Run: R631006							
LCS	Q2865207		Analytical Run: R631006							
DUP02	Q2865208		Analytical Run: R631006							
SPI02	Q2865209		Analytical Run: R631006							
SAMPLE	AA28611	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28612	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28613	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28614	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28615	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28616	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28617	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28618	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28619	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28620	Rep: 0	Analytical Run: R631006							

R630959 Analyst: J KRAMER Run Date: 29-Sep-14 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2865245		NICKEL	1			1.02	mg/L	102.0	

NICKEL ICP SW846-6010B **M122.3**
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R630959 Analyst: J KRAMER Run Date: 29-Sep-14
Analytical Reviewer: S ENDERSEN Review Date: 30-Sep-14 Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CDL01	Q2865288		NICKEL	0.080			0.0782	mg/L	97.8	
ICS-AB	Q2865300		NICKEL	3			2.88	mg/L	96.0	
BLA02	Q2864845		NICKEL			<	0.00200	mg/L		
LCS	Q2864846		NICKEL	0.5			0.492	mg/L	98.4	
SER01	Q2865295	AA28491	NICKEL	0.0325		CNA	0.0331	mg/L		
DUP02	Q2864847	AA28491	NICKEL	0.0325			0.0332	mg/L		2.1
SPI02	Q2864848	AA28491	NICKEL	0.0325	0.500		0.501	mg/L	93.7	
CCV	Q2865275		NICKEL	5.00			4.73	mg/L	94.6	
BLA01	Q2865253		NICKEL			<	0.00200	mg/L		
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
CCV	Q2865276		NICKEL	5.00			5.02	mg/L	100.4	
BLA01	Q2865254		NICKEL			<	0.00200	mg/L		
SER01	Q2865297	AA28572	NICKEL	0.0186		CNA	0.0197	mg/L		
CDL01	Q2865291		NICKEL	0.005			0.00492	mg/L	98.4	
ICS-AB	Q2865267		NICKEL	1.00			0.892	mg/L	89.2	

Q2865295 1:5 Dilution.
Q2865295 There was possible matrix interference for K and Na
Q2865295 as indicated by the serial dilution results.

R631006 Analyst: J KRAMER Run Date: 30-Sep-14 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2865702		NICKEL	1			1.02	mg/L	102.0	
CDL01	Q2865697		NICKEL	10			9.99	mg/L	99.9	
ICS-AB	Q2865691		NICKEL	1.00			0.948	mg/L	94.8	
CCV	Q2865720		NICKEL	5.00			4.78	mg/L	95.6	
BLA01	Q2865706		NICKEL			<	0.00200	mg/L		
BLA02	Q2865197		NICKEL			<	0.00200	mg/L		
LCS	Q2865198		NICKEL	0.5			0.517	mg/L	103.4	
SER01	Q2865734	AA28603	NICKEL	0.0719		CNA	0.0767	mg/L		
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
DUP02	Q2865199	AA28603	NICKEL	0.0719			0.0748	mg/L		4.0
SPI02	Q2865200	AA28603	NICKEL	0.0719	0.500		0.558	mg/L	97.2	
CCV	Q2865721		NICKEL	5.00			4.88	mg/L	97.6	
BLA01	Q2865707		NICKEL			<	0.00200	mg/L		
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28609		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
CCV	Q2865722		NICKEL	5.00			4.88	mg/L	97.6	
BLA01	Q2865708		NICKEL			<	0.00200	mg/L		

NICKEL ICP SW846-6010B **M122.3**
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R631006 Analyst: J KRAMER Run Date: 30-Sep-14
Analytical Reviewer: S ENDERSEN Review Date: 01-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865206		NICKEL			<	0.00200	mg/L		
LCS	Q2865207		NICKEL	0.5			0.501	mg/L	100.2	
SER01	Q2865735	AA28612	NICKEL	0		CNA	0.00524	mg/L		
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
DUP02	Q2865208	AA28612	NICKEL	0		BDL		mg/L		
SPI02	Q2865209	AA28612	NICKEL	0	0.500		0.483	mg/L	96.6	
CCV	Q2865723		NICKEL	5.00			4.82	mg/L	96.4	
BLA01	Q2865709		NICKEL			<	0.00200	mg/L		
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28617		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28618		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28619		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28620		See Certificate of Analysis, Rep: 0							
CCV	Q2865724		NICKEL	5.00			4.95	mg/L	99.0	
BLA01	Q2865710		NICKEL			<	0.00200	mg/L		
CDL01	Q2865731		NICKEL	0.005			0.00556	mg/L	111.2	
ICS-AB	Q2865715		NICKEL	1.00			0.932	mg/L	93.2	

Q2865734 1:5 Dilution.
Q2865734 There was possible matrix interference for K
Q2865734 as indicated by the serial dilution results.
Q2865735 1:5 Dilution.

R631012 Analyst: K KAMARA Run Date: 01-Oct-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865816		Analytical Run: R631069							
LCS	Q2865817		Analytical Run: R631069							
DUP02	Q2865818		Analytical Run: R631069							
SPI02	Q2865819		Analytical Run: R631069							
SAMPLE	AA28621	Rep: 0	Analytical Run: R631069							
SAMPLE	AA28622	Rep: 0	Analytical Run: R631069							
SAMPLE	AA28623	Rep: 0	Analytical Run: R631069							

R631069 Analyst: J KRAMER Run Date: 01-Oct-14 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 02-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2866199		NICKEL	1			1.03	mg/L	103.0	
CDL01	Q2866240		NICKEL	0.080			0.0809	mg/L	101.1	
ICS-AB	Q2866219		NICKEL	1.00			0.948	mg/L	94.8	
CCV	Q2866231		NICKEL	5.00			4.88	mg/L	97.6	
BLA01	Q2866210		NICKEL			<	0.00200	mg/L		
BLA02	Q2865816		NICKEL			<	0.00200	mg/L		

NICKEL ICP SW846-6010B **M122.3**
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R631069 Analytical — Analyst: J KRAMER — Reviewer: S ENDERSEN — Run Date: 01-Oct-14 — Review Date: 02-Oct-14 — Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
LCS	Q2865817		NICKEL	0.5			0.527	mg/L	105.4	
SER01	Q2866249	AA28623	NICKEL	0.00511		CNA	0.00936	mg/L		
SAMPLE	AA28623		See Certificate of Analysis, Rep: 0							
DUP02	Q2865818	AA28623	NICKEL	0.00511		CNA	0.00553	mg/L		
SPI02	Q2865819	AA28623	NICKEL	0.00511	0.500		0.503	mg/L	99.6	
CCV	Q2866232		NICKEL	5.00			5.01	mg/L	100.2	
BLA01	Q2866211		NICKEL			<	0.00200	mg/L		
SAMPLE	AA28621		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28622		See Certificate of Analysis, Rep: 0							
CCV	Q2866233		NICKEL	5.00			4.80	mg/L	96.0	
BLA01	Q2866212		NICKEL			<	0.00200	mg/L		
CDL01	Q2866243		NICKEL	0.005			0.00486	mg/L	97.2	
ICS-AB	Q2866220		NICKEL	1.00			0.923	mg/L	92.3	

Q2866249 1:5 Dilution.

NITROGEN, NITRATE-NITRITE EPA 353.2 REV. 2.0 (1993) **G113.3**

R631416 Analytical — Analyst: C ANYANWUTAKU — Reviewer: P SPENCE — Run Date: 10-Oct-14 — Review Date: 10-Oct-14 — Instrument: AUTO-ANALYZER

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA01	Q2869469		NITROGEN, NITRATE-NITRITE			BDL	0.01	mg/L		
CDL01	Q2869470		NITROGEN, NITRATE-NITRITE	0.0500			0.0493	mg/L	98.6	
ICV01	Q2869471		NITROGEN, NITRATE-NITRITE	0.500			0.528	mg/L	105.6	
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28609		See Certificate of Analysis, Rep: 0							
CCV	Q2869472		NITROGEN, NITRATE-NITRITE	0.200			0.204	mg/L	102.0	
BLA01	Q2869473		NITROGEN, NITRATE-NITRITE			BDL	0.01	mg/L		
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
BLA01	Q2869474		NITROGEN, NITRATE-NITRITE			BDL	0.01	mg/L		
ICV01	Q2869475		NITROGEN, NITRATE-NITRITE	0.500			0.548	mg/L	109.6	
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
CCV	Q2869476		NITROGEN, NITRATE-NITRITE	0.200			0.203	mg/L	101.5	
BLA01	Q2869477		NITROGEN, NITRATE-NITRITE			BDL	0.01	mg/L		
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
CCV	Q2869478		NITROGEN, NITRATE-NITRITE	0.200			0.208	mg/L	104.0	

NITROGEN, NITRATE-NITRITE EPA 353.2 REV. 2.0 (1993) G113.3

R631416 Analyst: C ANYANWUTAKU Run Date: 10-Oct-14
Analytical Reviewer: P SPENCE Review Date: 10-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA01	Q2869479		NITROGEN, NITRATE-NITRITE			BDL	0.01	mg/L		
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
CCV	Q2869482		NITROGEN, NITRATE-NITRITE	0.200			0.203	mg/L	101.5	
BLA01	Q2869483		NITROGEN, NITRATE-NITRITE			BDL	0.01	mg/L		
SPI01	Q2869488	AA28902	NITROGEN, NITRATE-NITRITE	1.26	0.5		1.77	mg/L	102.0	
DPS01	Q2869489	AA28902	NITROGEN, NITRATE-NITRITE	1.26	0.5		1.76	mg/L	100.0	2.0

Q2869470	1:20 Dilution
Q2869472	1:5 Dilution
Q2869474	Filtered
Q2869475	Filtered
Q2869476	1:5 Dilution
Q2869478	1:5 Dilution
Q2869482	1:5 Dilution
Q2869488	1:5 Dilution
Q2869489	1:5 Dilution

ORGANOCHLORINE PESTICIDES BY GC:ECD SW846-8081 O164.1
Prep : GC PESTICIDE SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

R630940 Analyst: K VEST Run Date: 29-Sep-14 Instrument: PREP
Prep Reviewer: E WERNZ Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865118		Analytical Run: R631033							
LCS	Q2865119		Analytical Run: R631033							
SPI02	Q2865120		Analytical Run: R631033							
DPS02	Q2865121		Analytical Run: R631033							
SAMPLE	AA28613	Rep: 0	Analytical Run: R631033							
SAMPLE	AA28614	Rep: 0	Analytical Run: R631033							
SAMPLE	AA28615	Rep: 0	Analytical Run: R631033							
SAMPLE	AA28616	Rep: 0	Analytical Run: R631033							
SAMPLE	AA28617	Rep: 0	Analytical Run: R631033							
SAMPLE	AA28618	Rep: 0	Analytical Run: R631033							
SAMPLE	AA28619	Rep: 0	Analytical Run: R631033							
SAMPLE	AA28620	Rep: 0	Analytical Run: R631033							
SAMPLE	AA28621	Rep: 0	Analytical Run: R631033							
SAMPLE	AA28622	Rep: 0	Analytical Run: R631033							
SAMPLE	AA28623	Rep: 0	Analytical Run: R631033							

Q2865120	Matrix interference may mask low level analytes.
Q2865120	Low recovery for Endrin Aldehyde caused by sample matrix.
Q2865121	Matrix interference may mask low level analytes.
Q2865121	Low recovery for Endrin Aldehyde caused by sample matrix.

R631033 Analyst: T WATSON Run Date: 29-Sep-14 Instrument: GC/ECD
Analytical Reviewer: E WERNZ Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CAL01	Q2866063		ALPHA-BHC							14.9
CAL01	Q2866063		BETA-BHC							1.92

ORGANOCHLORINE PESTICIDES BY GC:ECD SW846-8081 **O164.1**
Prep : GC PESTICIDE SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

R631033 Analyst: T WATSON Run Date: 29-Sep-14
Analytical Reviewer: E WERNZ Review Date: 01-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CAL01	Q2866063		DELTA-BHC							12.7
CAL01	Q2866063		GAMMA-BHC (LINDANE)							12.4
CAL01	Q2866063		HEPTACHLOR							8.09
CAL01	Q2866063		ALDRIN							11.1
CAL01	Q2866063		HEPTACHLOR EPOXIDE							4.76
CAL01	Q2866063		ENDOSULFAN I							5.65
CAL01	Q2866063		DIELDRIN							9.71
CAL01	Q2866063		4,4'-DDE							12.7
CAL01	Q2866063		ENDRIN							8.52
CAL01	Q2866063		ENDOSULFAN II							5.27
CAL01	Q2866063		4,4'-DDD							11.6
CAL01	Q2866063		ENDOSULFAN SULFATE							3.98
CAL01	Q2866063		4,4'-DDT							19.9
CAL01	Q2866063		METHOXYCHLOR							6.52
CAL01	Q2866063		ENDRIN ALDEHYDE							3.92
CAL01	Q2866063		ALPHA-CHLORDANE							5.94
CAL01	Q2866063		GAMMA-CHLORDANE							6.97
CAL01	Q2866063		DECACHLOROBIPHENYL (DCB)							3.65
ICV01	Q2866064		ALPHA-BHC	50.0			58.3	ug/L	116.6	
ICV01	Q2866064		BETA-BHC	50.0			52.2	ug/L	104.4	
ICV01	Q2866064		DELTA-BHC	50.0			55.6	ug/L	111.2	
ICV01	Q2866064		GAMMA-BHC (LINDANE)	50.0			55.4	ug/L	110.8	
ICV01	Q2866064		HEPTACHLOR	50.0			58.9	ug/L	117.8	
ICV01	Q2866064		ALDRIN	50.0			55.5	ug/L	111.0	
ICV01	Q2866064		HEPTACHLOR EPOXIDE	50.0			53.6	ug/L	107.2	
ICV01	Q2866064		ENDOSULFAN I	50.0			51.9	ug/L	103.8	
ICV01	Q2866064		DIELDRIN	50.0			52.3	ug/L	104.6	
ICV01	Q2866064		4,4'-DDE	50.0			52.9	ug/L	105.8	
ICV01	Q2866064		ENDRIN	50.0			51.5	ug/L	103.0	
ICV01	Q2866064		ENDOSULFAN II	50.0			49.9	ug/L	99.8	
ICV01	Q2866064		4,4'-DDD	50.0			51.9	ug/L	103.8	
ICV01	Q2866064		ENDOSULFAN SULFATE	50.0			51.9	ug/L	103.8	
ICV01	Q2866064		4,4'-DDT	50.0			54.3	ug/L	108.6	
ICV01	Q2866064		METHOXYCHLOR	50.0			52.9	ug/L	105.8	
ICV01	Q2866064		ENDRIN ALDEHYDE	50.0			50.2	ug/L	100.4	
ICV01	Q2866064		ALPHA-CHLORDANE	50.0			53.1	ug/L	106.2	
ICV01	Q2866064		GAMMA-CHLORDANE	50.0			54.0	ug/L	108.0	
ICV01	Q2866064		DECACHLOROBIPHENYL (DCB)	50.0			50.7		101.4	
BLA02	Q2865118		ALPHA-BHC			BDL	0.05	ug/L		
BLA02	Q2865118		BETA-BHC			BDL	0.05	ug/L		
BLA02	Q2865118		DELTA-BHC			BDL	0.05	ug/L		
BLA02	Q2865118		GAMMA-BHC (LINDANE)			BDL	0.05	ug/L		
BLA02	Q2865118		HEPTACHLOR			BDL	0.05	ug/L		
BLA02	Q2865118		ALDRIN			BDL	0.05	ug/L		
BLA02	Q2865118		HEPTACHLOR EPOXIDE			BDL	0.05	ug/L		
BLA02	Q2865118		ENDOSULFAN I			BDL	0.05	ug/L		
BLA02	Q2865118		DIELDRIN			BDL	0.1	ug/L		

ORGANOCHLORINE PESTICIDES BY GC:ECD SW846-8081 **O164.1**
Prep : GC PESTICIDE SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

R631033 Analyst: T WATSON
Analytical Reviewer: E WERNZ
Run Date: 29-Sep-14
Review Date: 01-Oct-14

Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865118		4,4'-DDE			BDL	0.1	ug/L		
BLA02	Q2865118		ENDRIN			BDL	0.1	ug/L		
BLA02	Q2865118		ENDOSULFAN II			BDL	0.1	ug/L		
BLA02	Q2865118		4,4'-DDD			BDL	0.1	ug/L		
BLA02	Q2865118		ENDOSULFAN SULFATE			BDL	0.1	ug/L		
BLA02	Q2865118		4,4'-DDT			BDL	0.1	ug/L		
BLA02	Q2865118		METHOXYCHLOR			BDL	0.5	ug/L		
BLA02	Q2865118		ENDRIN ALDEHYDE			BDL	0.1	ug/L		
BLA02	Q2865118		ALPHA-CHLORDANE			BDL	0.5	ug/L		
BLA02	Q2865118		GAMMA-CHLORDANE			BDL	0.5	ug/L		
BLA02	Q2865118		CHLORDANE			BDL	0.5	ug/L		
BLA02	Q2865118		TOXAPHENE			BDL	1	ug/L		
BLA02	Q2865118		DECACHLOROBIPHENYL (DCB)						85.7	
LCS	Q2865119		ALPHA-BHC	0.200			0.209	ug/L	104.5	
LCS	Q2865119		BETA-BHC	0.200			0.201	ug/L	100.5	
LCS	Q2865119		DELTA-BHC	0.200			0.190	ug/L	95.0	
LCS	Q2865119		GAMMA-BHC (LINDANE)	0.200			0.198	ug/L	99.0	
LCS	Q2865119		HEPTACHLOR	0.200			0.198	ug/L	99.0	
LCS	Q2865119		ALDRIN	0.200			0.172	ug/L	86.0	
LCS	Q2865119		HEPTACHLOR EPOXIDE	0.200			0.187	ug/L	93.5	
LCS	Q2865119		ENDOSULFAN I	0.200			0.189	ug/L	94.5	
LCS	Q2865119		DIELDRIN	0.400			0.382	ug/L	95.5	
LCS	Q2865119		4,4'-DDE	0.400			0.370	ug/L	92.5	
LCS	Q2865119		ENDRIN	0.400			0.390	ug/L	97.5	
LCS	Q2865119		ENDOSULFAN II	0.400			0.385	ug/L	96.2	
LCS	Q2865119		4,4'-DDD	0.400			0.364	ug/L	91.0	
LCS	Q2865119		ENDOSULFAN SULFATE	0.400			0.385	ug/L	96.2	
LCS	Q2865119		4,4'-DDT	0.400			0.424	ug/L	106.0	
LCS	Q2865119		METHOXYCHLOR	2.00			2.08	ug/L	104.0	
LCS	Q2865119		ENDRIN ALDEHYDE	0.400			0.379	ug/L	94.8	
LCS	Q2865119		ALPHA-CHLORDANE	0.200			0.179	ug/L	89.5	
LCS	Q2865119		GAMMA-CHLORDANE	0.200			0.182	ug/L	91.0	
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SPI02	Q2865120	AA28615	ALPHA-BHC	0	0.200		0.156	ug/L	78.0	
SPI02	Q2865120	AA28615	BETA-BHC	0	0.200		0.142	ug/L	71.0	
SPI02	Q2865120	AA28615	DELTA-BHC	0	0.200		0.175	ug/L	87.5	
SPI02	Q2865120	AA28615	GAMMA-BHC (LINDANE)	0	0.200		0.188	ug/L	94.0	
SPI02	Q2865120	AA28615	HEPTACHLOR	0	0.200		0.174	ug/L	87.0	
SPI02	Q2865120	AA28615	ALDRIN	0	0.200		0.143	ug/L	71.5	
SPI02	Q2865120	AA28615	HEPTACHLOR EPOXIDE	0	0.200		0.159	ug/L	79.5	
SPI02	Q2865120	AA28615	ENDOSULFAN I	0	0.200		0.209	ug/L	104.5	
SPI02	Q2865120	AA28615	DIELDRIN	0	0.400		0.322	ug/L	80.5	
SPI02	Q2865120	AA28615	4,4'-DDE	0	0.400		0.286	ug/L	71.5	
SPI02	Q2865120	AA28615	ENDRIN	0	0.400		0.356	ug/L	89.0	
SPI02	Q2865120	AA28615	ENDOSULFAN II	0	0.400		0.324	ug/L	81.0	
SPI02	Q2865120	AA28615	4,4'-DDD	0	0.400		0.317	ug/L	79.2	
SPI02	Q2865120	AA28615	ENDOSULFAN SULFATE	0	0.400		0.332	ug/L	83.0	

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Quality Assurance Report

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ORGANOCHLORINE PESTICIDES BY GC:ECD SW846-8081 **O164.1**
Prep : GC PESTICIDE SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

R631033 Analyst: T WATSON
Analytical Reviewer: E WERNZ
Run Date: 29-Sep-14
Review Date: 01-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SPI02	Q2865120	AA28615	4,4'-DDT	0	0.400		0.446	ug/L	111.5	
SPI02	Q2865120	AA28615	METHOXYCHLOR	0	2.00		2.18	ug/L	109.0	
SPI02	Q2865120	AA28615	ENDRIN ALDEHYDE	0	0.400	!	0.151	ug/L	37.8	
SPI02	Q2865120	AA28615	ALPHA-CHLORDANE	0	0.200		0.149	ug/L	74.5	
SPI02	Q2865120	AA28615	GAMMA-CHLORDANE	0	0.200		0.205	ug/L	102.5	
DPS02	Q2865121	AA28615	ALPHA-BHC	0	0.200		0.160	ug/L	80.0	2.5
DPS02	Q2865121	AA28615	BETA-BHC	0	0.200		0.151	ug/L	75.5	6.1
DPS02	Q2865121	AA28615	DELTA-BHC	0	0.200		0.161	ug/L	80.5	8.3
DPS02	Q2865121	AA28615	GAMMA-BHC (LINDANE)	0	0.200		0.181	ug/L	90.5	3.8
DPS02	Q2865121	AA28615	HEPTACHLOR	0	0.200		0.197	ug/L	98.5	12.4
DPS02	Q2865121	AA28615	ALDRIN	0	0.200		0.148	ug/L	74.0	3.4
DPS02	Q2865121	AA28615	HEPTACHLOR EPOXIDE	0	0.200		0.153	ug/L	76.5	3.8
DPS02	Q2865121	AA28615	ENDOSULFAN I	0	0.200		0.195	ug/L	97.5	6.9
DPS02	Q2865121	AA28615	DIELDRIN	0	0.400		0.321	ug/L	80.2	0.4
DPS02	Q2865121	AA28615	4,4'-DDE	0	0.400		0.297	ug/L	74.2	3.7
DPS02	Q2865121	AA28615	ENDRIN	0	0.400		0.352	ug/L	88.0	1.1
DPS02	Q2865121	AA28615	ENDOSULFAN II	0	0.400		0.329	ug/L	82.2	1.5
DPS02	Q2865121	AA28615	4,4'-DDD	0	0.400		0.338	ug/L	84.5	6.5
DPS02	Q2865121	AA28615	ENDOSULFAN SULFATE	0	0.400		0.336	ug/L	84.0	1.2
DPS02	Q2865121	AA28615	4,4'-DDT	0	0.400		0.404	ug/L	101.0	9.9
DPS02	Q2865121	AA28615	METHOXYCHLOR	0	2.00		2.06	ug/L	103.0	5.7
DPS02	Q2865121	AA28615	ENDRIN ALDEHYDE	0	0.400	!	0.204	ug/L	51.0	29.7
DPS02	Q2865121	AA28615	ALPHA-CHLORDANE	0	0.200		0.151	ug/L	75.5	1.3
DPS02	Q2865121	AA28615	GAMMA-CHLORDANE	0	0.200		0.206	ug/L	103.0	0.5
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
CCV	Q2866065		ALPHA-BHC	20.0			19.5	ug/L	97.5	
CCV	Q2866065		BETA-BHC	20.0			19.5	ug/L	97.5	
CCV	Q2866065		DELTA-BHC	20.0			19.6	ug/L	98.0	
CCV	Q2866065		GAMMA-BHC (LINDANE)	20.0			19.4	ug/L	97.0	
CCV	Q2866065		HEPTACHLOR	20.0			18.5	ug/L	92.5	
CCV	Q2866065		ALDRIN	20.0			19.3	ug/L	96.5	
CCV	Q2866065		HEPTACHLOR EPOXIDE	20.0			19.4	ug/L	97.0	
CCV	Q2866065		ENDOSULFAN I	20.0			19.4	ug/L	97.0	
CCV	Q2866065		DIELDRIN	40.0			39.5	ug/L	98.8	
CCV	Q2866065		4,4'-DDE	40.0			38.9	ug/L	97.2	
CCV	Q2866065		ENDRIN	40.0			40.0	ug/L	100.0	
CCV	Q2866065		ENDOSULFAN II	40.0			39.6	ug/L	99.0	
CCV	Q2866065		4,4'-DDD	40.0			39.2	ug/L	98.0	
CCV	Q2866065		ENDOSULFAN SULFATE	40.0			39.2	ug/L	98.0	
CCV	Q2866065		4,4'-DDT	40.0			38.6	ug/L	96.5	
CCV	Q2866065		METHOXYCHLOR	200			197	ug/L	98.5	
CCV	Q2866065		ENDRIN ALDEHYDE	40.0			38.6	ug/L	96.5	
CCV	Q2866065		ALPHA-CHLORDANE	20.0			19.2	ug/L	96.0	
CCV	Q2866065		GAMMA-CHLORDANE	20.0			19.3	ug/L	96.5	
CCV	Q2866065		DECACHLOROBIPHENYL (DCB)	40.0			38.5		96.2	
SAMPLE	AA28618		See Certificate of Analysis, Rep: 0							

ORGANOCHLORINE PESTICIDES BY GC:ECD SW846-8081 **O164.1**
Prep : GC PESTICIDE SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

R631033 Analyst: T WATSON Run Date: 29-Sep-14
Analytical Reviewer: E WERNZ Review Date: 01-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28620		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28621		See Certificate of Analysis, Rep: 0							
CCV	Q2866066		ALPHA-BHC	20.0			19.8	ug/L	99.0	
CCV	Q2866066		BETA-BHC	20.0			20.0	ug/L	100.0	
CCV	Q2866066		DELTA-BHC	20.0			19.0	ug/L	95.0	
CCV	Q2866066		GAMMA-BHC (LINDANE)	20.0			20.1	ug/L	100.5	
CCV	Q2866066		HEPTACHLOR	20.0			22.2	ug/L	111.0	
CCV	Q2866066		ALDRIN	20.0			19.8	ug/L	99.0	
CCV	Q2866066		HEPTACHLOR EPOXIDE	20.0			20.0	ug/L	100.0	
CCV	Q2866066		ENDOSULFAN I	20.0			19.9	ug/L	99.5	
CCV	Q2866066		DIELDRIN	40.0			40.6	ug/L	101.5	
CCV	Q2866066		4,4'-DDE	40.0			39.9	ug/L	99.8	
CCV	Q2866066		ENDRIN	40.0			41.1	ug/L	102.8	
CCV	Q2866066		ENDOSULFAN II	40.0			40.0	ug/L	100.0	
CCV	Q2866066		4,4'-DDD	40.0			40.1	ug/L	100.2	
CCV	Q2866066		ENDOSULFAN SULFATE	40.0			39.9	ug/L	99.8	
CCV	Q2866066		4,4'-DDT	40.0			44.4	ug/L	111.0	
CCV	Q2866066		METHOXYCHLOR	200			214	ug/L	107.0	
CCV	Q2866066		ENDRIN ALDEHYDE	40.0			39.9	ug/L	99.8	
CCV	Q2866066		ALPHA-CHLORDANE	20.0			19.6	ug/L	98.0	
CCV	Q2866066		GAMMA-CHLORDANE	20.0			19.9	ug/L	99.5	
CCV	Q2866066		DECACHLOROBIPHENYL (DCB)	40.0			39.4		98.5	
CCV	Q2866067		ALPHA-BHC	20.0			19.5	ug/L	97.5	
CCV	Q2866067		BETA-BHC	20.0			19.5	ug/L	97.5	
CCV	Q2866067		DELTA-BHC	20.0			18.5	ug/L	92.5	
CCV	Q2866067		GAMMA-BHC (LINDANE)	20.0			19.7	ug/L	98.5	
CCV	Q2866067		HEPTACHLOR	20.0			21.9	ug/L	109.5	
CCV	Q2866067		ALDRIN	20.0			19.5	ug/L	97.5	
CCV	Q2866067		HEPTACHLOR EPOXIDE	20.0			19.5	ug/L	97.5	
CCV	Q2866067		ENDOSULFAN I	20.0			19.5	ug/L	97.5	
CCV	Q2866067		DIELDRIN	40.0			39.5	ug/L	98.8	
CCV	Q2866067		4,4'-DDE	40.0			39.4	ug/L	98.5	
CCV	Q2866067		ENDRIN	40.0			39.1	ug/L	97.8	
CCV	Q2866067		ENDOSULFAN II	40.0			38.9	ug/L	97.2	
CCV	Q2866067		4,4'-DDD	40.0			39.2	ug/L	98.0	
CCV	Q2866067		ENDOSULFAN SULFATE	40.0			38.9	ug/L	97.2	
CCV	Q2866067		4,4'-DDT	40.0			42.5	ug/L	106.2	
CCV	Q2866067		METHOXYCHLOR	200			200	ug/L	100.0	
CCV	Q2866067		ENDRIN ALDEHYDE	40.0			38.5	ug/L	96.2	
CCV	Q2866067		ALPHA-CHLORDANE	20.0			19.6	ug/L	98.0	
CCV	Q2866067		GAMMA-CHLORDANE	20.0			19.4	ug/L	97.0	
CCV	Q2866067		DECACHLOROBIPHENYL (DCB)	40.0			39.5		98.8	
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28617		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28619		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28622		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28623		See Certificate of Analysis, Rep: 0							

ORGANOCHLORINE PESTICIDES BY GC:ECD SW846-8081 **O164.1**
Prep : GC PESTICIDE SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

R631033 Analytical — Analyst: T WATSON — Reviewer: E WERNZ — Run Date: 29-Sep-14 — Review Date: 01-Oct-14 — Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CCV	Q2866068		ALPHA-BHC	20.0			20.2	ug/L	101.0	
CCV	Q2866068		BETA-BHC	20.0			20.3	ug/L	101.5	
CCV	Q2866068		DELTA-BHC	20.0			19.4	ug/L	97.0	
CCV	Q2866068		GAMMA-BHC (LINDANE)	20.0			20.5	ug/L	102.5	
CCV	Q2866068		HEPTACHLOR	20.0			22.5	ug/L	112.5	
CCV	Q2866068		ALDRIN	20.0			20.0	ug/L	100.0	
CCV	Q2866068		HEPTACHLOR EPOXIDE	20.0			20.0	ug/L	100.0	
CCV	Q2866068		ENDOSULFAN I	20.0			20.0	ug/L	100.0	
CCV	Q2866068		DIELDRIN	40.0			40.7	ug/L	101.8	
CCV	Q2866068		4,4'-DDE	40.0			40.2	ug/L	100.5	
CCV	Q2866068		ENDRIN	40.0			40.9	ug/L	102.2	
CCV	Q2866068		ENDOSULFAN II	40.0			40.0	ug/L	100.0	
CCV	Q2866068		4,4'-DDD	40.0			40.2	ug/L	100.5	
CCV	Q2866068		ENDOSULFAN SULFATE	40.0			39.9	ug/L	99.8	
CCV	Q2866068		4,4'-DDT	40.0			44.0	ug/L	110.0	
CCV	Q2866068		METHOXYCHLOR	200			208	ug/L	104.0	
CCV	Q2866068		ENDRIN ALDEHYDE	40.0			39.1	ug/L	97.8	
CCV	Q2866068		ALPHA-CHLORDANE	20.0			20.0	ug/L	100.0	
CCV	Q2866068		GAMMA-CHLORDANE	20.0			19.9	ug/L	99.5	
CCV	Q2866068		DECACHLOROBIPHENYL (DCB)	40.0			39.6		99.0	

Q2865120 Matrix interference may mask low level analytes.
Q2865120 Low recovery for Endrin Aldehyde caused by sample matrix.
Q2865121 Matrix interference may mask low level analytes.
Q2865121 Low recovery for Endrin Aldehyde caused by sample matrix.

PCB AROCLORS BY GAS CHROMATOGRAPHY/ECD SW846-8082A **O301.7**
Prep : PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

R630939 Prep — Analyst: K VEST — Reviewer: E WERNZ — Run Date: 29-Sep-14 — Review Date: 30-Sep-14 — Instrument: PREP

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865114		Analytical Run: R630967							
LCS	Q2865115		Analytical Run: R630967							
SPI02	Q2865116		Analytical Run: R630967							
DPS02	Q2865117		Analytical Run: R630967							
SAMPLE	AA28613	Rep: 0	Analytical Run: R630967							
SAMPLE	AA28614	Rep: 0	Analytical Run: R630967							
SAMPLE	AA28615	Rep: 0	Analytical Run: R630967							
SAMPLE	AA28616	Rep: 0	Analytical Run: R630967							
SAMPLE	AA28617	Rep: 0	Analytical Run: R630967							
SAMPLE	AA28618	Rep: 0	Analytical Run: R630967							
SAMPLE	AA28619	Rep: 0	Analytical Run: R630967							
SAMPLE	AA28620	Rep: 0	Analytical Run: R630967							
SAMPLE	AA28621	Rep: 0	Analytical Run: R630967							
SAMPLE	AA28622	Rep: 0	Analytical Run: R630967							
SAMPLE	AA28623	Rep: 0	Analytical Run: R630967							

R630967 — Analyst: C HIPSKIND — Run Date: 29-Sep-14 — Instrument: GC/ECD

PCB AROCLORS BY GAS CHROMATOGRAPHY/ECD SW846-8082A **O301.7**
Prep : PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

R630967 Analyst: C HIPSKIND Run Date: 29-Sep-14
Analytical Reviewer: E WERNZ Review Date: 30-Sep-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CCV	Q2865394		PCB AROCLOR 1016	0.500			0.467	mg/L	93.4	
CCV	Q2865394		PCB AROCLOR 1260	0.500			0.429	mg/L	85.8	
CCV	Q2865394		DECACHLOROBIPHENYL (DCB)						92.0	
BLA02	Q2865114		PCB AROCLOR 1016			BDL	0.10	ug/L		
BLA02	Q2865114		PCB AROCLOR 1221			BDL	0.10	ug/L		
BLA02	Q2865114		PCB AROCLOR 1232			BDL	0.10	ug/L		
BLA02	Q2865114		PCB AROCLOR 1242			BDL	0.10	ug/L		
BLA02	Q2865114		PCB AROCLOR 1248			BDL	0.10	ug/L		
BLA02	Q2865114		PCB AROCLOR 1254			BDL	0.10	ug/L		
BLA02	Q2865114		PCB AROCLOR 1260			BDL	0.10	ug/L		
BLA02	Q2865114		DECACHLOROBIPHENYL (DCB)						84.0	
LCS	Q2865115		PCB AROCLOR 1016	0.500			0.530	ug/L	106.0	
LCS	Q2865115		PCB AROCLOR 1260	0.500			0.540	ug/L	108.0	
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28618		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28620		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28621		See Certificate of Analysis, Rep: 0							
CCV	Q2865395		PCB AROCLOR 1016	0.500			0.451	mg/L	90.2	
CCV	Q2865395		PCB AROCLOR 1260	0.500			0.426	mg/L	85.2	
CCV	Q2865395		DECACHLOROBIPHENYL (DCB)						96.0	
CCV	Q2865396		PCB AROCLOR 1016	0.500			0.443	mg/L	88.6	
CCV	Q2865396		PCB AROCLOR 1260	0.500			0.484	mg/L	96.8	
CCV	Q2865396		DECACHLOROBIPHENYL (DCB)						88.0	
SAMPLE	AA28623		See Certificate of Analysis, Rep: 0							
SPI02	Q2865116	AA28623	PCB AROCLOR 1016	0	0.500		0.535	ug/L	107.0	
SPI02	Q2865116	AA28623	PCB AROCLOR 1260	0	0.500		0.515	ug/L	103.0	
DPS02	Q2865117	AA28623	PCB AROCLOR 1016	0	0.500		0.610	ug/L	122.0	13.1
DPS02	Q2865117	AA28623	PCB AROCLOR 1260	0	0.500		0.590	ug/L	118.0	13.6
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28617		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28619		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28622		See Certificate of Analysis, Rep: 0							
CCV	Q2865397		PCB AROCLOR 1016	0.500			0.464	mg/L	92.8	
CCV	Q2865397		PCB AROCLOR 1260	0.500			0.424	mg/L	84.8	
CCV	Q2865397		DECACHLOROBIPHENYL (DCB)						92.0	

PHOSPHORUS, TOTAL (AUTOMATED) EPA 365.1 REV. 2.0 (1993) **G207.2**

R631070 Analyst: E SKALA Run Date: 02-Oct-14 Instrument: AUTO-ANALYZER
Analytical Reviewer: P SPENCE Review Date: 02-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA01	Q2866255		PHOSPHORUS			BDL	0.05	mg/L		
CCV	Q2866256		PHOSPHORUS	0.500			0.498	mg/L	99.6	
CDL01	Q2866257		PHOSPHORUS	0.0500			0.0457	mg/L	91.4	

PHOSPHORUS, TOTAL (AUTOMATED) EPA 365.1 REV. 2.0 (1993) **G207.2**

R631070 Analyst: E SKALA Run Date: 02-Oct-14
Analytical Reviewer: P SPENCE Review Date: 02-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2866258		PHOSPHORUS	0.500			0.504	mg/L	100.8	
BLA04	Q2866259		PHOSPHORUS			BDL	0.05	mg/L		
LFB01	Q2866260		PHOSPHORUS	0.500			0.482	mg/L	96.4	
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
CCV	Q2866265		PHOSPHORUS	0.500			0.502	mg/L	100.4	
BLA01	Q2866266		PHOSPHORUS			BDL	0.05	mg/L		
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SPI01	Q2866267	AA28605	PHOSPHORUS	0.128	0.5		0.592	mg/L	92.8	
DPS01	Q2866268	AA28605	PHOSPHORUS	0.128	0.5		0.573	mg/L	89.0	4.2
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28609		See Certificate of Analysis, Rep: 0							
CCV	Q2866269		PHOSPHORUS	0.500			0.501	mg/L	100.2	
BLA01	Q2866270		PHOSPHORUS			BDL	0.05	mg/L		
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
CCV	Q2866271		PHOSPHORUS	0.500			0.501	mg/L	100.2	
BLA01	Q2866272		PHOSPHORUS			BDL	0.05	mg/L		
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
CCV	Q2866273		PHOSPHORUS	0.500			0.502	mg/L	100.4	
BLA01	Q2866274		PHOSPHORUS			BDL	0.05	mg/L		

Q2866268 MS and/or MSD do not meet control limits. Results for this sample are
Q2866268 estimated.

POTASSIUM ICP SW846-6010B **M126.3**
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R630948 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865206		Analytical Run: R631006							
LCS	Q2865207		Analytical Run: R631006							
DUP02	Q2865208		Analytical Run: R631006							
SPI02	Q2865209		Analytical Run: R631006							
SAMPLE	AA28613	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28614	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28615	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28616	Rep: 0	Analytical Run: R631006							

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Quality Assurance Report 66865

POTASSIUM ICP SW846-6010B M126.3
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R630948 Analyst: K KAMARA Run Date: 30-Sep-14
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14 Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28617	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28618	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28619	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28620	Rep: 0	Analytical Run: R631006							

R631006 Analyst: J KRAMER Run Date: 30-Sep-14 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2865702		POTASSIUM	20			19.9	mg/L	99.5	
CDL01	Q2865696		POTASSIUM	0.1			0.0764	mg/L	76.4	
BLA02	Q2865206		POTASSIUM			<	0.0400	mg/L		
LCS	Q2865207		POTASSIUM	100			100	mg/L	100.0	
SER01	Q2865735	AA28612	POTASSIUM	1.79		CNA	1.44	mg/L		
DUP02	Q2865208	AA28612	POTASSIUM	1.79			1.89	mg/L		5.4
SPI02	Q2865209	AA28612	POTASSIUM	1.79	100		104	mg/L	102.2	
CCV	Q2865723		POTASSIUM	50			49.6	mg/L	99.2	
BLA01	Q2865709		POTASSIUM			<	0.0400	mg/L		
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28617		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28618		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28619		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28620		See Certificate of Analysis, Rep: 0							
CCV	Q2865724		POTASSIUM	50			50.9	mg/L	101.8	
BLA01	Q2865710		POTASSIUM			<	0.0400	mg/L		
CDL01	Q2865731		POTASSIUM	0.1			0.0766	mg/L	76.6	
Q2865735	1:5 Dilution.									

R631012 Analyst: K KAMARA Run Date: 01-Oct-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865816		Analytical Run: R631069							
LCS	Q2865817		Analytical Run: R631069							
DUP02	Q2865818		Analytical Run: R631069							
SPI02	Q2865819		Analytical Run: R631069							
SAMPLE	AA28621	Rep: 0	Analytical Run: R631069							
SAMPLE	AA28622	Rep: 0	Analytical Run: R631069							
SAMPLE	AA28623	Rep: 0	Analytical Run: R631069							

R631069 Analyst: J KRAMER Run Date: 01-Oct-14 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 02-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2866199		POTASSIUM	20			19.5	mg/L	97.5	
CDL01	Q2866242		POTASSIUM	0.1			0.0681	mg/L	68.1	

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Quality Assurance Report

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POTASSIUM ICP SW846-6010B M126.3
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R631069 Analytical — Analyst: J KRAMER — Reviewer: S ENDERSEN — Run Date: 01-Oct-14 — Review Date: 02-Oct-14 — Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CCV	Q2866231		POTASSIUM	50			50.2	mg/L	100.4	
BLA01	Q2866210		POTASSIUM			<	0.0400	mg/L		
BLA02	Q2865816		POTASSIUM			<	0.0400	mg/L		
LCS	Q2865817		POTASSIUM	100			104	mg/L	104.0	
SER01	Q2866249	AA28623	POTASSIUM	2.64			2.22	mg/L		17.3
SAMPLE	AA28623		See Certificate of Analysis, Rep: 0							
DUP02	Q2865818	AA28623	POTASSIUM	2.64			2.88	mg/L		8.7
SPI02	Q2865819	AA28623	POTASSIUM	2.64	100		106	mg/L	103.4	
CCV	Q2866232		POTASSIUM	50			51.5	mg/L	103.0	
BLA01	Q2866211		POTASSIUM			<	0.0400	mg/L		
SAMPLE	AA28621		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28622		See Certificate of Analysis, Rep: 0							
CCV	Q2866233		POTASSIUM	50			49.4	mg/L	98.8	
BLA01	Q2866212		POTASSIUM			<	0.0400	mg/L		
CDL01	Q2866243		POTASSIUM	0.1			0.0700	mg/L	70.0	

Q2866249 1:5 Dilution.

SELENIUM ICP/MS SW846-6020 V128.3
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R630907 Prep — Analyst: K KAMARA — Reviewer: S ENDERSEN — Run Date: 29-Sep-14 — Review Date: 29-Sep-14 — Instrument: PREP

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28600	Rep: 0	Analytical Run: R631019							
BLA02	Q2864829		Analytical Run: R631019							
LCS	Q2864830		Analytical Run: R631019							
DUP02	Q2864831		Analytical Run: R631019							
SPI02	Q2864832		Analytical Run: R631019							

Q2864832 1:5 Dilution.

R630945 Prep — Analyst: K KAMARA — Reviewer: S ENDERSEN — Run Date: 30-Sep-14 — Review Date: 30-Sep-14 — Instrument: PREP

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865189		Analytical Run: R631089							
LCS	Q2865190		Analytical Run: R631089							
DUP02	Q2865191		Analytical Run: R631089							
SPI02	Q2865192		Analytical Run: R631089							
SAMPLE	AA28601	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28602	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28603	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28604	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28605	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28606	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28607	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28608	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28609	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28610	Rep: 0	Analytical Run: R631089							

SELENIUM ICP/MS SW846-6020 V128.3
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R630946 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865193		Analytical Run: R631089							
LCS	Q2865194		Analytical Run: R631089							
DUP02	Q2865195		Analytical Run: R631089							
SPI02	Q2865196		Analytical Run: R631089							
SAMPLE	AA28611	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28612	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28613	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28614	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28615	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28616	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28617	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28618	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28619	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28620	Rep: 0	Analytical Run: R631089							
Q2865196	1:5 Dilution.									

R631004 Analyst: K KAMARA Run Date: 01-Oct-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28621	Rep: 0	Analytical Run: R631187							
SAMPLE	AA28622	Rep: 0	Analytical Run: R631187							
SAMPLE	AA28623	Rep: 0	Analytical Run: R631187							
BLA02	Q2865788		Analytical Run: R631187							
LCS	Q2865789		Analytical Run: R631187							
DUP02	Q2865790		Analytical Run: R631187							
SPI02	Q2865791		Analytical Run: R631187							
Q2865790	1:5 Dilution.									
Q2865791	1:5 Dilution.									

R631019 Analyst: C WILLHITE Run Date: 30-Sep-14 Instrument: ICP/MS
Analytical Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2865890		SELENIUM	50			49.6	ug/L	99.2	
CDL01	Q2865905		SELENIUM	2			1.83	ug/L	91.5	
ICS-A	Q2865906		SELENIUM	40			41.6	ug/L	104.0	
BLA02	Q2864829		SELENIUM			<	0.400	ug/L		
LCS	Q2864830		SELENIUM	40			34.1	ug/L	85.2	
SER01	Q2865934	AA28233	SELENIUM	0		BDL		ug/L		
DUP02	Q2864831	AA28233	SELENIUM	0		BDL		ug/L		
SPI02	Q2864832	AA28233	SELENIUM	0	40		41.8	ug/L	104.5	
CCV	Q2865919		SELENIUM	100			106	ug/L	106.0	
BLA01	Q2865910		SELENIUM			<	0.400	ug/L		
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
CCV	Q2865920		SELENIUM	100			102	ug/L	102.0	
BLA01	Q2865911		SELENIUM			<	0.400	ug/L		
SER01	Q2865935	AA28261	SELENIUM	0		BDL		ug/L		

SELENIUM ICP/MS SW846-6020 **V128.3**
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R631019 Analytical — Analyst: C WILLHITE, Reviewer: S ENDERSEN — Run Date: 30-Sep-14, Review Date: 01-Oct-14 — Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CDL01	Q2865937		SELENIUM	1			0.896	ug/L	89.6	
ICS-A	Q2865933		SELENIUM	40			44.6	ug/L	111.5	

Q2864832 1:5 Dilution.
Q2865906 1:5 Dilution.
Q2865933 1:5 Dilution.
Q2865935 1:25 Dilution.

R631089 Analytical — Analyst: C WILLHITE, Reviewer: S ENDERSEN — Run Date: 01-Oct-14, Review Date: 02-Oct-14 — Instrument: ICP/MS

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2866399		SELENIUM	50			50.6	ug/L	101.2	
CDL01	Q2866439		SELENIUM	2			2.53	ug/L	126.5	
ICS-A	Q2866443		SELENIUM	40			46.1	ug/L	115.2	
CCV	Q2866427		SELENIUM	100			119	ug/L	119.0	
BLA01	Q2866412		SELENIUM			<	0.400	ug/L		
BLA02	Q2865189		SELENIUM			<	0.400	ug/L		
LCS	Q2865190		SELENIUM	40			36.3	ug/L	90.8	
SER01	Q2866448	AA28601	SELENIUM	1.21		CNA	5.38	ug/L		
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
DUP02	Q2865191	AA28601	SELENIUM	0		BDL		ug/L		
SPI02	Q2865192	AA28601	SELENIUM	0	40		37.7	ug/L	94.2	
CCV	Q2866428		SELENIUM	100			102	ug/L	102.0	
BLA01	Q2866413		SELENIUM			<	0.400	ug/L		
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28609		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
CCV	Q2866429		SELENIUM	100			103	ug/L	103.0	
BLA01	Q2866414		SELENIUM			<	0.400	ug/L		
BLA02	Q2865193		SELENIUM			<	0.400	ug/L		
LCS	Q2865194		SELENIUM	40			35.3	ug/L	88.2	
SER01	Q2866449	AA28611	SELENIUM	1.33		CNA	5.45	ug/L		
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
DUP02	Q2865195	AA28611	SELENIUM	0		BDL		ug/L		
SPI02	Q2865196	AA28611	SELENIUM	0	40		38.7	ug/L	96.8	
CCV	Q2866430		SELENIUM	100			104	ug/L	104.0	
BLA01	Q2866454		SELENIUM			<	0.400	ug/L		
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							

SELENIUM ICP/MS SW846-6020 **V128.3**
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R631089 Analyst: C WILLHITE Run Date: 01-Oct-14
Analytical Reviewer: S ENDERSEN Review Date: 02-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28617		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28618		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28619		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28620		See Certificate of Analysis, Rep: 0							
CCV	Q2866459		SELENIUM	100			106	ug/L	106.0	
BLA01	Q2866455		SELENIUM				0.441	ug/L		
SER01	Q2866465	AA28642	SELENIUM	268		CNA	1580	ug/kg		
CDL01	Q2866466		SELENIUM	1			1.05	ug/L	105.0	
ICS-A	Q2866464		SELENIUM	40			47.2	ug/L	118.0	

Q2864832 1:5 Dilution.
Q2865196 1:5 Dilution.
Q2866443 1:5 Dilution.
Q2866449 1:25 Dilution.
Q2866464 1:5 Dilution.
Q2866465 1:5000 Dilution.

R631187 Analyst: C WILLHITE Run Date: 03-Oct-14 Instrument: ICP/MS
Analytical Reviewer: S ENDERSEN Review Date: 06-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2867384		SELENIUM	50			48.4	ug/L	96.8	
CDL01	Q2867420		SELENIUM	2			2.09	ug/L	104.5	
ICS-A	Q2867425		SELENIUM	40			41.7	ug/L	104.2	
CCV	Q2867443		SELENIUM	100			99.8	ug/L	99.8	
BLA01	Q2867435		SELENIUM			<	0.400	ug/L		
BLA02	Q2865788		SELENIUM			<	0.400	ug/L		
LCS	Q2865789		SELENIUM	40			37.0	ug/L	92.5	
SER01	Q2867455	AA28621	SELENIUM	1.48		CNA	6.52	ug/L		
SAMPLE	AA28621		See Certificate of Analysis, Rep: 0							
DUP02	Q2865790	AA28621	SELENIUM	0		BDL		ug/L		
SPI02	Q2865791	AA28621	SELENIUM	0	40		41.5	ug/L	103.8	
CCV	Q2867444		SELENIUM	100			103	ug/L	103.0	
BLA01	Q2867436		SELENIUM			<	0.400	ug/L		
SAMPLE	AA28622		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28623		See Certificate of Analysis, Rep: 0							
CCV	Q2867445		SELENIUM	100			104	ug/L	104.0	
BLA01	Q2867437		SELENIUM			<	0.400	ug/L		
SER01	Q2867457	AA28767	SELENIUM	1.16		CNA	5.80	ug/L		
CDL01	Q2867458		SELENIUM	1			1.17	ug/L	117.0	
ICS-A	Q2867454		SELENIUM	40			44.3	ug/L	110.8	

Q2865790 1:5 Dilution.
Q2865791 1:5 Dilution.
Q2867425 1:5 Dilution.
Q2867454 1:5 Dilution.
Q2867455 1:25 Dilution.
Q2867457 1:25 Dilution.

SILVER ICP/MS SW846-6020 V130.3
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R630907 Analyst: K KAMARA Run Date: 29-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 29-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28600	Rep: 0	Analytical Run: R631019							
BLA02	Q2864829		Analytical Run: R631019							
LCS	Q2864830		Analytical Run: R631019							
DUP02	Q2864831		Analytical Run: R631019							
SPI02	Q2864832		Analytical Run: R631019							
Q2864832	1:5 Dilution.									

R630945 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865189		Analytical Run: R631089							
LCS	Q2865190		Analytical Run: R631089							
DUP02	Q2865191		Analytical Run: R631089							
SPI02	Q2865192		Analytical Run: R631089							
SAMPLE	AA28601	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28602	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28603	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28604	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28605	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28606	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28607	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28608	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28609	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28610	Rep: 0	Analytical Run: R631089							

R630946 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865193		Analytical Run: R631089							
LCS	Q2865194		Analytical Run: R631089							
DUP02	Q2865195		Analytical Run: R631089							
SPI02	Q2865196		Analytical Run: R631089							
SAMPLE	AA28611	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28612	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28613	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28614	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28615	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28616	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28617	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28618	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28619	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28620	Rep: 0	Analytical Run: R631089							
Q2865196	1:5 Dilution.									

R631004 Analyst: K KAMARA Run Date: 01-Oct-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 01-Oct-14

SILVER ICP/MS SW846-6020 V130.3
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R631004 Analyst: K KAMARA Run Date: 01-Oct-14
Prep Reviewer: S ENDERSEN Review Date: 01-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28621	Rep: 0	Analytical Run: R631187							
SAMPLE	AA28622	Rep: 0	Analytical Run: R631187							
SAMPLE	AA28623	Rep: 0	Analytical Run: R631187							
BLA02	Q2865788		Analytical Run: R631187							
LCS	Q2865789		Analytical Run: R631187							
DUP02	Q2865790		Analytical Run: R631187							
SPI02	Q2865791		Analytical Run: R631187							

Q2865790 1:5 Dilution.
Q2865791 1:5 Dilution.

R631019 Analyst: C WILLHITE Run Date: 30-Sep-14 Instrument: ICP/MS
Analytical Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2865890		SILVER	50			50.7	ug/L	101.4	
CDL01	Q2865905		SILVER	0.5			0.342	ug/L	68.4	
ICS-A	Q2865906		SILVER	40			40.5	ug/L	101.2	
BLA02	Q2864829		SILVER			<	0.0800	ug/L		
LCS	Q2864830		SILVER	40			40.0	ug/L	100.0	
SER01	Q2865934	AA28233	SILVER	0		BDL		ug/L		
DUP02	Q2864831	AA28233	SILVER	0		BDL		ug/L		
SPI02	Q2864832	AA28233	SILVER	0	40		41.2	ug/L	103.0	
CCV	Q2865919		SILVER	20			22.1	ug/L	110.5	
BLA01	Q2865910		SILVER			<	0.0800	ug/L		
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
CCV	Q2865920		SILVER	20			21.2	ug/L	106.0	
BLA01	Q2865911		SILVER			<	0.0800	ug/L		
SER01	Q2865935	AA28261	SILVER	0		BDL		ug/L		
CDL01	Q2865929		SILVER	0.5			0.337	ug/L	67.4	
ICS-A	Q2865933		SILVER	40			41.8	ug/L	104.5	

Q2864832 1:5 Dilution.
Q2865906 1:5 Dilution.
Q2865933 1:5 Dilution.
Q2865935 1:25 Dilution.

R631089 Analyst: C WILLHITE Run Date: 01-Oct-14 Instrument: ICP/MS
Analytical Reviewer: S ENDERSEN Review Date: 02-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2866399		SILVER	50			50.5	ug/L	101.0	
CDL01	Q2866439		SILVER	0.5			0.469	ug/L	93.8	
ICS-A	Q2866443		SILVER	40			44.0	ug/L	110.0	
CCV	Q2866427		SILVER	20			20.7	ug/L	103.5	
BLA01	Q2866412		SILVER			<	0.0800	ug/L		
BLA02	Q2865189		SILVER			<	0.0800	ug/L		
LCS	Q2865190		SILVER	40			39.7	ug/L	99.2	
SER01	Q2866448	AA28601	SILVER	0		CNA	0.850	ug/L		
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							

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Quality Assurance Report

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SILVER ICP/MS SW846-6020 V130.3
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R631089 Analytical — Analyst: C WILLHITE, Reviewer: S ENDERSEN — Run Date: 01-Oct-14, Review Date: 02-Oct-14 — Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
DUP02	Q2865191	AA28601	SILVER	0		BDL		ug/L		
SPI02	Q2865192	AA28601	SILVER	0	40		40.1	ug/L	100.2	
CCV	Q2866428		SILVER	20			20.5	ug/L	102.5	
BLA01	Q2866413		SILVER			<	0.0800	ug/L		
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28609		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
CCV	Q2866429		SILVER	20			20.5	ug/L	102.5	
BLA01	Q2866414		SILVER			<	0.0800	ug/L		
BLA02	Q2865193		SILVER			<	0.0800	ug/L		
LCS	Q2865194		SILVER	40			39.3	ug/L	98.2	
SER01	Q2866449	AA28611	SILVER	0.255		CNA	0.925	ug/L		
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
DUP02	Q2865195	AA28611	SILVER	0		BDL		ug/L		
SPI02	Q2865196	AA28611	SILVER	0	40		39.1	ug/L	97.8	
CCV	Q2866430		SILVER	20			20.4	ug/L	102.0	
BLA01	Q2866454		SILVER			<	0.0800	ug/L		
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28617		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28618		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28619		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28620		See Certificate of Analysis, Rep: 0							
CCV	Q2866459		SILVER	20			20.2	ug/L	101.0	
BLA01	Q2866455		SILVER			<	0.0800	ug/L		
SER01	Q2866465	AA28642	SILVER	6.00		CNA	200	ug/kg		
CDL01	Q2866466		SILVER	0.05			0.0230	ug/L	46.0	
ICS-A	Q2866464		SILVER	40			42.8	ug/L	107.0	

Q2864832	1:5 Dilution.
Q2865196	1:5 Dilution.
Q2866443	1:5 Dilution.
Q2866449	1:25 Dilution.
Q2866464	1:5 Dilution.
Q2866465	1:5000 Dilution.

R631187 Analytical — Analyst: C WILLHITE, Reviewer: S ENDERSEN — Run Date: 03-Oct-14, Review Date: 06-Oct-14 — Instrument: ICP/MS

QC Type	Lab ID	Source	Parameter	RQL	Observed	Units	Rec	RPD

SILVER ICP/MS SW846-6020 V130.3
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R631187 Analyst: C WILLHITE Run Date: 03-Oct-14
Analytical Reviewer: S ENDERSEN Review Date: 06-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2867384		SILVER	50			47.9	ug/L	95.8	
CDL01	Q2867420		SILVER	0.5			0.408	ug/L	81.6	
ICS-A	Q2867425		SILVER	40			40.0	ug/L	100.0	
CCV	Q2867443		SILVER	20			19.4	ug/L	97.0	
BLA01	Q2867435		SILVER			<	0.400	ug/L		
BLA02	Q2865788		SILVER			<	0.400	ug/L		
LCS	Q2865789		SILVER	40			39.5	ug/L	98.8	
SER01	Q2867455	AA28621	SILVER	0		BDL		ug/L		
SAMPLE	AA28621		See Certificate of Analysis, Rep: 0							
DUP02	Q2865790	AA28621	SILVER	0		BDL		ug/L		
SPI02	Q2865791	AA28621	SILVER	0	40		41.4	ug/L	103.5	
CCV	Q2867444		SILVER	20			19.7	ug/L	98.5	
BLA01	Q2867436		SILVER			<	0.400	ug/L		
SAMPLE	AA28622		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28623		See Certificate of Analysis, Rep: 0							
CCV	Q2867445		SILVER	20			20.0	ug/L	100.0	
BLA01	Q2867437		SILVER			<	0.400	ug/L		
SER01	Q2867457	AA28767	SILVER	0		BDL		ug/L		
CDL01	Q2867458		SILVER	0.05			0.0100	ug/L	20.0	
ICS-A	Q2867454		SILVER	40			39.4	ug/L	98.5	

Q2865790 1:5 Dilution.
Q2865791 1:5 Dilution.
Q2867425 1:5 Dilution.
Q2867454 1:5 Dilution.
Q2867455 1:25 Dilution.
Q2867457 1:25 Dilution.

SODIUM ICP SW846-6010B M131.3
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R630909 Analyst: K KAMARA Run Date: 29-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 29-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2864845		Analytical Run: R630959							
LCS	Q2864846		Analytical Run: R630959							
DUP02	Q2864847		Analytical Run: R630959							
SPI02	Q2864848		Analytical Run: R630959							
SAMPLE	AA28600	Rep: 0	Analytical Run: R630959							

R630947 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865197		Analytical Run: R631006							
LCS	Q2865198		Analytical Run: R631006							
DUP02	Q2865199		Analytical Run: R631006							
SPI02	Q2865200		Analytical Run: R631006							
SAMPLE	AA28601	Rep: 0	Analytical Run: R631006							

SODIUM ICP SW846-6010B **M131.3**
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R630947 Analyst: K KAMARA Run Date: 30-Sep-14
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14 Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28602	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28603	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28604	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28605	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28606	Rep: 0	Analytical Run: R631069							
SAMPLE	AA28607	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28608	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28609	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28610	Rep: 0	Analytical Run: R631006							

R630948 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865206		Analytical Run: R631006							
LCS	Q2865207		Analytical Run: R631006							
DUP02	Q2865208		Analytical Run: R631006							
SPI02	Q2865209		Analytical Run: R631006							
SAMPLE	AA28611	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28612	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28613	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28614	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28615	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28616	Rep: 0	Analytical Run: R631006							

R630959 Analyst: J KRAMER Run Date: 29-Sep-14 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2865245		SODIUM	20			20.5	mg/L	102.5	
CDL01	Q2865290		SODIUM	0.1			0.0864	mg/L	86.4	
ICS-AB	Q2865300		SODIUM	50			52.3	mg/L	104.6	
BLA02	Q2864845		SODIUM			<	0.0400	mg/L		
LCS	Q2864846		SODIUM	100			102	mg/L	102.0	
SER01	Q2865295	AA28491	SODIUM	22.0			18.5	mg/L		17.3
DUP02	Q2864847	AA28491	SODIUM	22.0			23.2	mg/L		5.3
SPI02	Q2864848	AA28491	SODIUM	22.0	100		125	mg/L	103.0	
CCV	Q2865275		SODIUM	50			50.5	mg/L	101.0	
BLA01	Q2865253		SODIUM			<	0.0400	mg/L		
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
CCV	Q2865276		SODIUM	50			53.7	mg/L	107.4	
BLA01	Q2865254		SODIUM			<	0.0400	mg/L		
SER01	Q2865297	AA28572	SODIUM	74.5			70.5	mg/L		5.5
CDL01	Q2865291		SODIUM	0.1			0.0833	mg/L	83.3	

Q2865295 1:5 Dilution.
Q2865295 There was possible matrix interference for K and Na
Q2865295 as indicated by the serial dilution results.

SODIUM ICP SW846-6010B M131.3
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R631006 Analytical — Analyst: J KRAMER, Reviewer: S ENDERSEN — Run Date: 30-Sep-14, Review Date: 01-Oct-14 — Instrument: ICP

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2865702		SODIUM	20			21.0	mg/L	105.0	
CDL01	Q2865696		SODIUM	0.1			0.0908	mg/L	90.8	
CCV	Q2865720		SODIUM	50			52.6	mg/L	105.2	
BLA01	Q2865706		SODIUM			<	0.0400	mg/L		
BLA02	Q2865197		SODIUM			<	0.0400	mg/L		
LCS	Q2865198		SODIUM	100			104	mg/L	104.0	
SER01	Q2865734	AA28603	SODIUM	117			113	mg/L		3.5
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
DUP02	Q2865199	AA28603	SODIUM	117			122	mg/L		4.2
SPI02	Q2865200	AA28603	SODIUM	117	100		221	mg/L	104.0	
CCV	Q2865721		SODIUM	50			53.5	mg/L	107.0	
BLA01	Q2865707		SODIUM			<	0.0400	mg/L		
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28609		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
CCV	Q2865722		SODIUM	50			53.5	mg/L	107.0	
BLA01	Q2865708		SODIUM			<	0.0400	mg/L		
BLA02	Q2865206		SODIUM			<	0.0400	mg/L		
LCS	Q2865207		SODIUM	100			101	mg/L	101.0	
SER01	Q2865735	AA28612	SODIUM	20.8			18.5	mg/L		11.7
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
DUP02	Q2865208	AA28612	SODIUM	20.8			21.7	mg/L		4.2
SPI02	Q2865209	AA28612	SODIUM	20.8	100		122	mg/L	101.2	
CCV	Q2865723		SODIUM	50			52.8	mg/L	105.6	
BLA01	Q2865709		SODIUM			<	0.0400	mg/L		
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
CCV	Q2865724		SODIUM	50			54.3	mg/L	108.6	
BLA01	Q2865710		SODIUM			<	0.0400	mg/L		
CDL01	Q2865731		SODIUM	0.1			0.0906	mg/L	90.6	

Q2865734 1:5 Dilution.
Q2865734 There was possible matrix interference for K
Q2865734 as indicated by the serial dilution results.
Q2865735 1:5 Dilution.

R631069 Analytical — Analyst: J KRAMER, Reviewer: S ENDERSEN — Run Date: 01-Oct-14, Review Date: 02-Oct-14 — Instrument: ICP

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD

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Quality Assurance Report

66865

SODIUM ICP SW846-6010B M131.3

Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R631069 Analyst: J KRAMER
Analytical Reviewer: S ENDERSEN

Run Date: 01-Oct-14
Review Date: 02-Oct-14

Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2866199		SODIUM	20			21.1	mg/L	105.5	
CDL01	Q2866242		SODIUM	0.1			0.0858	mg/L	85.8	
CCV	Q2866226		SODIUM	50			54.4	mg/L	108.8	
BLA01	Q2866205		SODIUM			<	0.0400	mg/L		
SER01	Q2866253	AA28786	SODIUM	57.5			55.4	mg/L		3.7
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
CCV	Q2866227		SODIUM	50			53.3	mg/L	106.6	
BLA01	Q2866206		SODIUM			<	0.0400	mg/L		
SER01	Q2866248	AA28621	SODIUM	29.6			25.5	mg/L		14.9
CDL01	Q2866243		SODIUM	0.1			0.0852	mg/L	85.2	

Q2866248 1:5 Dilution.
Q2866248 There was possible matrix interference for K and Na
Q2866248 as indicated by the serial dilution results.
Q2866253 1:5 Dilution.

SULFATE BY ION CHROMATOGRAPHY SW846-9056 G310.7

R630926 Analyst: R DALAL
Analytical Reviewer: E WERNZ

Run Date: 26-Sep-14
Review Date: 29-Sep-14

Instrument: IC

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
LFB01H	Q2865038		SULFATE	25.0			24.6	mg/L	98.4	
LFB01L	Q2865049		SULFATE	2.50			2.47	mg/L	98.8	
CCVL	Q2865052		SULFATE	2.50			2.49	mg/L	99.6	
CCVH	Q2865053		SULFATE	10.0			9.94	mg/L	99.4	
BLA01	Q2865054		SULFATE			BDL	0.05	mg/L		
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
CCVL	Q2865057		SULFATE	2.50			2.55	mg/L	102.0	
CCVH	Q2865058		SULFATE	10.0			9.77	mg/L	97.7	
BLA01	Q2865059		SULFATE			BDL	0.05	mg/L		
LFB01L	Q2865060		SULFATE	2.50			2.47	mg/L	98.8	
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SPI01	Q2865061	AA28602	SULFATE	9.16	2.50		11.6	mg/L	97.6	
DPS01	Q2865062	AA28602	SULFATE	9.16	2.50		11.5	mg/L	93.6	4.2
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
CCVL	Q2865063		SULFATE	2.50			2.51	mg/L	100.4	
CCVH	Q2865064		SULFATE	10.0			10.2	mg/L	102.0	
BLA01	Q2865065		SULFATE			BDL	0.05	mg/L		
LFB01L	Q2865071		SULFATE	2.50			2.37	mg/L	94.8	

R630965 Analyst: R DALAL
Analytical Reviewer: E WERNZ

Run Date: 29-Sep-14
Review Date: 30-Sep-14

Instrument: IC

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA01	Q2865365		SULFATE			BDL	0.05	mg/L		

SULFATE BY ION CHROMATOGRAPHY SW846-9056 — **G310.7**

R630965 Analytical — Analyst: R DALAL, Reviewer: E WERNZ — Run Date: 29-Sep-14, Review Date: 30-Sep-14

Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CCVL	Q2865366		SULFATE	2.50			2.43	mg/L	97.2	
CCVH	Q2865367		SULFATE	10.0			9.89	mg/L	98.9	
LFB01L	Q2865368		SULFATE	2.50			2.43	mg/L	97.2	
LFB01H	Q2865369		SULFATE	25.0			24.8	mg/L	99.2	
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SPI01	Q2865370	AA28608	SULFATE	71.6	25.0		95.7	mg/L	96.4	
DPS01	Q2865371	AA28608	SULFATE	71.6	25.0		94.4	mg/L	91.2	5.5
CCVL	Q2865372		SULFATE	2.50			2.48	mg/L	99.2	
CCVH	Q2865373		SULFATE	10.0			9.85	mg/L	98.5	
BLA01	Q2865374		SULFATE			BDL	0.05	mg/L		
SAMPLE	AA28609		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
CCVL	Q2865376		SULFATE	2.50			2.51	mg/L	100.4	
CCVH	Q2865377		SULFATE	10.0			9.89	mg/L	98.9	
BLA01	Q2865378		SULFATE			BDL	0.05	mg/L		
LFB01L	Q2865379		SULFATE	2.50			2.44	mg/L	97.6	
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SPI01	Q2865382	AA28616	SULFATE	7.08	2.50		9.20	mg/L	84.8	
DPS01	Q2865383	AA28616	SULFATE	7.08	2.50		9.28	mg/L	88.0	3.7
CCVL	Q2865384		SULFATE	2.50			2.52	mg/L	100.8	
CCVH	Q2865385		SULFATE	10.0			9.84	mg/L	98.4	
BLA01	Q2865386		SULFATE			BDL	0.05	mg/L		
LFB01L	Q2865390		SULFATE	2.50			2.49	mg/L	99.6	

Q2865370 1:10 Dilution.
Q2865371 1:10 Dilution.

SULFIDE, IODOMETRIC METHOD SM4500-S F 2000 — **G110.1**

R630923 Analytical — Analyst: S MCNEAL, Reviewer: P SPENCE — Run Date: 29-Sep-14, Review Date: 29-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA01	Q2864993		SULFIDE			BDL	1.0	mg/L		
LFB01	Q2864995		SULFIDE	97.7			98.6	mg/L	100.9	
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28623		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28618		See Certificate of Analysis, Rep: 0							

SULFIDE, IODOMETRIC METHOD SM4500-S F 2000 — **G110.1**

R630923 Analytical — Analyst: S MCNEAL — Reviewer: P SPENCE — Run Date: 29-Sep-14 — Review Date: 29-Sep-14 — Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28617		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28621		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28619		See Certificate of Analysis, Rep: 0							
SPI01	Q2865000	AA28619	SULFIDE	1.46	48.9		49.6	mg/L	98.4	
DPS01	Q2865001	AA28619	SULFIDE	1.46	48.9		50.5	mg/L	100.3	1.9
SAMPLE	AA28622		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28620		See Certificate of Analysis, Rep: 0							

THALLIUM ICP/MS SW846-6020 — **V134.3**
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R630907 Prep — Analyst: K KAMARA — Reviewer: S ENDERSEN — Run Date: 29-Sep-14 — Review Date: 29-Sep-14 — Instrument: PREP

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28600	Rep: 0	Analytical Run: R631019							
BLA02	Q2864829		Analytical Run: R631019							
LCS	Q2864830		Analytical Run: R631019							
DUP02	Q2864831		Analytical Run: R631019							
SPI02	Q2864832		Analytical Run: R631019							

Q2864832 1:5 Dilution.

R630945 Prep — Analyst: K KAMARA — Reviewer: S ENDERSEN — Run Date: 30-Sep-14 — Review Date: 30-Sep-14 — Instrument: PREP

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865189		Analytical Run: R631089							
LCS	Q2865190		Analytical Run: R631089							
DUP02	Q2865191		Analytical Run: R631089							
SPI02	Q2865192		Analytical Run: R631089							
SAMPLE	AA28601	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28602	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28603	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28604	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28605	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28606	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28607	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28608	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28609	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28610	Rep: 0	Analytical Run: R631089							

R630946 Prep — Analyst: K KAMARA — Reviewer: S ENDERSEN — Run Date: 30-Sep-14 — Review Date: 30-Sep-14 — Instrument: PREP

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865193		Analytical Run: R631089							
LCS	Q2865194		Analytical Run: R631089							
DUP02	Q2865195		Analytical Run: R631089							
SPI02	Q2865196		Analytical Run: R631089							

THALLIUM ICP/MS SW846-6020 **V134.3**
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R630946 Analyst: K KAMARA Run Date: 30-Sep-14
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14 Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28611	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28612	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28613	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28614	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28615	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28616	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28617	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28618	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28619	Rep: 0	Analytical Run: R631089							
SAMPLE	AA28620	Rep: 0	Analytical Run: R631089							
Q2865196	1:5 Dilution.									

R631004 Analyst: K KAMARA Run Date: 01-Oct-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28621	Rep: 0	Analytical Run: R631187							
SAMPLE	AA28622	Rep: 0	Analytical Run: R631187							
SAMPLE	AA28623	Rep: 0	Analytical Run: R631187							
BLA02	Q2865788		Analytical Run: R631187							
LCS	Q2865789		Analytical Run: R631187							
DUP02	Q2865790		Analytical Run: R631187							
SPI02	Q2865791		Analytical Run: R631187							
Q2865790	1:5 Dilution.									
Q2865791	1:5 Dilution.									

R631019 Analyst: C WILLHITE Run Date: 30-Sep-14 Instrument: ICP/MS
Analytical Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2865890		THALLIUM	50			49.1	ug/L	98.2	
CDL01	Q2865905		THALLIUM	0.2			0.0930	ug/L	46.5	
ICS-A	Q2865906		THALLIUM	40			42.0	ug/L	105.0	
BLA02	Q2864829		THALLIUM			<	0.0800	ug/L		
LCS	Q2864830		THALLIUM	40			38.4	ug/L	96.0	
SER01	Q2865934	AA28233	THALLIUM	0		BDL		ug/L		
DUP02	Q2864831	AA28233	THALLIUM	0		BDL		ug/L		
SPI02	Q2864832	AA28233	THALLIUM	0	40		40.9	ug/L	102.2	
CCV	Q2865919		THALLIUM	20			22.1	ug/L	110.5	
BLA01	Q2865910		THALLIUM			<	0.0800	ug/L		
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
CCV	Q2865920		THALLIUM	20			21.0	ug/L	105.0	
BLA01	Q2865911		THALLIUM			<	0.0800	ug/L		
SER01	Q2865935	AA28261	THALLIUM	0		BDL		ug/L		
CDL01	Q2865929		THALLIUM	0.2			0.0720	ug/L	36.0	
ICS-A	Q2865933		THALLIUM	40			43.8	ug/L	109.5	
Q2864832	1:5 Dilution.									
Q2865906	1:5 Dilution.									

THALLIUM ICP/MS SW846-6020 **V134.3**
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R631019 Analytical — Analyst: C WILLHITE, Reviewer: S ENDERSEN — Run Date: 30-Sep-14, Review Date: 01-Oct-14 — Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
Q2865933	1:5 Dilution.									
Q2865935	1:25 Dilution.									

R631089 Analytical — Analyst: C WILLHITE, Reviewer: S ENDERSEN — Run Date: 01-Oct-14, Review Date: 02-Oct-14 — Instrument: ICP/MS

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2866399		THALLIUM	50			51.0	ug/L	102.0	
CDL01	Q2866439		THALLIUM	0.2			0.243	ug/L	121.5	
ICS-A	Q2866443		THALLIUM	40			47.0	ug/L	117.5	
CCV	Q2866427		THALLIUM	20			21.2	ug/L	106.0	
BLA01	Q2866412		THALLIUM				0.0510	ug/L		
BLA02	Q2865189		THALLIUM			<	0.0400	ug/L		
LCS	Q2865190		THALLIUM	40			39.2	ug/L	98.0	
SER01	Q2866448	AA28601	THALLIUM	0		CNA	1.75	ug/L		
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
DUP02	Q2865191	AA28601	THALLIUM	0		BDL		ug/L		
SPI02	Q2865192	AA28601	THALLIUM	0	40		38.8	ug/L	97.0	
CCV	Q2866428		THALLIUM	20			21.3	ug/L	106.5	
BLA01	Q2866413		THALLIUM				0.0540	ug/L		
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28609		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
CCV	Q2866429		THALLIUM	20			21.4	ug/L	107.0	
BLA01	Q2866414		THALLIUM				0.0480	ug/L		
BLA02	Q2865193		THALLIUM			<	0.0400	ug/L		
LCS	Q2865194		THALLIUM	40			38.7	ug/L	96.8	
SER01	Q2866449	AA28611	THALLIUM	0		CNA	1.85	ug/L		
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
DUP02	Q2865195	AA28611	THALLIUM	0		BDL		ug/L		
SPI02	Q2865196	AA28611	THALLIUM	0	40		38.0	ug/L	95.0	
CCV	Q2866430		THALLIUM	20			21.1	ug/L	105.5	
BLA01	Q2866454		THALLIUM				0.0510	ug/L		
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28617		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28618		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28619		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28620		See Certificate of Analysis, Rep: 0							

THALLIUM ICP/MS SW846-6020 **V134.3**
Prep : ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

R631089 Analytical — Analyst: C WILLHITE, Reviewer: S ENDERSEN — Run Date: 01-Oct-14, Review Date: 02-Oct-14

Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CCV	Q2866459		THALLIUM	20			20.6	ug/L	103.0	
BLA01	Q2866455		THALLIUM				0.0490	ug/L		
SER01	Q2866465	AA28642	THALLIUM	23.0		CNA	145	ug/kg		
CDL01	Q2866466		THALLIUM	0.1			0.105	ug/L	105.0	
ICS-A	Q2866464		THALLIUM	40			46.0	ug/L	115.0	

Q2864832 1:5 Dilution.
Q2865196 1:5 Dilution.
Q2866443 1:5 Dilution.
Q2866449 1:25 Dilution.
Q2866464 1:5 Dilution.
Q2866465 1:5000 Dilution.

R631187 Analytical — Analyst: C WILLHITE, Reviewer: S ENDERSEN — Run Date: 03-Oct-14, Review Date: 06-Oct-14 — Instrument: ICP/MS

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2867384		THALLIUM	50			48.8	ug/L	97.6	
CDL01	Q2867420		THALLIUM	0.2			0.184	ug/L	92.0	
ICS-A	Q2867425		THALLIUM	40			42.8	ug/L	107.0	
CCV	Q2867443		THALLIUM	20			19.6	ug/L	98.0	
BLA01	Q2867435		THALLIUM			<	0.0400	ug/L		
BLA02	Q2865788		THALLIUM			<	0.0400	ug/L		
LCS	Q2865789		THALLIUM	40			39.3	ug/L	98.2	
SER01	Q2867455	AA28621	THALLIUM	0		CNA	1.15	ug/L		
SAMPLE	AA28621		See Certificate of Analysis, Rep: 0							
DUP02	Q2865790	AA28621	THALLIUM	0		BDL		ug/L		
SPI02	Q2865791	AA28621	THALLIUM	0	40		40.2	ug/L	100.5	
CCV	Q2867444		THALLIUM	20			20.0	ug/L	100.0	
BLA01	Q2867436		THALLIUM			<	0.0400	ug/L		
SAMPLE	AA28622		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28623		See Certificate of Analysis, Rep: 0							
CCV	Q2867445		THALLIUM	20			20.2	ug/L	101.0	
BLA01	Q2867437		THALLIUM			<	0.0400	ug/L		
SER01	Q2867457	AA28767	THALLIUM	0		CNA	0.925	ug/L		
CDL01	Q2867458		THALLIUM	0.1			0.0610	ug/L	61.0	
ICS-A	Q2867454		THALLIUM	40			42.4	ug/L	106.0	

Q2865790 1:5 Dilution.
Q2865791 1:5 Dilution.
Q2867425 1:5 Dilution.
Q2867454 1:5 Dilution.
Q2867455 1:25 Dilution.
Q2867457 1:25 Dilution.

TIN ICP SW846-6010B **M135.3**
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R630948 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865206		Analytical Run: R631006							
LCS	Q2865207		Analytical Run: R631006							
DUP02	Q2865208		Analytical Run: R631006							
SPI02	Q2865209		Analytical Run: R631006							
SAMPLE	AA28613	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28614	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28615	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28616	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28617	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28618	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28619	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28620	Rep: 0	Analytical Run: R631006							

R631006 Analyst: J KRAMER Run Date: 30-Sep-14 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2865702		TIN	2			2.01	mg/L	100.5	
CDL01	Q2865696		TIN	0.01			0.00958	mg/L	95.8	
BLA02	Q2865206		TIN			<	0.00400	mg/L		
LCS	Q2865207		TIN	4			4.04	mg/L	101.0	
SER01	Q2865735	AA28612	TIN	0		BDL		mg/L		
DUP02	Q2865208	AA28612	TIN	0		BDL		mg/L		
SPI02	Q2865209	AA28612	TIN	0	4		3.89	mg/L	97.2	
CCV	Q2865723		TIN	5			4.90	mg/L	98.0	
BLA01	Q2865709		TIN			<	0.00400	mg/L		
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28617		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28618		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28619		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28620		See Certificate of Analysis, Rep: 0							
CCV	Q2865724		TIN	5			4.94	mg/L	98.8	
BLA01	Q2865710		TIN			<	0.00400	mg/L		
CDL01	Q2865731		TIN	0.01			0.00848	mg/L	84.8	
Q2865735	1:5 Dilution.									

R631012 Analyst: K KAMARA Run Date: 01-Oct-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865816		Analytical Run: R631069							
LCS	Q2865817		Analytical Run: R631069							
DUP02	Q2865818		Analytical Run: R631069							
SPI02	Q2865819		Analytical Run: R631069							
SAMPLE	AA28621	Rep: 0	Analytical Run: R631069							

TIN ICP SW846-6010B — **M135.3**
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R631012 Prep — Analyst: K KAMARA — Reviewer: S ENDERSEN — Run Date: 01-Oct-14 — Review Date: 01-Oct-14 — Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28622	Rep: 0	Analytical Run: R631069							
SAMPLE	AA28623	Rep: 0	Analytical Run: R631069							

R631069 Analytical — Analyst: J KRAMER — Reviewer: S ENDERSEN — Run Date: 01-Oct-14 — Review Date: 02-Oct-14 — Instrument: ICP

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2866199		TIN	2			2.02	mg/L	101.0	
CDL01	Q2866242		TIN	0.01			0.00919	mg/L	91.9	
CCV	Q2866231		TIN	5			4.91	mg/L	98.2	
BLA01	Q2866210		TIN			<	0.00400	mg/L		
BLA02	Q2865816		TIN			<	0.00400	mg/L		
LCS	Q2865817		TIN	4			4.15	mg/L	103.8	
SER01	Q2866249	AA28623	TIN	0		BDL		mg/L		
SAMPLE	AA28623		See Certificate of Analysis, Rep: 0							
DUP02	Q2865818	AA28623	TIN	0		BDL		mg/L		
SPI02	Q2865819	AA28623	TIN	0	4		3.97	mg/L	99.2	
CCV	Q2866232		TIN	5			5.08	mg/L	101.6	
BLA01	Q2866211		TIN			<	0.00400	mg/L		
SAMPLE	AA28621		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28622		See Certificate of Analysis, Rep: 0							
CCV	Q2866233		TIN	5			4.85	mg/L	97.0	
BLA01	Q2866212		TIN			<	0.00400	mg/L		
CDL01	Q2866243		TIN	0.01			0.00880	mg/L	88.0	

Q2866249 1:5 Dilution.

TOTAL DISSOLVED SOLIDS SM2540 C 1997 — **G402.9**

R631024 Analytical — Analyst: N HARBACHOW — Reviewer: P SPENCE — Run Date: 30-Sep-14 — Review Date: 07-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA01	Q2865979		DISSOLVED SOLIDS			BDL	10	mg/L		
LFB01	Q2865980		DISSOLVED SOLIDS	500			489	mg/L	97.8	
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
SPI01	Q2865981	AA28600	DISSOLVED SOLIDS	246	250		483	mg/L	94.8	
DPS01	Q2865982	AA28600	DISSOLVED SOLIDS	246	250		480	mg/L	93.6	1.3
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
LFB01	Q2865983		DISSOLVED SOLIDS	500			489	mg/L	97.8	
BLA01	Q2865984		DISSOLVED SOLIDS			BDL	10	mg/L		

R631076 Analytical — Analyst: C ANYANWUTAKU — Reviewer: P SPENCE — Run Date: 01-Oct-14 — Review Date: 07-Oct-14

QC Type	Lab ID	Source	Parameter	RQL	Observed	Units	Rec	RPD

TOTAL DISSOLVED SOLIDS SM2540 C 1997

G402.9

R631076 Analytical — Analyst: C ANYANWUTAKU — Reviewer: P SPENCE — Run Date: 01-Oct-14 — Review Date: 07-Oct-14

Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA01	Q2866306		DISSOLVED SOLIDS			BDL	10	mg/L		
LFB01	Q2866307		DISSOLVED SOLIDS	500			490	mg/L	98.0	
SPI01	Q2866310	AA28573	DISSOLVED SOLIDS	246	250		491	mg/L	98.0	
DPS01	Q2866311	AA28573	DISSOLVED SOLIDS	246	250		481	mg/L	94.0	4.2
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28609		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
DUP01	Q2866315	AA28616	DISSOLVED SOLIDS	459			481	mg/L		4.7
LFB01	Q2866316		DISSOLVED SOLIDS	500			479	mg/L	95.8	
BLA01	Q2866317		DISSOLVED SOLIDS			BDL	10	mg/L		

TOTAL ORGANIC CARBON SW846-9060A

O401.0

R631161 Analytical — Analyst: D DICKERSON — Reviewer: P SPENCE — Run Date: 02-Oct-14 — Review Date: 07-Oct-14 — Instrument: TOC

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CDL01	Q2867065		TOTAL ORGANIC CARBON (TOC)	1.00			1.20	mg/L	120.0	
ICV01	Q2867066		TOTAL ORGANIC CARBON (TOC)	12.5			13.0	mg/L	104.0	
ICV01	Q2867071		TOTAL ORGANIC CARBON (TOC)	12.5			12.5	mg/L	100.0	
CCVL	Q2867072		TOTAL ORGANIC CARBON (TOC)	5.00			5.09	mg/L	101.8	
CCVH	Q2867074		TOTAL ORGANIC CARBON (TOC)	15.0			15.5	mg/L	103.3	
BLA01	Q2867075		TOTAL ORGANIC CARBON (TOC)			BDL	1.0	mg/L		
ICV01	Q2867076		TOTAL ORGANIC CARBON (TOC)	12.5			12.7	mg/L	101.6	
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
DPS01	Q2867077	AA28601	TOTAL ORGANIC CARBON (TOC)	30.6	125		143	mg/L	89.9	
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SPI01	Q2867078	AA28601	TOTAL ORGANIC CARBON (TOC)	30.6	125		143	mg/L	89.9	
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
CCVL	Q2867079		TOTAL ORGANIC CARBON (TOC)	5.00			5.24	mg/L	104.8	
BLA01	Q2867080		TOTAL ORGANIC CARBON (TOC)			BDL	1.0	mg/L		
SPI01	Q2867081	AA28603	TOTAL ORGANIC CARBON (TOC)	65.2	125		164	mg/L	79.0	
DPS01	Q2867082	AA28603	TOTAL ORGANIC CARBON (TOC)	65.2	125		162	mg/L	77.4	2.0
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SPI01	Q2867083	AA28607	TOTAL ORGANIC CARBON (TOC)	31.6	125		141	mg/L	87.5	
DPS01	Q2867084	AA28607	TOTAL ORGANIC CARBON (TOC)	31.6	125		140	mg/L	86.7	0.9
CCVH	Q2867085		TOTAL ORGANIC CARBON (TOC)	15.0			14.7	mg/L	98.0	

TOTAL ORGANIC CARBON SW846-9060A **O401.0**

R631161 Analyst: D DICKERSON Run Date: 02-Oct-14
Analytical Reviewer: P SPENCE Review Date: 07-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA01	Q2867086		TOTAL ORGANIC CARBON (TOC)			BDL	1.0	mg/L		
ICV01	Q2867087		TOTAL ORGANIC CARBON (TOC)	12.5			12.0	mg/L	96.0	
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28609		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
CCVL	Q2867089		TOTAL ORGANIC CARBON (TOC)	5.00			4.77	mg/L	95.4	
BLA01	Q2867090		TOTAL ORGANIC CARBON (TOC)			BDL	1.0	mg/L		
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
CCVH	Q2867092		TOTAL ORGANIC CARBON (TOC)	15.0			14.2	mg/L	94.7	
BLA01	Q2867093		TOTAL ORGANIC CARBON (TOC)			BDL	1.0	mg/L		
ICV01	Q2867094		TOTAL ORGANIC CARBON (TOC)	12.5			11.4	mg/L	91.2	
CCVL	Q2867095		TOTAL ORGANIC CARBON (TOC)	5.00			4.96	mg/L	99.2	

Q2867077 1:10 Dilution.
Q2867078 1:10 Dilution.
Q2867081 1:10 Dilution.
Q2867081 MS and/or MSD do not meet control limits. Results for this sample are
Q2867081 estimated.
Q2867082 1:10 Dilution.
Q2867082 MS and/or MSD do not meet control limits. Results for this sample are
Q2867082 estimated.
Q2867083 1:10 Dilution.
Q2867084 1:10 Dilution.

R631233 Analyst: D DICKERSON Run Date: 06-Oct-14 Instrument: TOC
Analytical Reviewer: P SPENCE Review Date: 07-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA01	Q2867799		TOTAL ORGANIC CARBON (TOC)			BDL	0.06	mg/L		
CDL01	Q2867800		TOTAL ORGANIC CARBON (TOC)	1.00			1.19	mg/L	119.0	
ICV01	Q2867801		TOTAL ORGANIC CARBON (TOC)	12.5			13.0	mg/L	104.0	
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
CCVL	Q2867802		TOTAL ORGANIC CARBON (TOC)	5.00			5.49	mg/L	109.8	
BLA01	Q2867803		TOTAL ORGANIC CARBON (TOC)			BDL	0.06	mg/L		
CCVH	Q2867804		TOTAL ORGANIC CARBON (TOC)	15.0			15.3	mg/L	102.0	
ICV01	Q2867806		TOTAL ORGANIC CARBON (TOC)	12.5			12.6	mg/L	100.8	
SPI01	Q2867807	AA28604	TOTAL ORGANIC CARBON (TOC)	61.5	125		165	mg/L	82.8	
DPS01	Q2867808	AA28604	TOTAL ORGANIC CARBON (TOC)	61.5	125		164	mg/L	82.0	1.0

Q2867807 1:10 Dilution.
Q2867808 1:10 Dilution.

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Quality Assurance Report

66865

VANADIUM ICP SW846-6010B M138.3
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R630909 Analyst: K KAMARA Run Date: 29-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 29-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2864845		Analytical Run: R630959							
LCS	Q2864846		Analytical Run: R630959							
DUP02	Q2864847		Analytical Run: R630959							
SPI02	Q2864848		Analytical Run: R630959							
SAMPLE	AA28600	Rep: 0	Analytical Run: R630959							

R630947 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865197		Analytical Run: R631006							
LCS	Q2865198		Analytical Run: R631006							
DUP02	Q2865199		Analytical Run: R631006							
SPI02	Q2865200		Analytical Run: R631006							
SAMPLE	AA28601	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28602	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28603	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28604	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28605	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28606	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28607	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28608	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28609	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28610	Rep: 0	Analytical Run: R631006							

R630948 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865206		Analytical Run: R631006							
LCS	Q2865207		Analytical Run: R631006							
DUP02	Q2865208		Analytical Run: R631006							
SPI02	Q2865209		Analytical Run: R631006							
SAMPLE	AA28611	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28612	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28613	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28614	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28615	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28616	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28617	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28618	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28619	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28620	Rep: 0	Analytical Run: R631006							

R630959 Analyst: J KRAMER Run Date: 29-Sep-14 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2865245		VANADIUM	1			1.03	mg/L	103.0	

VANADIUM ICP SW846-6010B M138.3
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R630959 Analyst: J KRAMER Run Date: 29-Sep-14
Analytical Reviewer: S ENDERSEN Review Date: 30-Sep-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CDL01	Q2865288		VANADIUM	0.100			0.0990	mg/L	99.0	
ICS-AB	Q2865300		VANADIUM	3			3.07	mg/L	102.3	
BLA02	Q2864845		VANADIUM			<	0.000800	mg/L		
LCS	Q2864846		VANADIUM	0.5			0.502	mg/L	100.4	
SER01	Q2865295	AA28491	VANADIUM	0		BDL		mg/L		
DUP02	Q2864847	AA28491	VANADIUM	0		BDL		mg/L		
SPI02	Q2864848	AA28491	VANADIUM	0	0.500		0.491	mg/L	98.2	
CCV	Q2865275		VANADIUM	2			1.95	mg/L	97.5	
BLA01	Q2865253		VANADIUM			<	0.000800	mg/L		
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
CCV	Q2865276		VANADIUM	2			2.07	mg/L	103.5	
BLA01	Q2865254		VANADIUM			<	0.000800	mg/L		
SER01	Q2865297	AA28572	VANADIUM	0		BDL		mg/L		
CDL01	Q2865291		VANADIUM	0.0100			0.00964	mg/L	96.4	
ICS-AB	Q2865267		VANADIUM	0.500			0.479	mg/L	95.8	

Q2865295 1:5 Dilution.
Q2865295 There was possible matrix interference for K and Na
Q2865295 as indicated by the serial dilution results.

R631006 Analyst: J KRAMER Run Date: 30-Sep-14 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2865702		VANADIUM	1			1.02	mg/L	102.0	
CDL01	Q2865697		VANADIUM	10			9.98	mg/L	99.8	
ICS-AB	Q2865691		VANADIUM	0.500			0.497	mg/L	99.4	
CCV	Q2865720		VANADIUM	2			1.96	mg/L	98.0	
BLA01	Q2865706		VANADIUM			<	0.000800	mg/L		
BLA02	Q2865197		VANADIUM			<	0.000800	mg/L		
LCS	Q2865198		VANADIUM	0.5			0.518	mg/L	103.6	
SER01	Q2865734	AA28603	VANADIUM	0		BDL		mg/L		
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
DUP02	Q2865199	AA28603	VANADIUM	0		BDL		mg/L		
SPI02	Q2865200	AA28603	VANADIUM	0	0.500		0.506	mg/L	101.2	
CCV	Q2865721		VANADIUM	2			2.00	mg/L	100.0	
BLA01	Q2865707		VANADIUM			<	0.000800	mg/L		
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28609		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
CCV	Q2865722		VANADIUM	2			2.01	mg/L	100.5	
BLA01	Q2865708		VANADIUM			<	0.000800	mg/L		

VANADIUM ICP SW846-6010B **M138.3**
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R631006 Analytical — Analyst: J KRAMER, Reviewer: S ENDERSEN — Run Date: 30-Sep-14, Review Date: 01-Oct-14 — Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865206		VANADIUM			<	0.000800	mg/L		
LCS	Q2865207		VANADIUM	0.5			0.508	mg/L	101.6	
SER01	Q2865735	AA28612	VANADIUM	0		BDL		mg/L		
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
DUP02	Q2865208	AA28612	VANADIUM	0		BDL		mg/L		
SPI02	Q2865209	AA28612	VANADIUM	0	0.500		0.498	mg/L	99.6	
CCV	Q2865723		VANADIUM	2			1.99	mg/L	99.5	
BLA01	Q2865709		VANADIUM			<	0.000800	mg/L		
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28617		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28618		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28619		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28620		See Certificate of Analysis, Rep: 0							
CCV	Q2865724		VANADIUM	2			2.04	mg/L	102.0	
BLA01	Q2865710		VANADIUM			<	0.000800	mg/L		
CDL01	Q2865731		VANADIUM	0.0100			0.00999	mg/L	99.9	
ICS-AB	Q2865715		VANADIUM	0.500			0.490	mg/L	98.0	

Q2865734 1:5 Dilution.
Q2865734 There was possible matrix interference for K
Q2865734 as indicated by the serial dilution results.
Q2865735 1:5 Dilution.

R631012 Prep — Analyst: K KAMARA, Reviewer: S ENDERSEN — Run Date: 01-Oct-14, Review Date: 01-Oct-14 — Instrument: PREP

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865816		Analytical Run: R631069							
LCS	Q2865817		Analytical Run: R631069							
DUP02	Q2865818		Analytical Run: R631069							
SPI02	Q2865819		Analytical Run: R631069							
SAMPLE	AA28621	Rep: 0	Analytical Run: R631069							
SAMPLE	AA28622	Rep: 0	Analytical Run: R631069							
SAMPLE	AA28623	Rep: 0	Analytical Run: R631069							

R631069 Analytical — Analyst: J KRAMER, Reviewer: S ENDERSEN — Run Date: 01-Oct-14, Review Date: 02-Oct-14 — Instrument: ICP

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2866199		VANADIUM	1			1.04	mg/L	104.0	
CDL01	Q2866240		VANADIUM	0.100			0.102	mg/L	102.0	
ICS-AB	Q2866219		VANADIUM	0.500			0.502	mg/L	100.4	
CCV	Q2866231		VANADIUM	2			2.03	mg/L	101.5	
BLA01	Q2866210		VANADIUM			<	0.000800	mg/L		
BLA02	Q2865816		VANADIUM			<	0.000800	mg/L		

VANADIUM ICP SW846-6010B M138.3
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R631069 Analytical — Analyst: J KRAMER, Reviewer: S ENDERSEN — Run Date: 01-Oct-14, Review Date: 02-Oct-14

Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
LCS	Q2865817		VANADIUM	0.5			0.539	mg/L	107.8	
SER01	Q2866249	AA28623	VANADIUM	0		BDL		mg/L		
SAMPLE	AA28623		See Certificate of Analysis, Rep: 0							
DUP02	Q2865818	AA28623	VANADIUM	0		BDL		mg/L		
SPI02	Q2865819	AA28623	VANADIUM	0	0.500		0.519	mg/L	103.8	
CCV	Q2866232		VANADIUM	2			2.08	mg/L	104.0	
BLA01	Q2866211		VANADIUM			<	0.000800	mg/L		
SAMPLE	AA28621		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28622		See Certificate of Analysis, Rep: 0							
CCV	Q2866233		VANADIUM	2			1.99	mg/L	99.5	
BLA01	Q2866212		VANADIUM			<	0.000800	mg/L		
CDL01	Q2866243		VANADIUM	0.0100			0.0101	mg/L	101.0	
ICS-AB	Q2866220		VANADIUM	0.500			0.495	mg/L	99.0	
Q2866249	1:5 Dilution.									

VOLATILE ORGANICS (CAPILLARY COLUMN) SW846-8260B O510.6

R631088 Analytical — Analyst: R SHAMP, Reviewer: H WILLIAMS — Run Date: 30-Sep-14, Review Date: 02-Oct-14 — Instrument: GC/MS VOA

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CAL01	Q2858008		Analysis Date/Time: 08-Sep-14 08:57							
CAL01	Q2858008		ACETONE (2-PROPANONE)	0.2826						9.3
CAL01	Q2858008		ACRYLONITRILE	0.1771						6.1
CAL01	Q2858008		BENZENE	1.9603						4.8
CAL01	Q2858008		BROMOCHLOROMETHANE	0.2333						4.1
CAL01	Q2858008		BROMODICHLOROMETHANE	0.6351						6.4
CAL01	Q2858008		BROMOFORM	0.8714						6.2
CAL01	Q2858008		BROMOMETHANE			LIN				0.997
CAL01	Q2858008		CARBON DISULFIDE	0.9049						10.2
CAL01	Q2858008		CARBON TETRACHLORIDE	0.4683						6.2
CAL01	Q2858008		CHLOROBENZENE	3.7488						3.1
CAL01	Q2858008		DIBROMOCHLOROMETHANE	1.3389						3.7
CAL01	Q2858008		CHLOROETHANE	0.1923						5.3
CAL01	Q2858008		CHLOROFORM	0.8449						4.3
CAL01	Q2858008		CHLOROMETHANE	0.5002						14.5
CAL01	Q2858008		1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	0.4114						5.8
CAL01	Q2858008		1,2-DIBROMOETHANE (EDB)	0.4399						8.1
CAL01	Q2858008		DIBROMOMETHANE	0.3039						4
CAL01	Q2858008		1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	2.9270						4
CAL01	Q2858008		1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	3.0710						4.2
CAL01	Q2858008		TRANS-1,4-DICHLORO-2-BUTENE			LIN				0.999
CAL01	Q2858008		1,1-DICHLOROETHANE	0.8596						4.4
CAL01	Q2858008		1,2-DICHLOROETHANE	0.9083						3.6
CAL01	Q2858008		1,1-DICHLOROETHENE	0.2892						6.3
CAL01	Q2858008		CIS-1,2-DICHLOROETHENE	0.5017						3.9

VOLATILE ORGANICS (CAPILLARY COLUMN) SW846-8260B **O510.6**

R631088 Analyst: R SHAMP Run Date: 30-Sep-14
Analytical Reviewer: H WILLIAMS Review Date: 02-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CAL01	Q2858008		TRANS-1,2-DICHLOROETHENE	0.4604						3.1
CAL01	Q2858008		1,2-DICHLOROPROPANE	0.5012						6.8
CAL01	Q2858008		CIS-1,3-DICHLOROPROPENE	0.7156						14.9
CAL01	Q2858008		TRANS-1,3-DICHLOROPROPENE	0.6071						18
CAL01	Q2858008		ETHYL BENZENE	1.8985						3
CAL01	Q2858008		2-HEXANONE	1.9409						6.3
CAL01	Q2858008		IODOMETHANE	0.4888						6
CAL01	Q2858008		DICHLOROMETHANE (METHYLENE CHLORIDE)			LIN				0.998
CAL01	Q2858008		METHYL ETHYL KETONE	0.0848						5.3
CAL01	Q2858008		4-METHYL-2-PENTANONE	0.8861						14.3
CAL01	Q2858008		STYRENE	3.9945						10.1
CAL01	Q2858008		1,1,1,2-TETRACHLOROETHANE	1.1564						4.1
CAL01	Q2858008		1,1,2,2-TETRACHLOROETHANE	2.0480						3.4
CAL01	Q2858008		TETRACHLOROETHENE	1.2958						5.2
CAL01	Q2858008		TOLUENE	1.8943						7.7
CAL01	Q2858008		1,1,1-TRICHLOROETHANE	0.5268						4.4
CAL01	Q2858008		1,1,2-TRICHLOROETHANE	0.4236						5.2
CAL01	Q2858008		TRICHLOROETHENE	0.4799						3.2
CAL01	Q2858008		TRICHLOROFLUOROMETHANE	0.3193						11.2
CAL01	Q2858008		1,2,3-TRICHLOROPROPANE	0.6326						5.7
CAL01	Q2858008		VINYL ACETATE			LIN				0.999
CAL01	Q2858008		VINYL CHLORIDE	0.3895						7.7
CAL01	Q2858008		DICHLOROETHANE-D4	0.3879						2.1
CAL01	Q2858008		TOLUENE-D8	0.9253						3.7
CAL01	Q2858008		4-BROMOFLUOROBENZENE	0.8752						3.1
CAL01	Q2858008		DIBROMOFLUOROMETHANE	0.2517						3.2
ICV01	Q2858009		Analysis Date/Time: 08-Sep-14 11:56							
ICV01	Q2858009		ACETONE (2-PROPANONE)	50			47.6	ug/L	95.2	
ICV01	Q2858009		ACRYLONITRILE	100			94.3	ug/L	94.3	
ICV01	Q2858009		BENZENE	10			8.74	ug/L	87.4	
ICV01	Q2858009		BROMOCHLOROMETHANE	10			9.31	ug/L	93.1	
ICV01	Q2858009		BROMODICHLOROMETHANE	10			8.71	ug/L	87.1	
ICV01	Q2858009		BROMOFORM	10			8.65	ug/L	86.5	
ICV01	Q2858009		BROMOMETHANE	10			9.39	ug/L	93.9	
ICV01	Q2858009		CARBON DISULFIDE	10			8.2	ug/L	82	
ICV01	Q2858009		CARBON TETRACHLORIDE	10			7.94	ug/L	79.4	
ICV01	Q2858009		CHLOROBENZENE	10			9.04	ug/L	90.4	
ICV01	Q2858009		DIBROMOCHLOROMETHANE	10			9.08	ug/L	90.8	
ICV01	Q2858009		CHLOROETHANE	10			8.47	ug/L	84.7	
ICV01	Q2858009		CHLOROFORM	10			9.11	ug/L	91.1	
ICV01	Q2858009		CHLOROMETHANE	10			8.29	ug/L	82.9	
ICV01	Q2858009		1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	10			9.59	ug/L	95.9	
ICV01	Q2858009		1,2-DIBROMOETHANE (EDB)	10			9.55	ug/L	95.5	
ICV01	Q2858009		DIBROMOMETHANE	10			9.23	ug/L	92.3	
ICV01	Q2858009		1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	10			9.44	ug/L	94.4	
ICV01	Q2858009		1,4-DICHLOROBENZENE (P-	10			9.27	ug/L	92.7	

VOLATILE ORGANICS (CAPILLARY COLUMN) SW846-8260B **O510.6**

R631088 Analyst: R SHAMP Run Date: 30-Sep-14
Analytical Reviewer: H WILLIAMS Review Date: 02-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
			DICHLOROBENZENE)							
ICV01	Q2858009		TRANS-1,4-DICHLORO-2-BUTENE	20			18	ug/L	90	
ICV01	Q2858009		1,1-DICHLOROETHANE	10			8.84	ug/L	88.4	
ICV01	Q2858009		1,2-DICHLOROETHANE	10			9.4	ug/L	94	
ICV01	Q2858009		1,1-DICHLOROETHENE	10			8.67	ug/L	86.7	
ICV01	Q2858009		CIS-1,2-DICHLOROETHENE	10			8.95	ug/L	89.5	
ICV01	Q2858009		TRANS-1,2-DICHLOROETHENE	10			8.67	ug/L	86.7	
ICV01	Q2858009		1,2-DICHLOROPROPANE	10			9.38	ug/L	93.8	
ICV01	Q2858009		CIS-1,3-DICHLOROPROPENE	10			8.81	ug/L	88.1	
ICV01	Q2858009		TRANS-1,3-DICHLOROPROPENE	10			8.73	ug/L	87.3	
ICV01	Q2858009		ETHYL BENZENE	10			9.03	ug/L	90.3	
ICV01	Q2858009		2-HEXANONE	50			50.7	ug/L	101.4	
ICV01	Q2858009		IODOMETHANE	10			9.17	ug/L	91.7	
ICV01	Q2858009		DICHLOROMETHANE (METHYLENE CHLORIDE)	10			8.94	ug/L	89.4	
ICV01	Q2858009		METHYL ETHYL KETONE	50			47.6	ug/L	95.2	
ICV01	Q2858009		4-METHYL-2-PENTANONE	50			49.7	ug/L	99.4	
ICV01	Q2858009		STYRENE	10			9.12	ug/L	91.2	
ICV01	Q2858009		1,1,1,2-TETRACHLOROETHANE	10			8.91	ug/L	89.1	
ICV01	Q2858009		1,1,2,2-TETRACHLOROETHANE	10			10.1	ug/L	101	
ICV01	Q2858009		TETRACHLOROETHENE	10			8.89	ug/L	88.9	
ICV01	Q2858009		TOLUENE	10			8.66	ug/L	86.6	
ICV01	Q2858009		1,1,1-TRICHLOROETHANE	10			8.52	ug/L	85.2	
ICV01	Q2858009		1,1,2-TRICHLOROETHANE	10			9.43	ug/L	94.3	
ICV01	Q2858009		TRICHLOROETHENE	10			8.58	ug/L	85.8	
ICV01	Q2858009		TRICHLOROFLUOROMETHANE	10			7.42	ug/L	74.2	
ICV01	Q2858009		1,2,3-TRICHLOROPROPANE	10			10.1	ug/L	101	
ICV01	Q2858009		VINYL ACETATE	10			9.87	ug/L	98.7	
ICV01	Q2858009		VINYL CHLORIDE	10			8.25	ug/L	82.5	
CCVD	Q2866396		Analysis Date/Time: 30-Sep-14 06:58							
CCVD	Q2866396		ACETONE (2-PROPANONE)	0.2826			0.3060			8.3
CCVD	Q2866396		ACRYLONITRILE	0.1771			0.2352			32.8
CCVD	Q2866396		BENZENE	1.9603			2.1385			9.1
CCVD	Q2866396		BROMOCHLOROMETHANE	0.2333			0.2521			8.1
CCVD	Q2866396		BROMODICHLOROMETHANE	0.6351			0.6849			7.8
CCVD	Q2866396		BROMOFORM	0.8714			0.7775			10.8
CCVD	Q2866396		BROMOMETHANE	10		LIN	12.17			21.7
CCVD	Q2866396		CARBON DISULFIDE	0.9049			0.9493			4.9
CCVD	Q2866396		CARBON TETRACHLORIDE	0.4683			0.5126			9.5
CCVD	Q2866396		CHLOROBENZENE	3.7488			3.8667			3.1
CCVD	Q2866396		DIBROMOCHLOROMETHANE	1.3389			1.3783			2.9
CCVD	Q2866396		CHLOROETHANE	0.1923			0.1921			0.1
CCVD	Q2866396		CHLOROFORM	0.8449			0.9167			8.5
CCVD	Q2866396		CHLOROMETHANE	0.5002			0.4195			16.1
CCVD	Q2866396		1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	0.4114			0.4046			1.7
CCVD	Q2866396		1,2-DIBROMOETHANE (EDB)	0.4399			0.4755			8.1
CCVD	Q2866396		DIBROMOMETHANE	0.3039			0.3323			9.3

VOLATILE ORGANICS (CAPILLARY COLUMN) SW846-8260B **O510.6**

R631088 Analyst: R SHAMP Run Date: 30-Sep-14
Analytical Reviewer: H WILLIAMS Review Date: 02-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CCVD	Q2866396		1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	2.9270			3.0957			5.8
CCVD	Q2866396		1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	3.0710			3.3243			8.2
CCVD	Q2866396		TRANS-1,4-DICHLORO-2-BUTENE	20		LIN	15.59			22.1
CCVD	Q2866396		1,1-DICHLOROETHANE	0.8596			0.9166			6.6
CCVD	Q2866396		1,2-DICHLOROETHANE	0.9083			1.0323			13.7
CCVD	Q2866396		1,1-DICHLOROETHENE	0.2892			0.3026			4.6
CCVD	Q2866396		CIS-1,2-DICHLOROETHENE	0.5017			0.5143			2.5
CCVD	Q2866396		TRANS-1,2-DICHLOROETHENE	0.4604			0.4857			5.5
CCVD	Q2866396		1,2-DICHLOROPROPANE	0.5012			0.5737			14.5
CCVD	Q2866396		CIS-1,3-DICHLOROPROPENE	0.7156			0.7424			3.7
CCVD	Q2866396		TRANS-1,3-DICHLOROPROPENE	10		LIN	10.02			0.2
CCVD	Q2866396		ETHYL BENZENE	1.8985			2.0248			6.7
CCVD	Q2866396		2-HEXANONE	1.9409			2.1456			10.5
CCVD	Q2866396		IODOMETHANE	0.4888			0.4848			0.8
CCVD	Q2866396		DICHLOROMETHANE (METHYLENE CHLORIDE)	10		LIN	11.13			11.3
CCVD	Q2866396		METHYL ETHYL KETONE	0.0848			0.0885			4.4
CCVD	Q2866396		4-METHYL-2-PENTANONE	0.8861			0.9965			12.5
CCVD	Q2866396		STYRENE	3.9945			4.2568			6.6
CCVD	Q2866396		1,1,1,2-TETRACHLOROETHANE	1.1564			1.2202			5.5
CCVD	Q2866396		1,1,2,2-TETRACHLOROETHANE	2.0480			2.2666			10.7
CCVD	Q2866396		TETRACHLOROETHENE	1.2958			1.2547			3.2
CCVD	Q2866396		TOLUENE	1.8943			2.0365			7.5
CCVD	Q2866396		1,1,1-TRICHLOROETHANE	0.5268			0.5691			8
CCVD	Q2866396		1,1,2-TRICHLOROETHANE	0.4236			0.4759			12.3
CCVD	Q2866396		TRICHLOROETHENE	0.4799			0.5135			7
CCVD	Q2866396		TRICHLOROFLUOROMETHANE	0.3193			0.3528			10.5
CCVD	Q2866396		1,2,3-TRICHLOROPROPANE	0.6326			0.7349			16.2
CCVD	Q2866396		VINYL ACETATE	10		LIN	10.50			5
CCVD	Q2866396		VINYL CHLORIDE	0.3895			0.3410			12.5
CCVD	Q2866396		DICHLOROETHANE-D4	0.3879			0.4239			9.3
CCVD	Q2866396		TOLUENE-D8	0.9253			0.9564			3.4
CCVD	Q2866396		4-BROMOFLUOROBENZENE	0.8752			0.8153			6.8
CCVD	Q2866396		DIBROMOFLUOROMETHANE	0.2517			0.2558			1.6
BLA01	Q2866397		Analysis Date/Time: 30-Sep-14 07:23							
BLA01	Q2866397		ACETONE (2-PROPANONE)			BDL	10.	ug/L		
BLA01	Q2866397		ACRYLONITRILE			BDL	5.0	ug/L		
BLA01	Q2866397		BENZENE			BDL	1.0	ug/L		
BLA01	Q2866397		BROMOCHLOROMETHANE			BDL	1.0	ug/L		
BLA01	Q2866397		BROMODICHLOROMETHANE			BDL	1.0	ug/L		
BLA01	Q2866397		BROMOFORM			BDL	1.0	ug/L		
BLA01	Q2866397		BROMOMETHANE			BDL	1.0	ug/L		
BLA01	Q2866397		CARBON DISULFIDE			BDL	1.0	ug/L		
BLA01	Q2866397		CARBON TETRACHLORIDE			BDL	1.0	ug/L		
BLA01	Q2866397		CHLOROBENZENE			BDL	1.0	ug/L		
BLA01	Q2866397		DIBROMOCHLOROMETHANE			BDL	1.0	ug/L		
BLA01	Q2866397		CHLOROETHANE			BDL	1.0	ug/L		

VOLATILE ORGANICS (CAPILLARY COLUMN) SW846-8260B **O510.6**

R631088 Analyst: R SHAMP
Analytical Reviewer: H WILLIAMS
Run Date: 30-Sep-14
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Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA01	Q2866397		CHLOROFORM			BDL	1.0	ug/L		
BLA01	Q2866397		CHLOROMETHANE			BDL	1.0	ug/L		
BLA01	Q2866397		1,2-DIBROMO-3-CHLOROPROPANE (DBCP)			BDL	1.0	ug/L		
BLA01	Q2866397		1,2-DIBROMOETHANE (EDB)			BDL	1.0	ug/L		
BLA01	Q2866397		DIBROMOMETHANE			BDL	1.0	ug/L		
BLA01	Q2866397		1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)			BDL	1.0	ug/L		
BLA01	Q2866397		1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)			BDL	1.0	ug/L		
BLA01	Q2866397		TRANS-1,4-DICHLORO-2-BUTENE			BDL	1.0	ug/L		
BLA01	Q2866397		1,1-DICHLOROETHANE			BDL	1.0	ug/L		
BLA01	Q2866397		1,2-DICHLOROETHANE			BDL	1.0	ug/L		
BLA01	Q2866397		1,1-DICHLOROETHENE			BDL	1.0	ug/L		
BLA01	Q2866397		CIS-1,2-DICHLOROETHENE			BDL	1.0	ug/L		
BLA01	Q2866397		TRANS-1,2-DICHLOROETHENE			BDL	1.0	ug/L		
BLA01	Q2866397		1,2-DICHLOROPROPANE			BDL	1.0	ug/L		
BLA01	Q2866397		CIS-1,3-DICHLOROPROPENE			BDL	1.0	ug/L		
BLA01	Q2866397		TRANS-1,3-DICHLOROPROPENE			BDL	1.0	ug/L		
BLA01	Q2866397		ETHYL BENZENE			BDL	1.0	ug/L		
BLA01	Q2866397		2-HEXANONE			BDL	5.0	ug/L		
BLA01	Q2866397		IODOMETHANE			BDL	1.0	ug/L		
BLA01	Q2866397		DICHLOROMETHANE (METHYLENE CHLORIDE)			BDL	1.0	ug/L		
BLA01	Q2866397		METHYL ETHYL KETONE			BDL	5.0	ug/L		
BLA01	Q2866397		4-METHYL-2-PENTANONE			BDL	5.0	ug/L		
BLA01	Q2866397		STYRENE			BDL	1.0	ug/L		
BLA01	Q2866397		1,1,1,2-TETRACHLOROETHANE			BDL	1.0	ug/L		
BLA01	Q2866397		1,1,2,2-TETRACHLOROETHANE			BDL	1.0	ug/L		
BLA01	Q2866397		TETRACHLOROETHENE			BDL	1.0	ug/L		
BLA01	Q2866397		TOLUENE			BDL	1.0	ug/L		
BLA01	Q2866397		1,1,1-TRICHLOROETHANE			BDL	1.0	ug/L		
BLA01	Q2866397		1,1,2-TRICHLOROETHANE			BDL	1.0	ug/L		
BLA01	Q2866397		TRICHLOROETHENE			BDL	1.0	ug/L		
BLA01	Q2866397		TRICHLOROFLUOROMETHANE			BDL	1.0	ug/L		
BLA01	Q2866397		1,2,3-TRICHLOROPROPANE			BDL	1.0	ug/L		
BLA01	Q2866397		VINYL ACETATE			BDL	1.0	ug/L		
BLA01	Q2866397		VINYL CHLORIDE			BDL	1.0	ug/L		
BLA01	Q2866397		XYLENES (O/M/P-XYLENE)			BDL	2.0	ug/L		
BLA01	Q2866397		DICHLOROETHANE-D4						114	
BLA01	Q2866397		TOLUENE-D8						92	
BLA01	Q2866397		4-BROMOFLUOROBENZENE						85	
BLA01	Q2866397		DIBROMOFLUOROMETHANE						105	
LCS01	Q2866398		Analysis Date/Time: 30-Sep-14 07:53							
LCS01	Q2866398		ACETONE (2-PROPANONE)	50			52.8	ug/L	105.6	
LCS01	Q2866398		ACRYLONITRILE	100			124	ug/L	124	
LCS01	Q2866398		BENZENE	10			10.3	ug/L	103	
LCS01	Q2866398		BROMOCHLOROMETHANE	10			11.2	ug/L	112	
LCS01	Q2866398		BROMODICHLOROMETHANE	10			10.2	ug/L	102	

VOLATILE ORGANICS (CAPILLARY COLUMN) SW846-8260B **O510.6**

R631088 Analyst: R SHAMP Run Date: 30-Sep-14
Analytical Reviewer: H WILLIAMS Review Date: 02-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
LCS01	Q2866398		BROMOFORM	10			9.79	ug/L	97.9	
LCS01	Q2866398		BROMOMETHANE	10			11.1	ug/L	111	
LCS01	Q2866398		CARBON DISULFIDE	10			11	ug/L	110	
LCS01	Q2866398		CARBON TETRACHLORIDE	10			11.4	ug/L	114	
LCS01	Q2866398		CHLOROBENZENE	10			9.51	ug/L	95.1	
LCS01	Q2866398		DIBROMOCHLOROMETHANE	10			9.82	ug/L	98.2	
LCS01	Q2866398		CHLOROETHANE	10			10.7	ug/L	107	
LCS01	Q2866398		CHLOROFORM	10		!	11.5	ug/L	115	
LCS01	Q2866398		CHLOROMETHANE	10			7.73	ug/L	77.3	
LCS01	Q2866398		1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	10			9.65	ug/L	96.5	
LCS01	Q2866398		1,2-DIBROMOETHANE (EDB)	10			10.3	ug/L	103	
LCS01	Q2866398		DIBROMOMETHANE	10			11.3	ug/L	113	
LCS01	Q2866398		1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	10			10.5	ug/L	105	
LCS01	Q2866398		1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	10			11	ug/L	110	
LCS01	Q2866398		TRANS-1,4-DICHLORO-2-BUTENE	20			16.2	ug/L	81	
LCS01	Q2866398		1,1-DICHLOROETHANE	10		!	11.6	ug/L	116	
LCS01	Q2866398		1,2-DICHLOROETHANE	10			10.7	ug/L	107	
LCS01	Q2866398		1,1-DICHLOROETHENE	10			11.2	ug/L	112	
LCS01	Q2866398		CIS-1,2-DICHLOROETHENE	10			10.4	ug/L	104	
LCS01	Q2866398		TRANS-1,2-DICHLOROETHENE	10			10.2	ug/L	102	
LCS01	Q2866398		1,2-DICHLOROPROPANE	10			10.5	ug/L	105	
LCS01	Q2866398		CIS-1,3-DICHLOROPROPENE	10			8.84	ug/L	88.4	
LCS01	Q2866398		TRANS-1,3-DICHLOROPROPENE	10			9.34	ug/L	93.4	
LCS01	Q2866398		ETHYL BENZENE	10			10.2	ug/L	102	
LCS01	Q2866398		2-HEXANONE	50			54.1	ug/L	108.2	
LCS01	Q2866398		IODOMETHANE	10			10.3	ug/L	103	
LCS01	Q2866398		DICHLOROMETHANE (METHYLENE CHLORIDE)	10			10.7	ug/L	107	
LCS01	Q2866398		METHYL ETHYL KETONE	50			48.4	ug/L	96.8	
LCS01	Q2866398		4-METHYL-2-PENTANONE	50			53	ug/L	106	
LCS01	Q2866398		STYRENE	10			10.4	ug/L	104	
LCS01	Q2866398		1,1,1,2-TETRACHLOROETHANE	10			9.99	ug/L	99.9	
LCS01	Q2866398		1,1,2,2-TETRACHLOROETHANE	10			10.7	ug/L	107	
LCS01	Q2866398		TETRACHLOROETHENE	10			11.3	ug/L	113	
LCS01	Q2866398		TOLUENE	10			10.2	ug/L	102	
LCS01	Q2866398		1,1,1-TRICHLOROETHANE	10			11.8	ug/L	118	
LCS01	Q2866398		1,1,2-TRICHLOROETHANE	10			10.2	ug/L	102	
LCS01	Q2866398		TRICHLOROETHENE	10			10.2	ug/L	102	
LCS01	Q2866398		TRICHLOROFLUOROMETHANE	10			12.1	ug/L	121	
LCS01	Q2866398		1,2,3-TRICHLOROPROPANE	10			10.7	ug/L	107	
LCS01	Q2866398		VINYL ACETATE	10			9.97	ug/L	99.7	
LCS01	Q2866398		VINYL CHLORIDE	10			8.2	ug/L	82	
LCS01	Q2866398		XYLENES (O/M/P-XYLENE)	30			30.5	ug/L	101.7	
SAMPLE	AA28608		Analysis Date/Time: 30-Sep-14 08:24							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28609		Analysis Date/Time: 30-Sep-14 08:50							

VOLATILE ORGANICS (CAPILLARY COLUMN) SW846-8260B **O510.6**

R631088 Analyst: R SHAMP Run Date: 30-Sep-14
Analytical Reviewer: H WILLIAMS Review Date: 02-Oct-14
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QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28609		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		Analysis Date/Time: 30-Sep-14 09:16							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28611		Analysis Date/Time: 30-Sep-14 09:42							
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28612		Analysis Date/Time: 30-Sep-14 10:07							
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
SPI01	Q2866467	AA28656	Analysis Date/Time: 30-Sep-14 11:00							
SPI01	Q2866467	AA28656	ACETONE (2-PROPANONE)	0	50		57.4	ug/L	114.8	
SPI01	Q2866467	AA28656	ACRYLONITRILE	0	100		139	ug/L	139	
SPI01	Q2866467	AA28656	BENZENE	0	10		11.5	ug/L	115	
SPI01	Q2866467	AA28656	BROMOCHLOROMETHANE	0	10		11.6	ug/L	116	
SPI01	Q2866467	AA28656	BROMODICHLOROMETHANE	0	10		11	ug/L	110	
SPI01	Q2866467	AA28656	BROMOFORM	0	10		7.74	ug/L	77.4	
SPI01	Q2866467	AA28656	BROMOMETHANE	0	10		12.8	ug/L	128	
SPI01	Q2866467	AA28656	CARBON DISULFIDE	0	10		8.2	ug/L	82	
SPI01	Q2866467	AA28656	CARBON TETRACHLORIDE	0	10		10.6	ug/L	106	
SPI01	Q2866467	AA28656	CHLOROBENZENE	0	10		11	ug/L	110	
SPI01	Q2866467	AA28656	DIBROMOCHLOROMETHANE	0	10		9.5	ug/L	95	
SPI01	Q2866467	AA28656	CHLOROETHANE	0	10		10.4	ug/L	104	
SPI01	Q2866467	AA28656	CHLOROFORM	0	10		11.9	ug/L	119	
SPI01	Q2866467	AA28656	CHLOROMETHANE	0	10		9.51	ug/L	95.1	
SPI01	Q2866467	AA28656	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	0	10		9.87	ug/L	98.7	
SPI01	Q2866467	AA28656	1,2-DIBROMOETHANE (EDB)	0	10		11.7	ug/L	117	
SPI01	Q2866467	AA28656	DIBROMOMETHANE	0	10		11.9	ug/L	119	
SPI01	Q2866467	AA28656	1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	0	10		11.1	ug/L	111	
SPI01	Q2866467	AA28656	1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	0	10		11	ug/L	110	
SPI01	Q2866467	AA28656	TRANS-1,4-DICHLORO-2-BUTENE	0	20		13.5	ug/L	67.5	
SPI01	Q2866467	AA28656	1,1-DICHLOROETHANE	0	10		11.4	ug/L	114	
SPI01	Q2866467	AA28656	1,2-DICHLOROETHANE	0	10	!	12.3	ug/L	123	
SPI01	Q2866467	AA28656	1,1-DICHLOROETHENE	0	10		10.4	ug/L	104	
SPI01	Q2866467	AA28656	CIS-1,2-DICHLOROETHENE	0	10		11.3	ug/L	113	
SPI01	Q2866467	AA28656	TRANS-1,2-DICHLOROETHENE	0	10		10.5	ug/L	105	
SPI01	Q2866467	AA28656	1,2-DICHLOROPROPANE	0	10		11.9	ug/L	119	
SPI01	Q2866467	AA28656	CIS-1,3-DICHLOROPROPENE	0	10		10.4	ug/L	104	
SPI01	Q2866467	AA28656	TRANS-1,3-DICHLOROPROPENE	0	10		9.24	ug/L	92.4	
SPI01	Q2866467	AA28656	ETHYL BENZENE	0	10		10.9	ug/L	109	
SPI01	Q2866467	AA28656	2-HEXANONE	0	50	!	57.3	ug/L	114.6	
SPI01	Q2866467	AA28656	IODOMETHANE	0	10		10.3	ug/L	103	
SPI01	Q2866467	AA28656	DICHLOROMETHANE (METHYLENE CHLORIDE)	0	10		12.6	ug/L	126	
SPI01	Q2866467	AA28656	METHYL ETHYL KETONE	0	50		52.4	ug/L	104.8	
SPI01	Q2866467	AA28656	4-METHYL-2-PENTANONE	0	50	!	58.8	ug/L	117.6	
SPI01	Q2866467	AA28656	STYRENE	0	10		4.8	ug/L	48	
SPI01	Q2866467	AA28656	1,1,1,2-TETRACHLOROETHANE	0	10		10.8	ug/L	108	
SPI01	Q2866467	AA28656	1,1,2,2-TETRACHLOROETHANE	0	10		11.5	ug/L	115	

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Quality Assurance Report

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VOLATILE ORGANICS (CAPILLARY COLUMN) SW846-8260B

O510.6

R631088 Analytical
Analyst: R SHAMP
Reviewer: H WILLIAMS
Run Date: 30-Sep-14
Review Date: 02-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SPI01	Q2866467	AA28656	TETRACHLOROETHENE	0	10		10.9	ug/L	109	
SPI01	Q2866467	AA28656	TOLUENE	0	10		10.9	ug/L	109	
SPI01	Q2866467	AA28656	1,1,1-TRICHLOROETHANE	0	10		11.1	ug/L	111	
SPI01	Q2866467	AA28656	1,1,2-TRICHLOROETHANE	0	10		12	ug/L	120	
SPI01	Q2866467	AA28656	TRICHLOROETHENE	0	10		11.5	ug/L	115	
SPI01	Q2866467	AA28656	TRICHLOROFLUOROMETHANE	0	10		8.74	ug/L	87.4	
SPI01	Q2866467	AA28656	1,2,3-TRICHLOROPROPANE	0	10		11.7	ug/L	117	
SPI01	Q2866467	AA28656	VINYL ACETATE	0	10		9.17	ug/L	91.7	
SPI01	Q2866467	AA28656	VINYL CHLORIDE	0	10		9.24	ug/L	92.4	
SPI01	Q2866467	AA28656	XYLENES (O/M/P-XYLENE)	0	30		29.3	ug/L	97.7	
DPS01	Q2866468	AA28656	Analysis Date/Time: 30-Sep-14 11:26							
DPS01	Q2866468	AA28656	ACETONE (2-PROPANONE)	0	50		53	ug/L	106	8.1
DPS01	Q2866468	AA28656	ACRYLONITRILE	0	100		155	ug/L	154.9	10.8
DPS01	Q2866468	AA28656	BENZENE	0	10		10.8	ug/L	107.9	6.6
DPS01	Q2866468	AA28656	BROMOCHLOROMETHANE	0	10		10.7	ug/L	107.1	7.5
DPS01	Q2866468	AA28656	BROMODICHLOROMETHANE	0	10		10.3	ug/L	103.2	6.4
DPS01	Q2866468	AA28656	BROMOFORM	0	10		7.24	ug/L	72.4	6.7
DPS01	Q2866468	AA28656	BROMOMETHANE	0	10		12	ug/L	120	6.6
DPS01	Q2866468	AA28656	CARBON DISULFIDE	0	10		8.01	ug/L	80.1	2.3
DPS01	Q2866468	AA28656	CARBON TETRACHLORIDE	0	10		10.2	ug/L	101.7	4.5
DPS01	Q2866468	AA28656	CHLOROBENZENE	0	10		10.7	ug/L	107.3	2.6
DPS01	Q2866468	AA28656	DIBROMOCHLOROMETHANE	0	10		8.93	ug/L	89.3	6.2
DPS01	Q2866468	AA28656	CHLOROETHANE	0	10		11.3	ug/L	112.5	8
DPS01	Q2866468	AA28656	CHLOROFORM	0	10		10.8	ug/L	108.3	9.3
DPS01	Q2866468	AA28656	CHLOROMETHANE	0	10		8.95	ug/L	89.5	6.1
DPS01	Q2866468	AA28656	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	0	10		9.29	ug/L	92.9	6.1
DPS01	Q2866468	AA28656	1,2-DIBROMOETHANE (EDB)	0	10		10.7	ug/L	107.4	8.4
DPS01	Q2866468	AA28656	DIBROMOMETHANE	0	10		10.6	ug/L	106	11.9
DPS01	Q2866468	AA28656	1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	0	10		10.3	ug/L	102.7	8
DPS01	Q2866468	AA28656	1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	0	10		10.4	ug/L	103.9	5.4
DPS01	Q2866468	AA28656	TRANS-1,4-DICHLORO-2-BUTENE	0	20		12.8	ug/L	64	5
DPS01	Q2866468	AA28656	1,1-DICHLOROETHANE	0	10		10.8	ug/L	107.8	5.3
DPS01	Q2866468	AA28656	1,2-DICHLOROETHANE	0	10		11.4	ug/L	113.6	7.5
DPS01	Q2866468	AA28656	1,1-DICHLOROETHENE	0	10		10.4	ug/L	103.7	0.7
DPS01	Q2866468	AA28656	CIS-1,2-DICHLOROETHENE	0	10		10.5	ug/L	104.9	7
DPS01	Q2866468	AA28656	TRANS-1,2-DICHLOROETHENE	0	10		10.5	ug/L	105.2	0.1
DPS01	Q2866468	AA28656	1,2-DICHLOROPROPANE	0	10		11.1	ug/L	110.9	6.9
DPS01	Q2866468	AA28656	CIS-1,3-DICHLOROPROPENE	0	10		9.57	ug/L	95.7	8.1
DPS01	Q2866468	AA28656	TRANS-1,3-DICHLOROPROPENE	0	10		8.72	ug/L	87.2	5.8
DPS01	Q2866468	AA28656	ETHYL BENZENE	0	10		10.2	ug/L	102.3	6.3
DPS01	Q2866468	AA28656	2-HEXANONE	0	50		52.7	ug/L	105.4	8.4
DPS01	Q2866468	AA28656	IODOMETHANE	0	10		10	ug/L	100.2	2.4
DPS01	Q2866468	AA28656	DICHLOROMETHANE (METHYLENE CHLORIDE)	0	10		11.7	ug/L	116.7	7.6
DPS01	Q2866468	AA28656	METHYL ETHYL KETONE	0	50		47.6	ug/L	95.3	9.5
DPS01	Q2866468	AA28656	4-METHYL-2-PENTANONE	0	50		52.9	ug/L	105.8	10.5

VOLATILE ORGANICS (CAPILLARY COLUMN) SW846-8260B **O510.6**

R631088 Analyst: R SHAMP
Analytical Reviewer: H WILLIAMS
Run Date: 30-Sep-14
Review Date: 02-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
DPS01	Q2866468	AA28656	STYRENE	0	10		4.31	ug/L	43.1	10.8
DPS01	Q2866468	AA28656	1,1,1,2-TETRACHLOROETHANE	0	10		10.3	ug/L	102.5	5.4
DPS01	Q2866468	AA28656	1,1,2,2-TETRACHLOROETHANE	0	10		10.6	ug/L	106	8.1
DPS01	Q2866468	AA28656	TETRACHLOROETHENE	0	10		10.2	ug/L	101.8	6.6
DPS01	Q2866468	AA28656	TOLUENE	0	10		10.1	ug/L	101.1	7.6
DPS01	Q2866468	AA28656	1,1,1-TRICHLOROETHANE	0	10		11.1	ug/L	111.2	0.1
DPS01	Q2866468	AA28656	1,1,2-TRICHLOROETHANE	0	10		10.6	ug/L	106.3	12.4
DPS01	Q2866468	AA28656	TRICHLOROETHENE	0	10		11	ug/L	110.2	4.3
DPS01	Q2866468	AA28656	TRICHLOROFLUOROMETHANE	0	10		9.24	ug/L	92.4	5.6
DPS01	Q2866468	AA28656	1,2,3-TRICHLOROPROPANE	0	10		10.4	ug/L	103.9	11.7
DPS01	Q2866468	AA28656	VINYL ACETATE	0	10		8.83	ug/L	88.3	3.8
DPS01	Q2866468	AA28656	VINYL CHLORIDE	0	10		9.07	ug/L	90.7	1.9
DPS01	Q2866468	AA28656	XYLENES (O/M/P-XYLENE)	0	30		27.4	ug/L	91.3	6.8

Q2858008 Value reported for analytes calibrated by linear (LIN) or
Q2858008 quadratic (QDR) equations is r2 (Coef. of Determination).
Q2866396 Value reported for analytes calibrated by linear (LIN) or quadratic (QDR)
Q2866396 equations is concentration.
Q2866397 Analytes present greater than 1/2 of the detection limit are reported.
Q2866467 2-Chloroethyl vinyl ether degrades under acidic conditions. No recovery
Q2866467 possible. Unacidified sample not available.
Q2866468 2-Chloroethyl vinyl ether degrades under acidic conditions. No recovery
Q2866468 possible. Unacidified sample not available.

R631184 Analyst: H WILLIAMS
Analytical Reviewer: R SHAMP
Run Date: 30-Sep-14
Review Date: 07-Oct-14
Instrument: GC/MS VOA

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CAL01	Q2864793		Analysis Date/Time: 24-Sep-14 09:15							
CAL01	Q2864793		ACETONE (2-PROPANONE)	0.1914						11.8
CAL01	Q2864793		ACRYLONITRILE	0.1151						9.1
CAL01	Q2864793		BENZENE	0.9738						4.8
CAL01	Q2864793		BROMOCHLOROMETHANE	0.1043						6.1
CAL01	Q2864793		BROMODICHLOROMETHANE	0.3057						5.1
CAL01	Q2864793		BROMOFORM	0.4033						4.8
CAL01	Q2864793		BROMOMETHANE			LIN				0.995
CAL01	Q2864793		CARBON DISULFIDE	0.5904						5.3
CAL01	Q2864793		CARBON TETRACHLORIDE	0.2454						9
CAL01	Q2864793		CHLOROBENZENE	1.7275						3
CAL01	Q2864793		DIBROMOCHLOROMETHANE	0.6044						3.6
CAL01	Q2864793		CHLOROETHANE	0.1860						6.3
CAL01	Q2864793		CHLOROFORM	0.4107						2.9
CAL01	Q2864793		CHLOROMETHANE	0.4608						7
CAL01	Q2864793		1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	0.2390						9.4
CAL01	Q2864793		1,2-DIBROMOETHANE (EDB)	0.2023						7.1
CAL01	Q2864793		DIBROMOMETHANE	0.1374						3.9
CAL01	Q2864793		1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	1.3814						2.1

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Quality Assurance Report

66865

VOLATILE ORGANICS (CAPILLARY COLUMN) SW846-8260B

O510.6

R631184 Analyst: H WILLIAMS Run Date: 30-Sep-14
Analytical Reviewer: R SHAMP Review Date: 07-Oct-14

Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CAL01	Q2864793		1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	1.4091						2.2
CAL01	Q2864793		TRANS-1,4-DICHLORO-2-BUTENE	0.5625						8.1
CAL01	Q2864793		1,1-DICHLOROETHANE	0.5098						3.5
CAL01	Q2864793		1,2-DICHLOROETHANE	0.5082						3.4
CAL01	Q2864793		1,1-DICHLOROETHENE	0.2044						3.4
CAL01	Q2864793		CIS-1,2-DICHLOROETHENE	0.2438						4.9
CAL01	Q2864793		TRANS-1,2-DICHLOROETHENE	0.2275						4.8
CAL01	Q2864793		1,2-DICHLOROPROPANE	0.2970						7.2
CAL01	Q2864793		CIS-1,3-DICHLOROPROPENE	0.3636						12.2
CAL01	Q2864793		TRANS-1,3-DICHLOROPROPENE	0.3048						14
CAL01	Q2864793		ETHYL BENZENE	0.8512						11.5
CAL01	Q2864793		2-HEXANONE	1.1677						11.3
CAL01	Q2864793		IODOMETHANE	0.2934						1.8
CAL01	Q2864793		DICHLOROMETHANE (METHYLENE CHLORIDE)			LIN				1.000
CAL01	Q2864793		METHYL ETHYL KETONE	0.0433						13.1
CAL01	Q2864793		4-METHYL-2-PENTANONE	0.6055						13.3
CAL01	Q2864793		STYRENE	1.7917						12
CAL01	Q2864793		1,1,1,2-TETRACHLOROETHANE	0.6059						2.2
CAL01	Q2864793		1,1,2,2-TETRACHLOROETHANE	0.9642						2.7
CAL01	Q2864793		TETRACHLOROETHENE	0.5820						2.6
CAL01	Q2864793		TOLUENE	0.9494						7.8
CAL01	Q2864793		1,1,1-TRICHLOROETHANE	0.3079						4.1
CAL01	Q2864793		1,1,2-TRICHLOROETHANE	0.1980						4.8
CAL01	Q2864793		TRICHLOROETHENE	0.2455						4.8
CAL01	Q2864793		TRICHLOROFLUOROMETHANE	0.2921						4.9
CAL01	Q2864793		1,2,3-TRICHLOROPROPANE	0.3116						1.8
CAL01	Q2864793		VINYL ACETATE	0.7347						13
CAL01	Q2864793		VINYL CHLORIDE	0.4017						7.8
CAL01	Q2864793		DICHLOROETHANE-D4	0.3949						4.8
CAL01	Q2864793		TOLUENE-D8	0.9177						2.1
CAL01	Q2864793		4-BROMOFLUOROBENZENE	0.7377						1.3
CAL01	Q2864793		DIBROMOFLUOROMETHANE	0.2434						2
ICV01	Q2864794		Analysis Date/Time: 24-Sep-14 12:12							
ICV01	Q2864794		ACETONE (2-PROPANONE)	50			53.3	ug/L	106.6	
ICV01	Q2864794		ACRYLONITRILE	100			104	ug/L	104	
ICV01	Q2864794		BENZENE	10			10.5	ug/L	105	
ICV01	Q2864794		BROMOCHLOROMETHANE	10			11.6	ug/L	116	
ICV01	Q2864794		BROMODICHLOROMETHANE	10			10.7	ug/L	107	
ICV01	Q2864794		BROMOFORM	10			11	ug/L	110	
ICV01	Q2864794		BROMOMETHANE	10			10.4	ug/L	104	
ICV01	Q2864794		CARBON DISULFIDE	10			10.7	ug/L	107	
ICV01	Q2864794		CARBON TETRACHLORIDE	10			11.6	ug/L	116	
ICV01	Q2864794		CHLOROBENZENE	10			9.77	ug/L	97.7	
ICV01	Q2864794		DIBROMOCHLOROMETHANE	10			11	ug/L	110	
ICV01	Q2864794		CHLOROETHANE	10			11.8	ug/L	118	
ICV01	Q2864794		CHLOROFORM	10			11.3	ug/L	113	

VOLATILE ORGANICS (CAPILLARY COLUMN) SW846-8260B **O510.6**

R631184 Analyst: H WILLIAMS Run Date: 30-Sep-14
Analytical Reviewer: R SHAMP Review Date: 07-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2864794		CHLOROMETHANE	10			10.4	ug/L	104	
ICV01	Q2864794		1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	10			10.4	ug/L	104	
ICV01	Q2864794		1,2-DIBROMOETHANE (EDB)	10			10.3	ug/L	103	
ICV01	Q2864794		DIBROMOMETHANE	10			11.4	ug/L	114	
ICV01	Q2864794		1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	10			9.97	ug/L	99.7	
ICV01	Q2864794		1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	10			10.7	ug/L	107	
ICV01	Q2864794		TRANS-1,4-DICHLORO-2-BUTENE	20			19.4	ug/L	97	
ICV01	Q2864794		1,1-DICHLOROETHANE	10			11.6	ug/L	116	
ICV01	Q2864794		1,2-DICHLOROETHANE	10			10.7	ug/L	107	
ICV01	Q2864794		1,1-DICHLOROETHENE	10			11.3	ug/L	113	
ICV01	Q2864794		CIS-1,2-DICHLOROETHENE	10			10.6	ug/L	106	
ICV01	Q2864794		TRANS-1,2-DICHLOROETHENE	10			10.7	ug/L	107	
ICV01	Q2864794		1,2-DICHLOROPROPANE	10			10.3	ug/L	103	
ICV01	Q2864794		CIS-1,3-DICHLOROPROPENE	10			9.5	ug/L	95	
ICV01	Q2864794		TRANS-1,3-DICHLOROPROPENE	10			10.2	ug/L	102	
ICV01	Q2864794		ETHYL BENZENE	10			10.8	ug/L	108	
ICV01	Q2864794		2-HEXANONE	50			51.5	ug/L	103	
ICV01	Q2864794		IODOMETHANE	10			10.5	ug/L	105	
ICV01	Q2864794		DICHLOROMETHANE (METHYLENE CHLORIDE)	10			10.4	ug/L	104	
ICV01	Q2864794		METHYL ETHYL KETONE	50			53.5	ug/L	107	
ICV01	Q2864794		4-METHYL-2-PENTANONE	50			51.4	ug/L	102.8	
ICV01	Q2864794		STYRENE	10			10.8	ug/L	108	
ICV01	Q2864794		1,1,1,2-TETRACHLOROETHANE	10			10.6	ug/L	106	
ICV01	Q2864794		1,1,2,2-TETRACHLOROETHANE	10			10.6	ug/L	106	
ICV01	Q2864794		TETRACHLOROETHENE	10			11.6	ug/L	116	
ICV01	Q2864794		TOLUENE	10			10.3	ug/L	103	
ICV01	Q2864794		1,1,1-TRICHLOROETHANE	10			11.6	ug/L	116	
ICV01	Q2864794		1,1,2-TRICHLOROETHANE	10			10.5	ug/L	105	
ICV01	Q2864794		TRICHLOROETHENE	10			10.3	ug/L	103	
ICV01	Q2864794		TRICHLOROFLUOROMETHANE	10			10.8	ug/L	108	
ICV01	Q2864794		1,2,3-TRICHLOROPROPANE	10			11.2	ug/L	112	
ICV01	Q2864794		VINYL ACETATE	10			12.8	ug/L	128	
ICV01	Q2864794		VINYL CHLORIDE	10			9.9	ug/L	99	
CCVD	Q2867368		Analysis Date/Time: 30-Sep-14 07:01							
CCVD	Q2867368		ACETONE (2-PROPANONE)	0.1914			0.2037			6.4
CCVD	Q2867368		ACRYLONITRILE	0.1151			0.1500			30.3
CCVD	Q2867368		BENZENE	0.9738			1.0387			6.7
CCVD	Q2867368		BROMOCHLOROMETHANE	0.1043			0.1177			12.8
CCVD	Q2867368		BROMODICHLOROMETHANE	0.3057			0.3306			8.1
CCVD	Q2867368		BROMOFORM	0.4033			0.4301			6.6
CCVD	Q2867368		BROMOMETHANE	10.0		LIN	10.9			8.8
CCVD	Q2867368		CARBON DISULFIDE	0.5904			0.6165			4.4
CCVD	Q2867368		CARBON TETRACHLORIDE	0.2454			0.3257			32.7
CCVD	Q2867368		CHLOROBENZENE	1.7275			1.7522			1.4
CCVD	Q2867368		DIBROMOCHLOROMETHANE	0.6044			0.6547			8.3

VOLATILE ORGANICS (CAPILLARY COLUMN) SW846-8260B **O510.6**

R631184 Analyst: H WILLIAMS Run Date: 30-Sep-14
Analytical Reviewer: R SHAMP Review Date: 07-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CCVD	Q2867368		CHLOROETHANE	0.1860			0.1955			5.1
CCVD	Q2867368		CHLOROFORM	0.4107			0.4226			2.9
CCVD	Q2867368		CHLOROMETHANE	0.4608			0.4113			10.7
CCVD	Q2867368		1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	0.2390			0.2764			15.6
CCVD	Q2867368		1,2-DIBROMOETHANE (EDB)	0.2023			0.2129			5.2
CCVD	Q2867368		DIBROMOMETHANE	0.1374			0.1454			5.8
CCVD	Q2867368		1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	1.3814			1.4629			5.9
CCVD	Q2867368		1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	1.4091			1.5254			8.3
CCVD	Q2867368		TRANS-1,4-DICHLORO-2-BUTENE	0.5625			0.5960			6
CCVD	Q2867368		1,1-DICHLOROETHANE	0.5098			0.5256			3.1
CCVD	Q2867368		1,2-DICHLOROETHANE	0.5082			0.5342			5.1
CCVD	Q2867368		1,1-DICHLOROETHENE	0.2044			0.2004			2
CCVD	Q2867368		CIS-1,2-DICHLOROETHENE	0.2438			0.2505			2.7
CCVD	Q2867368		TRANS-1,2-DICHLOROETHENE	0.2275			0.2390			5.1
CCVD	Q2867368		1,2-DICHLOROPROPANE	0.2970			0.3069			3.3
CCVD	Q2867368		CIS-1,3-DICHLOROPROPENE	0.3636			0.3672			1
CCVD	Q2867368		TRANS-1,3-DICHLOROPROPENE	0.3048			0.3127			2.6
CCVD	Q2867368		ETHYL BENZENE	0.8512			0.8928			4.9
CCVD	Q2867368		2-HEXANONE	1.1677			1.2592			7.8
CCVD	Q2867368		IODOMETHANE	0.2934			0.2900			1.2
CCVD	Q2867368		DICHLOROMETHANE (METHYLENE CHLORIDE)	10.0		LIN	12.1			21.3
CCVD	Q2867368		METHYL ETHYL KETONE	0.0433			0.0452			4.4
CCVD	Q2867368		4-METHYL-2-PENTANONE	0.6055			0.6346			4.8
CCVD	Q2867368		STYRENE	1.7917			1.9238			7.4
CCVD	Q2867368		1,1,1,2-TETRACHLOROETHANE	0.6059			0.6497			7.2
CCVD	Q2867368		1,1,2,2-TETRACHLOROETHANE	0.9642			1.0332			7.2
CCVD	Q2867368		TETRACHLOROETHENE	0.5820			0.6040			3.8
CCVD	Q2867368		TOLUENE	0.9494			1.0126			6.7
CCVD	Q2867368		1,1,1-TRICHLOROETHANE	0.3079			0.3287			6.8
CCVD	Q2867368		1,1,2-TRICHLOROETHANE	0.1980			0.2112			6.7
CCVD	Q2867368		TRICHLOROETHENE	0.2455			0.2480			1
CCVD	Q2867368		TRICHLOROFLUOROMETHANE	0.2921			0.2939			0.6
CCVD	Q2867368		1,2,3-TRICHLOROPROPANE	0.3116			0.3429			10
CCVD	Q2867368		VINYL ACETATE	0.7347			0.7220			1.7
CCVD	Q2867368		VINYL CHLORIDE	0.4017			0.3689			8.2
CCVD	Q2867368		DICHLOROETHANE-D4	0.3949			0.4116			4.2
CCVD	Q2867368		TOLUENE-D8	0.9177			0.9392			2.3
CCVD	Q2867368		4-BROMOFLUOROBENZENE	0.7377			0.7635			3.5
CCVD	Q2867368		DIBROMOFLUOROMETHANE	0.2434			0.2542			4.4
BLA01	Q2867375		Analysis Date/Time: 30-Sep-14 07:26							
BLA01	Q2867375		ACETONE (2-PROPANONE)			BDL	10.	ug/L		
BLA01	Q2867375		ACRYLONITRILE			BDL	5.0	ug/L		
BLA01	Q2867375		BENZENE			BDL	1.0	ug/L		
BLA01	Q2867375		BROMOCHLOROMETHANE			BDL	1.0	ug/L		
BLA01	Q2867375		BROMODICHLOROMETHANE			BDL	1.0	ug/L		

VOLATILE ORGANICS (CAPILLARY COLUMN) SW846-8260B **O510.6**

R631184 Analyst: H WILLIAMS Run Date: 30-Sep-14
Analytical Reviewer: R SHAMP Review Date: 07-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA01	Q2867375		BROMOFORM			BDL	1.0	ug/L		
BLA01	Q2867375		BROMOMETHANE			BDL	1.0	ug/L		
BLA01	Q2867375		CARBON DISULFIDE			BDL	1.0	ug/L		
BLA01	Q2867375		CARBON TETRACHLORIDE			BDL	1.0	ug/L		
BLA01	Q2867375		CHLOROBENZENE			BDL	1.0	ug/L		
BLA01	Q2867375		DIBROMOCHLOROMETHANE			BDL	1.0	ug/L		
BLA01	Q2867375		CHLOROETHANE			BDL	1.0	ug/L		
BLA01	Q2867375		CHLOROFORM			BDL	1.0	ug/L		
BLA01	Q2867375		CHLOROMETHANE			BDL	1.0	ug/L		
BLA01	Q2867375		1,2-DIBROMO-3-CHLOROPROPANE (DBCP)			BDL	1.0	ug/L		
BLA01	Q2867375		1,2-DIBROMOETHANE (EDB)			BDL	1.0	ug/L		
BLA01	Q2867375		DIBROMOMETHANE			BDL	1.0	ug/L		
BLA01	Q2867375		1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)			BDL	1.0	ug/L		
BLA01	Q2867375		1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)			BDL	1.0	ug/L		
BLA01	Q2867375		TRANS-1,4-DICHLORO-2-BUTENE			BDL	1.0	ug/L		
BLA01	Q2867375		1,1-DICHLOROETHANE			BDL	1.0	ug/L		
BLA01	Q2867375		1,2-DICHLOROETHANE			BDL	1.0	ug/L		
BLA01	Q2867375		1,1-DICHLOROETHENE			BDL	1.0	ug/L		
BLA01	Q2867375		CIS-1,2-DICHLOROETHENE			BDL	1.0	ug/L		
BLA01	Q2867375		TRANS-1,2-DICHLOROETHENE			BDL	1.0	ug/L		
BLA01	Q2867375		1,2-DICHLOROPROPANE			BDL	1.0	ug/L		
BLA01	Q2867375		CIS-1,3-DICHLOROPROPENE			BDL	1.0	ug/L		
BLA01	Q2867375		TRANS-1,3-DICHLOROPROPENE			BDL	1.0	ug/L		
BLA01	Q2867375		ETHYL BENZENE			BDL	1.0	ug/L		
BLA01	Q2867375		2-HEXANONE			BDL	5.0	ug/L		
BLA01	Q2867375		IODOMETHANE			BDL	1.0	ug/L		
BLA01	Q2867375		DICHLOROMETHANE (METHYLENE CHLORIDE)			BDL	1.0	ug/L		
BLA01	Q2867375		METHYL ETHYL KETONE			BDL	5.0	ug/L		
BLA01	Q2867375		4-METHYL-2-PENTANONE			BDL	5.0	ug/L		
BLA01	Q2867375		STYRENE			BDL	1.0	ug/L		
BLA01	Q2867375		1,1,1,2-TETRACHLOROETHANE			BDL	1.0	ug/L		
BLA01	Q2867375		1,1,2,2-TETRACHLOROETHANE			BDL	1.0	ug/L		
BLA01	Q2867375		TETRACHLOROETHENE			BDL	1.0	ug/L		
BLA01	Q2867375		TOLUENE			BDL	1.0	ug/L		
BLA01	Q2867375		1,1,1-TRICHLOROETHANE			BDL	1.0	ug/L		
BLA01	Q2867375		1,1,2-TRICHLOROETHANE			BDL	1.0	ug/L		
BLA01	Q2867375		TRICHLOROETHENE			BDL	1.0	ug/L		
BLA01	Q2867375		TRICHLOROFLUOROMETHANE			BDL	1.0	ug/L		
BLA01	Q2867375		1,2,3-TRICHLOROPROPANE			BDL	1.0	ug/L		
BLA01	Q2867375		VINYL ACETATE			BDL	1.0	ug/L		
BLA01	Q2867375		VINYL CHLORIDE			BDL	1.0	ug/L		
BLA01	Q2867375		XYLENES (O/M/P-XYLENE)			BDL	0.81	ug/L		
BLA01	Q2867375		DICHLOROETHANE-D4						106	
BLA01	Q2867375		TOLUENE-D8						95	
BLA01	Q2867375		4-BROMOFLUOROBENZENE						93	

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R631184 Analyst: H WILLIAMS Run Date: 30-Sep-14
Analytical Reviewer: R SHAMP Review Date: 07-Oct-14
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QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA01	Q2867375		DIBROMOFLUOROMETHANE						106	
LCS01	Q2867380		Analysis Date/Time: 30-Sep-14 08:03							
LCS01	Q2867380		ACETONE (2-PROPANONE)	50			40.5	ug/L	81	
LCS01	Q2867380		ACRYLONITRILE	100			113	ug/L	113	
LCS01	Q2867380		BENZENE	10			10.3	ug/L	103	
LCS01	Q2867380		BROMOCHLOROMETHANE	10			11.5	ug/L	115	
LCS01	Q2867380		BROMODICHLOROMETHANE	10			10.4	ug/L	104	
LCS01	Q2867380		BROMOFORM	10			11	ug/L	110	
LCS01	Q2867380		BROMOMETHANE	10			9.71	ug/L	97.1	
LCS01	Q2867380		CARBON DISULFIDE	10			10.5	ug/L	105	
LCS01	Q2867380		CARBON TETRACHLORIDE	10		!	13.9	ug/L	139	
LCS01	Q2867380		CHLOROBENZENE	10			9.8	ug/L	98	
LCS01	Q2867380		DIBROMOCHLOROMETHANE	10			10.8	ug/L	108	
LCS01	Q2867380		CHLOROETHANE	10			11.1	ug/L	111	
LCS01	Q2867380		CHLOROFORM	10			10.6	ug/L	106	
LCS01	Q2867380		CHLOROMETHANE	10			8.91	ug/L	89.1	
LCS01	Q2867380		1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	10			9.62	ug/L	96.2	
LCS01	Q2867380		1,2-DIBROMOETHANE (EDB)	10			10.1	ug/L	101	
LCS01	Q2867380		DIBROMOMETHANE	10			11	ug/L	110	
LCS01	Q2867380		1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	10			9.82	ug/L	98.2	
LCS01	Q2867380		1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	10			10.8	ug/L	108	
LCS01	Q2867380		TRANS-1,4-DICHLORO-2-BUTENE	20			15.8	ug/L	79	
LCS01	Q2867380		1,1-DICHLOROETHANE	10			11.3	ug/L	113	
LCS01	Q2867380		1,2-DICHLOROETHANE	10			9.86	ug/L	98.6	
LCS01	Q2867380		1,1-DICHLOROETHENE	10			10.4	ug/L	104	
LCS01	Q2867380		CIS-1,2-DICHLOROETHENE	10			10.1	ug/L	101	
LCS01	Q2867380		TRANS-1,2-DICHLOROETHENE	10			10.7	ug/L	107	
LCS01	Q2867380		1,2-DICHLOROPROPANE	10			9.68	ug/L	96.8	
LCS01	Q2867380		CIS-1,3-DICHLOROPROPENE	10			8.95	ug/L	89.5	
LCS01	Q2867380		TRANS-1,3-DICHLOROPROPENE	10			9.79	ug/L	97.9	
LCS01	Q2867380		ETHYL BENZENE	10			10.6	ug/L	106	
LCS01	Q2867380		2-HEXANONE	50			49.7	ug/L	99.4	
LCS01	Q2867380		IODOMETHANE	10			9.75	ug/L	97.5	
LCS01	Q2867380		DICHLOROMETHANE (METHYLENE CHLORIDE)	10			9.43	ug/L	94.3	
LCS01	Q2867380		METHYL ETHYL KETONE	50			47.4	ug/L	94.8	
LCS01	Q2867380		4-METHYL-2-PENTANONE	50			46.2	ug/L	92.4	
LCS01	Q2867380		STYRENE	10			10.7	ug/L	107	
LCS01	Q2867380		1,1,1,2-TETRACHLOROETHANE	10			10.5	ug/L	105	
LCS01	Q2867380		1,1,2,2-TETRACHLOROETHANE	10			10.4	ug/L	104	
LCS01	Q2867380		TETRACHLOROETHENE	10			11.5	ug/L	115	
LCS01	Q2867380		TOLUENE	10			10.2	ug/L	102	
LCS01	Q2867380		1,1,1-TRICHLOROETHANE	10			11.5	ug/L	115	
LCS01	Q2867380		1,1,2-TRICHLOROETHANE	10			10.1	ug/L	101	
LCS01	Q2867380		TRICHLOROETHENE	10			10.2	ug/L	102	
LCS01	Q2867380		TRICHLOROFLUOROMETHANE	10			10	ug/L	100	

VOLATILE ORGANICS (CAPILLARY COLUMN) SW846-8260B **O510.6**

R631184 Analyst: H WILLIAMS Run Date: 30-Sep-14
Analytical Reviewer: R SHAMP Review Date: 07-Oct-14
Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
LCS01	Q2867380		1,2,3-TRICHLOROPROPANE	10			10.5	ug/L	105	
LCS01	Q2867380		VINYL ACETATE	10		!	11.8	ug/L	118	
LCS01	Q2867380		VINYL CHLORIDE	10			8.97	ug/L	89.7	
LCS01	Q2867380		XYLENES (O/M/P-XYLENE)	30			31.3	ug/L	104.3	
SAMPLE	AA28606		Analysis Date/Time: 30-Sep-14 09:27							
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28600		Analysis Date/Time: 30-Sep-14 14:06							
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
SPI01	Q2867381	AA28600	Analysis Date/Time: 30-Sep-14 14:31							
SPI01	Q2867381	AA28600	ACETONE (2-PROPANONE)	0	50		46.7	ug/L	93.4	
SPI01	Q2867381	AA28600	ACRYLONITRILE	0	100		45.	ug/L	45	
SPI01	Q2867381	AA28600	BENZENE	0	10		10.3	ug/L	103	
SPI01	Q2867381	AA28600	BROMOCHLOROMETHANE	0	10		10.5	ug/L	105	
SPI01	Q2867381	AA28600	BROMODICHLOROMETHANE	0	10		10.1	ug/L	101	
SPI01	Q2867381	AA28600	BROMOFORM	0	10		8.22	ug/L	82.2	
SPI01	Q2867381	AA28600	BROMOMETHANE	0	10		10.4	ug/L	104	
SPI01	Q2867381	AA28600	CARBON DISULFIDE	0	10		7.76	ug/L	77.6	
SPI01	Q2867381	AA28600	CARBON TETRACHLORIDE	0	10		11.5	ug/L	115	
SPI01	Q2867381	AA28600	CHLOROBENZENE	0	10		9.55	ug/L	95.5	
SPI01	Q2867381	AA28600	DIBROMOCHLOROMETHANE	0	10		9.56	ug/L	95.6	
SPI01	Q2867381	AA28600	CHLOROETHANE	0	10		9.83	ug/L	98.3	
SPI01	Q2867381	AA28600	CHLOROFORM	0	10		9.96	ug/L	99.6	
SPI01	Q2867381	AA28600	CHLOROMETHANE	0	10		8.74	ug/L	87.4	
SPI01	Q2867381	AA28600	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	0	10		9.55	ug/L	95.5	
SPI01	Q2867381	AA28600	1,2-DIBROMOETHANE (EDB)	0	10		9.54	ug/L	95.4	
SPI01	Q2867381	AA28600	DIBROMOMETHANE	0	10		9.91	ug/L	99.1	
SPI01	Q2867381	AA28600	1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	0	10		9.88	ug/L	98.8	
SPI01	Q2867381	AA28600	1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	0	10		10.2	ug/L	102	
SPI01	Q2867381	AA28600	TRANS-1,4-DICHLORO-2-BUTENE	0	20		6.9	ug/L	34.5	
SPI01	Q2867381	AA28600	1,1-DICHLOROETHANE	0	10		9.78	ug/L	97.8	
SPI01	Q2867381	AA28600	1,2-DICHLOROETHANE	0	10		10.2	ug/L	102	
SPI01	Q2867381	AA28600	1,1-DICHLOROETHENE	0	10		8.87	ug/L	88.7	
SPI01	Q2867381	AA28600	CIS-1,2-DICHLOROETHENE	0	10		9.37	ug/L	93.7	
SPI01	Q2867381	AA28600	TRANS-1,2-DICHLOROETHENE	0	10		9.48	ug/L	94.8	
SPI01	Q2867381	AA28600	1,2-DICHLOROPROPANE	0	10		10	ug/L	100	
SPI01	Q2867381	AA28600	CIS-1,3-DICHLOROPROPENE	0	10		7.7	ug/L	77	
SPI01	Q2867381	AA28600	TRANS-1,3-DICHLOROPROPENE	0	10		7.65	ug/L	76.5	
SPI01	Q2867381	AA28600	ETHYL BENZENE	0	10		9.48	ug/L	94.8	
SPI01	Q2867381	AA28600	2-HEXANONE	0	50		50.8	ug/L	101.6	
SPI01	Q2867381	AA28600	IODOMETHANE	0	10		9.12	ug/L	91.2	
SPI01	Q2867381	AA28600	DICHLOROMETHANE (METHYLENE CHLORIDE)	0	10		9.92	ug/L	99.2	
SPI01	Q2867381	AA28600	METHYL ETHYL KETONE	0	50		48.9	ug/L	97.8	
SPI01	Q2867381	AA28600	4-METHYL-2-PENTANONE	0	50		48.8	ug/L	97.6	
SPI01	Q2867381	AA28600	STYRENE	0	10		7.18	ug/L	71.8	
SPI01	Q2867381	AA28600	1,1,1,2-TETRACHLOROETHANE	0	10		10	ug/L	100	

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Quality Assurance Report

66865

VOLATILE ORGANICS (CAPILLARY COLUMN) SW846-8260B

O510.6

R631184 Analyst: H WILLIAMS Run Date: 30-Sep-14
Analytical Reviewer: R SHAMP Review Date: 07-Oct-14

Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SPI01	Q2867381	AA28600	1,1,2,2-TETRACHLOROETHANE	0	10		10.8	ug/L	108	
SPI01	Q2867381	AA28600	TETRACHLOROETHENE	0	10		9.69	ug/L	96.9	
SPI01	Q2867381	AA28600	TOLUENE	0	10		9.54	ug/L	95.4	
SPI01	Q2867381	AA28600	1,1,1-TRICHLOROETHANE	0	10		10.5	ug/L	105	
SPI01	Q2867381	AA28600	1,1,2-TRICHLOROETHANE	0	10		10.1	ug/L	101	
SPI01	Q2867381	AA28600	TRICHLOROETHENE	0	10		9.86	ug/L	98.6	
SPI01	Q2867381	AA28600	TRICHLOROFLUOROMETHANE	0	10		9.11	ug/L	91.1	
SPI01	Q2867381	AA28600	1,2,3-TRICHLOROPROPANE	0	10		10.5	ug/L	105	
SPI01	Q2867381	AA28600	VINYL ACETATE	0	10		6.29	ug/L	62.9	
SPI01	Q2867381	AA28600	VINYL CHLORIDE	0	10		8.66	ug/L	86.6	
SPI01	Q2867381	AA28600	XYLENES (O/M/P-XYLENE)	0	30		28.4	ug/L	94.7	
DPS01	Q2867382	AA28600	Analysis Date/Time: 30-Sep-14 14:57							
DPS01	Q2867382	AA28600	ACETONE (2-PROPANONE)	0	50		39.3	ug/L	78.5	17.4
DPS01	Q2867382	AA28600	ACRYLONITRILE	0	100		37.6	ug/L	37.6	17.9
DPS01	Q2867382	AA28600	BENZENE	0	10		9.87	ug/L	98.7	3.9
DPS01	Q2867382	AA28600	BROMOCHLOROMETHANE	0	10		9.83	ug/L	98.3	6.4
DPS01	Q2867382	AA28600	BROMODICHLOROMETHANE	0	10		9.51	ug/L	95.1	5.5
DPS01	Q2867382	AA28600	BROMOFORM	0	10		8.03	ug/L	80.3	2.3
DPS01	Q2867382	AA28600	BROMOMETHANE	0	10		10.5	ug/L	105.3	1.2
DPS01	Q2867382	AA28600	CARBON DISULFIDE	0	10		7.71	ug/L	77.1	0.6
DPS01	Q2867382	AA28600	CARBON TETRACHLORIDE	0	10		11.4	ug/L	113.8	1
DPS01	Q2867382	AA28600	CHLOROBENZENE	0	10		9.34	ug/L	93.4	2.2
DPS01	Q2867382	AA28600	DIBROMOCHLOROMETHANE	0	10		8.99	ug/L	89.9	6.1
DPS01	Q2867382	AA28600	CHLOROETHANE	0	10		9.97	ug/L	99.7	1.4
DPS01	Q2867382	AA28600	CHLOROFORM	0	10		9.47	ug/L	94.7	5
DPS01	Q2867382	AA28600	CHLOROMETHANE	0	10		8.15	ug/L	81.5	7
DPS01	Q2867382	AA28600	1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	0	10		8.53	ug/L	85.3	11.3
DPS01	Q2867382	AA28600	1,2-DIBROMOETHANE (EDB)	0	10		9.3	ug/L	93	2.5
DPS01	Q2867382	AA28600	DIBROMOMETHANE	0	10		9.52	ug/L	95.2	4
DPS01	Q2867382	AA28600	1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	0	10		9.64	ug/L	96.4	2.5
DPS01	Q2867382	AA28600	1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	0	10		10.1	ug/L	100.9	1.3
DPS01	Q2867382	AA28600	TRANS-1,4-DICHLORO-2-BUTENE	0	20		6.6	ug/L	33	4.4
DPS01	Q2867382	AA28600	1,1-DICHLOROETHANE	0	10		9.63	ug/L	96.3	1.5
DPS01	Q2867382	AA28600	1,2-DICHLOROETHANE	0	10		9.48	ug/L	94.8	7.6
DPS01	Q2867382	AA28600	1,1-DICHLOROETHENE	0	10		8.58	ug/L	85.8	3.3
DPS01	Q2867382	AA28600	CIS-1,2-DICHLOROETHENE	0	10		9.4	ug/L	94	0.3
DPS01	Q2867382	AA28600	TRANS-1,2-DICHLOROETHENE	0	10		9.43	ug/L	94.3	0.5
DPS01	Q2867382	AA28600	1,2-DICHLOROPROPANE	0	10		9.64	ug/L	96.4	3.8
DPS01	Q2867382	AA28600	CIS-1,3-DICHLOROPROPENE	0	10		7.62	ug/L	76.2	1
DPS01	Q2867382	AA28600	TRANS-1,3-DICHLOROPROPENE	0	10		7.72	ug/L	77.2	0.9
DPS01	Q2867382	AA28600	ETHYL BENZENE	0	10		9.38	ug/L	93.8	1.1
DPS01	Q2867382	AA28600	2-HEXANONE	0	50		44.4	ug/L	88.8	13.5
DPS01	Q2867382	AA28600	IODOMETHANE	0	10		9.13	ug/L	91.3	0.1
DPS01	Q2867382	AA28600	DICHLOROMETHANE (METHYLENE CHLORIDE)	0	10		9.73	ug/L	97.3	1.9
DPS01	Q2867382	AA28600	METHYL ETHYL KETONE	0	50		40.8	ug/L	81.7	17.9

VOLATILE ORGANICS (CAPILLARY COLUMN) SW846-8260B — **O510.6**

R631184 Analyst: H WILLIAMS — Run Date: 30-Sep-14
Analytical Reviewer: R SHAMP — Review Date: 07-Oct-14

Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
DPS01	Q2867382	AA28600	4-METHYL-2-PENTANONE	0	50		43.5	ug/L	86.9	11.6
DPS01	Q2867382	AA28600	STYRENE	0	10		6.93	ug/L	69.3	3.5
DPS01	Q2867382	AA28600	1,1,1,2-TETRACHLOROETHANE	0	10		9.53	ug/L	95.3	5.1
DPS01	Q2867382	AA28600	1,1,2,2-TETRACHLOROETHANE	0	10		9.86	ug/L	98.6	8.6
DPS01	Q2867382	AA28600	TETRACHLOROETHENE	0	10		9.5	ug/L	95	2
DPS01	Q2867382	AA28600	TOLUENE	0	10		9.35	ug/L	93.5	2
DPS01	Q2867382	AA28600	1,1,1-TRICHLOROETHANE	0	10		9.54	ug/L	95.4	9.4
DPS01	Q2867382	AA28600	1,1,2-TRICHLOROETHANE	0	10		9.58	ug/L	95.8	4.8
DPS01	Q2867382	AA28600	TRICHLOROETHENE	0	10		9.84	ug/L	98.4	0.2
DPS01	Q2867382	AA28600	TRICHLOROFLUOROMETHANE	0	10		9.03	ug/L	90.3	0.9
DPS01	Q2867382	AA28600	1,2,3-TRICHLOROPROPANE	0	10		9.49	ug/L	94.9	9.8
DPS01	Q2867382	AA28600	VINYL ACETATE	0	10		5.89	ug/L	58.9	6.6
DPS01	Q2867382	AA28600	VINYL CHLORIDE	0	10		8.36	ug/L	83.6	3.5
DPS01	Q2867382	AA28600	XYLENES (O/M/P-XYLENE)	0	30		27.3	ug/L	91.0	4.0
SAMPLE	AA28601		Analysis Date/Time: 30-Sep-14 15:22							
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28602		Analysis Date/Time: 30-Sep-14 15:47							
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28603		Analysis Date/Time: 30-Sep-14 16:13							
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		Analysis Date/Time: 30-Sep-14 16:38							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		Analysis Date/Time: 30-Sep-14 17:03							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		Analysis Date/Time: 30-Sep-14 17:29							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							

Q2864793 Value reported for analytes calibrated by linear (LIN) or
Q2864793 quadratic (QDR) equations is r2 (Coef. of Determination).
Q2867368 Value reported for analytes calibrated by linear (LIN) or quadratic (QDR)
Q2867368 equations is concentration.(UG/L)
Q2867381 2-Chloroethyl vinyl ether degrades under acidic conditions. No recovery
Q2867381 possible. Unacidified sample not available.
Q2867382 2-Chloroethyl vinyl ether degrades under acidic conditions. No recovery
Q2867382 possible. Unacidified sample not available.

ZINC ICP SW846-6010B — **M139.3**
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R630909 Analyst: K KAMARA — Run Date: 29-Sep-14 — Instrument: PREP
Prep Reviewer: S ENDERSEN — Review Date: 29-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2864845		Analytical Run: R630959							
LCS	Q2864846		Analytical Run: R630959							
DUP02	Q2864847		Analytical Run: R630959							
SPI02	Q2864848		Analytical Run: R630959							
SAMPLE	AA28600	Rep: 0	Analytical Run: R630959							

R630947 Analyst: K KAMARA — Run Date: 30-Sep-14 — Instrument: PREP

ZINC ICP SW846-6010B **M139.3**
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R630947 Analyst: K KAMARA Run Date: 30-Sep-14
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14 Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865197		Analytical Run: R631006							
LCS	Q2865198		Analytical Run: R631006							
DUP02	Q2865199		Analytical Run: R631006							
SPI02	Q2865200		Analytical Run: R631006							
SAMPLE	AA28601	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28602	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28603	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28604	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28605	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28606	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28607	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28608	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28609	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28610	Rep: 0	Analytical Run: R631006							

R630948 Analyst: K KAMARA Run Date: 30-Sep-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865206		Analytical Run: R631006							
LCS	Q2865207		Analytical Run: R631006							
DUP02	Q2865208		Analytical Run: R631006							
SPI02	Q2865209		Analytical Run: R631006							
SAMPLE	AA28611	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28612	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28613	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28614	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28615	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28616	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28617	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28618	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28619	Rep: 0	Analytical Run: R631006							
SAMPLE	AA28620	Rep: 0	Analytical Run: R631006							

R630959 Analyst: J KRAMER Run Date: 29-Sep-14 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 30-Sep-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2865245		ZINC	1			1.03	mg/L	103.0	
CDL01	Q2865288		ZINC	0.040			0.0382	mg/L	95.5	
ICS-AB	Q2865300		ZINC	3			2.95	mg/L	98.3	
BLA02	Q2864845		ZINC			<	0.00160	mg/L		
LCS	Q2864846		ZINC	0.5			0.492	mg/L	98.4	
SER01	Q2865295	AA28491	ZINC	0.00436		CNA	0.0202	mg/L		
DUP02	Q2864847	AA28491	ZINC	0.00436		CNA	0.00559	mg/L		
SPI02	Q2864848	AA28491	ZINC	0.00436	0.500		0.468	mg/L	92.7	
CCV	Q2865275		ZINC	5			4.74	mg/L	94.8	
BLA01	Q2865253		ZINC			<	0.00160	mg/L		

ZINC ICP SW846-6010B M139.3
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R630959 Analyst: J KRAMER Run Date: 29-Sep-14
Analytical Reviewer: S ENDERSEN Review Date: 30-Sep-14

Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28600		See Certificate of Analysis, Rep: 0							
CCV	Q2865276		ZINC	5			5.06	mg/L	101.2	
BLA01	Q2865254		ZINC			<	0.00160	mg/L		
SER01	Q2865297	AA28572	ZINC	0.00456		CNA	0.0135	mg/L		
CDL01	Q2865291		ZINC	0.0200			0.0207	mg/L	103.5	
ICS-AB	Q2865267		ZINC	1.00			0.895	mg/L	89.5	
Q2865295	1:5 Dilution.									
Q2865295	There was possible matrix interference for K and Na									
Q2865295	as indicated by the serial dilution results.									

R631006 Analyst: J KRAMER Run Date: 30-Sep-14 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2865702		ZINC	1			1.02	mg/L	102.0	
CDL01	Q2865697		ZINC	10			10.0	mg/L	100.0	
ICS-AB	Q2865691		ZINC	1.00			0.950	mg/L	95.0	
CCV	Q2865720		ZINC	5			4.82	mg/L	96.4	
BLA01	Q2865706		ZINC			<	0.00160	mg/L		
BLA02	Q2865197		ZINC			<	0.00160	mg/L		
LCS	Q2865198		ZINC	0.5			0.519	mg/L	103.8	
SER01	Q2865734	AA28603	ZINC	0.00540		CNA	0.0158	mg/L		
SAMPLE	AA28603		See Certificate of Analysis, Rep: 0							
DUP02	Q2865199	AA28603	ZINC	0.00540		CNA	0.00499	mg/L		
SPI02	Q2865200	AA28603	ZINC	0.00540	0.500		0.500	mg/L	98.9	
CCV	Q2865721		ZINC	5			4.92	mg/L	98.4	
BLA01	Q2865707		ZINC			<	0.00160	mg/L		
SAMPLE	AA28601		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28602		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28604		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28605		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28606		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28607		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28608		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28609		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28610		See Certificate of Analysis, Rep: 0							
CCV	Q2865722		ZINC	5			4.91	mg/L	98.2	
BLA01	Q2865708		ZINC			<	0.00160	mg/L		
BLA02	Q2865206		ZINC			<	0.00160	mg/L		
LCS	Q2865207		ZINC	0.5			0.504	mg/L	100.8	
SER01	Q2865735	AA28612	ZINC	0.00564		CNA	0.0137	mg/L		
SAMPLE	AA28612		See Certificate of Analysis, Rep: 0							
DUP02	Q2865208	AA28612	ZINC	0.00564		CNA	0.00464	mg/L		
SPI02	Q2865209	AA28612	ZINC	0.00564	0.500		0.483	mg/L	95.5	
CCV	Q2865723		ZINC	5			4.84	mg/L	96.8	
BLA01	Q2865709		ZINC			<	0.00160	mg/L		
SAMPLE	AA28611		See Certificate of Analysis, Rep: 0							

ZINC ICP SW846-6010B M139.3
Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R631006 Analyst: J KRAMER Run Date: 30-Sep-14
Analytical Reviewer: S ENDERSEN Review Date: 01-Oct-14 Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
SAMPLE	AA28613		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28614		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28615		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28616		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28617		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28618		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28619		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28620		See Certificate of Analysis, Rep: 0							
CCV	Q2865724		ZINC	5			4.97	mg/L	99.4	
BLA01	Q2865710		ZINC			<	0.00160	mg/L		
CDL01	Q2865731		ZINC	0.0200			0.0239	mg/L	119.5	
ICS-AB	Q2865715		ZINC	1.00			0.930	mg/L	93.0	

Q2865734 1:5 Dilution.
Q2865734 There was possible matrix interference for K
Q2865734 as indicated by the serial dilution results.
Q2865735 1:5 Dilution.

R631012 Analyst: K KAMARA Run Date: 01-Oct-14 Instrument: PREP
Prep Reviewer: S ENDERSEN Review Date: 01-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
BLA02	Q2865816		Analytical Run: R631069							
LCS	Q2865817		Analytical Run: R631069							
DUP02	Q2865818		Analytical Run: R631069							
SPI02	Q2865819		Analytical Run: R631069							
SAMPLE	AA28621	Rep: 0	Analytical Run: R631069							
SAMPLE	AA28622	Rep: 0	Analytical Run: R631069							
SAMPLE	AA28623	Rep: 0	Analytical Run: R631069							

R631069 Analyst: J KRAMER Run Date: 01-Oct-14 Instrument: ICP
Analytical Reviewer: S ENDERSEN Review Date: 02-Oct-14

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
ICV01	Q2866199		ZINC	1			1.04	mg/L	104.0	
CDL01	Q2866240		ZINC	0.040			0.0393	mg/L	98.2	
ICS-AB	Q2866219		ZINC	1.00			0.944	mg/L	94.4	
CCV	Q2866231		ZINC	5			4.82	mg/L	96.4	
BLA01	Q2866210		ZINC			<	0.00160	mg/L		
BLA02	Q2865816		ZINC				0.00162	mg/L		
LCS	Q2865817		ZINC	0.5			0.520	mg/L	104.0	
SER01	Q2866249	AA28623	ZINC	0		CNA	0.00955	mg/L		
SAMPLE	AA28623		See Certificate of Analysis, Rep: 0							
DUP02	Q2865818	AA28623	ZINC	0		BDL		mg/L		
SPI02	Q2865819	AA28623	ZINC	0	0.500		0.491	mg/L	98.2	
CCV	Q2866232		ZINC	5			4.97	mg/L	99.4	
BLA01	Q2866211		ZINC			<	0.00160	mg/L		
SAMPLE	AA28621		See Certificate of Analysis, Rep: 0							
SAMPLE	AA28622		See Certificate of Analysis, Rep: 0							

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Quality Assurance Report

66865

ZINC ICP SW846-6010B M139.3

Prep : FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

R631069 Analyst: J KRAMER
Analytical Reviewer: S ENDERSEN

Run Date: 01-Oct-14
Review Date: 02-Oct-14

Continued

QC Type	Lab ID	Source	Parameter	True / Sample	Spike Value	RQL	Observed	Units	Rec	RPD
CCV	Q2866233		ZINC	5			4.76	mg/L	95.2	
BLA01	Q2866212		ZINC			<	0.00160	mg/L		
CDL01	Q2866243		ZINC	0.0200			0.0247	mg/L	123.5	
ICS-AB	Q2866220		ZINC	1.00			0.926	mg/L	92.6	
Q2866249	1:5 Dilution.									

RQL	Result Qualifier Definition
!	Outside Lab Generated Control Limits
<	Less Than
BDL	Below Detection Limit
CNA	RPD Calculation Not Applicable, < DL
LIN	Linear Regression Used
MR	Initial Calibration > 15 % RSD
NQR	No QC Result. High Sample Concentration.

QC Type	Definition
BLA01	CALIBRATION (INSTRUMENT) BLANK
BLA02	PREPPED (CALIBRATION) BLANK OR METHOD BLANK
BLA04	PREPPED (REAGENT) BLANK, NO PREP TEST CODE
CAL01	INITIAL CALIBRATION
CCV	CONTINUING CALIBRATION VERIFICATION
CCVD	CONTINUING CALIBRATION VERIFICATION (USING %D)
CCVH	HIGH CONTINUING CALIBRATION VERIFICATION
CCVL	LOW CONTINUING CALIBRATION VERIFICATION
CDL01	DETECTION LIMIT STANDARD
DPS01	DUPLICATE MATRIX SPIKE
DPS02	PREPPED DUPLICATE MATRIX SPIKE
DUP01	DUPLICATE SAMPLE ANALYSIS
DUP02	PREPPED DUPLICATE SAMPLE ANALYSIS
ICS-A	INTERFERENCE CHECK SAMPLE A
ICS-AB	INTERFERENCE CHECK SAMPLE AB
ICV01	INITIAL CALIBRATION VERIFICATION DIFFERENT SOURCE
LCS	LABORATORY CONTROL SAMPLE PREPPED
LCS01	LABORATORY CONTROL SAMPLE
LFB01	LABORATORY FORTIFIED BLANK
LFB01H	HIGH LEVEL LABORATORY FORTIFIED BLANK
LFB01L	LOW LEVEL LABORATORY FORTIFIED BLANK
LFB02H	HIGH LABORATORY FORTIFIED BLANK PREPPED
LFB02L	LOW LABORATORY FORTIFIED BLANK PREPPED
SER01	ICP SERIAL DILUTION
SPI01	MATRIX SPIKE
SPI02	PREPPED MATRIX SPIKE

Approved By : CHRISTINE SARKAN

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Quality Assurance Report # 66865

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Report To:

HERST AND ASSOCIATES

4630 South Highway 94

North Outer Road
St. Charles, MO 63304

Attn : Jon Wilkinson

Submitter/Project Information

Submitter : MO-ALLIED-BRIDGETON LANDFILL

Project : GROUNDWATER - BRIDGETON LANDFILL

Christopher Boyle - Project Manager
chris.boyle@heritage-enviro.com
(317)390-3128

NELAP ACCREDITED LABORATORY TNI

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Quality Assurance Report # 66865

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Attn : Jon Wilkinson

Submitter/Project Information

Submitter : MO-ALLIED-BRIDGETON LANDFILL
Project : GROUNDWATER - BRIDGETON LANDFILL

Christopher Boyle - Project Manager
chris.boyle@heritage-enviro.com
(317)390-3128

NELAP ACCREDITED TNI LABORATORY

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Sample Summary

COC ID# : 1737795

COC Doc # : 01108488

Date/Time Sampled	Date Complete	LabSampleID	Client SampleID
09/23/2014 13:13:00	10/10/2014	AA28600	PZ-201A-SS
09/23/2014 13:44:00	10/10/2014	AA28601	PZ-100-SS
09/23/2014 14:09:00	10/10/2014	AA28602	PZ-100-SD
09/23/2014 14:38:00	10/10/2014	AA28603	PZ-115-SS
09/23/2014 15:15:00	10/10/2014	AA28604	PZ-114-AS
09/23/2014 15:45:00	10/10/2014	AA28605	PZ-110-SS
09/24/2014 09:42:00	10/10/2014	AA28606	PZ-106-SD
09/24/2014 10:08:00	10/10/2014	AA28607	PZ-106-SS
09/24/2014 10:44:00	10/10/2014	AA28608	PZ-105-SS
09/24/2014 10:44:00	10/10/2014	AA28609	PZ-105-SS DUP
09/24/2014 11:23:00	10/10/2014	AA28610	PZ-205-SS
09/24/2014 11:49:00	10/10/2014	AA28611	PZ-109-SS

COC ID# : 1804343

COC Doc # : 01108489

Date/Time Sampled	Date Complete	LabSampleID	Client SampleID
09/24/2014 12:16:00	10/10/2014	AA28612	PZ-111-SD
09/24/2014 13:10:00	10/10/2014	AA28613	FB @ PZ-104-SD
09/24/2014 13:40:00	10/10/2014	AA28614	PZ-104-SD
09/24/2014 13:40:00	10/10/2014	AA28615	PZ-104-SD DUP
09/24/2014 14:06:00	10/15/2014	AA28616	PZ-104-SS
09/24/2014 14:49:00	10/10/2014	AA28617	PZ-104-KS
09/25/2014 09:11:00	10/10/2014	AA28618	PZ-209-SD
09/25/2014 09:32:00	10/10/2014	AA28619	PZ-209-SS
09/25/2014 10:21:00	10/10/2014	AA28620	PZ-211-SD
09/25/2014 10:49:00	10/10/2014	AA28621	PZ-211-SS
09/25/2014 11:44:00	10/10/2014	AA28622	PZ-210-SD
09/25/2014 12:04:00	10/10/2014	AA28623	PZ-210-SS

COC ID# : 1804344

COC Doc # : 01108490

Date/Time Sampled	Date Complete	LabSampleID	Client SampleID
09/25/2014	10/10/2014	AA28624	TRIP BLANK

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Sample Summary

COC ID# : 1737795

COC Doc # : 01108488

Date/Time Sampled	Date Complete	LabSampleID	Client SampleID
09/23/2014 13:13:00	10/10/2014	AA28600	PZ-201A-SS
09/23/2014 13:44:00	10/10/2014	AA28601	PZ-100-SS
09/23/2014 14:09:00	10/10/2014	AA28602	PZ-100-SD
09/23/2014 14:38:00	10/10/2014	AA28603	PZ-115-SS
09/23/2014 15:15:00	10/10/2014	AA28604	PZ-114-AS
09/23/2014 15:45:00	10/10/2014	AA28605	PZ-110-SS
09/24/2014 09:42:00	10/10/2014	AA28606	PZ-106-SD
09/24/2014 10:08:00	10/10/2014	AA28607	PZ-106-SS
09/24/2014 10:44:00	10/10/2014	AA28608	PZ-105-SS
09/24/2014 10:44:00	10/10/2014	AA28609	PZ-105-SS DUP
09/24/2014 11:23:00	10/10/2014	AA28610	PZ-205-SS
09/24/2014 11:49:00	10/10/2014	AA28611	PZ-109-SS

COC ID# : 1804343

COC Doc # : 01108489

Date/Time Sampled	Date Complete	LabSampleID	Client SampleID
09/24/2014 12:16:00	10/10/2014	AA28612	PZ-111-SD
09/24/2014 13:10:00	10/10/2014	AA28613	FB @ PZ-104-SD
09/24/2014 13:40:00	10/10/2014	AA28614	PZ-104-SD
09/24/2014 13:40:00	10/10/2014	AA28615	PZ-104-SD DUP
09/24/2014 14:06:00	10/15/2014	AA28616	PZ-104-SS
09/24/2014 14:49:00	10/10/2014	AA28617	PZ-104-KS
09/25/2014 09:11:00	10/10/2014	AA28618	PZ-209-SD
09/25/2014 09:32:00	10/10/2014	AA28619	PZ-209-SS
09/25/2014 10:21:00	10/10/2014	AA28620	PZ-211-SD
09/25/2014 10:49:00	10/10/2014	AA28621	PZ-211-SS
09/25/2014 11:44:00	10/10/2014	AA28622	PZ-210-SD
09/25/2014 12:04:00	10/10/2014	AA28623	PZ-210-SS

COC ID# : 1804344

COC Doc # : 01108490

Date/Time Sampled	Date Complete	LabSampleID	Client SampleID
09/25/2014	10/10/2014	AA28624	TRIP BLANK

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FIELD INFORMATION LOG Part 1

Facility: Bridgeton Landfill
Location: Bridgeton, Missouri
Sample Matrix: Groundwater

Sample Point ID: PZ-100-SS
Sampler(s): Matt Stewart
Jonathan Wilkinson
Top of Casing (ft, msl): 485.84

PURGE INFORMATION:

Method of Well Purge: Bladder Pump
Date/Time Initiated: 9/23/2014 1331
Initial Water Level (feet): 31.39
Initial Water Level Previous Event (feet): 32.26
Ground Water Elevation (ft, msl): 454.45
Ground Water Elevation Previous Event (ft, msl): 453.58
Well Total Depth (feet): Top of Pump = 89.31
Well Total Depth Previous Event (feet): Top of Pump = 89.36

Dedicated Equipment: Yes ✓ No
Casing Diameter (inches): 2
One Borehole Volume (gal): Not Applicable
One Borehole Volume Previous Event (gal): N/A
Total Volume Purged (mL): 4,250 mL
Purged Dry?: Yes No ✓
Water Level after Purge (feet): 40.26
Date/Time Completed: 9/23/2014 1343

PURGE DATA: Discharge: 4.5 sec Refill: 6.0 sec Pressure: ~~40~~ (FW) 47.5 psi

Measure field pH, Temperature, and Specific Conductance using flow-through cell

Average Purge Rate: 354 mL / min

Time	Purge Rate (mL / min)	Cumulative Volume (mL)	Temp (°C)	pH (std units)	Conductivity (µS = µmhos/cm)	Turbidity (NTU)	Water Level (feet)	Notes
1334	367	1100	17.1	7.16	836	11.79	34.30	Clear
1337	400	2300	17.0	7.13	837	4.29	36.58	Clear
1340	333	3300	17.1	7.12	834	2.84	38.50	Clear
1343	317	4250	17.1	7.14	832	1.35	40.26	Clear

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FIELD INFORMATION LOG Part 2

SAMPLING INFORMATION:

Sample Point ID: PZ-100-SS

Sampling Method: Bladder Pump

Dedicated: Yes ✓ No ____

Water Level @ Sampling (ft): 40.26

Well Collection Sequence #: 2 of 21

Parameters: Annual: ___ Semi-Annual: ___ Quarterly: ✓ Monthly: ___ Other: ____

SAMPLE DATA:

Time & Date	Sample Rate	Temp (°C)	pH (std units)	Specific Conductance (µS = µmhos/cm)	Turbidity (NTU)	Other	Notes
9/23/2014 1344	VOC: 354 mL/min Other: 354 mL/min	17.1	7.14	832	1.35	N/A	Clear

INSTRUMENT CALIBRATION DATA:

Start of day: (Date/Time) 9/23/2014 1235

End of day: (Date/time) 9/23/2014 1600

Turbidity Meter: HF MicroTPW

Turbidity Meter S/N: #201205083

pH / Sp. Cond. Meter: WTW pH/Cond 3400i

pH / Sp. Cond. Meter S/N: #09490969

Purging Event			Sampling Event		
Start of day	End of day		Start of day	End of day	
0.02	N/A	NTU std = 0.02	N/A	0.00	NTU std = 0.02
10.04	N/A	NTU std = 10.0	N/A	10.06	NTU std = 10.0
1005	N/A	NTU std = 1,000	N/A	1026	NTU std = 1,000
1423	N/A	µS std = 1,413	N/A	1430	µS std = 1,413
Cell Const: 0.490	Cell Const: N/A	Cell Const Range: 0.45 - 0.50	Cell Const: N/A	Cell Const: 0.490	Cell Const Range: 0.45 - 0.50
7.00	N/A	pH std = 7.00 @ 24.4 °C	N/A	7.07	pH std = 7.00 @ 26.2 °C
4.01	N/A	pH std = 4.01 @ 24.4 °C	N/A	4.07	pH std = 4.01 @ 26.5 °C

Other Calibration: Not Applicable

GENERAL INFORMATION:

Weather Conditions @ Sampling: Partly Cloudy, Light Breeze, 70°F

Sample Characteristics: Clear

COMMENTS AND OBSERVATIONS:

Sp. Cond. Prediction Limit = 1,009 µS; Historical Range from May 2008 - May 2014: 620 - 908 µS.

pH Prediction Limits = 6.337 - 8.153 s.u.; Historical Range from May 2008 - May 2014: 6.62 - 7.24 s.u.

Well Closed and Locked?: (Y) / N Full Suite Collected? (Y) / N Z139500; # Bottles Collected: 7 of 7

Date: 9/23/2014 By: Jonathan Wilkinson Title: Senior Chemical Engine

Company: Herst & Associates, Inc.

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FIELD INFORMATION LOG Part 1

Facility: Bridgeton Landfill
Location: Bridgeton, Missouri
Sample Matrix: Groundwater

Sample Point ID: PZ-100-SD
Sampler(s): Matt Stewart
Jonathan Wilkinson
Top of Casing (ft, msl): 485.82

PURGE INFORMATION:

Method of Well Purge: Bladder Pump
Date/Time Initiated: 9/23/2014 1356
Initial Water Level (feet): 34.49
Initial Water Level Previous Event (feet): 35.52
Ground Water Elevation (ft, msl): 451.33
Ground Water Elevation Previous Event (ft, msl): 450.30
Well Total Depth (feet): Top of Pump = 96.48
Well Total Depth Previous Event (feet): Top of Pump = 96.25

Dedicated Equipment: Yes ✓ No
Casing Diameter (inches): 2
One Borehole Volume (gal): Not Applicable
One Borehole Volume Previous Event (gal): N/A
Total Volume Purged (mL): 3,800 mL
Purged Dry?: Yes No ✓
Water Level after Purge (feet): 42.57
Date/Time Completed: 9/23/2014 1408

PURGE DATA: Discharge: 4.2 sec Refill: 6.0 sec Pressure: ~~45~~ 52 psi

Measure field pH, Temperature, and Specific Conductance using flow-through cell

Average Purge Rate: 317 mL / min

Time	Purge Rate (mL / min)	Cumulative Volume (mL)	Temp (°C)	pH (std units)	Conductivity (µS = µmhos/cm)	Turbidity (NTU)	Water Level (feet)	Notes
1359	233	700	17.5	7.35	627	1.85	36.69	Clear
1402	367	1800	17.2	7.34	633	1.11	38.67	Clear
1405	333	2800	17.2	7.29	637	0.39	40.65	Clear
1408	333	3800	17.1	7.28	634	0.63	42.57	Clear

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FIELD INFORMATION LOG Part 2

SAMPLING INFORMATION:

Sample Point ID: PZ-100-SD

Sampling Method: Bladder Pump

Dedicated: Yes ✓ No ____

Water Level @ Sampling (ft): 42.57

Well Collection Sequence #: 3 of 21

Parameters: Annual: ___ Semi-Annual: ___ Quarterly: ✓ Monthly: ___ Other: ___

SAMPLE DATA:

Time & Date	Sample Rate	Temp (°C)	pH (std units)	Specific Conductance (µS = µmhos/cm)	Turbidity (NTU)	Other	Notes
9/23/2014 1409	VOC: 317 mL/min Other: 317 mL/min	17.1	7.28	634	0.63	N/A	Clear

INSTRUMENT CALIBRATION DATA:

Start of day: (Date/Time) 9/23/2014 1235

End of day: (Date/time) 9/23/2014 1600

Turbidity Meter: HF MicroTPW

Turbidity Meter S/N: #201205083

pH / Sp. Cond. Meter: WTW pH/Cond 3400i

pH / Sp. Cond. Meter S/N: #09490969

Purging Event			Sampling Event		
Start of day	End of day		Start of day	End of day	
0.02	N/A	NTU std = 0.02	N/A	0.00	NTU std = 0.02
10.04	N/A	NTU std = 10.0	N/A	10.06	NTU std = 10.0
1005	N/A	NTU std = 1,000	N/A	1026	NTU std = 1,000
1423	N/A	µS std = 1,413	N/A	1430	µS std = 1,413
Cell Const: 0.490	Cell Const: N/A	Cell Const Range: 0.45 - 0.50	Cell Const: N/A	Cell Const: 0.490	Cell Const Range: 0.45 - 0.50
7.00	N/A	pH std = 7.00 @ 24.4 °C	N/A	7.07	pH std = 7.00 @ 26.2 °C
4.01	N/A	pH std = 4.01 @ 24.4 °C	N/A	4.07	pH std = 4.01 @ 26.5 °C

Other Calibration: Not Applicable

GENERAL INFORMATION:

Weather Conditions @ Sampling: Partly Cloudy, Light Breeze, 70°F

Sample Characteristics: Clear

COMMENTS AND OBSERVATIONS:

Sp. Cond. Prediction Limit = 717.9 µS; Historical Range from May 2008 - May 2014: 596 - 826 µS.

pH Prediction Limits = 6.504 - 8.284 s.u.; Historical Range from May 2008 - May 2014: 6.78 - 7.57 s.u.

Well Closed and Locked?: Y / N Full Suite Collected?: Y / N Z139500; # Bottles Collected: 7 of 7

Date: 9/23/2014 By: Jonathan Wilkinson Title: Senior Chemical Engine

Company: Herst & Associates, Inc.

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FIELD INFORMATION LOG Part 1

Facility: Bridgeton Landfill
Location: Bridgeton, Missouri
Sample Matrix: Groundwater

Sample Point ID: PZ-104-SS
Sampler(s): Matt Stewart
Jonathan Wilkinson
Top of Casing (ft, msl): 483.63

PURGE INFORMATION:

Method of Well Purge: Bladder Pump
Date/Time Initiated: 9/24/2014 1350
Initial Water Level (feet): 20.43
Initial Water Level Previous Event (feet): 19.44
Ground Water Elevation (ft, msl): 463.20
Ground Water Elevation Previous Event (ft, msl): 464.19
Well Total Depth (feet): Top of Pump = 140.29
Well Total Depth Previous Event (feet): Top of Pump = 140.53

Dedicated Equipment: Yes ✓ No
Casing Diameter (inches): 2
One Borehole Volume (gal): Not Applicable
One Borehole Volume Previous Event (gal): N/A
Total Volume Purged (mL): 6,400 mL
Purged Dry?: Yes No ✓
Water Level after Purge (feet): 32.88
Date/Time Completed: 9/24/2014 1405

PURGE DATA: Discharge: 4.5 sec Refill: 6.0 sec Pressure: 75 psi

Measure field pH, Temperature, and Specific Conductance using flow-through cell

Average Purge Rate: 427 mL / min

Time	Purge Rate (mL / min)	Cumulative Volume (mL)	Temp (°C)	pH (std units)	Conductivity (µS = µmhos/cm)	Turbidity (NTU)	Water Level (feet)	Notes
1353	450	1350	26.5	6.73	854	5.64	23.65	Clear, LFgas odor
1356	417	2600	26.1	6.80	847	5.74	25.95	Clear, LFgas odor
1359	433	3900	25.9	6.58	821	2.63	28.22	Clear, LFgas odor
1402	433	5200	25.8	6.52	809	2.27	30.54	Clear, LFgas odor
1405	400	6400	25.8	6.51	808	1.52	32.88	Clear, LFgas odor

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FIELD INFORMATION LOG Part 2

SAMPLING INFORMATION:

Sample Point ID: PZ-104-SS

Sampling Method: Bladder Pump

Dedicated: Yes ✓ No ____

Water Level @ Sampling (ft): 32.88

Well Collection Sequence #: 14 of 21

Parameters: Annual: ___ Semi-Annual: ___ Quarterly: ✓ Monthly: ___ Other: ✓ Appendix II

SAMPLE DATA:

Time & Date	Sample Rate	Temp (°C)	pH (std units)	Specific Conductance (µS = µmhos/cm)	Turbidity (NTU)	Other	Notes
9/24/2014 1406	VOC: 427 mL/min Other: 427 mL/min	25.8	6.51	808	1.52	N/A	Clear; LF gas odor

INSTRUMENT CALIBRATION DATA:

Start of day: (Date/Time) 9/24/2014 0730

End of day: (Date/time) 9/24/2014 1525

Turbidity Meter: HF MicroTPW

Turbidity Meter S/N: # 201205083

pH / Sp. Cond. Meter: WTW pH/Cond 3400i

pH / Sp. Cond. Meter S/N: # 09490969

Purging Event			Sampling Event		
Start of day	End of day		Start of day	End of day	
0.03	N/A	NTU std = 0.02	N/A	0.01	NTU std = 0.02
10.03	N/A	NTU std = 10.0	N/A	10.36	NTU std = 10.0
995.6	N/A	NTU std = 1,000	N/A	1047	NTU std = 1,000
1422	N/A	µS std = 1,413	N/A	1394	µS std = 1,413
Cell Const: 0.482	Cell Const: N/A	Cell Const Range: 0.45 - 0.50	Cell Const: N/A	Cell Const: 0.482	Cell Const Range: 0.45 - 0.50
7.05	N/A	pH std = 7.05 @ 12.6 °C	N/A	6.94	pH std = 6.99 @ 27.8 oC
4.00	N/A	pH std = 4.00 @ 12.8 °C	N/A	3.96	pH std = 4.01 @ 28.8 oC

Other Calibration: Not Applicable

GENERAL INFORMATION:

Weather Conditions @ Sampling: Sunny, Light Breeze, 75°F

Sample Characteristics: Clear; landfill gas odor

COMMENTS AND OBSERVATIONS:

Sp. Cond. Prediction Limit = 944 µS; Historical Range from May 2008 - May 2014: 535 - 882 µS.

pH Prediction Limits = 6.222 - 8.336 s.u.; Historical Range from May 2008 - May 2014: 6.48 - 7.43 s.u.

Well Closed and Locked?: Y / N Full Suite Collected? Y / N Z161364; # Bottles Collected: 17 of 17

4x40mL HCl VOC8260; 8x1L Neat glass; 1x500 mL HNO_3; 1x500 mL H_2SO_4; 1x1L Sulfide; 1x125mL CN; 1x500mL Neat

Date: 9/24/2014 By: Jonathan Wilkinson Title: Senior Chemical Engine

Company: Herst & Associates, Inc.

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FIELD INFORMATION LOG Part 1

Facility: Bridgeton Landfill
Location: Bridgeton, Missouri
Sample Matrix: Groundwater

Sample Point ID: PZ-104-SD
Sampler(s): Matt Stewart
Jonathan Wilkinson
Top of Casing (ft, msl): 483.69

PURGE INFORMATION:

Method of Well Purge: Bladder Pump
Date/Time Initiated: 9/24/2014 1327
Initial Water Level (feet): 22.78
Initial Water Level Previous Event (feet): 21.59
Ground Water Elevation (ft, msl): 460.91
Ground Water Elevation Previous Event (ft, msl): 462.10
Well Total Depth (feet): Top of Pump = 120.59
Well Total Depth Previous Event (feet): Top of Pump = 120.50

Dedicated Equipment: Yes ✓ No
Casing Diameter (inches): 2
One Borehole Volume (gal): Not Applicable
One Borehole Volume Previous Event (gal): N/A
Total Volume Purged (mL): 5,200 mL
Purged Dry?: Yes No ✓
Water Level after Purge (feet): 27.37
Date/Time Completed: 9/24/2014 1339

PURGE DATA: Discharge: 4.5 sec Refill: 6.0 sec Pressure: 60 psi

Measure field pH, Temperature, and Specific Conductance using flow-through cell

Average Purge Rate: 433 mL / min

Time	Purge Rate (mL / min)	Cumulative Volume (mL)	Temp (°C)	pH (std units)	Conductivity (µS = µmhos/cm)	Turbidity (NTU)	Water Level (feet)	Notes
1330	467	1400	25.4	6.62	1453	5.93	25.20	Clear; LF gas odor
1333	467	2800	25.5	6.67	1486	4.58	26.36	Clear; LF gas odor
1336	400	4000	25.7	6.74	1467	4.66	26.95	Clear; LF gas odor
1339	400	5200	25.7	6.75	1457	2.54	27.37	Clear; LF gas odor

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FIELD INFORMATION LOG Part 2

SAMPLING INFORMATION:

Sample Point ID: PZ-104-SD

Sampling Method: Bladder Pump

Dedicated: Yes ✓ No ____

Water Level @ Sampling (ft): 27.37

Well Collection Sequence #: 13 of 21

Parameters: Annual: ___ Semi-Annual: ___ Quarterly: ✓ Monthly: ___ Other: ✓ Appendix II

SAMPLE DATA:

Time & Date	Sample Rate	Temp (°C)	pH (std units)	Specific Conductance (µS = µmhos/cm)	Turbidity (NTU)	Other	Notes
9/24/2014 1340	VOC: 433 ml/min Other 433 ml/min	25.7	6.75	1457	2.54	N/A	Clear; LF gas odor

INSTRUMENT CALIBRATION DATA:

Start of day: (Date/Time) 9/24/2014 0730

End of day: (Date/time) 9/24/2014 1525

Turbidity Meter: HF MicroTPW

Turbidity Meter S/N: # 20120508B

pH / Sp. Cond. Meter: WTW pH/Cond 3400i

pH / Sp. Cond. Meter S/N: # 09490969

Purging Event			Sampling Event		
Start of day	End of day		Start of day	End of day	
0.03	N/A	NTU std = 0.02	N/A	0.01	NTU std = 0.02
10.03	N/A	NTU std = 10.0	N/A	10.36	NTU std = 10.0
995.6	N/A	NTU std = 1,000	N/A	1047	NTU std = 1,000
1422	N/A	µS std = 1,413	N/A	1394	µS std = 1,413
Cell Const: 0.482	Cell Const: N/A	Cell Const Range: 0.45 - 0.50	Cell Const: N/A	Cell Const: 0.482	Cell Const Range: 0.45 - 0.50
7.05	N/A	pH std = 7.05 @ 12.6 °C	N/A	6.94	pH std = 6.99 @ 27.8 oC
4.00	N/A	pH std = 4.00 @ 12.8 °C	N/A	3.96	pH std = 4.01 @ 28.8 oC

Other Calibration: Not Applicable

GENERAL INFORMATION:

Weather Conditions @ Sampling: Sunny, 70°F

Sample Characteristics: Clear; Landfill gas odor

COMMENTS AND OBSERVATIONS:

Sp. Cond. Prediction Limit = 1,372 µS; Historical Range from May 2008 - May 2014: 836 - 1437 µS.

pH Prediction Limits = 6.368 - 8.172 s.u.; Historical Range from May 2008 - May 2014: 6.44 - 7.44 s.u.

Well Closed and Locked?: Y / N Full Suite Collected?: Y / N Z161364; # Bottles Collected: 17 of 17

Collect FB@PZ-104-SD @ 1310 - 17 bottles; collect PZ-104-SD DUP @ 1340 - 17 bottles

Date: 9/24/2014 By: Jonathan Wilkinson Title: Senior Chemical Engine

Company: Herst & Associates, Inc.

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FIELD INFORMATION LOG Part 1

Facility: Bridgeton Landfill

Location: Bridgeton, Missouri

Sample Matrix: Groundwater

Sample Point ID: PZ-104-KS

Sampler(s): Matt Stewart
Jonathan Wilkinson

Top of Casing (ft, msl): 483.95

PURGE INFORMATION:

Method of Well Purge: Bladder Pump

Dedicated Equipment: Yes ✓ No ____

Date/Time Initiated: 9/24/2014 1436

Casing Diameter (inches): 2

Initial Water Level (feet): 17.64

One Borehole Volume (gal): Not Applicable

Initial Water Level Previous Event (feet): 20.02

One Borehole Volume Previous Event (gal): N/A

Ground Water Elevation (ft, msl): 466.31

Total Volume Purged (mL): 6,000 mL

Ground Water Elevation Previous Event (ft, msl): 463.93

Purged Dry?: Yes ____ No ✓

Well Total Depth (feet): Top of Pump = 93.21

Water Level after Purge (feet): 26.01

Well Total Depth Previous Event (feet): 409.26

Date/Time Completed: 9/24/2014 1448

PURGE DATA: Discharge: 4.5 sec Refill: 6.0 sec Pressure: 43 psi

Measure field pH, Temperature, and Specific Conductance using flow-through cell

Average Purge Rate: 500 mL / min

Time	Purge Rate (mL / min)	Cumulative Volume (mL)	Temp (°C)	pH (std units)	Conductivity (µS = µmhos/cm)	Turbidity (NTU)	Water Level (feet)	Notes
1439	533	1600	22.2	7.27	723	5.87	20.95	Clear
1442	500	3100	21.9	7.22	738	55.94	22.94	Clear w/ particles
1445	467	4500	22.1	7.15	784	175.1	24.49	Gray
1448	500	6000	21.7	7.15	767	401.2	26.01	Gray

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FIELD INFORMATION LOG Part 2

SAMPLING INFORMATION:

Sample Point ID: PZ-104-KS

Sampling Method: Bladder Pump

Dedicated: Yes ✓ No ____

Water Level @ Sampling (ft): 26.01

Well Collection Sequence #: 15 of 21

Parameters: Annual: ___ Semi-Annual: ___ Quarterly: ___ Monthly: ___ Other: ✓ Appendix II

SAMPLE DATA:

Time & Date	Sample Rate	Temp (°C)	pH (std units)	Specific Conductance (µS = µmhos/cm)	Turbidity (NTU)	Other	Notes
9/24/2014 1449	VOC: 500 mL/min Other: 500 mL/min	21.7	7.15	767	401.2	N/A	Gray

INSTRUMENT CALIBRATION DATA:

Start of day: (Date/Time) 9/24/2014 0730

End of day: (Date/time) 9/24/2014 1525

Turbidity Meter: HF MicroTPW

Turbidity Meter S/N: # 20120503

pH / Sp. Cond. Meter: WTW pH/Cond 3400i

pH / Sp. Cond. Meter S/N: #04490969

Purging Event Start of day	Purging Event End of day		Sampling Event Start of day	Sampling Event End of day	
0.03	N/A	NTU std = 0.02	N/A	0.01	NTU std = 0.02
10.03	N/A	NTU std = 10.0	N/A	10.36	NTU std = 10.0
995.6	N/A	NTU std = 1,000	N/A	1047	NTU std = 1,000
1422	N/A	µS std = 1,413	N/A	1394	µS std = 1,413
Cell Const: 0.482	Cell Const: N/A	Cell Const Range: 0.45 - 0.50	Cell Const: N/A	Cell Const: 0.482	Cell Const Range: 0.45 - 0.50
7.05	N/A	pH std = 7.05 @ 12.6 °C	N/A	6.94	pH std = 6.99 @ 27.8 °C
4.00	N/A	pH std = 4.00 @ 12.8 °C	N/A	3.96	pH std = 4.01 @ 28.8 °C

Other Calibration: Not Applicable

GENERAL INFORMATION:

Weather Conditions @ Sampling: Sunny, 75°F

Sample Characteristics: Gray

COMMENTS AND OBSERVATIONS:

Well Closed and Locked?: (Y) / N Full Suite Collected?: (Y) / N Z161387; # Bottles Collected: 15 of 15

4x40 mL HCl VOC 8260, 8x1L Neat glass; 1x500 mL HNO_3; 1x1L Sulfide; 1x125mL CN

Date: 9/24/2014 By: Jonathan Wilkinson Title: Senior Chemical Engine

Company: Herst & Associates, Inc.

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FIELD INFORMATION LOG Part 1

Facility: Bridgeton Landfill
Location: Bridgeton, Missouri
Sample Matrix: Groundwater

Sample Point ID: PZ-105-SS
Sampler(s): Matt Stewart
Jonathan Wilkinson
Top of Casing (ft, msl): 483.61

PURGE INFORMATION:

Method of Well Purge: Bladder Pump
Date/Time Initiated: 9/24/2014 1028
Initial Water Level (feet): 25.97
Initial Water Level Previous Event (feet): 24.91
Ground Water Elevation (ft, msl): 457.64
Ground Water Elevation Previous Event (ft, msl): 458.70
Well Total Depth (feet): Top of Pump = 144.81
Well Total Depth Previous Event (feet): Top of Pump = 144.82

Dedicated Equipment: Yes ✓ No
Casing Diameter (inches): 2
One Borehole Volume (gal): Not Applicable
One Borehole Volume Previous Event (gal): N/A
Total Volume Purged (mL): 4,100mL
Purged Dry?: Yes No ✓
Water Level after Purge (feet): 34.30
Date/Time Completed: 9/24/2014 1043

PURGE DATA: Discharge: 4.5 sec Refill: 8.0 sec Pressure: 75 psi

Measure field pH, Temperature, and Specific Conductance using flow-through cell

Average Purge Rate: 273 mL / min

Time	Purge Rate (mL / min)	Cumulative Volume (mL)	Temp (°C)	pH (std units)	Conductivity (µS = µmhos/cm)	Turbidity (NTU)	Water Level (feet)	Notes
1031	267	800	18.2	7.30	1006	24.41	28.09	Clear
1034	283	1650	18.1	7.15	1025	95.50	29.63	Clear to cloudy
1037	267	2450	17.9	7.25	1007	36.50	31.18	Clear
1040	283	3300	17.9	7.26	1003	25.71	32.71	Clear
1043	267	4100	18.0	7.26	1004	18.18	34.30	Clear

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FIELD INFORMATION LOG Part 2

SAMPLING INFORMATION:

Sample Point ID: PZ-105-SS

Sampling Method: Bladder Pump

Dedicated: Yes ✓ No ____

Water Level @ Sampling (ft): 34.30

Well Collection Sequence #: 9 of 21

Parameters: Annual: ___ Semi-Annual: ___ Quarterly: ✓ Monthly: ___ Other: ____

SAMPLE DATA:

Time & Date	Sample Rate	Temp (°C)	pH (std units)	Specific Conductance (µS = µmhos/cm)	Turbidity (NTU)	Other	Notes
9/24/2014 1044	VOC: 273 mL/min Other: 273 mL/min	18.0	7.26	1004	18.18	N/A	Clear

INSTRUMENT CALIBRATION DATA:

Start of day: (Date/Time) 9/24/2014 0730

End of day: (Date/time) 9/24/2014 1525

Turbidity Meter: HF MicroTPW

Turbidity Meter S/N: #20120503

pH / Sp. Cond. Meter: WTW pH/Cond 3400i

pH / Sp. Cond. Meter S/N: #09490969

Purging Event Start of day	Purging Event End of day		Sampling Event Start of day	Sampling Event End of day	
0.03	N/A	NTU std = 0.02	N/A	0.01	NTU std = 0.02
10.03	N/A	NTU std = 10.0	N/A	10.36	NTU std = 10.0
995.6	N/A	NTU std = 1,000	N/A	1047	NTU std = 1,000
1422	N/A	µS std = 1,413	N/A	1394	µS std = 1,413
Cell Const: 0.482	Cell Const: N/A	Cell Const Range: 0.45 - 0.50	Cell Const: N/A	Cell Const: 0.482	Cell Const Range: 0.45 - 0.50
7.05	N/A	pH std = 7.05 @ 12.6 °C	N/A	6.94	pH std = 6.99 @ 27.8 °C
4.00	N/A	pH std = 4.00 @ 12.8 °C	N/A	3.96	pH std = 4.01 @ 28.8 °C

Other Calibration: Not Applicable

GENERAL INFORMATION:

Weather Conditions @ Sampling: Partly Cloudy, Sunny, 70°F

Sample Characteristics: Clear

COMMENTS AND OBSERVATIONS:

Sp. Cond. Prediction Limit = 1,049 µS; Historical Range from May 2008 - May 2014: 820 - 1208 µS.

pH Prediction Limits = 6.716 - 8.249 s.u.; Historical Range from May 2008 - May 2014: 6.88 - 7.55 s.u.

Well Closed and Locked?: (Y) / N Full Suite Collected?: (Y) / N Z139500; # Bottles Collected: 7 of 7

Collect PZ-105-SS DUP @ 1044 - 7 of 7 bottles

Date: 9/24/2014 By: Jonathan Wilkinson Title: Senior Chemical Engine

Company: Herst & Associates, Inc.

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FIELD INFORMATION LOG Part 1

Facility: Bridgeton Landfill

Location: Bridgeton, Missouri

Sample Matrix: Groundwater

Sample Point ID: PZ-106-SS

Sampler(s): Matt Stewart
Jonathan Wilkinson

Top of Casing (ft, msl) 462.70

PURGE INFORMATION:

Method of Well Purge: Bladder Pump

Dedicated Equipment: Yes ✓ No ____

Date/Time Initiated: 9/24/2014 0955

Casing Diameter (inches): 2

Initial Water Level (feet): 12.31

One Borehole Volume (gal): Not Applicable

Initial Water Level Previous Event (feet): 10.62

One Borehole Volume Previous Event (gal): N/A

Ground Water Elevation (ft, msl): 450.39

Total Volume Purged (mL): 3,800 mL

Ground Water Elevation Previous Event (ft, msl): 452.08

Purged Dry?: Yes ____ No ✓

Well Total Depth (feet): Top of Pump = 161.38

Water Level after Purge (feet): 19.44

Well Total Depth Previous Event (feet): Top of Pump = 161.15

Date/Time Completed: 9/24/2014 1007

PURGE DATA: Discharge: 6.0 sec Refill: 4.5 sec Pressure: 80 psi

Measure field pH, Temperature, and Specific Conductance using flow-through cell

Average Purge Rate: 317 mL / min

Time	Purge Rate (mL / min)	Cumulative Volume (mL)	Temp (°C)	pH (std units)	Conductivity (µS = µmhos/cm)	Turbidity (NTU)	Water Level (feet)	Notes
0958	300	900	21.9	7.06	866	7.11	14.35	Clear
1001	333	1900	21.9	6.97	875	4.61	16.23	Clear
1004	333	2900	21.7	6.96	876	1.71	17.77	Clear
1007	300	3800	21.5	6.96	873	2.67	19.44	Clear

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FIELD INFORMATION LOG Part 2

SAMPLING INFORMATION:

Sample Point ID: PZ-106-SS

Sampling Method: Bladder Pump

Dedicated: Yes ✓ No ____

Water Level @ Sampling (ft): 19.44

Well Collection Sequence #: 8 of 21

Parameters: Annual: ___ Semi-Annual: ___ Quarterly: ✓ Monthly: ___ Other: ____

SAMPLE DATA:

Time & Date	Sample Rate	Temp (°C)	pH (std units)	Specific Conductance (µS = µmhos/cm)	Turbidity (NTU)	Other	Notes
9/24/2014 1008	VOC: 317 mL/min Other: 317 mL/min	21.5	6.96	873	2.67	N/A	Clear

INSTRUMENT CALIBRATION DATA:

Start of day: (Date/Time) 9/24/2014 0730

End of day: (Date/time) 9/24/2014 1525

Turbidity Meter: HF MicroTPW

Turbidity Meter S/N: #20120508 3

pH / Sp. Cond. Meter: WTW pH/Cond 3400i

pH / Sp. Cond. Meter S/N: #09490969

Purging Event			Sampling Event		
Start of day	End of day		Start of day	End of day	
0.03	N/A	NTU std = 0.02	N/A	0.01	NTU std = 0.02
10.03	N/A	NTU std = 10.0	N/A	10.36	NTU std = 10.0
995.6	N/A	NTU std = 1,000	N/A	1047	NTU std = 1,000
1422	N/A	µS std = 1,413	N/A	1394	µS std = 1,413
Cell Const: 0.482	Cell Const: N/A	Cell Const Range: 0.45 - 0.50	Cell Const: N/A	Cell Const: 0.482	Cell Const Range: 0.45 - 0.50
7.05	N/A	pH std = 7.05 @ 12.6 °C	N/A	6.94	pH std = 6.99 @ 27.8 °C
4.00	N/A	pH std = 4.00 @ 12.8 °C	N/A	3.96	pH std = 4.01 @ 28.8 °C

Other Calibration: Not Applicable

GENERAL INFORMATION:

Weather Conditions @ Sampling: Partly Cloudy, 65F

Sample Characteristics: Clear

COMMENTS AND OBSERVATIONS:

Sp. Cond. Prediction Limit = 986.2 µS; Historical Range from May 2008 - May 2014: 781 - 892 µS.

pH Prediction Limits = 6.28 - 8.219 s.u.; Historical Range from May 2008 - May 2014: 6.59 - 7.4 s.u.

Well Closed and Locked?: (Y) N Full Suite Collected?: (Y) N **Z139500**; # Bottles Collected: 7 of 7

Date: 9/24/2014 By: Jonathan Wilkinson Title: Senior Chemical Engine

Company: **Herst & Associates, Inc.**

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FIELD INFORMATION LOG Part 1

Facility: Bridgeton Landfill

Location: Bridgeton, Missouri

Sample Matrix: Groundwater

Sample Point ID: PZ-106-SD

Sampler(s): Matt Stewart
Jonathan Wilkinson

Top of Casing (ft, msl) 463.42

PURGE INFORMATION:

Method of Well Purge: Bladder Pump

Dedicated Equipment: Yes ✓ No

Date/Time Initiated: 9/24/2014 0926

Casing Diameter (inches): 2

Initial Water Level (feet): 13.08

One Borehole Volume (gal): Not Applicable

Initial Water Level Previous Event (feet): 11.40

One Borehole Volume Previous Event (gal): N/A

Ground Water Elevation (ft, msl): (JW) ~~450.34~~ 450.34

Total Volume Purged (mL): 4,100 mL

Ground Water Elevation Previous Event (ft, msl): 452.02

Purged Dry?: Yes No ✓

Well Total Depth (feet): Top of Pump = 196.08

Water Level after Purge (feet): 17.21

Well Total Depth Previous Event (feet): Top of Pump = 196.11

Date/Time Completed: 9/24/2014 0941

PURGE DATA: Discharge: (JW) ~~9.0~~ 8.0 sec Refill: 4.7 sec Pressure: (JW) ~~80~~ 90 psi

Measure field pH, Temperature, and Specific Conductance using flow-through cell

Average Purge Rate: 273 mL / min

Time	Purge Rate (mL / min)	Cumulative Volume (mL)	Temp (°C)	pH (std units)	Conductivity (µS = µmhos/cm)	Turbidity (NTU)	Water Level (feet)	Notes
0929	167	500	22.3	7.41	3350	10.69	13.99	Clear; septic odor
0932	300	1400	21.9	7.08	3810	32.74	15.04	Clear; septic odor
0935	300	2300	21.8	6.59	4010	62.00	16.03	Clear; septic odor
0938	317	3250	21.7	6.54	3990	32.32	16.71	Clear; septic odor
0941	283	4100	21.7	6.54	4250	13.20	17.21	Clear; septic odor

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FIELD INFORMATION LOG Part 2

SAMPLING INFORMATION:

Sample Point ID: PZ-106-SD

Sampling Method: Bladder Pump

Dedicated: Yes ✓ No ____

Water Level @ Sampling (ft): 17.21

Well Collection Sequence #: 7 of 21

Parameters: Annual: ___ Semi-Annual: ___ Quarterly: ✓ Monthly: ___ Other: ____

SAMPLE DATA:

Time & Date	Sample Rate	Temp (°C)	pH (std units)	Specific Conductance (µS = µmhos/cm)	Turbidity (NTU)	Other	Notes
9/24/2014 0942	VOC: 273 mL/min Other: 273 mL/min	21.7	6.54	4250	13.20	N/A	Clear; septic odor

INSTRUMENT CALIBRATION DATA:

Start of day: (Date/Time) 9/24/2014 0730

End of day: (Date/time) 9/24/2014 1525

Turbidity Meter: HF MicroTPW

Turbidity Meter S/N: # 201205083

pH / Sp. Cond. Meter: WTW pH/Cond 3400i

pH / Sp. Cond. Meter S/N: # 04490969

Purging Event Start of day	Purging Event End of day		Sampling Event Start of day	Sampling Event End of day	
0.03	N/A	NTU std = 0.02	N/A	0.01	NTU std = 0.02
10.03	N/A	NTU std = 10.0	N/A	10.36	NTU std = 10.0
995.6	N/A	NTU std = 1,000	N/A	1047	NTU std = 1,000
1422	N/A	µS std = 1,413	N/A	1394	µS std = 1,413
Cell Const: 0.482	Cell Const: N/A	Cell Const Range: 0.45 - 0.50	Cell Const: N/A	Cell Const: 0.482	Cell Const Range: 0.45 - 0.50
7.05	N/A	pH std = 7.05 @ 12.6 °C	N/A	6.94	pH std = 6.99 @ 27.8 °C
4.00	N/A	pH std = 4.00 @ 12.8 °C	N/A	3.96	pH std = 4.01 @ 28.8 °C

Other Calibration: Not Applicable

GENERAL INFORMATION:

Weather Conditions @ Sampling: Partly Cloudy, 65°F

Sample Characteristics: Clear; septic odor

COMMENTS AND OBSERVATIONS:

Sp. Cond. Prediction Limit = 1,121 µS; Historical Range from May 2008 - May 2014: 743 - 951 µS.

pH Prediction Limits = 6.482 - 7.92 s.u.; Historical Range from May 2008 - May 2014: 6.55 - 7.11 s.u.

Well Closed and Locked?: (Y) / N Full Suite Collected?: (Y) / N Z139500; # Bottles Collected: 7 of 7

*VOAs effervesced - sent unpreserved - 7 day hold * ; 1 VOA w/ bubble

Date: 9/24/2014 By: Jonathan Wilkinson Title: Senior Chemical Engine

Company: Herst & Associates, Inc.

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FIELD INFORMATION LOG Part 1

Facility: Bridgeton Landfill

Location: Bridgeton, Missouri

Sample Matrix: Groundwater

Sample Point ID: PZ-109-SS

Sampler(s): Matt Stewart
Jonathan Wilkinson

Top of Casing (ft, msl): 458.50

PURGE INFORMATION:

Method of Well Purge: Bladder Pump

Dedicated Equipment: Yes ✓ No ____

Date/Time Initiated: 9/24/2014 1136

Casing Diameter (inches): 2

Initial Water Level (feet): 25.21

One Borehole Volume (gal): Not Applicable

Initial Water Level Previous Event (feet): 34.12

One Borehole Volume Previous Event (gal): N/A

Ground Water Elevation (ft, msl): 433.29

Total Volume Purged (mL): 4,900 mL

Ground Water Elevation Previous Event (ft, msl): 424.38

Purged Dry?: Yes ____ No ✓

Well Total Depth (feet): ~~Top of Pump =~~ 137.53 (w/in pump)

Water Level after Purge (feet): 35.18

Well Total Depth Previous Event (feet): Top of Pump = 130.88

Date/Time Completed: 9/24/2014 1148

PURGE DATA: Discharge: 4.5 sec Refill: 6.0 sec Pressure: 70 psi

Measure field pH, Temperature, and Specific Conductance using flow-through cell

Average Purge Rate: 408 mL / min

Time	Purge Rate (mL / min)	Cumulative Volume (mL)	Temp (°C)	pH (std units)	Conductivity (µS = µmhos/cm)	Turbidity (NTU)	Water Level (feet)	Notes
1139	400	1200	21.1	7.01	807	13.73	28.30	Clear
1142	433	2500	21.1	6.99	811	8.85	30.52	Clear
1145	400	3700	21.2	6.99	809	11.31	32.85	Clear
1148	400	4900	21.2	7.01	808	8.35	35.18	Clear

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FIELD INFORMATION LOG Part 2

SAMPLING INFORMATION:

Sample Point ID: PZ-109-SS

Sampling Method: Bladder Pump

Dedicated: Yes ✓ No ____

Water Level @ Sampling (ft): 35.18

Well Collection Sequence #: 11 of 21

Parameters: Annual: ___ Semi-Annual: ___ Quarterly: ✓ Monthly: ___ Other: ___

SAMPLE DATA:

Time & Date	Sample Rate	Temp (°C)	pH (std units)	Specific Conductance (µS = µmhos/cm)	Turbidity (NTU)	Other	Notes
9/24/2014 1149	VOC: 400 ml/min Other: 400 ml/min	21.2	7.01	808	8.35	N/A	Clear

INSTRUMENT CALIBRATION DATA:

Start of day: (Date/Time) 9/24/2014 0730

End of day: (Date/time) 9/24/2014 1525

Turbidity Meter: HF MicroTPW

Turbidity Meter S/N: #2012050B3

pH / Sp. Cond. Meter: WTW pH/Cond 3400i

pH / Sp. Cond. Meter S/N: #04490969

Purging Event			Sampling Event		
Start of day	End of day		Start of day	End of day	
0.03	N/A	NTU std = 0.02	N/A	0.01	NTU std = 0.02
10.03	N/A	NTU std = 10.0	N/A	10.36	NTU std = 10.0
995.6	N/A	NTU std = 1,000	N/A	1047	NTU std = 1,000
1422	N/A	µS std = 1,413	N/A	1394	µS std = 1,413
Cell Const: 0.482	Cell Const: N/A	Cell Const Range: 0.45 - 0.50	Cell Const: N/A	Cell Const: 0.482	Cell Const Range: 0.45 - 0.50
7.05	N/A	pH std = 7.05 @ 12.6 °C	N/A	6.94	pH std = 6.99 @ 27.8 °C
4.00	N/A	pH std = 4.00 @ 12.8 °C	N/A	3.96	pH std = 4.01 @ 28.8 °C

Other Calibration: Not Applicable

GENERAL INFORMATION:

Weather Conditions @ Sampling: Partly Cloudy, Light Breeze, 70°F

Sample Characteristics: Clear

COMMENTS AND OBSERVATIONS:

Sp. Cond. Prediction Limit = 998.7 µS; Historical Range from May 2008 - May 2014: 782 - 917 µS.

pH Prediction Limits = 6.425 - 8.012 s.u.; Historical Range from May 2008 - May 2014: 6.68 - 7.46 s.u.

Well Closed and Locked?: (Y) / N Full Suite Collected?: (Y) / N Z139500; # Bottles Collected: 7 of 7

Date: 9/24/2014 By: Jonathan Wilkinson Title: Senior Chemical Engine

Company: Herst & Associates, Inc.

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FIELD INFORMATION LOG Part 1

Facility: Bridgeton Landfill
Location: Bridgeton, Missouri
Sample Matrix: Groundwater

Sample Point ID: PZ-110-SS
Sampler(s): Matt Stewart
Jonathan Wilkinson
Top of Casing (ft, msl) 461.34

PURGE INFORMATION:

Method of Well Purge: Bladder Pump
Date/Time Initiated: 9/23/2014 1532
Initial Water Level (feet): 30.67
Initial Water Level Previous Event (feet): 33.13
Ground Water Elevation (ft, msl): 430.67
Ground Water Elevation Previous Event (ft, msl): 428.21
Well Total Depth (feet): Top of Pump = 106.90
Well Total Depth Previous Event (feet): Top of Pump = 106.90

Dedicated Equipment: Yes ✓ No
Casing Diameter (inches): 2
One Borehole Volume (gal): Not Applicable
One Borehole Volume Previous Event (gal): N/A
Total Volume Purged (mL): 4,900 mL
Purged Dry?: Yes No ✓
Water Level after Purge (feet): 35.07
Date/Time Completed: 9/23/2014 1544

PURGE DATA: Discharge: 5.5 sec Refill: 6.0 sec Pressure: 57 psi

Measure field pH, Temperature, and Specific Conductance using flow-through cell

Average Purge Rate: 408 mL / min

Time	Purge Rate (mL / min)	Cumulative Volume (mL)	Temp (°C)	pH (std units)	Conductivity (µS = µmhos/cm)	Turbidity (NTU)	Water Level (feet)	Notes
1535	433	1300	17.0	6.76	1910	26.05	32.78	Clear
1538	400	2500	16.8	6.75	1909	9.08	33.83	Clear
1541	367	3600	16.8	6.75	1905	3.87	34.48	Clear
1544	433	4900	16.8	6.74	1910	3.07	35.07	Clear

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FIELD INFORMATION LOG Part 2

SAMPLING INFORMATION:

Sample Point ID: PZ-110-SS

Sampling Method: Bladder Pump

Dedicated: Yes ✓ No ____

Water Level @ Sampling (ft): 35.07

Well Collection Sequence #: 6 of 21

Parameters: Annual: ___ Semi-Annual: ___ Quarterly: ✓ Monthly: ___ Other: ____

SAMPLE DATA:

Time & Date	Sample Rate	Temp (°C)	pH (std units)	Specific Conductance (µS = µmhos/cm)	Turbidity (NTU)	Other	Notes
9/23/2014 1545	VOC: 408 mL/min Other: 408 mL/min	16.6	6.74	1910	3.07	N/A	Clear

INSTRUMENT CALIBRATION DATA:

Start of day: (Date/Time) 9/23/2014 1235

End of day: (Date/time) 9/23/2014 1600

Turbidity Meter: HF MicroTPW

Turbidity Meter S/N: # 201205083

pH / Sp. Cond. Meter: WTW pH/Cond 3400i

pH / Sp. Cond. Meter S/N: # 09490969

Purging Event Start of day	Purging Event End of day		Sampling Event Start of day	Sampling Event End of day	
0.02	N/A	NTU std = 0.02	N/A	0.00	NTU std = 0.02
10.04	N/A	NTU std = 10.0	N/A	10.06	NTU std = 10.0
1005	N/A	NTU std = 1,000	N/A	1026	NTU std = 1,000
1423	N/A	µS std = 1,413	N/A	1430	µS std = 1,413
Cell Const: 0.490	Cell Const: N/A	Cell Const Range: 0.45 - 0.50	Cell Const: N/A	Cell Const: 0.490	Cell Const Range: 0.45 - 0.50
7.00	N/A	pH std = 7.00 @ 24.4 °C	N/A	7.07	pH std = 7.00 @ 26.2 °C
4.01	N/A	pH std = 4.01 @ 24.4 °C	N/A	4.07	pH std = 4.01 @ 26.5 °C

Other Calibration: Not Applicable

GENERAL INFORMATION:

Weather Conditions @ Sampling: Partly Cloudy, Light Breeze, 75°F

Sample Characteristics: Clear

COMMENTS AND OBSERVATIONS:

Sp. Cond. Prediction Limit = 2,318 µS; Historical Range from May 2008 - May 2014: 1774 - 2930 µS.

pH Prediction Limits = 5.962 - 7.608 s.u.; Historical Range from May 2008 - May 2014: 6.25 - 6.92 s.u.

Well Closed and Locked?: (Y) / N Full Suite Collected?: (Y) / N Z139500; # Bottles Collected: 7 of 7

Date: 9/23/2014 By: Jonathan Wilkinson Title: Senior Chemical Engine

Company: Herst & Associates, Inc.

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FIELD INFORMATION LOG Part 1

Facility: Bridgeton Landfill
Location: Bridgeton, Missouri
Sample Matrix: Groundwater

Sample Point ID: PZ-111-SD
Sampler(s): Matt Stewart
Jonathan Wilkinson
Top of Casing (ft, msl) 461.55

PURGE INFORMATION:

Method of Well Purge: Bladder Pump
Date/Time Initiated: 9/24/2014 1203
Initial Water Level (feet): 35.69
Initial Water Level Previous Event (feet): 38.36
Ground Water Elevation (ft, msl): 425.86
Ground Water Elevation Previous Event (ft, msl): 423.19
Well Total Depth (feet): Top of Pump = 196.70
Well Total Depth Previous Event (feet): Top of Pump = 196.48

Dedicated Equipment: Yes ✓ No
Casing Diameter (inches): 2
One Borehole Volume (gal): Not Applicable
One Borehole Volume Previous Event (gal): N/A
Total Volume Purged (mL): 1,950 mL
Purged Dry?: Yes No ✓
Water Level after Purge (feet): 39.98
Date/Time Completed: 9/24/2014 1215

PURGE DATA: Discharge: 6.0 sec Refill: 8.0 sec Pressure: ~~100~~ 95 psi

Measure field pH, Temperature, and Specific Conductance using flow-through cell

Average Purge Rate: 163 mL / min

Time	Purge Rate (mL / min)	Cumulative Volume (mL)	Temp (°C)	pH (std units)	Conductivity (µS = µmhos/cm)	Turbidity (NTU)	Water Level (feet)	Notes
1206	167	500	19.3	7.31	820	2.23	37.25	Clear
1209	167	1000	18.9	7.15	806	1.64	38.15	Clear
1212	133	1400	19.4	7.07	825	4.16	39.13	Clear
1215	183	1950	19.5	7.06	826	19.61	39.98	Clear

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FIELD INFORMATION LOG Part 2

SAMPLING INFORMATION:

Sample Point ID: PZ-111-SD

Sampling Method: Bladder Pump

Dedicated: Yes ✓ No ____

Water Level @ Sampling (ft): 39.98

Well Collection Sequence #: 12 of 21

Parameters: Annual: ___ Semi-Annual: ___ Quarterly: ✓ Monthly: ___ Other: ____

SAMPLE DATA:

Time & Date	Sample Rate	Temp (°C)	pH (std units)	Specific Conductance (µS = µmhos/cm)	Turbidity (NTU)	Other	Notes
9/24/2014 1216	VOC: 163 mL/min Other: 163 mL/min	19.5	7.06	826	19.61	N/A	Clear

INSTRUMENT CALIBRATION DATA:

Start of day: (Date/Time) 9/24/2014 0730

End of day: (Date/time) 9/24/2014 1525

Turbidity Meter: HF MicroTPW

Turbidity Meter S/N: #201205083

pH / Sp. Cond. Meter: WTW pH/Cond 3400i

pH / Sp. Cond. Meter S/N: # 09490969

Purging Event Start of day	Purging Event End of day		Sampling Event Start of day	Sampling Event End of day	
0.03	N/A	NTU std = 0.02	N/A	0.01	NTU std = 0.02
10.03	N/A	NTU std = 10.0	N/A	10.36	NTU std = 10.0
995.6	N/A	NTU std = 1,000	N/A	1047	NTU std = 1,000
1422	N/A	µS std = 1,413	N/A	1394	µS std = 1,413
Cell Const: 0.482	Cell Const: N/A	Cell Const Range: 0.45 - 0.50	N/A	Cell Const: 0.482	Cell Const Range: 0.45 - 0.50
7.05	N/A	pH std = 7.05 @ 12.6 °C	N/A	6.94	pH std = 6.99 @ 27.8 °C
4.00	N/A	pH std = 4.00 @ 12.8 °C	N/A	3.96	pH std = 4.01 @ 28.8 °C

Other Calibration: Not Applicable

GENERAL INFORMATION:

Weather Conditions @ Sampling: Sunny, 75°F

Sample Characteristics: Clear

COMMENTS AND OBSERVATIONS:

Sp. Cond. Prediction Limit = 1,017 µS; Historical Range from May 2008 - May 2014: 806 - 896 µS.

pH Prediction Limits = 6.398 - 8.073 s.u.; Historical Range from May 2008 - May 2014: 6.59 - 7.44 s.u.

Well Closed and Locked?: Ⓨ / N Full Suite Collected?: Ⓨ / N Z139500; # Bottles Collected: 7 of 7

Date: 9/24/2014 By: Jonathan Wilkinson Title: Senior Chemical Engine

Company: Herst & Associates, Inc.

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FIELD INFORMATION LOG Part 1

Facility: Bridgeton Landfill

Location: Bridgeton, Missouri

Sample Matrix: Groundwater

Sample Point ID: PZ-114-AS

Sampler(s): Matt Stewart
Jonathan Wilkinson

Top of Casing (ft, msl) 451.31

PURGE INFORMATION:

Method of Well Purge: Bladder Pump

Dedicated Equipment: Yes ✓ No

Date/Time Initiated: 9/23/2014 1502

Casing Diameter (inches): 2

Initial Water Level (feet): 20.48

One Borehole Volume (gal): Not Applicable

Initial Water Level Previous Event (feet): 22.82

One Borehole Volume Previous Event (gal): N/A

Ground Water Elevation (ft, msl): 430.83

Total Volume Purged (mL): 4,400 mL

Ground Water Elevation Previous Event (ft, msl): 428.49

Purged Dry?: Yes No ✓

Well Total Depth (feet): Top of Pump = 26.31

Water Level after Purge (feet): 20.52

Well Total Depth Previous Event (feet): Top of Pump = 26.20

Date/Time Completed: 9/23/2014 1514

PURGE DATA: Discharge: 2.5 sec Refill: 4.0 sec Pressure: ~~10~~ (JW) 20 psi

Measure field pH, Temperature, and Specific Conductance using flow-through cell

Average Purge Rate: 367 mL / min

Time	Purge Rate (mL / min)	Cumulative Volume (mL)	Temp (°C)	pH (std units)	Conductivity (µS = µmhos/cm)	Turbidity (NTU)	Water Level (feet)	Notes
1505	400	1200	16.5	6.66	2260	49.87	20.53	Clear to cloudy
1508	383	2350	15.9	6.67	2330	16.81	20.57	Clear
1511	383	3500	15.8	6.68	2360	8.25	20.56	Clear
1514	800	4400	15.8	6.68	2370	12.38	20.52	Clear

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FIELD INFORMATION LOG Part 2

SAMPLING INFORMATION:

Sample Point ID: PZ-114-AS

Sampling Method: Bladder Pump

Dedicated: Yes ✓ No ____

Water Level @ Sampling (ft): 20.52

Well Collection Sequence #: 5 of 21

Parameters: Annual: ___ Semi-Annual: ___ Quarterly: ✓ Monthly: ___ Other: ____

SAMPLE DATA:

Time & Date	Sample Rate	Temp (°C)	pH (std units)	Specific Conductance (µS = µmhos/cm)	Turbidity (NTU)	Other	Notes
9/23/2014 1515	VOC: 367 mL/min Other: 367 mL/min	15.8	6.68	2370	12.38	N/A	Clear

INSTRUMENT CALIBRATION DATA:

Start of day: (Date/Time) 9/23/2014 1235

End of day: (Date/time) 9/23/2014 1600

Turbidity Meter: HF MicroTPW

Turbidity Meter S/N: # 201205083

pH / Sp. Cond. Meter: WTW pH/Cond 3400i

pH / Sp. Cond. Meter S/N: # 09490968

Purging Event			Sampling Event		
Start of day	End of day		Start of day	End of day	
0.02	N/A	NTU std = 0.02	N/A	0.00	NTU std = 0.02
10.04	N/A	NTU std = 10.0	N/A	10.06	NTU std = 10.0
1005	N/A	NTU std = 1,000	N/A	1026	NTU std = 1,000
1423	N/A	µS std = 1,413	N/A	1430	µS std = 1,413
Cell Const: 0.490	Cell Const: N/A	Cell Const Range: 0.45 - 0.50	Cell Const: N/A	Cell Const: 0.490	Cell Const Range: 0.45 - 0.50
7.00	N/A	pH std = 7.00 @ 24.4 °C	N/A	7.07	pH std = 7.00 @ 26.2 °C
4.01	N/A	pH std = 4.01 @ 24.4 °C	N/A	4.07	pH std = 4.01 @ 26.5 °C

Other Calibration: Not Applicable

GENERAL INFORMATION:

Weather Conditions @ Sampling: Partly Cloudy, Light Breeze, 75°F

Sample Characteristics: Clear

COMMENTS AND OBSERVATIONS:

Sp. Cond. Prediction Limit = 3,407 µS; Historical Range from May 2008 - May 2014: 1410 - 3301 µS.

pH Prediction Limits = 5.997 - 7.192 s.u.; Historical Range from May 2008 - May 2014: 6.16 - 6.79 s.u.

Well Closed and Locked?: (Y) / N Full Suite Collected?: (Y) / N Z139500; # Bottles Collected: 7of7

Date: 9/23/2014 By: Jonathan Wilkinson Title: Senior Chemical Engine

Company: Herst & Associates, Inc.

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FIELD INFORMATION LOG Part 1

Facility: Bridgeton Landfill

Location: Bridgeton, Missouri

Sample Matrix: Groundwater

Sample Point ID: PZ-115-SS

Sampler(s): Matt Stewart
Jonathan Wilkinson

Top of Casing (ft, msl) 452.30

PURGE INFORMATION:

Method of Well Purge: Bladder Pump

Dedicated Equipment: Yes ✓ No ____

Date/Time Initiated: 9/23/2014 1422

Casing Diameter (inches): 2

Initial Water Level (feet): 16.94

One Borehole Volume (gal): Not Applicable

Initial Water Level Previous Event (feet): 17.25

One Borehole Volume Previous Event (gal): N/A

Ground Water Elevation (ft, msl): 435.36

Total Volume Purged (mL): 5,700 mL

Ground Water Elevation Previous Event (ft, msl): 435.05

Purged Dry?: Yes ____ No ✓

Well Total Depth (feet): Top of Pump = 81.06

Water Level after Purge (feet): 22.07

Well Total Depth Previous Event (feet): Top of Pump = 81.02

Date/Time Completed: 9/23/2014 1437

PURGE DATA: Discharge: 4.5 sec Refill: 6.0 sec Pressure: 45 psi

Measure field pH, Temperature, and Specific Conductance using flow-through cell

Average Purge Rate: 380 mL / min

Time	Purge Rate (mL / min)	Cumulative Volume (mL)	Temp (°C)	pH (std units)	Conductivity (µS = µmhos/cm)	Turbidity (NTU)	Water Level (feet)	Notes
1425	367	1100	16.0	6.70	2500	5.54	18.78	Clear; slight septic odor
1428	433	2400	15.9	6.69	2610	1.63	20.07	Clear; slight septic odor
1431	400	3600	16.0	6.73	2330	3.57	21.04	Clear; slight septic odor
1434	333	4600	16.0	6.75	2240	2.12	21.52	Clear; slight septic odor
1437	367	5700	15.9	6.74	2230	0.79	22.07	Clear; slight septic odor

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FIELD INFORMATION LOG Part 2

SAMPLING INFORMATION:

Sample Point ID: PZ-115-SS

Sampling Method: Bladder Pump

Dedicated: Yes ✓ No ____

Water Level @ Sampling (ft): 22.07

Well Collection Sequence #: 4 of 21

Parameters: Annual: ___ Semi-Annual: ___ Quarterly: ✓ Monthly: ___ Other: ____

SAMPLE DATA:

Time & Date	Sample Rate	Temp (°C)	pH (std units)	Specific Conductance (µS = µmhos/cm)	Turbidity (NTU)	Other	Notes
9/23/2014 1438	VOC: 380 mL/min Other: 380 mL/min	15.9	6.74	2230	0.79	N/A	Clear, slight septic odor

INSTRUMENT CALIBRATION DATA:

Start of day: (Date/Time) 9/23/2014 1235

End of day: (Date/time) 9/23/2014 1600

Turbidity Meter: HF MicroTPW

Turbidity Meter S/N: #201205083

pH / Sp. Cond. Meter: WTW pH/Cond 3400i

pH / Sp. Cond. Meter S/N: #04490969

Purging Event Start of day	Purging Event End of day		Sampling Event Start of day	Sampling Event End of day	
0.02	N/A	NTU std = 0.02	N/A	0.00	NTU std = 0.02
10.04	N/A	NTU std = 10.0	N/A	10.06	NTU std = 10.0
1005	N/A	NTU std = 1,000	N/A	1026	NTU std = 1,000
1423	N/A	µS std = 1,413	N/A	1430	µS std = 1,413
Cell Const: 0.490	Cell Const: N/A	Cell Const Range: 0.45 - 0.50	Cell Const: N/A	Cell Const: 0.490	Cell Const Range: 0.45 - 0.50
7.00	N/A	pH std = 7.00 @ 24.4 °C	N/A	7.07	pH std = 7.00 @ 26.2 °C
4.01	N/A	pH std = 4.01 @ 24.4 °C	N/A	4.07	pH std = 4.01 @ 26.5 °C

Other Calibration: Not Applicable

GENERAL INFORMATION:

Weather Conditions @ Sampling: Partly Cloudy, Light Breeze, 75°F

Sample Characteristics: Clear; Slight Septic odor

COMMENTS AND OBSERVATIONS:

Sp. Cond. Prediction Limit = 2,747 µS; Historical Range from May 2008 - May 2014: 1320 - 2530 µS.

pH Prediction Limits = 6.018 - 7.555 s.u.; Historical Range from May 2008 - May 2014: 6.23 - 6.91 s.u.

Well Closed and Locked?: (Y) / N Full Suite Collected? (Y) / N Z139500; # Bottles Collected: 7 of 7

Date: 9/23/2014 By: Jonathan Wilkinson Title: Senior Chemical Engine

Company: Herst & Associates, Inc.

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FIELD INFORMATION LOG Part 1

Facility: Bridgeton Landfill
Location: Bridgeton, Missouri
Sample Matrix: Groundwater

Sample Point ID: PZ-201A-SS
Sampler(s): Matt Stewart
Jonathan Wilkinson
Top of Casing (ft, msl) 480.16

PURGE INFORMATION:

Method of Well Purge: Bladder Pump
Date/Time Initiated: 9/23/2014 1300
Initial Water Level (feet): 9.81
Initial Water Level Previous Event (feet): 9.08
Ground Water Elevation (ft, msl): 470.35
Ground Water Elevation Previous Event (ft, msl): 471.08
Well Total Depth (feet): Top of Pump = 86.20
Well Total Depth Previous Event (feet): Top of Pump = 86.08

Dedicated Equipment: Yes ✓ No
Casing Diameter (inches): 2
One Borehole Volume (gal): Not Applicable
One Borehole Volume Previous Event (gal): N/A
Total Volume Purged (mL): 3,800mL
Purged Dry?: Yes No ✓
Water Level after Purge (feet): 17.76
Date/Time Completed: 9/23/2014 1312

PURGE DATA: Discharge: 4.5 sec Refill: 6.0 sec Pressure: 50 psi

Measure field pH, Temperature, and Specific Conductance using flow-through cell

Average Purge Rate: 317 mL / min

Time	Purge Rate (mL / min)	Cumulative Volume (mL)	Temp (°C)	pH (std units)	Conductivity (µS = µmhos/cm)	Turbidity (NTU)	Water Level (feet)	Notes
1303	250	750	18.3	6.94	840	6.96	11.78	Clear
1306	333	1750	18.2	7.03	844	7.98	13.84	Clear
1309	333	2750	18.1	7.04	837	4.21	15.77	Clear
1312	350	3800	17.9	7.05	822	3.18	17.76	Clear

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FIELD INFORMATION LOG Part 2

SAMPLING INFORMATION:

Sample Point ID: PZ-201A-SS

Sampling Method: Bladder Pump

Dedicated: Yes ✓ No ____

Water Level @ Sampling (ft): 17.76

Well Collection Sequence #: 1 of 21

Parameters: Annual: ___ Semi-Annual: ___ Quarterly: ✓ Monthly: ___ Other: ___

SAMPLE DATA:

Time & Date	Sample Rate	Temp (°C)	pH (std units)	Specific Conductance (µS = µmhos/cm)	Turbidity (NTU)	Other	Notes
9/23/2014 1313	VOC: 317 mL/min Other 317 mL/min	17.9	7.05	822	3.18	N/A	Clear

INSTRUMENT CALIBRATION DATA:

Start of day: (Date/Time) 9/23/2014 1235

End of day: (Date/time) 9/23/2014 1600

Turbidity Meter: HF MicroTPW

Turbidity Meter S/N: #20120508 3

pH / Sp. Cond. Meter: WTW pH/Cond 3400i

pH / Sp. Cond. Meter S/N: #09490969

Purging Event			Sampling Event		
Start of day	End of day		Start of day	End of day	
0.02	N/A	NTU std = 0.02	N/A	0.00	NTU std = 0.02
10.04	N/A	NTU std = 10.0	N/A	10.06	NTU std = 10.0
1005	N/A	NTU std = 1,000	N/A	1026	NTU std = 1,000
1423	N/A	µS std = 1,413	N/A	1430	µS std = 1,413
Cell Const: 0.490	Cell Const: N/A	Cell Const Range: 0.45 - 0.50	N/A	Cell Const: 0.490	Cell Const Range: 0.45 - 0.50
7.00	N/A	pH std = 7.00 @ 24.4 °C	N/A	7.07	pH std = 7.00 @ 26.2 °C
4.01	N/A	pH std = 4.01 @ 24.4 °C	N/A	4.07	pH std = 4.01 @ 26.5 °C

Other Calibration: Not Applicable

GENERAL INFORMATION:

Weather Conditions @ Sampling: Partly Cloudy, Breezy, 70°F

Sample Characteristics: Clear

COMMENTS AND OBSERVATIONS:

Sp. Cond. Prediction Limit = 988.7 µS; Historical Range from May 2008 - May 2014: 809 - 881 µS.

pH Prediction Limits = 6.362 - 8.334 s.u.; Historical Range from May 2008 - May 2014: 6.48 - 7.38 s.u.

Well Closed and Locked?: (Y) / N Full Suite Collected?: (Y) / N **Z139500**; # Bottles Collected: 7 of 7

Date: 9/23/2014 By: Jonathan Wilkinson Title: Senior Chemical Engine

Company: **Herst & Associates, Inc.**

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FIELD INFORMATION LOG Part 1

Facility: Bridgeton Landfill

Location: Bridgeton, Missouri

Sample Matrix: Groundwater

Sample Point ID: PZ-205-SS

Sampler(s): Matt Stewart
Jonathan Wilkinson

Top of Casing (ft, msl) 466.68

PURGE INFORMATION:

Method of Well Purge: Bladder Pump

Dedicated Equipment: Yes ✓ No

Date/Time Initiated: 9/24/2014 1110

Casing Diameter (inches): 2

Initial Water Level (feet): 26.62

One Borehole Volume (gal): Not Applicable

Initial Water Level Previous Event (feet): 27.15

One Borehole Volume Previous Event (gal): N/A

Ground Water Elevation (ft, msl): 440.06

Total Volume Purged (mL): 5,600 mL

Ground Water Elevation Previous Event (ft, msl): 434.63

Purged Dry?: Yes No ✓

Well Total Depth (feet): ~~Top of Pump =~~ 105.18 (@ With pump)

Water Level after Purge (feet): 37.66

Well Total Depth Previous Event (feet): Top of Pump = 93.01

Date/Time Completed: 9/24/2014 1122

PURGE DATA: Discharge: 5.0 sec Refill: 6.0 sec Pressure: 50 psi

Measure field pH, Temperature, and Specific Conductance using flow-through cell

Average Purge Rate: 467 mL / min

Time	Purge Rate (mL / min)	Cumulative Volume (mL)	Temp (°C)	pH (std units)	Conductivity (µS = µmhos/cm)	Turbidity (NTU)	Water Level (feet)	Notes
1113	467	1400	19.2	7.01	903	26.01	30.01	Clear
1116	467	2800	19.3	6.94	907	17.51	32.42	Clear
1119	483	4250	19.3	6.93	909	14.78	35.08	Clear
1122	450	5600	19.3	6.93	909	11.24	37.66	Clear

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FIELD INFORMATION LOG Part 2

SAMPLING INFORMATION:

Sample Point ID: PZ-205-SS

Sampling Method: Bladder Pump

Dedicated: Yes ✓ No ____

Water Level @ Sampling (ft): 37.66

Well Collection Sequence #: 10 of 21

Parameters: Annual: ___ Semi-Annual: ___ Quarterly: ✓ Monthly: ___ Other: ____

SAMPLE DATA:

Time & Date	Sample Rate	Temp (°C)	pH (std units)	Specific Conductance (µS = µmhos/cm)	Turbidity (NTU)	Other	Notes
9/24/2014 1123	VOC: 467 mL/min Other: 467 mL/min	19.3	6.93	909	11.24	N/A	Clear

INSTRUMENT CALIBRATION DATA:

Start of day: (Date/Time) 9/24/2014 0730

End of day: (Date/time) 9/24/2014 1525

Turbidity Meter: HF MicroTPW

Turbidity Meter S/N: ~~#15~~ #20120503

pH / Sp. Cond. Meter: WTW pH/Cond 3400i

pH / Sp. Cond. Meter S/N: # 09490969

Purging Event			Sampling Event		
Start of day	End of day		Start of day	End of day	
0.03	N/A	NTU std = 0.02	N/A	0.01	NTU std = 0.02
10.03	N/A	NTU std = 10.0	N/A	10.36	NTU std = 10.0
995.6	N/A	NTU std = 1,000	N/A	1047	NTU std = 1,000
1422	N/A	µS std = 1,413	N/A	1394	µS std = 1,413
Cell Const: 0.482	Cell Const: N/A	Cell Const Range: 0.45 - 0.50	Cell Const: N/A	Cell Const: 0.482	Cell Const Range: 0.45 - 0.50
7.05	N/A	pH std = 7.05 @ 12.6 °C	N/A	6.94	pH std = 6.99 @ 27.8 °C
4.00	N/A	pH std = 4.00 @ 12.8 °C	N/A	3.96	pH std = 4.01 @ 28.8 °C

Other Calibration: Not Applicable

GENERAL INFORMATION:

Weather Conditions @ Sampling: Partly Cloudy, Light Breeze, 70°F

Sample Characteristics: Clear

COMMENTS AND OBSERVATIONS:

Sp. Cond. Prediction Limit = 1,270 µS; Historical Range from May 2008 - May 2014: 847 - 936 µS.

pH Prediction Limits = 6.496 - 7.842 s.u.; Historical Range from May 2008 - May 2014: 6.58 - 7.37 s.u.

Well Closed and Locked?: (Y) / N Full Suite Collected?: (Y) / N Z139500; # Bottles Collected: 7 of 7

Date: 9/24/2014 By: Jonathan Wilkinson Title: Senior Chemical Engine

Company: Herst & Associates, Inc.

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FIELD INFORMATION LOG Part 1

Facility: Bridgeton Landfill
Location: Bridgeton, Missouri
Sample Matrix: Groundwater

Sample Point ID: PZ-209-SS
Sampler(s): Matt Stewart
Jonathan Wilkinson
Top of Casing (ft, msl) 489.68

PURGE INFORMATION:

Method of Well Purge: Bladder Pump
Date/Time Initiated: 9/25/2014 0919
Initial Water Level (feet): 21.69
Initial Water Level Previous Event (feet): 23.15
Ground Water Elevation (ft, msl): 467.99
Ground Water Elevation Previous Event (ft, msl): 466.53
Well Total Depth (feet): Top of Pump = 99.91
Well Total Depth Previous Event (feet): 152.70

Dedicated Equipment: Yes ✓ No
Casing Diameter (inches): 2
One Borehole Volume (gal): Not Applicable
One Borehole Volume Previous Event (gal): N/A
Total Volume Purged (mL): 4,900 mL
Purged Dry?: Yes No ✓
Water Level after Purge (feet): 31.25
Date/Time Completed: 9/25/2014 0931

PURGE DATA: Discharge: 4.5 sec Refill: 6.0 sec Pressure: ~~45~~ 47.5 psi

Measure field pH, Temperature, and Specific Conductance using flow-through cell

Average Purge Rate: 408 mL / min

Time	Purge Rate (mL / min)	Cumulative Volume (mL)	Temp (°C)	pH (std units)	Conductivity (µS = µmhos/cm)	Turbidity (NTU)	Water Level (feet)	Notes
0922	333	1000	15.4	7.29	735	18.77	24.32	Clear
0925	367	2100	15.3	7.24	755	8.31	26.24	Clear
0928	533	3700	15.0	7.24	751	7.16	29.20	Clear
0931	400	4900	15.0	7.25	744	6.97	31.25	Clear

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FIELD INFORMATION LOG Part 2

SAMPLING INFORMATION:

Sample Point ID: PZ-209-SS

Sampling Method: Bladder Pump

Dedicated: Yes ✓ No ___

Water Level @ Sampling (ft): 31.25

Well Collection Sequence #: 17 of 21

Parameters: Annual: ___ Semi-Annual: ___ Quarterly: ___ Monthly: ___ Other: ✓ Appendix II

SAMPLE DATA:

Time & Date	Sample Rate	Temp (°C)	pH (std units)	Specific Conductance (µS = µmhos/cm)	Turbidity (NTU)	Other	Notes
9/25/2014 0932	VOC: 408 mL/min Other: 408 mL/min	15.0	7.25	744	6.97	N/A	Clear

INSTRUMENT CALIBRATION DATA:

Start of day: (Date/Time) 9/25/2014 0730

End of day: (Date/time) 9/25/2014 1215

Turbidity Meter: HF MicroTPW

Turbidity Meter S/N: #201205083

pH / Sp. Cond. Meter: WTW pH/Cond 3400i

pH / Sp. Cond. Meter S/N: # 09490969

Purging Event Start of day	Purging Event End of day		Sampling Event Start of day	Sampling Event End of day	
0.02	N/A	NTU std = 0.02	N/A	0.44	NTU std = 0.02
10.00	N/A	NTU std = 10.0	N/A	10.56	NTU std = 10.0
987.8	N/A	NTU std = 1,000	N/A	1028	NTU std = 1,000
1421	N/A	µS std = 1,413	N/A	1397	µS std = 1,413
Cell Const: 0.482	Cell Const: N/A	Cell Const Range: 0.45 - 0.50	Cell Const: N/A	Cell Const: 0.482	Cell Const Range: 0.45 - 0.50
7.03	N/A	pH std = 7.03 @ 17.1 °C	N/A	7.03	pH std = 7.00 @ 26.2 °C
4.00	N/A	pH std = 4.00 @ 16.8 °C	N/A	3.99	pH std = 4.01 @ 27.5 °C

Other Calibration: Not Applicable

GENERAL INFORMATION:

Weather Conditions @ Sampling: Partly Cloudy, 65°F

Sample Characteristics: Clear

COMMENTS AND OBSERVATIONS:

Well Closed and Locked?: Y / N Full Suite Collected?: Y / N Z161387; # Bottles Collected: 15 of 15

Date: 9/25/2014 By: Jonathan Wilkinson Title: Senior Chemical Engine

Company: Herst & Associates, Inc.

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FIELD INFORMATION LOG Part 1

Facility: Bridgeton Landfill

Location: Bridgeton, Missouri

Sample Matrix: Groundwater

Sample Point ID: PZ-209-SD

Sampler(s): Matt Stewart
Jonathan Wilkinson

Top of Casing (ft, msl): 489.58

PURGE INFORMATION:

Method of Well Purge: Bladder Pump

Dedicated Equipment: Yes ✓ No

Date/Time Initiated: 9/25/2014 0858

Casing Diameter (inches): 2

Initial Water Level (feet): 24.75

One Borehole Volume (gal): Not Applicable

Initial Water Level Previous Event (feet): 24.73

One Borehole Volume Previous Event (gal): N/A

Ground Water Elevation (ft, msl): 464.83

Total Volume Purged (mL): 4,200 mL

Ground Water Elevation Previous Event (ft, msl): 464.85

Purged Dry?: Yes No ✓

Well Total Depth (feet): Top of Pump = 101.44

Water Level after Purge (feet): 33.02

Well Total Depth Previous Event (feet): 253.05

Date/Time Completed: 9/25/2014 0910

PURGE DATA: Discharge: 4.5 sec Refill: 6.0 sec Pressure: 52 psi

Measure field pH, Temperature, and Specific Conductance using flow-through cell

Average Purge Rate: (JW) ~~433~~ 350 mL / min

Time	Purge Rate (mL / min)	Cumulative Volume (mL)	Temp (°C)	pH (std units)	Conductivity (µS = µmhos/cm)	Turbidity (NTU)	Water Level (feet)	Notes
0901	317	950	15.5	7.40	876	31.42	27.11	Clear
0904	350	2000	15.2	7.36	883	679.0	29.18	Lt. gray
0907	367	3100	15.1	7.30	889	>1,100	31.10	Gray
0910	367	(JW) ~~3200~~ 4,200	15.1	7.30	886	>1,100	33.02	Gray

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FIELD INFORMATION LOG Part 2

SAMPLING INFORMATION:

Sample Point ID: PZ-209-SD

Sampling Method: Bladder Pump

Dedicated: Yes ✓ No ____

Water Level @ Sampling (ft): 33.02

Well Collection Sequence #: 16 of 21

Parameters: Annual: ___ Semi-Annual: ___ Quarterly: ___ Monthly: ___ Other: ✓ Appendix II

SAMPLE DATA:

Time & Date	Sample Rate	Temp (°C)	pH (std units)	Specific Conductance (µS = µmhos/cm)	Turbidity (NTU)	Other	Notes
9/25/2014 0911	VOC: 350 mL/min Other: 350 mL/min	15.1	7.30	886	>1,100	N/A	Gray

INSTRUMENT CALIBRATION DATA:

Start of day: (Date/Time) 9/25/2014 0730

End of day: (Date/time) 9/25/2014 1215

Turbidity Meter: HF MicroTPW

Turbidity Meter S/N: #201205083

pH / Sp. Cond. Meter: WTW pH/Cond 3400i

pH / Sp. Cond. Meter S/N: # 09490969

Purging Event			Sampling Event		
Start of day	End of day		Start of day	End of day	
0.02	N/A	NTU std = 0.02	N/A	0.44	NTU std = 0.02
10.00	N/A	NTU std = 10.0	N/A	10.56	NTU std = 10.0
987.8	N/A	NTU std = 1,000	N/A	1028	NTU std = 1,000
1421	N/A	µS std = 1,413	N/A	1397	µS std = 1,413
Cell Const: 0.482	Cell Const: N/A	Cell Const Range: 0.45 - 0.50	Cell Const: N/A	Cell Const: 0.482	Cell Const Range: 0.45 - 0.50
7.03	N/A	pH std = 7.03 @ 17.1 °C	N/A	7.03	pH std = 7.00 @ 26.2 °C
4.00	N/A	pH std = 4.00 @ 16.8 °C	N/A	3.99	pH std = 4.01 @ 27.5 °C

Other Calibration: Not Applicable

GENERAL INFORMATION:

Weather Conditions @ Sampling: Partly Cloudy, 65°F

Sample Characteristics: Gray

COMMENTS AND OBSERVATIONS:

Well Closed and Locked? (Y) / N Full Suite Collected? (Y) / N Z161387; # Bottles Collected: 15 of 15

Date: 9/25/2014 By: Jonathan Wilkinson Title: Senior Chemical Engineer

Company: Herst & Associates, Inc.

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FIELD INFORMATION LOG Part 1

Facility: Bridgeton Landfill
Location: Bridgeton, Missouri
Sample Matrix: Groundwater

Sample Point ID: PZ-210-SS
Sampler(s): Matt Stewart
Jonathan Wilkinson
Top of Casing (ft, msl): 486.90

PURGE INFORMATION:

Method of Well Purge: Bladder Pump
Date/Time Initiated: 9/25/2014 1151
Initial Water Level (feet): 24.02
Initial Water Level Previous Event (feet): 26.20
Ground Water Elevation (ft, msl): 462.88
Ground Water Elevation Previous Event (ft, msl): 460.70
Well Total Depth (feet): Top of Pump = 101.50
Well Total Depth Previous Event (feet): 150.39

Dedicated Equipment: Yes ✓ No
Casing Diameter (inches): 2
One Borehole Volume (gal): Not Applicable
One Borehole Volume Previous Event (gal): N/A
Total Volume Purged (mL): 5,400 mL
Purged Dry?: Yes No ✓
Water Level after Purge (feet): 34.21
Date/Time Completed: 9/25/2014 1203

PURGE DATA: Discharge: 4.5 sec Refill: 6.0 sec Pressure: 47 psi

Measure field pH, Temperature, and Specific Conductance using flow-through cell

Average Purge Rate: 450 mL / min

Time	Purge Rate (mL / min)	Cumulative Volume (mL)	Temp (°C)	pH (std units)	Conductivity (µS = µmhos/cm)	Turbidity (NTU)	Water Level (feet)	Notes
1154	467	1400	16.5	7.08	799	5.25	27.28	Clear
1157	400	2600	16.4	7.10	809	4.66	29.68	Clear
1200	467	4000	16.4	7.08	806	4.67	31.93	Clear
1203	467	5400	16.3	7.06	807	7.87	34.21	Clear

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FIELD INFORMATION LOG Part 2

SAMPLING INFORMATION:

Sample Point ID: PZ-210-SS

Sampling Method: Bladder Pump

Dedicated: Yes ✓ No ____

Water Level @ Sampling (ft): 34.21

Well Collection Sequence #: 21 of 21

Parameters: Annual: ___ Semi-Annual: ___ Quarterly: ___ Monthly: ___ Other: ✓ Appendix II

SAMPLE DATA:

Time & Date	Sample Rate	Temp (°C)	pH (std units)	Specific Conductance (µS = µmhos/cm)	Turbidity (NTU)	Other	Notes
9/25/2014 1204	VOC: 450mL/min Other: 450mL/min	16.3	7.06	807	7.07	N/A	Clear

INSTRUMENT CALIBRATION DATA:

Start of day: (Date/Time) 9/25/2014 0930

End of day: (Date/time) 9/25/2014 1215

Turbidity Meter: HF MicroTPW

Turbidity Meter S/N: #201205083

pH / Sp. Cond. Meter: WTW pH/Cond 3400i

pH / Sp. Cond. Meter S/N: #09490969

Purging Event			Sampling Event		
Start of day	End of day		Start of day	End of day	
0.02	N/A	NTU std = 0.02	N/A	0.44	NTU std = 0.02
10.00	N/A	NTU std = 10.0	N/A	10.56	NTU std = 10.0
967.8	N/A	NTU std = 1,000	N/A	1028	NTU std = 1,000
1421	N/A	µS std = 1,413	N/A	1397	µS std = 1,413
Cell Const: 0.462	Cell Const: N/A	Cell Const Range: 0.45 - 0.50	Cell Const: N/A	Cell Const: 0.462	Cell Const Range: 0.45 - 0.50
7.03	N/A	pH std = 7.03 @ 17.1 °C	N/A	7.03	pH std = 7.00 @ 26.2 °C
4.00	N/A	pH std = 4.00 @ 16.8 °C	N/A	3.99	pH std = 4.01 @ 27.5 °C

Other Calibration: Not Applicable

GENERAL INFORMATION:

Weather Conditions @ Sampling: Sunny, 75°F

Sample Characteristics: Clear

COMMENTS AND OBSERVATIONS:

Well Closed and Locked? (Y) / N Full Suite Collected?: (Y) / N Z161387; # Bottles Collected: 15 of 15

Date: 9/25/2014 By: Jonathan Wilkinson Title: Senior Chemical Engine

Company: Herst & Associates, Inc.

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FIELD INFORMATION LOG Part 1

Facility: Bridgeton Landfill
Location: Bridgeton, Missouri
Sample Matrix: Groundwater

Sample Point ID: PZ-210-SD
Sampler(s): Matt Stewart
Jonathan Wilkinson
Top of Casing (ft, msl) 487.01

PURGE INFORMATION:

Method of Well Purge: Bladder Pump
Date/Time Initiated: 9/25/2014 1119
Initial Water Level (feet): 28.23
Initial Water Level Previous Event (feet): 27.16
Ground Water Elevation (ft, msl): 458.78
Ground Water Elevation Previous Event (ft, msl): 459.85
Well Total Depth (feet): Top of Pump = 101.82
Well Total Depth Previous Event (feet): 250.13

Dedicated Equipment: Yes ✓ No
Casing Diameter (inches): 2
One Borehole Volume (gal): Not Applicable
One Borehole Volume Previous Event (gal): N/A
Total Volume Purged (mL): 9,300 mL
Purged Dry?: Yes No ✓
Water Level after Purge (feet): 45.34
Date/Time Completed: 9/25/2014 1143

PURGE DATA: Discharge: 4.5 sec Refill: 6.0 sec Pressure: 55 psi

Measure field pH, Temperature, and Specific Conductance using flow-through cell

Average Purge Rate: 388 mL / min

Time	Purge Rate (mL / min)	Cumulative Volume (mL)	Temp (°C)	pH (std units)	Conductivity (µS = µmhos/cm)	Turbidity (NTU)	Water Level (feet)	Notes
1134	400	6,000	16.3	6.96	1206	677.3	39.86	Lt. gray
1137	233	6,700	16.7	6.95	1207	460.8	41.00	Lt. gray
1140	400	7,900	16.3	6.96	1209	411.2	43.17	Lt. gray
1143	467	9,300	16.4	6.96	1207	295.4	45.34	Lt. gray

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FIELD INFORMATION LOG Part 2

SAMPLING INFORMATION:

Sample Point ID: PZ-210-SD

Sampling Method: Bladder Pump

Dedicated: Yes ✓ No ____

Water Level @ Sampling (ft): 45.34

Well Collection Sequence #: 20 of 21

Parameters: Annual: ___ Semi-Annual: ___ Quarterly: ___ Monthly: ___ Other: ✓ Appendix II

SAMPLE DATA:

Time & Date	Sample Rate	Temp (°C)	pH (std units)	Specific Conductance (µS = µmhos/cm)	Turbidity (NTU)	Other	Notes
9/25/2014 1444	VOC: 300 mL/min Other: 300 mL/min	16.4	6.96	1207	295.4	N/A	Lt. gray

INSTRUMENT CALIBRATION DATA:

Start of day: (Date/Time) 9/25/2014 0730

End of day: (Date/time) 9/25/2014 1215

Turbidity Meter: HF MicroTPW

Turbidity Meter S/N: # 20120508 3

pH / Sp. Cond. Meter: WTW pH/Cond 3400i

pH / Sp. Cond. Meter S/N: # 09490969

Purging Event Start of day	Purging Event End of day		Sampling Event Start of day	Sampling Event End of day	
0.02	N/A	NTU std = 0.02	N/A	0.44	NTU std = 0.02
10.00	N/A	NTU std = 10.0	N/A	10.56	NTU std = 10.0
987.0	N/A	NTU std = 1,000	N/A	1028	NTU std = 1,000
1421	N/A	µS std = 1,413	N/A	1397	µS std = 1,413
Cell Const: 0.482	Cell Const: N/A	Cell Const Range: 0.45 - 0.50	Cell Const: N/A	Cell Const: 0.482	Cell Const Range: 0.45 - 0.50
7.03	N/A	pH std = 7.03 @ 17.1 °C	N/A	7.03	pH std = 7.00 @ 26.2 °C
4.00	N/A	pH std = 4.00 @ 16.8 °C	N/A	3.99	pH std = 4.01 @ 27.5 °C

Other Calibration: Not Applicable

GENERAL INFORMATION:

Weather Conditions @ Sampling: Sunny, 75°F

Sample Characteristics: Light gray

COMMENTS AND OBSERVATIONS:

Well Closed and Locked?: (Y) / N Full Suite Collected?: (Y) / N Z161387; # Bottles Collected: 15 of 15

Date: 9/24/2014 By: Jonathan Wilkinson Title: Senior Chemical Engine

Company: Herst & Associates, Inc.

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FIELD INFORMATION LOG Part 1

Facility: Bridgeton Landfill

Location: Bridgeton, Missouri

Sample Matrix: Groundwater

Sample Point ID: PZ-211-SS

Sampler(s): Matt Stewart
Jonathan Wilkinson

Top of Casing (ft, msl): 487.41

PURGE INFORMATION:

Method of Well Purge: Bladder Pump

Dedicated Equipment: Yes ✓ No ____

Date/Time Initiated: 9/25/2014 1035

Casing Diameter (inches): 2

Initial Water Level (feet): 19.44

One Borehole Volume (gal): Not Applicable

Initial Water Level Previous Event (feet): 21.55

One Borehole Volume Previous Event (gal): N/A

Ground Water Elevation (ft, msl): 467.97

Total Volume Purged (mL): 6,100 mL

Ground Water Elevation Previous Event (ft, msl): 465.86

Purged Dry?: Yes ____ No ✓

Well Total Depth (feet): Top of Pump = 98.16

Water Level after Purge (feet): 31.35

Well Total Depth Previous Event (feet): 149.99

Date/Time Completed: 9/25/2014 1047

PURGE DATA: Discharge: 4.5 sec Refill: 6.0 sec Pressure: 47 psi

Measure field pH, Temperature, and Specific Conductance using flow-through cell

Average Purge Rate: 508 mL / min

Time	Purge Rate (mL / min)	Cumulative Volume (mL)	Temp (°C)	pH (std units)	Conductivity (µS = µmhos/cm)	Turbidity (NTU)	Water Level (feet)	Notes
1038	533	1600	15.8	7.05	726	4.02	23.15	Clear
1041	500	3100	15.8	7.00	727	7.46	25.95	Clear
1044	500	4600	15.7	6.99	726	14.05	28.51	Clear
1047	500	6100	15.7	6.97	726	19.33	31.35	Clear

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FIELD INFORMATION LOG Part 2

SAMPLING INFORMATION:

Sample Point ID: PZ-211-SS

Sampling Method: Bladder Pump

Dedicated: Yes ✓ No ___

Water Level @ Sampling (ft): 31.35

Well Collection Sequence #: 19 of 21

Parameters: Annual: ___ Semi-Annual: ___ Quarterly: ___ Monthly: ___ Other: ✓ Appendix II

SAMPLE DATA:

Time & Date	Sample Rate	Temp (°C)	pH (std units)	Specific Conductance (µS = µmhos/cm)	Turbidity (NTU)	Other	Notes
9/25/2014 1049	VOC: 500 mL/min Other: 500 mL/min	15.7	6.97	726	19.33	N/A	Clear

INSTRUMENT CALIBRATION DATA:

Start of day: (Date/Time) 9/25/2014 0730

End of day: (Date/time) 9/25/2014 1215

Turbidity Meter: HF MicroTPW

Turbidity Meter S/N: # 20120503

pH / Sp. Cond. Meter: WTW pH/Cond 3400i

pH / Sp. Cond. Meter S/N: # 09490969

Purging Event			Sampling Event		
Start of day	End of day		Start of day	End of day	
0.02	N/A	NTU std = 0.02	N/A	0.44	NTU std = 0.02
10.00	N/A	NTU std = 10.0	N/A	10.56	NTU std = 10.0
987.8	N/A	NTU std = 1,000	N/A	1028	NTU std = 1,000
1421	N/A	µS std = 1,413	N/A	1397	µS std = 1,413
Cell Const: 0.482	Cell Const: N/A	Cell Const Range: 0.45 - 0.50	Cell Const: N/A	Cell Const: 0.482	Cell Const Range: 0.45 - 0.50
7.03	N/A	pH std = 7.03 @ 17.1 °C	N/A	7.03	pH std = 7.00 @ 26.2 °C
4.00	N/A	pH std = 4.00 @ 16.8 °C	N/A	3.99	pH std = 4.01 @ 27.5 °C

Other Calibration: Not Applicable

GENERAL INFORMATION:

Weather Conditions @ Sampling: Sunny, 70°F

Sample Characteristics: Clear

COMMENTS AND OBSERVATIONS:

Well Closed and Locked?: Y / N Full Suite Collected?: Y / N Z161387; # Bottles Collected: 15 of 15

Date: 9/25/2014 By: Jonathan Wilkinson Title: Senior Chemical Engine

Company: Herst & Associates, Inc.

HERST & ASSOCIATES, INC.

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FIELD INFORMATION LOG Part 1

Facility: Bridgeton Landfill
Location: Bridgeton, Missouri
Sample Matrix: Groundwater

Sample Point ID: PZ-211-SD
Sampler(s): Matt Stewart
Jonathan Wilkinson
Top of Casing (ft, msl): 487.46

PURGE INFORMATION:

Method of Well Purge: Bladder Pump
Date/Time Initiated: 9/25/2014 1005
Initial Water Level (feet): 23.16
Initial Water Level Previous Event (feet): 23.26
Ground Water Elevation (ft, msl): 464.30
Ground Water Elevation Previous Event (ft, msl): 464.20
Well Total Depth (feet): Top of Pump = 99.40
Well Total Depth Previous Event (feet): 249.82

Dedicated Equipment: Yes ✓ No
Casing Diameter (inches): 2
One Borehole Volume (gal): Not Applicable
One Borehole Volume Previous Event (gal): N/A
Total Volume Purged (mL): 2,800 mL
Purged Dry?: Yes No ✓
Water Level after Purge (feet): 26.23
Date/Time Completed: 9/25/2014 1020

PURGE DATA: Discharge: 4.5 4.0 (TJ) sec Refill: 6.0 12.0 (TJ) sec Pressure: 52 75 (TJ) psi

Measure field pH, Temperature, and Specific Conductance using flow-through cell

Average Purge Rate: 187 mL / min

Time	Purge Rate (mL / min)	Cumulative Volume (mL)	Temp (°C)	pH (std units)	Conductivity (µS = µmhos/cm)	Turbidity (NTU)	Water Level (feet)	Notes
1008	350	1050	16.8	7.42	928	2.42	25.20	Clear
1011	433	2350	18.7	7.39	926	1.38	25.50	Clear
1014	67	2550	20.1	7.38	915	2.75	25.78	Clear
1017	50	2700	20.9	7.37	922	3.66	26.01	Clear
1020	33	2800	20.9	7.37	920	6.50	26.23	Clear

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Personal Attention

FIELD INFORMATION LOG Part 2

SAMPLING INFORMATION:

Sample Point ID: PZ-211-SD

Sampling Method: Bladder Pump

Dedicated: Yes ✓ No ____

Water Level @ Sampling (ft): 26.23

Well Collection Sequence #: 18 of 21

Parameters: Annual: ___ Semi-Annual: ___ Quarterly: ___ Monthly: ___ Other: ✓ Appendix II

SAMPLE DATA:

Time & Date	Sample Rate	Temp (°C)	pH (std units)	Specific Conductance (µS = µmhos/cm)	Turbidity (NTU)	Other	Notes
9/25/2014 1021	VOC: 187 mL/min Other: 187 mL/min	20.9	7.37	920	6.50	N/A	Clear

INSTRUMENT CALIBRATION DATA:

Start of day: (Date/Time) 9/25/2014 0730

End of day: (Date/time) 9/25/2014 1215

Turbidity Meter: HF MicroTPW

Turbidity Meter S/N: #201205083

pH / Sp. Cond. Meter: WTW pH/Cond 3400i

pH / Sp. Cond. Meter S/N: #09490969

Purging Event			Sampling Event		
Start of day	End of day		Start of day	End of day	
0.02	N/A	NTU std = 0.02	N/A	0.44	NTU std = 0.02
10.00	N/A	NTU std = 10.0	N/A	10.56	NTU std = 10.0
987.8	N/A	NTU std = 1,000	N/A	1028	NTU std = 1,000
1421	N/A	µS std = 1,413	N/A	1397	µS std = 1,413
Cell Const: 0.482	Cell Const: N/A	Cell Const Range: 0.45 - 0.50	Cell Const: N/A	Cell Const: 0.482	Cell Const Range: 0.45 - 0.50
7.03	N/A	pH std = 7.03 @ 17.1 °C	N/A	7.03	pH std = 7.00 @ 26.2 °C
4.00	N/A	pH std = 4.00 @ 16.8 °C	N/A	3.99	pH std = 4.01 @ 27.5 °C

Other Calibration: Not Applicable

GENERAL INFORMATION:

Weather Conditions @ Sampling: Sunny, 70°F

Sample Characteristics: Clear

COMMENTS AND OBSERVATIONS:

Well Closed and Locked?: (Y) / N Full Suite Collected?: (Y) / N Z161387; # Bottles Collected: 15 of 15

Date: 9/25/2014 By: Jonathan Wilkinson Title: Senior Chemical Engine

Company: Herst & Associates, Inc.

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CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
PACE ANALYTICAL SERVICES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	26-SEP-14	AA28600
	Completed 10-OCT-14	PO Number NEED PO
	Printed 15-OCT-14	Sampled 23-SEP-14 13:13

Report To	Bill To
JON WILKINSON HERST AND ASSOCIATES 4630 SOUTH HIGHWAY 94 NORTH OUTER ROAD ST. CHARLES, MO 63304	DAVE VASBINDER ALLIED WASTE SYSTEMS 13570 ST. CHARLES ROCK ROAD BRIDGETON, MO 63044

Sample Description

CLIENT ID: PZ-201A-SS
MATRIX TYPE: NON-SPECIFIC WATER
SUBMITTER: 8945 - MO-ALLIED-BRIDGETON LANDFILL
PROJECT NAME: GROUNDWATER - BRIDGETON LANDFILL
DATA PACKAGE #: 66865
LOCATION: BRIDGETON LANDFILL
DESCRIPTION: SEMI-ANNUAL GROUNDWATER TESTING

GROUNDWATER MONITORING WELL DATA SAS

Analysis Date: 23-SEP-14 13:13 Instrument: FIELD Test: G600.0.0

Parameter	Result	Det. Limit	Units
TOTAL WELL DEPTH	86.20		ft
INITIAL WATER LEVEL	9.81		ft
ELEVATION OF GROUNDWATER SURFACE	470.35		Feet/MSL

FIELD TEMPERATURE SM2550 B 2000 NELAC:N

Analysis Date: 23-SEP-14 13:13 Instrument: FIELD Test: G603.1.0

Parameter	Result	Det. Limit	Units
TEMPERATURE	17.9		Degrees C

FIELD PH (AQUEOUS) SW846-9040C NELAC:Y

Analysis Date: 23-SEP-14 13:13 Instrument: FIELD Test: G607.0.0

Parameter	Result	Det. Limit	Units
PH	7.05	0.1	Std. Units

FIELD SPECIFIC CONDUCTANCE SW846-9050A NELAC:Y

Analysis Date: 23-SEP-14 13:13 Instrument: FIELD Test: G604.0.0

Parameter	Result	Det. Limit	Units
CONDUCTIVITY	822	1.0	umHOS/cm

FIELD TURBIDITY EPA 180.1 NELAC:Y

Analysis Date: 23-SEP-14 13:13 Instrument: FIELD Test: G602.0.0

Parameter	Result	Det. Limit	Units
TURBIDITY	3.18		ntu

HARDNESS SM2340 B 1997 NELAC:Y

Analyst: J. KRAMER Analysis Date: 30-SEP-14 04:27 Instrument: ICP Test: G608.0.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
HARDNESS	440	1.0	mg CaCO3/L

ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

Analyst: K. KAMARA Analysis Date: 29-SEP-14 09:00 Instrument: PREP Test: P129.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

Analyst: K. KAMARA Analysis Date: 29-SEP-14 09:00 Instrument: PREP Test: P130.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

BARIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 30-SEP-14 04:27 Instrument: ICP Test: M104.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BARIUM	120	10	ug/L

BERYLLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 01:31 Instrument: ICP/MS Test: V105.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	2.0	ug/L

1:5 Dilution.

BORON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 30-SEP-14 04:27 Instrument: ICP Test: M107.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BORON	BDL	100	ug/L

CALCIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 30-SEP-14 04:27 Instrument: ICP Test: M109.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units

Parameter	Result	Det. Limit	Units
CALCIUM	100000	100	ug/L

CHROMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 01:31 Instrument: ICP/MS Test: V110.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	5.0	ug/L

1:5 Dilution.

COBALT ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 30-SEP-14 04:27 Instrument: ICP Test: M111.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COBALT	BDL	5.0	ug/L

COPPER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 21:39 Instrument: ICP/MS Test: V112.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
COPPER	BDL	5.0	ug/L

1:5 Dilution.

IRON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 30-SEP-14 04:27 Instrument: ICP Test: M115.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
IRON	360	20	ug/L

MAGNESIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 30-SEP-14 04:27 Instrument: ICP Test: M118.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MAGNESIUM	47000	100	ug/L

MANGANESE ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 30-SEP-14 04:27 Instrument: ICP Test: M119.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MANGANESE	57	5.0	ug/L

NICKEL ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 30-SEP-14 04:27 Instrument: ICP Test: M122.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
NICKEL	BDL	10	ug/L

SILVER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 01:31 Instrument: ICP/MS Test: V130.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	5.0	ug/L

1:5 Dilution.

SODIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 30-SEP-14 04:27 Instrument: ICP Test: M131.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SODIUM	15000	1000	ug/L

THALLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 01:31 Instrument: ICP/MS Test: V134.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	2.0	ug/L

1:5 Dilution.

VANADIUM ICP SW846-6010B NELAC:N

Analyst: J. KRAMER Analysis Date: 30-SEP-14 04:27 Instrument: ICP Test: M138.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	10	ug/L

ZINC ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 30-SEP-14 04:27 Instrument: ICP Test: M139.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ZINC	BDL	20	ug/L

ARSENIC ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 01:31 Instrument: ICP/MS Test: V103.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	5.0	ug/L

1:5 Dilution.

CADMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 01:31 Instrument: ICP/MS Test: V108.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.20	ug/L

1:5 Dilution.

LEAD ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 01:31 Instrument: ICP/MS Test: V116.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
LEAD	BDL	5.0	ug/L

1:5 Dilution.

ANTIMONY ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 01:31 Instrument: ICP/MS Test: V102.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	5.0	ug/L

1:5 Dilution.

SELENIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 01:31 Instrument: ICP/MS Test: V128.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	5.0	ug/L

1:5 Dilution.

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 08:00 Instrument: PREP Test: P131.6.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	40		mL
FINAL VOLUME	40		mL

MERCURY CVAA SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 20:03 Instrument: CVAA Test: M120.1.0

Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A P131.6.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.20	ug/L

TOTAL DISSOLVED SOLIDS SM2540 C 1997 NELAC:Y

Analyst: N. HARBACHOW Analysis Date: 30-SEP-14 18:30 Test: G402.9.0

Parameter	Result	Det. Limit	Units
DISSOLVED SOLIDS	490	10	mg/L

CHLORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 26-SEP-14 23:21 Instrument: IC Test: G310.2.0

Parameter	Result	Det. Limit	Units
CHLORIDE	3.8	3.0	mg/L

FLUORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 26-SEP-14 23:21 Instrument: IC Test: G310.1.0

Parameter	Result	Det. Limit	Units
FLUORIDE	0.38	0.10	mg/L

AMMONIA BY AUTOMATED PHENATE SM4500-NH3 G 1997 NELAC:Y

Analyst: T. DRIGGERS Analysis Date: 06-OCT-14 14:42 Instrument: AUTO-ANALYZER Test: G204.6.0

Parameter	Result	Det. Limit	Units
NITROGEN, AMMONIA	BDL	0.10	mg/L

NITROGEN, NITRATE-NITRITE EPA 353.2 REV. 2.0 (1993) NELAC:Y

Analyst: C. ANYANWUTAKU Analysis Date: 10-OCT-14 11:36 Instrument: AUTO-ANALYZER Test: G113.3.0

Parameter	Result	Det. Limit	Units
NITROGEN, NITRATE-NITRITE	0.27	0.10	mg/L

PHOSPHORUS, TOTAL (AUTOMATED) EPA 365.1 REV. 2.0 (1993) NELAC:Y

Analyst: E. SKALA Analysis Date: 02-OCT-14 08:23 Instrument: AUTO-ANALYZER Test: G207.2.0

Parameter	Result	Det. Limit	Units
PHOSPHORUS	BDL	0.05	mg/L

SULFATE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 27-SEP-14 00:16 Instrument: IC Test: G310.7.0

Parameter	Result	Det. Limit	Units
SULFATE	56	2.0	mg/L

1:5 Dilution.

CHEMICAL OXYGEN DEMAND (COLORIMETRIC) EPA 410.4 REV. 2.0 (1993) NELAC:Y

Analyst: B. LEDFORD Analysis Date: 30-SEP-14 11:30 Test: G301.1.0

Parameter	Result	Det. Limit	Units
CHEMICAL OXYGEN DEMAND	BDL	10	mg/L

MS and/or MSD do not meet control limits. Results for this sample are estimated.

TOTAL ORGANIC CARBON SW846-9060A NELAC:Y

Analyst: D. DICKERSON Analysis Date: 02-OCT-14 09:47 Instrument: TOC Test: O401.0.0

Parameter	Result	Det. Limit	Units
TOTAL ORGANIC CARBON (TOC)	33	5.0	mg/L

1:5 Dilution.

VOLATILE ORGANICS (CAPILLARY COLUMN) SW846-8260B NELAC:Y

Analyst: H. WILLIAMS Analysis Date: 30-SEP-14 14:06 Instrument: GC/MS VOA Test: O510.6.0

Parameter	Result	Det. Limit	Units
ACETONE (2-PROPANONE)	BDL	10	ug/L
ACRYLONITRILE	BDL	100	ug/L
BENZENE	BDL	5.0	ug/L
BROMOCHLOROMETHANE	BDL	5.0	ug/L
BROMODICHLOROMETHANE	BDL	5.0	ug/L
BROMOFORM	BDL	5.0	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	10	ug/L
CARBON TETRACHLORIDE	BDL	5.0	ug/L
CHLOROBENZENE	BDL	5.0	ug/L
DIBROMOCHLOROMETHANE	BDL	5.0	ug/L
CHLOROETHANE	BDL	10	ug/L
CHLOROFORM	BDL	5.0	ug/L
CHLOROMETHANE	BDL	10	ug/L
1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	BDL	5.0	ug/L
1,2-DIBROMOETHANE (EDB)	BDL	5.0	ug/L
DIBROMOMETHANE	BDL	10	ug/L
1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	BDL	5.0	ug/L
1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	BDL	5.0	ug/L
TRANS-1,4-DICHLORO-2-BUTENE	BDL	10	ug/L
1,1-DICHLOROETHANE	BDL	5.0	ug/L
1,2-DICHLOROETHANE	BDL	5.0	ug/L
1,1-DICHLOROETHENE	BDL	5.0	ug/L
CIS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
TRANS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
1,2-DICHLOROPROPANE	BDL	5.0	ug/L
CIS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
ETHYL BENZENE	BDL	5.0	ug/L
2-HEXANONE	BDL	10	ug/L
IODOMETHANE	BDL	5.0	ug/L
DICHLOROMETHANE (METHYLENE CHLORIDE)	BDL	5.0	ug/L
METHYL ETHYL KETONE	BDL	10	ug/L
4-METHYL-2-PENTANONE	BDL	10	ug/L
STYRENE	BDL	5.0	ug/L
1,1,1,2-TETRACHLOROETHANE	BDL	5.0	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5.0	ug/L

Sample ID: AA28600 PZ-201A-SS

Parameter	Result	Det. Limit	Units
TETRACHLOROETHENE	BDL	5.0	ug/L
TOLUENE	BDL	5.0	ug/L
1,1,1-TRICHLOROETHANE	BDL	5.0	ug/L
1,1,2-TRICHLOROETHANE	BDL	5.0	ug/L
TRICHLOROETHENE	BDL	5.0	ug/L
TRICHLOROFLUOROMETHANE	BDL	10	ug/L
1,2,3-TRICHLOROPROPANE	BDL	5.0	ug/L
VINYL ACETATE	BDL	10	ug/L
VINYL CHLORIDE	BDL	2.0	ug/L
XYLENES (O/M/P-XYLENE)	BDL	5.0	ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	116		% Rec
TOLUENE-D8	90		% Rec
4-BROMOFLUOROBENZENE	80		% Rec
DIBROMOFLUOROMETHANE	119		% Rec

Prep Method SW846-5030B Purge and Trap

Sample Comments

BDL Below Detection Limit

Sample was received on ice at temperature 2.4 C.
Sample chain of custody number 1737795.

This Certificate shall not be reproduced, except in full, without the written approval of the lab. The sample results relate only to the analytes of interest tested or to the sample as received by the lab. Pace Analytical Services, INC. certifies that the test results indicated as NELAP (National Environmental Laboratory Accreditation Program) accredited (Yes for NELAP) meet all requirements of NELAP and Kansas (KDHE) unless otherwise explained or justified as to the the exact nature of the deviations.
KS ELAP / NELAP Accreditation # E-10177 Indiana SDWA C-49-01

Approved by: CHRISTINE SARKAN 13-OCT-14

Pace Analytical®
Pace Analytical Services, Inc.

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
PACE ANALYTICAL SERVICES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	26-SEP-14	AA28601
	Completed 10-OCT-14	PO Number NEED PO
	Printed 15-OCT-14	Sampled 23-SEP-14 13:44

Report To	Bill To
JON WILKINSON HERST AND ASSOCIATES 4630 SOUTH HIGHWAY 94 NORTH OUTER ROAD ST. CHARLES, MO 63304	DAVE VASBINDER ALLIED WASTE SYSTEMS 13570 ST. CHARLES ROCK ROAD BRIDGETON, MO 63044

Sample Description

CLIENT ID: PZ-100-SS
MATRIX TYPE: NON-SPECIFIC WATER
SUBMITTER: 8945 - MO-ALLIED-BRIDGETON LANDFILL
PROJECT NAME: GROUNDWATER - BRIDGETON LANDFILL
DATA PACKAGE #: 66865
LOCATION: BRIDGETON LANDFILL
DESCRIPTION: SEMI-ANNUAL GROUNDWATER TESTING

GROUNDWATER MONITORING WELL DATA SAS

Analysis Date: 23-SEP-14 13:44 Instrument: FIELD Test: G600.0.0

Parameter	Result	Det. Limit	Units
TOTAL WELL DEPTH	89.31		ft
INITIAL WATER LEVEL	31.39		ft
ELEVATION OF GROUNDWATER SURFACE	454.45		Feet/MSL

FIELD TEMPERATURE SM2550 B 2000 NELAC:N

Analysis Date: 23-SEP-14 13:44 Instrument: FIELD Test: G603.1.0

Parameter	Result	Det. Limit	Units
TEMPERATURE	17.1		Degrees C

FIELD PH (AQUEOUS) SW846-9040C NELAC:Y

Analysis Date: 23-SEP-14 13:44 Instrument: FIELD Test: G607.0.0

Parameter	Result	Det. Limit	Units
PH	7.14	0.1	Std. Units

FIELD SPECIFIC CONDUCTANCE SW846-9050A NELAC:Y

Analysis Date: 23-SEP-14 13:44 Instrument: FIELD Test: G604.0.0

Parameter	Result	Det. Limit	Units
CONDUCTIVITY	832	1.0	umHOS/cm

FIELD TURBIDITY EPA 180.1 NELAC:Y

Analysis Date: 23-SEP-14 13:44 Instrument: FIELD Test: G602.0.0

Parameter	Result	Det. Limit	Units
TURBIDITY	1.35		ntu

HARDNESS SM2340 B 1997 NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 01:59 Instrument: ICP Test: G608.0.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
HARDNESS	440	1.0	mg CaCO3/L

ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P129.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P130.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

BARIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 01:59 Instrument: ICP Test: M104.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BARIUM	68	10	ug/L

BERYLLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:17 Instrument: ICP/MS Test: V105.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	2.0	ug/L

1:5 Dilution.

BORON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 01:59 Instrument: ICP Test: M107.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BORON	120	100	ug/L

CALCIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 01:59 Instrument: ICP Test: M109.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units

Parameter	Result	Det. Limit	Units
CALCIUM	93000	100	ug/L

CHROMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:17 Instrument: ICP/MS Test: V110.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	5.0	ug/L

1:5 Dilution.

COBALT ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 01:59 Instrument: ICP Test: M111.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COBALT	BDL	5.0	ug/L

COPPER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:17 Instrument: ICP/MS Test: V112.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
COPPER	BDL	5.0	ug/L

1:5 Dilution.

IRON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 01:59 Instrument: ICP Test: M115.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
IRON	29	20	ug/L

MAGNESIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 01:59 Instrument: ICP Test: M118.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MAGNESIUM	52000	100	ug/L

MANGANESE ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 01:59 Instrument: ICP Test: M119.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MANGANESE	BDL	5.0	ug/L

NICKEL ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 01:59 Instrument: ICP Test: M122.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
NICKEL	16	10	ug/L

SILVER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:17 Instrument: ICP/MS Test: V130.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	5.0	ug/L

1:5 Dilution.

SODIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 01:59 Instrument: ICP Test: M131.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SODIUM	13000	1000	ug/L

THALLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:17 Instrument: ICP/MS Test: V134.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	2.0	ug/L

1:5 Dilution.

VANADIUM ICP SW846-6010B NELAC:N

Analyst: J. KRAMER Analysis Date: 01-OCT-14 01:59 Instrument: ICP Test: M138.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	10	ug/L

ZINC ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 01:59 Instrument: ICP Test: M139.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ZINC	BDL	20	ug/L

ARSENIC ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:17 Instrument: ICP/MS Test: V103.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	5.0	ug/L

1:5 Dilution.

CADMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:17 Instrument: ICP/MS Test: V108.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.20	ug/L

1:5 Dilution.

LEAD ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:17 Instrument: ICP/MS Test: V116.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
LEAD	BDL	5.0	ug/L

1:5 Dilution.

ANTIMONY ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:17 Instrument: ICP/MS Test: V102.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	5.0	ug/L

1:5 Dilution.

SELENIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:17 Instrument: ICP/MS Test: V128.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	5.0	ug/L

1:5 Dilution.

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 08:00 Instrument: PREP Test: P131.6.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	40		mL
FINAL VOLUME	40		mL

MERCURY CVAA SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 20:05 Instrument: CVAA Test: M120.1.0

Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A P131.6.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.20	ug/L

TOTAL DISSOLVED SOLIDS SM2540 C 1997 NELAC:Y

Analyst: N. HARBACHOW Analysis Date: 30-SEP-14 18:30 Test: G402.9.0

Parameter	Result	Det. Limit	Units
DISSOLVED SOLIDS	480	10	mg/L

CHLORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 27-SEP-14 00:34 Instrument: IC Test: G310.2.0

Parameter	Result	Det. Limit	Units
CHLORIDE	3.6	3.0	mg/L

FLUORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 27-SEP-14 00:34 Instrument: IC Test: G310.1.0

Parameter	Result	Det. Limit	Units
FLUORIDE	0.59	0.10	mg/L

AMMONIA BY AUTOMATED PHENATE SM4500-NH3 G 1997 NELAC:Y

Analyst: T. DRIGGERS Analysis Date: 06-OCT-14 13:12 Instrument: AUTO-ANALYZER Test: G204.6.0

Parameter	Result	Det. Limit	Units
NITROGEN, AMMONIA	BDL	0.10	mg/L

NITROGEN, NITRATE-NITRITE EPA 353.2 REV. 2.0 (1993) NELAC:Y

Analyst: C. ANYANWUTAKU Analysis Date: 10-OCT-14 11:38 Instrument: AUTO-ANALYZER Test: G113.3.0

Parameter	Result	Det. Limit	Units
NITROGEN, NITRATE-NITRITE	0.14	0.10	mg/L

PHOSPHORUS, TOTAL (AUTOMATED) EPA 365.1 REV. 2.0 (1993) NELAC:Y

Analyst: E. SKALA Analysis Date: 02-OCT-14 08:24 Instrument: AUTO-ANALYZER Test: G207.2.0

Parameter	Result	Det. Limit	Units
PHOSPHORUS	BDL	0.05	mg/L

SULFATE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 27-SEP-14 00:34 Instrument: IC Test: G310.7.0

Parameter	Result	Det. Limit	Units
SULFATE	41	2.0	mg/L

CHEMICAL OXYGEN DEMAND (COLORIMETRIC) EPA 410.4 REV. 2.0 (1993) NELAC:Y

Analyst: B. LEDFORD Analysis Date: 30-SEP-14 11:30 Test: G301.1.0

Parameter	Result	Det. Limit	Units
CHEMICAL OXYGEN DEMAND	BDL	10	mg/L

TOTAL ORGANIC CARBON SW846-9060A NELAC:Y

Analyst: D. DICKERSON Analysis Date: 02-OCT-14 09:47 Instrument: TOC Test: O401.0.0

Parameter	Result	Det. Limit	Units
TOTAL ORGANIC CARBON (TOC)	31	5.0	mg/L

1:5 Dilution.

VOLATILE ORGANICS (CAPILLARY COLUMN) SW846-8260B NELAC:Y

Analyst: H. WILLIAMS | Analysis Date: 30-SEP-14 15:22 | Instrument: GC/MS VOA | Test: O510.6.0

Parameter	Result	Det. Limit	Units
ACETONE (2-PROPANONE)	BDL	10	ug/L
ACRYLONITRILE	BDL	100	ug/L
BENZENE	BDL	5.0	ug/L
BROMOCHLOROMETHANE	BDL	5.0	ug/L
BROMODICHLOROMETHANE	BDL	5.0	ug/L
BROMOFORM	BDL	5.0	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	10	ug/L
CARBON TETRACHLORIDE	BDL	5.0	ug/L
CHLOROBENZENE	BDL	5.0	ug/L
DIBROMOCHLOROMETHANE	BDL	5.0	ug/L
CHLOROETHANE	BDL	10	ug/L
CHLOROFORM	BDL	5.0	ug/L
CHLOROMETHANE	BDL	10	ug/L
1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	BDL	5.0	ug/L
1,2-DIBROMOETHANE (EDB)	BDL	5.0	ug/L
DIBROMOMETHANE	BDL	10	ug/L
1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	BDL	5.0	ug/L
1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	BDL	5.0	ug/L
TRANS-1,4-DICHLORO-2-BUTENE	BDL	10	ug/L
1,1-DICHLOROETHANE	BDL	5.0	ug/L
1,2-DICHLOROETHANE	BDL	5.0	ug/L
1,1-DICHLOROETHENE	BDL	5.0	ug/L
CIS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
TRANS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
1,2-DICHLOROPROPANE	BDL	5.0	ug/L
CIS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
ETHYL BENZENE	BDL	5.0	ug/L
2-HEXANONE	BDL	10	ug/L
IODOMETHANE	BDL	5.0	ug/L
DICHLOROMETHANE (METHYLENE CHLORIDE)	BDL	5.0	ug/L
METHYL ETHYL KETONE	BDL	10	ug/L
4-METHYL-2-PENTANONE	BDL	10	ug/L
STYRENE	BDL	5.0	ug/L
1,1,1,2-TETRACHLOROETHANE	BDL	5.0	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5.0	ug/L
TETRACHLOROETHENE	BDL	5.0	ug/L
TOLUENE	BDL	5.0	ug/L
1,1,1-TRICHLOROETHANE	BDL	5.0	ug/L
1,1,2-TRICHLOROETHANE	BDL	5.0	ug/L
TRICHLOROETHENE	BDL	5.0	ug/L

Parameter	Result	Det. Limit	Units
TRICHLOROFLUOROMETHANE	BDL	10	ug/L
1,2,3-TRICHLOROPROPANE	BDL	5.0	ug/L
VINYL ACETATE	BDL	10	ug/L
VINYL CHLORIDE	BDL	2.0	ug/L
XYLENES (O/M/P-XYLENE)	BDL	5.0	ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	116		% Rec
TOLUENE-D8	93		% Rec
4-BROMOFLUOROBENZENE	86		% Rec
DIBROMOFLUOROMETHANE	115		% Rec

Prep Method SW846-5030B Purge and Trap

Sample Comments

BDL Below Detection Limit

Sample was received on ice at temperature 2.4 C.
Sample chain of custody number 1737795.

This Certificate shall not be reproduced, except in full, without the written approval of the lab. The sample results relate only to the analytes of interest tested or to the sample as received by the lab. Pace Analytical Services, INC. certifies that the test results indicated as NELAP (National Environmental Laboratory Accreditation Program) accredited (Yes for NELAP) meet all requirements of NELAP and Kansas (KDHE) unless otherwise explained or justified as to the the exact nature of the deviations.
KS ELAP / NELAP Accreditation # E-10177 Indiana SDWA C-49-01

Approved by: CHRISTINE SARKAN 13-OCT-14

Pace Analytical®
Pace Analytical Services, Inc.

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
PACE ANALYTICAL SERVICES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	26-SEP-14	AA28602
	Completed 10-OCT-14	PO Number NEED PO
	Printed 15-OCT-14	Sampled 23-SEP-14 14:09

Report To	Bill To
JON WILKINSON HERST AND ASSOCIATES 4630 SOUTH HIGHWAY 94 NORTH OUTER ROAD ST. CHARLES, MO 63304	DAVE VASBINDER ALLIED WASTE SYSTEMS 13570 ST. CHARLES ROCK ROAD BRIDGETON, MO 63044

Sample Description

CLIENT ID: PZ-100-SD
MATRIX TYPE: NON-SPECIFIC WATER
SUBMITTER: 8945 - MO-ALLIED-BRIDGETON LANDFILL
PROJECT NAME: GROUNDWATER - BRIDGETON LANDFILL
DATA PACKAGE #: 66865
LOCATION: BRIDGETON LANDFILL
DESCRIPTION: SEMI-ANNUAL GROUNDWATER TESTING

GROUNDWATER MONITORING WELL DATA SAS

Analysis Date: 23-SEP-14 14:09 Instrument: FIELD Test: G600.0.0

Parameter	Result	Det. Limit	Units
TOTAL WELL DEPTH	96.48		ft
INITIAL WATER LEVEL	34.49		ft
ELEVATION OF GROUNDWATER SURFACE	451.33		Feet/MSL

FIELD TEMPERATURE SM2550 B 2000 NELAC:N

Analysis Date: 23-SEP-14 14:09 Instrument: FIELD Test: G603.1.0

Parameter	Result	Det. Limit	Units
TEMPERATURE	17.1		Degrees C

FIELD PH (AQUEOUS) SW846-9040C NELAC:Y

Analysis Date: 23-SEP-14 14:09 Instrument: FIELD Test: G607.0.0

Parameter	Result	Det. Limit	Units
PH	7.28	0.1	Std. Units

FIELD SPECIFIC CONDUCTANCE SW846-9050A NELAC:Y

Analysis Date: 23-SEP-14 14:09 Instrument: FIELD Test: G604.0.0

Parameter	Result	Det. Limit	Units
CONDUCTIVITY	634	1.0	umHOS/cm

FIELD TURBIDITY EPA 180.1 NELAC:Y

Analysis Date: 23-SEP-14 14:09 Instrument: FIELD Test: G602.0.0

Parameter	Result	Det. Limit	Units
TURBIDITY	0.63		ntu

HARDNESS SM2340 B 1997 NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:02 Instrument: ICP Test: G608.0.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
HARDNESS	340	1.0	mg CaCO3/L

ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P129.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P130.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

BARIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:02 Instrument: ICP Test: M104.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BARIUM	300	10	ug/L

BERYLLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:43 Instrument: ICP/MS Test: V105.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	2.0	ug/L

1:5 Dilution.

BORON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:02 Instrument: ICP Test: M107.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BORON	BDL	100	ug/L

CALCIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:02 Instrument: ICP Test: M109.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units

Parameter	Result	Det. Limit	Units
CALCIUM	76000	100	ug/L

CHROMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:43 Instrument: ICP/MS Test: V110.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	5.0	ug/L

1:5 Dilution.

COBALT ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:02 Instrument: ICP Test: M111.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COBALT	BDL	5.0	ug/L

COPPER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:43 Instrument: ICP/MS Test: V112.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
COPPER	BDL	5.0	ug/L

1:5 Dilution.

IRON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:02 Instrument: ICP Test: M115.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
IRON	1500	20	ug/L

MAGNESIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:02 Instrument: ICP Test: M118.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MAGNESIUM	36000	100	ug/L

MANGANESE ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:02 Instrument: ICP Test: M119.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MANGANESE	68	5.0	ug/L

NICKEL ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:02 Instrument: ICP Test: M122.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
NICKEL	BDL	10	ug/L

SILVER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:43 Instrument: ICP/MS Test: V130.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	5.0	ug/L

1:5 Dilution.

SODIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:02 Instrument: ICP Test: M131.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SODIUM	6400	1000	ug/L

THALLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:43 Instrument: ICP/MS Test: V134.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	2.0	ug/L

1:5 Dilution.

VANADIUM ICP SW846-6010B NELAC:N

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:02 Instrument: ICP Test: M138.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	10	ug/L

ZINC ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:02 Instrument: ICP Test: M139.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ZINC	BDL	20	ug/L

ARSENIC ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:43 Instrument: ICP/MS Test: V103.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	5.0	ug/L

1:5 Dilution.

CADMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:43 Instrument: ICP/MS Test: V108.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.20	ug/L

1:5 Dilution.

LEAD ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:43 Instrument: ICP/MS Test: V116.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
LEAD	BDL	5.0	ug/L

1:5 Dilution.

SELENIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:43 Instrument: ICP/MS Test: V128.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	5.0	ug/L

1:5 Dilution.

ANTIMONY ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:43 Instrument: ICP/MS Test: V102.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	5.0	ug/L

1:5 Dilution.

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 08:00 Instrument: PREP Test: P131.6.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	40		mL
FINAL VOLUME	40		mL

MERCURY CVAA SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 20:08 Instrument: CVAA Test: M120.1.0

Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A P131.6.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.20	ug/L

TOTAL DISSOLVED SOLIDS SM2540 C 1997 NELAC:Y

Analyst: N. HARBACHOW Analysis Date: 30-SEP-14 18:30 Test: G402.9.0

Parameter	Result	Det. Limit	Units
DISSOLVED SOLIDS	340	10	mg/L

CHLORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 27-SEP-14 02:24 Instrument: IC Test: G310.2.0

Parameter	Result	Det. Limit	Units
CHLORIDE	BDL	3.0	mg/L

FLUORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 30-SEP-14 22:11 Instrument: IC Test: G310.1.0

Parameter	Result	Det. Limit	Units
FLUORIDE	2.0	0.10	mg/L

AMMONIA BY AUTOMATED PHENATE SM4500-NH3 G 1997 NELAC:Y

Analyst: T. DRIGGERS Analysis Date: 06-OCT-14 13:13 Instrument: AUTO-ANALYZER Test: G204.6.0

Parameter	Result	Det. Limit	Units
NITROGEN, AMMONIA	0.35	0.10	mg/L

NITROGEN, NITRATE-NITRITE EPA 353.2 REV. 2.0 (1993) NELAC:Y

Analyst: C. ANYANWUTAKU Analysis Date: 10-OCT-14 11:40 Instrument: AUTO-ANALYZER Test: G113.3.0

Parameter	Result	Det. Limit	Units
NITROGEN, NITRATE-NITRITE	BDL	0.10	mg/L

PHOSPHORUS, TOTAL (AUTOMATED) EPA 365.1 REV. 2.0 (1993) NELAC:Y

Analyst: E. SKALA Analysis Date: 02-OCT-14 08:26 Instrument: AUTO-ANALYZER Test: G207.2.0

Parameter	Result	Det. Limit	Units
PHOSPHORUS	BDL	0.05	mg/L

SULFATE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 27-SEP-14 02:24 Instrument: IC Test: G310.7.0

Parameter	Result	Det. Limit	Units
SULFATE	10	2.0	mg/L

CHEMICAL OXYGEN DEMAND (COLORIMETRIC) EPA 410.4 REV. 2.0 (1993) NELAC:Y

Analyst: B. LEDFORD Analysis Date: 30-SEP-14 11:30 Test: G301.1.0

Parameter	Result	Det. Limit	Units
CHEMICAL OXYGEN DEMAND	BDL	10	mg/L

TOTAL ORGANIC CARBON SW846-9060A NELAC:Y

Analyst: D. DICKERSON Analysis Date: 02-OCT-14 09:47 Instrument: TOC Test: O401.0.0

Parameter	Result	Det. Limit	Units
TOTAL ORGANIC CARBON (TOC)	29	5.0	mg/L

1:5 Dilution.

VOLATILE ORGANICS (CAPILLARY COLUMN) SW846-8260B NELAC:Y

Analyst: H. WILLIAMS Analysis Date: 30-SEP-14 15:47 Instrument: GC/MS VOA Test: O510.6.0

Parameter	Result	Det. Limit	Units
ACETONE (2-PROPANONE)	BDL	10	ug/L
ACRYLONITRILE	BDL	100	ug/L
BENZENE	BDL	5.0	ug/L
BROMOCHLOROMETHANE	BDL	5.0	ug/L
BROMODICHLOROMETHANE	BDL	5.0	ug/L
BROMOFORM	BDL	5.0	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	10	ug/L
CARBON TETRACHLORIDE	BDL	5.0	ug/L
CHLOROBENZENE	BDL	5.0	ug/L
DIBROMOCHLOROMETHANE	BDL	5.0	ug/L
CHLOROETHANE	BDL	10	ug/L
CHLOROFORM	BDL	5.0	ug/L
CHLOROMETHANE	BDL	10	ug/L
1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	BDL	5.0	ug/L
1,2-DIBROMOETHANE (EDB)	BDL	5.0	ug/L
DIBROMOMETHANE	BDL	10	ug/L
1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	BDL	5.0	ug/L
1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	BDL	5.0	ug/L
TRANS-1,4-DICHLORO-2-BUTENE	BDL	10	ug/L
1,1-DICHLOROETHANE	BDL	5.0	ug/L
1,2-DICHLOROETHANE	BDL	5.0	ug/L
1,1-DICHLOROETHENE	BDL	5.0	ug/L
CIS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
TRANS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
1,2-DICHLOROPROPANE	BDL	5.0	ug/L
CIS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
ETHYL BENZENE	BDL	5.0	ug/L
2-HEXANONE	BDL	10	ug/L
IODOMETHANE	BDL	5.0	ug/L
DICHLOROMETHANE (METHYLENE CHLORIDE)	BDL	5.0	ug/L
METHYL ETHYL KETONE	BDL	10	ug/L
4-METHYL-2-PENTANONE	BDL	10	ug/L
STYRENE	BDL	5.0	ug/L
1,1,1,2-TETRACHLOROETHANE	BDL	5.0	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5.0	ug/L
TETRACHLOROETHENE	BDL	5.0	ug/L
TOLUENE	BDL	5.0	ug/L
1,1,1-TRICHLOROETHANE	BDL	5.0	ug/L
1,1,2-TRICHLOROETHANE	BDL	5.0	ug/L
TRICHLOROETHENE	BDL	5.0	ug/L

Parameter	Result	Det. Limit	Units
TRICHLOROFLUOROMETHANE	BDL	10	ug/L
1,2,3-TRICHLOROPROPANE	BDL	5.0	ug/L
VINYL ACETATE	BDL	10	ug/L
VINYL CHLORIDE	BDL	2.0	ug/L
XYLENES (O/M/P-XYLENE)	BDL	5.0	ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	119		% Rec
TOLUENE-D8	89		% Rec
4-BROMOFLUOROBENZENE	84		% Rec
DIBROMOFLUOROMETHANE	114		% Rec

Prep Method SW846-5030B Purge and Trap

Sample Comments

BDL Below Detection Limit

Sample was received on ice at temperature 2.4 C.
Sample chain of custody number 1737795.

This Certificate shall not be reproduced, except in full, without the written approval of the lab. The sample results relate only to the analytes of interest tested or to the sample as received by the lab. Pace Analytical Services, INC. certifies that the test results indicated as NELAP (National Environmental Laboratory Accreditation Program) accredited (Yes for NELAP) meet all requirements of NELAP and Kansas (KDHE) unless otherwise explained or justified as to the the exact nature of the deviations.
KS ELAP / NELAP Accreditation # E-10177 Indiana SDWA C-49-01

Approved by: CHRISTINE SARKAN 13-OCT-14

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Pace Analytical Services, Inc.

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
PACE ANALYTICAL SERVICES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	26-SEP-14	AA28603
	Completed 10-OCT-14	PO Number NEED PO
	Printed 15-OCT-14	Sampled 23-SEP-14 14:38

Report To	Bill To
JON WILKINSON HERST AND ASSOCIATES 4630 SOUTH HIGHWAY 94 NORTH OUTER ROAD ST. CHARLES, MO 63304	DAVE VASBINDER ALLIED WASTE SYSTEMS 13570 ST. CHARLES ROCK ROAD BRIDGETON, MO 63044

Sample Description

CLIENT ID: PZ-115-SS
MATRIX TYPE: NON-SPECIFIC WATER
SUBMITTER: 8945 - MO-ALLIED-BRIDGETON LANDFILL
PROJECT NAME: GROUNDWATER - BRIDGETON LANDFILL
DATA PACKAGE #: 66865
LOCATION: BRIDGETON LANDFILL
DESCRIPTION: SEMI-ANNUAL GROUNDWATER TESTING

GROUNDWATER MONITORING WELL DATA SAS

Analysis Date: 23-SEP-14 14:38 Instrument: FIELD Test: G600.0.0

Parameter	Result	Det. Limit	Units
TOTAL WELL DEPTH	81.06		ft
INITIAL WATER LEVEL	16.94		ft
ELEVATION OF GROUNDWATER SURFACE	435.36		Feet/MSL

FIELD TEMPERATURE SM2550 B 2000 NELAC:N

Analysis Date: 23-SEP-14 14:38 Instrument: FIELD Test: G603.1.0

Parameter	Result	Det. Limit	Units
TEMPERATURE	15.9		Degrees C

FIELD PH (AQUEOUS) SW846-9040C NELAC:Y

Analysis Date: 23-SEP-14 14:38 Instrument: FIELD Test: G607.0.0

Parameter	Result	Det. Limit	Units
PH	6.74	0.1	Std. Units

FIELD SPECIFIC CONDUCTANCE SW846-9050A NELAC:Y

Analysis Date: 23-SEP-14 14:38 Instrument: FIELD Test: G604.0.0

Parameter	Result	Det. Limit	Units
CONDUCTIVITY	2230	1.0	umHOS/cm

FIELD TURBIDITY EPA 180.1 NELAC:Y

Analysis Date: 23-SEP-14 14:38 Instrument: FIELD Test: G602.0.0

Parameter	Result	Det. Limit	Units
TURBIDITY	0.79		ntu

HARDNESS SM2340 B 1997 NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 01:42 Instrument: ICP Test: G608.0.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
HARDNESS	960	1.0	mg CaCO3/L

ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P129.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P130.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

BARIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 01:42 Instrument: ICP Test: M104.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BARIUM	440	10	ug/L

BERYLLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:47 Instrument: ICP/MS Test: V105.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	2.0	ug/L

1:5 Dilution.

BORON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 01:42 Instrument: ICP Test: M107.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BORON	380	100	ug/L

CALCIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 01:42 Instrument: ICP Test: M109.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units

Parameter	Result	Det. Limit	Units
CALCIUM	220000	100	ug/L

CHROMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:47 Instrument: ICP/MS Test: V110.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	5.0	ug/L

1:5 Dilution.

COBALT ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 01:42 Instrument: ICP Test: M111.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COBALT	27	5.0	ug/L

COPPER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:47 Instrument: ICP/MS Test: V112.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
COPPER	BDL	5.0	ug/L

1:5 Dilution.

IRON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 01:42 Instrument: ICP Test: M115.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
IRON	2700	20	ug/L

MAGNESIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 01:42 Instrument: ICP Test: M118.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MAGNESIUM	100000	100	ug/L

MANGANESE ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 01:42 Instrument: ICP Test: M119.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MANGANESE	73	5.0	ug/L

NICKEL ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 01:42 Instrument: ICP Test: M122.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
NICKEL	72	10	ug/L

SILVER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:47 Instrument: ICP/MS Test: V130.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	5.0	ug/L

1:5 Dilution.

SODIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 01:42 Instrument: ICP Test: M131.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SODIUM	120000	1000	ug/L

THALLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:47 Instrument: ICP/MS Test: V134.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	2.0	ug/L

1:5 Dilution.

VANADIUM ICP SW846-6010B NELAC:N

Analyst: J. KRAMER Analysis Date: 01-OCT-14 01:42 Instrument: ICP Test: M138.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	10	ug/L

ZINC ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 01:42 Instrument: ICP Test: M139.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ZINC	BDL	20	ug/L

ARSENIC ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:47 Instrument: ICP/MS Test: V103.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ARSENIC	7.3	5.0	ug/L

1:5 Dilution.

CADMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:47 Instrument: ICP/MS Test: V108.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.20	ug/L

1:5 Dilution.

LEAD ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:47 Instrument: ICP/MS Test: V116.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
LEAD	BDL	5.0	ug/L

1:5 Dilution.

SELENIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:47 Instrument: ICP/MS Test: V128.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	5.0	ug/L

1:5 Dilution.

ANTIMONY ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:47 Instrument: ICP/MS Test: V102.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	5.0	ug/L

1:5 Dilution.

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 08:00 Instrument: PREP Test: P131.6.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	40		mL
FINAL VOLUME	40		mL

MERCURY CVAA SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 20:10 Instrument: CVAA Test: M120.1.0

Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A P131.6.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.20	ug/L

TOTAL DISSOLVED SOLIDS SM2540 C 1997 NELAC:Y

Analyst: N. HARBACHOW Analysis Date: 30-SEP-14 18:30 Test: G402.9.0

Parameter	Result	Det. Limit	Units
DISSOLVED SOLIDS	1200	10	mg/L

CHLORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 27-SEP-14 03:37 Instrument: IC Test: G310.2.0

Parameter	Result	Det. Limit	Units
CHLORIDE	310	6.3	mg/L

1:25 Dilution.

FLUORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 27-SEP-14 03:19 Instrument: IC Test: G310.1.0

Parameter	Result	Det. Limit	Units
FLUORIDE	0.49	0.10	mg/L

AMMONIA BY AUTOMATED PHENATE SM4500-NH3 G 1997 NELAC:Y

Analyst: T. DRIGGERS Analysis Date: 06-OCT-14 13:15 Instrument: AUTO-ANALYZER Test: G204.6.0

Parameter	Result	Det. Limit	Units
NITROGEN, AMMONIA	BDL	0.10	mg/L

NITROGEN, NITRATE-NITRITE EPA 353.2 REV. 2.0 (1993) NELAC:Y

Analyst: C. ANYANWUTAKU Analysis Date: 10-OCT-14 11:41 Instrument: AUTO-ANALYZER Test: G113.3.0

Parameter	Result	Det. Limit	Units
NITROGEN, NITRATE-NITRITE	BDL	0.10	mg/L

PHOSPHORUS, TOTAL (AUTOMATED) EPA 365.1 REV. 2.0 (1993) NELAC:Y

Analyst: E. SKALA Analysis Date: 02-OCT-14 08:27 Instrument: AUTO-ANALYZER Test: G207.2.0

Parameter	Result	Det. Limit	Units
PHOSPHORUS	0.24	0.050	mg/L

SULFATE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 27-SEP-14 03:19 Instrument: IC Test: G310.7.0

Parameter	Result	Det. Limit	Units
SULFATE	6.0	2.0	mg/L

CHEMICAL OXYGEN DEMAND (COLORIMETRIC) EPA 410.4 REV. 2.0 (1993) NELAC:Y

Analyst: B. LEDFORD Analysis Date: 30-SEP-14 11:30 Test: G301.1.0

Parameter	Result	Det. Limit	Units
CHEMICAL OXYGEN DEMAND	29	10	mg/L

TOTAL ORGANIC CARBON SW846-9060A NELAC:Y

Analyst: D. DICKERSON Analysis Date: 02-OCT-14 09:47 Instrument: TOC Test: O401.0.0

Parameter	Result	Det. Limit	Units
TOTAL ORGANIC CARBON (TOC)	66	5.0	mg/L

1:5 Dilution.

MS and/or MSD do not meet control limits. Results for this sample are estimated.

VOLATILE ORGANICS (CAPILLARY COLUMN) SW846-8260B NELAC:Y

Analyst: H. WILLIAMS Analysis Date: 30-SEP-14 16:13 Instrument: GC/MS VOA Test: O510.6.0

Parameter	Result	Det. Limit	Units
ACETONE (2-PROPANONE)	BDL	10	ug/L
ACRYLONITRILE	BDL	100	ug/L
BENZENE	BDL	5.0	ug/L
BROMOCHLOROMETHANE	BDL	5.0	ug/L
BROMODICHLOROMETHANE	BDL	5.0	ug/L
BROMOFORM	BDL	5.0	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	10	ug/L
CARBON TETRACHLORIDE	BDL	5.0	ug/L
CHLOROBENZENE	BDL	5.0	ug/L
DIBROMOCHLOROMETHANE	BDL	5.0	ug/L
CHLOROETHANE	BDL	10	ug/L
CHLOROFORM	BDL	5.0	ug/L
CHLOROMETHANE	BDL	10	ug/L
1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	BDL	5.0	ug/L
1,2-DIBROMOETHANE (EDB)	BDL	5.0	ug/L
DIBROMOMETHANE	BDL	10	ug/L
1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	BDL	5.0	ug/L
1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	BDL	5.0	ug/L
TRANS-1,4-DICHLORO-2-BUTENE	BDL	10	ug/L
1,1-DICHLOROETHANE	BDL	5.0	ug/L
1,2-DICHLOROETHANE	BDL	5.0	ug/L
1,1-DICHLOROETHENE	BDL	5.0	ug/L
CIS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
TRANS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
1,2-DICHLOROPROPANE	BDL	5.0	ug/L
CIS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
ETHYL BENZENE	BDL	5.0	ug/L
2-HEXANONE	BDL	10	ug/L
IODOMETHANE	BDL	5.0	ug/L
DICHLOROMETHANE (METHYLENE CHLORIDE)	BDL	5.0	ug/L
METHYL ETHYL KETONE	BDL	10	ug/L
4-METHYL-2-PENTANONE	BDL	10	ug/L
STYRENE	BDL	5.0	ug/L
1,1,1,2-TETRACHLOROETHANE	BDL	5.0	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5.0	ug/L

Parameter	Result	Det. Limit	Units
TETRACHLOROETHENE	BDL	5.0	ug/L
TOLUENE	BDL	5.0	ug/L
1,1,1-TRICHLOROETHANE	BDL	5.0	ug/L
1,1,2-TRICHLOROETHANE	BDL	5.0	ug/L
TRICHLOROETHENE	BDL	5.0	ug/L
TRICHLOROFLUOROMETHANE	BDL	10	ug/L
1,2,3-TRICHLOROPROPANE	BDL	5.0	ug/L
VINYL ACETATE	BDL	10	ug/L
VINYL CHLORIDE	BDL	2.0	ug/L
XYLENES (O/M/P-XYLENE)	BDL	5.0	ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	109		% Rec
TOLUENE-D8	90		% Rec
4-BROMOFLUOROBENZENE	83		% Rec
DIBROMOFLUOROMETHANE	109		% Rec

Prep Method SW846-5030B Purge and Trap

Sample Comments

BDL Below Detection Limit

Sample was received on ice at temperature 2.4 C.
Sample chain of custody number 1737795.

This Certificate shall not be reproduced, except in full, without the written approval of the lab. The sample results relate only to the analytes of interest tested or to the sample as received by the lab. Pace Analytical Services, INC. certifies that the test results indicated as NELAP (National Environmental Laboratory Accreditation Program) accredited (Yes for NELAP) meet all requirements of NELAP and Kansas (KDHE) unless otherwise explained or justified as to the the exact nature of the deviations.
KS ELAP / NELAP Accreditation # E-10177 Indiana SDWA C-49-01

Approved by: CHRISTINE SARKAN 13-OCT-14

Pace Analytical
Pace Analytical Services, Inc.

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
PACE ANALYTICAL SERVICES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	26-SEP-14	AA28604
	Completed	**PO Number**
	10-OCT-14	NEED PO
	Printed	**Sampled**
	15-OCT-14	23-SEP-14 15:15

Report To	Bill To
JON WILKINSON HERST AND ASSOCIATES 4630 SOUTH HIGHWAY 94 NORTH OUTER ROAD ST. CHARLES, MO 63304	DAVE VASBINDER ALLIED WASTE SYSTEMS 13570 ST. CHARLES ROCK ROAD BRIDGETON, MO 63044

Sample Description

CLIENT ID: PZ-114-AS
MATRIX TYPE: NON-SPECIFIC WATER
SUBMITTER: 8945 - MO-ALLIED-BRIDGETON LANDFILL
PROJECT NAME: GROUNDWATER - BRIDGETON LANDFILL
DATA PACKAGE #: 66865
LOCATION: BRIDGETON LANDFILL
DESCRIPTION: SEMI-ANNUAL GROUNDWATER TESTING

GROUNDWATER MONITORING WELL DATA SAS

Analysis Date: 23-SEP-14 15:15 Instrument: FIELD Test: G600.0.0

Parameter	Result	Det. Limit	Units
TOTAL WELL DEPTH	26.31		ft
INITIAL WATER LEVEL	20.48		ft
ELEVATION OF GROUNDWATER SURFACE	430.83		Feet/MSL

FIELD TEMPERATURE SM2550 B 2000 NELAC:N

Analysis Date: 23-SEP-14 15:15 Instrument: FIELD Test: G603.1.0

Parameter	Result	Det. Limit	Units
TEMPERATURE	15.8		Degrees C

FIELD PH (AQUEOUS) SW846-9040C NELAC:Y

Analysis Date: 23-SEP-14 15:15 Instrument: FIELD Test: G607.0.0

Parameter	Result	Det. Limit	Units
PH	6.68	0.1	Std. Units

FIELD SPECIFIC CONDUCTANCE SW846-9050A NELAC:Y

Analysis Date: 23-SEP-14 15:15 Instrument: FIELD Test: G604.0.0

Parameter	Result	Det. Limit	Units
CONDUCTIVITY	2370	1.0	umHOS/cm

FIELD TURBIDITY EPA 180.1 NELAC:Y

Analysis Date: 23-SEP-14 15:15 Instrument: FIELD Test: G602.0.0

Parameter	Result	Det. Limit	Units
TURBIDITY	12.38		ntu

HARDNESS SM2340 B 1997 NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:06 Instrument: ICP Test: G608.0.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
HARDNESS	630	1.0	mg CaCO3/L

ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P129.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P130.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

BARIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:06 Instrument: ICP Test: M104.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BARIUM	690	10	ug/L

BERYLLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:51 Instrument: ICP/MS Test: V105.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	2.0	ug/L

1:5 Dilution.

BORON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:06 Instrument: ICP Test: M107.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BORON	160	100	ug/L

CALCIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:06 Instrument: ICP Test: M109.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units

Parameter	Result	Det. Limit	Units
CALCIUM	180000	100	ug/L

CHROMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:51 Instrument: ICP/MS Test: V110.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	5.0	ug/L

1:5 Dilution.

COBALT ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:06 Instrument: ICP Test: M111.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COBALT	BDL	5.0	ug/L

COPPER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:51 Instrument: ICP/MS Test: V112.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
COPPER	BDL	5.0	ug/L

1:5 Dilution.

IRON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:06 Instrument: ICP Test: M115.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
IRON	98000	20	ug/L

MAGNESIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:06 Instrument: ICP Test: M118.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MAGNESIUM	45000	100	ug/L

MANGANESE ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:06 Instrument: ICP Test: M119.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MANGANESE	2200	5.0	ug/L

NICKEL ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:06 Instrument: ICP Test: M122.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
NICKEL	BDL	10	ug/L

SILVER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:51 Instrument: ICP/MS Test: V130.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	5.0	ug/L

1:5 Dilution.

SODIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:06 Instrument: ICP Test: M131.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SODIUM	150000	1000	ug/L

THALLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:51 Instrument: ICP/MS Test: V134.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	2.0	ug/L

1:5 Dilution.

VANADIUM ICP SW846-6010B NELAC:N

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:06 Instrument: ICP Test: M138.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	10	ug/L

ZINC ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:06 Instrument: ICP Test: M139.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ZINC	BDL	20	ug/L

ARSENIC ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:51 Instrument: ICP/MS Test: V103.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ARSENIC	210	5.0	ug/L

1:5 Dilution.

CADMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:51 Instrument: ICP/MS Test: V108.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.20	ug/L

1:5 Dilution.

LEAD ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:51 Instrument: ICP/MS Test: V116.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
LEAD	BDL	5.0	ug/L

1:5 Dilution.

SELENIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:51 Instrument: ICP/MS Test: V128.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	5.0	ug/L

1:5 Dilution.

ANTIMONY ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:51 Instrument: ICP/MS Test: V102.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	5.0	ug/L

1:5 Dilution.

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 08:00 Instrument: PREP Test: P131.6.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	40		mL
FINAL VOLUME	40		mL

MERCURY CVAA SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 20:12 Instrument: CVAA Test: M120.1.0

Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A P131.6.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.20	ug/L

TOTAL DISSOLVED SOLIDS SM2540 C 1997 NELAC:Y

Analyst: N. HARBACHOW Analysis Date: 30-SEP-14 18:30 Test: G402.9.0

Parameter	Result	Det. Limit	Units
DISSOLVED SOLIDS	1300	10	mg/L

CHLORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 27-SEP-14 04:14 Instrument: IC Test: G310.2.0

Parameter	Result	Det. Limit	Units
CHLORIDE	360	6.3	mg/L

1:25 Dilution.

FLUORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 27-SEP-14 03:56 Instrument: IC Test: G310.1.0

Parameter	Result	Det. Limit	Units
FLUORIDE	0.16	0.10	mg/L

AMMONIA BY AUTOMATED PHENATE SM4500-NH3 G 1997 NELAC:Y

Analyst: T. DRIGGERS Analysis Date: 06-OCT-14 14:26 Instrument: AUTO-ANALYZER Test: G204.6.0

Parameter	Result	Det. Limit	Units
NITROGEN, AMMONIA	4.7	1.0	mg/L

1:10 Dilution.

NITROGEN, NITRATE-NITRITE EPA 353.2 REV. 2.0 (1993) NELAC:Y

Analyst: C. ANYANWUTAKU Analysis Date: 10-OCT-14 12:51 Instrument: AUTO-ANALYZER Test: G113.3.0

Parameter	Result	Det. Limit	Units
NITROGEN, NITRATE-NITRITE	0.39	0.10	mg/L

Sample filtered due to high turbidity.

Adjusted sample pH to 7 before analysis.

PHOSPHORUS, TOTAL (AUTOMATED) EPA 365.1 REV. 2.0 (1993) NELAC:Y

Analyst: E. SKALA Analysis Date: 02-OCT-14 08:47 Instrument: AUTO-ANALYZER Test: G207.2.0

Parameter	Result	Det. Limit	Units
PHOSPHORUS	1.9	0.25	mg/L

1:5 Dilution.

SULFATE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 27-SEP-14 03:56 Instrument: IC Test: G310.7.0

Parameter	Result	Det. Limit	Units
SULFATE	BDL	2.0	mg/L

CHEMICAL OXYGEN DEMAND (COLORIMETRIC) EPA 410.4 REV. 2.0 (1993) NELAC:Y

Analyst: B. LEDFORD Analysis Date: 30-SEP-14 11:30 Test: G301.1.0

Parameter	Result	Det. Limit	Units
CHEMICAL OXYGEN DEMAND	34	10	mg/L

TOTAL ORGANIC CARBON SW846-9060A NELAC:Y

Analyst: D. DICKERSON | Analysis Date: 06-OCT-14 10:48 | Instrument: TOC | Test: O401.0.0

Parameter	Result	Det. Limit	Units
TOTAL ORGANIC CARBON (TOC)	62	10	mg/L

1:10 Dilution.

VOLATILE ORGANICS (CAPILLARY COLUMN) SW846-8260B NELAC:Y

Analyst: H. WILLIAMS | Analysis Date: 30-SEP-14 16:38 | Instrument: GC/MS VOA | Test: O510.6.0

Parameter	Result	Det. Limit	Units
ACETONE (2-PROPANONE)	BDL	10	ug/L
ACRYLONITRILE	BDL	100	ug/L
BENZENE	5.0	5.0	ug/L
BROMOCHLOROMETHANE	BDL	5.0	ug/L
BROMODICHLOROMETHANE	BDL	5.0	ug/L
BROMOFORM	BDL	5.0	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	10	ug/L
CARBON TETRACHLORIDE	BDL	5.0	ug/L
CHLOROBENZENE	58	5.0	ug/L
DIBROMOCHLOROMETHANE	BDL	5.0	ug/L
CHLOROETHANE	BDL	10	ug/L
CHLOROFORM	BDL	5.0	ug/L
CHLOROMETHANE	BDL	10	ug/L
1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	BDL	5.0	ug/L
1,2-DIBROMOETHANE (EDB)	BDL	5.0	ug/L
DIBROMOMETHANE	BDL	10	ug/L
1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	BDL	5.0	ug/L
1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	5.9	5.0	ug/L
TRANS-1,4-DICHLORO-2-BUTENE	BDL	10	ug/L
1,1-DICHLOROETHANE	BDL	5.0	ug/L
1,2-DICHLOROETHANE	BDL	5.0	ug/L
1,1-DICHLOROETHENE	BDL	5.0	ug/L
CIS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
TRANS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
1,2-DICHLOROPROPANE	BDL	5.0	ug/L
CIS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
ETHYL BENZENE	BDL	5.0	ug/L
2-HEXANONE	BDL	10	ug/L
IODOMETHANE	BDL	5.0	ug/L
DICHLOROMETHANE (METHYLENE CHLORIDE)	BDL	5.0	ug/L
METHYL ETHYL KETONE	BDL	10	ug/L
4-METHYL-2-PENTANONE	BDL	10	ug/L
STYRENE	BDL	5.0	ug/L

Sample ID: AA28604 PZ-114-AS

Parameter	Result	Det. Limit	Units
1,1,1,2-TETRACHLOROETHANE	BDL	5.0	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5.0	ug/L
TETRACHLOROETHENE	BDL	5.0	ug/L
TOLUENE	BDL	5.0	ug/L
1,1,1-TRICHLOROETHANE	BDL	5.0	ug/L
1,1,2-TRICHLOROETHANE	BDL	5.0	ug/L
TRICHLOROETHENE	BDL	5.0	ug/L
TRICHLOROFLUOROMETHANE	BDL	10	ug/L
1,2,3-TRICHLOROPROPANE	BDL	5.0	ug/L
VINYL ACETATE	BDL	10	ug/L
VINYL CHLORIDE	BDL	2.0	ug/L
XYLENES (O/M/P-XYLENE)	BDL	5.0	ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	115		% Rec
TOLUENE-D8	89		% Rec
4-BROMOFLUOROBENZENE	91		% Rec
DIBROMOFLUOROMETHANE	116		% Rec

Prep Method SW846-5030B Purge and Trap

Sample Comments

BDL Below Detection Limit

Sample was received on ice at temperature 2.4 C.
Sample chain of custody number 1737795.

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KS ELAP / NELAP Accreditation # E-10177 Indiana SDWA C-49-01

Approved by: CHRISTINE SARKAN 13-OCT-14

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CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
PACE ANALYTICAL SERVICES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	26-SEP-14	AA28605
	Completed 10-OCT-14	PO Number NEED PO
	Printed 15-OCT-14	Sampled 23-SEP-14 15:45

Report To	Bill To
JON WILKINSON HERST AND ASSOCIATES 4630 SOUTH HIGHWAY 94 NORTH OUTER ROAD ST. CHARLES, MO 63304	DAVE VASBINDER ALLIED WASTE SYSTEMS 13570 ST. CHARLES ROCK ROAD BRIDGETON, MO 63044

Sample Description

CLIENT ID: PZ-110-SS
MATRIX TYPE: NON-SPECIFIC WATER
SUBMITTER: 8945 - MO-ALLIED-BRIDGETON LANDFILL
PROJECT NAME: GROUNDWATER - BRIDGETON LANDFILL
DATA PACKAGE #: 66865
LOCATION: BRIDGETON LANDFILL
DESCRIPTION: SEMI-ANNUAL GROUNDWATER TESTING

GROUNDWATER MONITORING WELL DATA SAS

Analysis Date: 23-SEP-14 15:45 Instrument: FIELD Test: G600.0.0

Parameter	Result	Det. Limit	Units
TOTAL WELL DEPTH	106.98		ft
INITIAL WATER LEVEL	30.67		ft
ELEVATION OF GROUNDWATER SURFACE	430.67		Feet/MSL

FIELD TEMPERATURE SM2550 B 2000 NELAC:N

Analysis Date: 23-SEP-14 15:45 Instrument: FIELD Test: G603.1.0

Parameter	Result	Det. Limit	Units
TEMPERATURE	16.6		Degrees C

FIELD PH (AQUEOUS) SW846-9040C NELAC:Y

Analysis Date: 23-SEP-14 15:45 Instrument: FIELD Test: G607.0.0

Parameter	Result	Det. Limit	Units
PH	6.74	0.1	Std. Units

FIELD SPECIFIC CONDUCTANCE SW846-9050A NELAC:Y

Analysis Date: 23-SEP-14 15:45 Instrument: FIELD Test: G604.0.0

Parameter	Result	Det. Limit	Units
CONDUCTIVITY	1910	1.0	umHOS/cm

FIELD TURBIDITY EPA 180.1 NELAC:Y

Analysis Date: 23-SEP-14 15:45 Instrument: FIELD Test: G602.0.0

Parameter	Result	Det. Limit	Units
TURBIDITY	3.07		ntu

HARDNESS SM2340 B 1997 NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:09 Instrument: ICP Test: G608.0.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
HARDNESS	840	1.0	mg CaCO3/L

ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P129.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P130.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

BARIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:09 Instrument: ICP Test: M104.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BARIUM	250	10	ug/L

BERYLLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:55 Instrument: ICP/MS Test: V105.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	2.0	ug/L

1:5 Dilution.

BORON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:09 Instrument: ICP Test: M107.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BORON	220	100	ug/L

CALCIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:09 Instrument: ICP Test: M109.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units

Parameter	Result	Det. Limit	Units
CALCIUM	210000	100	ug/L

CHROMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:55 Instrument: ICP/MS Test: V110.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	5.0	ug/L

1:5 Dilution.

COBALT ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:09 Instrument: ICP Test: M111.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COBALT	BDL	5.0	ug/L

COPPER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:55 Instrument: ICP/MS Test: V112.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
COPPER	BDL	5.0	ug/L

1:5 Dilution.

IRON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:09 Instrument: ICP Test: M115.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
IRON	5600	20	ug/L

MAGNESIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:09 Instrument: ICP Test: M118.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MAGNESIUM	79000	100	ug/L

MANGANESE ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:09 Instrument: ICP Test: M119.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MANGANESE	170	5.0	ug/L

NICKEL ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:09 Instrument: ICP Test: M122.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
NICKEL	15	10	ug/L

SILVER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:55 Instrument: ICP/MS Test: V130.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	5.0	ug/L

1:5 Dilution.

SODIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:09 Instrument: ICP Test: M131.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SODIUM	78000	1000	ug/L

THALLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:55 Instrument: ICP/MS Test: V134.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	2.0	ug/L

1:5 Dilution.

VANADIUM ICP SW846-6010B NELAC:N

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:09 Instrument: ICP Test: M138.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	10	ug/L

ZINC ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:09 Instrument: ICP Test: M139.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ZINC	BDL	20	ug/L

ARSENIC ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:55 Instrument: ICP/MS Test: V103.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	5.0	ug/L

1:5 Dilution.

CADMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:55 Instrument: ICP/MS Test: V108.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.20	ug/L

1:5 Dilution.

LEAD ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:55 Instrument: ICP/MS Test: V116.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
LEAD	BDL	5.0	ug/L

1:5 Dilution.

SELENIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:55 Instrument: ICP/MS Test: V128.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	5.0	ug/L

1:5 Dilution.

ANTIMONY ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:55 Instrument: ICP/MS Test: V102.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	5.0	ug/L

1:5 Dilution.

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 08:00 Instrument: PREP Test: P131.6.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	40		mL
FINAL VOLUME	40		mL

MERCURY CVAA SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 20:27 Instrument: CVAA Test: M120.1.0

Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A P131.6.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.20	ug/L

TOTAL DISSOLVED SOLIDS SM2540 C 1997 NELAC:Y

Analyst: N. HARBACHOW Analysis Date: 30-SEP-14 18:30 Test: G402.9.0

Parameter	Result	Det. Limit	Units
DISSOLVED SOLIDS	1100	10	mg/L

CHLORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 27-SEP-14 04:50 Instrument: IC Test: G310.2.0

Parameter	Result	Det. Limit	Units
CHLORIDE	160	6.3	mg/L

1:25 Dilution.

FLUORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 27-SEP-14 04:32 Instrument: IC Test: G310.1.0

Parameter	Result	Det. Limit	Units
FLUORIDE	0.32	0.10	mg/L

AMMONIA BY AUTOMATED PHENATE SM4500-NH3 G 1997 NELAC:Y

Analyst: T. DRIGGERS Analysis Date: 06-OCT-14 13:24 Instrument: AUTO-ANALYZER Test: G204.6.0

Parameter	Result	Det. Limit	Units
NITROGEN, AMMONIA	0.25	0.10	mg/L

NITROGEN, NITRATE-NITRITE EPA 353.2 REV. 2.0 (1993) NELAC:Y

Analyst: C. ANYANWUTAKU Analysis Date: 10-OCT-14 11:45 Instrument: AUTO-ANALYZER Test: G113.3.0

Parameter	Result	Det. Limit	Units
NITROGEN, NITRATE-NITRITE	BDL	0.10	mg/L

PHOSPHORUS, TOTAL (AUTOMATED) EPA 365.1 REV. 2.0 (1993) NELAC:Y

Analyst: E. SKALA Analysis Date: 02-OCT-14 08:28 Instrument: AUTO-ANALYZER Test: G207.2.0

Parameter	Result	Det. Limit	Units
PHOSPHORUS	0.14	0.050	mg/L

MS and/or MSD do not meet control limits. Results for this sample are estimated.

SULFATE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 27-SEP-14 04:50 Instrument: IC Test: G310.7.0

Parameter	Result	Det. Limit	Units
SULFATE	53	6.3	mg/L

1:25 Dilution.

CHEMICAL OXYGEN DEMAND (COLORIMETRIC) EPA 410.4 REV. 2.0 (1993) NELAC:Y

Analyst: B. LEDFORD Analysis Date: 30-SEP-14 11:30 Test: G301.1.0

Parameter	Result	Det. Limit	Units
CHEMICAL OXYGEN DEMAND	33	10	mg/L

TOTAL ORGANIC CARBON SW846-9060A NELAC:Y

Analyst: D. DICKERSON | Analysis Date: 02-OCT-14 09:47 | Instrument: TOC | Test: O401.0.0

Parameter	Result	Det. Limit	Units
TOTAL ORGANIC CARBON (TOC)	66	5.0	mg/L

1:5 Dilution.

VOLATILE ORGANICS (CAPILLARY COLUMN) SW846-8260B NELAC:Y

Analyst: H. WILLIAMS | Analysis Date: 30-SEP-14 17:03 | Instrument: GC/MS VOA | Test: O510.6.0

Parameter	Result	Det. Limit	Units
ACETONE (2-PROPANONE)	BDL	10	ug/L
ACRYLONITRILE	BDL	100	ug/L
BENZENE	BDL	5.0	ug/L
BROMOCHLOROMETHANE	BDL	5.0	ug/L
BROMODICHLOROMETHANE	BDL	5.0	ug/L
BROMOFORM	BDL	5.0	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	10	ug/L
CARBON TETRACHLORIDE	BDL	5.0	ug/L
CHLOROBENZENE	BDL	5.0	ug/L
DIBROMOCHLOROMETHANE	BDL	5.0	ug/L
CHLOROETHANE	BDL	10	ug/L
CHLOROFORM	BDL	5.0	ug/L
CHLOROMETHANE	BDL	10	ug/L
1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	BDL	5.0	ug/L
1,2-DIBROMOETHANE (EDB)	BDL	5.0	ug/L
DIBROMOMETHANE	BDL	10	ug/L
1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	BDL	5.0	ug/L
1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	BDL	5.0	ug/L
TRANS-1,4-DICHLORO-2-BUTENE	BDL	10	ug/L
1,1-DICHLOROETHANE	BDL	5.0	ug/L
1,2-DICHLOROETHANE	BDL	5.0	ug/L
1,1-DICHLOROETHENE	BDL	5.0	ug/L
CIS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
TRANS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
1,2-DICHLOROPROPANE	BDL	5.0	ug/L
CIS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
ETHYL BENZENE	BDL	5.0	ug/L
2-HEXANONE	BDL	10	ug/L
IODOMETHANE	BDL	5.0	ug/L
DICHLOROMETHANE (METHYLENE CHLORIDE)	BDL	5.0	ug/L
METHYL ETHYL KETONE	BDL	10	ug/L
4-METHYL-2-PENTANONE	BDL	10	ug/L
STYRENE	BDL	5.0	ug/L

Sample ID: AA28605 PZ-110-SS

Parameter	Result	Det. Limit	Units
1,1,1,2-TETRACHLOROETHANE	BDL	5.0	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5.0	ug/L
TETRACHLOROETHENE	BDL	5.0	ug/L
TOLUENE	BDL	5.0	ug/L
1,1,1-TRICHLOROETHANE	BDL	5.0	ug/L
1,1,2-TRICHLOROETHANE	BDL	5.0	ug/L
TRICHLOROETHENE	BDL	5.0	ug/L
TRICHLOROFLUOROMETHANE	BDL	10	ug/L
1,2,3-TRICHLOROPROPANE	BDL	5.0	ug/L
VINYL ACETATE	BDL	10	ug/L
VINYL CHLORIDE	BDL	2.0	ug/L
XYLENES (O/M/P-XYLENE)	BDL	5.0	ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	111		% Rec
TOLUENE-D8	89		% Rec
4-BROMOFLUOROBENZENE	83		% Rec
DIBROMOFLUOROMETHANE	109		% Rec

Prep Method SW846-5030B Purge and Trap

Sample Comments

BDL Below Detection Limit

Sample was received on ice at temperature 2.4 C.
Sample chain of custody number 1737795.

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KS ELAP / NELAP Accreditation # E-10177 Indiana SDWA C-49-01

Approved by: CHRISTINE SARKAN 13-OCT-14

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CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
PACE ANALYTICAL SERVICES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	26-SEP-14	AA28606
	Completed	**PO Number**
	10-OCT-14	NEED PO
	Printed	**Sampled**
	15-OCT-14	24-SEP-14 09:42

Report To	Bill To
JON WILKINSON HERST AND ASSOCIATES 4630 SOUTH HIGHWAY 94 NORTH OUTER ROAD ST. CHARLES, MO 63304	DAVE VASBINDER ALLIED WASTE SYSTEMS 13570 ST. CHARLES ROCK ROAD BRIDGETON, MO 63044

Sample Description

CLIENT ID: PZ-106-SD
MATRIX TYPE: NON-SPECIFIC WATER
SUBMITTER: 8945 - MO-ALLIED-BRIDGETON LANDFILL
PROJECT NAME: GROUNDWATER - BRIDGETON LANDFILL
DATA PACKAGE #: 66865
LOCATION: BRIDGETON LANDFILL
DESCRIPTION: SEMI-ANNUAL GROUNDWATER TESTING

GROUNDWATER MONITORING WELL DATA SAS

Analysis Date: 24-SEP-14 09:42 Instrument: FIELD Test: G600.0.0

Parameter	Result	Det. Limit	Units
TOTAL WELL DEPTH	196.08		ft
INITIAL WATER LEVEL	13.08		ft
ELEVATION OF GROUNDWATER SURFACE	450.34		Feet/MSL

FIELD TEMPERATURE SM2550 B 2000 NELAC:N

Analysis Date: 24-SEP-14 09:42 Instrument: FIELD Test: G603.1.0

Parameter	Result	Det. Limit	Units
TEMPERATURE	21.7		Degrees C

FIELD PH (AQUEOUS) SW846-9040C NELAC:Y

Analysis Date: 24-SEP-14 09:42 Instrument: FIELD Test: G607.0.0

Parameter	Result	Det. Limit	Units
PH	6.54	0.1	Std. Units

FIELD SPECIFIC CONDUCTANCE SW846-9050A NELAC:Y

Analysis Date: 24-SEP-14 09:42 Instrument: FIELD Test: G604.0.0

Parameter	Result	Det. Limit	Units
CONDUCTIVITY	4250	1.0	umHOS/cm

FIELD TURBIDITY EPA 180.1 NELAC:Y

Analysis Date: 24-SEP-14 09:42 Instrument: FIELD Test: G602.0.0

Parameter	Result	Det. Limit	Units
TURBIDITY	13.20		ntu

HARDNESS SM2340 B 1997 NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:12 Instrument: ICP Test: G608.0.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
HARDNESS	1300	1.0	mg CaCO3/L

ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P129.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P130.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

BARIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:12 Instrument: ICP Test: M104.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BARIUM	1400	10	ug/L

BERYLLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:59 Instrument: ICP/MS Test: V105.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	2.0	ug/L

1:5 Dilution.

BORON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:12 Instrument: ICP Test: M107.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BORON	2900	100	ug/L

CALCIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:12 Instrument: ICP Test: M109.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units

Parameter	Result	Det. Limit	Units
CALCIUM	200000	100	ug/L

CHROMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:59 Instrument: ICP/MS Test: V110.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CHROMIUM	42	5.0	ug/L

1:5 Dilution.

COBALT ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:12 Instrument: ICP Test: M111.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COBALT	12	5.0	ug/L

COPPER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:59 Instrument: ICP/MS Test: V112.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
COPPER	BDL	5.0	ug/L

1:5 Dilution.

IRON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:12 Instrument: ICP Test: M115.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
IRON	13000	20	ug/L

MAGNESIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:12 Instrument: ICP Test: M118.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MAGNESIUM	190000	100	ug/L

MANGANESE ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:12 Instrument: ICP Test: M119.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MANGANESE	92	5.0	ug/L

NICKEL ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:12 Instrument: ICP Test: M122.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
NICKEL	60	10	ug/L

SILVER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:59 Instrument: ICP/MS Test: V130.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	5.0	ug/L

1:5 Dilution.

SODIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 02-OCT-14 03:31 Instrument: ICP Test: M131.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SODIUM	560000	10000	ug/L

1:10 Dilution.

THALLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:59 Instrument: ICP/MS Test: V134.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	2.0	ug/L

1:5 Dilution.

VANADIUM ICP SW846-6010B NELAC:N

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:12 Instrument: ICP Test: M138.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
VANADIUM	42	10	ug/L

ZINC ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:12 Instrument: ICP Test: M139.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ZINC	BDL	20	ug/L

ARSENIC ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:59 Instrument: ICP/MS Test: V103.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ARSENIC	6.6	5.0	ug/L

1:5 Dilution.

CADMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:59 Instrument: ICP/MS Test: V108.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.20	ug/L

1:5 Dilution.

LEAD ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:59 Instrument: ICP/MS Test: V116.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
LEAD	BDL	5.0	ug/L

1:5 Dilution.

SELENIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:59 Instrument: ICP/MS Test: V128.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	5.0	ug/L

1:5 Dilution.

ANTIMONY ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 22:59 Instrument: ICP/MS Test: V102.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	5.0	ug/L

1:5 Dilution.

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 08:00 Instrument: PREP Test: P131.6.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	40		mL
FINAL VOLUME	40		mL

MERCURY CVAA SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 20:40 Instrument: CVAA Test: M120.1.0

Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A P131.6.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.20	ug/L

TOTAL DISSOLVED SOLIDS SM2540 C 1997 NELAC:Y

Analyst: C. ANYANWUTAKU Analysis Date: 01-OCT-14 14:00 Test: G402.9.0

Parameter	Result	Det. Limit	Units
DISSOLVED SOLIDS	3200	10	mg/L

CHLORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 30-SEP-14 02:42 Instrument: IC Test: G310.2.0

Parameter	Result	Det. Limit	Units
CHLORIDE	870	25	mg/L

1:100 Dilution.

FLUORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 30-SEP-14 15:28 Instrument: IC Test: G310.1.0

Parameter	Result	Det. Limit	Units
FLUORIDE	0.87	0.10	mg/L

AMMONIA BY AUTOMATED PHENATE SM4500-NH3 G 1997 NELAC:Y

Analyst: T. DRIGGERS Analysis Date: 06-OCT-14 15:08 Instrument: AUTO-ANALYZER Test: G204.6.0

Parameter	Result	Det. Limit	Units
NITROGEN, AMMONIA	73	10	mg/L

1:100 Dilution.

NITROGEN, NITRATE-NITRITE EPA 353.2 REV. 2.0 (1993) NELAC:Y

Analyst: C. ANYANWUTAKU Analysis Date: 10-OCT-14 12:26 Instrument: AUTO-ANALYZER Test: G113.3.0

Parameter	Result	Det. Limit	Units
NITROGEN, NITRATE-NITRITE	BDL	0.10	mg/L

Sample filtered due to high turbidity.

PHOSPHORUS, TOTAL (AUTOMATED) EPA 365.1 REV. 2.0 (1993) NELAC:Y

Analyst: E. SKALA Analysis Date: 02-OCT-14 08:29 Instrument: AUTO-ANALYZER Test: G207.2.0

Parameter	Result	Det. Limit	Units
PHOSPHORUS	0.19	0.050	mg/L

SULFATE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 29-SEP-14 15:26 Instrument: IC Test: G310.7.0

Parameter	Result	Det. Limit	Units
SULFATE	29	2.0	mg/L

CHEMICAL OXYGEN DEMAND (COLORIMETRIC) EPA 410.4 REV. 2.0 (1993) NELAC:Y

Analyst: B. LEDFORD Analysis Date: 30-SEP-14 12:00 Test: G301.1.0

Parameter	Result	Det. Limit	Units
CHEMICAL OXYGEN DEMAND	940	10	mg/L

MS and/or MSD do not meet control limits. Results for this sample are estimated.

TOTAL ORGANIC CARBON SW846-9060A NELAC:Y

Analyst: D. DICKERSON | Analysis Date: 02-OCT-14 09:47 | Instrument: TOC | Test: O401.0.0

Parameter	Result	Det. Limit	Units
TOTAL ORGANIC CARBON (TOC)	370	25	mg/L

1:25 Dilution.

VOLATILE ORGANICS (CAPILLARY COLUMN) SW846-8260B NELAC:Y

Analyst: H. WILLIAMS | Analysis Date: 30-SEP-14 09:27 | Instrument: GC/MS VOA | Test: O510.6.0

Parameter	Result	Det. Limit	Units
ACETONE (2-PROPANONE)	BDL	200	ug/L
ACRYLONITRILE	BDL	200	ug/L
BENZENE	BDL	10	ug/L
BROMOCHLOROMETHANE	BDL	10	ug/L
BROMODICHLOROMETHANE	BDL	10	ug/L
BROMOFORM	BDL	10	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	10	ug/L
CARBON TETRACHLORIDE	BDL	10	ug/L
CHLOROBENZENE	BDL	10	ug/L
DIBROMOCHLOROMETHANE	BDL	10	ug/L
CHLOROETHANE	BDL	10	ug/L
CHLOROFORM	BDL	10	ug/L
CHLOROMETHANE	BDL	10	ug/L
1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	BDL	10	ug/L
1,2-DIBROMOETHANE (EDB)	BDL	10	ug/L
DIBROMOMETHANE	BDL	10	ug/L
1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	BDL	10	ug/L
1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	BDL	10	ug/L
TRANS-1,4-DICHLORO-2-BUTENE	BDL	10	ug/L
1,1-DICHLOROETHANE	BDL	10	ug/L
1,2-DICHLOROETHANE	BDL	10	ug/L
1,1-DICHLOROETHENE	BDL	10	ug/L
CIS-1,2-DICHLOROETHENE	BDL	10	ug/L
TRANS-1,2-DICHLOROETHENE	BDL	10	ug/L
1,2-DICHLOROPROPANE	BDL	10	ug/L
CIS-1,3-DICHLOROPROPENE	BDL	10	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	10	ug/L
ETHYL BENZENE	BDL	10	ug/L
2-HEXANONE	BDL	100	ug/L
IODOMETHANE	BDL	10	ug/L
DICHLOROMETHANE (METHYLENE CHLORIDE)	BDL	10	ug/L
METHYL ETHYL KETONE	BDL	100	ug/L
4-METHYL-2-PENTANONE	BDL	100	ug/L
STYRENE	BDL	10	ug/L

Parameter	Result	Det. Limit	Units
1,1,1,2-TETRACHLOROETHANE	BDL	10	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	10	ug/L
TETRACHLOROETHENE	BDL	10	ug/L
TOLUENE	BDL	10	ug/L
1,1,1-TRICHLOROETHANE	BDL	10	ug/L
1,1,2-TRICHLOROETHANE	BDL	10	ug/L
TRICHLOROETHENE	BDL	10	ug/L
TRICHLOROFLUOROMETHANE	BDL	10	ug/L
1,2,3-TRICHLOROPROPANE	BDL	10	ug/L
VINYL ACETATE	BDL	10	ug/L
VINYL CHLORIDE	BDL	10	ug/L
XYLENES (O/M/P-XYLENE)	BDL	20	ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	104		% Rec
TOLUENE-D8	90		% Rec
4-BROMOFLUOROBENZENE	96		% Rec
DIBROMOFLUOROMETHANE	102		% Rec

1:10 Dilution.

PH6

Unable to analyze sample at lower dilution due to high concentration of

non-target analytes.

Unable to analyze at lower dilution due to sample matrix. Sample foamed.

Prep Method SW846-5030B Purge and Trap

Sample Comments

BDL Below Detection Limit

Sample was received on ice at temperature 2.4 C.
Sample chain of custody number 1737795.

This Certificate shall not be reproduced, except in full, without the written approval of the lab. The sample results relate only to the analytes of interest tested or to the sample as received by the lab. Pace Analytical Services, INC. certifies that the test results indicated as NELAP (National Environmental Laboratory Accreditation Program) accredited (Yes for NELAP) meet all requirements of NELAP and Kansas (KDHE) unless otherwise explained or justified as to the the exact nature of the deviations.
KS ELAP / NELAP Accreditation # E-10177 Indiana SDWA C-49-01

Approved by: CHRISTINE SARKAN 13-OCT-14

Pace Analytical®
Pace Analytical Services, Inc.

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
PACE ANALYTICAL SERVICES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	26-SEP-14	AA28607
	Completed 10-OCT-14	PO Number NEED PO
	Printed 15-OCT-14	Sampled 24-SEP-14 10:08

Report To	Bill To
JON WILKINSON HERST AND ASSOCIATES 4630 SOUTH HIGHWAY 94 NORTH OUTER ROAD ST. CHARLES, MO 63304	DAVE VASBINDER ALLIED WASTE SYSTEMS 13570 ST. CHARLES ROCK ROAD BRIDGETON, MO 63044

Sample Description

CLIENT ID: PZ-106-SS
MATRIX TYPE: NON-SPECIFIC WATER
SUBMITTER: 8945 - MO-ALLIED-BRIDGETON LANDFILL
PROJECT NAME: GROUNDWATER - BRIDGETON LANDFILL
DATA PACKAGE #: 66865
LOCATION: BRIDGETON LANDFILL
DESCRIPTION: SEMI-ANNUAL GROUNDWATER TESTING

GROUNDWATER MONITORING WELL DATA SAS

Analysis Date: 24-SEP-14 10:08 Instrument: FIELD Test: G600.0.0

Parameter	Result	Det. Limit	Units
TOTAL WELL DEPTH	161.38		ft
INITIAL WATER LEVEL	12.31		ft
ELEVATION OF GROUNDWATER SURFACE	450.39		Feet/MSL

FIELD TEMPERATURE SM2550 B 2000 NELAC:N

Analysis Date: 24-SEP-14 10:08 Instrument: FIELD Test: G603.1.0

Parameter	Result	Det. Limit	Units
TEMPERATURE	21.5		Degrees C

FIELD PH (AQUEOUS) SW846-9040C NELAC:Y

Analysis Date: 24-SEP-14 10:08 Instrument: FIELD Test: G607.0.0

Parameter	Result	Det. Limit	Units
PH	6.96	0.1	Std. Units

FIELD SPECIFIC CONDUCTANCE SW846-9050A NELAC:Y

Analysis Date: 24-SEP-14 10:08 Instrument: FIELD Test: G604.0.0

Parameter	Result	Det. Limit	Units
CONDUCTIVITY	873	1.0	umHOS/cm

FIELD TURBIDITY EPA 180.1 NELAC:Y

Analysis Date: 24-SEP-14 10:08 Instrument: FIELD Test: G602.0.0

Parameter	Result	Det. Limit	Units
TURBIDITY	2.67		ntu

HARDNESS SM2340 B 1997 NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:16 Instrument: ICP Test: G608.0.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
HARDNESS	470	1.0	mg CaCO3/L

ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P129.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P130.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

BARIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:16 Instrument: ICP Test: M104.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BARIUM	160	10	ug/L

BERYLLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:04 Instrument: ICP/MS Test: V105.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	2.0	ug/L

1:5 Dilution.

BORON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:16 Instrument: ICP Test: M107.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BORON	BDL	100	ug/L

CALCIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:16 Instrument: ICP Test: M109.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units

Parameter	Result	Det. Limit	Units
CALCIUM	110000	100	ug/L

CHROMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:04 Instrument: ICP/MS Test: V110.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	5.0	ug/L

1:5 Dilution.

COBALT ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:16 Instrument: ICP Test: M111.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COBALT	BDL	5.0	ug/L

COPPER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:04 Instrument: ICP/MS Test: V112.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
COPPER	BDL	5.0	ug/L

1:5 Dilution.

IRON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:16 Instrument: ICP Test: M115.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
IRON	1300	20	ug/L

MAGNESIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:16 Instrument: ICP Test: M118.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MAGNESIUM	50000	100	ug/L

MANGANESE ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:16 Instrument: ICP Test: M119.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MANGANESE	23	5.0	ug/L

NICKEL ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:16 Instrument: ICP Test: M122.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
NICKEL	BDL	10	ug/L

SILVER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:04 Instrument: ICP/MS Test: V130.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	5.0	ug/L

1:5 Dilution.

SODIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:16 Instrument: ICP Test: M131.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SODIUM	18000	1000	ug/L

THALLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:04 Instrument: ICP/MS Test: V134.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	2.0	ug/L

1:5 Dilution.

VANADIUM ICP SW846-6010B NELAC:N

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:16 Instrument: ICP Test: M138.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	10	ug/L

ZINC ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:16 Instrument: ICP Test: M139.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ZINC	BDL	20	ug/L

ARSENIC ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:04 Instrument: ICP/MS Test: V103.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	5.0	ug/L

1:5 Dilution.

CADMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:04 Instrument: ICP/MS Test: V108.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.20	ug/L

1:5 Dilution.

LEAD ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:04 Instrument: ICP/MS Test: V116.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
LEAD	BDL	5.0	ug/L

1:5 Dilution.

SELENIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:04 Instrument: ICP/MS Test: V128.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	5.0	ug/L

1:5 Dilution.

ANTIMONY ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:04 Instrument: ICP/MS Test: V102.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	5.0	ug/L

1:5 Dilution.

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 08:00 Instrument: PREP Test: P131.6.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	40		mL
FINAL VOLUME	40		mL

MERCURY CVAA SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 20:42 Instrument: CVAA Test: M120.1.0

Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A P131.6.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.20	ug/L

TOTAL DISSOLVED SOLIDS SM2540 C 1997 NELAC:Y

Analyst: C. ANYANWUTAKU Analysis Date: 01-OCT-14 14:00 Test: G402.9.0

Parameter	Result	Det. Limit	Units
DISSOLVED SOLIDS	510	10	mg/L

CHLORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 29-SEP-14 16:02 Instrument: IC Test: G310.2.0

Parameter	Result	Det. Limit	Units
CHLORIDE	24	3.0	mg/L

1:5 Dilution.

FLUORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 30-SEP-14 15:46 Instrument: IC Test: G310.1.0

Parameter	Result	Det. Limit	Units
FLUORIDE	1.8	0.10	mg/L

AMMONIA BY AUTOMATED PHENATE SM4500-NH3 G 1997 NELAC:Y

Analyst: T. DRIGGERS Analysis Date: 06-OCT-14 13:44 Instrument: AUTO-ANALYZER Test: G204.6.0

Parameter	Result	Det. Limit	Units
NITROGEN, AMMONIA	BDL	0.10	mg/L

NITROGEN, NITRATE-NITRITE EPA 353.2 REV. 2.0 (1993) NELAC:Y

Analyst: C. ANYANWUTAKU Analysis Date: 10-OCT-14 11:46 Instrument: AUTO-ANALYZER Test: G113.3.0

Parameter	Result	Det. Limit	Units
NITROGEN, NITRATE-NITRITE	BDL	0.10	mg/L

PHOSPHORUS, TOTAL (AUTOMATED) EPA 365.1 REV. 2.0 (1993) NELAC:Y

Analyst: E. SKALA Analysis Date: 02-OCT-14 08:30 Instrument: AUTO-ANALYZER Test: G207.2.0

Parameter	Result	Det. Limit	Units
PHOSPHORUS	BDL	0.05	mg/L

SULFATE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 29-SEP-14 16:02 Instrument: IC Test: G310.7.0

Parameter	Result	Det. Limit	Units
SULFATE	46	2.0	mg/L

1:5 Dilution.

CHEMICAL OXYGEN DEMAND (COLORIMETRIC) EPA 410.4 REV. 2.0 (1993) NELAC:Y

Analyst: B. LEDFORD Analysis Date: 30-SEP-14 11:30 Test: G301.1.0

Parameter	Result	Det. Limit	Units
CHEMICAL OXYGEN DEMAND	BDL	10	mg/L

TOTAL ORGANIC CARBON SW846-9060A NELAC:Y

Analyst: D. DICKERSON Analysis Date: 02-OCT-14 09:47 Instrument: TOC Test: O401.0.0

Parameter	Result	Det. Limit	Units

Parameter	Result	Det. Limit	Units
TOTAL ORGANIC CARBON (TOC)	32	5.0	mg/L
1:5 Dilution.			

VOLATILE ORGANICS (CAPILLARY COLUMN) SW846-8260B NELAC:Y

Analyst: H. WILLIAMS Analysis Date: 30-SEP-14 17:29 Instrument: GC/MS VOA Test: O510.6.0

Parameter	Result	Det. Limit	Units
ACETONE (2-PROPANONE)	BDL	10	ug/L
ACRYLONITRILE	BDL	100	ug/L
BENZENE	BDL	5.0	ug/L
BROMOCHLOROMETHANE	BDL	5.0	ug/L
BROMODICHLOROMETHANE	BDL	5.0	ug/L
BROMOFORM	BDL	5.0	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	10	ug/L
CARBON TETRACHLORIDE	BDL	5.0	ug/L
CHLOROBENZENE	BDL	5.0	ug/L
DIBROMOCHLOROMETHANE	BDL	5.0	ug/L
CHLOROETHANE	BDL	10	ug/L
CHLOROFORM	BDL	5.0	ug/L
CHLOROMETHANE	BDL	10	ug/L
1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	BDL	5.0	ug/L
1,2-DIBROMOETHANE (EDB)	BDL	5.0	ug/L
DIBROMOMETHANE	BDL	10	ug/L
1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	BDL	5.0	ug/L
1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	BDL	5.0	ug/L
TRANS-1,4-DICHLORO-2-BUTENE	BDL	10	ug/L
1,1-DICHLOROETHANE	BDL	5.0	ug/L
1,2-DICHLOROETHANE	BDL	5.0	ug/L
1,1-DICHLOROETHENE	BDL	5.0	ug/L
CIS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
TRANS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
1,2-DICHLOROPROPANE	BDL	5.0	ug/L
CIS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
ETHYL BENZENE	BDL	5.0	ug/L
2-HEXANONE	BDL	10	ug/L
IODOMETHANE	BDL	5.0	ug/L
DICHLOROMETHANE (METHYLENE CHLORIDE)	BDL	5.0	ug/L
METHYL ETHYL KETONE	BDL	10	ug/L
4-METHYL-2-PENTANONE	BDL	10	ug/L
STYRENE	BDL	5.0	ug/L
1,1,1,2-TETRACHLOROETHANE	BDL	5.0	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5.0	ug/L

Parameter	Result	Det. Limit	Units
TETRACHLOROETHENE	BDL	5.0	ug/L
TOLUENE	BDL	5.0	ug/L
1,1,1-TRICHLOROETHANE	BDL	5.0	ug/L
1,1,2-TRICHLOROETHANE	BDL	5.0	ug/L
TRICHLOROETHENE	BDL	5.0	ug/L
TRICHLOROFLUOROMETHANE	BDL	10	ug/L
1,2,3-TRICHLOROPROPANE	BDL	5.0	ug/L
VINYL ACETATE	BDL	10	ug/L
VINYL CHLORIDE	BDL	2.0	ug/L
XYLENES (O/M/P-XYLENE)	BDL	5.0	ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	124		% Rec
TOLUENE-D8	91		% Rec
4-BROMOFLUOROBENZENE	77		% Rec
DIBROMOFLUOROMETHANE	118		% Rec

Prep Method SW846-5030B Purge and Trap

Sample Comments

BDL Below Detection Limit

Sample was received on ice at temperature 2.4 C.
Sample chain of custody number 1737795.

This Certificate shall not be reproduced, except in full, without the written approval of the lab. The sample results relate only to the analytes of interest tested or to the sample as received by the lab. Pace Analytical Services, INC. certifies that the test results indicated as NELAP (National Environmental Laboratory Accreditation Program) accredited (Yes for NELAP) meet all requirements of NELAP and Kansas (KDHE) unless otherwise explained or justified as to the the exact nature of the deviations.
KS ELAP / NELAP Accreditation # E-10177 Indiana SDWA C-49-01

Approved by: CHRISTINE SARKAN 13-OCT-14

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CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
PACE ANALYTICAL SERVICES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	26-SEP-14	AA28608
	Completed 10-OCT-14	PO Number NEED PO
	Printed 15-OCT-14	Sampled 24-SEP-14 10:44

Report To	Bill To
JON WILKINSON HERST AND ASSOCIATES 4630 SOUTH HIGHWAY 94 NORTH OUTER ROAD ST. CHARLES, MO 63304	DAVE VASBINDER ALLIED WASTE SYSTEMS 13570 ST. CHARLES ROCK ROAD BRIDGETON, MO 63044

Sample Description

CLIENT ID: PZ-105-SS
MATRIX TYPE: NON-SPECIFIC WATER
SUBMITTER: 8945 - MO-ALLIED-BRIDGETON LANDFILL
PROJECT NAME: GROUNDWATER - BRIDGETON LANDFILL
DATA PACKAGE #: 66865
LOCATION: BRIDGETON LANDFILL
DESCRIPTION: SEMI-ANNUAL GROUNDWATER TESTING

GROUNDWATER MONITORING WELL DATA SAS

Analysis Date: 24-SEP-14 10:44 Instrument: FIELD Test: G600.0.0

Parameter	Result	Det. Limit	Units
TOTAL WELL DEPTH	144.81		ft
INITIAL WATER LEVEL	25.97		ft
ELEVATION OF GROUNDWATER SURFACE	457.64		Feet/MSL

FIELD TEMPERATURE SM2550 B 2000 NELAC:N

Analysis Date: 24-SEP-14 10:44 Instrument: FIELD Test: G603.1.0

Parameter	Result	Det. Limit	Units
TEMPERATURE	18.0		Degrees C

FIELD PH (AQUEOUS) SW846-9040C NELAC:Y

Analysis Date: 24-SEP-14 10:44 Instrument: FIELD Test: G607.0.0

Parameter	Result	Det. Limit	Units
PH	7.26	0.1	Std. Units

FIELD SPECIFIC CONDUCTANCE SW846-9050A NELAC:Y

Analysis Date: 24-SEP-14 10:44 Instrument: FIELD Test: G604.0.0

Parameter	Result	Det. Limit	Units
CONDUCTIVITY	1004	1.0	umHOS/cm

FIELD TURBIDITY EPA 180.1 NELAC:Y

Analysis Date: 24-SEP-14 10:44 Instrument: FIELD Test: G602.0.0

Parameter	Result	Det. Limit	Units
TURBIDITY	18.18		ntu

HARDNESS SM2340 B 1997 NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:19 Instrument: ICP Test: G608.0.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
HARDNESS	420	1.0	mg CaCO3/L

ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P129.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P130.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

BARIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:19 Instrument: ICP Test: M104.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BARIUM	160	10	ug/L

BERYLLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:08 Instrument: ICP/MS Test: V105.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	2.0	ug/L

1:5 Dilution.

BORON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:19 Instrument: ICP Test: M107.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BORON	BDL	100	ug/L

CALCIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:19 Instrument: ICP Test: M109.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units

Parameter	Result	Det. Limit	Units
CALCIUM	92000	100	ug/L

CHROMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:08 Instrument: ICP/MS Test: V110.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	5.0	ug/L

1:5 Dilution.

COBALT ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:19 Instrument: ICP Test: M111.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COBALT	BDL	5.0	ug/L

COPPER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:08 Instrument: ICP/MS Test: V112.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
COPPER	BDL	5.0	ug/L

1:5 Dilution.

IRON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:19 Instrument: ICP Test: M115.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
IRON	1700	20	ug/L

MAGNESIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:19 Instrument: ICP Test: M118.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MAGNESIUM	48000	100	ug/L

MANGANESE ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:19 Instrument: ICP Test: M119.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MANGANESE	29	5.0	ug/L

NICKEL ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:19 Instrument: ICP Test: M122.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
NICKEL	BDL	10	ug/L

SILVER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:08 Instrument: ICP/MS Test: V130.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	5.0	ug/L

1:5 Dilution.

SODIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:19 Instrument: ICP Test: M131.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SODIUM	57000	1000	ug/L

THALLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:08 Instrument: ICP/MS Test: V134.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	2.0	ug/L

1:5 Dilution.

VANADIUM ICP SW846-6010B NELAC:N

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:19 Instrument: ICP Test: M138.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	10	ug/L

ZINC ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:19 Instrument: ICP Test: M139.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ZINC	BDL	20	ug/L

ARSENIC ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:08 Instrument: ICP/MS Test: V103.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	5.0	ug/L

1:5 Dilution.

CADMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:08 Instrument: ICP/MS Test: V108.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.20	ug/L

1:5 Dilution.

LEAD ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:08 Instrument: ICP/MS Test: V116.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
LEAD	BDL	5.0	ug/L

1:5 Dilution.

SELENIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:08 Instrument: ICP/MS Test: V128.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	5.0	ug/L

1:5 Dilution.

ANTIMONY ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:08 Instrument: ICP/MS Test: V102.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	5.0	ug/L

1:5 Dilution.

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 08:00 Instrument: PREP Test: P131.6.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	40		mL
FINAL VOLUME	40		mL

MERCURY CVAA SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 20:44 Instrument: CVAA Test: M120.1.0

Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A P131.6.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.20	ug/L

TOTAL DISSOLVED SOLIDS SM2540 C 1997 NELAC:Y

Analyst: C. ANYANWUTAKU Analysis Date: 01-OCT-14 14:00 Test: G402.9.0

Parameter	Result	Det. Limit	Units
DISSOLVED SOLIDS	580	10	mg/L

CHLORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 29-SEP-14 16:39 Instrument: IC Test: G310.2.0

Parameter	Result	Det. Limit	Units
CHLORIDE	78	3.0	mg/L

1:10 Dilution.

FLUORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 30-SEP-14 16:05 Instrument: IC Test: G310.1.0

Parameter	Result	Det. Limit	Units
FLUORIDE	0.53	0.10	mg/L

AMMONIA BY AUTOMATED PHENATE SM4500-NH3 G 1997 NELAC:Y

Analyst: T. DRIGGERS Analysis Date: 06-OCT-14 13:28 Instrument: AUTO-ANALYZER Test: G204.6.0

Parameter	Result	Det. Limit	Units
NITROGEN, AMMONIA	BDL	0.10	mg/L

NITROGEN, NITRATE-NITRITE EPA 353.2 REV. 2.0 (1993) NELAC:Y

Analyst: C. ANYANWUTAKU Analysis Date: 10-OCT-14 11:48 Instrument: AUTO-ANALYZER Test: G113.3.0

Parameter	Result	Det. Limit	Units
NITROGEN, NITRATE-NITRITE	BDL	0.10	mg/L

PHOSPHORUS, TOTAL (AUTOMATED) EPA 365.1 REV. 2.0 (1993) NELAC:Y

Analyst: E. SKALA Analysis Date: 02-OCT-14 08:30 Instrument: AUTO-ANALYZER Test: G207.2.0

Parameter	Result	Det. Limit	Units
PHOSPHORUS	BDL	0.05	mg/L

SULFATE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 29-SEP-14 16:39 Instrument: IC Test: G310.7.0

Parameter	Result	Det. Limit	Units
SULFATE	80	2.5	mg/L

1:10 Dilution.

CHEMICAL OXYGEN DEMAND (COLORIMETRIC) EPA 410.4 REV. 2.0 (1993) NELAC:Y

Analyst: B. LEDFORD Analysis Date: 30-SEP-14 11:30 Test: G301.1.0

Parameter	Result	Det. Limit	Units
CHEMICAL OXYGEN DEMAND	BDL	10	mg/L

MS and/or MSD do not meet control limits. Results for this sample are estimated.

TOTAL ORGANIC CARBON SW846-9060A NELAC:Y

Analyst: D. DICKERSON | Analysis Date: 02-OCT-14 09:47 | Instrument: TOC | Test: O401.0.0

Parameter	Result	Det. Limit	Units
TOTAL ORGANIC CARBON (TOC)	29	5.0	mg/L

1:5 Dilution.

VOLATILE ORGANICS (CAPILLARY COLUMN) SW846-8260B NELAC:Y

Analyst: R. SHAMP | Analysis Date: 30-SEP-14 08:24 | Instrument: GC/MS VOA | Test: O510.6.0

Parameter	Result	Det. Limit	Units
ACETONE (2-PROPANONE)	BDL	10	ug/L
ACRYLONITRILE	BDL	100	ug/L
BENZENE	BDL	5.0	ug/L
BROMOCHLOROMETHANE	BDL	5.0	ug/L
BROMODICHLOROMETHANE	BDL	5.0	ug/L
BROMOFORM	BDL	5.0	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	10	ug/L
CARBON TETRACHLORIDE	BDL	5.0	ug/L
CHLOROBENZENE	BDL	5.0	ug/L
DIBROMOCHLOROMETHANE	BDL	5.0	ug/L
CHLOROETHANE	BDL	10	ug/L
CHLOROFORM	BDL	5.0	ug/L
CHLOROMETHANE	BDL	10	ug/L
1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	BDL	5.0	ug/L
1,2-DIBROMOETHANE (EDB)	BDL	5.0	ug/L
DIBROMOMETHANE	BDL	10	ug/L
1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	BDL	5.0	ug/L
1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	BDL	5.0	ug/L
TRANS-1,4-DICHLORO-2-BUTENE	BDL	10	ug/L
1,1-DICHLOROETHANE	BDL	5.0	ug/L
1,2-DICHLOROETHANE	BDL	5.0	ug/L
1,1-DICHLOROETHENE	BDL	5.0	ug/L
CIS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
TRANS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
1,2-DICHLOROPROPANE	BDL	5.0	ug/L
CIS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
ETHYL BENZENE	BDL	5.0	ug/L
2-HEXANONE	BDL	10	ug/L
IODOMETHANE	BDL	5.0	ug/L
DICHLOROMETHANE (METHYLENE CHLORIDE)	BDL	5.0	ug/L
METHYL ETHYL KETONE	BDL	10	ug/L
4-METHYL-2-PENTANONE	BDL	10	ug/L
STYRENE	BDL	5.0	ug/L

Sample ID: AA28608 PZ-105-SS

Parameter	Result	Det. Limit	Units
1,1,1,2-TETRACHLOROETHANE	BDL	5.0	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5.0	ug/L
TETRACHLOROETHENE	BDL	5.0	ug/L
TOLUENE	BDL	5.0	ug/L
1,1,1-TRICHLOROETHANE	BDL	5.0	ug/L
1,1,2-TRICHLOROETHANE	BDL	5.0	ug/L
TRICHLOROETHENE	BDL	5.0	ug/L
TRICHLOROFLUOROMETHANE	BDL	10	ug/L
1,2,3-TRICHLOROPROPANE	BDL	5.0	ug/L
VINYL ACETATE	BDL	10	ug/L
VINYL CHLORIDE	BDL	2.0	ug/L
XYLENES (O/M/P-XYLENE)	BDL	5.0	ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	114		% Rec
TOLUENE-D8	92		% Rec
4-BROMOFLUOROBENZENE	87		% Rec
DIBROMOFLUOROMETHANE	109		% Rec

Prep Method SW846-5030B Purge and Trap

Sample Comments

BDL Below Detection Limit

Sample was received on ice at temperature 2.4 C.
Sample chain of custody number 1737795.

This Certificate shall not be reproduced, except in full, without the written approval of the lab. The sample results relate only to the analytes of interest tested or to the sample as received by the lab. Pace Analytical Services, INC. certifies that the test results indicated as NELAP (National Environmental Laboratory Accreditation Program) accredited (Yes for NELAP) meet all requirements of NELAP and Kansas (KDHE) unless otherwise explained or justified as to the the exact nature of the deviations.
KS ELAP / NELAP Accreditation # E-10177 Indiana SDWA C-49-01

Approved by: CHRISTINE SARKAN 13-OCT-14

Pace Analytical®
Pace Analytical Services, Inc.

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
PACE ANALYTICAL SERVICES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	26-SEP-14	AA28609
	Completed 10-OCT-14	PO Number NEED PO
	Printed 15-OCT-14	Sampled 24-SEP-14 10:44

Report To	Bill To
JON WILKINSON HERST AND ASSOCIATES 4630 SOUTH HIGHWAY 94 NORTH OUTER ROAD ST. CHARLES, MO 63304	DAVE VASBINDER ALLIED WASTE SYSTEMS 13570 ST. CHARLES ROCK ROAD BRIDGETON, MO 63044

Sample Description

CLIENT ID: PZ-105-SS DUP
MATRIX TYPE: NON-SPECIFIC WATER
SUBMITTER: 8945 - MO-ALLIED-BRIDGETON LANDFILL
PROJECT NAME: GROUNDWATER - BRIDGETON LANDFILL
DATA PACKAGE #: 66865
LOCATION: BRIDGETON LANDFILL
DESCRIPTION: SEMI-ANNUAL GROUNDWATER TESTING

HARDNESS SM2340 B 1997 NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:23 Instrument: ICP Test: G608.0.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
HARDNESS	430	1.0	mg CaCO3/L

FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P130.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P129.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

BARIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:23 Instrument: ICP Test: M104.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BARIUM	160	10	ug/L

BERYLLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:12 Instrument: ICP/MS Test: V105.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	2.0	ug/L

1:5 Dilution.

BORON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:23 Instrument: ICP Test: M107.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BORON	BDL	100	ug/L

CALCIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:23 Instrument: ICP Test: M109.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
CALCIUM	93000	100	ug/L

CHROMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:12 Instrument: ICP/MS Test: V110.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	5.0	ug/L

1:5 Dilution.

COBALT ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:23 Instrument: ICP Test: M111.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COBALT	BDL	5.0	ug/L

COPPER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:12 Instrument: ICP/MS Test: V112.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
COPPER	BDL	5.0	ug/L

1:5 Dilution.

IRON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:23 Instrument: ICP Test: M115.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units

Parameter	Result	Det. Limit	Units
IRON	1400	20	ug/L

MAGNESIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:23 Instrument: ICP Test: M118.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MAGNESIUM	48000	100	ug/L

MANGANESE ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:23 Instrument: ICP Test: M119.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MANGANESE	26	5.0	ug/L

NICKEL ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:23 Instrument: ICP Test: M122.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
NICKEL	BDL	10	ug/L

SILVER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:12 Instrument: ICP/MS Test: V130.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	5.0	ug/L

1:5 Dilution.

SODIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:23 Instrument: ICP Test: M131.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SODIUM	58000	1000	ug/L

THALLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:12 Instrument: ICP/MS Test: V134.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	2.0	ug/L

1:5 Dilution.

VANADIUM ICP SW846-6010B NELAC:N

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:23 Instrument: ICP Test: M138.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	10	ug/L

ZINC ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:23 Instrument: ICP Test: M139.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ZINC	BDL	20	ug/L

ARSENIC ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:12 Instrument: ICP/MS Test: V103.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	5.0	ug/L

1:5 Dilution.

CADMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:12 Instrument: ICP/MS Test: V108.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.20	ug/L

1:5 Dilution.

LEAD ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:12 Instrument: ICP/MS Test: V116.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
LEAD	BDL	5.0	ug/L

1:5 Dilution.

SELENIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:12 Instrument: ICP/MS Test: V128.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	5.0	ug/L

1:5 Dilution.

ANTIMONY ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:12 Instrument: ICP/MS Test: V102.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	5.0	ug/L

1:5 Dilution.

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A NELAC:Y

Analyst: S. O'NEAL | Analysis Date: 02-OCT-14 08:00 | Instrument: PREP | Test: P131.6.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	40		mL
FINAL VOLUME	40		mL

MERCURY CVAA SW846-7470A NELAC:Y

Analyst: S. O'NEAL | Analysis Date: 02-OCT-14 20:46 | Instrument: CVAA | Test: M120.1.0

Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A P131.6.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.20	ug/L

TOTAL DISSOLVED SOLIDS SM2540 C 1997 NELAC:Y

Analyst: C. ANYANWUTAKU | Analysis Date: 01-OCT-14 14:00 | Test: G402.9.0

Parameter	Result	Det. Limit	Units
DISSOLVED SOLIDS	590	10	mg/L

CHLORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL | Analysis Date: 29-SEP-14 19:23 | Instrument: IC | Test: G310.2.0

Parameter	Result	Det. Limit	Units
CHLORIDE	79	3.0	mg/L

1:10 Dilution.

FLUORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL | Analysis Date: 30-SEP-14 16:23 | Instrument: IC | Test: G310.1.0

Parameter	Result	Det. Limit	Units
FLUORIDE	0.52	0.10	mg/L

AMMONIA BY AUTOMATED PHENATE SM4500-NH3 G 1997 NELAC:Y

Analyst: T. DRIGGERS | Analysis Date: 06-OCT-14 13:29 | Instrument: AUTO-ANALYZER | Test: G204.6.0

Parameter	Result	Det. Limit	Units
NITROGEN, AMMONIA	BDL	0.10	mg/L

NITROGEN, NITRATE-NITRITE EPA 353.2 REV. 2.0 (1993) NELAC:Y

Analyst: C. ANYANWUTAKU | Analysis Date: 10-OCT-14 11:50 | Instrument: AUTO-ANALYZER | Test: G113.3.0

Parameter	Result	Det. Limit	Units
NITROGEN, NITRATE-NITRITE	BDL	0.10	mg/L

PHOSPHORUS, TOTAL (AUTOMATED) EPA 365.1 REV. 2.0 (1993) NELAC:Y

Analyst: E. SKALA | Analysis Date: 02-OCT-14 08:31 | Instrument: AUTO-ANALYZER | Test: G207.2.0

Parameter	Result	Det. Limit	Units

Parameter	Result	Det. Limit	Units
PHOSPHORUS	BDL	0.05	mg/L

SULFATE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL | Analysis Date: 29-SEP-14 19:23 | Instrument: IC | Test: G310.7.0

Parameter	Result	Det. Limit	Units
SULFATE	79	2.5	mg/L

1:10 Dilution.

CHEMICAL OXYGEN DEMAND (COLORIMETRIC) EPA 410.4 REV. 2.0 (1993) NELAC:Y

Analyst: B. LEDFORD | Analysis Date: 30-SEP-14 11:30 | Test: G301.1.0

Parameter	Result	Det. Limit	Units
CHEMICAL OXYGEN DEMAND	24	10	mg/L

TOTAL ORGANIC CARBON SW846-9060A NELAC:Y

Analyst: D. DICKERSON | Analysis Date: 02-OCT-14 09:47 | Instrument: TOC | Test: O401.0.0

Parameter	Result	Det. Limit	Units
TOTAL ORGANIC CARBON (TOC)	31	5.0	mg/L

1:5 Dilution.

VOLATILE ORGANICS (CAPILLARY COLUMN) SW846-8260B NELAC:Y

Analyst: R. SHAMP | Analysis Date: 30-SEP-14 08:50 | Instrument: GC/MS VOA | Test: O510.6.0

Parameter	Result	Det. Limit	Units
ACETONE (2-PROPANONE)	BDL	10	ug/L
ACRYLONITRILE	BDL	100	ug/L
BENZENE	BDL	5.0	ug/L
BROMOCHLOROMETHANE	BDL	5.0	ug/L
BROMODICHLOROMETHANE	BDL	5.0	ug/L
BROMOFORM	BDL	5.0	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	10	ug/L
CARBON TETRACHLORIDE	BDL	5.0	ug/L
CHLOROBENZENE	BDL	5.0	ug/L
DIBROMOCHLOROMETHANE	BDL	5.0	ug/L
CHLOROETHANE	BDL	10	ug/L
CHLOROFORM	BDL	5.0	ug/L
CHLOROMETHANE	BDL	10	ug/L
1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	BDL	5.0	ug/L
1,2-DIBROMOETHANE (EDB)	BDL	5.0	ug/L
DIBROMOMETHANE	BDL	10	ug/L
1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	BDL	5.0	ug/L
1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	BDL	5.0	ug/L
TRANS-1,4-DICHLORO-2-BUTENE	BDL	10	ug/L

Sample ID: AA28609 PZ-105-SS DUP

Parameter	Result	Det. Limit	Units
1,1-DICHLOROETHANE	BDL	5.0	ug/L
1,2-DICHLOROETHANE	BDL	5.0	ug/L
1,1-DICHLOROETHENE	BDL	5.0	ug/L
CIS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
TRANS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
1,2-DICHLOROPROPANE	BDL	5.0	ug/L
CIS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
ETHYL BENZENE	BDL	5.0	ug/L
2-HEXANONE	BDL	10	ug/L
IODOMETHANE	BDL	5.0	ug/L
DICHLOROMETHANE (METHYLENE CHLORIDE)	BDL	5.0	ug/L
METHYL ETHYL KETONE	BDL	10	ug/L
4-METHYL-2-PENTANONE	BDL	10	ug/L
STYRENE	BDL	5.0	ug/L
1,1,1,2-TETRACHLOROETHANE	BDL	5.0	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5.0	ug/L
TETRACHLOROETHENE	BDL	5.0	ug/L
TOLUENE	BDL	5.0	ug/L
1,1,1-TRICHLOROETHANE	BDL	5.0	ug/L
1,1,2-TRICHLOROETHANE	BDL	5.0	ug/L
TRICHLOROETHENE	BDL	5.0	ug/L
TRICHLOROFLUOROMETHANE	BDL	10	ug/L
1,2,3-TRICHLOROPROPANE	BDL	5.0	ug/L
VINYL ACETATE	BDL	10	ug/L
VINYL CHLORIDE	BDL	2.0	ug/L
XYLENES (O/M/P-XYLENE)	BDL	5.0	ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	114		% Rec
TOLUENE-D8	92		% Rec
4-BROMOFLUOROBENZENE	84		% Rec
DIBROMOFLUOROMETHANE	105		% Rec

Prep Method SW846-5030B Purge and Trap

Sample Comments

BDL Below Detection Limit

Sample was received on ice at temperature 2.4 C.
Sample chain of custody number 1737795.

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KS ELAP / NELAP Accreditation # E-10177 Indiana SDWA C-49-01

Approved by: CHRISTINE SARKAN 13-OCT-14

Pace Analytical®
Pace Analytical Services, Inc.

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
PACE ANALYTICAL SERVICES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	26-SEP-14	AA28610
	Completed 10-OCT-14	PO Number NEED PO
	Printed 15-OCT-14	Sampled 24-SEP-14 11:23

Report To	Bill To
JON WILKINSON HERST AND ASSOCIATES 4630 SOUTH HIGHWAY 94 NORTH OUTER ROAD ST. CHARLES, MO 63304	DAVE VASBINDER ALLIED WASTE SYSTEMS 13570 ST. CHARLES ROCK ROAD BRIDGETON, MO 63044

Sample Description

CLIENT ID: PZ-205-SS
MATRIX TYPE: NON-SPECIFIC WATER
SUBMITTER: 8945 - MO-ALLIED-BRIDGETON LANDFILL
PROJECT NAME: GROUNDWATER - BRIDGETON LANDFILL
DATA PACKAGE #: 66865
LOCATION: BRIDGETON LANDFILL
DESCRIPTION: SEMI-ANNUAL GROUNDWATER TESTING

GROUNDWATER MONITORING WELL DATA SAS

Analysis Date: 24-SEP-14 11:23 Instrument: FIELD Test: G600.0.0

Parameter	Result	Det. Limit	Units
TOTAL WELL DEPTH	105.18		ft
INITIAL WATER LEVEL	26.62		ft
ELEVATION OF GROUNDWATER SURFACE	440.06		Feet/MSL

FIELD TEMPERATURE SM2550 B 2000 NELAC:N

Analysis Date: 24-SEP-14 11:23 Instrument: FIELD Test: G603.1.0

Parameter	Result	Det. Limit	Units
TEMPERATURE	19.3		Degrees C

FIELD PH (AQUEOUS) SW846-9040C NELAC:Y

Analysis Date: 24-SEP-14 11:23 Instrument: FIELD Test: G607.0.0

Parameter	Result	Det. Limit	Units
PH	6.93	0.1	Std. Units

FIELD SPECIFIC CONDUCTANCE SW846-9050A NELAC:Y

Analysis Date: 24-SEP-14 11:23 Instrument: FIELD Test: G604.0.0

Parameter	Result	Det. Limit	Units
CONDUCTIVITY	909	1.0	umHOS/cm

FIELD TURBIDITY EPA 180.1 NELAC:Y

Analysis Date: 24-SEP-14 11:23 Instrument: FIELD Test: G602.0.0

Parameter	Result	Det. Limit	Units
TURBIDITY	11.24		ntu

HARDNESS SM2340 B 1997 NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:26 Instrument: ICP Test: G608.0.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
HARDNESS	490	1.0	mg CaCO3/L

ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P129.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P130.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

BARIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:26 Instrument: ICP Test: M104.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BARIUM	140	10	ug/L

BERYLLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:16 Instrument: ICP/MS Test: V105.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	2.0	ug/L

1:5 Dilution.

BORON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:26 Instrument: ICP Test: M107.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BORON	BDL	100	ug/L

CALCIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:26 Instrument: ICP Test: M109.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units

Parameter	Result	Det. Limit	Units
CALCIUM	100000	100	ug/L

CHROMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:16 Instrument: ICP/MS Test: V110.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	5.0	ug/L

1:5 Dilution.

COBALT ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:26 Instrument: ICP Test: M111.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COBALT	BDL	5.0	ug/L

COPPER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:16 Instrument: ICP/MS Test: V112.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
COPPER	16	5.0	ug/L

1:5 Dilution.

IRON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:26 Instrument: ICP Test: M115.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
IRON	1000	20	ug/L

MAGNESIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:26 Instrument: ICP Test: M118.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MAGNESIUM	56000	100	ug/L

MANGANESE ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:26 Instrument: ICP Test: M119.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MANGANESE	9.1	5.0	ug/L

NICKEL ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:26 Instrument: ICP Test: M122.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
NICKEL	BDL	10	ug/L

SILVER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:16 Instrument: ICP/MS Test: V130.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	5.0	ug/L

1:5 Dilution.

SODIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:26 Instrument: ICP Test: M131.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SODIUM	16000	1000	ug/L

THALLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:16 Instrument: ICP/MS Test: V134.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	2.0	ug/L

1:5 Dilution.

VANADIUM ICP SW846-6010B NELAC:N

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:26 Instrument: ICP Test: M138.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	10	ug/L

ZINC ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:26 Instrument: ICP Test: M139.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ZINC	BDL	20	ug/L

ARSENIC ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:16 Instrument: ICP/MS Test: V103.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	5.0	ug/L

1:5 Dilution.

CADMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:16 Instrument: ICP/MS Test: V108.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.20	ug/L

1:5 Dilution.

LEAD ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:16 Instrument: ICP/MS Test: V116.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
LEAD	BDL	5.0	ug/L

1:5 Dilution.

SELENIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:16 Instrument: ICP/MS Test: V128.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	5.0	ug/L

1:5 Dilution.

ANTIMONY ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:16 Instrument: ICP/MS Test: V102.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	5.0	ug/L

1:5 Dilution.

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 08:00 Instrument: PREP Test: P131.6.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	40		mL
FINAL VOLUME	40		mL

MERCURY CVAA SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 20:48 Instrument: CVAA Test: M120.1.0

Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A P131.6.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.20	ug/L

TOTAL DISSOLVED SOLIDS SM2540 C 1997 NELAC:Y

Analyst: C. ANYANWUTAKU Analysis Date: 01-OCT-14 14:00 Test: G402.9.0

Parameter	Result	Det. Limit	Units
DISSOLVED SOLIDS	530	10	mg/L

CHLORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 29-SEP-14 20:00 Instrument: IC Test: G310.2.0

Parameter	Result	Det. Limit	Units
CHLORIDE	31	3.0	mg/L

1:5 Dilution.

FLUORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 30-SEP-14 18:13 Instrument: IC Test: G310.1.0

Parameter	Result	Det. Limit	Units
FLUORIDE	0.36	0.10	mg/L

AMMONIA BY AUTOMATED PHENATE SM4500-NH3 G 1997 NELAC:Y

Analyst: T. DRIGGERS Analysis Date: 06-OCT-14 13:31 Instrument: AUTO-ANALYZER Test: G204.6.0

Parameter	Result	Det. Limit	Units
NITROGEN, AMMONIA	BDL	0.10	mg/L

NITROGEN, NITRATE-NITRITE EPA 353.2 REV. 2.0 (1993) NELAC:Y

Analyst: C. ANYANWUTAKU Analysis Date: 10-OCT-14 11:56 Instrument: AUTO-ANALYZER Test: G113.3.0

Parameter	Result	Det. Limit	Units
NITROGEN, NITRATE-NITRITE	0.15	0.10	mg/L

PHOSPHORUS, TOTAL (AUTOMATED) EPA 365.1 REV. 2.0 (1993) NELAC:Y

Analyst: E. SKALA Analysis Date: 02-OCT-14 08:33 Instrument: AUTO-ANALYZER Test: G207.2.0

Parameter	Result	Det. Limit	Units
PHOSPHORUS	BDL	0.05	mg/L

SULFATE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 29-SEP-14 20:00 Instrument: IC Test: G310.7.0

Parameter	Result	Det. Limit	Units
SULFATE	48	2.0	mg/L

1:5 Dilution.

CHEMICAL OXYGEN DEMAND (COLORIMETRIC) EPA 410.4 REV. 2.0 (1993) NELAC:Y

Analyst: B. LEDFORD Analysis Date: 30-SEP-14 11:30 Test: G301.1.0

Parameter	Result	Det. Limit	Units
CHEMICAL OXYGEN DEMAND	BDL	10	mg/L

TOTAL ORGANIC CARBON SW846-9060A NELAC:Y

Analyst: D. DICKERSON Analysis Date: 02-OCT-14 09:47 Instrument: TOC Test: O401.0.0

Parameter	Result	Det. Limit	Units

Parameter	Result	Det. Limit	Units
TOTAL ORGANIC CARBON (TOC)	34	5.0	mg/L
1:5 Dilution.			

VOLATILE ORGANICS (CAPILLARY COLUMN) SW846-8260B NELAC:Y

Analyst: R. SHAMP Analysis Date: 30-SEP-14 09:16 Instrument: GC/MS VOA Test: O510.6.0

Parameter	Result	Det. Limit	Units
ACETONE (2-PROPANONE)	BDL	10	ug/L
ACRYLONITRILE	BDL	100	ug/L
BENZENE	BDL	5.0	ug/L
BROMOCHLOROMETHANE	BDL	5.0	ug/L
BROMODICHLOROMETHANE	BDL	5.0	ug/L
BROMOFORM	BDL	5.0	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	10	ug/L
CARBON TETRACHLORIDE	BDL	5.0	ug/L
CHLOROBENZENE	BDL	5.0	ug/L
DIBROMOCHLOROMETHANE	BDL	5.0	ug/L
CHLOROETHANE	BDL	10	ug/L
CHLOROFORM	BDL	5.0	ug/L
CHLOROMETHANE	BDL	10	ug/L
1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	BDL	5.0	ug/L
1,2-DIBROMOETHANE (EDB)	BDL	5.0	ug/L
DIBROMOMETHANE	BDL	10	ug/L
1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	BDL	5.0	ug/L
1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	BDL	5.0	ug/L
TRANS-1,4-DICHLORO-2-BUTENE	BDL	10	ug/L
1,1-DICHLOROETHANE	BDL	5.0	ug/L
1,2-DICHLOROETHANE	BDL	5.0	ug/L
1,1-DICHLOROETHENE	BDL	5.0	ug/L
CIS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
TRANS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
1,2-DICHLOROPROPANE	BDL	5.0	ug/L
CIS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
ETHYL BENZENE	BDL	5.0	ug/L
2-HEXANONE	BDL	10	ug/L
IODOMETHANE	BDL	5.0	ug/L
DICHLOROMETHANE (METHYLENE CHLORIDE)	BDL	5.0	ug/L
METHYL ETHYL KETONE	BDL	10	ug/L
4-METHYL-2-PENTANONE	BDL	10	ug/L
STYRENE	BDL	5.0	ug/L
1,1,1,2-TETRACHLOROETHANE	BDL	5.0	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5.0	ug/L

Parameter	Result	Det. Limit	Units
TETRACHLOROETHENE	BDL	5.0	ug/L
TOLUENE	BDL	5.0	ug/L
1,1,1-TRICHLOROETHANE	BDL	5.0	ug/L
1,1,2-TRICHLOROETHANE	BDL	5.0	ug/L
TRICHLOROETHENE	BDL	5.0	ug/L
TRICHLOROFLUOROMETHANE	BDL	10	ug/L
1,2,3-TRICHLOROPROPANE	BDL	5.0	ug/L
VINYL ACETATE	BDL	10	ug/L
VINYL CHLORIDE	BDL	2.0	ug/L
XYLENES (O/M/P-XYLENE)	BDL	5.0	ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	108		% Rec
TOLUENE-D8	94		% Rec
4-BROMOFLUOROBENZENE	84		% Rec
DIBROMOFLUOROMETHANE	103		% Rec

Prep Method SW846-5030B Purge and Trap

Sample Comments

BDL Below Detection Limit

Sample was received on ice at temperature 2.4 C.
Sample chain of custody number 1737795.

This Certificate shall not be reproduced, except in full, without the written approval of the lab. The sample results relate only to the analytes of interest tested or to the sample as received by the lab. Pace Analytical Services, INC. certifies that the test results indicated as NELAP (National Environmental Laboratory Accreditation Program) accredited (Yes for NELAP) meet all requirements of NELAP and Kansas (KDHE) unless otherwise explained or justified as to the the exact nature of the deviations.
KS ELAP / NELAP Accreditation # E-10177 Indiana SDWA C-49-01

Approved by: CHRISTINE SARKAN 13-OCT-14

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CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
PACE ANALYTICAL SERVICES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	26-SEP-14	AA28611
	Completed 10-OCT-14	PO Number NEED PO
	Printed 15-OCT-14	Sampled 24-SEP-14 11:49

Report To	Bill To
JON WILKINSON HERST AND ASSOCIATES 4630 SOUTH HIGHWAY 94 NORTH OUTER ROAD ST. CHARLES, MO 63304	DAVE VASBINDER ALLIED WASTE SYSTEMS 13570 ST. CHARLES ROCK ROAD BRIDGETON, MO 63044

Sample Description

CLIENT ID: PZ-109-SS
MATRIX TYPE: NON-SPECIFIC WATER
SUBMITTER: 8945 - MO-ALLIED-BRIDGETON LANDFILL
PROJECT NAME: GROUNDWATER - BRIDGETON LANDFILL
DATA PACKAGE #: 66865
LOCATION: BRIDGETON LANDFILL
DESCRIPTION: SEMI-ANNUAL GROUNDWATER TESTING

GROUNDWATER MONITORING WELL DATA SAS

Analysis Date: 24-SEP-14 11:49 Instrument: FIELD Test: G600.0.0

Parameter	Result	Det. Limit	Units
TOTAL WELL DEPTH	137.53		ft
INITIAL WATER LEVEL	25.21		ft
ELEVATION OF GROUNDWATER SURFACE	433.29		Feet/MSL

FIELD TEMPERATURE SM2550 B 2000 NELAC:N

Analysis Date: 24-SEP-14 11:49 Instrument: FIELD Test: G603.1.0

Parameter	Result	Det. Limit	Units
TEMPERATURE	21.2		Degrees C

FIELD PH (AQUEOUS) SW846-9040C NELAC:Y

Analysis Date: 24-SEP-14 11:49 Instrument: FIELD Test: G607.0.0

Parameter	Result	Det. Limit	Units
PH	7.01	0.1	Std. Units

FIELD SPECIFIC CONDUCTANCE SW846-9050A NELAC:Y

Analysis Date: 24-SEP-14 11:49 Instrument: FIELD Test: G604.0.0

Parameter	Result	Det. Limit	Units
CONDUCTIVITY	808	1.0	umHOS/cm

FIELD TURBIDITY EPA 180.1 NELAC:Y

Analysis Date: 24-SEP-14 11:49 Instrument: FIELD Test: G602.0.0

Parameter	Result	Det. Limit	Units
TURBIDITY	8.35		ntu

HARDNESS SM2340 B 1997 NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:07 Instrument: ICP Test: G608.0.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
HARDNESS	450	1.0	mg CaCO3/L

ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P129.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P130.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

BARIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:07 Instrument: ICP Test: M104.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BARIUM	64	10	ug/L

BERYLLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:42 Instrument: ICP/MS Test: V105.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	2.0	ug/L

1:5 Dilution.

BORON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:07 Instrument: ICP Test: M107.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BORON	210	100	ug/L

CALCIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:07 Instrument: ICP Test: M109.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units

Parameter	Result	Det. Limit	Units
CALCIUM	92000	100	ug/L

CHROMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:42 Instrument: ICP/MS Test: V110.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	5.0	ug/L

1:5 Dilution.

COBALT ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:07 Instrument: ICP Test: M111.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COBALT	BDL	5.0	ug/L

COPPER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:42 Instrument: ICP/MS Test: V112.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
COPPER	BDL	5.0	ug/L

1:5 Dilution.

IRON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:07 Instrument: ICP Test: M115.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
IRON	250	20	ug/L

MAGNESIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:07 Instrument: ICP Test: M118.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MAGNESIUM	53000	100	ug/L

MANGANESE ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:07 Instrument: ICP Test: M119.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MANGANESE	18	5.0	ug/L

NICKEL ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:07 Instrument: ICP Test: M122.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
NICKEL	BDL	10	ug/L

SILVER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:42 Instrument: ICP/MS Test: V130.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	5.0	ug/L

1:5 Dilution.

SODIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:07 Instrument: ICP Test: M131.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SODIUM	14000	1000	ug/L

THALLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:42 Instrument: ICP/MS Test: V134.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	2.0	ug/L

1:5 Dilution.

VANADIUM ICP SW846-6010B NELAC:N

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:07 Instrument: ICP Test: M138.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	10	ug/L

ZINC ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:07 Instrument: ICP Test: M139.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ZINC	BDL	20	ug/L

ARSENIC ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:42 Instrument: ICP/MS Test: V103.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	5.0	ug/L

1:5 Dilution.

CADMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:42 Instrument: ICP/MS Test: V108.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.20	ug/L

1:5 Dilution.

LEAD ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:42 Instrument: ICP/MS Test: V116.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
LEAD	BDL	5.0	ug/L

1:5 Dilution.

SELENIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:42 Instrument: ICP/MS Test: V128.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	5.0	ug/L

1:5 Dilution.

ANTIMONY ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 01-OCT-14 23:42 Instrument: ICP/MS Test: V102.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	5.0	ug/L

1:5 Dilution.

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 08:00 Instrument: PREP Test: P131.6.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	40		mL
FINAL VOLUME	40		mL

MERCURY CVAA SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 20:50 Instrument: CVAA Test: M120.1.0

Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A P131.6.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.20	ug/L

TOTAL DISSOLVED SOLIDS SM2540 C 1997 NELAC:Y

Analyst: C. ANYANWUTAKU Analysis Date: 01-OCT-14 14:00 Test: G402.9.0

Parameter	Result	Det. Limit	Units
DISSOLVED SOLIDS	460	10	mg/L

CHLORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 29-SEP-14 20:18 Instrument: IC Test: G310.2.0

Parameter	Result	Det. Limit	Units
CHLORIDE	3.9	3.0	mg/L

FLUORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 30-SEP-14 18:31 Instrument: IC Test: G310.1.0

Parameter	Result	Det. Limit	Units
FLUORIDE	2.1	0.10	mg/L

AMMONIA BY AUTOMATED PHENATE SM4500-NH3 G 1997 NELAC:Y

Analyst: T. DRIGGERS Analysis Date: 06-OCT-14 13:32 Instrument: AUTO-ANALYZER Test: G204.6.0

Parameter	Result	Det. Limit	Units
NITROGEN, AMMONIA	BDL	0.10	mg/L

NITROGEN, NITRATE-NITRITE EPA 353.2 REV. 2.0 (1993) NELAC:Y

Analyst: C. ANYANWUTAKU Analysis Date: 10-OCT-14 11:57 Instrument: AUTO-ANALYZER Test: G113.3.0

Parameter	Result	Det. Limit	Units
NITROGEN, NITRATE-NITRITE	BDL	0.10	mg/L

PHOSPHORUS, TOTAL (AUTOMATED) EPA 365.1 REV. 2.0 (1993) NELAC:Y

Analyst: E. SKALA Analysis Date: 02-OCT-14 08:34 Instrument: AUTO-ANALYZER Test: G207.2.0

Parameter	Result	Det. Limit	Units
PHOSPHORUS	BDL	0.05	mg/L

SULFATE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 29-SEP-14 20:18 Instrument: IC Test: G310.7.0

Parameter	Result	Det. Limit	Units
SULFATE	27	2.0	mg/L

CHEMICAL OXYGEN DEMAND (COLORIMETRIC) EPA 410.4 REV. 2.0 (1993) NELAC:Y

Analyst: B. LEDFORD Analysis Date: 02-OCT-14 11:00 Test: G301.1.0

Parameter	Result	Det. Limit	Units
CHEMICAL OXYGEN DEMAND	BDL	10	mg/L

TOTAL ORGANIC CARBON SW846-9060A NELAC:Y

Analyst: D. DICKERSON Analysis Date: 02-OCT-14 09:47 Instrument: TOC Test: O401.0.0

Parameter	Result	Det. Limit	Units
TOTAL ORGANIC CARBON (TOC)	31	5.0	mg/L

1:5 Dilution.

VOLATILE ORGANICS (CAPILLARY COLUMN) SW846-8260B NELAC:Y

Analyst: R. SHAMP Analysis Date: 30-SEP-14 09:42 Instrument: GC/MS VOA Test: O510.6.0

Parameter	Result	Det. Limit	Units
ACETONE (2-PROPANONE)	BDL	10	ug/L
ACRYLONITRILE	BDL	100	ug/L
BENZENE	BDL	5.0	ug/L
BROMOCHLOROMETHANE	BDL	5.0	ug/L
BROMODICHLOROMETHANE	BDL	5.0	ug/L
BROMOFORM	BDL	5.0	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	10	ug/L
CARBON TETRACHLORIDE	BDL	5.0	ug/L
CHLOROBENZENE	BDL	5.0	ug/L
DIBROMOCHLOROMETHANE	BDL	5.0	ug/L
CHLOROETHANE	BDL	10	ug/L
CHLOROFORM	BDL	5.0	ug/L
CHLOROMETHANE	BDL	10	ug/L
1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	BDL	5.0	ug/L
1,2-DIBROMOETHANE (EDB)	BDL	5.0	ug/L
DIBROMOMETHANE	BDL	10	ug/L
1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	BDL	5.0	ug/L
1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	BDL	5.0	ug/L
TRANS-1,4-DICHLORO-2-BUTENE	BDL	10	ug/L
1,1-DICHLOROETHANE	BDL	5.0	ug/L
1,2-DICHLOROETHANE	BDL	5.0	ug/L
1,1-DICHLOROETHENE	BDL	5.0	ug/L
CIS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
TRANS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
1,2-DICHLOROPROPANE	BDL	5.0	ug/L
CIS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
ETHYL BENZENE	BDL	5.0	ug/L
2-HEXANONE	BDL	10	ug/L
IODOMETHANE	BDL	5.0	ug/L
DICHLOROMETHANE (METHYLENE CHLORIDE)	BDL	5.0	ug/L
METHYL ETHYL KETONE	BDL	10	ug/L
4-METHYL-2-PENTANONE	BDL	10	ug/L
STYRENE	BDL	5.0	ug/L
1,1,1,2-TETRACHLOROETHANE	BDL	5.0	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5.0	ug/L
TETRACHLOROETHENE	BDL	5.0	ug/L
TOLUENE	BDL	5.0	ug/L
1,1,1-TRICHLOROETHANE	BDL	5.0	ug/L
1,1,2-TRICHLOROETHANE	BDL	5.0	ug/L
TRICHLOROETHENE	BDL	5.0	ug/L

Parameter	Result	Det. Limit	Units
TRICHLOROFLUOROMETHANE	BDL	10	ug/L
1,2,3-TRICHLOROPROPANE	BDL	5.0	ug/L
VINYL ACETATE	BDL	10	ug/L
VINYL CHLORIDE	BDL	2.0	ug/L
XYLENES (O/M/P-XYLENE)	BDL	5.0	ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	114		% Rec
TOLUENE-D8	92		% Rec
4-BROMOFLUOROBENZENE	84		% Rec
DIBROMOFLUOROMETHANE	108		% Rec

Prep Method SW846-5030B Purge and Trap

Sample Comments

BDL Below Detection Limit

Sample was received on ice at temperature 2.4 C.
Sample chain of custody number 1737795.

This Certificate shall not be reproduced, except in full, without the written approval of the lab. The sample results relate only to the analytes of interest tested or to the sample as received by the lab. Pace Analytical Services, INC. certifies that the test results indicated as NELAP (National Environmental Laboratory Accreditation Program) accredited (Yes for NELAP) meet all requirements of NELAP and Kansas (KDHE) unless otherwise explained or justified as to the the exact nature of the deviations.
KS ELAP / NELAP Accreditation # E-10177 Indiana SDWA C-49-01

Approved by: CHRISTINE SARKAN 13-OCT-14

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Pace Analytical Services, Inc.

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
PACE ANALYTICAL SERVICES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	26-SEP-14	AA28612
	Completed 10-OCT-14	PO Number NEED PO
	Printed 15-OCT-14	Sampled 24-SEP-14 12:16

Report To	Bill To
JON WILKINSON HERST AND ASSOCIATES 4630 SOUTH HIGHWAY 94 NORTH OUTER ROAD ST. CHARLES, MO 63304	DAVE VASBINDER ALLIED WASTE SYSTEMS 13570 ST. CHARLES ROCK ROAD BRIDGETON, MO 63044

Sample Description

CLIENT ID: PZ-111-SD
MATRIX TYPE: NON-SPECIFIC WATER
SUBMITTER: 8945 - MO-ALLIED-BRIDGETON LANDFILL
PROJECT NAME: GROUNDWATER - BRIDGETON LANDFILL
DATA PACKAGE #: 66865
LOCATION: BRIDGETON LANDFILL
DESCRIPTION: SEMI-ANNUAL GROUNDWATER TESTING

GROUNDWATER MONITORING WELL DATA SAS

Analysis Date: 24-SEP-14 12:16 Instrument: FIELD Test: G600.0.0

Parameter	Result	Det. Limit	Units
TOTAL WELL DEPTH	196.70		ft
INITIAL WATER LEVEL	35.69		ft
ELEVATION OF GROUNDWATER SURFACE	425.86		Feet/MSL

FIELD TEMPERATURE SM2550 B 2000 NELAC:N

Analysis Date: 24-SEP-14 12:16 Instrument: FIELD Test: G603.1.0

Parameter	Result	Det. Limit	Units
TEMPERATURE	19.5		Degrees C

FIELD PH (AQUEOUS) SW846-9040C NELAC:Y

Analysis Date: 24-SEP-14 12:16 Instrument: FIELD Test: G607.0.0

Parameter	Result	Det. Limit	Units
PH	7.06	0.1	Std. Units

FIELD SPECIFIC CONDUCTANCE SW846-9050A NELAC:Y

Analysis Date: 24-SEP-14 12:16 Instrument: FIELD Test: G604.0.0

Parameter	Result	Det. Limit	Units
CONDUCTIVITY	826	1.0	umHOS/cm

FIELD TURBIDITY EPA 180.1 NELAC:Y

Analysis Date: 24-SEP-14 12:16 Instrument: FIELD Test: G602.0.0

Parameter	Result	Det. Limit	Units
TURBIDITY	19.61		ntu

HARDNESS SM2340 B 1997 NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:50 Instrument: ICP Test: G608.0.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
HARDNESS	430	1.0	mg CaCO3/L

ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P129.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P130.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

BARIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:50 Instrument: ICP Test: M104.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BARIUM	110	10	ug/L

BERYLLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:07 Instrument: ICP/MS Test: V105.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	2.0	ug/L

1:5 Dilution.

BORON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:50 Instrument: ICP Test: M107.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BORON	BDL	100	ug/L

CALCIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:50 Instrument: ICP Test: M109.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units

Parameter	Result	Det. Limit	Units
CALCIUM	88000	100	ug/L

CHROMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:07 Instrument: ICP/MS Test: V110.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	5.0	ug/L

1:5 Dilution.

COBALT ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:50 Instrument: ICP Test: M111.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COBALT	BDL	5.0	ug/L

COPPER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:07 Instrument: ICP/MS Test: V112.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
COPPER	BDL	5.0	ug/L

1:5 Dilution.

IRON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:50 Instrument: ICP Test: M115.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
IRON	1000	20	ug/L

MAGNESIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:50 Instrument: ICP Test: M118.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MAGNESIUM	50000	100	ug/L

MANGANESE ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:50 Instrument: ICP Test: M119.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MANGANESE	7.4	5.0	ug/L

NICKEL ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:50 Instrument: ICP Test: M122.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
NICKEL	BDL	10	ug/L

SILVER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:07 Instrument: ICP/MS Test: V130.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	5.0	ug/L

1:5 Dilution.

SODIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:50 Instrument: ICP Test: M131.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SODIUM	21000	1000	ug/L

THALLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:07 Instrument: ICP/MS Test: V134.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	2.0	ug/L

1:5 Dilution.

VANADIUM ICP SW846-6010B NELAC:N

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:50 Instrument: ICP Test: M138.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	10	ug/L

ZINC ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 02:50 Instrument: ICP Test: M139.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ZINC	BDL	20	ug/L

ARSENIC ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:07 Instrument: ICP/MS Test: V103.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	5.0	ug/L

1:5 Dilution.

CADMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:07 Instrument: ICP/MS Test: V108.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.20	ug/L

1:5 Dilution.

LEAD ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:07 Instrument: ICP/MS Test: V116.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
LEAD	BDL	5.0	ug/L

1:5 Dilution.

SELENIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:07 Instrument: ICP/MS Test: V128.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	5.0	ug/L

1:5 Dilution.

ANTIMONY ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:07 Instrument: ICP/MS Test: V102.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	5.0	ug/L

1:5 Dilution.

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 08:00 Instrument: PREP Test: P131.6.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	40		mL
FINAL VOLUME	40		mL

MERCURY CVAA SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 20:52 Instrument: CVAA Test: M120.1.0

Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A P131.6.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.20	ug/L

TOTAL DISSOLVED SOLIDS SM2540 C 1997 NELAC:Y

Analyst: C. ANYANWUTAKU Analysis Date: 01-OCT-14 14:00 Test: G402.9.0

Parameter	Result	Det. Limit	Units
DISSOLVED SOLIDS	510	10	mg/L

CHLORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 29-SEP-14 20:37 Instrument: IC Test: G310.2.0

Parameter	Result	Det. Limit	Units
CHLORIDE	10	3.0	mg/L

FLUORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 30-SEP-14 18:49 Instrument: IC Test: G310.1.0

Parameter	Result	Det. Limit	Units
FLUORIDE	2.0	0.10	mg/L

AMMONIA BY AUTOMATED PHENATE SM4500-NH3 G 1997 NELAC:Y

Analyst: T. DRIGGERS Analysis Date: 06-OCT-14 13:33 Instrument: AUTO-ANALYZER Test: G204.6.0

Parameter	Result	Det. Limit	Units
NITROGEN, AMMONIA	BDL	0.10	mg/L

NITROGEN, NITRATE-NITRITE EPA 353.2 REV. 2.0 (1993) NELAC:Y

Analyst: C. ANYANWUTAKU Analysis Date: 10-OCT-14 11:59 Instrument: AUTO-ANALYZER Test: G113.3.0

Parameter	Result	Det. Limit	Units
NITROGEN, NITRATE-NITRITE	BDL	0.10	mg/L

PHOSPHORUS, TOTAL (AUTOMATED) EPA 365.1 REV. 2.0 (1993) NELAC:Y

Analyst: E. SKALA Analysis Date: 02-OCT-14 08:34 Instrument: AUTO-ANALYZER Test: G207.2.0

Parameter	Result	Det. Limit	Units
PHOSPHORUS	BDL	0.05	mg/L

SULFATE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 29-SEP-14 20:37 Instrument: IC Test: G310.7.0

Parameter	Result	Det. Limit	Units
SULFATE	49	2.0	mg/L

CHEMICAL OXYGEN DEMAND (COLORIMETRIC) EPA 410.4 REV. 2.0 (1993) NELAC:Y

Analyst: B. LEDFORD Analysis Date: 02-OCT-14 11:00 Test: G301.1.0

Parameter	Result	Det. Limit	Units
CHEMICAL OXYGEN DEMAND	BDL	10	mg/L

TOTAL ORGANIC CARBON SW846-9060A NELAC:Y

Analyst: D. DICKERSON Analysis Date: 02-OCT-14 09:47 Instrument: TOC Test: O401.0.0

Parameter	Result	Det. Limit	Units
TOTAL ORGANIC CARBON (TOC)	30	5.0	mg/L

1:5 Dilution.

VOLATILE ORGANICS (CAPILLARY COLUMN) SW846-8260B NELAC:Y

Analyst: R. SHAMP | Analysis Date: 30-SEP-14 10:07 | Instrument: GC/MS VOA | Test: O510.6.0

Parameter	Result	Det. Limit	Units
ACETONE (2-PROPANONE)	BDL	10	ug/L
ACRYLONITRILE	BDL	100	ug/L
BENZENE	BDL	5.0	ug/L
BROMOCHLOROMETHANE	BDL	5.0	ug/L
BROMODICHLOROMETHANE	BDL	5.0	ug/L
BROMOFORM	BDL	5.0	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	10	ug/L
CARBON TETRACHLORIDE	BDL	5.0	ug/L
CHLOROBENZENE	BDL	5.0	ug/L
DIBROMOCHLOROMETHANE	BDL	5.0	ug/L
CHLOROETHANE	BDL	10	ug/L
CHLOROFORM	BDL	5.0	ug/L
CHLOROMETHANE	BDL	10	ug/L
1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	BDL	5.0	ug/L
1,2-DIBROMOETHANE (EDB)	BDL	5.0	ug/L
DIBROMOMETHANE	BDL	10	ug/L
1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	BDL	5.0	ug/L
1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	BDL	5.0	ug/L
TRANS-1,4-DICHLORO-2-BUTENE	BDL	10	ug/L
1,1-DICHLOROETHANE	BDL	5.0	ug/L
1,2-DICHLOROETHANE	BDL	5.0	ug/L
1,1-DICHLOROETHENE	BDL	5.0	ug/L
CIS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
TRANS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
1,2-DICHLOROPROPANE	BDL	5.0	ug/L
CIS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
ETHYL BENZENE	BDL	5.0	ug/L
2-HEXANONE	BDL	10	ug/L
IODOMETHANE	BDL	5.0	ug/L
DICHLOROMETHANE (METHYLENE CHLORIDE)	BDL	5.0	ug/L
METHYL ETHYL KETONE	BDL	10	ug/L
4-METHYL-2-PENTANONE	BDL	10	ug/L
STYRENE	BDL	5.0	ug/L
1,1,1,2-TETRACHLOROETHANE	BDL	5.0	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5.0	ug/L
TETRACHLOROETHENE	BDL	5.0	ug/L
TOLUENE	BDL	5.0	ug/L
1,1,1-TRICHLOROETHANE	BDL	5.0	ug/L
1,1,2-TRICHLOROETHANE	BDL	5.0	ug/L
TRICHLOROETHENE	BDL	5.0	ug/L

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Sample ID: AA28612 PZ-111-SD

Parameter	Result	Det. Limit	Units
TRICHLOROFLUOROMETHANE	BDL	10	ug/L
1,2,3-TRICHLOROPROPANE	BDL	5.0	ug/L
VINYL ACETATE	BDL	10	ug/L
VINYL CHLORIDE	BDL	2.0	ug/L
XYLENES (O/M/P-XYLENE)	BDL	5.0	ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	117		% Rec
TOLUENE-D8	92		% Rec
4-BROMOFLUOROBENZENE	85		% Rec
DIBROMOFLUOROMETHANE	108		% Rec

Prep Method SW846-5030B Purge and Trap

Sample Comments

BDL Below Detection Limit

Sample was received on ice at temperature 2.4 C.
Sample chain of custody number 1804343.

This Certificate shall not be reproduced, except in full, without the written approval of the lab. The sample results relate only to the analytes of interest tested or to the sample as received by the lab. Pace Analytical Services, INC. certifies that the test results indicated as NELAP (National Environmental Laboratory Accreditation Program) accredited (Yes for NELAP) meet all requirements of NELAP and Kansas (KDHE) unless otherwise explained or justified as to the the exact nature of the deviations.
KS ELAP / NELAP Accreditation # E-10177 Indiana SDWA C-49-01

Approved by: CHRISTINE SARKAN 13-OCT-14

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CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
PACE ANALYTICAL SERVICES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	26-SEP-14	AA28613
	Completed	**PO Number**
	10-OCT-14	NEED PO
	Printed	**Sampled**
	15-OCT-14	24-SEP-14 13:10

Report To	Bill To
JON WILKINSON HERST AND ASSOCIATES 4630 SOUTH HIGHWAY 94 NORTH OUTER ROAD ST. CHARLES, MO 63304	DAVE VASBINDER ALLIED WASTE SYSTEMS 13570 ST. CHARLES ROCK ROAD BRIDGETON, MO 63044

Sample Description

CLIENT ID: FB @ PZ-104-SD
MATRIX TYPE: NON-SPECIFIC WATER
SUBMITTER: 8945 - MO-ALLIED-BRIDGETON LANDFILL
PROJECT NAME: GROUNDWATER - BRIDGETON LANDFILL
DATA PACKAGE #: 66865
LOCATION: BRIDGETON LANDFILL
DESCRIPTION: APPENDIX I/II TESTING - ADDITIONAL VOLS

HARDNESS SM2340 B 1997 NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:10 Instrument: ICP Test: G608.0.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
HARDNESS	BDL	1.0	mg CaCO3/L

ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P129.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P130.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

BARIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:10 Instrument: ICP Test: M104.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BARIUM	BDL	10	ug/L

BERYLLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:11 Instrument: ICP/MS Test: V105.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	2.0	ug/L

1:5 Dilution.

BORON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:10 Instrument: ICP Test: M107.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BORON	300	100	ug/L

CALCIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:10 Instrument: ICP Test: M109.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
CALCIUM	BDL	100	ug/L

CHROMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:11 Instrument: ICP/MS Test: V110.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	5.0	ug/L

1:5 Dilution.

COBALT ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:10 Instrument: ICP Test: M111.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COBALT	BDL	5.0	ug/L

COPPER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:11 Instrument: ICP/MS Test: V112.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
COPPER	BDL	5.0	ug/L

1:5 Dilution.

IRON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:10 Instrument: ICP Test: M115.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units

Parameter	Result	Det. Limit	Units
IRON	BDL	20	ug/L

MAGNESIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:10 Instrument: ICP Test: M118.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MAGNESIUM	BDL	100	ug/L

MANGANESE ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:10 Instrument: ICP Test: M119.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MANGANESE	BDL	5.0	ug/L

NICKEL ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:10 Instrument: ICP Test: M122.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
NICKEL	BDL	10	ug/L

SILVER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:11 Instrument: ICP/MS Test: V130.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	5.0	ug/L

1:5 Dilution.

SODIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:10 Instrument: ICP Test: M131.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SODIUM	BDL	1000	ug/L

THALLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:11 Instrument: ICP/MS Test: V134.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	2.0	ug/L

1:5 Dilution.

TIN ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:10 Instrument: ICP Test: M135.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
TIN	BDL	50	ug/L

VANADIUM ICP SW846-6010B NELAC:N

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:10 Instrument: ICP Test: M138.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	10	ug/L

ZINC ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:10 Instrument: ICP Test: M139.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ZINC	BDL	20	ug/L

ARSENIC ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:11 Instrument: ICP/MS Test: V103.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	5.0	ug/L

1:5 Dilution.

CADMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:11 Instrument: ICP/MS Test: V108.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.20	ug/L

1:5 Dilution.

LEAD ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:11 Instrument: ICP/MS Test: V116.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
LEAD	BDL	5.0	ug/L

1:5 Dilution.

ANTIMONY ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:11 Instrument: ICP/MS Test: V102.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	5.0	ug/L

1:5 Dilution.

SELENIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE | Analysis Date: 02-OCT-14 00:11 | Instrument: ICP/MS | Test: V128.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	5.0	ug/L

1:5 Dilution.

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A NELAC:Y

Analyst: S. O'NEAL | Analysis Date: 02-OCT-14 08:00 | Instrument: PREP | Test: P131.6.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	40		mL
FINAL VOLUME	40		mL

MERCURY CVAA SW846-7470A NELAC:Y

Analyst: S. O'NEAL | Analysis Date: 02-OCT-14 20:54 | Instrument: CVAA | Test: M120.1.0

Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A P131.6.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.20	ug/L

TOTAL DISSOLVED SOLIDS SM2540 C 1997 NELAC:Y

Analyst: C. ANYANWUTAKU | Analysis Date: 01-OCT-14 14:00 | Test: G402.9.0

Parameter	Result	Det. Limit	Units
DISSOLVED SOLIDS	BDL	10	mg/L

CHLORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL | Analysis Date: 29-SEP-14 22:26 | Instrument: IC | Test: G310.2.0

Parameter	Result	Det. Limit	Units
CHLORIDE	BDL	3.0	mg/L

FLUORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL | Analysis Date: 30-SEP-14 19:08 | Instrument: IC | Test: G310.1.0

Parameter	Result	Det. Limit	Units
FLUORIDE	BDL	0.10	mg/L

AMMONIA BY AUTOMATED PHENATE SM4500-NH3 G 1997 NELAC:Y

Analyst: T. DRIGGERS | Analysis Date: 06-OCT-14 13:35 | Instrument: AUTO-ANALYZER | Test: G204.6.0

Parameter	Result	Det. Limit	Units
NITROGEN, AMMONIA	BDL	0.10	mg/L

NITROGEN, NITRATE-NITRITE EPA 353.2 REV. 2.0 (1993) NELAC:Y

Analyst: C. ANYANWUTAKU | Analysis Date: 10-OCT-14 12:01 | Instrument: AUTO-ANALYZER | Test: G113.3.0

Parameter	Result	Det. Limit	Units
NITROGEN, NITRATE-NITRITE	BDL	0.10	mg/L

PHOSPHORUS, TOTAL (AUTOMATED) EPA 365.1 REV. 2.0 (1993) NELAC:Y

Analyst: E. SKALA | Analysis Date: 02-OCT-14 08:35 | Instrument: AUTO-ANALYZER | Test: G207.2.0

Parameter	Result	Det. Limit	Units
PHOSPHORUS	BDL	0.05	mg/L

SULFATE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL | Analysis Date: 29-SEP-14 22:26 | Instrument: IC | Test: G310.7.0

Parameter	Result	Det. Limit	Units
SULFATE	BDL	2.0	mg/L

CHEMICAL OXYGEN DEMAND (COLORIMETRIC) EPA 410.4 REV. 2.0 (1993) NELAC:Y

Analyst: B. LEDFORD | Analysis Date: 02-OCT-14 11:00 | Test: G301.1.0

Parameter	Result	Det. Limit	Units
CHEMICAL OXYGEN DEMAND	BDL	10	mg/L

TOTAL ORGANIC CARBON SW846-9060A NELAC:Y

Analyst: D. DICKERSON | Analysis Date: 06-OCT-14 10:48 | Instrument: TOC | Test: O401.0.0

Parameter	Result	Det. Limit	Units
TOTAL ORGANIC CARBON (TOC)	BDL	1.0	mg/L

APPENDIX IX VOLATILE ORGANICS, CAPILLARY COLUMN TECHNIQUE SW846-8260B NELAC:Y

Analyst: H. WILLIAMS | Analysis Date: 28-SEP-14 13:30 | Instrument: GC/MS VOA | Test: O509.3.0

Parameter	Result	Det. Limit	Units
ACETONE	BDL	10	ug/L
ACETONITRILE	BDL	50	ug/L
ACROLEIN	BDL	50	ug/L
ACRYLONITRILE	BDL	100	ug/L
BENZENE	BDL	5.0	ug/L
BROMODICHLOROMETHANE	BDL	5.0	ug/L
BROMOCHLOROMETHANE	BDL	5.0	ug/L
BROMOFORM	BDL	5.0	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	10	ug/L
CARBON TETRACHLORIDE	BDL	5.0	ug/L
CHLOROBENZENE	BDL	5.0	ug/L
CHLORODIBROMOMETHANE	BDL	5.0	ug/L
1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	BDL	5.0	ug/L
1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	BDL	5.0	ug/L
1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	BDL	5.0	ug/L
CHLOROETHANE	BDL	10	ug/L
2-CHLORO-1,3-BUTADIENE (CHLOROPRENE)	BDL	5.0	ug/L
CHLOROFORM	BDL	5.0	ug/L
CHLOROMETHANE	BDL	10	ug/L
1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	BDL	5.0	ug/L

Sample ID: AA28613 FB @ PZ-104-SD

Parameter	Result	Det. Limit	Units
3-CHLOROPROPENE (ALLYL CHLORIDE)	BDL	10	ug/L
1,2-DIBROMOETHANE (EDB)	BDL	5.0	ug/L
DIBROMOMETHANE	BDL	10	ug/L
TRANS-1,4-DICHLORO-2-BUTENE	BDL	10	ug/L
DICHLORODIFLUOROMETHANE	BDL	10	ug/L
1,1-DICHLOROETHANE	BDL	5.0	ug/L
1,2-DICHLOROETHANE	BDL	5.0	ug/L
CIS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
TRANS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
1,1-DICHLOROETHENE	BDL	5.0	ug/L
1,2-DICHLOROPROPANE	BDL	5.0	ug/L
1,3-DICHLOROPROPANE	BDL	5.0	ug/L
1,1-DICHLOROPROPENE	BDL	5.0	ug/L
2,2-DICHLOROPROPANE	BDL	5.0	ug/L
DICHLOROMETHANE (METHYLENE CHLORIDE)	BDL	5.0	ug/L
CIS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
ETHYL BENZENE	BDL	5.0	ug/L
ETHYL CYANIDE (PROPIONITRILE)	BDL	5.0	ug/L
ETHYL METHACRYLATE	BDL	5.0	ug/L
2-HEXANONE	BDL	10	ug/L
IODOMETHANE	BDL	5.0	ug/L
ISOBUTANOL (ISOBUTYL ALCOHOL)	BDL	1000	ug/L
METHYL ISOBUTYL KETONE	BDL	10	ug/L
METHACRYLONITRILE	BDL	20	ug/L
METHYL ETHYL KETONE	BDL	10	ug/L
METHYL METHACRYLATE	BDL	5.0	ug/L
STYRENE	BDL	5.0	ug/L
1,1,1,2-TETRACHLOROETHANE	BDL	5.0	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5.0	ug/L
TETRACHLOROETHENE	BDL	5.0	ug/L
TOLUENE	BDL	5.0	ug/L
1,1,1-TRICHLOROETHANE	BDL	5.0	ug/L
1,1,2-TRICHLOROETHANE	BDL	5.0	ug/L
TRICHLOROETHENE	BDL	5.0	ug/L
TRICHLOROFLUOROMETHANE	BDL	10	ug/L
1,2,3-TRICHLOROPROPANE	BDL	5.0	ug/L
VINYL ACETATE	BDL	10	ug/L
VINYL CHLORIDE	BDL	2.0	ug/L
XYLENES (O/M/P-XYLENE)	BDL	5.0	ug/L
METHYL-T-BUTYL ETHER (MTBE)	BDL	10	ug/L
1,2,4-TRIMETHYLBENZENE	BDL	5.0	ug/L
1,3,5-TRIMETHYLBENZENE	BDL	5.0	ug/L
ISOPROPYLBENZENE (CUMENE)	BDL	10	ug/L

Parameter	Result	Det. Limit	Units
TETRAHYDROFURAN	BDL	25	ug/L
4-ISOPROPYLTOLUENE (P-ISOPROPYLTOLUENE)	BDL	10	ug/L
CHLOROBUTANE	*		ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	108		% Rec
TOLUENE-D8	92		% Rec
4-BROMOFLUOROBENZENE	88		% Rec

Note: * Compound searched for but not detected. Standard was unavailable to determine retention time and detection limit.

Prep Method SW846-5030B Purge and Trap

APPENDIX IX SEMIVOLATILE ORGANICS SW846-8270C NELAC:Y

Analyst: T. PINCKERT Analysis Date: 02-OCT-14 18:27 Instrument: GC/MS SVOA Test: O508.3.0

Prep: GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P233.4.0

Parameter	Result	Det. Limit	Units
ACENAPHTHENE	BDL	10	ug/L
ACENAPHTHYLENE	BDL	10	ug/L
ACETOPHENONE	BDL	10	ug/L
2-ACETYLAMINOFLUORENE	BDL	10	ug/L
4-AMINOBIPHENYL	BDL	10	ug/L
ANTHRACENE	BDL	10	ug/L
BENZO(A)ANTHRACENE	BDL	10	ug/L
BENZO(B)FLUORANTHENE	BDL	10	ug/L
BENZO(K)FLUORANTHENE	BDL	10	ug/L
BENZO(G,H,I)PERYLENE	BDL	10	ug/L
BENZO(A)PYRENE	BDL	10	ug/L
BENZYL ALCOHOL	BDL	10	ug/L
BIS(2-CHLOROETHOXY)METHANE	BDL	10	ug/L
BIS(2-CHLOROETHYL)ETHER	BDL	10	ug/L
BIS(2-CHLOROISOPROPYL)ETHER	BDL	10	ug/L
BIS(2-ETHYLHEXYL)PHTHALATE	BDL	10	ug/L
4-BROMODIPHENYL ETHER	BDL	10	ug/L
(BENZYLBUTYLPHTHALATE) BUTYLBENZYLPHTHALATE	BDL	10	ug/L
4-CHLOROANILINE	BDL	10	ug/L
CHLOROBENZILATE	BDL	10	ug/L
2-CHLORONAPHTHALENE	BDL	10	ug/L
4-CHLOROPHENYL-PHENYLETHER	BDL	10	ug/L
CHRYSENE	BDL	10	ug/L
DIALLATE	BDL	10	ug/L
DIBENZ(A,H)ANTHRACENE	BDL	10	ug/L
DIBENZOFURAN	BDL	10	ug/L

Parameter	Result	Det. Limit	Units
DI-N-BUTYLPHTHALATE	BDL	10	ug/L
3,3'-DICHLOROBENZIDINE	BDL	20	ug/L
DIETHYLPHTHALATE	BDL	10	ug/L
DIMETHOATE	BDL	10	ug/L
4-(DIMETHYLAMINO)AZOBENZENE	BDL	10	ug/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	BDL	20	ug/L
3,3'-DIMETHYLBENZIDINE	BDL MR	20	ug/L
DIMETHYLPHTHALATE	BDL	10	ug/L
1,3-DINITROBENZENE (M-DINITROBENZENE)	BDL	50	ug/L
2,4-DINITROTOLUENE	BDL	10	ug/L
2,6-DINITROTOLUENE	BDL	10	ug/L
DI-N-OCTYLPHTHALATE	BDL	10	ug/L
DI-N-PROPYLNITROSOAMINE	BDL	50	ug/L
ETHYL METHANESULFONATE	BDL	10	ug/L
FLUORANTHENE	BDL	10	ug/L
FLUORENE	BDL	10	ug/L
HEXACHLOROBENZENE	BDL	10	ug/L
HEXACHLOROBUTADIENE	BDL	10	ug/L
HEXACHLOROCYCLOPENTADIENE	BDL	10	ug/L
HEXACHLOROETHANE	BDL	10	ug/L
HEXACHLOROPROPENE	BDL	10	ug/L
INDENO(1,2,3-CD)PYRENE	BDL	10	ug/L
2-METHYLNAPHTHALENE	BDL	10	ug/L
METHAPYRILENE	BDL MR	10	ug/L
3-METHYLCHOLANTHRENE	BDL	10	ug/L
METHYL METHANESULFONATE	BDL	10	ug/L
NAPHTHALENE	BDL	10	ug/L
1,4-NAPHTHOQUINONE	BDL	50	ug/L
1-NAPHTHYLAMINE	BDL	50	ug/L
2-NAPHTHYLAMINE	BDL	10	ug/L
3-NITROANILINE (M-NITROANILINE)	BDL	50	ug/L
2-NITROANILINE (O-NITROANILINE)	BDL	50	ug/L
4-NITROANILINE (P-NITROANILINE)	BDL	50	ug/L
NITROBENZENE	BDL	10	ug/L
N-NITROSODI-N-BUTYLAMINE	BDL	10	ug/L
N-NITROSODIETHYLAMINE	BDL	10	ug/L
N-NITROSODIMETHYLAMINE	BDL	10	ug/L
N-NITROSODIPHENYLAMINE	BDL	10	ug/L
N-NITROSOMETHYLETHYLAMINE	BDL	10	ug/L
N-NITROSOPIPERIDINE	BDL	10	ug/L
N-NITROSOPYRROLIDINE	BDL	10	ug/L
5-NITRO-O-TOLUIDINE	BDL	10	ug/L
PENTACHLOROBENZENE	BDL	10	ug/L
PENTACHLORONITROBENZENE	BDL	10	ug/L

Parameter	Result	Det. Limit	Units
PHENACETIN	BDL	10	ug/L
PHENANTHRENE	BDL	10	ug/L
PYRENE	BDL	10	ug/L
1,2,4,5-TETRACHLOROBENZENE	BDL	10	ug/L
1,2,4-TRICHLOROBENZENE	BDL	10	ug/L
THIONAZIN	BDL	10	ug/L
O,O,O-TRIETHYL PHOSPHOROTHIOATE	BDL	10	ug/L
SYM-(1,3,5)-TRINITROBENZENE	BDL	20	ug/L
O-TOLUIDINE	BDL	10	ug/L
P-PHENYLENEDIAMINE	BDL	20	ug/L
2-SEC-BUTYL-4,6-DINITROPHENOL (DINOSEB)	BDL	10	ug/L
DIPHENYLAMINE	BDL	10	ug/L
4-CHLORO-3-METHYLPHENOL	BDL	10	ug/L
2-CHLOROPHENOL	BDL	10	ug/L
2-METHYLPHENOL (O-CRESOL)	BDL	10	ug/L
4-METHYLPHENOL (P-CRESOL)	BDL	10	ug/L
2,4-DICHLOROPHENOL	BDL	10	ug/L
2,6-DICHLOROPHENOL	BDL	10	ug/L
2,4-DIMETHYLPHENOL	BDL	10	ug/L
4,6-DINITRO-O-CRESOL	BDL	50	ug/L
2,4-DINITROPHENOL	BDL	50	ug/L
3-METHYLPHENOL (M-CRESOL)	BDL	10	ug/L
2-NITROPHENOL	BDL	10	ug/L
4-NITROPHENOL	BDL	50	ug/L
PENTACHLOROPHENOL	BDL	50	ug/L
PHENOL	BDL	10	ug/L
2,3,4,6-TETRACHLOROPHENOL	BDL	10	ug/L
2,4,5-TRICHLOROPHENOL	BDL	10	ug/L
2,4,6-TRICHLOROPHENOL	BDL	10	ug/L
DISULFOTON	BDL	10	ug/L
FAMPHUR	BDL MR	200	ug/L
ISODRIN	BDL	10	ug/L
ISOPHORONE	BDL	10	ug/L
ISOSAFROLE	BDL	10	ug/L
KEPONE	BDL MR	200	ug/L
PARATHION	BDL	10	ug/L
METHYL PARATHION	BDL	10	ug/L
PHORATE	BDL	10	ug/L
PRONAMIDE	BDL	10	ug/L
SAFROLE	BDL	10	ug/L
...			
SURROGATE RECOVERY			

2-FLUOROPHENOL	46		% Rec

Parameter	Result	Det. Limit	Units
PHENOL-D5	26		% Rec
NITROBENZENE-D5	96		% Rec
2-FLUOROBIPHENYL	89		% Rec
2,4,6-TRIBROMOPHENOL	95		% Rec
TERPHENYL-D14	99		% Rec

GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

Analyst: J. MINNIEAR, II | Analysis Date: 01-OCT-14 | Instrument: PREP | Test: P233.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	1		mL

ORGANOCHLORINE PESTICIDES BY GC:ECD SW846-8081 NELAC:Y

Analyst: T. WATSON | Analysis Date: 29-SEP-14 21:26 | Instrument: GC/ECD | Test: O164.1.0

Prep: GC PESTICIDE SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P233.1.0

Parameter	Result	Det. Limit	Units
ALPHA-BHC	BDL	0.05	ug/L
BETA-BHC	BDL	0.05	ug/L
DELTA-BHC	BDL	0.05	ug/L
GAMMA-BHC (LINDANE)	BDL	0.05	ug/L
HEPTACHLOR	BDL	0.05	ug/L
ALDRIN	BDL	0.05	ug/L
HEPTACHLOR EPOXIDE	BDL	0.05	ug/L
ENDOSULFAN I	BDL	0.05	ug/L
DIELDRIN	BDL	0.1	ug/L
4,4'-DDE	BDL	0.1	ug/L
ENDRIN	BDL	0.1	ug/L
ENDOSULFAN II	BDL	0.1	ug/L
4,4'-DDD	BDL	0.1	ug/L
ENDOSULFAN SULFATE	BDL	0.1	ug/L
4,4'-DDT	BDL	0.1	ug/L
METHOXYCHLOR	BDL	0.5	ug/L
ENDRIN ALDEHYDE	BDL	0.1	ug/L
ALPHA-CHLORDANE	BDL	0.5	ug/L
GAMMA-CHLORDANE	BDL	0.5	ug/L
CHLORDANE	BDL	0.5	ug/L
TOXAPHENE	BDL	1	ug/L
...			
SURROGATE RECOVERY			

DECACHLOROBIPHENYL (DCB)	65.8		% Rec

GC PESTICIDE SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

Analyst: K. VEST | Analysis Date: 29-SEP-14 | Instrument: PREP | Test: P233.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	5		mL

CYANIDE, TOTAL (AUTOMATED) SW846-9012B NELAC:Y

Analyst: E. SKALA Analysis Date: 02-OCT-14 14:38 Instrument: AUTO-ANALYZER Test: G101.4.0

Prep: CYANIDE DISTILLATION SW846-9012B P101.4.0

Parameter	Result	Det. Limit	Units
CYANIDE	BDL	0.005	mg/L

CYANIDE DISTILLATION SW846-9012B

Analyst: E. SKALA Analysis Date: 02-OCT-14 10:20 Instrument: PREP Test: P101.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	6		mL
FINAL VOLUME	6		mL

CHLORINATED HERBICIDES (2,4 D, SILVEX AND 2,4,5-T) SW846-8151A NELAC:Y

Analyst: B. WOOD Analysis Date: 29-SEP-14 17:52 Instrument: GC/ECD Test: O253.1.0

Prep: DIAZOMETHANE HERBICIDE DERIVATIZATION SW846-8151A P201.4.0

Parameter	Result	Det. Limit	Units
2,4-DICHLOROPHENOXYACETIC ACID	BDL	10	ug/L
SILVEX (2,4,5-TP)	BDL	1	ug/L
2,4,5-TRICHLOROPHENOXYACETIC ACID (2,4,5-T)	BDL	1	ug/L
...			
SURROGATE RECOVERY			

DCAA	76.6		% Rec

DIAZOMETHANE HERBICIDE DERIVATIZATION SW846-8151A

Analyst: T. DAHN Analysis Date: 29-SEP-14 Instrument: PREP Test: P201.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	10		mL

PCB AROCLORS BY GAS CHROMATOGRAPHY/ECD SW846-8082A NELAC:Y

Analyst: C. HIPSKIND Analysis Date: 29-SEP-14 14:40 Instrument: GC/ECD Test: O301.7.0

Prep: PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P230.1.0

Parameter	Result	Det. Limit	Units
PCB AROCLOR 1016	BDL	0.10	ug/L
PCB AROCLOR 1221	BDL	0.10	ug/L
PCB AROCLOR 1232	BDL	0.10	ug/L
PCB AROCLOR 1242	BDL	0.10	ug/L
PCB AROCLOR 1248	BDL	0.10	ug/L
PCB AROCLOR 1254	BDL	0.10	ug/L
PCB AROCLOR 1260	BDL	0.10	ug/L

Parameter	Result	Det. Limit	Units
...			
SURROGATE RECOVERY			

DECACHLOROBIPHENYL (DCB)	62.0		% Rec

PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

Analyst: K. VEST | Analysis Date: 29-SEP-14 | Instrument: PREP | Test: P230.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	5		mL

SULFIDE, IODOMETRIC METHOD SM4500-S F 2000 NELAC:N

Analyst: S. MCNEAL | Analysis Date: 29-SEP-14 07:30 | Test: G110.1.0

Parameter	Result	Det. Limit	Units
SULFIDE	BDL	1.0	mg/L

ALKALINITY TOTAL (AUTOMATED) EPA 310.2 NELAC:N

Analyst: E. SKALA | Analysis Date: 06-OCT-14 11:30 | Instrument: AUTO-ANALYZER | Test: G605.3.0

Parameter	Result	Det. Limit	Units
ALKALINITY	BDL	10	mg/L

ALKALINITY BICARBONATE (AUTOMATED) EPA 310.2 NELAC:N

Analyst: E. SKALA | Analysis Date: 06-OCT-14 11:30 | Instrument: AUTO-ANALYZER | Test: G610.3.0

Parameter	Result	Det. Limit	Units
ALKALINITY, BICARBONATE	BDL	10	mg/L

ALKALINITY CARBONATE (AUTOMATED) EPA 310.2 NELAC:N

Analyst: E. SKALA | Analysis Date: 06-OCT-14 11:30 | Instrument: AUTO-ANALYZER | Test: G611.3.0

Parameter	Result	Det. Limit	Units
ALKALINITY, CARBONATE	BDL	10	mg/L

POTASSIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER | Analysis Date: 01-OCT-14 03:10 | Instrument: ICP | Test: M126.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
POTASSIUM	BDL	100	ug/L

Sample Comments

* See Note for Parameter
BDL Below Detection Limit
MR Initial Calibration > 15 % RSD

Sample was received on ice at temperature 2.4 C.
Sample chain of custody number 1804343.

This Certificate shall not be reproduced, except in full, without the written approval of the lab. The sample results relate only to the analytes of interest tested or to the sample as received by the lab. Pace Analytical Services, INC.

Sample Comments

certifies that the test results indicated as NELAP (National Environmental Laboratory Accreditation Program) accredited (Yes for NELAP) meet all requirements of NELAP and Kansas (KDHE) unless otherwise explained or justified as to the the exact nature of the deviations.
KS ELAP / NELAP Accreditation # E-10177 Indiana SDWA C-49-01

Approved by: CHRISTINE SARKAN 13-OCT-14

Pace Analytical®
Pace Analytical Services, Inc.

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
PACE ANALYTICAL SERVICES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	26-SEP-14	AA28614
	Completed 10-OCT-14	PO Number NEED PO
	Printed 15-OCT-14	Sampled 24-SEP-14 13:40

Report To	Bill To
JON WILKINSON HERST AND ASSOCIATES 4630 SOUTH HIGHWAY 94 NORTH OUTER ROAD ST. CHARLES, MO 63304	DAVE VASBINDER ALLIED WASTE SYSTEMS 13570 ST. CHARLES ROCK ROAD BRIDGETON, MO 63044

Sample Description

CLIENT ID: PZ-104-SD
MATRIX TYPE: NON-SPECIFIC WATER
SUBMITTER: 8945 - MO-ALLIED-BRIDGETON LANDFILL
PROJECT NAME: GROUNDWATER - BRIDGETON LANDFILL
DATA PACKAGE #: 66865
LOCATION: BRIDGETON LANDFILL
DESCRIPTION: APPENDIX I/II TESTING - ADDITIONAL VOLS

GROUNDWATER MONITORING WELL DATA SAS

Analysis Date: 24-SEP-14 13:40 Instrument: FIELD Test: G600.0.0

Parameter	Result	Det. Limit	Units
TOTAL WELL DEPTH	120.59		ft
INITIAL WATER LEVEL	22.78		ft
ELEVATION OF GROUNDWATER SURFACE	460.91		Feet/MSL

FIELD TEMPERATURE SM2550 B 2000 NELAC:N

Analysis Date: 24-SEP-14 13:40 Instrument: FIELD Test: G603.1.0

Parameter	Result	Det. Limit	Units
TEMPERATURE	25.7		Degrees C

FIELD PH (AQUEOUS) SW846-9040C NELAC:Y

Analysis Date: 24-SEP-14 13:40 Instrument: FIELD Test: G607.0.0

Parameter	Result	Det. Limit	Units
PH	6.75	0.1	Std. Units

FIELD SPECIFIC CONDUCTANCE SW846-9050A NELAC:Y

Analysis Date: 24-SEP-14 13:40 Instrument: FIELD Test: G604.0.0

Parameter	Result	Det. Limit	Units
CONDUCTIVITY	1457	1.0	umHOS/cm

FIELD TURBIDITY EPA 180.1 NELAC:Y

Analysis Date: 24-SEP-14 13:40 Instrument: FIELD Test: G602.0.0

Parameter	Result	Det. Limit	Units
TURBIDITY	2.54		ntu

HARDNESS SM2340 B 1997 NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:14 Instrument: ICP Test: G608.0.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
HARDNESS	550	1.0	mg CaCO3/L

ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P129.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P130.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

BARIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:14 Instrument: ICP Test: M104.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BARIUM	710	10	ug/L

BERYLLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:15 Instrument: ICP/MS Test: V105.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	2.0	ug/L

1:5 Dilution.

BORON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:14 Instrument: ICP Test: M107.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BORON	920	100	ug/L

CALCIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:14 Instrument: ICP Test: M109.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units

Parameter	Result	Det. Limit	Units
CALCIUM	110000	100	ug/L

CHROMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:15 Instrument: ICP/MS Test: V110.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CHROMIUM	13	5.0	ug/L

1:5 Dilution.

COBALT ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:14 Instrument: ICP Test: M111.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COBALT	BDL	5.0	ug/L

COPPER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:15 Instrument: ICP/MS Test: V112.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
COPPER	BDL	5.0	ug/L

1:5 Dilution.

IRON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:14 Instrument: ICP Test: M115.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
IRON	12000	20	ug/L

MAGNESIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:14 Instrument: ICP Test: M118.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MAGNESIUM	65000	100	ug/L

MANGANESE ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:14 Instrument: ICP Test: M119.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MANGANESE	160	5.0	ug/L

NICKEL ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:14 Instrument: ICP Test: M122.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
NICKEL	55	10	ug/L

SILVER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:15 Instrument: ICP/MS Test: V130.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	5.0	ug/L

1:5 Dilution.

SODIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:14 Instrument: ICP Test: M131.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SODIUM	150000	1000	ug/L

THALLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:15 Instrument: ICP/MS Test: V134.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	2.0	ug/L

1:5 Dilution.

TIN ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:14 Instrument: ICP Test: M135.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
TIN	BDL	50	ug/L

VANADIUM ICP SW846-6010B NELAC:N

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:14 Instrument: ICP Test: M138.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
VANADIUM	10	10	ug/L

ZINC ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:14 Instrument: ICP Test: M139.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ZINC	BDL	20	ug/L

ARSENIC ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:15 Instrument: ICP/MS Test: V103.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ARSENIC	15	5.0	ug/L

1:5 Dilution.

CADMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:15 Instrument: ICP/MS Test: V108.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.20	ug/L

1:5 Dilution.

LEAD ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:15 Instrument: ICP/MS Test: V116.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
LEAD	BDL	5.0	ug/L

1:5 Dilution.

ANTIMONY ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:15 Instrument: ICP/MS Test: V102.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	5.0	ug/L

1:5 Dilution.

SELENIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:15 Instrument: ICP/MS Test: V128.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	5.0	ug/L

1:5 Dilution.

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 08:00 Instrument: PREP Test: P131.6.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	40		mL
FINAL VOLUME	40		mL

MERCURY CVAA SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 20:57 Instrument: CVAA Test: M120.1.0

Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A P131.6.0

Parameter	Result	Det. Limit	Units

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.20	ug/L

TOTAL DISSOLVED SOLIDS SM2540 C 1997 NELAC:Y

Analyst: C. ANYANWUTAKU Analysis Date: 01-OCT-14 14:00 Test: G402.9.0

Parameter	Result	Det. Limit	Units
DISSOLVED SOLIDS	1100	10	mg/L

CHLORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 29-SEP-14 23:03 Instrument: IC Test: G310.2.0

Parameter	Result	Det. Limit	Units
CHLORIDE	210	6.3	mg/L

1:25 Dilution.

FLUORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 30-SEP-14 19:26 Instrument: IC Test: G310.1.0

Parameter	Result	Det. Limit	Units
FLUORIDE	0.93	0.10	mg/L

AMMONIA BY AUTOMATED PHENATE SM4500-NH3 G 1997 NELAC:Y

Analyst: T. DRIGGERS Analysis Date: 06-OCT-14 15:10 Instrument: AUTO-ANALYZER Test: G204.6.0

Parameter	Result	Det. Limit	Units
NITROGEN, AMMONIA	45	10	mg/L

1:100 Dilution.

NITROGEN, NITRATE-NITRITE EPA 353.2 REV. 2.0 (1993) NELAC:Y

Analyst: C. ANYANWUTAKU Analysis Date: 10-OCT-14 12:28 Instrument: AUTO-ANALYZER Test: G113.3.0

Parameter	Result	Det. Limit	Units
NITROGEN, NITRATE-NITRITE	BDL	0.10	mg/L

Sample filtered due to high turbidity.

PHOSPHORUS, TOTAL (AUTOMATED) EPA 365.1 REV. 2.0 (1993) NELAC:Y

Analyst: E. SKALA Analysis Date: 02-OCT-14 08:35 Instrument: AUTO-ANALYZER Test: G207.2.0

Parameter	Result	Det. Limit	Units
PHOSPHORUS	0.12	0.050	mg/L

SULFATE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 29-SEP-14 22:45 Instrument: IC Test: G310.7.0

Parameter	Result	Det. Limit	Units
SULFATE	29	2.0	mg/L

CHEMICAL OXYGEN DEMAND (COLORIMETRIC) EPA 410.4 REV. 2.0 (1993) NELAC:Y

Analyst: B. LEDFORD Analysis Date: 07-OCT-14 12:03 Test: G301.1.0

Parameter	Result	Det. Limit	Units
CHEMICAL OXYGEN DEMAND	310	10	mg/L

TOTAL ORGANIC CARBON SW846-9060A NELAC:Y

Analyst: D. DICKERSON Analysis Date: 02-OCT-14 09:47 Instrument: TOC Test: O401.0.0

Parameter	Result	Det. Limit	Units
TOTAL ORGANIC CARBON (TOC)	140	25	mg/L

1:25 Dilution.

APPENDIX IX VOLATILE ORGANICS, CAPILLARY COLUMN TECHNIQUE SW846-8260B NELAC:Y

Analyst: H. WILLIAMS Analysis Date: 28-SEP-14 13:55 Instrument: GC/MS VOA Test: O509.3.0

Parameter	Result	Det. Limit	Units
ACETONE	11	10	ug/L
ACETONITRILE	BDL	50	ug/L
ACROLEIN	BDL	50	ug/L
ACRYLONITRILE	BDL	100	ug/L
BENZENE	EX	5.0	ug/L
BROMODICHLOROMETHANE	BDL	5.0	ug/L
BROMOCHLOROMETHANE	BDL	5.0	ug/L
BROMOFORM	BDL	5.0	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	10	ug/L
CARBON TETRACHLORIDE	BDL	5.0	ug/L
CHLOROBENZENE	BDL	5.0	ug/L
CHLORODIBROMOMETHANE	BDL	5.0	ug/L
1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	BDL	5.0	ug/L
1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	BDL	5.0	ug/L
1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	BDL	5.0	ug/L
CHLOROETHANE	BDL	10	ug/L
2-CHLORO-1,3-BUTADIENE (CHLOROPRENE)	BDL	5.0	ug/L
CHLOROFORM	BDL	5.0	ug/L
CHLOROMETHANE	BDL	10	ug/L
1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	BDL	5.0	ug/L
3-CHLOROPROPENE (ALLYL CHLORIDE)	BDL	10	ug/L
1,2-DIBROMOETHANE (EDB)	BDL	5.0	ug/L
DIBROMOMETHANE	BDL	10	ug/L
TRANS-1,4-DICHLORO-2-BUTENE	BDL	10	ug/L
DICHLORODIFLUOROMETHANE	BDL	10	ug/L
1,1-DICHLOROETHANE	BDL	5.0	ug/L
1,2-DICHLOROETHANE	BDL	5.0	ug/L
CIS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
TRANS-1,2-DICHLOROETHENE	BDL	5.0	ug/L

Parameter	Result	Det. Limit	Units
1,1-DICHLOROETHENE	BDL	5.0	ug/L
1,2-DICHLOROPROPANE	BDL	5.0	ug/L
1,3-DICHLOROPROPANE	BDL	5.0	ug/L
1,1-DICHLOROPROPENE	BDL	5.0	ug/L
2,2-DICHLOROPROPANE	BDL	5.0	ug/L
DICHLOROMETHANE (METHYLENE CHLORIDE)	BDL	5.0	ug/L
CIS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
ETHYL BENZENE	13	5.0	ug/L
ETHYL CYANIDE (PROPIONITRILE)	BDL	5.0	ug/L
ETHYL METHACRYLATE	BDL	5.0	ug/L
2-HEXANONE	BDL	10	ug/L
IODOMETHANE	BDL	5.0	ug/L
ISOBUTANOL (ISOBUTYL ALCOHOL)	BDL	1000	ug/L
METHYL ISOBUTYL KETONE	BDL	10	ug/L
METHACRYLONITRILE	BDL	20	ug/L
METHYL ETHYL KETONE	BDL	10	ug/L
METHYL METHACRYLATE	BDL	5.0	ug/L
STYRENE	BDL	5.0	ug/L
1,1,1,2-TETRACHLOROETHANE	BDL	5.0	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5.0	ug/L
TETRACHLOROETHENE	BDL	5.0	ug/L
TOLUENE	34	5.0	ug/L
1,1,1-TRICHLOROETHANE	BDL	5.0	ug/L
1,1,2-TRICHLOROETHANE	BDL	5.0	ug/L
TRICHLOROETHENE	BDL	5.0	ug/L
TRICHLOROFLUOROMETHANE	BDL	10	ug/L
1,2,3-TRICHLOROPROPANE	BDL	5.0	ug/L
VINYL ACETATE	BDL	10	ug/L
VINYL CHLORIDE	BDL	2.0	ug/L
XYLENES (O/M/P-XYLENE)	25	5.0	ug/L
METHYL-T-BUTYL ETHER (MTBE)	BDL	10	ug/L
1,2,4-TRIMETHYLBENZENE	BDL	5.0	ug/L
1,3,5-TRIMETHYLBENZENE	BDL	5.0	ug/L
ISOPROPYLBENZENE (CUMENE)	BDL	10	ug/L
TETRAHYDROFURAN	63	25	ug/L
4-ISOPROPYLTOLUENE (P-ISOPROPYLTOLUENE)	BDL	10	ug/L
CHLOROBUTANE	*		ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	94		% Rec
TOLUENE-D8	91		% Rec
4-BROMOFLUOROBENZENE	100		% Rec

Dilution necessary due to high concentration of target analytes.

Note: * Compound searched for but not detected. Standard was unavailable to determine retention time and detection limit.

Prep Method SW846-5030B Purge and Trap

APPENDIX IX VOLATILE ORGANICS, CAPILLARY COLUMN TECHNIQUE SW846-8260B NELAC:Y

Analyst: H. WILLIAMS Analysis Date: 29-SEP-14 09:12 Instrument: GC/MS VOA Test: O509.3.1

Parameter	Result	Det. Limit	Units
BENZENE	1200	20	ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	102		% Rec
TOLUENE-D8	87		% Rec
4-BROMOFLUOROBENZENE	93		% Rec

1:20 Dilution.

Prep Method SW846-5030B Purge and Trap

APPENDIX IX SEMIVOLATILE ORGANICS SW846-8270C NELAC:Y

Analyst: T. PINCKERT Analysis Date: 02-OCT-14 18:49 Instrument: GC/MS SVOA Test: O508.3.0

Prep: GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P233.4.0

Parameter	Result	Det. Limit	Units
ACENAPHTHENE	BDL	10	ug/L
ACENAPHTHYLENE	BDL	10	ug/L
ACETOPHENONE	BDL	10	ug/L
2-ACETYLAMINOFLUORENE	BDL	10	ug/L
4-AMINOBIPHENYL	BDL	10	ug/L
ANTHRACENE	BDL	10	ug/L
BENZO(A)ANTHRACENE	BDL	10	ug/L
BENZO(B)FLUORANTHENE	BDL	10	ug/L
BENZO(K)FLUORANTHENE	BDL	10	ug/L
BENZO(G,H,I)PERYLENE	BDL	10	ug/L
BENZO(A)PYRENE	BDL	10	ug/L
BENZYL ALCOHOL	BDL	10	ug/L
BIS(2-CHLOROETHOXY)METHANE	BDL	10	ug/L
BIS(2-CHLOROETHYL)ETHER	BDL	10	ug/L
BIS(2-CHLOROISOPROPYL)ETHER	BDL	10	ug/L
BIS(2-ETHYLHEXYL)PHTHALATE	BDL	10	ug/L
4-BROMODIPHENYL ETHER	BDL	10	ug/L
(BENZYLBUTYLPHTHALATE) BUTYLBENZYLPHTHALATE	BDL	10	ug/L
4-CHLOROANILINE	BDL	10	ug/L
CHLOROBENZILATE	BDL	10	ug/L
2-CHLORONAPHTHALENE	BDL	10	ug/L

Parameter	Result	Det. Limit	Units
4-CHLOROPHENYL-PHENYLETHER	BDL	10	ug/L
CHRYSENE	BDL	10	ug/L
DIALLATE	BDL	10	ug/L
DIBENZ(A,H)ANTHRACENE	BDL	10	ug/L
DIBENZOFURAN	BDL	10	ug/L
DI-N-BUTYLPHTHALATE	BDL	10	ug/L
3,3'-DICHLOROBENZIDINE	BDL	20	ug/L
DIETHYLPHTHALATE	BDL	10	ug/L
DIMETHOATE	BDL	10	ug/L
4-(DIMETHYLAMINO)AZOBENZENE	BDL	10	ug/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	BDL	20	ug/L
3,3'-DIMETHYLBENZIDINE	BDL MR	20	ug/L
DIMETHYLPHTHALATE	BDL	10	ug/L
1,3-DINITROBENZENE (M-DINITROBENZENE)	BDL	50	ug/L
2,4-DINITROTOLUENE	BDL	10	ug/L
2,6-DINITROTOLUENE	BDL	10	ug/L
DI-N-OCTYLPHTHALATE	BDL	10	ug/L
DI-N-PROPYLNITROSOAMINE	BDL	50	ug/L
ETHYL METHANESULFONATE	BDL	10	ug/L
FLUORANTHENE	BDL	10	ug/L
FLUORENE	BDL	10	ug/L
HEXACHLOROBENZENE	BDL	10	ug/L
HEXACHLOROBUTADIENE	BDL	10	ug/L
HEXACHLOROCYCLOPENTADIENE	BDL	10	ug/L
HEXACHLOROETHANE	BDL	10	ug/L
HEXACHLOROPROPENE	BDL	10	ug/L
INDENO(1,2,3-CD)PYRENE	BDL	10	ug/L
2-METHYLNAPHTHALENE	BDL	10	ug/L
METHAPYRILENE	BDL MR	10	ug/L
3-METHYLCHOLANTHRENE	BDL	10	ug/L
METHYL METHANESULFONATE	BDL	10	ug/L
NAPHTHALENE	BDL	10	ug/L
1,4-NAPHTHOQUINONE	BDL	50	ug/L
1-NAPHTHYLAMINE	BDL	50	ug/L
2-NAPHTHYLAMINE	BDL	10	ug/L
3-NITROANILINE (M-NITROANILINE)	BDL	50	ug/L
2-NITROANILINE (O-NITROANILINE)	BDL	50	ug/L
4-NITROANILINE (P-NITROANILINE)	BDL	50	ug/L
NITROBENZENE	BDL	10	ug/L
N-NITROSODI-N-BUTYLAMINE	BDL	10	ug/L
N-NITROSODIETHYLAMINE	BDL	10	ug/L
N-NITROSODIMETHYLAMINE	BDL	10	ug/L
N-NITROSODIPHENYLAMINE	BDL	10	ug/L
N-NITROSOMETHYLETHYLAMINE	BDL	10	ug/L

Parameter	Result	Det. Limit	Units
N-NITROSOPIPERIDINE	BDL	10	ug/L
N-NITROSOPYRROLIDINE	BDL	10	ug/L
5-NITRO-O-TOLUIDINE	BDL	10	ug/L
PENTACHLOROBENZENE	BDL	10	ug/L
PENTACHLORONITROBENZENE	BDL	10	ug/L
PHENACETIN	BDL	10	ug/L
PHENANTHRENE	BDL	10	ug/L
PYRENE	BDL	10	ug/L
1,2,4,5-TETRACHLOROBENZENE	BDL	10	ug/L
1,2,4-TRICHLOROBENZENE	BDL	10	ug/L
THIONAZIN	BDL	10	ug/L
O,O,O-TRIETHYL PHOSPHOROTHIOATE	BDL	10	ug/L
SYM-(1,3,5)-TRINITROBENZENE	BDL	20	ug/L
O-TOLUIDINE	BDL	10	ug/L
P-PHENYLENEDIAMINE	BDL	20	ug/L
2-SEC-BUTYL-4,6-DINITROPHENOL (DINOSEB)	BDL	10	ug/L
DIPHENYLAMINE	BDL	10	ug/L
4-CHLORO-3-METHYLPHENOL	BDL	10	ug/L
2-CHLOROPHENOL	BDL	10	ug/L
2-METHYLPHENOL (O-CRESOL)	BDL	10	ug/L
4-METHYLPHENOL (P-CRESOL)	21	10	ug/L
2,4-DICHLOROPHENOL	BDL	10	ug/L
2,6-DICHLOROPHENOL	BDL	10	ug/L
2,4-DIMETHYLPHENOL	BDL	10	ug/L
4,6-DINITRO-O-CRESOL	BDL	50	ug/L
2,4-DINITROPHENOL	BDL	50	ug/L
3-METHYLPHENOL (M-CRESOL)	*	10	ug/L
2-NITROPHENOL	BDL	10	ug/L
4-NITROPHENOL	BDL	50	ug/L
PENTACHLOROPHENOL	BDL	50	ug/L
PHENOL	BDL	10	ug/L
2,3,4,6-TETRACHLOROPHENOL	BDL	10	ug/L
2,4,5-TRICHLOROPHENOL	BDL	10	ug/L
2,4,6-TRICHLOROPHENOL	BDL	10	ug/L
DISULFOTON	BDL	10	ug/L
FAMPHUR	BDL MR	200	ug/L
ISODRIN	BDL	10	ug/L
ISOPHORONE	BDL	10	ug/L
ISOSAFROLE	BDL	10	ug/L
KEPONE	BDL MR	200	ug/L
PARATHION	BDL	10	ug/L
METHYL PARATHION	BDL	10	ug/L
PHORATE	BDL	10	ug/L
PRONAMIDE	BDL	10	ug/L

Parameter	Result	Det. Limit	Units
SAFROLE	BDL	10	ug/L
...			
SURROGATE RECOVERY			

2-FLUOROPHENOL	48		% Rec
PHENOL-D5	28		% Rec
NITROBENZENE-D5	93		% Rec
2-FLUOROBIPHENYL	82		% Rec
2,4,6-TRIBROMOPHENOL	97		% Rec
TERPHENYL-D14	63		% Rec

NOTE: 3-Methylphenol and 4-Methylphenol co-elute.

GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

Analyst: J. MINNIEAR, II Analysis Date: 01-OCT-14 Instrument: PREP Test: P233.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	1		mL

ORGANOCHLORINE PESTICIDES BY GC:ECD SW846-8081 NELAC:Y

Analyst: T. WATSON Analysis Date: 29-SEP-14 21:39 Instrument: GC/ECD Test: O164.1.0

Prep: GC PESTICIDE SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P233.1.0

Parameter	Result	Det. Limit	Units
ALPHA-BHC	BDL	0.05	ug/L
BETA-BHC	BDL	0.05	ug/L
DELTA-BHC	BDL	0.05	ug/L
GAMMA-BHC (LINDANE)	BDL	0.05	ug/L
HEPTACHLOR	BDL	0.05	ug/L
ALDRIN	BDL	0.05	ug/L
HEPTACHLOR EPOXIDE	BDL	0.05	ug/L
ENDOSULFAN I	BDL	0.05	ug/L
DIELDRIN	BDL	0.1	ug/L
4,4'-DDE	BDL	0.1	ug/L
ENDRIN	BDL	0.1	ug/L
ENDOSULFAN II	BDL	0.1	ug/L
4,4'-DDD	BDL	0.1	ug/L
ENDOSULFAN SULFATE	BDL	0.1	ug/L
4,4'-DDT	BDL	0.1	ug/L
METHOXYCHLOR	BDL	0.5	ug/L
ENDRIN ALDEHYDE	BDL	0.1	ug/L
ALPHA-CHLORDANE	BDL	0.5	ug/L
GAMMA-CHLORDANE	BDL	0.5	ug/L
CHLORDANE	BDL	0.5	ug/L
TOXAPHENE	BDL	1	ug/L

Parameter	Result	Det. Limit	Units
...			
SURROGATE RECOVERY			

DECACHLOROBIPHENYL (DCB)	74.6		% Rec

Matrix interference may mask low level analytes.

GC PESTICIDE SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

Analyst: K. VEST | Analysis Date: 29-SEP-14 | Instrument: PREP | Test: P233.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	5		mL

CYANIDE, TOTAL (AUTOMATED) SW846-9012B NELAC:Y

Analyst: E. SKALA | Analysis Date: 02-OCT-14 14:38 | Instrument: AUTO-ANALYZER | Test: G101.4.0

Prep: CYANIDE DISTILLATION SW846-9012B P101.4.0

Parameter	Result	Det. Limit	Units
CYANIDE	BDL	0.005	mg/L

CYANIDE DISTILLATION SW846-9012B

Analyst: E. SKALA | Analysis Date: 02-OCT-14 10:20 | Instrument: PREP | Test: P101.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	6		mL
FINAL VOLUME	6		mL

CHLORINATED HERBICIDES (2,4 D, SILVEX AND 2,4,5-T) SW846-8151A NELAC:Y

Analyst: B. WOOD | Analysis Date: 29-SEP-14 17:52 | Instrument: GC/ECD | Test: O253.1.0

Prep: DIAZOMETHANE HERBICIDE DERIVATIZATION SW846-8151A P201.4.0

Parameter	Result	Det. Limit	Units
2,4-DICHLOROPHENOXYACETIC ACID	BDL	10	ug/L
SILVEX (2,4,5-TP)	BDL	1	ug/L
2,4,5-TRICHLOROPHENOXYACETIC ACID (2,4,5-T)	BDL	1	ug/L
...			
SURROGATE RECOVERY			

DCAA	142.2		% Rec

Interference peak in sample, MS/MSD recoveries for silvex not reported.

Matrix interference may mask low level analytes.

DIAZOMETHANE HERBICIDE DERIVATIZATION SW846-8151A

Analyst: T. DAHN | Analysis Date: 29-SEP-14 | Instrument: PREP | Test: P201.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL

Parameter	Result	Det. Limit	Units
FINAL VOLUME	10		mL

PCB AROCLORS BY GAS CHROMATOGRAPHY/ECD SW846-8082A NELAC:Y

Analyst: C. HIPSKIND Analysis Date: 29-SEP-14 14:40 Instrument: GC/ECD Test: O301.7.0

Prep: PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P230.1.0

Parameter	Result	Det. Limit	Units
PCB AROCLOR 1016	BDL	0.10	ug/L
PCB AROCLOR 1221	BDL	0.10	ug/L
PCB AROCLOR 1232	BDL	0.10	ug/L
PCB AROCLOR 1242	BDL	0.10	ug/L
PCB AROCLOR 1248	BDL	0.10	ug/L
PCB AROCLOR 1254	BDL	0.10	ug/L
PCB AROCLOR 1260	BDL	0.10	ug/L
...			
SURROGATE RECOVERY			

DECACHLOROBIPHENYL (DCB)	78.0		% Rec

PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

Analyst: K. VEST Analysis Date: 29-SEP-14 Instrument: PREP Test: P230.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	5		mL

SULFIDE, IODOMETRIC METHOD SM4500-S F 2000 NELAC:N

Analyst: S. MCNEAL Analysis Date: 29-SEP-14 07:30 Test: G110.1.0

Parameter	Result	Det. Limit	Units
SULFIDE	BDL	1.0	mg/L

ALKALINITY TOTAL (AUTOMATED) EPA 310.2 NELAC:N

Analyst: E. SKALA Analysis Date: 06-OCT-14 11:30 Instrument: AUTO-ANALYZER Test: G605.3.0

Parameter	Result	Det. Limit	Units
ALKALINITY	700	50	mg/L

1:5 Dilution.

ALKALINITY BICARBONATE (AUTOMATED) EPA 310.2 NELAC:N

Analyst: E. SKALA Analysis Date: 06-OCT-14 11:30 Instrument: AUTO-ANALYZER Test: G610.3.0

Parameter	Result	Det. Limit	Units
ALKALINITY, BICARBONATE	700	50	mg/L

1:5 Dilution.

Sample ID: AA28614 PZ-104-SD

ALKALINITY CARBONATE (AUTOMATED) EPA 310.2 NELAC:N

Analyst: E. SKALA Analysis Date: 06-OCT-14 11:30 Instrument: AUTO-ANALYZER Test: G611.3.0

Parameter	Result	Det. Limit	Units
ALKALINITY, CARBONATE	BDL	10	mg/L

POTASSIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:14 Instrument: ICP Test: M126.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
POTASSIUM	26000	100	ug/L

Sample Comments

* See Note for Parameter
BDL Below Detection Limit
EX Exceeds calibration range. See Replicate
MR Initial Calibration > 15 % RSD

Sample was received on ice at temperature 2.4 C.
Sample chain of custody number 1804343.

This Certificate shall not be reproduced, except in full, without the written approval of the lab. The sample results relate only to the analytes of interest tested or to the sample as received by the lab. Pace Analytical Services, INC. certifies that the test results indicated as NELAP (National Environmental Laboratory Accreditation Program) accredited (Yes for NELAP) meet all requirements of NELAP and Kansas (KDHE) unless otherwise explained or justified as to the the exact nature of the deviations.
KS ELAP / NELAP Accreditation # E-10177 Indiana SDWA C-49-01

Approved by: CHRISTINE SARKAN 13-OCT-14

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CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
PACE ANALYTICAL SERVICES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	26-SEP-14	AA28615
	Completed 10-OCT-14	**PO Number** NEED PO
	Printed 15-OCT-14	**Sampled** 24-SEP-14 13:40

Report To	Bill To
JON WILKINSON HERST AND ASSOCIATES 4630 SOUTH HIGHWAY 94 NORTH OUTER ROAD ST. CHARLES, MO 63304	DAVE VASBINDER ALLIED WASTE SYSTEMS 13570 ST. CHARLES ROCK ROAD BRIDGETON, MO 63044

Sample Description

CLIENT ID: PZ-104-SD DUP
MATRIX TYPE: NON-SPECIFIC WATER
SUBMITTER: 8945 - MO-ALLIED-BRIDGETON LANDFILL
PROJECT NAME: GROUNDWATER - BRIDGETON LANDFILL
DATA PACKAGE #: 66865
LOCATION: BRIDGETON LANDFILL
DESCRIPTION: APPENDIX I/II TESTING - ADDITIONAL VOLS

HARDNESS SM2340 B 1997 NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:17 Instrument: ICP Test: G608.0.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
HARDNESS	560	1.0	mg CaCO3/L

FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P130.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P129.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

BARIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:17 Instrument: ICP Test: M104.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BARIUM	710	10	ug/L

BERYLLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:20 Instrument: ICP/MS Test: V105.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	2.0	ug/L

1:5 Dilution.

BORON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:17 Instrument: ICP Test: M107.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BORON	920	100	ug/L

CALCIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:17 Instrument: ICP Test: M109.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
CALCIUM	120000	100	ug/L

CHROMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:20 Instrument: ICP/MS Test: V110.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CHROMIUM	12	5.0	ug/L

1:5 Dilution.

COBALT ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:17 Instrument: ICP Test: M111.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COBALT	BDL	5.0	ug/L

COPPER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:20 Instrument: ICP/MS Test: V112.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
COPPER	BDL	5.0	ug/L

1:5 Dilution.

IRON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:17 Instrument: ICP Test: M115.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units

Parameter	Result	Det. Limit	Units
IRON	12000	20	ug/L

MAGNESIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:17 Instrument: ICP Test: M118.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MAGNESIUM	65000	100	ug/L

MANGANESE ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:17 Instrument: ICP Test: M119.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MANGANESE	160	5.0	ug/L

NICKEL ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:17 Instrument: ICP Test: M122.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
NICKEL	55	10	ug/L

SILVER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:20 Instrument: ICP/MS Test: V130.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	5.0	ug/L

1:5 Dilution.

SODIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:17 Instrument: ICP Test: M131.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SODIUM	150000	1000	ug/L

THALLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:20 Instrument: ICP/MS Test: V134.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	2.0	ug/L

1:5 Dilution.

TIN ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:17 Instrument: ICP Test: M135.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
TIN	BDL	50	ug/L

VANADIUM ICP SW846-6010B NELAC:N

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:17 Instrument: ICP Test: M138.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
VANADIUM	10	10	ug/L

ZINC ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:17 Instrument: ICP Test: M139.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ZINC	BDL	20	ug/L

ARSENIC ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:20 Instrument: ICP/MS Test: V103.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ARSENIC	14	5.0	ug/L

1:5 Dilution.

CADMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:20 Instrument: ICP/MS Test: V108.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.20	ug/L

1:5 Dilution.

LEAD ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:20 Instrument: ICP/MS Test: V116.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
LEAD	BDL	5.0	ug/L

1:5 Dilution.

SELENIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:20 Instrument: ICP/MS Test: V128.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	5.0	ug/L

1:5 Dilution.

ANTIMONY ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:20 Instrument: ICP/MS Test: V102.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	5.0	ug/L

1:5 Dilution.

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 08:00 Instrument: PREP Test: P131.6.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	40		mL
FINAL VOLUME	40		mL

MERCURY CVAA SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 21:24 Instrument: CVAA Test: M120.1.0

Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A P131.6.0

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.20	ug/L

TOTAL DISSOLVED SOLIDS SM2540 C 1997 NELAC:Y

Analyst: C. ANYANWUTAKU Analysis Date: 01-OCT-14 14:00 Test: G402.9.0

Parameter	Result	Det. Limit	Units
DISSOLVED SOLIDS	1100	10	mg/L

CHLORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 29-SEP-14 23:39 Instrument: IC Test: G310.2.0

Parameter	Result	Det. Limit	Units
CHLORIDE	230	6.3	mg/L

1:25 Dilution.

FLUORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 30-SEP-14 19:44 Instrument: IC Test: G310.1.0

Parameter	Result	Det. Limit	Units
FLUORIDE	0.88	0.10	mg/L

AMMONIA BY AUTOMATED PHENATE SM4500-NH3 G 1997 NELAC:Y

Analyst: T. DRIGGERS Analysis Date: 06-OCT-14 15:13 Instrument: AUTO-ANALYZER Test: G204.6.0

Parameter	Result	Det. Limit	Units
NITROGEN, AMMONIA	45	10	mg/L

1:100 Dilution.

NITROGEN, NITRATE-NITRITE EPA 353.2 REV. 2.0 (1993) NELAC:Y

Analyst: C. ANYANWUTAKU Analysis Date: 10-OCT-14 12:29 Instrument: AUTO-ANALYZER Test: G113.3.0

Parameter	Result	Det. Limit	Units
NITROGEN, NITRATE-NITRITE	BDL	0.10	mg/L

Sample filtered due to high turbidity.

PHOSPHORUS, TOTAL (AUTOMATED) EPA 365.1 REV. 2.0 (1993) NELAC:Y

Analyst: E. SKALA Analysis Date: 02-OCT-14 08:36 Instrument: AUTO-ANALYZER Test: G207.2.0

Parameter	Result	Det. Limit	Units
PHOSPHORUS	0.12	0.050	mg/L

SULFATE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 29-SEP-14 23:21 Instrument: IC Test: G310.7.0

Parameter	Result	Det. Limit	Units
SULFATE	29	2.0	mg/L

CHEMICAL OXYGEN DEMAND (COLORIMETRIC) EPA 410.4 REV. 2.0 (1993) NELAC:Y

Analyst: B. LEDFORD Analysis Date: 07-OCT-14 12:03 Test: G301.1.0

Parameter	Result	Det. Limit	Units
CHEMICAL OXYGEN DEMAND	300	10	mg/L

TOTAL ORGANIC CARBON SW846-9060A NELAC:Y

Analyst: D. DICKERSON Analysis Date: 02-OCT-14 09:47 Instrument: TOC Test: O401.0.0

Parameter	Result	Det. Limit	Units
TOTAL ORGANIC CARBON (TOC)	140	25	mg/L

1:25 Dilution.

APPENDIX IX VOLATILE ORGANICS, CAPILLARY COLUMN TECHNIQUE SW846-8260B NELAC:Y

Analyst: H. WILLIAMS Analysis Date: 28-SEP-14 14:20 Instrument: GC/MS VOA Test: O509.3.0

Parameter	Result	Det. Limit	Units
ACETONE	23	10	ug/L
ACETONITRILE	BDL	50	ug/L
ACROLEIN	BDL	50	ug/L
ACRYLONITRILE	BDL	100	ug/L
BENZENE	EX	5.0	ug/L
BROMODICHLOROMETHANE	BDL	5.0	ug/L
BROMOCHLOROMETHANE	BDL	5.0	ug/L
BROMOFORM	BDL	5.0	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	10	ug/L
CARBON TETRACHLORIDE	BDL	5.0	ug/L
CHLOROBENZENE	BDL	5.0	ug/L
CHLORODIBROMOMETHANE	BDL	5.0	ug/L

Parameter	Result	Det. Limit	Units
1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	BDL	5.0	ug/L
1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	BDL	5.0	ug/L
1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	BDL	5.0	ug/L
CHLOROETHANE	BDL	10	ug/L
2-CHLORO-1,3-BUTADIENE (CHLOROPRENE)	BDL	5.0	ug/L
CHLOROFORM	BDL	5.0	ug/L
CHLOROMETHANE	BDL	10	ug/L
1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	BDL	5.0	ug/L
3-CHLOROPROPENE (ALLYL CHLORIDE)	BDL	10	ug/L
1,2-DIBROMOETHANE (EDB)	BDL	5.0	ug/L
DIBROMOMETHANE	BDL	10	ug/L
TRANS-1,4-DICHLORO-2-BUTENE	BDL	10	ug/L
DICHLORODIFLUOROMETHANE	BDL	10	ug/L
1,1-DICHLOROETHANE	BDL	5.0	ug/L
1,2-DICHLOROETHANE	BDL	5.0	ug/L
CIS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
TRANS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
1,1-DICHLOROETHENE	BDL	5.0	ug/L
1,2-DICHLOROPROPANE	BDL	5.0	ug/L
1,3-DICHLOROPROPANE	BDL	5.0	ug/L
1,1-DICHLOROPROPENE	BDL	5.0	ug/L
2,2-DICHLOROPROPANE	BDL	5.0	ug/L
DICHLOROMETHANE (METHYLENE CHLORIDE)	BDL	5.0	ug/L
CIS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
ETHYL BENZENE	13	5.0	ug/L
ETHYL CYANIDE (PROPIONITRILE)	BDL	5.0	ug/L
ETHYL METHACRYLATE	BDL	5.0	ug/L
2-HEXANONE	BDL	10	ug/L
IODOMETHANE	BDL	5.0	ug/L
ISOBUTANOL (ISOBUTYL ALCOHOL)	BDL	1000	ug/L
METHYL ISOBUTYL KETONE	BDL	10	ug/L
METHACRYLONITRILE	BDL	20	ug/L
METHYL ETHYL KETONE	BDL	10	ug/L
METHYL METHACRYLATE	BDL	5.0	ug/L
STYRENE	BDL	5.0	ug/L
1,1,1,2-TETRACHLOROETHANE	BDL	5.0	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5.0	ug/L
TETRACHLOROETHENE	BDL	5.0	ug/L
TOLUENE	33	5.0	ug/L
1,1,1-TRICHLOROETHANE	BDL	5.0	ug/L
1,1,2-TRICHLOROETHANE	BDL	5.0	ug/L
TRICHLOROETHENE	BDL	5.0	ug/L
TRICHLOROFLUOROMETHANE	BDL	10	ug/L

Parameter	Result	Det. Limit	Units
1,2,3-TRICHLOROPROPANE	BDL	5.0	ug/L
VINYL ACETATE	BDL	10	ug/L
VINYL CHLORIDE	BDL	2.0	ug/L
XYLENES (O/M/P-XYLENE)	25	5.0	ug/L
METHYL-T-BUTYL ETHER (MTBE)	BDL	10	ug/L
1,2,4-TRIMETHYLBENZENE	BDL	5.0	ug/L
1,3,5-TRIMETHYLBENZENE	BDL	5.0	ug/L
ISOPROPYLBENZENE (CUMENE)	BDL	10	ug/L
TETRAHYDROFURAN	58	25	ug/L
4-ISOPROPYLTOLUENE (P-ISOPROPYLTOLUENE)	BDL	10	ug/L
CHLOROBUTANE	*		ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	91		% Rec
TOLUENE-D8	91		% Rec
4-BROMOFLUOROBENZENE	100		% Rec

Dilution necessary due to high concentration of target analytes.

Note: * Compound searched for but not detected. Standard was unavailable to determine retention time and detection limit.

Prep Method SW846-5030B Purge and Trap

APPENDIX IX VOLATILE ORGANICS, CAPILLARY COLUMN TECHNIQUE SW846-8260B NELAC:Y

Analyst: H. WILLIAMS Analysis Date: 29-SEP-14 09:38 Instrument: GC/MS VOA Test: O509.3.1

Parameter	Result	Det. Limit	Units
BENZENE	1200	20	ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	102		% Rec
TOLUENE-D8	86		% Rec
4-BROMOFLUOROBENZENE	89		% Rec

1:20 Dilution.

Prep Method SW846-5030B Purge and Trap

APPENDIX IX SEMIVOLATILE ORGANICS SW846-8270C NELAC:Y

Analyst: T. PINCKERT Analysis Date: 02-OCT-14 19:11 Instrument: GC/MS SVOA Test: O508.3.0

Prep: GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P233.4.0

Parameter	Result	Det. Limit	Units
ACENAPHTHENE	BDL	10	ug/L
ACENAPHTHYLENE	BDL	10	ug/L
ACETOPHENONE	BDL	10	ug/L

Parameter	Result	Det. Limit	Units
2-ACETYLAMINOFLUORENE	BDL	10	ug/L
4-AMINOBIPHENYL	BDL	10	ug/L
ANTHRACENE	BDL	10	ug/L
BENZO(A)ANTHRACENE	BDL	10	ug/L
BENZO(B)FLUORANTHENE	BDL	10	ug/L
BENZO(K)FLUORANTHENE	BDL	10	ug/L
BENZO(G,H,I)PERYLENE	BDL	10	ug/L
BENZO(A)PYRENE	BDL	10	ug/L
BENZYL ALCOHOL	BDL	10	ug/L
BIS(2-CHLOROETHOXY)METHANE	BDL	10	ug/L
BIS(2-CHLOROETHYL)ETHER	BDL	10	ug/L
BIS(2-CHLOROISOPROPYL)ETHER	BDL	10	ug/L
BIS(2-ETHYLHEXYL)PHTHALATE	BDL	10	ug/L
4-BROMODIPHENYL ETHER	BDL	10	ug/L
(BENZYLBUTYLPHTHALATE) BUTYLBENZYLPHTHALATE	BDL	10	ug/L
4-CHLOROANILINE	BDL	10	ug/L
CHLOROBENZILATE	BDL	10	ug/L
2-CHLORONAPHTHALENE	BDL	10	ug/L
4-CHLOROPHENYL-PHENYLETHER	BDL	10	ug/L
CHRYSENE	BDL	10	ug/L
DIALLATE	BDL	10	ug/L
DIBENZ(A,H)ANTHRACENE	BDL	10	ug/L
DIBENZOFURAN	BDL	10	ug/L
DI-N-BUTYLPHTHALATE	BDL	10	ug/L
3,3'-DICHLOROBENZIDINE	BDL	20	ug/L
DIETHYLPHTHALATE	BDL	10	ug/L
DIMETHOATE	BDL	10	ug/L
4-(DIMETHYLAMINO)AZOBENZENE	BDL	10	ug/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	BDL	20	ug/L
3,3'-DIMETHYLBENZIDINE	BDL MR	20	ug/L
DIMETHYLPHTHALATE	BDL	10	ug/L
1,3-DINITROBENZENE (M-DINITROBENZENE)	BDL	50	ug/L
2,4-DINITROTOLUENE	BDL	10	ug/L
2,6-DINITROTOLUENE	BDL	10	ug/L
DI-N-OCTYLPHTHALATE	BDL	10	ug/L
DI-N-PROPYLNITROSOAMINE	BDL	50	ug/L
ETHYL METHANESULFONATE	BDL	10	ug/L
FLUORANTHENE	BDL	10	ug/L
FLUORENE	BDL	10	ug/L
HEXACHLOROBENZENE	BDL	10	ug/L
HEXACHLOROBUTADIENE	BDL	10	ug/L
HEXACHLOROCYCLOPENTADIENE	BDL	10	ug/L
HEXACHLOROETHANE	BDL	10	ug/L
HEXACHLOROPROPENE	BDL	10	ug/L

Parameter	Result	Det. Limit	Units
INDENO(1,2,3-CD)PYRENE	BDL	10	ug/L
2-METHYLNAPHTHALENE	BDL	10	ug/L
METHAPYRILENE	BDL MR	10	ug/L
3-METHYLCHOLANTHRENE	BDL	10	ug/L
METHYL METHANESULFONATE	BDL	10	ug/L
NAPHTHALENE	BDL	10	ug/L
1,4-NAPHTHOQUINONE	BDL	50	ug/L
1-NAPHTHYLAMINE	BDL	50	ug/L
2-NAPHTHYLAMINE	BDL	10	ug/L
3-NITROANILINE (M-NITROANILINE)	BDL	50	ug/L
2-NITROANILINE (O-NITROANILINE)	BDL	50	ug/L
4-NITROANILINE (P-NITROANILINE)	BDL	50	ug/L
NITROBENZENE	BDL	10	ug/L
N-NITROSODI-N-BUTYLAMINE	BDL	10	ug/L
N-NITROSODIETHYLAMINE	BDL	10	ug/L
N-NITROSODIMETHYLAMINE	BDL	10	ug/L
N-NITROSODIPHENYLAMINE	BDL	10	ug/L
N-NITROSOMETHYLETHYLAMINE	BDL	10	ug/L
N-NITROSOPIPERIDINE	BDL	10	ug/L
N-NITROSOPYRROLIDINE	BDL	10	ug/L
5-NITRO-O-TOLUIDINE	BDL	10	ug/L
PENTACHLOROBENZENE	BDL	10	ug/L
PENTACHLORONITROBENZENE	BDL	10	ug/L
PHENACETIN	BDL	10	ug/L
PHENANTHRENE	BDL	10	ug/L
PYRENE	BDL	10	ug/L
1,2,4,5-TETRACHLOROBENZENE	BDL	10	ug/L
1,2,4-TRICHLOROBENZENE	BDL	10	ug/L
THIONAZIN	BDL	10	ug/L
O,O,O-TRIETHYL PHOSPHOROTHIOATE	BDL	10	ug/L
SYM-(1,3,5)-TRINITROBENZENE	BDL	20	ug/L
O-TOLUIDINE	BDL	10	ug/L
P-PHENYLENEDIAMINE	BDL	20	ug/L
2-SEC-BUTYL-4,6-DINITROPHENOL (DINOSEB)	BDL	10	ug/L
DIPHENYLAMINE	BDL	10	ug/L
4-CHLORO-3-METHYLPHENOL	BDL	10	ug/L
2-CHLOROPHENOL	BDL	10	ug/L
2-METHYLPHENOL (O-CRESOL)	BDL	10	ug/L
4-METHYLPHENOL (P-CRESOL)	EX	10	ug/L
2,4-DICHLOROPHENOL	BDL	10	ug/L
2,6-DICHLOROPHENOL	BDL	10	ug/L
2,4-DIMETHYLPHENOL	BDL	10	ug/L
4,6-DINITRO-O-CRESOL	BDL	50	ug/L
2,4-DINITROPHENOL	BDL	50	ug/L

Parameter	Result	Det. Limit	Units
3-METHYLPHENOL (M-CRESOL)	*	10	ug/L
2-NITROPHENOL	BDL	10	ug/L
4-NITROPHENOL	BDL	50	ug/L
PENTACHLOROPHENOL	BDL	50	ug/L
PHENOL	26	10	ug/L
2,3,4,6-TETRACHLOROPHENOL	BDL	10	ug/L
2,4,5-TRICHLOROPHENOL	BDL	10	ug/L
2,4,6-TRICHLOROPHENOL	BDL	10	ug/L
DISULFOTON	BDL	10	ug/L
FAMPHUR	BDL MR	200	ug/L
ISODRIN	BDL	10	ug/L
ISOPHORONE	BDL	10	ug/L
ISOSAFROLE	BDL	10	ug/L
KEPONE	BDL MR	200	ug/L
PARATHION	BDL	10	ug/L
METHYL PARATHION	BDL	10	ug/L
PHORATE	BDL	10	ug/L
PRONAMIDE	BDL	10	ug/L
SAFROLE	BDL	10	ug/L
...			
SURROGATE RECOVERY			

2-FLUOROPHENOL	49		% Rec
PHENOL-D5	29		% Rec
NITROBENZENE-D5	94		% Rec
2-FLUOROBIPHENYL	87		% Rec
2,4,6-TRIBROMOPHENOL	104		% Rec
TERPHENYL-D14	64		% Rec

NOTE: 3-Methylphenol and 4-Methylphenol co-elute.

APPENDIX IX SEMIVOLATILE ORGANICS SW846-8270C NELAC:Y

Analyst: T. PINCKERT Analysis Date: 03-OCT-14 17:51 Instrument: GC/MS SVOA Test: O508.3.1

Prep: GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P233.4.0

Parameter	Result	Det. Limit	Units
4-METHYLPHENOL (P-CRESOL)	240	100	ug/L
3-METHYLPHENOL (M-CRESOL)	*	100	ug/L
...			
SURROGATE RECOVERY			

2-FLUOROPHENOL	52		% Rec
PHENOL-D5	29		% Rec
NITROBENZENE-D5	118		% Rec
2-FLUOROBIPHENYL	109		% Rec
2,4,6-TRIBROMOPHENOL	110		% Rec

Parameter	Result	Det. Limit	Units
TERPHENYL-D14	101		% Rec

1:10 Dilution

NOTE: 3-Methylphenol and 4-Methylphenol co-elute.

GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

Analyst: J. MINNIEAR, II Analysis Date: 01-OCT-14 Instrument: PREP Test: P233.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	1		mL

ORGANOCHLORINE PESTICIDES BY GC:ECD SW846-8081 NELAC:Y

Analyst: T. WATSON Analysis Date: 29-SEP-14 20:47 Instrument: GC/ECD Test: O164.1.0

Prep: GC PESTICIDE SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P233.1.0

Parameter	Result	Det. Limit	Units
ALPHA-BHC	BDL	0.05	ug/L
BETA-BHC	BDL	0.05	ug/L
DELTA-BHC	BDL	0.05	ug/L
GAMMA-BHC (LINDANE)	BDL	0.05	ug/L
HEPTACHLOR	BDL	0.05	ug/L
ALDRIN	BDL	0.05	ug/L
HEPTACHLOR EPOXIDE	BDL	0.05	ug/L
ENDOSULFAN I	BDL	0.05	ug/L
DIELDRIN	BDL	0.1	ug/L
4,4'-DDE	BDL	0.1	ug/L
ENDRIN	BDL	0.1	ug/L
ENDOSULFAN II	BDL	0.1	ug/L
4,4'-DDD	BDL	0.1	ug/L
ENDOSULFAN SULFATE	BDL	0.1	ug/L
4,4'-DDT	BDL	0.1	ug/L
METHOXYCHLOR	BDL	0.5	ug/L
ENDRIN ALDEHYDE	BDL	0.1	ug/L
ALPHA-CHLORDANE	BDL	0.5	ug/L
GAMMA-CHLORDANE	BDL	0.5	ug/L
CHLORDANE	BDL	0.5	ug/L
TOXAPHENE	BDL	1	ug/L
...			
SURROGATE RECOVERY			

DECACHLOROBIPHENYL (DCB)	102.0		% Rec

Matrix interference may mask low level analytes.

GC PESTICIDE SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

Analyst: K. VEST | Analysis Date: 29-SEP-14 | Instrument: PREP | Test: P233.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	5		mL

CYANIDE, TOTAL (AUTOMATED) SW846-9012B NELAC:Y

Analyst: E. SKALA | Analysis Date: 02-OCT-14 14:40 | Instrument: AUTO-ANALYZER | Test: G101.4.0

Prep: CYANIDE DISTILLATION SW846-9012B P101.4.0

Parameter	Result	Det. Limit	Units
CYANIDE	BDL	0.005	mg/L

CYANIDE DISTILLATION SW846-9012B

Analyst: E. SKALA | Analysis Date: 02-OCT-14 10:20 | Instrument: PREP | Test: P101.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	6		mL
FINAL VOLUME	6		mL

CHLORINATED HERBICIDES (2,4 D, SILVEX AND 2,4,5-T) SW846-8151A NELAC:Y

Analyst: B. WOOD | Analysis Date: 29-SEP-14 17:52 | Instrument: GC/ECD | Test: O253.1.0

Prep: DIAZOMETHANE HERBICIDE DERIVATIZATION SW846-8151A P201.4.0

Parameter	Result	Det. Limit	Units
2,4-DICHLOROPHENOXYACETIC ACID	BDL	10	ug/L
SILVEX (2,4,5-TP)	BDL	1	ug/L
2,4,5-TRICHLOROPHENOXYACETIC ACID (2,4,5-T)	BDL	1	ug/L
...			
SURROGATE RECOVERY			

DCAA	121.7		% Rec

Matrix interference may mask low level analytes.

DIAZOMETHANE HERBICIDE DERIVATIZATION SW846-8151A

Analyst: T. DAHN | Analysis Date: 29-SEP-14 | Instrument: PREP | Test: P201.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	10		mL

PCB AROCLORS BY GAS CHROMATOGRAPHY/ECD SW846-8082A NELAC:Y

Analyst: C. HIPSKIND | Analysis Date: 29-SEP-14 14:40 | Instrument: GC/ECD | Test: O301.7.0

Prep: PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P230.1.0

Parameter	Result	Det. Limit	Units
PCB AROCLOR 1016	BDL	0.10	ug/L
PCB AROCLOR 1221	BDL	0.10	ug/L
PCB AROCLOR 1232	BDL	0.10	ug/L

Parameter	Result	Det. Limit	Units
PCB AROCLOR 1242	BDL	0.10	ug/L
PCB AROCLOR 1248	BDL	0.10	ug/L
PCB AROCLOR 1254	BDL	0.10	ug/L
PCB AROCLOR 1260	BDL	0.10	ug/L
...			
SURROGATE RECOVERY			

DECACHLOROBIPHENYL (DCB)	102.0		% Rec

PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

Analyst: K. VEST | Analysis Date: 29-SEP-14 | Instrument: PREP | Test: P230.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	5		mL

SULFIDE, IODOMETRIC METHOD SM4500-S F 2000 NELAC:N

Analyst: S. MCNEAL | Analysis Date: 29-SEP-14 07:30 | Test: G110.1.0

Parameter	Result	Det. Limit	Units
SULFIDE	BDL	1.0	mg/L

ALKALINITY TOTAL (AUTOMATED) EPA 310.2 NELAC:N

Analyst: E. SKALA | Analysis Date: 06-OCT-14 11:31 | Instrument: AUTO-ANALYZER | Test: G605.3.0

Parameter	Result	Det. Limit	Units
ALKALINITY	690	50	mg/L

1:5 Dilution.

ALKALINITY BICARBONATE (AUTOMATED) EPA 310.2 NELAC:N

Analyst: E. SKALA | Analysis Date: 06-OCT-14 11:31 | Instrument: AUTO-ANALYZER | Test: G610.3.0

Parameter	Result	Det. Limit	Units
ALKALINITY, BICARBONATE	690	50	mg/L

1:5 Dilution.

ALKALINITY CARBONATE (AUTOMATED) EPA 310.2 NELAC:N

Analyst: E. SKALA | Analysis Date: 06-OCT-14 11:31 | Instrument: AUTO-ANALYZER | Test: G611.3.0

Parameter	Result	Det. Limit	Units
ALKALINITY, CARBONATE	BDL	10	mg/L

POTASSIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER | Analysis Date: 01-OCT-14 03:17 | Instrument: ICP | Test: M126.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
POTASSIUM	26000	100	ug/L

Sample Comments

* See Note for Parameter
BDL Below Detection Limit
EX Exceeds calibration range. See Replicate
MR Initial Calibration > 15 % RSD

Sample was received on ice at temperature 2.4 C.
Sample chain of custody number 1804343.

This Certificate shall not be reproduced, except in full, without the written approval of the lab. The sample results relate only to the analytes of interest tested or to the sample as received by the lab. Pace Analytical Services, INC. certifies that the test results indicated as NELAP (National Environmental Laboratory Accreditation Program) accredited (Yes for NELAP) meet all requirements of NELAP and Kansas (KDHE) unless otherwise explained or justified as to the the exact nature of the deviations.
KS ELAP / NELAP Accreditation # E-10177 Indiana SDWA C-49-01

Approved by: CHRISTINE SARKAN 13-OCT-14

Pace Analytical
Pace Analytical Services, Inc.

CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
PACE ANALYTICAL SERVICES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	26-SEP-14	AA28616
	Completed 15-OCT-14	PO Number NEED PO
	Printed 15-OCT-14	Sampled 24-SEP-14 14:06

Report To	Bill To
JON WILKINSON HERST AND ASSOCIATES 4630 SOUTH HIGHWAY 94 NORTH OUTER ROAD ST. CHARLES, MO 63304	DAVE VASBINDER ALLIED WASTE SYSTEMS 13570 ST. CHARLES ROCK ROAD BRIDGETON, MO 63044

Sample Description

CLIENT ID: PZ-104-SS
MATRIX TYPE: NON-SPECIFIC WATER
SUBMITTER: 8945 - MO-ALLIED-BRIDGETON LANDFILL
PROJECT NAME: GROUNDWATER - BRIDGETON LANDFILL
DATA PACKAGE #: 66865
LOCATION: BRIDGETON LANDFILL
DESCRIPTION: APPENDIX I/II TESTING - ADDITIONAL VOLS

GROUNDWATER MONITORING WELL DATA SAS

Analysis Date: 24-SEP-14 14:06 Instrument: FIELD Test: G600.0.0

Parameter	Result	Det. Limit	Units
TOTAL WELL DEPTH	140.29		ft
INITIAL WATER LEVEL	20.43		ft
ELEVATION OF GROUNDWATER SURFACE	463.20		Feet/MSL

FIELD TEMPERATURE SM2550 B 2000 NELAC:N

Analysis Date: 24-SEP-14 14:06 Instrument: FIELD Test: G603.1.0

Parameter	Result	Det. Limit	Units
TEMPERATURE	25.8		Degrees C

FIELD PH (AQUEOUS) SW846-9040C NELAC:Y

Analysis Date: 24-SEP-14 14:06 Instrument: FIELD Test: G607.0.0

Parameter	Result	Det. Limit	Units
PH	6.51	0.1	Std. Units

FIELD SPECIFIC CONDUCTANCE SW846-9050A NELAC:Y

Analysis Date: 24-SEP-14 14:06 Instrument: FIELD Test: G604.0.0

Parameter	Result	Det. Limit	Units
CONDUCTIVITY	808	1.0	umHOS/cm

FIELD TURBIDITY EPA 180.1 NELAC:Y

Analysis Date: 24-SEP-14 14:06 Instrument: FIELD Test: G602.0.0

Parameter	Result	Det. Limit	Units
TURBIDITY	1.52		ntu

HARDNESS SM2340 B 1997 NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:20 Instrument: ICP Test: G608.0.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
HARDNESS	380	1.0	mg CaCO3/L

ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P129.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A

Analyst: K. KAMARA Analysis Date: 30-SEP-14 09:00 Instrument: PREP Test: P130.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	50		mL
FINAL VOLUME	50		mL

BARIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:20 Instrument: ICP Test: M104.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BARIUM	96	10	ug/L

BERYLLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:24 Instrument: ICP/MS Test: V105.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
BERYLLIUM	BDL	2.0	ug/L

1:5 Dilution.

BORON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:20 Instrument: ICP Test: M107.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
BORON	120	100	ug/L

CALCIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:20 Instrument: ICP Test: M109.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units

Parameter	Result	Det. Limit	Units
CALCIUM	80000	100	ug/L

CHROMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:24 Instrument: ICP/MS Test: V110.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CHROMIUM	BDL	5.0	ug/L

1:5 Dilution.

COBALT ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:20 Instrument: ICP Test: M111.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
COBALT	BDL	5.0	ug/L

COPPER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:24 Instrument: ICP/MS Test: V112.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
COPPER	BDL	5.0	ug/L

1:5 Dilution.

IRON ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:20 Instrument: ICP Test: M115.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
IRON	240	20	ug/L

MAGNESIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:20 Instrument: ICP Test: M118.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MAGNESIUM	45000	100	ug/L

MANGANESE ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:20 Instrument: ICP Test: M119.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
MANGANESE	32	5.0	ug/L

NICKEL ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:20 Instrument: ICP Test: M122.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
NICKEL	BDL	10	ug/L

SILVER ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:24 Instrument: ICP/MS Test: V130.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SILVER	BDL	5.0	ug/L

1:5 Dilution.

SODIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:20 Instrument: ICP Test: M131.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
SODIUM	12000	1000	ug/L

THALLIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:24 Instrument: ICP/MS Test: V134.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
THALLIUM	BDL	2.0	ug/L

1:5 Dilution.

TIN ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:20 Instrument: ICP Test: M135.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
TIN	BDL	50	ug/L

VANADIUM ICP SW846-6010B NELAC:N

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:20 Instrument: ICP Test: M138.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
VANADIUM	BDL	10	ug/L

ZINC ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:20 Instrument: ICP Test: M139.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
ZINC	BDL	20	ug/L

ARSENIC ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:24 Instrument: ICP/MS Test: V103.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ARSENIC	BDL	5.0	ug/L

1:5 Dilution.

CADMIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:24 Instrument: ICP/MS Test: V108.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
CADMIUM	BDL	0.20	ug/L

1:5 Dilution.

LEAD ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:24 Instrument: ICP/MS Test: V116.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
LEAD	BDL	5.0	ug/L

1:5 Dilution.

ANTIMONY ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:24 Instrument: ICP/MS Test: V102.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
ANTIMONY	BDL	5.0	ug/L

1:5 Dilution.

SELENIUM ICP/MS SW846-6020 NELAC:Y

Analyst: C. WILLHITE Analysis Date: 02-OCT-14 00:24 Instrument: ICP/MS Test: V128.3.0

Prep: ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE EPA 200.2 REV. 2.8 P129.4.0

Parameter	Result	Det. Limit	Units
SELENIUM	BDL	5.0	ug/L

1:5 Dilution.

MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 08:00 Instrument: PREP Test: P131.6.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	40		mL
FINAL VOLUME	40		mL

MERCURY CVAA SW846-7470A NELAC:Y

Analyst: S. O'NEAL Analysis Date: 02-OCT-14 21:11 Instrument: CVAA Test: M120.1.0

Prep: MERCURY CVAA ACID DIGESTION OF AQUEOUS SAMPLES SW846-7470A P131.6.0

Parameter	Result	Det. Limit	Units

Parameter	Result	Det. Limit	Units
MERCURY	BDL	0.20	ug/L

TOTAL DISSOLVED SOLIDS SM2540 C 1997 NELAC:Y

Analyst: C. ANYANWUTAKU Analysis Date: 01-OCT-14 14:00 Test: G402.9.0

Parameter	Result	Det. Limit	Units
DISSOLVED SOLIDS	460	10	mg/L

CHLORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 29-SEP-14 23:58 Instrument: IC Test: G310.2.0

Parameter	Result	Det. Limit	Units
CHLORIDE	4.1	3.0	mg/L

FLUORIDE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 30-SEP-14 20:03 Instrument: IC Test: G310.1.0

Parameter	Result	Det. Limit	Units
FLUORIDE	0.74	0.10	mg/L

AMMONIA BY AUTOMATED PHENATE SM4500-NH3 G 1997 NELAC:Y

Analyst: C. ANYANWUTAKU Analysis Date: 13-OCT-14 12:51 Instrument: AUTO-ANALYZER Test: G204.6.0

Parameter	Result	Det. Limit	Units
NITROGEN, AMMONIA	0.18	0.10	mg/L

NITROGEN, NITRATE-NITRITE EPA 353.2 REV. 2.0 (1993) NELAC:Y

Analyst: C. ANYANWUTAKU Analysis Date: 10-OCT-14 12:15 Instrument: AUTO-ANALYZER Test: G113.3.0

Parameter	Result	Det. Limit	Units
NITROGEN, NITRATE-NITRITE	BDL	0.10	mg/L

PHOSPHORUS, TOTAL (AUTOMATED) EPA 365.1 REV. 2.0 (1993) NELAC:Y

Analyst: E. SKALA Analysis Date: 02-OCT-14 08:36 Instrument: AUTO-ANALYZER Test: G207.2.0

Parameter	Result	Det. Limit	Units
PHOSPHORUS	BDL	0.05	mg/L

SULFATE BY ION CHROMATOGRAPHY SW846-9056 NELAC:Y

Analyst: R. DALAL Analysis Date: 29-SEP-14 23:58 Instrument: IC Test: G310.7.0

Parameter	Result	Det. Limit	Units
SULFATE	7.9	2.0	mg/L

CHEMICAL OXYGEN DEMAND (COLORIMETRIC) EPA 410.4 REV. 2.0 (1993) NELAC:Y

Analyst: B. LEDFORD Analysis Date: 02-OCT-14 11:00 Test: G301.1.0

Parameter	Result	Det. Limit	Units
CHEMICAL OXYGEN DEMAND	28	10	mg/L

TOTAL ORGANIC CARBON SW846-9060A NELAC:Y

Analyst: D. DICKERSON Analysis Date: 02-OCT-14 09:47 Instrument: TOC Test: O401.0.0

Parameter	Result	Det. Limit	Units
TOTAL ORGANIC CARBON (TOC)	23	5.0	mg/L

1:5 Dilution.

APPENDIX IX VOLATILE ORGANICS, CAPILLARY COLUMN TECHNIQUE SW846-8260B NELAC:Y

Analyst: H. WILLIAMS Analysis Date: 28-SEP-14 14:46 Instrument: GC/MS VOA Test: O509.3.0

Parameter	Result	Det. Limit	Units
ACETONE	BDL	10	ug/L
ACETONITRILE	BDL	50	ug/L
ACROLEIN	BDL	50	ug/L
ACRYLONITRILE	BDL	100	ug/L
BENZENE	EX	5.0	ug/L
BROMODICHLOROMETHANE	BDL	5.0	ug/L
BROMOCHLOROMETHANE	BDL	5.0	ug/L
BROMOFORM	BDL	5.0	ug/L
BROMOMETHANE	BDL	10	ug/L
CARBON DISULFIDE	BDL	10	ug/L
CARBON TETRACHLORIDE	BDL	5.0	ug/L
CHLOROBENZENE	BDL	5.0	ug/L
CHLORODIBROMOMETHANE	BDL	5.0	ug/L
1,2-DICHLOROBENZENE (O-DICHLOROBENZENE)	BDL	5.0	ug/L
1,3-DICHLOROBENZENE (M-DICHLOROBENZENE)	BDL	5.0	ug/L
1,4-DICHLOROBENZENE (P-DICHLOROBENZENE)	5.5	5.0	ug/L
CHLOROETHANE	BDL	10	ug/L
2-CHLORO-1,3-BUTADIENE (CHLOROPRENE)	BDL	5.0	ug/L
CHLOROFORM	BDL	5.0	ug/L
CHLOROMETHANE	BDL	10	ug/L
1,2-DIBROMO-3-CHLOROPROPANE (DBCP)	BDL	5.0	ug/L
3-CHLOROPROPENE (ALLYL CHLORIDE)	BDL	10	ug/L
1,2-DIBROMOETHANE (EDB)	BDL	5.0	ug/L
DIBROMOMETHANE	BDL	10	ug/L
TRANS-1,4-DICHLORO-2-BUTENE	BDL	10	ug/L
DICHLORODIFLUOROMETHANE	BDL	10	ug/L
1,1-DICHLOROETHANE	BDL	5.0	ug/L
1,2-DICHLOROETHANE	BDL QC-	5.0	ug/L
CIS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
TRANS-1,2-DICHLOROETHENE	BDL	5.0	ug/L
1,1-DICHLOROETHENE	BDL	5.0	ug/L
1,2-DICHLOROPROPANE	BDL	5.0	ug/L
1,3-DICHLOROPROPANE	BDL	5.0	ug/L
1,1-DICHLOROPROPENE	BDL	5.0	ug/L
2,2-DICHLOROPROPANE	BDL	5.0	ug/L

Parameter	Result	Det. Limit	Units
DICHLOROMETHANE (METHYLENE CHLORIDE)	BDL	5.0	ug/L
CIS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
TRANS-1,3-DICHLOROPROPENE	BDL	5.0	ug/L
ETHYL BENZENE	29	5.0	ug/L
ETHYL CYANIDE (PROPIONITRILE)	BDL	5.0	ug/L
ETHYL METHACRYLATE	BDL	5.0	ug/L
2-HEXANONE	BDL	10	ug/L
IODOMETHANE	BDL	5.0	ug/L
ISOBUTANOL (ISOBUTYL ALCOHOL)	BDL	1000	ug/L
METHYL ISOBUTYL KETONE	BDL	10	ug/L
METHACRYLONITRILE	BDL	20	ug/L
METHYL ETHYL KETONE	BDL	10	ug/L
METHYL METHACRYLATE	BDL	5.0	ug/L
STYRENE	BDL	5.0	ug/L
1,1,1,2-TETRACHLOROETHANE	BDL	5.0	ug/L
1,1,2,2-TETRACHLOROETHANE	BDL	5.0	ug/L
TETRACHLOROETHENE	BDL	5.0	ug/L
TOLUENE	EX	5.0	ug/L
1,1,1-TRICHLOROETHANE	BDL	5.0	ug/L
1,1,2-TRICHLOROETHANE	BDL	5.0	ug/L
TRICHLOROETHENE	BDL	5.0	ug/L
TRICHLOROFLUOROMETHANE	BDL	10	ug/L
1,2,3-TRICHLOROPROPANE	BDL	5.0	ug/L
VINYL ACETATE	BDL	10	ug/L
VINYL CHLORIDE	BDL	2.0	ug/L
XYLENES (O/M/P-XYLENE)	65	5.0	ug/L
METHYL-T-BUTYL ETHER (MTBE)	BDL	10	ug/L
1,2,4-TRIMETHYLBENZENE	6.3	5.0	ug/L
1,3,5-TRIMETHYLBENZENE	BDL	5.0	ug/L
ISOPROPYLBENZENE (CUMENE)	BDL	10	ug/L
TETRAHYDROFURAN	EX	25	ug/L
4-ISOPROPYLTOLUENE (P-ISOPROPYLTOLUENE)	10	10	ug/L
CHLOROBUTANE	*		ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	95		% Rec
TOLUENE-D8	92		% Rec
4-BROMOFLUOROBENZENE	96		% Rec

Dilution necessary due to high concentration of target analytes.

Note: * Compound searched for but not detected. Standard was unavailable to determine retention time and detection limit.

Prep Method SW846-5030B Purge and Trap

APPENDIX IX VOLATILE ORGANICS, CAPILLARY COLUMN TECHNIQUE SW846-8260B NELAC:Y

Analyst: H. WILLIAMS Analysis Date: 30-SEP-14 08:36 Instrument: GC/MS VOA Test: O509.3.1

Parameter	Result	Det. Limit	Units
TOLUENE	130	50	ug/L
BENZENE	1500	50	ug/L
TETRAHYDROFURAN	2000	700	ug/L
...			
SURROGATE RECOVERY			

DICHLOROETHANE-D4	104		% Rec
TOLUENE-D8	90		% Rec
4-BROMOFLUOROBENZENE	98		% Rec

1:50 Dilution.

Prep Method SW846-5030B Purge and Trap

APPENDIX IX SEMIVOLATILE ORGANICS SW846-8270C NELAC:Y

Analyst: T. PINCKERT Analysis Date: 02-OCT-14 19:33 Instrument: GC/MS SVOA Test: O508.3.0

Prep: GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P233.4.0

Parameter	Result	Det. Limit	Units
ACENAPHTHENE	BDL	10	ug/L
ACENAPHTHYLENE	BDL	10	ug/L
ACETOPHENONE	BDL	10	ug/L
2-ACETYLAMINOFLUORENE	BDL	10	ug/L
4-AMINOBIPHENYL	BDL	10	ug/L
ANTHRACENE	BDL	10	ug/L
BENZO(A)ANTHRACENE	BDL	10	ug/L
BENZO(B)FLUORANTHENE	BDL	10	ug/L
BENZO(K)FLUORANTHENE	BDL	10	ug/L
BENZO(G,H,I)PERYLENE	BDL	10	ug/L
BENZO(A)PYRENE	BDL	10	ug/L
BENZYL ALCOHOL	BDL	10	ug/L
BIS(2-CHLOROETHOXY)METHANE	BDL	10	ug/L
BIS(2-CHLOROETHYL)ETHER	BDL	10	ug/L
BIS(2-CHLOROISOPROPYL)ETHER	BDL	10	ug/L
BIS(2-ETHYLHEXYL)PHTHALATE	BDL	10	ug/L
4-BROMODIPHENYL ETHER	BDL	10	ug/L
(BENZYLBUTYLPHTHALATE) BUTYLBENZYLPHTHALATE	BDL	10	ug/L
4-CHLOROANILINE	BDL	10	ug/L
CHLOROBENZILATE	BDL	10	ug/L
2-CHLORONAPHTHALENE	BDL	10	ug/L
4-CHLOROPHENYL-PHENYLETHER	BDL	10	ug/L
CHRYSENE	BDL	10	ug/L
DIALLATE	BDL	10	ug/L
DIBENZ(A,H)ANTHRACENE	BDL	10	ug/L

Parameter	Result	Det. Limit	Units
DIBENZOFURAN	BDL	10	ug/L
DI-N-BUTYLPHTHALATE	BDL	10	ug/L
3,3'-DICHLOROBENZIDINE	BDL	20	ug/L
DIETHYLPHTHALATE	BDL	10	ug/L
DIMETHOATE	BDL	10	ug/L
4-(DIMETHYLAMINO)AZOBENZENE	BDL	10	ug/L
7,12-DIMETHYLBENZ(A)ANTHRACENE	BDL	20	ug/L
3,3'-DIMETHYLBENZIDINE	BDL MR	20	ug/L
DIMETHYLPHTHALATE	BDL	10	ug/L
1,3-DINITROBENZENE (M-DINITROBENZENE)	BDL	50	ug/L
2,4-DINITROTOLUENE	BDL	10	ug/L
2,6-DINITROTOLUENE	BDL	10	ug/L
DI-N-OCTYLPHTHALATE	BDL	10	ug/L
DI-N-PROPYLNITROSOAMINE	BDL	50	ug/L
ETHYL METHANESULFONATE	BDL	10	ug/L
FLUORANTHENE	BDL	10	ug/L
FLUORENE	BDL	10	ug/L
HEXACHLOROBENZENE	BDL	10	ug/L
HEXACHLOROBUTADIENE	BDL	10	ug/L
HEXACHLOROCYCLOPENTADIENE	BDL	10	ug/L
HEXACHLOROETHANE	BDL	10	ug/L
HEXACHLOROPROPENE	BDL	10	ug/L
INDENO(1,2,3-CD)PYRENE	BDL	10	ug/L
2-METHYLNAPHTHALENE	BDL	10	ug/L
METHAPYRILENE	BDL MR	10	ug/L
3-METHYLCHOLANTHRENE	BDL	10	ug/L
METHYL METHANESULFONATE	BDL	10	ug/L
NAPHTHALENE	BDL	10	ug/L
1,4-NAPHTHOQUINONE	BDL	50	ug/L
1-NAPHTHYLAMINE	BDL	50	ug/L
2-NAPHTHYLAMINE	BDL	10	ug/L
3-NITROANILINE (M-NITROANILINE)	BDL	50	ug/L
2-NITROANILINE (O-NITROANILINE)	BDL	50	ug/L
4-NITROANILINE (P-NITROANILINE)	BDL	50	ug/L
NITROBENZENE	BDL	10	ug/L
N-NITROSODI-N-BUTYLAMINE	BDL	10	ug/L
N-NITROSODIETHYLAMINE	BDL	10	ug/L
N-NITROSODIMETHYLAMINE	BDL	10	ug/L
N-NITROSODIPHENYLAMINE	BDL	10	ug/L
N-NITROSOMETHYLETHYLAMINE	BDL	10	ug/L
N-NITROSOPIPERIDINE	BDL	10	ug/L
N-NITROSOPYRROLIDINE	BDL	10	ug/L
5-NITRO-O-TOLUIDINE	BDL	10	ug/L
PENTACHLOROBENZENE	BDL	10	ug/L

Parameter	Result	Det. Limit	Units
PENTACHLORONITROBENZENE	BDL	10	ug/L
PHENACETIN	BDL	10	ug/L
PHENANTHRENE	BDL	10	ug/L
PYRENE	BDL	10	ug/L
1,2,4,5-TETRACHLOROBENZENE	BDL	10	ug/L
1,2,4-TRICHLOROBENZENE	BDL	10	ug/L
THIONAZIN	BDL	10	ug/L
O,O,O-TRIETHYL PHOSPHOROTHIOATE	BDL	10	ug/L
SYM-(1,3,5)-TRINITROBENZENE	BDL	20	ug/L
O-TOLUIDINE	BDL	10	ug/L
P-PHENYLENEDIAMINE	BDL	20	ug/L
2-SEC-BUTYL-4,6-DINITROPHENOL (DINOSEB)	BDL	10	ug/L
DIPHENYLAMINE	BDL	10	ug/L
4-CHLORO-3-METHYLPHENOL	BDL	10	ug/L
2-CHLOROPHENOL	BDL	10	ug/L
2-METHYLPHENOL (O-CRESOL)	BDL	10	ug/L
4-METHYLPHENOL (P-CRESOL)	BDL	10	ug/L
2,4-DICHLOROPHENOL	BDL	10	ug/L
2,6-DICHLOROPHENOL	BDL	10	ug/L
2,4-DIMETHYLPHENOL	BDL	10	ug/L
4,6-DINITRO-O-CRESOL	BDL	50	ug/L
2,4-DINITROPHENOL	BDL	50	ug/L
3-METHYLPHENOL (M-CRESOL)	BDL	10	ug/L
2-NITROPHENOL	BDL	10	ug/L
4-NITROPHENOL	BDL	50	ug/L
PENTACHLOROPHENOL	BDL	50	ug/L
PHENOL	BDL	10	ug/L
2,3,4,6-TETRACHLOROPHENOL	BDL	10	ug/L
2,4,5-TRICHLOROPHENOL	BDL	10	ug/L
2,4,6-TRICHLOROPHENOL	BDL	10	ug/L
DISULFOTON	BDL	10	ug/L
FAMPHUR	BDL MR	200	ug/L
ISODRIN	BDL	10	ug/L
ISOPHORONE	BDL	10	ug/L
ISOSAFROLE	BDL	10	ug/L
KEPONE	BDL MR	200	ug/L
PARATHION	BDL	10	ug/L
METHYL PARATHION	BDL	10	ug/L
PHORATE	BDL	10	ug/L
PRONAMIDE	BDL	10	ug/L
SAFROLE	BDL	10	ug/L
...			
SURROGATE RECOVERY			

Parameter	Result	Det. Limit	Units
2-FLUOROPHENOL	54		% Rec
PHENOL-D5	30		% Rec
NITROBENZENE-D5	98		% Rec
2-FLUOROBIPHENYL	92		% Rec
2,4,6-TRIBROMOPHENOL	106		% Rec
TERPHENYL-D14	80		% Rec

GC/MS SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

Analyst: J. MINNIEAR, II | Analysis Date: 01-OCT-14 | Instrument: PREP | Test: P233.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	1		mL

ORGANOCHLORINE PESTICIDES BY GC:ECD SW846-8081 NELAC:Y

Analyst: T. WATSON | Analysis Date: 30-SEP-14 16:45 | Instrument: GC/ECD | Test: O164.1.0

Prep: GC PESTICIDE SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P233.1.0

Parameter	Result	Det. Limit	Units
ALPHA-BHC	BDL	0.05	ug/L
BETA-BHC	BDL	0.05	ug/L
DELTA-BHC	BDL	0.05	ug/L
GAMMA-BHC (LINDANE)	BDL	0.05	ug/L
HEPTACHLOR	BDL	0.05	ug/L
ALDRIN	BDL	0.05	ug/L
HEPTACHLOR EPOXIDE	BDL	0.05	ug/L
ENDOSULFAN I	BDL	0.05	ug/L
DIELDRIN	BDL	0.1	ug/L
4,4'-DDE	BDL	0.1	ug/L
ENDRIN	BDL	0.1	ug/L
ENDOSULFAN II	BDL	0.1	ug/L
4,4'-DDD	BDL	0.1	ug/L
ENDOSULFAN SULFATE	BDL	0.1	ug/L
4,4'-DDT	BDL	0.1	ug/L
METHOXYCHLOR	BDL	0.5	ug/L
ENDRIN ALDEHYDE	BDL	0.1	ug/L
ALPHA-CHLORDANE	BDL	0.5	ug/L
GAMMA-CHLORDANE	BDL	0.5	ug/L
CHLORDANE	BDL	0.5	ug/L
TOXAPHENE	BDL	1	ug/L
...			
SURROGATE RECOVERY			
DECACHLOROBIPHENYL (DCB)	86.7		% Rec

Matrix interference may mask low level analytes.

GC PESTICIDE SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

Analyst: K. VEST | Analysis Date: 29-SEP-14 | Instrument: PREP | Test: P233.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	5		mL

CYANIDE, TOTAL (AUTOMATED) SW846-9012B NELAC:Y

Analyst: E. SKALA | Analysis Date: 02-OCT-14 14:40 | Instrument: AUTO-ANALYZER | Test: G101.4.0

Prep: CYANIDE DISTILLATION SW846-9012B P101.4.0

Parameter	Result	Det. Limit	Units
CYANIDE	BDL	0.005	mg/L

CYANIDE DISTILLATION SW846-9012B

Analyst: E. SKALA | Analysis Date: 02-OCT-14 10:20 | Instrument: PREP | Test: P101.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	6		mL
FINAL VOLUME	6		mL

CHLORINATED HERBICIDES (2,4 D, SILVEX AND 2,4,5-T) SW846-8151A NELAC:Y

Analyst: B. WOOD | Analysis Date: 29-SEP-14 17:52 | Instrument: GC/ECD | Test: O253.1.0

Prep: DIAZOMETHANE HERBICIDE DERIVATIZATION SW846-8151A P201.4.0

Parameter	Result	Det. Limit	Units
2,4-DICHLOROPHENOXYACETIC ACID	BDL	10	ug/L
SILVEX (2,4,5-TP)	BDL	1	ug/L
2,4,5-TRICHLOROPHENOXYACETIC ACID (2,4,5-T)	BDL	1	ug/L
...			
SURROGATE RECOVERY			

DCAA	106.0		% Rec

Matrix interference may mask low level analytes.

DIAZOMETHANE HERBICIDE DERIVATIZATION SW846-8151A

Analyst: T. DAHN | Analysis Date: 29-SEP-14 | Instrument: PREP | Test: P201.4.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	10		mL

PCB AROCLORS BY GAS CHROMATOGRAPHY/ECD SW846-8082A NELAC:Y

Analyst: C. HIPSKIND | Analysis Date: 29-SEP-14 14:40 | Instrument: GC/ECD | Test: O301.7.0

Prep: PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C P230.1.0

Parameter	Result	Det. Limit	Units
PCB AROCLOR 1016	BDL	0.10	ug/L
PCB AROCLOR 1221	0.18	0.10	ug/L
PCB AROCLOR 1232	BDL	0.10	ug/L

Parameter	Result	Det. Limit	Units
PCB AROCLOR 1242	BDL	0.10	ug/L
PCB AROCLOR 1248	BDL	0.10	ug/L
PCB AROCLOR 1254	BDL	0.10	ug/L
PCB AROCLOR 1260	BDL	0.10	ug/L
...			
SURROGATE RECOVERY			

DECACHLOROBIPHENYL (DCB)	89.0		% Rec

Aroclor pattern is degraded.

Matrix interference may mask low level analytes.

Sample required additional cleanup.

PCB SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION SW846-3510C

Analyst: K. VEST | Analysis Date: 29-SEP-14 | Instrument: PREP | Test: P230.1.0

Parameter	Result	Det. Limit	Units
INITIAL WEIGHT OR VOLUME	1000		mL
FINAL VOLUME	5		mL

SULFIDE, IODOMETRIC METHOD SM4500-S F 2000 NELAC:N

Analyst: S. MCNEAL | Analysis Date: 29-SEP-14 07:30 | Test: G110.1.0

Parameter	Result	Det. Limit	Units
SULFIDE	3.1	1.0	mg/L

ALKALINITY TOTAL (AUTOMATED) EPA 310.2 NELAC:N

Analyst: E. SKALA | Analysis Date: 06-OCT-14 11:31 | Instrument: AUTO-ANALYZER | Test: G605.3.0

Parameter	Result	Det. Limit	Units
ALKALINITY	460	50	mg/L

1:5 Dilution.

ALKALINITY BICARBONATE (AUTOMATED) EPA 310.2 NELAC:N

Analyst: E. SKALA | Analysis Date: 06-OCT-14 11:31 | Instrument: AUTO-ANALYZER | Test: G610.3.0

Parameter	Result	Det. Limit	Units
ALKALINITY, BICARBONATE	460	50	mg/L

1:5 Dilution.

ALKALINITY CARBONATE (AUTOMATED) EPA 310.2 NELAC:N

Analyst: E. SKALA | Analysis Date: 06-OCT-14 11:31 | Instrument: AUTO-ANALYZER | Test: G611.3.0

Parameter	Result	Det. Limit	Units
ALKALINITY, CARBONATE	BDL	10	mg/L

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Pace Analytical Services, Inc.

Sample ID: AA28616 PZ-104-SS

POTASSIUM ICP SW846-6010B NELAC:Y

Analyst: J. KRAMER Analysis Date: 01-OCT-14 03:20 Instrument: ICP Test: M126.3.0

Prep: FAA/ ICP ACID DIGESTION OF AQUEOUS SAMPLES, TOTAL RECOVERABLE SW846-3005A P130.4.0

Parameter	Result	Det. Limit	Units
POTASSIUM	2000	100	ug/L

Sample Comments

* See Note for Parameter
BDL Below Detection Limit
EX Exceeds calibration range. See Replicate
MR Initial Calibration > 15 % RSD
QC- Estimated due to Low QC Recovery

Sample was received on ice at temperature 2.4 C.
Sample chain of custody number 1804343.

This Certificate shall not be reproduced, except in full, without the written approval of the lab. The sample results relate only to the analytes of interest tested or to the sample as received by the lab. Pace Analytical Services, INC. certifies that the test results indicated as NELAP (National Environmental Laboratory Accreditation Program) accredited (Yes for NELAP) meet all requirements of NELAP and Kansas (KDHE) unless otherwise explained or justified as to the the exact nature of the deviations.
KS ELAP / NELAP Accreditation # E-10177 Indiana SDWA C-49-01

Approved by: CHRISTINE SARKAN 15-OCT-14

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CERTIFICATE OF ANALYSIS

Service Location	Received	Lab ID
PACE ANALYTICAL SERVICES, INC. 7901 W. MORRIS ST. INDIANAPOLIS, IN 46231 (317)243-8304	26-SEP-14	AA28617
	Completed 10-OCT-14	PO Number NEED PO
	Printed 15-OCT-14	Sampled 24-SEP-14 14:49

Report To	Bill To
JON WILKINSON HERST AND ASSOCIATES 4630 SOUTH HIGHWAY 94 NORTH OUTER ROAD ST. CHARLES, MO 63304	DAVE VASBINDER ALLIED WASTE SYSTEMS 13570 ST. CHARLES ROCK ROAD BRIDGETON, MO 63044

Sample Description

CLIENT ID: PZ-104-KS
MATRIX TYPE: NON-SPECIFIC WATER
SUBMITTER: 8945 - MO-ALLIED-BRIDGETON LANDFILL
PROJECT NAME: GROUNDWATER - BRIDGETON LANDFILL
DATA PACKAGE #: 66865
LOCATION: BRIDGETON LANDFILL
DESCRIPTION: APPENDIX I/II TESTING - ADDITIONAL VOLS/NO INORG

GROUNDWATER MONITORING WELL DATA SAS

Analysis Date: 24-SEP-14 14:49 Instrument: FIELD Test: G600.0.0

Parameter	Result	Det. Limit	Units
TOTAL WELL DEPTH	93.21		ft
INITIAL WATER LEVEL	17.64		ft
ELEVATION OF GROUNDWATER SURFACE	466.31		Feet/MSL

FIELD TEMPERATURE SM2550 B 2000 NELAC:N

Analysis Date: 24-SEP-14 14:49 Instrument: FIELD Test: G603.1.0

Parameter	Result	Det. Limit	Units
TEMPERATURE	21.7		Degrees C

FIELD PH (AQUEOUS) SW846-9040C NELAC:Y

Analysis Date: 24-SEP-14 14:49 Instrument: FIELD Test: G607.0.0

Parameter	Result	Det. Limit	Units
PH	7.15	0.1	Std. Units

FIELD SPECIFIC CONDUCTANCE SW846-9050A NELAC:Y

Analysis Date: 24-SEP-14 14:49 Instrument: FIELD Test: G604.0.0

Parameter	Result	Det. Limit	Units
CONDUCTIVITY	767	1.0	umHOS/cm

FIELD TURBIDITY EPA 180.1 NELAC:Y

Analysis Date: 24-SEP-14 14:49 Instrument: FIELD Test: G602.0.0