



ALS Canada Ltd.  
2103 Dollarton Hwy  
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www.alsglobal.com/geochemistry

To: COLIN DUNN CONSULTING INC.  
8756 PENDER PARK DRIVE  
NORTH SAANICH BC V8L 3Z5

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Total # Pages: 5 (A)  
Plus Appendix Pages  
Finalized Date: 30-MAY-2019  
Account: CODUCO

**CERTIFICATE VA19111401**

Project: Research-Collaborative w/ALS

This report is for 157 Vegetation samples submitted to our lab in Vancouver, BC, Canada on 9-MAY-2019.

The following have access to data associated with this certificate:

COLIN DUNN

DAVE HEBERLEIN

**SAMPLE PREPARATION**

ALS CODE	DESCRIPTION
WEI-21	Received Sample Weight
LOG-23	Pulp Login - Rcvd with Barcode

**ANALYTICAL PROCEDURES**

ALS CODE	DESCRIPTION
ME-HAL01a	Super Trace Halogens on Vegetation

This is the Final Report and supersedes any preliminary report with this certificate number. Results apply to samples as submitted. All pages of this report have been checked and approved for release.

\*\*\*\*\* See Appendix Page for comments regarding this certificate \*\*\*\*\*

**Signature:**

Colin Ramshaw, Vancouver Laboratory Manager



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Sample Description	Method Analyte Units LOD	WEI-21	ME-HAL01a	ME-HAL01a	ME-HAL01a	ME-HAL01a
		Recvd Wt. kg 0.02	I ppm 0.002	Br ppm 0.02	F ppm 0.05	Cl ppm 0.1
1001		<0.02	0.038	14.30	39.3	9800
1002		<0.02	0.050	0.80	153.0	201
1003		<0.02	0.032	0.48	170.0	100.0
1004		<0.02	0.037	1.92	70.3	918
1005		<0.02	0.040	1.69	51.8	917
1006		<0.02	0.015	0.99	49.9	304
1007		<0.02	0.015	1.00	42.3	711
1008		<0.02	0.009	0.17	46.7	33.5
1009		<0.02	0.080	3.48	80.4	1415
1010		<0.02	0.106	91.1	<0.05	406
1011		<0.02	0.006	0.23	54.9	60.0
1012		<0.02	0.009	0.18	<0.05	100.0
1013		<0.02	0.113	16.75	30.4	>10000
1014		<0.02	0.097	16.75	30.6	>10000
1015		<0.02	0.021	1.26	57.2	507
1016		<0.02	0.018	1.75	33.5	1690
1017		<0.02	0.021	14.95	67.7	994
1018		<0.02	0.159	3.71	110.5	3300
1019		<0.02	0.033	20.1	56.3	1000
1020		<0.02	0.011	1.26	53.4	100.0
1021		<0.02	0.018	0.83	66.7	815
1022		<0.02	0.082	1.65	33.1	2360
1023		<0.02	0.051	22.6	75.5	2340
1024		<0.02	0.075	3.18	128.5	1095
1025		<0.02	0.024	0.34	78.8	199.5
1026		<0.02	0.100	91.1	<0.05	406
1027		<0.02	0.016	0.48	87.5	201
1028		<0.02	0.024	1.15	70.4	911
1029		<0.02	0.020	1.12	80.8	804
1030		<0.02	0.016	1.70	42.8	2800
1031		<0.02	0.011	1.33	54.4	710
1032		<0.02	0.051	2.12	44.5	3280
1033		<0.02	0.036	1.00	43.5	1195
1034		<0.02	0.089	18.35	35.1	5400
1035		<0.02	0.007	0.62	66.9	403
1036		<0.02	0.026	26.6	68.8	1000
1037		<0.02	0.020	0.94	64.2	99.8
1038		<0.02	0.089	19.05	70.5	1330
1039		<0.02	0.067	2.27	60.5	1620
1040		<0.02	0.099	2.28	27.9	2010



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		Recvd Wt. kg 0.02	I ppm 0.002	Br ppm 0.02	F ppm 0.05	Cl ppm 0.1
1041		<0.02	0.019	4.69	60.2	201
1042		<0.02	0.023	1.59	36.1	1120
1043		<0.02	0.073	3.01	100.5	1705
1044		<0.02	0.023	0.89	45.1	509
1045		<0.02	0.017	0.25	93.0	64.2
1046		<0.02	0.021	1.09	32.5	300
1047		<0.02	0.058	12.45	61.5	910
1048		<0.02	0.161	2.48	148.0	1995
1049		<0.02	0.070	5.49	81.2	2380
1050		<0.02	0.109	13.20	63.6	1120
1051		<0.02	0.114	91.3	<0.05	406
1052		<0.02	0.015	4.51	114.5	100.0
1053		<0.02	0.019	6.58	47.6	300
1054		<0.02	0.019	4.11	89.5	200
1055		<0.02	0.026	1.34	36.9	713
1056		<0.02	0.212	29.7	64.8	1825
1057		<0.02	0.058	2.68	35.3	1420
1058		<0.02	0.013	0.94	45.1	1015
1059		<0.02	0.016	5.28	36.2	1530
1060		<0.02	0.013	1.04	65.4	37.8
1061		<0.02	0.044	1.76	68.4	608
1062		<0.02	0.027	2.14	68.9	100.0
1063		<0.02	0.093	3.55	63.1	3530
1064		<0.02	0.015	0.60	77.0	199.5
1065		<0.02	0.026	1.48	59.4	1040
1066		<0.02	0.041	1.87	66.7	814
1067		<0.02	0.062	2.65	64.4	3870
1068		<0.02	0.031	2.11	42.3	1125
1069		<0.02	0.107	95.2	<0.05	406
1070		<0.02	0.063	2.86	37.0	4170
1071		<0.02	0.078	1.84	35.5	1830
1072		<0.02	0.023	9.28	103.5	612
1073		<0.02	0.032	1.50	62.8	902
1074		<0.02	0.025	0.20	324	44.9
1075		<0.02	0.022	5.30	54.8	1095
1076		<0.02	0.020	0.76	32.1	302
1077		<0.02	0.024	4.87	43.3	993
1078		<0.02	0.069	2.50	73.4	1485
1079		<0.02	0.014	1.56	24.0	1775
1080		<0.02	0.032	0.69	159.5	223



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		Recvd Wt. kg 0.02	I ppm 0.002	Br ppm 0.02	F ppm 0.05	Cl ppm 0.1
1081		<0.02	0.023	1.11	116.0	594
1082		<0.02	0.027	1.41	36.9	794
1083		<0.02	0.022	1.95	78.0	199.5
1084		<0.02	0.039	1.50	58.0	2830
1085		<0.02	0.016	0.85	59.4	1480
1086		<0.02	0.015	1.81	25.0	3630
1087		<0.02	0.071	6.31	30.4	2410
1088		<0.02	0.025	0.49	159.0	260
1089		<0.02	0.033	1.48	71.4	1570
1090		<0.02	0.028	1.04	73.4	595
1091		<0.02	0.013	0.56	47.9	497
1092		<0.02	0.012	0.37	69.6	201
1093		<0.02	0.061	2.18	42.5	3700
1094		<0.02	0.115	95.1	5.66	401
1095		<0.02	0.014	0.19	78.1	158.5
1096		<0.02	0.071	2.12	75.8	1275
1097		<0.02	0.061	1.54	38.7	903
1098		<0.02	0.048	1.75	30.9	1395
1099		<0.02	0.081	2.34	52.3	3440
1100		<0.02	0.037	1.19	28.1	2340
1101		<0.02	0.033	1.41	48.7	400
1102		<0.02	0.057	1.54	84.9	1185
1103		<0.02	0.062	2.56	87.9	127.5
1104		<0.02	0.023	16.20	34.7	3180
1105		<0.02	0.018	0.17	83.3	22.0
1106		<0.02	0.068	2.53	52.6	2240
1107		<0.02	0.091	2.17	67.6	1665
1108		<0.02	0.022	0.51	59.0	397
1109		<0.02	0.075	44.3	50.0	1090
1110		<0.02	0.124	99.3	4.02	401
1111		<0.02	0.070	3.01	60.5	2800
1112		<0.02	0.032	1.44	53.2	398
1113		<0.02	0.027	1.45	35.7	399
1114		<0.02	0.126	3.22	66.4	3500
1115		<0.02	0.092	2.39	78.0	2100
1116		<0.02	0.045	5.24	45.5	599
1117		<0.02	0.052	10.90	31.5	893
1118		<0.02	0.113	7.78	73.9	4900
1119		<0.02	0.032	2.23	46.7	2800
1120		<0.02	0.090	2.51	87.4	2200



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		Recvd Wt. kg 0.02	I ppm 0.002	Br ppm 0.02	F ppm 0.05	Cl ppm 0.1
1121		<0.02	0.086	4.96	51.3	1370
1122		<0.02	0.025	0.36	33.4	400
1123		<0.02	0.015	1.01	36.1	987
1124		<0.02	0.116	101.5	5.43	400
1125		<0.02	0.042	2.59	38.9	2700
1126		<0.02	0.054	1.51	43.9	1280
1127		<0.02	0.028	0.46	93.5	397
1128		<0.02	0.037	2.03	52.0	2120
1129		<0.02	0.002	0.31	36.6	100.0
1130		<0.02	0.023	1.42	28.4	1280
1131		<0.02	0.027	1.68	37.3	599
1132		<0.02	0.073	5.79	47.4	1380
1133		<0.02	0.059	5.81	55.7	1370
1134		<0.02	0.063	12.20	78.0	2200
1135		<0.02	0.073	9.75	51.4	1375
1136		<0.02	0.048	19.25	36.2	2800
1137		<0.02	0.010	1.26	56.7	99.9
1138		<0.02	0.006	0.86	41.3	1185
1139		<0.02	<0.002	0.16	56.5	35.5
1140		<0.02	0.014	0.42	55.2	63.1
1141		<0.02	0.007	0.93	27.3	994
1142		<0.02	0.145	2.87	73.9	5100
1143		<0.02	0.015	0.60	69.1	794
1144		<0.02	0.014	1.39	144.0	36.8
1145		<0.02	0.017	0.68	90.6	796
1146		<0.02	0.014	0.72	68.7	594
1147		<0.02	0.021	0.16	108.5	27.6
1148		<0.02	0.058	2.63	133.0	6800
1149		<0.02	0.035	1.68	85.3	1470
1150		<0.02	0.031	18.10	96.5	1270
1151		<0.02	0.012	0.19	56.5	13.5
1152		<0.02	0.017	1.46	44.5	1185
1153		<0.02	0.028	2.13	50.0	5400
1154		<0.02	0.040	1.27	100.5	2600
1155		<0.02	0.090	32.1	84.8	1360
1156		<0.02	0.071	1.90	156.0	1900
1157		<0.02	0.117	96.0	21.2	401



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## CERTIFICATE COMMENTS

### LABORATORY ADDRESSES

Applies to Method:

Processed at ALS Vancouver located at 2103 Dollarton Hwy, North Vancouver, BC, Canada.  
LOG-23 ME-HAL01a WEI-21