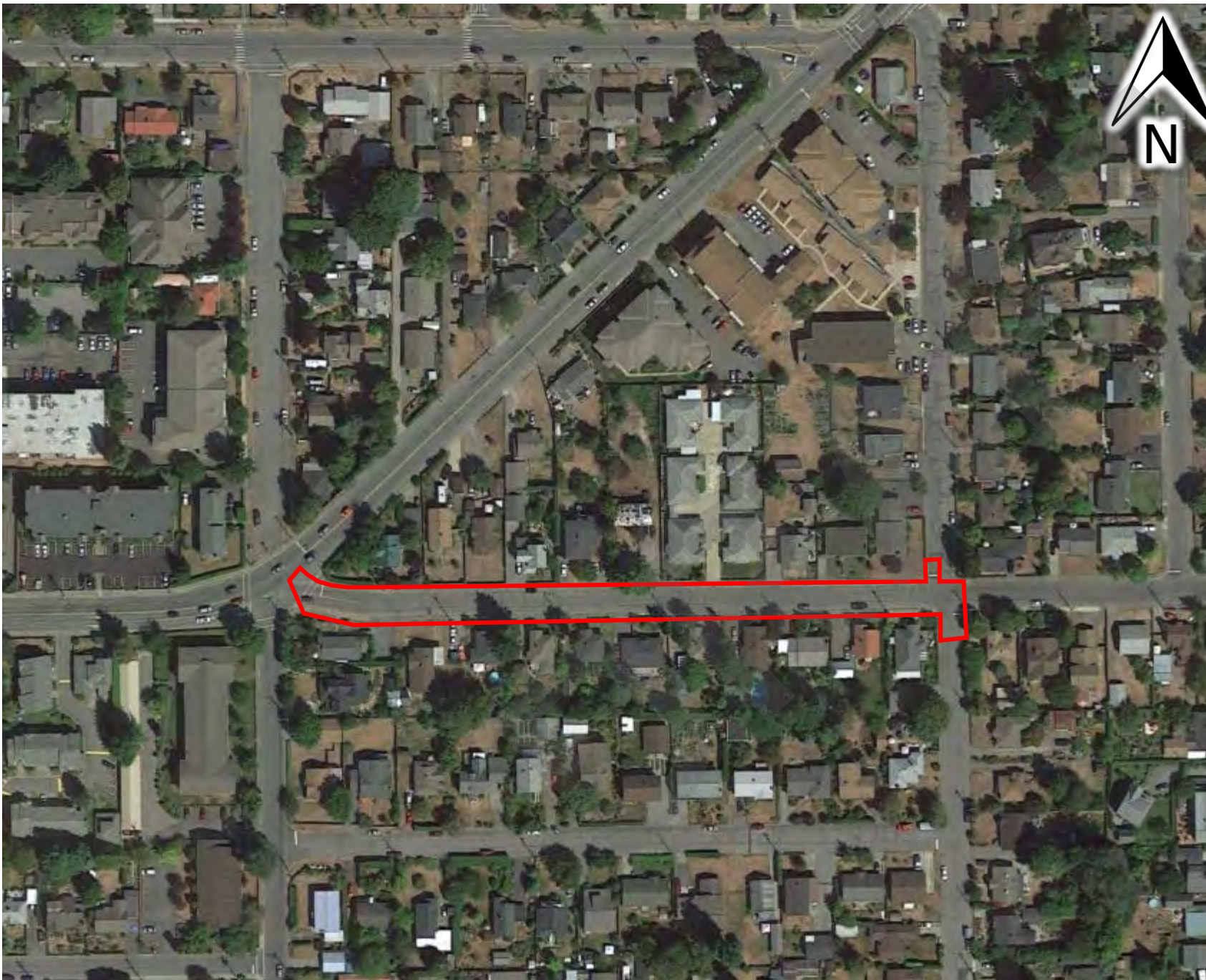


APPENDIX A – AERIAL PHOTOGRAPHS

DRAFT



Photograph Reference: Google Earth
Photograph Year: 2023
Interpreted by: SM
Reviewed by: VA

For ease of reference the Site has been outlined in red.

The Site: Observations were similar to 2012.

The Surrounding Area: Observations were similar to 2012.



Photograph Reference: Google Earth
Photograph Year: 2012
Interpreted by: SM
Reviewed by: VA

For ease of reference the Site has been outlined in red.

The Site: Observations were similar to 2006.

The Surrounding Area: Observations were similar to 2006.



Photograph Reference: Google Earth
Photograph Year: 2006
Interpreted by: SM
Reviewed by: VA

For ease of reference the Site has been outlined in red.

The Site: Observations were similar to 1998.

The Surrounding Area: Observations were similar to 1998.

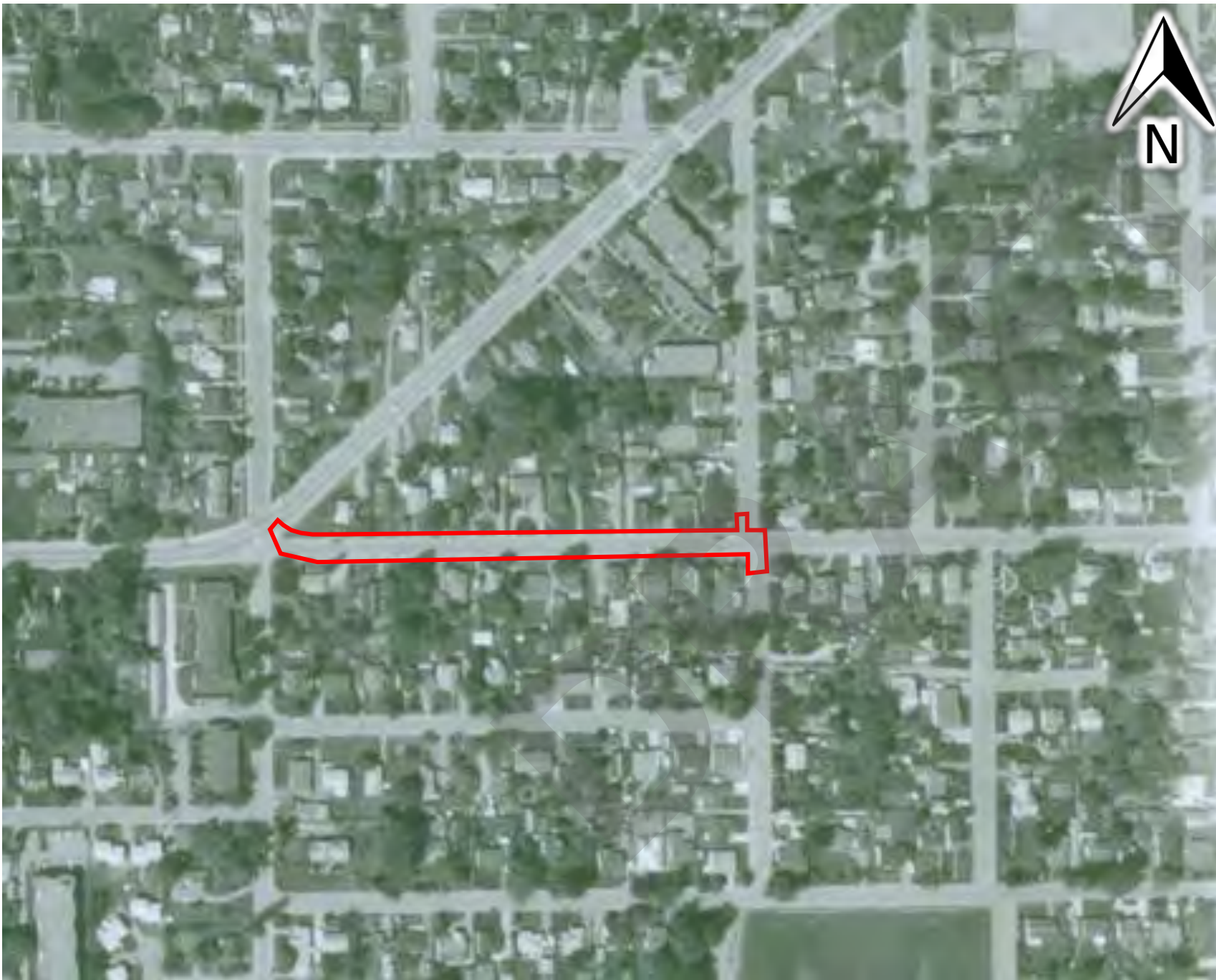


Photograph Reference: 30BCC98036NO66
Photograph Year: 1998
Interpreted by: SM
Reviewed by: VA

For ease of reference the Site has been outlined in red.

The Site: Observations were similar to 1986.

The Surrounding Area: Further residential development was observed.



Photograph Reference: 30BCC394NO138
Photograph Year: 1986
Interpreted by: SM
Reviewed by: VA

For ease of reference the Site has been outlined in red.

The Site: Observations were similar to 1975.

The Surrounding Area: Observations were similar to 1975.



Photograph Reference: BC5647-068
Photograph Year: 1975
Interpreted by: SM
Reviewed by: VA

For ease of reference the Site has been outlined in red.

The Site: Observations were similar to 1962.

The Surrounding Area: Day Road was completed and connected to Trunk Road northeast of the Site. Further residential development was evident. The large residential complex on the corner of Trunk Road and McKinstry Road was constructed.



Photograph Reference: BC5057;50

Photograph Year: 1962

Interpreted by: SM

Reviewed by: VA

For ease of reference the Site has been outlined in red.

The Site: Observations were similar to 1956.

The Surrounding Area: Further residential development surrounding the Site was observed. Watson Street appeared to be completed connecting McKinstry Street and Day Road south of the Site.



Photograph Reference: BC2082;69
Photograph Year: 1956
Interpreted by: SM
Reviewed by: VA

For ease of reference the Site has been outlined in red.

The Site: A clearing for the current Day Road on the northeast boundary of the Site appeared visible.

The Surrounding Area: Further residential development surrounding the Site was observed.



Photograph Reference: BC;246;75

Photograph Year: 1946

Interpreted by: SM

Reviewed by: VA

For ease of reference the Site has been outlined in red.

The Site: Marchmont Road was visible.

The Surrounding Area: Trunk Road was constructed west and north of the Site. Day Road was partially constructed on the east boundary south of the Site. Watson Street was partially constructed south of the Site. The surrounding area appeared primarily residential and treed. McAdam Park was visible southeast of the Site.

APPENDIX B – SELECT SITE PHOTOGRAPHS

DRAFT



Photograph 1: Utility locating activities on Marchmont Rd at Day Rd.



Photograph 2: View of TH23-02; typical view of hydrovac test hole from surface.



Photograph 3: View of asphalt fill material encountered at TH23-03.



Photograph 4: Typical view of soils encountered from 0.3-1.8mbs.



Photograph 5: View of Hydroforce sawing through the asphalt at location TH23-03.



Photograph 6: View of TH23-01 with uniform sand from approximately 0.3 to 1.8m.

APPENDIX C – ANALYTICAL TABLES

DRAFT

Laboratory: ALS	Units	DL	BC CSR Schedule 3.1 Parts 1, 2 and 3 Industrial Land Use (IL) ¹							TH23-01A	TH23-02A	TH23-02B	TH23-03A	DUP-A	TH23-03B	TH23-04A	TH23-04B	
Sample Collection Date			Intake of Contaminated Soil ²	Drinking Water ³	Toxicity to soil invertebrates and plants ⁴	GW Flow to SW Freshwater Aquatic Life ⁵	GW Flow to SW Marine Aquatic Life ⁶	Human Health Soil ⁷	Ecological Health Soil ⁸	16-Jun-23	16-Jun-23	16-Jun-23	16-Jun-23	16-Jun-23	16-Jun-23	16-Jun-23	16-Jun-23	
Lab Work Order			VA23B3748-001	VA23B3748-003	VA23B3748-004	VA23B3748-005	VA23B3748-009	VA23B3748-006	VA23B3748-007	VA23B3748-008	Soil	Soil	Soil	Soil	BFD of TH23-03A	Soil	Soil	Soil
Analyte			Soil	Soil	Soil	Soil	BFD of TH23-03A	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sample Collection Depth	m	-	-	-	-	-	-	-	0.3-0.6	0.3-0.6	1.2-1.5	0.3-0.6	0.3-0.6	1.2-1.5	0.3-0.6	1.2-1.5		
PID readings	ppm	-	-	-	-	-	-	-	0.4	0.7	0.2	0.2	0.2	0.1	0.2	0.1		
Moisture	%	0.25	-	-	-	-	-	-	14.4	8.89	-	8.59	9.48	6.18	6.1	7.41		
pH (Lab)	pH	0.1	-	-	-	-	-	-	6.2	6.69	-	6.27	5.68	-	-	7.39		
Metals:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Aluminum	ug/g	50	-	-	-	-	250,000	-	29,400	21,900	-	22,500	23,900	-	-	19,700		
Antimony	ug/g	0.1	-	-	-	-	40,000	40	0.23	0.16	-	0.22	0.19	-	-	0.17		
Arsenic	ug/g	0.1	400	10	40	10	-	-	5.05	3.8	-	4.42	4.36	-	-	4.94		
Barium	ug/g	0.5	>1,000,000	350	1,500	3,500	1,500	-	95.4	54.3	-	86.7	109	-	-	48.2		
Beryllium	ug/g	0.1	15,000	1 ^a	350	1 ^a	85 ^a	-	0.5	0.3	-	0.31	0.34	-	-	0.26		
Bismuth	ug/g	0.2	-	-	-	-	-	-	<0.2	<0.2	-	<0.2	<0.2	-	-	<0.2		
Boron	ug/g	5	-	-	-	-	>1,000,000	-	<5	<5	-	<5	<5	-	-	49.5		
Cadmium	ug/g	0.02	3,500	1 ^a	75	1 ^a	1 ^a	-	0.092	0.075	-	0.118	0.102	-	-	0.113		
Calcium	ug/g	50	-	-	-	-	-	-	7,910	6,730	-	5,930	6,360	-	-	7,840		
Chromium (Total)	ug/g	0.5	20,000	60b, >1,000,000c	250	60b, 300,000c	60b, >1,000,000c	-	45.5	32.6	-	32.2	35	-	-	38		
Cobalt	ug/g	0.1	2,000	25	200	25	25	-	17.8	14.8	-	13.8	15.6	-	-	12.9		
Copper	ug/g	0.5	700,000	250 ^a	300	75 ^a	75 ^a	-	50.6	44.3	-	46.6	41.9	-	-	47.4		
Iron	ug/g	50	-	-	-	-	150,000	-	42,800	34,000	-	35,000	37,900	-	-	29,500		
Lead	ug/g	0.5	4,000	120 ^a	1,000	200 ^a	120 ^a	-	3.71	3.36	-	8.55	6.7	-	-	10.1		
Lithium	ug/g	2	-	-	-	-	450	-	15.2	11.3	-	13.1	13.3	-	-	10.7		
Magnesium	ug/g	20	-	-	-	-	-	-	15,000	13,500	-	12,500	13,600	-	-	12,400		
Manganese	ug/g	1	>1,000,000	2,000	2,000	-	-	-	748	644	-	776	826	-	-	512		
Mercury	ug/g	0.05	2,000	-	75	-	-	-	<0.05	<0.05	-	<0.05	<0.05	-	-	<0.05		
Molybdenum	ug/g	0.1	35,000	15	150	650	650	-	0.24	0.17	-	0.22	0.2	-	-	0.23		
Nickel	ug/g	0.5	80,000	70 ^a	250	90 ^a	70 ^a	-	29.5	24.4	-	24.9	25.1	-	-	24.4		
Phosphorus	ug/g	50	-	-	-	-	-	-	854	714	-	954	1,140	-	-	602		
Potassium	ug/g	100	-	-	-	-	-	-	770	520	-	540	590	-	-	490		
Selenium	ug/g	0.2	35,000	1	2	1	1	-	<0.2	<0.2	-	<0.2	<0.2	-	-	<0.2		
Silver	ug/g	0.1	-	-	-	-	35,000	40	<0.1	<0.1	-	<0.1	<0.1	-	-	<0.1		
Sodium	ug/g	50	-	-	-	-	-	-	486	598	-	658	776	-	-	376		
Strontium	ug/g	0.5	-	-	-	-	150,000	-	55.2	37.2	-	32.5	37.3	-	-	34.9		
Sulphur as S	ug/g	1000	-	-	-	-	-	-	<1,000	<1,000	-	<1,000	<1,000	-	-	<1,000		
Thallium	ug/g	0.05	-	-	-	-	-	25	<0.05	<0.05	-	<0.05	<0.05	-	-	<0.05		
Tin	ug/g	2	-	-	-	-	>1,000,000	300	<2	<2	-	<2	<2	-	-	<2		
Titanium	ug/g	1	-	-	-	-	-	-	1,890	1,590	-	1,410	1,420	-	-	1,420		
Tungsten	ug/g	0.5	-	-	-	-	200	-	<0.5	<0.5	-	<0.5	<0.5	-	-	<0.5		
Uranium	ug/g	0.05	20,000	30	2,000	150	150	-	0.38	0.226	-	0.206	0.281	-	-	0.198		
Vanadium	ug/g	0.2	35,000	100	300	-	-	-	128	96.7	-	94.4	105	-	-	83.2		
Zinc	ug/g	2	>1000000	200 ^a	450	150 ^a	150 ^a	-	66.6	55.6	-	74.6	75.1	-	-	53.7		
Zirconium	ug/g	1	-	-	-	-	-	-	3	3.5	-	2.4	2.5	-	-	3.2		

Laboratory: ALS	Units	DL	BC CSR Schedule 3.1 Parts 1, 2 and 3 Industrial Land Use (IL) ¹							TH23-01A	TH23-02A	TH23-02B	TH23-03A	DUP-A	TH23-03B	TH23-04A	TH23-04B	
			Sample Collection Date	Intake of Contaminated Soil ²	Drinking Water ³	Toxicity to soil invertebrates and plants ⁴	GW Flow to SW Freshwater Aquatic Life ⁵	GW Flow to SW Marine Aquatic Life ⁶	Human Health Soil ⁷	Ecological Health Soil ⁸	16-Jun-23	16-Jun-23	16-Jun-23	16-Jun-23	16-Jun-23	16-Jun-23	16-Jun-23	16-Jun-23
			Lab Work Order								VA23B3748-001	VA23B3748-003	VA23B3748-004	VA23B3748-005	VA23B3748-009	VA23B3748-006	VA23B3748-007	VA23B3748-008
			Analyte								Soil	Soil	Soil	Soil	BFD of TH23-03A	Soil	Soil	Soil
Salinity:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Chloride	ug/g	6.4	>1,000,000	100	2,500	600	600	-	-	36.2	221	42.1	478	528	109	28.1	45.8	
Sodium Ion	ug/g	6.36	>1,000,000	15,000	1,000	-	-	-	-	23.6	126	21.2	294	307	65.6	<5.20	49.3	
Petroleum Hydrocarbons:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
EPH C10-C19	ug/g	200	-	-	-	-	-	-	-	<200	<200	-	<200	<200	-	-	<200	
EPH C19-C32	ug/g	200	-	-	-	-	-	-	-	<200	<200	-	640	490	-	-	<200	
HEPH	ug/g	200	-	-	-	-	-	5,000	5,000	<200	<200	-	510	380	-	-	<200	
LEPH	ug/g	200	-	-	-	-	-	2,000	2,000	<200	<200	-	<200	<200	-	-	<200	
Volatile Hydrocarbons (V6-10)	ug/g	10	-	-	-	-	-	-	-	-	<10	-	-	-	-	-	-	
VPH C6-C10	ug/g	10	-	-	-	-	-	200	200	-	<10	-	-	-	-	-	-	
Polycyclic Aromatic Hydrocarbons:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Acenaphthene	ug/g	0.005	-	-	-	-	-	15,000	-	0.007	0.0137	-	0.202	0.173	<0.050	0.081	<0.005	
Acenaphthylene	ug/g	0.005	-	-	-	-	-	-	-	0.055	0.186	-	2.8	2.45	<0.050	0.834	0.0186	
Anthracene	ug/g	0.004	1,000,000	-	30	-	-	-	-	0.045	0.119	-	2.49	1.61	<0.050	0.752	0.008	
Benzo(a)anthracene	ug/g	0.01	-	-	-	-	-	500	10	0.169	0.736	-	18.1	13.9	<0.050	2.84	0.032	
Benzo(a) pyrene	ug/g	0.01	50	-	70	-	-	-	-	0.209	1.16	-	23.2	18.8	0.076	3.26	0.047	
Benzo(b+j)fluoranthene	ug/g	0.01	-	-	-	-	-	500	10	0.238	1.17	-	22.9	18.4	0.071	3.37	0.056	
Benzo(b+j+k)fluoranthene	ug/g	0.015	-	-	-	-	-	-	-	0.332	1.55	-	31.2	24.2	<0.075	4.60	0.075	
Benzo(g,h,i)perylene	ug/g	0.01	-	-	-	-	-	-	-	0.156	1.12	-	19.9	18.3	0.086	2.51	0.038	
Benzo(k)fluoranthene	ug/g	0.01	-	-	-	-	-	500	10	0.094	0.384	-	8.26	5.84	<0.050	1.23	0.019	
Chrysene	ug/g	0.01	-	-	-	-	-	4,500	-	0.206	0.78	-	18.8	14.6	0.059	3.01	0.034	
Dibenz(a,h)anthracene	ug/g	0.005	-	-	-	-	-	50	10	0.0296	0.132	-	2.8	2.44	<0.050	0.480	0.0073	
Fluoranthene	ug/g	0.01	300,000	-	200	-	-	-	-	0.394	1.46	-	31.4	24.5	0.074	5.09	0.058	
Fluorene	ug/g	0.01	-	-	-	-	-	9,500	-	0.015	0.024	-	0.274	0.233	<0.050	0.126	<0.01	
1-Methylnaphthalene	ug/g	0.01	-	-	-	-	-	1,000	-	<0.01	<0.01	-	0.068	0.114	<0.050	<0.050	<0.01	
2-methylnaphthalene	ug/g	0.01	-	-	-	-	-	950	-	<0.01	<0.01	-	0.061	0.101	<0.050	<0.050	<0.01	
Indeno(1,2,3-c,d)pyrene	ug/g	0.01	-	-	-	-	-	500	10	0.147	0.996	-	17.6	15.6	0.068	2.37	0.037	
Naphthalene	ug/g	0.01	150,000	100	20	75	75	-	-	<0.01	0.013	-	0.113	0.128	<0.050	<0.050	<0.01	
Phenanthrene	ug/g	0.01	-	-	-	-	-	300,000	50	0.236	0.466	-	6.73	8.31	<0.050	2.31	0.017	
Pyrene	ug/g	0.01	-	-	-	-	-	200,000	100	0.452	1.89	-	40.5	32.5	0.098	5.30	0.063	
Quinoline	ug/g	0.01	-	-	-	-	-	10	-	<0.01	<0.01	-	<0.011	<0.011	<0.050	<0.050	<0.01	
Acridine	ug/g	0.01	-	-	-	-	-	-	-	<0.01	<0.01	-	<0.18	<0.11	<0.050	0.059	<0.01	
Volatile Organic Compounds:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Benzene	ug/g	0.005	6,500	0.035	250	2.5	6.5	-	-	-	<0.005	-	-	-	-	-	-	
Ethylbenzene	ug/g	0.015	700,000	15	650	200	200	-	-	-	<0.015	-	-	-	-	-	-	
MTBE	ug/g	0.2	-	-	-	-	-	20,000	-	-	<0.2	-	-	-	-	-	-	
Styrene	ug/g	0.05	-	-	-	-	-	>1,000,000	50	-	<0.05	-	-	-	-	-	-	
Toluene	ug/g	0.05	550,000	6	450	0.5	200	-	-	-	<0.05	-	-	-	-	-	-	
Xylene (o)	ug/g	0.05	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	
Xylene (m & p)	ug/g	0.05	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-	-	
Xylenes	ug/g	0.075	>1,000,000	6.5	600	20	20	-	-	-	<0.075	-	-	-	-	-	-	

Colour Key:

Exceeds Standard	Exceeds Standard but meets Protocol 4	DL Exceeds Standard
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Notes:

All values reported as ug/g unless otherwise indicated

- 1 - Stage 12 Amendments to the BC CSR B.C Reg 375/96, effective January 24, 2019 Schedule 3.1 Parts 1, 2 and 3 for Industrial Land Use
- 2 - Schedule 3.1 Part 1 - Human health protection, intake of contaminated soil
- 3 - Schedule 3.1 Part 1 - Human health protection, groundwater used for drinking water applies as per Protocol 21
- 4 - Schedule 3.1 Part 1 - Environmental protection, toxicity to soil invertebrates and plants
- 5 - Schedule 3.1 Part 1 - Environmental protection, groundwater flow to surface water, used by aquatic life (freshwater) applies as per Protocol 21
- 6 - Schedule 3.1 Part 1 - Environmental protection, groundwater flow to surface water, used by aquatic life (marine) applies as per Protocol 21
- 7 - Schedule 3.1 Part 2 - Generic numerical soil standards to protect human health
- 8 - Schedule 3.1 Part 3 - Generic numerical soil standards to protect ecological health
 - a - Standard is pH dependent, and only the most stringent standard is shown
 - b - Standard is for chromium, hexavalent
 - c - Standard is for chromium, trivalent
 - d - Assumes standard applies to chromium, hexavalent as a conservative measure. Speciation analysis is required to determine true standard.
 - e - Concentration exceeds applicable standards, but is less than BC CSR Protocol 4: Establishing Background Concentrations in Soil for Region 1 - Vancouver Island (200 ug/g for Vanadium). Protocol 4 values only apply if soil is to stay in this region.

BFD - Blind field duplicate

"-" Not analyzed or no standards apply

"<" Less than the laboratory reportable detection limit (DL) indicated.

Laboratory: ALS	Units	DL	BC Hazardous Waste Regulation ¹	TH23-03A
Sample Collection Date				16-Jun-23
Lab Work Order				VA23B3748-005
Analyte				Soil
Sample Collection Depth	m	-	-	0.6
PID (field)	ppm	-	-	-
Moisture	%	0.25	-	8.59
pH (Lab)	pH	0.1	-	6.27
TCLP Extractables:				
acenaphthene, TCLP	µg/L	5.0	-	<5.0
acenaphthylene, TCLP	µg/L	5.0	-	<5.0
acridine, TCLP	µg/L	5.0	-	<5.0
anthracene, TCLP	µg/L	5.0	-	<5.0
benz(a)anthracene, TCLP	µg/L	5.0	-	<5.0
benzo(a)pyrene, TCLP	µg/L	0.50	1	<0.50
benzo(b+j)fluoranthene, TCLP	µg/L	5.0	-	<5.0
benzo(g,h,i)perylene, TCLP	µg/L	5.0	-	<5.0
benzo(k)fluoranthene, TCLP	µg/L	5.0	-	<5.0
chrysene, TCLP	µg/L	5.0	-	<5.0
dibenz(a,h)anthracene, TCLP	µg/L	5.0	-	<5.0
fluoranthene, TCLP	µg/L	5.0	-	<5.0
fluorene, TCLP	µg/L	5.0	-	<5.0
indeno(1,2,3-c,d)pyrene, TCLP	µg/L	5.0	-	<5.0
naphthalene, TCLP	µg/L	5.0	-	<5.0
phenanthrene, TCLP	µg/L	5.0	-	<5.0
pyrene, TCLP	µg/L	5.0	-	<5.0

Colour Key:

Exceeds BC HWR Standards

Notes:

All values reported as ug/L unless otherwise indicated

1 - BC Hazardous Waste Regulation Schedule 4, Part 3, Table 1 - Includes amendments up to B.C.

BFD - Blind field duplicate

"-" Not analyzed or no standards apply

"<" Less than the laboratory reportable detection limit (DL) indicated.

DL - Laboratory detection limit

Laboratory: ALS	Units	DL	BC CSR Schedule 3.1 Parts 1, 2 and 3 Residential Low Density Land Use (RL _{LD}) ¹							TH23-01A	TH23-02A	TH23-02B	TH23-03A	DUP-A	TH23-03B	TH23-04A	TH23-04B	
Sample Collection Date			Intake of Contaminated Soil ²	Drinking Water ³	Toxicity to soil invertebrates and plants ⁴	GW Flow to SW Freshwater Aquatic Life ⁵	GW Flow to SW Marine Aquatic Life ⁶	Human Health Soil ⁷	Ecological Health Soil ⁸	16-Jun-23	16-Jun-23	16-Jun-23	16-Jun-23	16-Jun-23	16-Jun-23	16-Jun-23	16-Jun-23	
Lab Work Order:			VA23B3748-001	VA23B3748-003	VA23B3748-004	VA23B3748-005	VA23B3748-009	VA23B3748-006	VA23B3748-007	VA23B3748-008	Soil	Soil	Soil	Soil	BFD of TH23-03A	Soil	Soil	Soil
Analyte			Soil	Soil	Soil	Soil	BFD of TH23-03A	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Sample Collection Depth	m	-	-	-	-	-	-	-	0.3-0.6	0.3-0.6	1.2-1.5	0.3-0.6	0.3-0.6	1.2-1.5	0.3-0.6	1.2-1.5		
PID readings	ppm	-	-	-	-	-	-	-	0.4	0.7	0.2	0.2	0.2	0.1	0.2	0.1		
Moisture	%	0.25	-	-	-	-	-	-	14.4	8.89	-	8.59	9.48	6.18	6.1	7.41		
pH (Lab)	pH	0.1	-	-	-	-	-	-	6.2	6.69	-	6.27	5.68	-	-	7.39		
Metals:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Aluminum	ug/g	50	-	-	-	-	-	40,000	29,400	21,900	-	22,500	23,900	-	-	19,700		
Antimony	ug/g	0.1	-	-	-	-	-	250	0.23	0.16	-	0.22	0.19	-	-	0.17		
Arsenic	ug/g	0.1	15	10	25	10	10	-	5.05	3.8	-	4.42	4.36	-	-	4.94		
Barium	ug/g	0.5	8,500	350	700	3,500	1,500	-	95.4	54.3	-	86.7	109	-	-	48.2		
Beryllium	ug/g	0.1	85	1 ^a	150	1 ^a	85 ^a	-	0.5	0.3	-	0.31	0.34	-	-	0.26		
Bismuth	ug/g	0.2	-	-	-	-	-	-	<0.2	<0.2	-	<0.2	<0.2	-	-	<0.2		
Boron	ug/g	5	-	-	-	-	-	8,500	<5	<5	-	<5	<5	-	-	49.5		
Cadmium	ug/g	0.02	20	1 ^a	30	1 ^a	1 ^a	-	0.092	0.075	-	0.118	0.102	-	-	0.113		
Calcium	ug/g	50	-	-	-	-	-	-	7,910	6,730	-	5,930	6,360	-	-	7,840		
Chromium (Total)	ug/g	0.5	20,000	60b, >1,000,000c	250	60b, 300,000c	60b, >1,000,000c	-	45.5	32.6	-	32.2	35	-	-	38		
Cobalt	ug/g	0.1	25	25	45	25	25	-	17.8	14.8	-	13.8	15.6	-	-	12.9		
Copper	ug/g	0.5	3,500	250 ^a	150	75 ^a	75 ^a	-	50.6	44.3	-	46.6	41.9	-	-	47.4		
Iron	ug/g	50	-	-	-	-	-	35,000	42,800	34,000	-	35,000	37,900	-	-	29,500		
Lead	ug/g	0.5	120	120 ^a	550	200 ^a	120 ^a	-	3.71	3.36	-	8.55	6.7	-	-	10.1		
Lithium	ug/g	2	-	-	-	-	-	30	15.2	11.3	-	13.1	13.3	-	-	10.7		
Magnesium	ug/g	20	-	-	-	-	-	-	15,000	13,500	-	12,500	13,600	-	-	12,400		
Manganese	ug/g	1	6,000	2,000	2,000	-	-	-	748	644	-	776	826	-	-	512		
Mercury	ug/g	0.05	10	-	40	-	-	-	<0.05	<0.05	-	<0.05	<0.05	-	-	<0.05		
Molybdenum	ug/g	0.1	200	15	80	650	650	-	0.24	0.17	-	0.22	0.2	-	-	0.23		
Nickel	ug/g	0.5	450	70 ^a	150	90 ^a	70 ^a	-	29.5	24.4	-	24.9	25.1	-	-	24.4		
Phosphorus	ug/g	50	-	-	-	-	-	-	854	714	-	954	1,140	-	-	602		
Potassium	ug/g	100	-	-	-	-	-	-	770	520	-	540	590	-	-	490		
Selenium	ug/g	0.2	200	1	1.5	1	1	-	<0.2	<0.2	-	<0.2	<0.2	-	-	<0.2		
Silver	ug/g	0.1	-	-	-	-	-	200	<0.1	<0.1	-	<0.1	<0.1	-	-	<0.1		
Sodium	ug/g	50	-	-	-	-	-	-	486	598	-	658	776	-	-	376		
Strontium	ug/g	0.5	-	-	-	-	-	9,500	55.2	37.2	-	32.5	37.3	-	-	34.9		
Sulphur as S	ug/g	1000	-	-	-	-	-	-	<1,000	<1,000	-	<1,000	<1,000	-	-	<1,000		
Thallium	ug/g	0.05	-	-	-	-	-	-	<0.05	<0.05	-	<0.05	<0.05	-	-	<0.05		
Tin	ug/g	2	-	-	-	-	-	25,000	<2	<2	-	<2	<2	-	-	<2		
Titanium	ug/g	1	-	-	-	-	-	-	1,890	1,590	-	1,410	1,420	-	-	1,420		
Tungsten	ug/g	0.5	-	-	-	-	-	15	<0.5	<0.5	-	<0.5	<0.5	-	-	<0.5		
Uranium	ug/g	0.05	100	30	500	150	150	-	0.38	0.226	-	0.206	0.281	-	-	0.198		
Vanadium	ug/g	0.2	200	100	150	-	-	-	128	96.7	-	94.4	105	-	-	83.2		
Zinc	ug/g	2	10,000	200 ^a	450	150 ^a	150 ^a	-	66.6	55.6	-	74.6	75.1	-	-	53.7		
Zirconium	ug/g	1	-	-	-	-	-	-	3	3.5	-	2.4	2.5	-	-	3.2		
Salinity:	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Chloride	ug/g	20	>1,000,000	100	350	600	-	-	36.2	221	42.1	478	528	109	28.1	45.8		
Sodium Ion	ug/g	20	>1,000,000	200	15,000	-	-	-	23.6	126	21.2	294	307	65.6	<5.20	49.3		

Laboratory: ALS	Units	DL	BC CSR Schedule 3.1 Parts 1, 2 and 3 Residential Low Density Land Use (RL _{LD}) ¹							TH23-01A	TH23-02A	TH23-02B	TH23-03A	DUP-A	TH23-03B	TH23-04A	TH23-04B	
Sample Collection Date			Intake of Contaminated Soil ²	Drinking Water ³	Toxicity to soil invertebrates and plants ⁴	GW Flow to SW Freshwater Aquatic Life ⁵	GW Flow to SW Marine Aquatic Life ⁶	Human Health Soil ⁷	Ecological Health Soil ⁸	16-Jun-23	16-Jun-23	16-Jun-23	16-Jun-23	16-Jun-23	16-Jun-23	16-Jun-23	16-Jun-23	
Lab Work Order:			VA23B3748-001	VA23B3748-003	VA23B3748-004	VA23B3748-005	VA23B3748-009	VA23B3748-006	VA23B3748-007	VA23B3748-008	Soil	Soil	Soil	Soil	BFD of TH23-03A	Soil	Soil	Soil
Analyte			Soil	Soil	Soil	Soil	BFD of TH23-03A	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Petroleum Hydrocarbons:		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
EPH C10-C19	ug/g	200	-	-	-	-	-	-	<200	<200	-	<200	<200	-	-	<200		
EPH C19-C32	ug/g	200	-	-	-	-	-	-	<200	<200	-	640	490	-	-	<200		
HEPH	ug/g	200	-	-	-	-	-	1,000	1,000	<200	<200	-	510	380	-	<200		
LEPH	ug/g	200	-	-	-	-	-	1,000	1,000	<200	<200	-	<200	<200	-	<200		
Volatile Hydrocarbons (V6-10)	ug/g	10	-	-	-	-	-	-	-	<10	-	-	-	-	-	-		
VPH C6-C10	ug/g	10	-	-	-	-	-	200	200	-	<10	-	-	-	-	-		
Polycyclic Aromatic Hydrocarbons:		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Acenaphthene	ug/g	0.005	-	-	-	-	-	950	-	0.007	0.0137	-	0.202	0.173	<0.050	0.081	<0.005	
Acenaphthylene	ug/g	0.005	-	-	-	-	-	-	-	0.055	0.186	-	2.8	2.45	<0.050	0.834	0.0186	
Anthracene	ug/g	0.004	10,000	-	2.5	-	-	-	-	0.045	0.119	-	2.49	1.61	<0.050	0.752	0.008	
Benz(a)anthracene	ug/g	0.01	-	-	-	-	-	50	1	0.169	0.736	-	18.1	13.9	<0.050	2.84	0.032	
Benzo(a) pyrene	ug/g	0.01	5	-	20	-	-	-	-	0.209	1.16	-	23.2	18.8	0.076	3.26	0.047	
Benzo[b+j]fluoranthene	ug/g	0.01	-	-	-	-	-	50	1	0.238	1.17	-	22.9	18.4	0.071	3.37	0.056	
Benzo(b+j+k)fluoranthene	ug/g	0.015	-	-	-	-	-	-	-	0.332	1.55	-	31.2	24.2	<0.075	4.60	0.075	
Benzo(g,h,i)perylene	ug/g	0.01	-	-	-	-	-	-	-	0.156	1.12	-	19.9	18.3	0.086	2.51	0.038	
Benzo(k)fluoranthene	ug/g	0.01	-	-	-	-	-	50	1	0.094	0.384	-	8.26	5.84	<0.050	1.23	0.019	
Chrysene	ug/g	0.01	-	-	-	-	-	200	-	0.206	0.78	-	18.8	14.6	0.059	3.01	0.034	
Dibenz(a,h)anthracene	ug/g	0.005	-	-	-	-	-	5	1	0.0296	0.132	-	2.8	2.44	<0.050	0.480	0.0073	
Fluoranthene	ug/g	0.01	1,500	-	50	-	-	-	-	0.394	1.46	-	31.4	24.5	0.074	5.09	0.058	
Fluorene	ug/g	0.01	-	-	-	-	-	600	-	0.015	0.024	-	0.274	0.233	<0.050	0.126	<0.01	
1-Methylnaphthalene	ug/g	0.01	-	-	-	-	-	250	-	<0.01	<0.01	-	0.068	0.114	<0.050	<0.050	<0.01	
2-methylnaphthalene	ug/g	0.01	-	-	-	-	-	60	-	<0.01	<0.01	-	0.061	0.101	<0.050	<0.050	<0.01	
Indeno(1,2,3-c,d)pyrene	ug/g	0.01	-	-	-	-	-	50	1	0.147	0.996	-	17.6	15.6	0.068	2.37	0.037	
Naphthalene	ug/g	0.01	850	100	0.6	75	75	-	-	<0.01	0.013	-	0.113	0.128	<0.050	<0.050	<0.01	
Phenanthrene	ug/g	0.01	-	-	-	-	-	1,500	5	0.236	0.466	-	6.73	8.31	<0.050	2.31	0.017	
Pyrene	ug/g	0.01	-	-	-	-	-	1,000	10	0.452	1.89	-	40.5	32.5	0.098	5.30	0.063	
Quinoline	ug/g	0.01	-	-	-	-	-	2.5	-	<0.01	<0.01	-	<0.011	<0.011	<0.050	<0.050	<0.01	
Acridine	ug/g	0.01	-	-	-	-	-	-	-	<0.01	<0.01	-	<0.18	<0.11	<0.050	0.059	<0.01	
Volatile Organic Compounds:		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Benzene	ug/g	0.005	150	0.035	100	2.5	6.5	-	-	-	<0.005	-	-	-	-	-		
Ethylbenzene	ug/g	0.015	4,000	15	200	200	200	-	-	-	<0.015	-	-	-	-	-		
MTBE	ug/g	0.2	-	-	-	-	-	4,000	-	-	<0.2	-	-	-	-	-		
Styrene	ug/g	0.05	-	-	-	-	-	8,500	5	-	<0.05	-	-	-	-	-		
Toluene	ug/g	0.05	3,500	6	150	0.5	200	-	-	-	<0.05	-	-	-	-	-		
Xylene (o)	ug/g	0.05	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-		
Xylene (m & p)	ug/g	0.05	-	-	-	-	-	-	-	-	<0.05	-	-	-	-	-		
Xylenes	ug/g	0.075	8,500	6.5	150	20	20	-	-	-	<0.075	-	-	-	-	-		

Colour Key:

Exceeds Standard	Exceeds Standard but meets Protocol 4	DL Exceeds Standard
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Notes:

s

- 1 - BC CSR B.C Reg 375/96, effective July 7, 2021 Schedule 3.1 Parts 1, 2 and 3 for Residential Low Density Land Use
- 2 - Schedule 3.1 Part 1 - Human health protection, intake of contaminated soil
- 3 - Schedule 3.1 Part 1 - Human health protection, groundwater used for drinking water applies as per Protocol 21
- 4 - Schedule 3.1 Part 1 - Environmental protection, toxicity to soil invertebrates and plants
- 5 - Schedule 3.1 Part 1 - Environmental protection, groundwater flow to surface water, used by aquatic life (freshwater) applies as per Protocol 21
- 6 - Schedule 3.1 Part 1 - Environmental protection, groundwater flow to surface water, used by aquatic life (marine) applies as per Protocol 21
- 7 - Schedule 3.1 Part 2 - Generic numerical soil standards to protect human health
- 8 - Schedule 3.1 Part 3 - Generic numerical soil standards to protect ecological health
- a - Standard is pH dependent, and only the most stringent standard is shown
- b - Standard is for chromium, hexavalent
- c - Standard is for chromium, trivalent
- d - Assumes standard applies to chromium, hexavalent as a conservative measure. Speciation analysis is required to determine true standard.
- e - Concentration exceeds applicable standards, but is less than BC CSR Protocol 4: Establishing Background Concentrations in Soil for Region 1 - Vancouver Island (55,000 ug/g for Aluminum and 200 ug/g for Vanadium). Protocol 4 values only apply if soil is to stay in this region.

BFD - Blind field duplicate

"-" Not analyzed or no standards apply

"<" Less than the laboratory reportable detection limit (DL) indicated.

APPENDIX D – LABORATORY CERTIFICATES OF ANALYSIS

DRAFT



CERTIFICATE OF ANALYSIS

Work Order : **VA23B3748**
Amendment : **1**
Client : **McElhanney Ltd.**
Contact : Victoria Amson
Address : # 500 - 3960 Quadra Street
 Victoria BC Canada V8X 4A3
Telephone : 250 370 9221
Project : 2233-02107-00
PO : ----
C-O-C number : 21-
Sampler : M.Manzi
Site : ----
Quote number : BC/Yukon Standing Offer - 2022 update
No. of samples received : 9
No. of samples analysed : 8

Page : 1 of 12
Laboratory : Vancouver - Environmental
Account Manager : Dean Watt
Address : 8081 Lougheed Highway
 Burnaby BC Canada V5A 1W9
Telephone : +1 604 253 4188
Date Samples Received : 17-Jun-2023 12:10
Date Analysis Commenced : 17-Jun-2023
Issue Date : 22-Jun-2023 17:19

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Laboratory Department</i>
Janice Leung	Supervisor - Organics Instrumentation	Organics, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Metals, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Metals, Burnaby, British Columbia
Kinny Wu	Lab Analyst	Metals, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Inorganics, Burnaby, British Columbia



General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).

<i>Unit</i>	<i>Description</i>
-	no units
%	percent
µg/g	micrograms per gram
µg/L	micrograms per litre
mg/kg	milligrams per kilogram
pH units	pH units

<: less than.

>: greater than.

Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Workorder Comments

Additional data has been added.

Qualifiers

<i>Qualifier</i>	<i>Description</i>
DLCI	Detection Limit Raised: Chromatographic interference due to co-elution.
DLQ	Detection Limit raised due to co-eluting interference. Mass Spectrometry qualifier ion ratio did not meet acceptance criteria.



Analytical Results

Sub-Matrix: Soil					Client sample ID	TH23-01A	TH23-02A	TH23-02B	TH23-03A	TH23-03B
(Matrix: Soil/Solid)					Client sampling date / time	16-Jun-2023	16-Jun-2023	16-Jun-2023	16-Jun-2023	16-Jun-2023
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23B3748-001	VA23B3748-003	VA23B3748-004	VA23B3748-005	VA23B3748-006	
					Result	Result	Result	Result	Result	
Physical Tests										
% Saturation	---	E141/VA	1.0	%	31.8	113	23.8	72.9	34.7	
Moisture	---	E144/VA	0.25	%	14.4	8.89	---	8.59	6.18	
pH (1:2 soil:water)	---	E108/VA	0.10	pH units	6.20	6.69	---	6.27	---	
Saturated Paste Extractables										
Chloride, soluble ion content	16887-00-6	EC239A.CI/VA	1.0	µg/g	36.2	221	42.1	478	109	
Chloride, soluble ion content	16887-00-6	E239.CI/VA	20000	µg/L	114000	196000	177000	656000	315000	
Sodium, soluble ion content	17341-25-2	EC442/VA	1.00	µg/g	23.6	126	21.2	294	65.6	
Sodium, soluble ion content	17341-25-2	E442/VA	20000	µg/L	74200	112000	89000	404000	189000	
Metals										
Aluminum	7429-90-5	E440/VA	50	µg/g	29400	21900	---	22500	---	
Antimony	7440-36-0	E440/VA	0.10	µg/g	0.23	0.16	---	0.22	---	
Arsenic	7440-38-2	E440/VA	0.10	µg/g	5.05	3.80	---	4.42	---	
Barium	7440-39-3	E440/VA	0.50	µg/g	95.4	54.3	---	86.7	---	
Beryllium	7440-41-7	E440/VA	0.10	µg/g	0.50	0.30	---	0.31	---	
Bismuth	7440-69-9	E440/VA	0.20	µg/g	<0.20	<0.20	---	<0.20	---	
Boron	7440-42-8	E440/VA	5.0	µg/g	<5.0	<5.0	---	<5.0	---	
Cadmium	7440-43-9	E440/VA	0.020	µg/g	0.092	0.075	---	0.118	---	
Calcium	7440-70-2	E440/VA	50	µg/g	7910	6730	---	5930	---	
Chromium	7440-47-3	E440/VA	0.50	µg/g	45.5	32.6	---	32.2	---	
Cobalt	7440-48-4	E440/VA	0.10	µg/g	17.8	14.8	---	13.8	---	
Copper	7440-50-8	E440/VA	0.50	µg/g	50.6	44.3	---	46.6	---	
Iron	7439-89-6	E440/VA	50	µg/g	42800	34000	---	35000	---	
Lead	7439-92-1	E440/VA	0.50	µg/g	3.71	3.36	---	8.55	---	
Lithium	7439-93-2	E440/VA	2.0	µg/g	15.2	11.3	---	13.1	---	
Magnesium	7439-95-4	E440/VA	20	µg/g	15000	13500	---	12500	---	
Manganese	7439-96-5	E440/VA	1.0	µg/g	748	644	---	776	---	
Mercury	7439-97-6	E510/VA	0.0500	µg/g	<0.0500	<0.0500	---	<0.0500	---	
Molybdenum	7439-98-7	E440/VA	0.10	µg/g	0.24	0.17	---	0.22	---	
Nickel	7440-02-0	E440/VA	0.50	µg/g	29.5	24.4	---	24.9	---	



Analytical Results

Sub-Matrix: Soil					Client sample ID	TH23-01A	TH23-02A	TH23-02B	TH23-03A	TH23-03B
(Matrix: Soil/Solid)					Client sampling date / time	16-Jun-2023	16-Jun-2023	16-Jun-2023	16-Jun-2023	16-Jun-2023
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23B3748-001	VA23B3748-003	VA23B3748-004	VA23B3748-005	VA23B3748-006	
					Result	Result	Result	Result	Result	
Metals										
Phosphorus	7723-14-0	E440/VA	50	µg/g	854	714	----	954	----	
Potassium	7440-09-7	E440/VA	100	µg/g	770	520	----	540	----	
Selenium	7782-49-2	E440/VA	0.20	µg/g	<0.20	<0.20	----	<0.20	----	
Silver	7440-22-4	E440/VA	0.10	µg/g	<0.10	<0.10	----	<0.10	----	
Sodium	7440-23-5	E440/VA	50	µg/g	486	598	----	658	----	
Strontium	7440-24-6	E440/VA	0.50	µg/g	55.2	37.2	----	32.5	----	
Sulfur	7704-34-9	E440/VA	1000	µg/g	<1000	<1000	----	<1000	----	
Thallium	7440-28-0	E440/VA	0.050	µg/g	<0.050	<0.050	----	<0.050	----	
Tin	7440-31-5	E440/VA	2.0	µg/g	<2.0	<2.0	----	<2.0	----	
Titanium	7440-32-6	E440/VA	1.0	µg/g	1890	1590	----	1410	----	
Tungsten	7440-33-7	E440/VA	0.50	µg/g	<0.50	<0.50	----	<0.50	----	
Uranium	7440-61-1	E440/VA	0.050	µg/g	0.380	0.226	----	0.206	----	
Vanadium	7440-62-2	E440/VA	0.20	µg/g	128	96.7	----	94.4	----	
Zinc	7440-66-6	E440/VA	2.0	µg/g	66.6	55.6	----	74.6	----	
Zirconium	7440-67-7	E440/VA	1.0	µg/g	3.0	3.5	----	2.4	----	
TCLP Extractables										
Acenaphthene, TCLP	83-32-9	E644/VA	5.0	µg/L	----	----	----	<5.0	----	
Acenaphthylene, TCLP	208-96-8	E644/VA	5.0	µg/L	----	----	----	<5.0	----	
Acridine, TCLP	260-94-6	E644/VA	5.0	µg/L	----	----	----	<5.0	----	
Anthracene, TCLP	120-12-7	E644/VA	5.0	µg/L	----	----	----	<5.0	----	
Benz(a)anthracene, TCLP	56-55-3	E644/VA	5.0	µg/L	----	----	----	<5.0	----	
Benzo(a)pyrene, TCLP	50-32-8	E644/VA	0.50	µg/L	----	----	----	<0.50	----	
Benzo(b+j)fluoranthene, TCLP	----	E644/VA	5.0	µg/L	----	----	----	<5.0	----	
Benzo(g,h,i)perylene, TCLP	191-24-2	E644/VA	5.0	µg/L	----	----	----	<5.0	----	
Benzo(k)fluoranthene, TCLP	207-08-9	E644/VA	5.0	µg/L	----	----	----	<5.0	----	
Chrysene, TCLP	218-01-9	E644/VA	5.0	µg/L	----	----	----	<5.0	----	
Dibenz(a,h)anthracene, TCLP	53-70-3	E644/VA	5.0	µg/L	----	----	----	<5.0	----	
Fluoranthene, TCLP	206-44-0	E644/VA	5.0	µg/L	----	----	----	<5.0	----	
Fluorene, TCLP	86-73-7	E644/VA	5.0	µg/L	----	----	----	<5.0	----	
Indeno(1,2,3-cd)pyrene, TCLP	193-39-5	E644/VA	5.0	µg/L	----	----	----	<5.0	----	
Naphthalene, TCLP	91-20-3	E644/VA	5.0	µg/L	----	----	----	<5.0	----	



Analytical Results

Sub-Matrix: Soil					Client sample ID	TH23-01A	TH23-02A	TH23-02B	TH23-03A	TH23-03B
(Matrix: Soil/Solid)					Client sampling date / time	16-Jun-2023	16-Jun-2023	16-Jun-2023	16-Jun-2023	16-Jun-2023
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23B3748-001	VA23B3748-003	VA23B3748-004	VA23B3748-005	VA23B3748-006	
					Result	Result	Result	Result	Result	
TCLP Extractables										
Phenanthrene, TCLP	85-01-8	E644/VA	5.0	µg/L	---	---	---	<5.0	---	
Pyrene, TCLP	129-00-0	E644/VA	5.0	µg/L	---	---	---	<5.0	---	
TCLP Extractables Surrogates										
Chrysene-d12, TCLP	1719-03-5	E644/VA	5.0	%	---	---	---	75.2	---	
Naphthalene-d8, TCLP	1146-65-2	E644/VA	5.0	%	---	---	---	90.5	---	
Phenanthrene-d10, TCLP	1517-22-2	E644/VA	5.0	%	---	---	---	102	---	
TCLP Metals										
pH, TCLP 1st preliminary	---	EPP444/VA	0.010	pH units	---	---	---	7.70	---	
pH, TCLP 2nd preliminary	---	EPP444/VA	0.010	pH units	---	---	---	1.70	---	
pH, TCLP extraction fluid initial	---	EPP444/VA	0.010	pH units	---	---	---	4.90	---	
pH, TCLP final	---	EPP444/VA	0.010	pH units	---	---	---	4.89	---	
Volatile Organic Compounds [Fuels]										
Benzene	71-43-2	E611A/VA	0.0050	µg/g	---	<0.0050	---	---	---	
Ethylbenzene	100-41-4	E611A/VA	0.015	µg/g	---	<0.015	---	---	---	
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611A/VA	0.200	µg/g	---	<0.200	---	---	---	
Styrene	100-42-5	E611A/VA	0.050	µg/g	---	<0.050	---	---	---	
Toluene	108-88-3	E611A/VA	0.050	µg/g	---	<0.050	---	---	---	
Xylene, m+p-	179601-23-1	E611A/VA	0.050	µg/g	---	<0.050	---	---	---	
Xylene, o-	95-47-6	E611A/VA	0.050	µg/g	---	<0.050	---	---	---	
Xylenes, total	1330-20-7	E611A/VA	0.075	µg/g	---	<0.075	---	---	---	
Hydrocarbons										
EPH (C10-C19)	---	E601A/VA	200	µg/g	<200	<200	---	<200	---	
EPH (C19-C32)	---	E601A/VA	200	µg/g	<200	<200	---	640	---	
VHs (C6-C10)	---	E581.VH+F1/ VA	10	µg/g	---	<10	---	---	---	
HEPHs	---	EC600A/VA	200	µg/g	<200	<200	---	510	---	
LEPHs	---	EC600A/VA	200	µg/g	<200	<200	---	<200	---	
VPHs	---	EC580A/VA	10	µg/g	---	<10	---	---	---	
Hydrocarbons Surrogates										
Bromobenzotrifluoride, 2- (EPH surrogate)	392-83-6	E601A/VA	1.0	%	95.8	98.9	---	101	---	



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	TH23-01A	TH23-02A	TH23-02B	TH23-03A	TH23-03B
Client sampling date / time					16-Jun-2023	16-Jun-2023	16-Jun-2023	16-Jun-2023	16-Jun-2023	
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23B3748-001	VA23B3748-003	VA23B3748-004	VA23B3748-005	VA23B3748-006	
					Result	Result	Result	Result	Result	
Hydrocarbons Surrogates										
Dichlorotoluene, 3,4-	95-75-0	E581.VH+F1/VA	1.0	%	----	95.7	----	----	----	
Volatile Organic Compounds Surrogates										
Bromofluorobenzene, 4-	460-00-4	E611A/VA	0.10	%	----	81.2	----	----	----	
Difluorobenzene, 1,4-	540-36-3	E611A/VA	0.10	%	----	81.8	----	----	----	
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	83-32-9	E641A-L/VA	0.0050	µg/g	0.0070	0.0137	----	0.202	----	
Acenaphthene	83-32-9	E641A/VA	0.050	µg/g	----	----	----	----	<0.050	
Acenaphthylene	208-96-8	E641A-L/VA	0.0050	µg/g	0.0550	0.186	----	2.80	----	
Acenaphthylene	208-96-8	E641A/VA	0.050	µg/g	----	----	----	----	<0.050	
Acridine	260-94-6	E641A-L/VA	0.010	µg/g	<0.010	<0.010	----	<0.180 ^{DLQ}	----	
Acridine	260-94-6	E641A/VA	0.050	µg/g	----	----	----	----	<0.050	
Anthracene	120-12-7	E641A-L/VA	0.0040	µg/g	0.0450	0.119	----	2.49	----	
Anthracene	120-12-7	E641A/VA	0.050	µg/g	----	----	----	----	<0.050	
Benz(a)anthracene	56-55-3	E641A-L/VA	0.010	µg/g	0.169	0.736	----	18.1	----	
Benz(a)anthracene	56-55-3	E641A/VA	0.050	µg/g	----	----	----	----	<0.050	
Benzo(a)pyrene	50-32-8	E641A-L/VA	0.010	µg/g	0.209	1.16	----	23.2	----	
Benzo(a)pyrene	50-32-8	E641A/VA	0.050	µg/g	----	----	----	----	0.076	
Benzo(b+j)fluoranthene	n/a	E641A-L/VA	0.010	µg/g	0.238	1.17	----	22.9	----	
Benzo(b+j)fluoranthene	n/a	E641A/VA	0.050	µg/g	----	----	----	----	0.071	
Benzo(b+j+k)fluoranthene	n/a	E641A-L/VA	0.015	µg/g	0.332	1.55	----	31.2	----	
Benzo(b+j+k)fluoranthene	n/a	E641A/VA	0.075	µg/g	----	----	----	----	<0.075	
Benzo(g,h,i)perylene	191-24-2	E641A-L/VA	0.010	µg/g	0.156	1.12	----	19.9	----	
Benzo(g,h,i)perylene	191-24-2	E641A/VA	0.050	µg/g	----	----	----	----	0.086	
Benzo(k)fluoranthene	207-08-9	E641A-L/VA	0.010	µg/g	0.094	0.384	----	8.26	----	
Benzo(k)fluoranthene	207-08-9	E641A/VA	0.050	µg/g	----	----	----	----	<0.050	
Chrysene	218-01-9	E641A-L/VA	0.010	µg/g	0.206	0.780	----	18.8	----	
Chrysene	218-01-9	E641A/VA	0.050	µg/g	----	----	----	----	0.059	
Dibenz(a,h)anthracene	53-70-3	E641A-L/VA	0.0050	µg/g	0.0296	0.132	----	2.80	----	
Dibenz(a,h)anthracene	53-70-3	E641A/VA	0.050	µg/g	----	----	----	----	<0.050	
Fluoranthene	206-44-0	E641A-L/VA	0.010	µg/g	0.394	1.46	----	31.4	----	



Analytical Results

Sub-Matrix: Soil					Client sample ID	TH23-01A	TH23-02A	TH23-02B	TH23-03A	TH23-03B
(Matrix: Soil/Solid)					Client sampling date / time	16-Jun-2023	16-Jun-2023	16-Jun-2023	16-Jun-2023	16-Jun-2023
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23B3748-001	VA23B3748-003	VA23B3748-004	VA23B3748-005	VA23B3748-006	
					Result	Result	Result	Result	Result	
Polycyclic Aromatic Hydrocarbons										
Fluoranthene	206-44-0	E641A/VA	0.050	µg/g	---	---	---	---	0.074	
Fluorene	86-73-7	E641A-L/VA	0.010	µg/g	0.015	0.024	---	0.274	---	
Fluorene	86-73-7	E641A/VA	0.050	µg/g	---	---	---	---	<0.050	
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L/VA	0.010	µg/g	0.147	0.996	---	17.6	---	
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A/VA	0.050	µg/g	---	---	---	---	0.068	
Methylnaphthalene, 1-	90-12-0	E641A-L/VA	0.010	µg/g	<0.010	<0.010	---	0.068	---	
Methylnaphthalene, 1-	90-12-0	E641A/VA	0.050	µg/g	---	---	---	---	<0.050	
Methylnaphthalene, 1+2-	---	E641A/VA	0.075	µg/g	---	---	---	---	<0.075	
Methylnaphthalene, 2-	91-57-6	E641A-L/VA	0.010	µg/g	<0.010	<0.010	---	0.061	---	
Methylnaphthalene, 2-	91-57-6	E641A/VA	0.050	µg/g	---	---	---	---	<0.050	
Naphthalene	91-20-3	E641A-L/VA	0.010	µg/g	<0.010	0.013	---	0.113	---	
Naphthalene	91-20-3	E641A/VA	0.050	µg/g	---	---	---	---	<0.050	
Phenanthrene	85-01-8	E641A-L/VA	0.010	µg/g	0.236	0.466	---	6.73	---	
Phenanthrene	85-01-8	E641A/VA	0.050	µg/g	---	---	---	---	<0.050	
Pyrene	129-00-0	E641A-L/VA	0.010	µg/g	0.452	1.89	---	40.5	---	
Pyrene	129-00-0	E641A/VA	0.050	µg/g	---	---	---	---	0.098	
Quinoline	91-22-5	E641A-L/VA	0.010	µg/g	<0.010	<0.010	---	<0.011 ^{DLO}	---	
Quinoline	91-22-5	E641A/VA	0.050	µg/g	---	---	---	---	<0.050	
B(a)P total potency equivalents [B(a)P TPE]	---	E641A-L/VA	0.020	µg/g	0.307	1.64	---	33.1	---	
B(a)P total potency equivalents [B(a)P TPE]	---	E641A/VA	0.065	µg/g	---	---	---	---	0.121	
IACR (CCME)	---	E641A-L/VA	0.150	-	3.46	16.6	---	343	---	
IACR (CCME)	---	E641A/VA	0.60	-	---	---	---	---	1.06	
IACR AB (coarse)	---	E641A/VA	0.10	-	---	---	---	---	<0.10	
IACR AB (fine)	---	E641A/VA	0.10	-	---	---	---	---	<0.10	
PAHs, total (BC Sched 3.4)	n/a	E641A/VA	0.20	µg/g	---	---	---	---	0.31	
PAHs, total (EPA 16)	n/a	E641A/VA	0.20	µg/g	---	---	---	---	0.53	
Polycyclic Aromatic Hydrocarbons Surrogates										
Acridine-d9	34749-75-2	E641A/VA	0.1	%	---	---	---	---	96.6	
Acridine-d9	34749-75-2	E641A-L/VA	0.1	%	94.6	92.2	---	98.9	---	
Chrysene-d12	1719-03-5	E641A/VA	0.1	%	---	---	---	---	101	
Chrysene-d12	1719-03-5	E641A-L/VA	0.1	%	101	97.1	---	104	---	



Analytical Results

Sub-Matrix: Soil (Matrix: Soil/Solid)					Client sample ID	TH23-01A	TH23-02A	TH23-02B	TH23-03A	TH23-03B
Client sampling date / time					16-Jun-2023	16-Jun-2023	16-Jun-2023	16-Jun-2023	16-Jun-2023	16-Jun-2023
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23B3748-001	VA23B3748-003	VA23B3748-004	VA23B3748-005	VA23B3748-006	
					Result	Result	Result	Result	Result	
Polycyclic Aromatic Hydrocarbons Surrogates										
Naphthalene-d8	1146-65-2	E641A/VA	0.1	%	----	----	----	----	109	
Naphthalene-d8	1146-65-2	E641A-L/VA	0.1	%	102	99.2	----	99.6	----	
Phenanthrene-d10	1517-22-2	E641A/VA	0.1	%	----	----	----	----	104	
Phenanthrene-d10	1517-22-2	E641A-L/VA	0.1	%	105	101	----	107	----	

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

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Analytical Results

Sub-Matrix: Soil					Client sample ID	TH23-04A	TH23-04B	DUP-A	----	----
(Matrix: Soil/Solid)					Client sampling date / time	16-Jun-2023	16-Jun-2023	16-Jun-2023	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23B3748-007	VA23B3748-008	VA23B3748-009	-----	-----	
					Result	Result	Result	----	----	
Physical Tests										
% Saturation	----	E141/VA	1.0	%	26.0	218	59.4	----	----	
Moisture	----	E144/VA	0.25	%	6.10	7.41	9.48	----	----	
pH (1:2 soil:water)	----	E108/VA	0.10	pH units	----	7.39	5.68	----	----	
Saturated Paste Extractables										
Chloride, soluble ion content	16887-00-6	EC239A.CI/V A	1.0	µg/g	28.1	45.8	528	----	----	
Chloride, soluble ion content	16887-00-6	E239.CI/VA	20000	µg/L	108000	21000	889000	----	----	
Sodium, soluble ion content	17341-25-2	EC442/VA	1.00	µg/g	<5.20	49.3	307	----	----	
Sodium, soluble ion content	17341-25-2	E442/VA	20000	µg/L	<20000	22600	517000	----	----	
Metals										
Aluminum	7429-90-5	E440/VA	50	µg/g	----	19700	23900	----	----	
Antimony	7440-36-0	E440/VA	0.10	µg/g	----	0.17	0.19	----	----	
Arsenic	7440-38-2	E440/VA	0.10	µg/g	----	4.94	4.36	----	----	
Barium	7440-39-3	E440/VA	0.50	µg/g	----	48.2	109	----	----	
Beryllium	7440-41-7	E440/VA	0.10	µg/g	----	0.26	0.34	----	----	
Bismuth	7440-69-9	E440/VA	0.20	µg/g	----	<0.20	<0.20	----	----	
Boron	7440-42-8	E440/VA	5.0	µg/g	----	49.5	<5.0	----	----	
Cadmium	7440-43-9	E440/VA	0.020	µg/g	----	0.113	0.102	----	----	
Calcium	7440-70-2	E440/VA	50	µg/g	----	7840	6360	----	----	
Chromium	7440-47-3	E440/VA	0.50	µg/g	----	38.0	35.0	----	----	
Cobalt	7440-48-4	E440/VA	0.10	µg/g	----	12.9	15.6	----	----	
Copper	7440-50-8	E440/VA	0.50	µg/g	----	47.4	41.9	----	----	
Iron	7439-89-6	E440/VA	50	µg/g	----	29500	37900	----	----	
Lead	7439-92-1	E440/VA	0.50	µg/g	----	10.1	6.70	----	----	
Lithium	7439-93-2	E440/VA	2.0	µg/g	----	10.7	13.3	----	----	
Magnesium	7439-95-4	E440/VA	20	µg/g	----	12400	13600	----	----	
Manganese	7439-96-5	E440/VA	1.0	µg/g	----	512	826	----	----	
Mercury	7439-97-6	E510/VA	0.0500	µg/g	----	<0.0500	<0.0500	----	----	
Molybdenum	7439-98-7	E440/VA	0.10	µg/g	----	0.23	0.20	----	----	
Nickel	7440-02-0	E440/VA	0.50	µg/g	----	24.4	25.1	----	----	
Phosphorus	7723-14-0	E440/VA	50	µg/g	----	602	1140	----	----	



Analytical Results

Sub-Matrix: Soil					Client sample ID	TH23-04A	TH23-04B	DUP-A	----	----
(Matrix: Soil/Solid)					Client sampling date / time	16-Jun-2023	16-Jun-2023	16-Jun-2023	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23B3748-007	VA23B3748-008	VA23B3748-009	-----	-----	
					Result	Result	Result	----	----	
Metals										
Potassium	7440-09-7	E440/VA	100	µg/g	----	490	590	----	----	
Selenium	7782-49-2	E440/VA	0.20	µg/g	----	<0.20	<0.20	----	----	
Silver	7440-22-4	E440/VA	0.10	µg/g	----	<0.10	<0.10	----	----	
Sodium	7440-23-5	E440/VA	50	µg/g	----	376	776	----	----	
Strontium	7440-24-6	E440/VA	0.50	µg/g	----	34.9	37.3	----	----	
Sulfur	7704-34-9	E440/VA	1000	µg/g	----	<1000	<1000	----	----	
Thallium	7440-28-0	E440/VA	0.050	µg/g	----	<0.050	<0.050	----	----	
Tin	7440-31-5	E440/VA	2.0	µg/g	----	<2.0	<2.0	----	----	
Titanium	7440-32-6	E440/VA	1.0	µg/g	----	1420	1420	----	----	
Tungsten	7440-33-7	E440/VA	0.50	µg/g	----	<0.50	<0.50	----	----	
Uranium	7440-61-1	E440/VA	0.050	µg/g	----	0.198	0.281	----	----	
Vanadium	7440-62-2	E440/VA	0.20	µg/g	----	83.2	105	----	----	
Zinc	7440-66-6	E440/VA	2.0	µg/g	----	53.7	75.1	----	----	
Zirconium	7440-67-7	E440/VA	1.0	µg/g	----	3.2	2.5	----	----	
Hydrocarbons										
EPH (C10-C19)	----	E601A/VA	200	µg/g	----	<200	<200	----	----	
EPH (C19-C32)	----	E601A/VA	200	µg/g	----	<200	490	----	----	
HEPHs	----	EC600A/VA	200	µg/g	----	<200	380	----	----	
LEPHs	----	EC600A/VA	200	µg/g	----	<200	<200	----	----	
Hydrocarbons Surrogates										
Bromobenzotrifluoride, 2- (EPH surrogate)	392-83-6	E601A/VA	1.0	%	----	93.8	94.5	----	----	
Polycyclic Aromatic Hydrocarbons										
Acenaphthene	83-32-9	E641A-L/VA	0.0050	µg/g	----	<0.0050	0.173	----	----	
Acenaphthene	83-32-9	E641A/VA	0.050	µg/g	0.081	----	----	----	----	
Acenaphthylene	208-96-8	E641A-L/VA	0.0050	µg/g	----	0.0186	2.45	----	----	
Acenaphthylene	208-96-8	E641A/VA	0.050	µg/g	0.834	----	----	----	----	
Acridine	260-94-6	E641A-L/VA	0.010	µg/g	----	<0.010	<0.110 ^{DLQ}	----	----	
Acridine	260-94-6	E641A/VA	0.050	µg/g	0.059	----	----	----	----	
Anthracene	120-12-7	E641A-L/VA	0.0040	µg/g	----	0.0080	1.61	----	----	
Anthracene	120-12-7	E641A/VA	0.050	µg/g	0.752	----	----	----	----	
Benz(a)anthracene	56-55-3	E641A-L/VA	0.010	µg/g	----	0.032	13.9	----	----	



Analytical Results

Sub-Matrix: Soil					Client sample ID	TH23-04A	TH23-04B	DUP-A	----	----
(Matrix: Soil/Solid)					Client sampling date / time	16-Jun-2023	16-Jun-2023	16-Jun-2023	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23B3748-007	VA23B3748-008	VA23B3748-009	-----	-----	
					Result	Result	Result	----	----	
Polycyclic Aromatic Hydrocarbons										
Benz(a)anthracene	56-55-3	E641A/VA	0.050	µg/g	2.84	----	----	----	----	----
Benzo(a)pyrene	50-32-8	E641A-L/VA	0.010	µg/g	----	0.047	18.8	----	----	----
Benzo(a)pyrene	50-32-8	E641A/VA	0.050	µg/g	3.26	----	----	----	----	----
Benzo(b+j)fluoranthene	n/a	E641A-L/VA	0.010	µg/g	----	0.056	18.4	----	----	----
Benzo(b+j)fluoranthene	n/a	E641A/VA	0.050	µg/g	3.37	----	----	----	----	----
Benzo(b+j+k)fluoranthene	n/a	E641A-L/VA	0.015	µg/g	----	0.075	24.2	----	----	----
Benzo(b+j+k)fluoranthene	n/a	E641A/VA	0.075	µg/g	4.60	----	----	----	----	----
Benzo(g,h,i)perylene	191-24-2	E641A-L/VA	0.010	µg/g	----	0.038	18.3	----	----	----
Benzo(g,h,i)perylene	191-24-2	E641A/VA	0.050	µg/g	2.51	----	----	----	----	----
Benzo(k)fluoranthene	207-08-9	E641A-L/VA	0.010	µg/g	----	0.019	5.84	----	----	----
Benzo(k)fluoranthene	207-08-9	E641A/VA	0.050	µg/g	1.23	----	----	----	----	----
Chrysene	218-01-9	E641A-L/VA	0.010	µg/g	----	0.034	14.6	----	----	----
Chrysene	218-01-9	E641A/VA	0.050	µg/g	3.01	----	----	----	----	----
Dibenz(a,h)anthracene	53-70-3	E641A-L/VA	0.0050	µg/g	----	0.0073	2.44	----	----	----
Dibenz(a,h)anthracene	53-70-3	E641A/VA	0.050	µg/g	0.480	----	----	----	----	----
Fluoranthene	206-44-0	E641A-L/VA	0.010	µg/g	----	0.058	24.5	----	----	----
Fluoranthene	206-44-0	E641A/VA	0.050	µg/g	5.09	----	----	----	----	----
Fluorene	86-73-7	E641A-L/VA	0.010	µg/g	----	<0.010	0.233	----	----	----
Fluorene	86-73-7	E641A/VA	0.050	µg/g	0.126	----	----	----	----	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L/VA	0.010	µg/g	----	0.037	15.6	----	----	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A/VA	0.050	µg/g	2.37	----	----	----	----	----
Methylnaphthalene, 1-	90-12-0	E641A-L/VA	0.010	µg/g	----	<0.010	0.114	----	----	----
Methylnaphthalene, 1-	90-12-0	E641A/VA	0.050	µg/g	<0.050	----	----	----	----	----
Methylnaphthalene, 1+2-	----	E641A/VA	0.075	µg/g	<0.075	----	----	----	----	----
Methylnaphthalene, 2-	91-57-6	E641A-L/VA	0.010	µg/g	----	<0.010	0.101	----	----	----
Methylnaphthalene, 2-	91-57-6	E641A/VA	0.050	µg/g	<0.050	----	----	----	----	----
Naphthalene	91-20-3	E641A-L/VA	0.010	µg/g	----	<0.010	0.128	----	----	----
Naphthalene	91-20-3	E641A/VA	0.050	µg/g	<0.050	----	----	----	----	----
Phenanthrene	85-01-8	E641A-L/VA	0.010	µg/g	----	0.017	8.31	----	----	----
Phenanthrene	85-01-8	E641A/VA	0.050	µg/g	2.31	----	----	----	----	----
Pyrene	129-00-0	E641A-L/VA	0.010	µg/g	----	0.063	32.5	----	----	----



Analytical Results

Sub-Matrix: Soil					Client sample ID	TH23-04A	TH23-04B	DUP-A	----	----
(Matrix: Soil/Solid)					Client sampling date / time	16-Jun-2023	16-Jun-2023	16-Jun-2023	----	----
Analyte	CAS Number	Method/Lab	LOR	Unit	VA23B3748-007	VA23B3748-008	VA23B3748-009	-----	-----	
					Result	Result	Result	----	----	
Polycyclic Aromatic Hydrocarbons										
Pyrene	129-00-0	E641A/VA	0.050	µg/g	5.30	----	----	----	----	----
Quinoline	91-22-5	E641A-L/VA	0.010	µg/g	----	<0.010	<0.011 ^{DLCL}	----	----	----
Quinoline	91-22-5	E641A/VA	0.050	µg/g	<0.050	----	----	----	----	----
B(a)P total potency equivalents [B(a)P TPE]	----	E641A-L/VA	0.020	µg/g	----	0.069	26.9	----	----	----
B(a)P total potency equivalents [B(a)P TPE]	----	E641A/VA	0.065	µg/g	4.78	----	----	----	----	----
IACR (CCME)	----	E641A-L/VA	0.150	-	----	0.760	270	----	----	----
IACR (CCME)	----	E641A/VA	0.60	-	50.9	----	----	----	----	----
IACR AB (coarse)	----	E641A/VA	0.10	-	2.20	----	----	----	----	----
IACR AB (fine)	----	E641A/VA	0.10	-	4.20	----	----	----	----	----
PAHs, total (BC Sched 3.4)	n/a	E641A/VA	0.20	µg/g	24.1	----	----	----	----	----
PAHs, total (EPA 16)	n/a	E641A/VA	0.20	µg/g	33.6	----	----	----	----	----
Polycyclic Aromatic Hydrocarbons Surrogates										
Acridine-d9	34749-75-2	E641A/VA	0.1	%	106	----	----	----	----	----
Acridine-d9	34749-75-2	E641A-L/VA	0.1	%	----	104	93.6	----	----	----
Chrysene-d12	1719-03-5	E641A/VA	0.1	%	107	----	----	----	----	----
Chrysene-d12	1719-03-5	E641A-L/VA	0.1	%	----	106	99.8	----	----	----
Naphthalene-d8	1146-65-2	E641A/VA	0.1	%	119	----	----	----	----	----
Naphthalene-d8	1146-65-2	E641A-L/VA	0.1	%	----	100	94.9	----	----	----
Phenanthrene-d10	1517-22-2	E641A/VA	0.1	%	112	----	----	----	----	----
Phenanthrene-d10	1517-22-2	E641A-L/VA	0.1	%	----	109	102	----	----	----

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

QUALITY CONTROL INTERPRETIVE REPORT

<p>Work Order : VA23B3748</p> <p>Amendment : 1</p> <p>Client : McElhanney Ltd.</p> <p>Contact : Victoria Amson</p> <p>Address : # 500 - 3960 Quadra Street Victoria BC Canada V8X 4A3</p> <p>Telephone : 250 370 9221</p> <p>Project : 2233-02107-00</p> <p>PO : ----</p> <p>C-O-C number : 21-</p> <p>Sampler : M.Manzi</p> <p>Site : ----</p> <p>Quote number : BC/Yukon Standing Offer - 2022 update</p> <p>No. of samples received : 9</p> <p>No. of samples analysed : 8</p>	<p>Page : 1 of 17</p> <p>Laboratory : Vancouver - Environmental</p> <p>Account Manager : Dean Watt</p> <p>Address : 8081 Lougheed Highway Burnaby, British Columbia Canada V5A 1W9</p> <p>Telephone : +1 604 253 4188</p> <p>Date Samples Received : 17-Jun-2023 12:10</p> <p>Issue Date : 22-Jun-2023 17:20</p>
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This report is automatically generated by the ALS LIMS (Laboratory Information Management System) through evaluation of Quality Control (QC) results and other QA parameters associated with this submission, and is intended to facilitate rapid data validation by auditors or reviewers. The report highlights any exceptions and outliers to ALS Data Quality Objectives, provides holding time details and exceptions, summarizes QC sample frequencies, and lists applicable methodology references and summaries.

Key

- Anonymous: Refers to samples which are not part of this work order, but which formed part of the QC process lot.
- CAS Number: Chemical Abstracts Service number is a unique identifier assigned to discrete substances.
- DQO: Data Quality Objective.
- LOR: Limit of Reporting (detection limit).
- RPD: Relative Percent Difference.

Workorder Comments

Holding times are displayed as "----" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

Summary of Outliers

Outliers : Quality Control Samples

- No Method Blank value outliers occur.
- No Laboratory Control Sample (LCS) outliers occur
- Duplicate outliers occur - please see following pages for full details.
- Matrix Spike outliers occur - please see following pages for full details.
- No Test sample Surrogate recovery outliers exist.

Outliers: Reference Material (RM) Samples

- No Reference Material (RM) Sample outliers occur.

Outliers : Analysis Holding Time Compliance (Breaches)

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- No Quality Control Sample Frequency Outliers occur.

DRAFT



Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: Soil/Solid

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Duplicate (DUP) RPDs								
Saturated Paste Extractables	VA23B3748-005	TH23-03A	Sodium, soluble ion content	17341-25-2	E442	31.2 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	VA23B3748-008	TH23-04B	Boron	7440-42-8	E440	54.0 % DUP-H	30%	Duplicate RPD does not meet the DQO for this test.
Metals	VA23B3748-008	TH23-04B	Lead	7439-92-1	E440	63.9 % DUP-H	40%	Duplicate RPD does not meet the DQO for this test.
Polycyclic Aromatic Hydrocarbons	VA23B3748-001	TH23-01A	Acenaphthylene	208-96-8	E641A-L	74.0 % DUP-H	50%	Duplicate RPD does not meet the DQO for this test.
Polycyclic Aromatic Hydrocarbons	VA23B3748-001	TH23-01A	Anthracene	120-12-7	E641A-L	80.9 % DUP-H	50%	Duplicate RPD does not meet the DQO for this test.
Polycyclic Aromatic Hydrocarbons	VA23B3748-001	TH23-01A	Benz(a)anthracene	56-55-3	E641A-L	86.7 % DUP-H	50%	Duplicate RPD does not meet the DQO for this test.
Polycyclic Aromatic Hydrocarbons	VA23B3748-001	TH23-01A	Benzo(a)pyrene	50-32-8	E641A-L	82.9 % DUP-H	50%	Duplicate RPD does not meet the DQO for this test.
Polycyclic Aromatic Hydrocarbons	VA23B3748-001	TH23-01A	Benzo(b+j)fluoranthene	n/a	E641A-L	82.5 % DUP-H	50%	Duplicate RPD does not meet the DQO for this test.
Polycyclic Aromatic Hydrocarbons	VA23B3748-001	TH23-01A	Benzo(g,h,i)perylene	191-24-2	E641A-L	77.2 % DUP-H	50%	Duplicate RPD does not meet the DQO for this test.
Polycyclic Aromatic Hydrocarbons	VA23B3748-001	TH23-01A	Benzo(k)fluoranthene	207-08-9	E641A-L	90.3 % DUP-H	50%	Duplicate RPD does not meet the DQO for this test.
Polycyclic Aromatic Hydrocarbons	VA23B3748-001	TH23-01A	Chrysene	218-01-9	E641A-L	85.1 % DUP-H	50%	Duplicate RPD does not meet the DQO for this test.
Polycyclic Aromatic Hydrocarbons	VA23B3748-001	TH23-01A	Dibenz(a,h)anthracene	53-70-3	E641A-L	81.7 % DUP-H	50%	Duplicate RPD does not meet the DQO for this test.
Polycyclic Aromatic Hydrocarbons	VA23B3748-001	TH23-01A	Fluoranthene	206-44-0	E641A-L	91.2 % DUP-H	50%	Duplicate RPD does not meet the DQO for this test.
Polycyclic Aromatic Hydrocarbons	VA23B3748-001	TH23-01A	Indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	68.0 % DUP-H	50%	Duplicate RPD does not meet the DQO for this test.
Polycyclic Aromatic Hydrocarbons	VA23B3748-001	TH23-01A	Phenanthrene	85-01-8	E641A-L	88.0 % DUP-H	50%	Duplicate RPD does not meet the DQO for this test.
Polycyclic Aromatic Hydrocarbons	VA23B3748-001	TH23-01A	Pyrene	129-00-0	E641A-L	87.0 % DUP-H	50%	Duplicate RPD does not meet the DQO for this test.

Result Qualifiers

Qualifier	Description
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.



Matrix: **Soil/Solid**

Analyte Group	Laboratory sample ID	Client/Ref Sample ID	Analyte	CAS Number	Method	Result	Limits	Comment
Matrix Spike (MS) Recoveries								
Polycyclic Aromatic Hydrocarbons	VA23B3748-003	TH23-02A	Anthracene	120-12-7	E641A-L	142 % ^E	50.0-140%	Recovery greater than upper data quality objective
Polycyclic Aromatic Hydrocarbons	VA23B3748-003	TH23-02A	Benzo(k)fluoranthene	207-08-9	E641A-L	170 % ^E	50.0-140%	Recovery greater than upper data quality objective

Result Qualifiers

Qualifier	Description
E	Matrix Spike recovery outside ALS DQO due to heterogeneous analyte background in sample.

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Analysis Holding Time Compliance

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times, which are selected to meet known provincial and /or federal requirements. In the absence of regulatory hold times, ALS establishes recommendations based on guidelines published by organizations such as CCME, US EPA, APHA Standard Methods, ASTM, or Environment Canada (where available). Dates and holding times reported below represent the first dates of extraction or analysis. If subsequent tests or dilutions exceeded holding times, qualifiers are added (refer to COA).

If samples are identified below as having been analyzed or extracted outside of recommended holding times, measurement uncertainties may be increased, and this should be taken into consideration when interpreting results.

Where actual sampling date is not provided on the chain of custody, the date of receipt with time at 00:00 is used for calculation purposes.

Where only the sample date without time is provided on the chain of custody, the sampling date at 00:00 is used for calculation purposes.

Matrix: Soil/Solid

Evaluation: * = Holding time exceedance ; ✓ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Hydrocarbons : BC PHCs - EPH by GC-FID										
Glass soil jar/Teflon lined cap DUP-A	E601A	16-Jun-2023	18-Jun-2023	14 days	2 days	✓	20-Jun-2023	40 days	2 days	✓
Hydrocarbons : BC PHCs - EPH by GC-FID										
Glass soil jar/Teflon lined cap TH23-01A	E601A	16-Jun-2023	18-Jun-2023	14 days	2 days	✓	20-Jun-2023	40 days	2 days	✓
Hydrocarbons : BC PHCs - EPH by GC-FID										
Glass soil jar/Teflon lined cap TH23-02A	E601A	16-Jun-2023	18-Jun-2023	14 days	2 days	✓	20-Jun-2023	40 days	2 days	✓
Hydrocarbons : BC PHCs - EPH by GC-FID										
Glass soil jar/Teflon lined cap TH23-03A	E601A	16-Jun-2023	18-Jun-2023	14 days	2 days	✓	20-Jun-2023	40 days	2 days	✓
Hydrocarbons : BC PHCs - EPH by GC-FID										
Glass soil jar/Teflon lined cap TH23-04B	E601A	16-Jun-2023	18-Jun-2023	14 days	2 days	✓	20-Jun-2023	40 days	2 days	✓
Hydrocarbons : VH and F1 by Headspace GC-FID										
Glass soil methanol vial TH23-02A	E581.VH+F1	16-Jun-2023	18-Jun-2023	----	----		19-Jun-2023	40 days	3 days	✓
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap DUP-A	E510	16-Jun-2023	18-Jun-2023	----	----		19-Jun-2023	28 days	4 days	✓



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap TH23-01A	E510	16-Jun-2023	18-Jun-2023	----	----		19-Jun-2023	28 days	4 days	✔
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap TH23-02A	E510	16-Jun-2023	18-Jun-2023	----	----		19-Jun-2023	28 days	4 days	✔
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap TH23-03A	E510	16-Jun-2023	18-Jun-2023	----	----		19-Jun-2023	28 days	4 days	✔
Metals : Mercury in Soil/Solid by CVAAS										
Glass soil jar/Teflon lined cap TH23-04B	E510	16-Jun-2023	18-Jun-2023	----	----		19-Jun-2023	28 days	4 days	✔
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap DUP-A	E440	16-Jun-2023	18-Jun-2023	----	----		20-Jun-2023	180 days	5 days	✔
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap TH23-01A	E440	16-Jun-2023	18-Jun-2023	----	----		20-Jun-2023	180 days	5 days	✔
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap TH23-02A	E440	16-Jun-2023	18-Jun-2023	----	----		20-Jun-2023	180 days	5 days	✔
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap TH23-03A	E440	16-Jun-2023	18-Jun-2023	----	----		20-Jun-2023	180 days	5 days	✔
Metals : Metals in Soil/Solid by CRC ICPMS										
Glass soil jar/Teflon lined cap TH23-04B	E440	16-Jun-2023	18-Jun-2023	----	----		20-Jun-2023	180 days	5 days	✔



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap DUP-A	E144	16-Jun-2023	----	----	----		17-Jun-2023	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap TH23-01A	E144	16-Jun-2023	----	----	----		17-Jun-2023	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap TH23-02A	E144	16-Jun-2023	----	----	----		17-Jun-2023	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap TH23-03A	E144	16-Jun-2023	----	----	----		17-Jun-2023	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap TH23-03B	E144	16-Jun-2023	----	----	----		21-Jun-2023	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap TH23-04A	E144	16-Jun-2023	----	----	----		21-Jun-2023	----	----	
Physical Tests : Moisture Content by Gravimetry										
Glass soil jar/Teflon lined cap TH23-04B	E144	16-Jun-2023	----	----	----		17-Jun-2023	----	----	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap DUP-A	E108	16-Jun-2023	18-Jun-2023	----	----		19-Jun-2023	30 days	4 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap TH23-01A	E108	16-Jun-2023	18-Jun-2023	----	----		19-Jun-2023	30 days	4 days	✔



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap TH23-02A	E108	16-Jun-2023	18-Jun-2023	----	----		19-Jun-2023	30 days	4 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap TH23-03A	E108	16-Jun-2023	18-Jun-2023	----	----		19-Jun-2023	30 days	4 days	✔
Physical Tests : pH by Meter (1:2 Soil:Water Extraction)										
Glass soil jar/Teflon lined cap TH23-04B	E108	16-Jun-2023	18-Jun-2023	----	----		19-Jun-2023	30 days	4 days	✔
Physical Tests : Saturation Percentage										
Glass soil jar/Teflon lined cap DUP-A	E141	16-Jun-2023	19-Jun-2023	----	----		19-Jun-2023	----	0 days	
Physical Tests : Saturation Percentage										
Glass soil jar/Teflon lined cap TH23-01A	E141	16-Jun-2023	19-Jun-2023	----	----		19-Jun-2023	----	0 days	
Physical Tests : Saturation Percentage										
Glass soil jar/Teflon lined cap TH23-02A	E141	16-Jun-2023	19-Jun-2023	----	----		19-Jun-2023	----	0 days	
Physical Tests : Saturation Percentage										
Glass soil jar/Teflon lined cap TH23-02B	E141	16-Jun-2023	21-Jun-2023	----	----		21-Jun-2023	----	0 days	
Physical Tests : Saturation Percentage										
Glass soil jar/Teflon lined cap TH23-03A	E141	16-Jun-2023	19-Jun-2023	----	----		19-Jun-2023	----	0 days	
Physical Tests : Saturation Percentage										
Glass soil jar/Teflon lined cap TH23-03B	E141	16-Jun-2023	21-Jun-2023	----	----		21-Jun-2023	----	0 days	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Physical Tests : Saturation Percentage										
Glass soil jar/Teflon lined cap TH23-04A	E141	16-Jun-2023	21-Jun-2023	----	----		21-Jun-2023	----	0 days	
Physical Tests : Saturation Percentage										
Glass soil jar/Teflon lined cap TH23-04B	E141	16-Jun-2023	19-Jun-2023	----	----		19-Jun-2023	----	0 days	
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS (Low Level CCME)										
Glass soil jar/Teflon lined cap DUP-A	E641A-L	16-Jun-2023	18-Jun-2023	14 days	2 days	✔	19-Jun-2023	40 days	1 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS (Low Level CCME)										
Glass soil jar/Teflon lined cap TH23-01A	E641A-L	16-Jun-2023	18-Jun-2023	14 days	2 days	✔	19-Jun-2023	40 days	1 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS (Low Level CCME)										
Glass soil jar/Teflon lined cap TH23-02A	E641A-L	16-Jun-2023	18-Jun-2023	14 days	2 days	✔	19-Jun-2023	40 days	1 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS (Low Level CCME)										
Glass soil jar/Teflon lined cap TH23-03A	E641A-L	16-Jun-2023	18-Jun-2023	14 days	2 days	✔	19-Jun-2023	40 days	1 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS (Low Level CCME)										
Glass soil jar/Teflon lined cap TH23-04B	E641A-L	16-Jun-2023	18-Jun-2023	14 days	2 days	✔	19-Jun-2023	40 days	1 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap TH23-03B	E641A	16-Jun-2023	21-Jun-2023	14 days	6 days	✔	21-Jun-2023	40 days	0 days	✔
Polycyclic Aromatic Hydrocarbons : PAHs by Hex:Ace GC-MS										
Glass soil jar/Teflon lined cap TH23-04A	E641A	16-Jun-2023	21-Jun-2023	14 days	6 days	✔	21-Jun-2023	40 days	0 days	✔



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Saturated Paste Extractables : Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)											
Glass soil jar/Teflon lined cap DUP-A	E442	16-Jun-2023	19-Jun-2023	365 days	4 days	✔	20-Jun-2023	180 days	0 days	✔	
Saturated Paste Extractables : Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)											
Glass soil jar/Teflon lined cap TH23-01A	E442	16-Jun-2023	19-Jun-2023	365 days	4 days	✔	20-Jun-2023	180 days	0 days	✔	
Saturated Paste Extractables : Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)											
Glass soil jar/Teflon lined cap TH23-02A	E442	16-Jun-2023	19-Jun-2023	365 days	4 days	✔	20-Jun-2023	180 days	0 days	✔	
Saturated Paste Extractables : Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)											
Glass soil jar/Teflon lined cap TH23-03A	E442	16-Jun-2023	19-Jun-2023	365 days	4 days	✔	20-Jun-2023	180 days	0 days	✔	
Saturated Paste Extractables : Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)											
Glass soil jar/Teflon lined cap TH23-04B	E442	16-Jun-2023	19-Jun-2023	365 days	4 days	✔	20-Jun-2023	180 days	0 days	✔	
Saturated Paste Extractables : Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)											
Glass soil jar/Teflon lined cap TH23-02B	E442	16-Jun-2023	21-Jun-2023	365 days	6 days	✔	22-Jun-2023	180 days	1 days	✔	
Saturated Paste Extractables : Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)											
Glass soil jar/Teflon lined cap TH23-03B	E442	16-Jun-2023	21-Jun-2023	365 days	6 days	✔	22-Jun-2023	180 days	1 days	✔	
Saturated Paste Extractables : Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)											
Glass soil jar/Teflon lined cap TH23-04A	E442	16-Jun-2023	21-Jun-2023	365 days	6 days	✔	22-Jun-2023	180 days	1 days	✔	
Saturated Paste Extractables : Chloride by IC (Saturated Paste)											
Glass soil jar/Teflon lined cap DUP-A	E239.Cl	16-Jun-2023	19-Jun-2023	365 days	4 days	✔	19-Jun-2023	28 days	0 days	✔	



Matrix: Soil/Solid

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis				
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval	
				Rec	Actual			Rec	Actual		
Saturated Paste Extractables : Chloride by IC (Saturated Paste)											
Glass soil jar/Teflon lined cap TH23-01A	E239.CI	16-Jun-2023	19-Jun-2023	365 days	4 days	✔	19-Jun-2023	28 days	0 days	✔	
Saturated Paste Extractables : Chloride by IC (Saturated Paste)											
Glass soil jar/Teflon lined cap TH23-02A	E239.CI	16-Jun-2023	19-Jun-2023	365 days	4 days	✔	19-Jun-2023	28 days	0 days	✔	
Saturated Paste Extractables : Chloride by IC (Saturated Paste)											
Glass soil jar/Teflon lined cap TH23-03A	E239.CI	16-Jun-2023	19-Jun-2023	365 days	4 days	✔	19-Jun-2023	28 days	0 days	✔	
Saturated Paste Extractables : Chloride by IC (Saturated Paste)											
Glass soil jar/Teflon lined cap TH23-04B	E239.CI	16-Jun-2023	19-Jun-2023	365 days	4 days	✔	19-Jun-2023	28 days	0 days	✔	
Saturated Paste Extractables : Chloride by IC (Saturated Paste)											
Glass soil jar/Teflon lined cap TH23-02B	E239.CI	16-Jun-2023	21-Jun-2023	365 days	6 days	✔	22-Jun-2023	28 days	0 days	✔	
Saturated Paste Extractables : Chloride by IC (Saturated Paste)											
Glass soil jar/Teflon lined cap TH23-03B	E239.CI	16-Jun-2023	21-Jun-2023	365 days	6 days	✔	22-Jun-2023	28 days	0 days	✔	
Saturated Paste Extractables : Chloride by IC (Saturated Paste)											
Glass soil jar/Teflon lined cap TH23-04A	E239.CI	16-Jun-2023	21-Jun-2023	365 days	6 days	✔	22-Jun-2023	28 days	0 days	✔	
TCLP Extractables : PAHs by GC-MS (TCLP)											
Amber glass/Teflon lined cap (sodium bisulfate) TH23-03A	E644	21-Jun-2023	22-Jun-2023	20 days	7 days	✔	22-Jun-2023	40 days	0 days	✔	
TCLP Metals : TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)											
Lab Split - Non-Volatile Leach: 14 day HT (e.g. CN, SVOC, NOx) TH23-03A	EPP444	16-Jun-2023	21-Jun-2023	----	----		----	----	----		



Matrix: **Soil/Solid**

Evaluation: ✖ = Holding time exceedance ; ✔ = Within Holding Time

Analyte Group Container / Client Sample ID(s)	Method	Sampling Date	Extraction / Preparation				Analysis			
			Preparation Date	Holding Times		Eval	Analysis Date	Holding Times		Eval
				Rec	Actual			Rec	Actual	
Volatile Organic Compounds [Fuels] : BTEX by Headspace GC-MS										
Glass soil methanol vial TH23-02A	E611A	16-Jun-2023	18-Jun-2023	----	----		19-Jun-2023	40 days	3 days	✔

Legend & Qualifier Definitions

Rec. HT: ALS recommended hold time (see units).

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Quality Control Parameter Frequency Compliance

The following report summarizes the frequency of laboratory QC samples analyzed within the analytical batches (QC lots) in which the submitted samples were processed. The actual frequency should be greater than or equal to the expected frequency.

Matrix: **Soil/Solid**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Laboratory Duplicates (DUP)							
BC PHCs - EPH by GC-FID	E601A	995031	1	5	20.0	5.0	✓
BTEX by Headspace GC-MS	E611A	995186	1	20	5.0	5.0	✓
Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)	E442	995028	2	8	25.0	5.0	✓
Chloride by IC (Saturated Paste)	E239.Cl	995026	2	8	25.0	5.0	✓
Mercury in Soil/Solid by CVAAS	E510	995023	1	5	20.0	5.0	✓
Metals in Soil/Solid by CRC ICPMS	E440	995024	1	5	20.0	5.0	✓
Moisture Content by Gravimetry	E144	995033	2	7	28.5	5.0	✓
PAHs by Hex:Ace GC-MS	E641A	1001707	1	2	50.0	5.0	✓
PAHs by Hex:Ace GC-MS (Low Level CCME)	E641A-L	995032	1	5	20.0	5.0	✓
pH by Meter (1:2 Soil:Water Extraction)	E108	995025	1	5	20.0	5.0	✓
Saturation Percentage	E141	995027	2	8	25.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	995185	1	20	5.0	5.0	✓
Laboratory Control Samples (LCS)							
BC PHCs - EPH by GC-FID	E601A	995031	1	5	20.0	5.0	✓
BTEX by Headspace GC-MS	E611A	995186	1	20	5.0	5.0	✓
Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)	E442	995028	4	8	50.0	10.0	✓
Chloride by IC (Saturated Paste)	E239.Cl	995026	4	8	50.0	10.0	✓
Mercury in Soil/Solid by CVAAS	E510	995023	2	5	40.0	10.0	✓
Metals in Soil/Solid by CRC ICPMS	E440	995024	2	5	40.0	10.0	✓
Moisture Content by Gravimetry	E144	995033	2	7	28.5	5.0	✓
PAHs by Hex:Ace GC-MS	E641A	1001707	1	2	50.0	5.0	✓
PAHs by Hex:Ace GC-MS (Low Level CCME)	E641A-L	995032	1	5	20.0	5.0	✓
pH by Meter (1:2 Soil:Water Extraction)	E108	995025	1	5	20.0	5.0	✓
Saturation Percentage	E141	995027	4	8	50.0	10.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	995185	1	20	5.0	5.0	✓
Method Blanks (MB)							
BC PHCs - EPH by GC-FID	E601A	995031	1	5	20.0	5.0	✓
BTEX by Headspace GC-MS	E611A	995186	1	20	5.0	5.0	✓
Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)	E442	995028	2	8	25.0	5.0	✓
Chloride by IC (Saturated Paste)	E239.Cl	995026	2	8	25.0	5.0	✓
Mercury in Soil/Solid by CVAAS	E510	995023	1	5	20.0	5.0	✓
Metals in Soil/Solid by CRC ICPMS	E440	995024	1	5	20.0	5.0	✓
Moisture Content by Gravimetry	E144	995033	2	7	28.5	5.0	✓
PAHs by GC-MS (TCLP)	E644	1003228	1	1	100.0	5.0	✓
PAHs by Hex:Ace GC-MS	E641A	1001707	1	2	50.0	5.0	✓



Matrix: **Soil/Solid**

Evaluation: * = QC frequency outside specification; ✓ = QC frequency within specification.

Quality Control Sample Type	Method	QC Lot #	Count		Frequency (%)		
			QC	Regular	Actual	Expected	Evaluation
Analytical Methods							
Method Blanks (MB) - Continued							
PAHs by Hex:Ace GC-MS (Low Level CCME)	E641A-L	995032	1	5	20.0	5.0	✓
Saturation Percentage	E141	995027	2	8	25.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	995185	1	20	5.0	5.0	✓
Matrix Spikes (MS)							
BC PHCs - EPH by GC-FID	E601A	995031	1	5	20.0	5.0	✓
BTEX by Headspace GC-MS	E611A	995186	1	20	5.0	5.0	✓
PAHs by GC-MS (TCLP)	E644	1003228	1	1	100.0	5.0	✓
PAHs by Hex:Ace GC-MS	E641A	1001707	1	2	50.0	5.0	✓
PAHs by Hex:Ace GC-MS (Low Level CCME)	E641A-L	995032	1	5	20.0	5.0	✓
VH and F1 by Headspace GC-FID	E581.VH+F1	995185	1	20	5.0	5.0	✓

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Methodology References and Summaries

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Reference methods may incorporate modifications to improve performance (indicated by "mod").

Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
pH by Meter (1:2 Soil:Water Extraction)	E108 Vancouver - Environmental	Soil/Solid	BC Lab Manual	pH is determined by potentiometric measurement with a pH electrode at ambient laboratory temperature (normally 20 ± 5°C), and is carried out in accordance with procedures described in the BC Lab Manual (prescriptive method). The procedure involves mixing the dried (at <60 °C) and sieved (10mesh/2mm) sample with ultra pure water at a 1:2 ratio of sediment to water. The pH is then measured by a standard pH probe.
Saturation Percentage	E141 Vancouver - Environmental	Soil/Solid	CSSS Ch. 15 (mod)/AER D50	Saturation Percentage (SP) is determined as the total volume of water present in a saturated paste (in mL) divided by the dry weight of the sample (in grams), expressed as a percentage.
Moisture Content by Gravimetry	E144 Vancouver - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1	Moisture is measured gravimetrically by drying the sample at 105°C. Moisture content is calculated as the weight loss (due to water) divided by the wet weight of the sample, expressed as a percentage.
Chloride by IC (Saturated Paste)	E239.Cl Vancouver - Environmental	Soil/Solid	CSSS Ch. 15 (mod)/EPA 300.1 (mod)	Inorganic anions are analyzed by obtaining a soil extract produced by the saturated paste extraction procedure which is then analyzed by Ion Chromatography with conductivity and/or UV detection.
Metals in Soil/Solid by CRC ICPMS	E440 Vancouver - Environmental	Soil/Solid	EPA 6020B (mod)	This method is intended to liberate metals that may be environmentally available. Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl. Dependent on sample matrix, some metals may be only partially recovered, including Al, Ba, Be, Cr, Sr, Ti, Tl, V, W, and Zr. Silicate minerals are not solubilized. Volatile forms of sulfur (including sulfide) may not be captured, as they may be lost during sampling, storage, or digestion. This method does not adequately recover elemental sulfur, and is unsuitable for assessment of elemental sulfur standards or guidelines. Analysis is by Collision/Reaction Cell ICPMS.
Ca, K, Mg, and Na by CRC ICPMS (Saturated Paste, mg/L)	E442 Vancouver - Environmental	Soil/Solid	CSSS CH15/EPA 6020B (mod)	A soil extract produced by the saturated paste extraction procedure is analyzed for Calcium, Magnesium, Potassium and Sodium by Collision/Reaction Cell ICPMS as per "Soil Sampling Methods of Analysis" By M Carter.
Mercury in Soil/Solid by CVAAS	E510 Vancouver - Environmental	Soil/Solid	EPA 200.2/1631 Appendix (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl, followed by CVAAS analysis.
VH and F1 by Headspace GC-FID	E581.VH+F1 Vancouver - Environmental	Soil/Solid	BC MOE Lab Manual / CCME PHC in Soil - Tier 1 (mod)	Volatile Hydrocarbons (VH and F1) is analyzed by static headspace GC-FID. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.



Analytical Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
BC PHCs - EPH by GC-FID	E601A Vancouver - Environmental	Soil/Solid	BC MOE Lab Manual (EPH in Solids by GC/FID) (mod)	Sample extracts are analyzed by GC-FID for BC hydrocarbon fractions.
BTEX by Headspace GC-MS	E611A Vancouver - Environmental	Soil/Solid	EPA 8260D (mod)	Volatile Organic Compounds (VOCs) are analyzed by static headspace GC-MS. Samples are prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.
PAHs by Hex:Ace GC-MS	E641A Vancouver - Environmental	Soil/Solid	EPA 8270E (mod)	Polycyclic Aromatic Hydrocarbons (PAHs) are extracted with hexane/acetone and analyzed by GC-MS. If reported, IACR (index of additive cancer risk, unitless) and B(a)P toxic potency equivalent (in soil concentration units) are calculated as per CCME PAH Soil Quality Guidelines fact sheet (2010) or ABT1.
PAHs by Hex:Ace GC-MS (Low Level CCME)	E641A-L Vancouver - Environmental	Soil/Solid	EPA 8270E (mod)	Polycyclic Aromatic Hydrocarbons (PAHs) are extracted with hexane/acetone and analyzed by GC-MS. If reported, IACR (index of additive cancer risk, unitless) and B(a)P toxic potency equivalent (in soil concentration units) are calculated as per CCME PAH Soil Quality Guidelines fact sheet (2010) or ABT1.
PAHs by GC-MS (TCLP)	E644 Vancouver - Environmental	Soil/Solid	EPA 8270E (mod)	Polycyclic Aromatic Hydrocarbons (PAHs) are analyzed by GC-MS.
Chloride by IC (Saturated Paste) (mg/kg)	EC239A.Cl Vancouver - Environmental	Soil/Solid	CSSS Ch. 15 (mod)/EPA 300.1 (mod)	Inorganic anions are analyzed by obtaining a soil extract produced by the saturated paste extraction procedure which is then analyzed by Ion Chromatography with conductivity and/or UV detection.
Ca, K, Mg, Na by ICPMS (Saturated Paste, mg/kg)	EC442 Vancouver - Environmental	Soil/Solid	CSSS CH15/EPA 6020B (mod)	A soil extract produced by the saturated paste extraction procedure is analyzed for Calcium, Magnesium, Potassium, Sodium by ICPMS.
VPH: VH-BTEX-Styrene	EC580A Vancouver - Environmental	Soil/Solid	BC MOE Lab Manual (VPH in Water and Solids) (mod)	Volatile Petroleum Hydrocarbons (VPH) is calculated as follows: VH-BTEX = Volatile Hydrocarbons (VH6-10) minus benzene, toluene, ethylbenzene, xylenes (BTEX) and styrene.
LEPH and HEPH: EPH-PAH	EC600A Vancouver - Environmental	Soil/Solid	BC MOE Lab Manual (LEPH and HEPH)	Light Extractable Petroleum Hydrocarbons (LEPH) and Heavy Extractable Petroleum Hydrocarbons (HEPH) are calculated as follows: LEPH = Extractable Petroleum Hydrocarbons (EPH10-19) minus Naphthalene and Phenanthrene; HEPH = Extractable Petroleum Hydrocarbons (EPH19-32) minus Benz(a)anthracene, Benzo(b+j+k)fluoranthene, Benzo(a)pyrene, Dibenz(a,h)anthracene, Indeno(1,2,3-cd)pyrene, and Pyrene.

Preparation Methods	Method / Lab	Matrix	Method Reference	Method Descriptions
Leach 1:2 Soil:Water for pH/EC	EP108 Vancouver - Environmental	Soil/Solid	BC WLAP METHOD: PH, ELECTROMETRIC, SOIL	The procedure involves mixing the dried (at <60°C) and sieved (No. 10 / 2mm) sample with deionized/distilled water at a 1:2 ratio of sediment to water.



<i>Preparation Methods</i>	<i>Method / Lab</i>	<i>Matrix</i>	<i>Method Reference</i>	<i>Method Descriptions</i>
Digestion for Metals and Mercury	EP440 Vancouver - Environmental	Soil/Solid	EPA 200.2 (mod)	Samples are dried, then sieved through a 2 mm sieve, and digested with HNO ₃ and HCl. This method is intended to liberate metals that may be environmentally available.
VOCs Methanol Extraction for Headspace Analysis	EP581 Vancouver - Environmental	Soil/Solid	EPA 5035A (mod)	VOCs in samples are extracted with methanol. Extracts are then prepared in headspace vials and are heated and agitated on the headspace autosampler, causing VOCs to partition between the aqueous phase and the headspace in accordance with Henry's law.
PHCs and PAHs Hexane-Acetone Tumbler Extraction	EP601 Vancouver - Environmental	Soil/Solid	CCME PHC in Soil - Tier 1 (mod)	Samples are subsampled and Petroleum Hydrocarbons (PHC) and PAHs are extracted with 1:1 hexane:acetone using a rotary extractor.
PHCs and PAHs Extraction (TCLP)	EP602 Vancouver - Environmental	Soil/Solid	EPA 3511 (mod)	Petroleum Hydrocarbons (PHCs) and Polycyclic Aromatic Hydrocarbons (PAHs) are extracted using a hexane liquid-liquid extraction.
TCLP Leachate Preparation (Metals, Inorganics, and SVOCs)	EPP444 Vancouver - Environmental	Soil/Solid	EPA 1311	Preparation of a Toxicity Characteristic Leaching Procedure (TCLP) solid sample involves particle size reduction, homogenization, then determination of appropriate extraction fluid. A measured portion of fresh subsample is placed in an extraction bottle with the appropriate extraction fluid then tumbled in a rotary extractor for 18+/- 2 hours at 23 +/- 2 C. The liquid leachate is filtered to separate from solids then bottled and prepared for analytical tests.

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QUALITY CONTROL REPORT

Work Order : **VA23B3748**
Amendment : **1**
Client : McElhanney Ltd.
Contact : Victoria Amson
Address : # 500 - 3960 Quadra Street
 Victoria BC Canada V8X 4A3
Telephone :
Project : 2233-02107-00
PO : ----
C-O-C number : 21-
Sampler : M.Manzi 250 370 9221
Site : ----
Quote number : BC/Yukon Standing Offer - 2022 update
No. of samples received : 9
No. of samples analysed : 8

Page : 1 of 19
Laboratory : Vancouver - Environmental
Account Manager : Dean Watt
Address : 8081 Lougheed Highway
 Burnaby, British Columbia Canada V5A 1W9
Telephone : +1 604 253 4188
Date Samples Received : 17-Jun-2023 12:10
Date Analysis Commenced : 17-Jun-2023
Issue Date : 22-Jun-2023 17:19

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percent Difference (RPD) and Data Quality Objectives
- Matrix Spike (MS) Report; Recovery and Data Quality Objectives
- Reference Material (RM) Report; Recovery and Data Quality Objectives
- Method Blank (MB) Report; Recovery and Data Quality Objectives
- Laboratory Control Sample (LCS) Report; Recovery and Data Quality Objectives

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	Position	Laboratory Department
Janice Leung	Supervisor - Organics Instrumentation	Vancouver Organics, Burnaby, British Columbia
Kevin Duarte	Supervisor - Metals ICP Instrumentation	Vancouver Metals, Burnaby, British Columbia
Kim Jensen	Department Manager - Metals	Vancouver Metals, Burnaby, British Columbia
Kinny Wu	Lab Analyst	Vancouver Metals, Burnaby, British Columbia
Miles Gropen	Department Manager - Inorganics	Vancouver Inorganics, Burnaby, British Columbia



General Comments

The ALS Quality Control (QC) report is optionally provided to ALS clients upon request. ALS test methods include comprehensive QC checks with every analysis to ensure our high standards of quality are met. Each QC result has a known or expected target value, which is compared against predetermined Data Quality Objectives (DQOs) to provide confidence in the accuracy of associated test results. This report contains detailed results for all QC results applicable to this sample submission. Please refer to the ALS Quality Control Interpretation report (QCI) for applicable method references and methodology summaries.

Key :

Anonymous = Refers to samples which are not part of this work order, but which formed part of the QC process lot.

CAS Number = Chemical Abstracts Service number is a unique identifier assigned to discrete substances.

DQO = Data Quality Objective.

LOR = Limit of Reporting (detection limit).

RPD = Relative Percent Difference

= Indicates a QC result that did not meet the ALS DQO.

Workorder Comments

Holding times are displayed as "---" if no guidance exists from CCME, Canadian provinces, or broadly recognized international references.

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Laboratory Duplicate (DUP) Report

A Laboratory Duplicate (DUP) is a randomly selected intralaboratory replicate sample. Laboratory Duplicates provide information regarding method precision and sample heterogeneity. ALS DQOs for Laboratory Duplicates are expressed as test-specific limits for Relative Percent Difference (RPD), or as an absolute difference limit of 2 times the LOR for low concentration duplicates within ~ 4-10 times the LOR (cut-off is test-specific).

Sub-Matrix: Soil/Solid

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Physical Tests (QC Lot: 1001708)											
VA23B3748-006	TH23-03B	Moisture	----	E144	0.25	%	6.18	5.71	7.98%	20%	----
Physical Tests (QC Lot: 995025)											
VA23B3748-008	TH23-04B	pH (1:2 soil:water)	----	E108	0.10	pH units	7.39	7.21	2.5%	5%	----
Physical Tests (QC Lot: 995033)											
VA23B3748-009	DUP-A	Moisture	----	E144	0.25	%	9.48	9.36	1.28%	20%	----
Saturated Paste Extractables (QC Lot: 1001704)											
VA23B3748-004	TH23-02B	Chloride, soluble ion content	16887-00-6	E239.Cl	20	mg/L	177000 µg/L	161	9.16%	30%	----
Saturated Paste Extractables (QC Lot: 1001705)											
VA23B3748-004	TH23-02B	% Saturation	----	E141	1.0	%	23.8	21.5	9.90%	20%	----
Saturated Paste Extractables (QC Lot: 1001706)											
VA23B3748-004	TH23-02B	Sodium, soluble ion content	17341-25-2	E442	20.0	mg/L	89000 µg/L	81.5	7.5	Diff <2x LOR	----
Saturated Paste Extractables (QC Lot: 995026)											
VA23B3748-005	TH23-03A	Chloride, soluble ion content	16887-00-6	E239.Cl	20	mg/L	656000 µg/L	538	19.7%	30%	----
Saturated Paste Extractables (QC Lot: 995027)											
VA23B3748-005	TH23-03A	% Saturation	----	E141	1.0	%	72.9	80.0	9.32%	20%	----
Saturated Paste Extractables (QC Lot: 995028)											
VA23B3748-005	TH23-03A	Sodium, soluble ion content	17341-25-2	E442	20.0	mg/L	404000 µg/L	295	31.2%	30%	DUP-H
Metals (QC Lot: 995023)											
VA23B3748-008	TH23-04B	Mercury	7439-97-6	E510	0.0500	mg/kg	<0.0500 µg/g	<0.0500	0	Diff <2x LOR	----
Metals (QC Lot: 995024)											
VA23B3748-008	TH23-04B	Aluminum	7429-90-5	E440	50	mg/kg	19700 µg/g	18200	8.34%	40%	----
		Antimony	7440-36-0	E440	0.10	mg/kg	0.17 µg/g	0.16	0.01	Diff <2x LOR	----
		Arsenic	7440-38-2	E440	0.10	mg/kg	4.94 µg/g	4.39	11.8%	30%	----
		Barium	7440-39-3	E440	0.50	mg/kg	48.2 µg/g	44.4	8.18%	40%	----
		Beryllium	7440-41-7	E440	0.10	mg/kg	0.26 µg/g	0.25	0.008	Diff <2x LOR	----
		Bismuth	7440-69-9	E440	0.20	mg/kg	<0.20 µg/g	<0.20	0	Diff <2x LOR	----
		Boron	7440-42-8	E440	5.0	mg/kg	49.5 µg/g	28.4	54.0%	30%	DUP-H
		Cadmium	7440-43-9	E440	0.020	mg/kg	0.113 µg/g	0.095	0.018	Diff <2x LOR	----
		Calcium	7440-70-2	E440	50	mg/kg	7840 µg/g	7650	2.49%	30%	----
		Chromium	7440-47-3	E440	0.50	mg/kg	38.0 µg/g	37.3	1.84%	30%	----



Sub-Matrix: Soil/Solid					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Metals (QC Lot: 995024) - continued											
VA23B3748-008	TH23-04B	Cobalt	7440-48-4	E440	0.10	mg/kg	12.9 µg/g	11.4	12.6%	30%	----
		Copper	7440-50-8	E440	0.50	mg/kg	47.4 µg/g	45.9	3.27%	30%	----
		Iron	7439-89-6	E440	50	mg/kg	29500 µg/g	26700	9.92%	30%	----
		Lead	7439-92-1	E440	0.50	mg/kg	10.1 µg/g	5.21	63.9%	40%	DUP-H
		Lithium	7439-93-2	E440	2.0	mg/kg	10.7 µg/g	10.9	0.2	Diff <2x LOR	----
		Magnesium	7439-95-4	E440	20	mg/kg	12400 µg/g	11200	10.4%	30%	----
		Manganese	7439-96-5	E440	1.0	mg/kg	512 µg/g	454	12.1%	30%	----
		Molybdenum	7439-98-7	E440	0.10	mg/kg	0.23 µg/g	0.23	0.002	Diff <2x LOR	----
		Nickel	7440-02-0	E440	0.50	mg/kg	24.4 µg/g	23.3	4.64%	30%	----
		Phosphorus	7723-14-0	E440	50	mg/kg	602 µg/g	592	1.77%	30%	----
		Potassium	7440-09-7	E440	100	mg/kg	490 µg/g	520	5.40%	40%	----
		Selenium	7782-49-2	E440	0.20	mg/kg	<0.20 µg/g	<0.20	0	Diff <2x LOR	----
		Silver	7440-22-4	E440	0.10	mg/kg	<0.10 µg/g	<0.10	0	Diff <2x LOR	----
		Sodium	7440-23-5	E440	50	mg/kg	376 µg/g	360	4.40%	40%	----
		Strontium	7440-24-6	E440	0.50	mg/kg	34.9 µg/g	35.1	0.480%	40%	----
		Sulfur	7704-34-9	E440	1000	mg/kg	<1000 µg/g	<1000	0	Diff <2x LOR	----
		Thallium	7440-28-0	E440	0.050	mg/kg	<0.050 µg/g	<0.050	0	Diff <2x LOR	----
		Tin	7440-31-5	E440	2.0	mg/kg	<2.0 µg/g	<2.0	0	Diff <2x LOR	----
		Titanium	7440-32-6	E440	1.0	mg/kg	1420 µg/g	1340	5.80%	40%	----
		Tungsten	7440-33-7	E440	0.50	mg/kg	<0.50 µg/g	<0.50	0	Diff <2x LOR	----
Uranium	7440-61-1	E440	0.050	mg/kg	0.198 µg/g	0.210	0.012	Diff <2x LOR	----		
Vanadium	7440-62-2	E440	0.20	mg/kg	83.2 µg/g	76.5	8.35%	30%	----		
Zinc	7440-66-6	E440	2.0	mg/kg	53.7 µg/g	49.1	8.88%	30%	----		
Zirconium	7440-67-7	E440	1.0	mg/kg	3.2 µg/g	3.1	0.06	Diff <2x LOR	----		
Volatile Organic Compounds (QC Lot: 995186)											
VA23B3748-003	TH23-02A	Benzene	71-43-2	E611A	0.0050	mg/kg	<0.0050 µg/g	<0.0050	0	Diff <2x LOR	----
		Ethylbenzene	100-41-4	E611A	0.015	mg/kg	<0.015 µg/g	<0.015	0	Diff <2x LOR	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	0.200	mg/kg	<0.200 µg/g	<0.200	0	Diff <2x LOR	----
		Styrene	100-42-5	E611A	0.050	mg/kg	<0.050 µg/g	<0.050	0	Diff <2x LOR	----
		Toluene	108-88-3	E611A	0.050	mg/kg	<0.050 µg/g	<0.050	0	Diff <2x LOR	----
		Xylene, m+p-	179601-23-1	E611A	0.050	mg/kg	<0.050 µg/g	<0.050	0	Diff <2x LOR	----
		Xylene, o-	95-47-6	E611A	0.050	mg/kg	<0.050 µg/g	<0.050	0	Diff <2x LOR	----
		Hydrocarbons (QC Lot: 995031)									
VA23B3748-001	TH23-01A	EPH (C10-C19)	----	E601A	200	mg/kg	<200 µg/g	<200	0	Diff <2x LOR	----



Sub-Matrix: Soil/Solid					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Hydrocarbons (QC Lot: 995031) - continued											
VA23B3748-001	TH23-01A	EPH (C19-C32)	----	E601A	200	mg/kg	<200 µg/g	<200	0	Diff <2x LOR	----
Hydrocarbons (QC Lot: 995185)											
VA23B3748-003	TH23-02A	VHs (C6-C10)	----	E581.VH+F1	10	mg/kg	<10 µg/g	<10	0	Diff <2x LOR	----
Polycyclic Aromatic Hydrocarbons (QC Lot: 1001707)											
VA23B3748-006	TH23-03B	Acenaphthene	83-32-9	E641A	0.050	mg/kg	<0.050 µg/g	<0.050	0	Diff <2x LOR	----
		Acenaphthylene	208-96-8	E641A	0.050	mg/kg	<0.050 µg/g	<0.050	0	Diff <2x LOR	----
		Acridine	260-94-6	E641A	0.050	mg/kg	<0.050 µg/g	<0.050	0	Diff <2x LOR	----
		Anthracene	120-12-7	E641A	0.050	mg/kg	<0.050 µg/g	<0.050	0	Diff <2x LOR	----
		Benz(a)anthracene	56-55-3	E641A	0.050	mg/kg	<0.050 µg/g	0.075	0.025	Diff <2x LOR	----
		Benzo(a)pyrene	50-32-8	E641A	0.050	mg/kg	0.076 µg/g	0.089	0.013	Diff <2x LOR	----
		Benzo(b+j)fluoranthene	n/a	E641A	0.050	mg/kg	0.071 µg/g	0.087	0.015	Diff <2x LOR	----
		Benzo(g,h,i)perylene	191-24-2	E641A	0.050	mg/kg	0.086 µg/g	0.082	0.004	Diff <2x LOR	----
		Benzo(k)fluoranthene	207-08-9	E641A	0.050	mg/kg	<0.050 µg/g	<0.050	0	Diff <2x LOR	----
		Chrysene	218-01-9	E641A	0.050	mg/kg	0.059 µg/g	0.080	0.021	Diff <2x LOR	----
		Dibenz(a,h)anthracene	53-70-3	E641A	0.050	mg/kg	<0.050 µg/g	<0.050	0	Diff <2x LOR	----
		Fluoranthene	206-44-0	E641A	0.050	mg/kg	0.074 µg/g	0.105	0.031	Diff <2x LOR	----
		Fluorene	86-73-7	E641A	0.050	mg/kg	<0.050 µg/g	<0.050	0	Diff <2x LOR	----
		Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.050	mg/kg	0.068 µg/g	0.068	0.0006	Diff <2x LOR	----
		Methylnaphthalene, 1-	90-12-0	E641A	0.050	mg/kg	<0.050 µg/g	<0.050	0	Diff <2x LOR	----
		Methylnaphthalene, 2-	91-57-6	E641A	0.050	mg/kg	<0.050 µg/g	<0.050	0	Diff <2x LOR	----
		Naphthalene	91-20-3	E641A	0.050	mg/kg	<0.050 µg/g	<0.050	0	Diff <2x LOR	----
		Phenanthrene	85-01-8	E641A	0.050	mg/kg	<0.050 µg/g	<0.050	0	Diff <2x LOR	----
		Pyrene	129-00-0	E641A	0.050	mg/kg	0.098 µg/g	0.136	0.039	Diff <2x LOR	----
		Quinoline	91-22-5	E641A	0.050	mg/kg	<0.050 µg/g	<0.050	0	Diff <2x LOR	----
Polycyclic Aromatic Hydrocarbons (QC Lot: 995032)											
VA23B3748-001	TH23-01A	Acenaphthene	83-32-9	E641A-L	0.0050	mg/kg	0.0070 µg/g	<0.0050	0.0020	Diff <2x LOR	----
		Acenaphthylene	208-96-8	E641A-L	0.0050	mg/kg	0.0550 µg/g	0.0253	74.0%	50%	DUP-H
		Acridine	260-94-6	E641A-L	0.010	mg/kg	<0.010 µg/g	<0.010	0	Diff <2x LOR	----
		Anthracene	120-12-7	E641A-L	0.0040	mg/kg	0.0450 µg/g	0.0191	80.9%	50%	DUP-H
		Benz(a)anthracene	56-55-3	E641A-L	0.010	mg/kg	0.169 µg/g	0.067	86.7%	50%	DUP-H
		Benzo(a)pyrene	50-32-8	E641A-L	0.010	mg/kg	0.209 µg/g	0.086	82.9%	50%	DUP-H
		Benzo(b+j)fluoranthene	n/a	E641A-L	0.010	mg/kg	0.238 µg/g	0.099	82.5%	50%	DUP-H
		Benzo(g,h,i)perylene	191-24-2	E641A-L	0.010	mg/kg	0.156 µg/g	0.069	77.2%	50%	DUP-H
		Benzo(k)fluoranthene	207-08-9	E641A-L	0.010	mg/kg	0.094 µg/g	0.035	90.3%	50%	DUP-H



Sub-Matrix: Soil/Solid

					Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	LOR	Unit	Original Result	Duplicate Result	RPD(%) or Difference	Duplicate Limits	Qualifier
Polycyclic Aromatic Hydrocarbons (QC Lot: 995032) - continued											
VA23B3748-001	TH23-01A	Chrysene	218-01-9	E641A-L	0.010	mg/kg	0.206 µg/g	0.083	85.1%	50%	DUP-H
		Dibenz(a,h)anthracene	53-70-3	E641A-L	0.0050	mg/kg	0.0296 µg/g	0.0124	81.7%	50%	DUP-H
		Fluoranthene	206-44-0	E641A-L	0.010	mg/kg	0.394 µg/g	0.147	91.2%	50%	DUP-H
		Fluorene	86-73-7	E641A-L	0.010	mg/kg	0.015 µg/g	<0.010	0.005	Diff <2x LOR	----
		Indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.010	mg/kg	0.147 µg/g	0.072	68.0%	50%	DUP-H
		Methylnaphthalene, 1-	90-12-0	E641A-L	0.010	mg/kg	<0.010 µg/g	<0.010	0	Diff <2x LOR	----
		Methylnaphthalene, 2-	91-57-6	E641A-L	0.010	mg/kg	<0.010 µg/g	<0.010	0	Diff <2x LOR	----
		Naphthalene	91-20-3	E641A-L	0.010	mg/kg	<0.010 µg/g	<0.010	0	Diff <2x LOR	----
		Phenanthrene	85-01-8	E641A-L	0.010	mg/kg	0.236 µg/g	0.092	88.0%	50%	DUP-H
		Pyrene	129-00-0	E641A-L	0.010	mg/kg	0.452 µg/g	0.178	87.0%	50%	DUP-H
		Quinoline	91-22-5	E641A-L	0.010	mg/kg	<0.010 µg/g	<0.010	0	Diff <2x LOR	----

Qualifiers

Qualifier	Description
DUP-H	Duplicate results outside ALS DQO, due to sample heterogeneity.

DRAFT



Method Blank (MB) Report

A Method Blank is an analyte-free matrix that undergoes sample processing identical to that carried out for test samples. Method Blank results are used to monitor and control for potential contamination from the laboratory environment and reagents. For most tests, the DQO for Method Blanks is for the result to be < LOR.

Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Physical Tests (QCLot: 1001708)						
Moisture	---	E144	0.25	%	<0.25	---
Physical Tests (QCLot: 995033)						
Moisture	---	E144	0.25	%	<0.25	---
Saturated Paste Extractables (QCLot: 1001704)						
Chloride, soluble ion content	16887-00-6	E239.Cl	20	mg/L	<20	---
Saturated Paste Extractables (QCLot: 1001705)						
% Saturation	---	E141	1	%	50.0	---
Saturated Paste Extractables (QCLot: 1001706)						
Sodium, soluble ion content	17341-25-2	E442	2	mg/L	<2.0	---
Saturated Paste Extractables (QCLot: 995026)						
Chloride, soluble ion content	16887-00-6	E239.Cl	20	mg/L	<20	---
Saturated Paste Extractables (QCLot: 995027)						
% Saturation	---	E141	1	%	50.0	---
Saturated Paste Extractables (QCLot: 995028)						
Sodium, soluble ion content	17341-25-2	E442	2	mg/L	<2.0	---
Metals (QCLot: 995023)						
Mercury	7439-97-6	E510	0.005	mg/kg	<0.0050	---
Metals (QCLot: 995024)						
Aluminum	7429-90-5	E440	50	mg/kg	<50	---
Antimony	7440-36-0	E440	0.1	mg/kg	<0.10	---
Arsenic	7440-38-2	E440	0.1	mg/kg	<0.10	---
Barium	7440-39-3	E440	0.5	mg/kg	<0.50	---
Beryllium	7440-41-7	E440	0.1	mg/kg	<0.10	---
Bismuth	7440-69-9	E440	0.2	mg/kg	<0.20	---
Boron	7440-42-8	E440	5	mg/kg	<5.0	---
Cadmium	7440-43-9	E440	0.02	mg/kg	<0.020	---
Calcium	7440-70-2	E440	50	mg/kg	<50	---
Chromium	7440-47-3	E440	0.5	mg/kg	<0.50	---
Cobalt	7440-48-4	E440	0.1	mg/kg	<0.10	---
Copper	7440-50-8	E440	0.5	mg/kg	<0.50	---
Iron	7439-89-6	E440	50	mg/kg	<50	---
Lead	7439-92-1	E440	0.5	mg/kg	<0.50	---



Sub-Matrix: Soil/Solid

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Metals (QCLot: 995024) - continued						
Lithium	7439-93-2	E440	2	mg/kg	<2.0	----
Magnesium	7439-95-4	E440	20	mg/kg	<20	----
Manganese	7439-96-5	E440	1	mg/kg	<1.0	----
Molybdenum	7439-98-7	E440	0.1	mg/kg	<0.10	----
Nickel	7440-02-0	E440	0.5	mg/kg	<0.50	----
Phosphorus	7723-14-0	E440	50	mg/kg	<50	----
Potassium	7440-09-7	E440	100	mg/kg	<100	----
Selenium	7782-49-2	E440	0.2	mg/kg	<0.20	----
Silver	7440-22-4	E440	0.1	mg/kg	<0.10	----
Sodium	7440-23-5	E440	50	mg/kg	<50	----
Strontium	7440-24-6	E440	0.5	mg/kg	<0.50	----
Sulfur	7704-34-9	E440	1000	mg/kg	<1000	----
Thallium	7440-28-0	E440	0.05	mg/kg	<0.050	----
Tin	7440-31-5	E440	2	mg/kg	<2.0	----
Titanium	7440-32-6	E440	1	mg/kg	<1.0	----
Tungsten	7440-33-7	E440	0.5	mg/kg	<0.50	----
Uranium	7440-61-1	E440	0.05	mg/kg	<0.050	----
Vanadium	7440-62-2	E440	0.2	mg/kg	<0.20	----
Zinc	7440-66-6	E440	2	mg/kg	<2.0	----
Zirconium	7440-67-7	E440	1	mg/kg	<1.0	----
TCLP Extractables (QCLot: 1003228)						
Acenaphthene, TCLP	83-32-9	E644	5	µg/L	<5.0	----
Acenaphthylene, TCLP	208-96-8	E644	5	µg/L	<5.0	----
Acridine, TCLP	260-94-6	E644	5	µg/L	<5.0	----
Anthracene, TCLP	120-12-7	E644	5	µg/L	<5.0	----
Benzo(a)anthracene, TCLP	56-55-3	E644	5	µg/L	<5.0	----
Benzo(a)pyrene, TCLP	50-32-8	E644	0.5	µg/L	<0.50	----
Benzo(b+j)fluoranthene, TCLP	----	E644	5	µg/L	<5.0	----
Benzo(g,h,i)perylene, TCLP	191-24-2	E644	5	µg/L	<5.0	----
Benzo(k)fluoranthene, TCLP	207-08-9	E644	5	µg/L	<5.0	----
Chrysene, TCLP	218-01-9	E644	5	µg/L	<5.0	----
Dibenz(a,h)anthracene, TCLP	53-70-3	E644	5	µg/L	<5.0	----
Fluoranthene, TCLP	206-44-0	E644	5	µg/L	<5.0	----
Fluorene, TCLP	86-73-7	E644	5	µg/L	<5.0	----
Indeno(1,2,3-cd)pyrene, TCLP	193-39-5	E644	5	µg/L	<5.0	----



Sub-Matrix: **Soil/Solid**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
TCLP Extractables (QCLot: 1003228) - continued						
Naphthalene, TCLP	91-20-3	E644	5	µg/L	<5.0	----
Phenanthrene, TCLP	85-01-8	E644	5	µg/L	<5.0	----
Pyrene, TCLP	129-00-0	E644	5	µg/L	<5.0	----
Volatile Organic Compounds (QCLot: 995186)						
Benzene	71-43-2	E611A	0.005	mg/kg	<0.0050	----
Ethylbenzene	100-41-4	E611A	0.015	mg/kg	<0.015	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	0.04	mg/kg	<0.040	----
Styrene	100-42-5	E611A	0.05	mg/kg	<0.050	----
Toluene	108-88-3	E611A	0.05	mg/kg	<0.050	----
Xylene, m+p-	179601-23-1	E611A	0.03	mg/kg	<0.030	----
Xylene, o-	95-47-6	E611A	0.03	mg/kg	<0.030	----
Hydrocarbons (QCLot: 995031)						
EPH (C10-C19)	----	E601A	200	mg/kg	<200	----
EPH (C19-C32)	----	E601A	200	mg/kg	<200	----
Hydrocarbons (QCLot: 995185)						
VHs (C6-C10)	----	E581.VH+F1	10	mg/kg	<10	----
Polycyclic Aromatic Hydrocarbons (QCLot: 1001707)						
Acenaphthene	83-32-9	E641A	0.05	mg/kg	<0.050	----
Acenaphthylene	208-96-8	E641A	0.05	mg/kg	<0.050	----
Acridine	260-94-6	E641A	0.05	mg/kg	<0.050	----
Anthracene	120-12-7	E641A	0.05	mg/kg	<0.050	----
Benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	<0.050	----
Benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	<0.050	----
Benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	<0.050	----
Benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	<0.050	----
Benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	<0.050	----
Chrysene	218-01-9	E641A	0.05	mg/kg	<0.050	----
Dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	<0.050	----
Fluoranthene	206-44-0	E641A	0.05	mg/kg	<0.050	----
Fluorene	86-73-7	E641A	0.05	mg/kg	<0.050	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	<0.050	----
Methylnaphthalene, 1-	90-12-0	E641A	0.03	mg/kg	<0.030	----
Methylnaphthalene, 2-	91-57-6	E641A	0.03	mg/kg	<0.030	----
Naphthalene	91-20-3	E641A	0.01	mg/kg	<0.010	----
Phenanthrene	85-01-8	E641A	0.05	mg/kg	<0.050	----



Sub-Matrix: **Soil/Solid**

Analyte	CAS Number	Method	LOR	Unit	Result	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 1001707) - continued						
Pyrene	129-00-0	E641A	0.05	mg/kg	<0.050	----
Quinoline	91-22-5	E641A	0.05	mg/kg	<0.050	----
Polycyclic Aromatic Hydrocarbons (QCLot: 995032)						
Acenaphthene	83-32-9	E641A-L	0.005	mg/kg	<0.0050	----
Acenaphthylene	208-96-8	E641A-L	0.005	mg/kg	<0.0050	----
Acridine	260-94-6	E641A-L	0.01	mg/kg	<0.010	----
Anthracene	120-12-7	E641A-L	0.004	mg/kg	<0.0040	----
Benz(a)anthracene	56-55-3	E641A-L	0.01	mg/kg	<0.010	----
Benzo(a)pyrene	50-32-8	E641A-L	0.01	mg/kg	<0.010	----
Benzo(b+j)fluoranthene	n/a	E641A-L	0.01	mg/kg	<0.010	----
Benzo(g,h,i)perylene	191-24-2	E641A-L	0.01	mg/kg	<0.010	----
Benzo(k)fluoranthene	207-08-9	E641A-L	0.01	mg/kg	<0.010	----
Chrysene	218-01-9	E641A-L	0.01	mg/kg	<0.010	----
Dibenz(a,h)anthracene	53-70-3	E641A-L	0.005	mg/kg	<0.0050	----
Fluoranthene	206-44-0	E641A-L	0.01	mg/kg	<0.010	----
Fluorene	86-73-7	E641A-L	0.01	mg/kg	<0.010	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.01	mg/kg	<0.010	----
Methylnaphthalene, 1-	90-12-0	E641A-L	0.01	mg/kg	<0.010	----
Methylnaphthalene, 2-	91-57-6	E641A-L	0.01	mg/kg	<0.010	----
Naphthalene	91-20-3	E641A-L	0.01	mg/kg	<0.010	----
Phenanthrene	85-01-8	E641A-L	0.01	mg/kg	<0.010	----
Pyrene	129-00-0	E641A-L	0.01	mg/kg	<0.010	----
Quinoline	91-22-5	E641A-L	0.01	mg/kg	<0.010	----



Laboratory Control Sample (LCS) Report

A Laboratory Control Sample (LCS) is an analyte-free matrix that has been fortified (spiked) with test analytes at known concentration and processed in an identical manner to test samples. LCS results are expressed as percent recovery, and are used to monitor and control test method accuracy and precision, independent of test sample matrix.

Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Physical Tests (QCLot: 1001708)									
Moisture	----	E144	0.25	%	50 %	102	90.0	110	----
Physical Tests (QCLot: 995025)									
pH (1:2 soil:water)	----	E108	----	pH units	6 pH units	99.8	95.0	105	----
Physical Tests (QCLot: 995033)									
Moisture	----	E144	0.25	%	50 %	99.5	90.0	110	----
Saturated Paste Extractables (QCLot: 1001704)									
Chloride, soluble ion content	16887-00-6	E239.Cl	20	mg/L	100 mg/L	102	80.0	120	----
Saturated Paste Extractables (QCLot: 1001705)									
% Saturation	----	E141	1	%	100 %	101	80.0	120	----
Saturated Paste Extractables (QCLot: 1001706)									
Sodium, soluble ion content	17341-25-2	E442	2	mg/L	50 mg/L	114	80.0	120	----
Saturated Paste Extractables (QCLot: 995026)									
Chloride, soluble ion content	16887-00-6	E239.Cl	20	mg/L	100 mg/L	101	80.0	120	----
Saturated Paste Extractables (QCLot: 995027)									
% Saturation	----	E141	1	%	100 %	93.6	80.0	120	----
Saturated Paste Extractables (QCLot: 995028)									
Sodium, soluble ion content	17341-25-2	E442	2	mg/L	50 mg/L	106	80.0	120	----
Metals (QCLot: 995023)									
Mercury	7439-97-6	E510	0.005	mg/kg	0.1 mg/kg	97.0	80.0	120	----
Metals (QCLot: 995024)									
Aluminum	7429-90-5	E440	50	mg/kg	200 mg/kg	91.2	80.0	120	----
Antimony	7440-36-0	E440	0.1	mg/kg	100 mg/kg	95.5	80.0	120	----
Arsenic	7440-38-2	E440	0.1	mg/kg	100 mg/kg	98.4	80.0	120	----
Barium	7440-39-3	E440	0.5	mg/kg	25 mg/kg	95.1	80.0	120	----
Beryllium	7440-41-7	E440	0.1	mg/kg	10 mg/kg	88.0	80.0	120	----
Bismuth	7440-69-9	E440	0.2	mg/kg	100 mg/kg	87.4	80.0	120	----
Boron	7440-42-8	E440	5	mg/kg	100 mg/kg	89.2	80.0	120	----
Cadmium	7440-43-9	E440	0.02	mg/kg	10 mg/kg	90.5	80.0	120	----
Calcium	7440-70-2	E440	50	mg/kg	5000 mg/kg	88.9	80.0	120	----
Chromium	7440-47-3	E440	0.5	mg/kg	25 mg/kg	87.5	80.0	120	----



Sub-Matrix: Soil/Solid

Laboratory Control Sample (LCS) Report

Analyte	CAS Number	Method	LOR	Unit	Spike	Recovery (%)	Recovery Limits (%)		Qualifier
					Concentration	LCS	Low	High	
Metals (QCLot: 995024) - continued									
Cobalt	7440-48-4	E440	0.1	mg/kg	25 mg/kg	86.0	80.0	120	----
Copper	7440-50-8	E440	0.5	mg/kg	25 mg/kg	85.9	80.0	120	----
Iron	7439-89-6	E440	50	mg/kg	100 mg/kg	90.7	80.0	120	----
Lead	7439-92-1	E440	0.5	mg/kg	50 mg/kg	88.5	80.0	120	----
Lithium	7439-93-2	E440	2	mg/kg	25 mg/kg	86.3	80.0	120	----
Magnesium	7439-95-4	E440	20	mg/kg	5000 mg/kg	95.2	80.0	120	----
Manganese	7439-96-5	E440	1	mg/kg	25 mg/kg	90.5	80.0	120	----
Molybdenum	7439-98-7	E440	0.1	mg/kg	25 mg/kg	91.2	80.0	120	----
Nickel	7440-02-0	E440	0.5	mg/kg	50 mg/kg	87.8	80.0	120	----
Phosphorus	7723-14-0	E440	50	mg/kg	1000 mg/kg	97.7	80.0	120	----
Potassium	7440-09-7	E440	100	mg/kg	5000 mg/kg	88.2	80.0	120	----
Selenium	7782-49-2	E440	0.2	mg/kg	100 mg/kg	95.2	80.0	120	----
Silver	7440-22-4	E440	0.1	mg/kg	10 mg/kg	82.6	80.0	120	----
Sodium	7440-23-5	E440	50	mg/kg	5000 mg/kg	91.4	80.0	120	----
Strontium	7440-24-6	E440	0.5	mg/kg	25 mg/kg	91.0	80.0	120	----
Sulfur	7704-34-9	E440	1000	mg/kg	5000 mg/kg	93.5	80.0	120	----
Thallium	7440-28-0	E440	0.05	mg/kg	100 mg/kg	89.9	80.0	120	----
Tin	7440-31-5	E440	2	mg/kg	50 mg/kg	91.6	80.0	120	----
Titanium	7440-32-6	E440	1	mg/kg	25 mg/kg	91.6	80.0	120	----
Tungsten	7440-33-7	E440	0.5	mg/kg	10 mg/kg	91.4	80.0	120	----
Uranium	7440-61-1	E440	0.05	mg/kg	0.5 mg/kg	87.0	80.0	120	----
Vanadium	7440-62-2	E440	0.2	mg/kg	50 mg/kg	90.7	80.0	120	----
Zinc	7440-66-6	E440	2	mg/kg	50 mg/kg	89.5	80.0	120	----
Zirconium	7440-67-7	E440	1	mg/kg	10 mg/kg	95.6	80.0	120	----
Volatile Organic Compounds (QCLot: 995186)									
Benzene	71-43-2	E611A	0.005	mg/kg	2.5 mg/kg	100	70.0	130	----
Ethylbenzene	100-41-4	E611A	0.015	mg/kg	2.5 mg/kg	101	70.0	130	----
Methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	0.04	mg/kg	2.5 mg/kg	103	70.0	130	----
Styrene	100-42-5	E611A	0.05	mg/kg	2.5 mg/kg	105	70.0	130	----
Toluene	108-88-3	E611A	0.05	mg/kg	2.5 mg/kg	100	70.0	130	----
Xylene, m+p-	179601-23-1	E611A	0.03	mg/kg	5 mg/kg	108	70.0	130	----
Xylene, o-	95-47-6	E611A	0.03	mg/kg	2.5 mg/kg	104	70.0	130	----
Hydrocarbons (QCLot: 995031)									
EPH (C10-C19)	----	E601A	200	mg/kg	1134.37 mg/kg	97.4	70.0	130	----



Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Hydrocarbons (QCLot: 995031) - continued									
EPH (C19-C32)	---	E601A	200	mg/kg	575.98 mg/kg	94.0	70.0	130	---
Hydrocarbons (QCLot: 995185)									
VHs (C6-C10)	---	E581.VH+F1	10	mg/kg	85.8 mg/kg	114	70.0	130	---
Polycyclic Aromatic Hydrocarbons (QCLot: 1001707)									
Acenaphthene	83-32-9	E641A	0.05	mg/kg	0.5 mg/kg	106	60.0	130	---
Acenaphthylene	208-96-8	E641A	0.05	mg/kg	0.5 mg/kg	105	60.0	130	---
Acridine	260-94-6	E641A	0.05	mg/kg	0.5 mg/kg	106	60.0	130	---
Anthracene	120-12-7	E641A	0.05	mg/kg	0.5 mg/kg	107	60.0	130	---
Benz(a)anthracene	56-55-3	E641A	0.05	mg/kg	0.5 mg/kg	97.0	60.0	130	---
Benzo(a)pyrene	50-32-8	E641A	0.05	mg/kg	0.5 mg/kg	101	60.0	130	---
Benzo(b+j)fluoranthene	n/a	E641A	0.05	mg/kg	0.5 mg/kg	98.8	60.0	130	---
Benzo(g,h,i)perylene	191-24-2	E641A	0.05	mg/kg	0.5 mg/kg	111	60.0	130	---
Benzo(k)fluoranthene	207-08-9	E641A	0.05	mg/kg	0.5 mg/kg	103	60.0	130	---
Chrysene	218-01-9	E641A	0.05	mg/kg	0.5 mg/kg	104	60.0	130	---
Dibenz(a,h)anthracene	53-70-3	E641A	0.05	mg/kg	0.5 mg/kg	107	60.0	130	---
Fluoranthene	206-44-0	E641A	0.05	mg/kg	0.5 mg/kg	106	60.0	130	---
Fluorene	86-73-7	E641A	0.05	mg/kg	0.5 mg/kg	106	60.0	130	---
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	0.05	mg/kg	0.5 mg/kg	106	60.0	130	---
Methylnaphthalene, 1-	90-12-0	E641A	0.03	mg/kg	0.5 mg/kg	108	60.0	130	---
Methylnaphthalene, 2-	91-57-6	E641A	0.03	mg/kg	0.5 mg/kg	105	60.0	130	---
Naphthalene	91-20-3	E641A	0.01	mg/kg	0.5 mg/kg	107	50.0	130	---
Phenanthrene	85-01-8	E641A	0.05	mg/kg	0.5 mg/kg	107	60.0	130	---
Pyrene	129-00-0	E641A	0.05	mg/kg	0.5 mg/kg	105	60.0	130	---
Quinoline	91-22-5	E641A	0.05	mg/kg	0.5 mg/kg	102	60.0	130	---
Polycyclic Aromatic Hydrocarbons (QCLot: 995032)									
Acenaphthene	83-32-9	E641A-L	0.005	mg/kg	0.5 mg/kg	104	60.0	130	---
Acenaphthylene	208-96-8	E641A-L	0.005	mg/kg	0.5 mg/kg	104	60.0	130	---
Acridine	260-94-6	E641A-L	0.01	mg/kg	0.5 mg/kg	101	60.0	130	---
Anthracene	120-12-7	E641A-L	0.004	mg/kg	0.5 mg/kg	103	60.0	130	---
Benz(a)anthracene	56-55-3	E641A-L	0.01	mg/kg	0.5 mg/kg	94.9	60.0	130	---
Benzo(a)pyrene	50-32-8	E641A-L	0.01	mg/kg	0.5 mg/kg	96.3	60.0	130	---
Benzo(b+j)fluoranthene	n/a	E641A-L	0.01	mg/kg	0.5 mg/kg	101	60.0	130	---
Benzo(g,h,i)perylene	191-24-2	E641A-L	0.01	mg/kg	0.5 mg/kg	108	60.0	130	---
Benzo(k)fluoranthene	207-08-9	E641A-L	0.01	mg/kg	0.5 mg/kg	106	60.0	130	---
Chrysene	218-01-9	E641A-L	0.01	mg/kg	0.5 mg/kg	103	60.0	130	---



Sub-Matrix: Soil/Solid

					Laboratory Control Sample (LCS) Report				
					Spike	Recovery (%)	Recovery Limits (%)		
Analyte	CAS Number	Method	LOR	Unit	Concentration	LCS	Low	High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 995032) - continued									
Dibenz(a,h)anthracene	53-70-3	E641A-L	0.005	mg/kg	0.5 mg/kg	103	60.0	130	----
Fluoranthene	206-44-0	E641A-L	0.01	mg/kg	0.5 mg/kg	106	60.0	130	----
Fluorene	86-73-7	E641A-L	0.01	mg/kg	0.5 mg/kg	107	60.0	130	----
Indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	0.01	mg/kg	0.5 mg/kg	101	60.0	130	----
Methylnaphthalene, 1-	90-12-0	E641A-L	0.01	mg/kg	0.5 mg/kg	105	60.0	130	----
Methylnaphthalene, 2-	91-57-6	E641A-L	0.01	mg/kg	0.5 mg/kg	113	60.0	130	----
Naphthalene	91-20-3	E641A-L	0.01	mg/kg	0.5 mg/kg	112	50.0	130	----
Phenanthrene	85-01-8	E641A-L	0.01	mg/kg	0.5 mg/kg	107	60.0	130	----
Pyrene	129-00-0	E641A-L	0.01	mg/kg	0.5 mg/kg	105	60.0	130	----
Quinoline	91-22-5	E641A-L	0.01	mg/kg	0.5 mg/kg	106	60.0	130	----

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Matrix Spike (MS) Report

A Matrix Spike (MS) is a randomly selected intra-laboratory replicate sample that has been fortified (spiked) with test analytes at known concentration, and processed in an identical manner to test samples. Matrix Spikes provide information regarding analyte recovery and potential matrix effects. MS DQO exceedances due to sample matrix may sometimes be unavoidable; in such cases, test results for the associated sample (or similar samples) may be subject to bias. ND – Recovery not determined, background level >= 1x spike level.

Sub-Matrix: Soil/Solid

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
TCLP Extractables (QCLot: 1003228)										
VA23B3748-005	TH23-03A	Acenaphthene, TCLP	83-32-9	E644	0.5 µg/L	0.5 µg/L	92.2	50.0	140	----
		Acenaphthylene, TCLP	208-96-8	E644	0.5 µg/L	0.5 µg/L	93.6	50.0	140	----
		Acridine, TCLP	260-94-6	E644	0.5 µg/L	0.5 µg/L	102	50.0	140	----
		Anthracene, TCLP	120-12-7	E644	0.5 µg/L	0.5 µg/L	92.2	50.0	140	----
		Benz(a)anthracene, TCLP	56-55-3	E644	0.5 µg/L	0.5 µg/L	93.1	50.0	140	----
		Benzo(a)pyrene, TCLP	50-32-8	E644	0.43 µg/L	0.5 µg/L	86.8	50.0	140	----
		Benzo(b+)fluoranthene, TCLP	----	E644	0.4 µg/L	0.5 µg/L	87.4	50.0	140	----
		Benzo(g,h,i)perylene, TCLP	191-24-2	E644	0.5 µg/L	0.5 µg/L	97.3	50.0	140	----
		Benzo(k)fluoranthene, TCLP	207-08-9	E644	0.5 µg/L	0.5 µg/L	95.8	50.0	140	----
		Chrysene, TCLP	218-01-9	E644	0.5 µg/L	0.5 µg/L	101	50.0	140	----
		Dibenz(a,h)anthracene, TCLP	53-70-3	E644	0.4 µg/L	0.5 µg/L	91.5	50.0	140	----
		Fluoranthene, TCLP	206-44-0	E644	ND µg/L	0.5 µg/L	ND	50.0	140	----
		Fluorene, TCLP	86-73-7	E644	0.5 µg/L	0.5 µg/L	97.9	50.0	140	----
		Indeno(1,2,3-cd)pyrene, TCLP	193-39-5	E644	0.4 µg/L	0.5 µg/L	88.1	50.0	140	----
		Naphthalene, TCLP	91-20-3	E644	0.4 µg/L	0.5 µg/L	84.5	50.0	140	----
		Phenanthrene, TCLP	85-01-8	E644	ND µg/L	0.5 µg/L	ND	50.0	140	----
		Pyrene, TCLP	129-00-0	E644	ND µg/L	0.5 µg/L	ND	50.0	140	----
Volatile Organic Compounds (QCLot: 995186)										
VA23B3748-003	TH23-02A	Benzene	71-43-2	E611A	1.93 mg/kg	3.125 mg/kg	100	60.0	140	----
		Ethylbenzene	100-41-4	E611A	1.98 mg/kg	3.125 mg/kg	102	60.0	140	----
		Methyl-tert-butyl ether [MTBE]	1634-04-4	E611A	1.98 mg/kg	3.125 mg/kg	102	60.0	140	----
		Styrene	100-42-5	E611A	2.00 mg/kg	3.125 mg/kg	104	60.0	140	----
		Toluene	108-88-3	E611A	1.97 mg/kg	3.125 mg/kg	102	60.0	140	----
		Xylene, m+p-	179601-23-1	E611A	4.04 mg/kg	6.25 mg/kg	105	60.0	140	----
		Xylene, o-	95-47-6	E611A	1.98 mg/kg	3.125 mg/kg	103	60.0	140	----
Hydrocarbons (QCLot: 995031)										
VA23B3748-003	TH23-02A	EPH (C10-C19)	----	E601A	930 mg/kg	1134.37 mg/kg	97.3	60.0	140	----
		EPH (C19-C32)	----	E601A	500 mg/kg	575.98 mg/kg	102	60.0	140	----
Hydrocarbons (QCLot: 995185)										
VA23B3748-003	TH23-02A	VHs (C6-C10)	----	E581.VH+F1	96 mg/kg	171.9 mg/kg	90.7	60.0	140	----



Sub-Matrix: Soil/Solid

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 1001707)										
VA23B3748-007	TH23-04A	Acenaphthene	83-32-9	E641A	0.401 mg/kg	0.5 mg/kg	102	50.0	140	----
		Acenaphthylene	208-96-8	E641A	ND mg/kg	0.5 mg/kg	ND	50.0	140	----
		Acridine	260-94-6	E641A	0.407 mg/kg	0.5 mg/kg	104	50.0	140	----
		Anthracene	120-12-7	E641A	ND mg/kg	0.5 mg/kg	ND	50.0	140	----
		Benz(a)anthracene	56-55-3	E641A	ND mg/kg	0.5 mg/kg	ND	50.0	140	----
		Benzo(a)pyrene	50-32-8	E641A	ND mg/kg	0.5 mg/kg	ND	50.0	140	----
		Benzo(b+j)fluoranthene	n/a	E641A	ND mg/kg	0.5 mg/kg	ND	50.0	140	----
		Benzo(g,h,i)perylene	191-24-2	E641A	ND mg/kg	0.5 mg/kg	ND	50.0	140	----
		Benzo(k)fluoranthene	207-08-9	E641A	ND mg/kg	0.5 mg/kg	ND	50.0	140	----
		Chrysene	218-01-9	E641A	ND mg/kg	0.5 mg/kg	ND	50.0	140	----
		Dibenz(a,h)anthracene	53-70-3	E641A	ND mg/kg	0.5 mg/kg	ND	50.0	140	----
		Fluoranthene	206-44-0	E641A	ND mg/kg	0.5 mg/kg	ND	50.0	140	----
		Fluorene	86-73-7	E641A	0.444 mg/kg	0.5 mg/kg	114	50.0	140	----
		Indeno(1,2,3-c,d)pyrene	193-39-5	E641A	ND mg/kg	0.5 mg/kg	ND	50.0	140	----
		Methylnaphthalene, 1-	90-12-0	E641A	0.422 mg/kg	0.5 mg/kg	108	50.0	140	----
		Methylnaphthalene, 2-	91-57-6	E641A	0.412 mg/kg	0.5 mg/kg	105	50.0	140	----
		Naphthalene	91-20-3	E641A	0.402 mg/kg	0.5 mg/kg	103	50.0	140	----
		Phenanthrene	85-01-8	E641A	ND mg/kg	0.5 mg/kg	ND	50.0	140	----
		Pyrene	129-00-0	E641A	ND mg/kg	0.5 mg/kg	ND	50.0	140	----
		Quinoline	91-22-5	E641A	0.374 mg/kg	0.5 mg/kg	95.5	50.0	140	----
Polycyclic Aromatic Hydrocarbons (QCLot: 995032)										
VA23B3748-003	TH23-02A	Acenaphthene	83-32-9	E641A-L	0.402 mg/kg	0.5 mg/kg	101	50.0	140	----
		Acenaphthylene	208-96-8	E641A-L	0.532 mg/kg	0.5 mg/kg	134	50.0	140	----
		Acridine	260-94-6	E641A-L	0.376 mg/kg	0.5 mg/kg	94.7	50.0	140	----
		Anthracene	120-12-7	E641A-L	0.563 mg/kg	0.5 mg/kg	142	50.0	140	E
		Benz(a)anthracene	56-55-3	E641A-L	ND mg/kg	0.5 mg/kg	ND	50.0	140	----
		Benzo(a)pyrene	50-32-8	E641A-L	ND mg/kg	0.5 mg/kg	ND	50.0	140	----
		Benzo(b+j)fluoranthene	n/a	E641A-L	ND mg/kg	0.5 mg/kg	ND	50.0	140	----
		Benzo(g,h,i)perylene	191-24-2	E641A-L	ND mg/kg	0.5 mg/kg	ND	50.0	140	----
		Benzo(k)fluoranthene	207-08-9	E641A-L	0.675 mg/kg	0.5 mg/kg	170	50.0	140	E
		Chrysene	218-01-9	E641A-L	ND mg/kg	0.5 mg/kg	ND	50.0	140	----
		Dibenz(a,h)anthracene	53-70-3	E641A-L	0.444 mg/kg	0.5 mg/kg	112	50.0	140	----
		Fluoranthene	206-44-0	E641A-L	ND mg/kg	0.5 mg/kg	ND	50.0	140	----
		Fluorene	86-73-7	E641A-L	0.460 mg/kg	0.5 mg/kg	116	50.0	140	----
		Indeno(1,2,3-c,d)pyrene	193-39-5	E641A-L	ND mg/kg	0.5 mg/kg	ND	50.0	140	----



Sub-Matrix: **Soil/Solid**

					Matrix Spike (MS) Report					
					Spike		Recovery (%)	Recovery Limits (%)		
Laboratory sample ID	Client sample ID	Analyte	CAS Number	Method	Concentration	Target	MS	Low	High	Qualifier
Polycyclic Aromatic Hydrocarbons (QCLot: 995032) - continued										
VA23B3748-003	TH23-02A	Methylnaphthalene, 1-	90-12-0	E641A-L	0.398 mg/kg	0.5 mg/kg	100	50.0	140	----
		Methylnaphthalene, 2-	91-57-6	E641A-L	0.422 mg/kg	0.5 mg/kg	106	50.0	140	----
		Naphthalene	91-20-3	E641A-L	0.416 mg/kg	0.5 mg/kg	105	50.0	140	----
		Phenanthrene	85-01-8	E641A-L	ND mg/kg	0.5 mg/kg	ND	50.0	140	----
		Pyrene	129-00-0	E641A-L	ND mg/kg	0.5 mg/kg	ND	50.0	140	----
		Quinoline	91-22-5	E641A-L	0.391 mg/kg	0.5 mg/kg	98.5	50.0	140	----

Qualifiers

Qualifier	Description
E	Matrix Spike recovery outside ALS DQO due to heterogeneous analyte background in sample.

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Reference Material (RM) Report

A Reference Material (RM) is a homogenous material with known and well-established analyte concentrations. RMs are processed in an identical manner to test samples, and are used to monitor and control the accuracy and precision of a test method for a typical sample matrix. RM results are expressed as percent recovery of the target analyte concentration. RM targets may be certified target concentrations provided by the RM supplier, or may be ALS long-term mean values (for empirical test methods).

Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Saturated Paste Extractables (QCLot: 1001704)									
	RM	Chloride, soluble ion content	16887-00-6	E239.Cl	1237 mg/L	99.9	70.0	130	----
Saturated Paste Extractables (QCLot: 1001705)									
	RM	% Saturation	----	E141	48.3 %	99.4	70.0	130	----
Saturated Paste Extractables (QCLot: 1001706)									
	RM	Sodium, soluble ion content	17341-25-2	E442	330 mg/L	104	70.0	130	----
Saturated Paste Extractables (QCLot: 995026)									
	RM	Chloride, soluble ion content	16887-00-6	E239.Cl	1237 mg/L	102	70.0	130	----
Saturated Paste Extractables (QCLot: 995027)									
	RM	% Saturation	----	E141	48.3 %	97.1	70.0	130	----
Saturated Paste Extractables (QCLot: 995028)									
	RM	Sodium, soluble ion content	17341-25-2	E442	330 mg/L	93.9	70.0	130	----
Metals (QCLot: 995023)									
	SCP SS-2	Mercury	7439-97-6	E510	0.059 mg/kg	102	70.0	130	----
Metals (QCLot: 995024)									
	SCP SS-2	Aluminum	7429-90-5	E440	9817 mg/kg	105	70.0	130	----
	SCP SS-2	Antimony	7440-36-0	E440	3.99 mg/kg	90.1	70.0	130	----
	SCP SS-2	Arsenic	7440-38-2	E440	3.73 mg/kg	105	70.0	130	----
	SCP SS-2	Barium	7440-39-3	E440	105 mg/kg	102	70.0	130	----
	SCP SS-2	Beryllium	7440-41-7	E440	0.349 mg/kg	103	70.0	130	----
	SCP SS-2	Boron	7440-42-8	E440	8.5 mg/kg	120	40.0	160	----
	SCP SS-2	Cadmium	7440-43-9	E440	0.91 mg/kg	95.7	70.0	130	----
	SCP SS-2	Calcium	7440-70-2	E440	31082 mg/kg	105	70.0	130	----
	SCP SS-2	Chromium	7440-47-3	E440	101 mg/kg	107	70.0	130	----
	SCP SS-2	Cobalt	7440-48-4	E440	6.9 mg/kg	98.5	70.0	130	----
	SCP SS-2	Copper	7440-50-8	E440	123 mg/kg	93.9	70.0	130	----
	SCP SS-2	Iron	7439-89-6	E440	23558 mg/kg	102	70.0	130	----
	SCP SS-2	Lead	7439-92-1	E440	267 mg/kg	97.6	70.0	130	----
	SCP SS-2	Lithium	7439-93-2	E440	9.5 mg/kg	101	70.0	130	----



Sub-Matrix:

Laboratory sample ID	Reference Material ID	Analyte	CAS Number	Method	Reference Material (RM) Report				
					RM Target Concentration	Recovery (%) RM	Recovery Limits (%)		Qualifier
							Low	High	
Metals (QCLot: 995024) - continued									
SCP SS-2	SCP SS-2	Magnesium	7439-95-4	E440	5509 mg/kg	109	70.0	130	----
SCP SS-2	SCP SS-2	Manganese	7439-96-5	E440	269 mg/kg	107	70.0	130	----
SCP SS-2	SCP SS-2	Molybdenum	7439-98-7	E440	1.03 mg/kg	95.6	70.0	130	----
SCP SS-2	SCP SS-2	Nickel	7440-02-0	E440	26.7 mg/kg	100	70.0	130	----
SCP SS-2	SCP SS-2	Phosphorus	7723-14-0	E440	752 mg/kg	98.8	70.0	130	----
SCP SS-2	SCP SS-2	Potassium	7440-09-7	E440	1587 mg/kg	109	70.0	130	----
SCP SS-2	SCP SS-2	Sodium	7440-23-5	E440	797 mg/kg	97.8	70.0	130	----
SCP SS-2	SCP SS-2	Strontium	7440-24-6	E440	86.1 mg/kg	101	70.0	130	----
SCP SS-2	SCP SS-2	Thallium	7440-28-0	E440	0.0786 mg/kg	85.3	40.0	160	----
SCP SS-2	SCP SS-2	Tin	7440-31-5	E440	10.6 mg/kg	94.5	70.0	130	----
SCP SS-2	SCP SS-2	Titanium	7440-32-6	E440	839 mg/kg	116	70.0	130	----
SCP SS-2	SCP SS-2	Uranium	7440-61-1	E440	0.52 mg/kg	99.8	70.0	130	----
SCP SS-2	SCP SS-2	Vanadium	7440-62-2	E440	32.7 mg/kg	105	70.0	130	----
SCP SS-2	SCP SS-2	Zinc	7440-66-6	E440	297 mg/kg	97.5	70.0	130	----
SCP SS-2	SCP SS-2	Zirconium	7440-67-7	E440	5.73 mg/kg	85.5	70.0	130	----

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Chain of Custody (COC) / Analytical Request Form

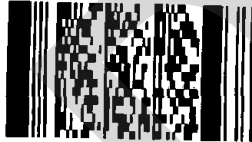
COC Number: 21 -

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Report To Contact and company name below will appear on the final report		Reports / Recipients			Turnaround Time (TAT) Requested				AFFIX ALS BARCODE LABEL HERE (ALS use only)																		
Company:	McElhanney	Select Report Format:	<input checked="" type="checkbox"/> PDF <input checked="" type="checkbox"/> EXCEL <input checked="" type="checkbox"/> EDD (DIGITAL)	<input type="checkbox"/> Routine [R] if received by 3pm M-F - no surcharges apply		<input type="checkbox"/> 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum		<input type="checkbox"/> 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum				<input type="checkbox"/> 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum															
Contact:	Victoria Amson	Merge QC/QCI Reports with COA	<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> N/A	<input type="checkbox"/> Compare Results to Criteria on Report - provide details below if box checked		<input type="checkbox"/> 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum		<input type="checkbox"/> Same day [E2] if received by 10am M-S - 200% rush surcharge.		Additional fees may apply to rush requests on weekends, statutory holidays and for non-routine tests.																	
Phone:	7785841382	Select Distribution:	<input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX	Date and Time Required for all E&P TATs:		For all tests with rush TATs requested, please contact your AM to confirm availability.		Analysis Request																			
Company address below will appear on the final report		Email 1 or Fax:	vamson@mcelhanney.com	Invoice To		Same as Report To <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below																			
Street:	Suite 500 - 3960 Quadra St	Email 2:	bwhite@mcelhanney.com	Copy of Invoice with Report		<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO																					
City/Province:	Victoria, BC	Email 3:	mmanzi@mcelhanney.com	Invoice Recipients		Select Invoice Distribution:		<input checked="" type="checkbox"/> EMAIL <input type="checkbox"/> MAIL <input type="checkbox"/> FAX		NUMBER OF CONTAINERS																	
Postal Code:	V8X 4A3	Invoice Recipients		Company:		Email 1 or Fax:		vamson@mcelhanney.com		SAMPLES ON HOLD																	
Project Information		Oil and Gas Required Fields (client use)		Contact:		Email 2:		bwhite@mcelhanney.com		EXTENDED STORAGE REQUIRED																	
ALS Account # / Quote #:		AFE/Cost Center:	PO#	Major/Minor Code:		Routing Code:		Requisitioner:		SUSPECTED HAZARD (see notes)																	
Job #:	2233-02107-00	Location:		ALS Lab Work Order # (ALS use only):		B3748		ALS Contact:		Dean Watt																	
PO / AFE:		ALS Contact:		Dean Watt		Sampler:		M. Manzi																			
LSD:		ALS Sample # (ALS use only)		Sample Identification and/or Coordinates (This description will appear on the report)		Date (dd-mmm-yy)		Time (hh:mm)		Sample Type																	
Environmental Division Vancouver Work Order Reference VA23B3748  Telephone : +1 604 253 4188		1	TH23-01A	16-Jun-23	AM	Soil	5	E	F	F																	
		2	TH23-01B	16-Jun-23	AM	Soil	5																				
		3	TH23-02A	16-Jun-23	AM	Soil	5	E	E	E	E																
		4	TH23-02B	16-Jun-23	AM	Soil	5																				
		5	TH23-03A	16-Jun-23	AM	Soil	5	E	E	E																	
		6	TH23-03B	16-Jun-23	AM	Soil	5																				
		7	TH23-04A	16-Jun-23	AM	Soil	5																				
		8	TH23-04B	16-Jun-23	AM	Soil	5	E	E	E																	
		9	DUP-A	16-Jun-23	AM	Soil	5	E	E	E																	
		Drinking Water (DW) Samples ¹ (client use)		Are samples taken from a Regulated DW System? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		Are samples for human consumption/ use? <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO		result evaluation by selecting from drop-down below (Excel COC only)		SAMPLE RECEIPT DETAILS (ALS use only)				Cooling Method: <input type="checkbox"/> NONE <input type="checkbox"/> ICE <input checked="" type="checkbox"/> ICE PACKS <input type="checkbox"/> FROZEN <input type="checkbox"/> COOLING INITIATED		Submission Comments identified on Sample Receipt Notification: <input type="checkbox"/> YES <input type="checkbox"/> NO		Cooler Custody Seals Intact: <input type="checkbox"/> YES <input type="checkbox"/> N/A Sample Custody Seals Intact: <input type="checkbox"/> YES <input type="checkbox"/> N/A		INITIAL COOLER TEMPERATURES °C		FINAL COOLER TEMPERATURES °C					
SHIPMENT RELEASE (client use)		INITIAL SHIPMENT RECEPTION (ALS use only)		FINAL SHIPMENT RECEPTION (ALS use only)		Released by: Michael Manzi		Date: June 17 2023		Time:		Received by: JC		Date: JUN 17 2023		Time: 12:10 PM											

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION
 WHITE - LABORATORY COPY YELLOW - CLIENT COPY
 Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.
 1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

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bwhite@mcelhanney.com



McElhanney

