

TOTAL METALS SCREENING FOR SOME RANDOM CANNABIS SAMPLES BY ICP-MS

Analyzed by Dragon Analytical Laboratory - April through August 2015

TOTAL METAL	MDL (ng/g)	PQL (ng/g)	MB (ng/g)	C150331-01	C150331-01	C150220-01	C150220-01	C150220-01	C150511-01	C150511-01	C150511-01	C150512-01	C150512-01	C150513-01	C150519-01	C150527-01	C150527-01
				#1 DF500 (ng/g)	#2 DF500 (ng/g)	#3 DF500 (ng/g)	#4 DF500 (ng/g)	#5 DF500 (ng/g)	#6 DF500 (ng/g)	#7 DF500 (ng/g)	#8 DF500 (ng/g)	#9 DF500 (ng/g)	#10 DF500 (ng/g)	#11 DF500 (ng/g)	#12 DF500 (ng/g)	#13 DF500 (ng/g)	#14 DF500 (ng/g)
Aluminum (Al)	0.5740	1.4350	0.54	9,410	11,500	37,000	32,800	57,700	12,100	19,500	32,800	5,770	20,000	14,900	11,300	13,500	19,200
Antimony (Sb)	0.0177	0.0441	nd	nd	nd	33.1	40.1	45.6	14.6 J	14.7 J	9.19 J	nd	362	nd	nd	nd	nd
Arsenic (As)	0.1644	0.4110	nd	685	200 J	183 J	nd	128 J	102 J	nd	116 J	185 J	136 J	nd	nd	nd	nd
Barium (Ba)	0.0039	0.0099	nd	1,440 J	1,600 J	42,800	7,400	8,700	4,500	1,440 J	6,970	5,520	4,300	13,700	9,070	3,790	7,200
Beryllium (Be)	0.0095	0.0237	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Bismuth (Bi)	0.0206	0.0515	nd	83.2	76.3	236	67.6	132	236	163	62.7	96.5	251	220	80.6	178	139
Boron (B)	0.8084	2.0210	nd	50,600	36,200	44,600	39,600	41,900	38,400	41,100	41,645	39,100	27,300	56,100	33,200	29,100	54,400
Cadmium (Cd)	0.0190	0.0475	0.005	124	64.5	20.6	62.4	16.7 J	12.0 J	23.2 J	30.0	33.7	67.3	33.2	33.6	16.9 J	53.4
Calcium (Ca)	0.1207	0.3017	nd	>100,000	>100,000	>100,000	>100,000	>100,000	>100,000	>100,000	>100,000	>100,000	>100,000	>100,000	>100,000	>100,000	>100,000
Cerium (Ce)	0.0036	0.0090	nd	12.8	30.6	3.53 J	4.15 J	9.17	6.97	30.5	5.00	11.7	8.69	11.5	3.92 J	22.1	28.6
Cesium (Cs)	0.0093	0.0232	0.078	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	75.8	nd	nd	nd
Chromium (Cr)	0.0263	0.0658	nd	704	533	488	359	492	216	382	679	153	1,070	691	160	57.7	169
Cobalt (Co)	0.0071	0.0178	nd	106	86.3	85.2	92.6	138	137	98.3	247	174	97.0	62.3	57.0	14.3	53.6
Copper (Cu)	0.3814	0.9535	nd	4,540	3,000	11,100	11,400	13,800	11,600	9,000	9,340	8,900	9,650	6,350	10,600	4,570	3,860
Dysprosium (Dy)	0.0071	0.0178	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Erbium (Er)	0.0181	0.0453	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Europium (Eu)	0.0181	0.0453	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Gadolinium (Gd)	0.0215	0.0538	nd	nd	nd	nd	nd	nd	22.2 J	nd	nd	nd	nd	nd	nd	nd	nd
Gallium (Ga)	0.0013	0.0033	nd	52.7	54.4	1,320	236	265	140	58.6	237	185	158	424	275	130	230
Germanium (Ge)	0.0574	0.1435	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Gold (Au)	0.4305	1.0763	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Hafnium (Hf)	0.5603	1.4008	nd	696 J	nd	345 J	611 J	nd	342 J	594 J	1,210	nd	1,120	285 J	nd	nd	nd
Holmium (Ho)	0.0023	0.0058	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Indium (In)	TBD	1.0000	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Iridium (Ir)	0.0433	0.1083	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Iron (Fe)	1.8574	4.6435	0.5	217,000	147,000	200,000	160,000	217,000	147,000	134,000	219,000	207,000	303,000	148,000	207,000	130,000	220,000
Lanthanum (La)	0.0032	0.0080	nd	6.09	18.6	2.88 J	2.60 J	5.61	4.69	16.8	3.71 J	2.79 J	4.92	8.56	3.72 J	14.9	19.7
Lead (Pb)	0.0109	0.0274	nd	197	409	316	196	235	243	116	284	123	293	552	126	137	185
Lithium (Li)	0.0133	0.0333	nd	508	122	95.6	92.6	142	16.0 J	40.3	53.3	48.8	59.2	209	71.1	83.5	94.7
Lutetium (Lu)	0.0161	0.0403	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Magnesium (Mg)	0.0969	0.2423	0.076	>100,000	>100,000	>100,000	>100,000	>100,000	>100,000	>100,000	>100,000	>100,000	>100,000	>100,000	4,880,000	4,780,000	>100,000
Manganese (Mn)	0.0223	0.0559	nd	286,000	257,000	310,000	260,000	181,000	284,000	213,000	276,000	329,000	250,000	138,000	131,000	78,600	237,000
Mercury (Hg)	0.0207	0.0518	nd	nd	nd	nd	13.2 J	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Molybdenum (Mo)	0.1200	0.2999	nd	819	736	324	214	377	451	859	403	877	527	375	147 J	924	970
Neodymium (Nd)	0.0069	0.0173	nd	nd	nd	nd	nd	nd	147	8.46 J	9.32	nd	10.5	6.60 J	nd	nd	4.71 J
Nickel (Ni)	0.1813	0.4533	nd	nd	nd	nd	nd	138	nd	nd	nd	nd	nd	1,130	nd	nd	nd
Niobium (Nb)	1.5110	3.7775	nd	1,310 J	nd	nd	1040 J	nd	nd	764 J	1,540 J	nd	1,270 J	nd	nd	nd	1220 J
Osmium (Os)	1.2796	3.1990	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	999 J	nd	nd	nd	nd
Palladium (Pd)	0.1050	0.2625	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Platinum (Pt)	0.0102	0.0255	nd	nd	nd	nd	nd	nd	nd	5.65 J	nd	nd	nd	nd	nd	nd	nd
Potassium (K)	7.9091	19.7728	4.78	>100,000	>100,000	>100,000	>100,000	>100,000	>100,000	>100,000	>100,000	>100,000	>100,000	>100,000	>100,000	>100,000	>100,000
Praseodymium (Pr)	0.0022	0.0055	nd	1.30 J	nd	nd	nd	nd	45.5	nd	2.94	nd	2.827	2.47 J	nd	nd	nd
Rhenium (Re)	0.0111	0.0278	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd

C150715-01 #15 DF500 (ng/g)	C150715-01 #16 DF500 (ng/g)	C150715-01 #17 DF500 (ng/g)	C150715-01 #18 DF500 (ng/g)	C150715-01 #19 DF500 (ng/g)	C150715-01 #20 DF500 (ng/g)	C150715-01 #21 DF500 (ng/g)
19,200	29,300	19,900	16,400	14,000	10,600	8,030
19.7 J	10.3 J	96.6	12.6 J	13.8 J	37.8	12.6 J
138 J	117 J	83.8 J	85.1 J	84.7 J	111 J	84.4 J
9,020	4,410	6,810	5,930	6,580	4,950	3,320
nd	nd	nd	nd	nd	nd	nd
275	180	67.3	105	148	85.1	21.0 J
73,900	106,000	181,000	138,000	96,300	69,700	57,600
215	58.6	106	105	163	76.7	160
>100,000	>100,000	>100,000	>100,000	>100,000	>100,000	>100,000
16	42.1	19.6	9.17	12.8	7.31	7.32
83.2	87.0	104	96.7	120	218	118
410	402	478	344	387	310	305
45.6	49.7	23.9	28.5	34.4	28.1	33.3
5,380	3,510	1,680	3,000	4,490	2,580	2,190
nd	nd	nd	nd	nd	nd	nd
nd	nd	nd	nd	nd	nd	nd
nd	nd	nd	nd	nd	nd	nd
nd	nd	nd	nd	nd	nd	nd
302	149	223	199	216	165	110
nd	nd	nd	nd	250	nd	nd
nd	nd	nd	nd	nd	nd	nd
316 J	nd	nd	nd	nd	3,160	662 J
nd	nd	nd	nd	nd	nd	nd
nd	nd	nd	nd	nd	nd	nd
nd	nd	nd	nd	nd	nd	nd
216,000	175,000	152,000	107,000	136,000	166,000	82,500
8.45	15.1	9.69	5.46	7.01	5.04	3.54 J
423	298	113	268	212	227	81.5
1,090	1,400	247	244	435	2,790	127
nd	nd	nd	nd	nd	nd	nd
4,810,000	4,370,000	4,760,000	4,160,000	3,820,000	4,290,000	4,400,000
192,000	114,000	152,000	120,000	146,000	104,000	119,000
nd	nd	nd	nd	nd	nd	nd
1,160	711	1,980	1,190	1,330	817	1,270
5.57 J	11	6.81 J	4.01 J	6.38 J	nd	nd
396	640	791	548	410	964	378
nd	nd	nd	nd	nd	2,580	833 J
nd	nd	nd	nd	nd	960 J	nd
nd	nd	nd	nd	nd	nd	nd
nd	nd	nd	nd	nd	14.1	nd
3,360,000	>100,000	>100,000	>100,000	>100,000	>100,000	>100,000
1.26 J	2.65 J	2.38 J	1.16 J	1.11 J	nd	nd
nd	nd	nd	nd	nd	nd	nd

Rhodium (Rh)	0.0101	0.0253	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Rubidium (Rb)	0.0067	0.0168	nd	11,900	11,300	45,000	42,000	50,600	23,800	17,800	22,300	24,100	30,900	12,800	11,400	19,600	17,400
Ruthenium (Ru)	0.0565	0.1413	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Samarium (Sm)	0.0034	0.0085	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	3.32 J	nd	nd	nd
Scandium (Sc)	0.5796	1.4490	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Selenium (Se)	0.0670	0.1676	nd	117	37.7 J	nd	nd	nd	77.0 J	121	191	nd	111	nd	nd	nd	nd
Silicon (Si)	6.5571	16.3928	3.91	266,000	1,120,000	1,300,000	503,000	845,000	872,000	275,000	385,000	743,000	765,000	1,320,000	840,000	653,000	390,000
Silver (Ag)	0.0047	0.0119	0.004	15.1	nd	18.0	7.84	11.2	6.41	4.64 J	nd	4.27 J	8.23	2.96 J	2.41 J	3.62 J	9.64
Sodium (Na)	2.0140	5.0350	2.53	58,000	45,400	78,500	29,100	31,300	55,300	47,900	62,900	34,500	43,500	37,300	25,500	88,300	94,700
Strontium (Sr)	0.0155	0.0388	nd	52,000	50,600	36,000	36,100	36,300	36,100	16,600	46,700	41,900	356,000	73,300	64,600	32,700	58,200
Sulfur (S)	320.9	802.3	349	>1,000,000	3,650,000	3,770,000	3,810,000	4,210,000	3,022,000	3,292,000	3,740,000	3,470,000	3,290,000	3,890,000	4,570,000	3,150,000	4,430,000
Tantalum (Ta)	0.3509	0.8773	nd	2,160	678	747	1,590	620	625	598	1,810	623	976	825	1,050	1,090	2,150
Tellurium (Te)	0.3489	0.8723	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Terbium (Tb)	0.0112	0.0280	nd	nd	5.67 J	nd	nd	nd	nd	nd	nd	nd	5.71 J	7.915 J	nd	nd	nd
Thallium (Tl)	0.0031	0.0078	0.04	nd	nd	62.1	138	39.6	nd	nd	nd	nd	nd	nd	2.21 J	7.49	7.04
Thorium (Th)	0.0849	0.2123	0.074	nd	nd	nd	58.2 J	nd	nd	nd	51.2 J	45.7 J	nd	61.6 J	nd	nd	nd
Thulium (Tm)	0.0029	0.0073	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd
Tin (Sn)	0.0352	0.0879	nd	1,770	1,670	2,780	1,970	4,100	2,230	1,910	1710	1,640	3,650	1,180	1,010	1,030	1,100
Titanium (Ti)	0.2008	0.5020	nd	14,400	12,600	17,800	17,800	18,700	21,500	23,900	20,200	23,200	22,500	12,100	8,330	22,000	27,600
Tungsten (W)	0.9553	2.3883	nd	nd	nd	nd	nd	nd	nd	nd	nd	nd	541 J	nd	nd	nd	nd
Uranium (U)	0.0017	0.0042	nd	nd	nd	nd	2.80	1.19 J	nd	0.888 J	1.23 J	1.30 J	nd	nd	nd	nd	nd
Vanadium (V)	0.0354	0.0885	nd	18.0 J	nd	nd	20.5 J	32.4 J	29.5 J	80.6	18.8 J	21.7 J	28.0 J	22.1 J	29.9 J	20.5 J	23.0 J
Ytterbium (Yb)	0.0042	0.0105	nd	2.49 J	nd	2.48 J	3.11 J	nd	nd	2.92 J	nd	2.11 J	nd	3.30 J	nd	3.60 J	1.91 J
Yttrium (Y)	0.0037	0.0093	nd	3.12 J	2.07 J	3.03 J	2.84 J	4.31 J	2.39 J	8.01	2.68 J	2.99 J	5.02	6.10	3.28 J	2.64 J	4.34 J
Zinc (Zn)	0.3164	0.7910	nd	120,000	88,100	80,100	86,100	109,000	63,800	53,900	57,850	73,600	70,100	93,900	101,000	85,800	106,000
Zirconium (Zr)	0.3554	0.8885	nd	542 J	198 J	446 J	675	398 J	594	606	898	nd	1,090	278 J	265 J	nd	266 J

MDL = MDL is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero. Per the Code of Federal Regulations (CFR) (CFR 40, part 136, Appendix B, replicates of given spiking concentration in a range of one to five times from the projected lowest concentration that detector in the analytical method can measure, and then calculate with the following equation: multiply the standard deviation of the PQL = The practical quantitation limit (PQL), aka, limit of quantitation (LOQ) and the estimated quantitation limit (EQL) are set to increase the confidence level in quantification. PQL or EQL is defined as 2 to 5 times above MDL. By raising MDL by a factor concentrations with a degree of certainty. The degree of the factor (2-5) is decided by the quality of the instrument, and the nature of the sample objectives. In this spread sheet the "safety factor" is set at 2.5. If the Analyst requires a different "safety factor"

MB = Method Blank

nd = not detected at MDL

DF = Dilution Factor

J = Estimated Value. Results are between MDL and PQL

ng/g = is equivalent to ug/kg and parts per billion (ppb)

nd	nd	nd	nd	nd	nd	nd
8,980	10,800	8,170	8,390	8,060	8,530	5,910
nd	nd	nd	nd	nd	nd	nd
nd	nd	nd	nd	nd	nd	nd
nd	nd	nd	nd	nd	nd	nd
nd	nd	nd	nd	nd	nd	nd
591,000	588,000	597,000	462,000	455,000	704,000	410,000
10.6	6.3	7.45	8.02	6.89	6.91	6.12
102,000	112,000	57,200	31,200	40,200	51,500	36,400
40,200	31,980	32,400	32,000	30,200	35,200	23,300
3,360,000	3,590,000	3,690,000	3,780,000	3,130,000	2,880,000	3,280,000
1,050	630	779	777	623	1,360	539
nd	nd	nd	nd	nd	nd	nd
nd	5.80 J	nd	nd	nd	nd	nd
nd	nd	nd	nd	16.3	8.79	30.3
nd	nd	nd	nd	nd	nd	nd
nd	nd	nd	nd	nd	nd	nd
1,850	1,820	1,790	2,020	1,770	2,080	1,670
8,030	11,500	5,570	4,660	5,670	4,870	4,590
nd	nd	nd	nd	nd	583 J	nd
nd	nd	nd	nd	nd	nd	nd
50.4	82.4	47.0	39.2 J	35.0 J	35.1 J	nd
nd	nd	2.52 J	nd	nd	nd	nd
11.6	10.1	6.14	2.34 J	3.73 J	2.20 J	2.48 J
78,500	87,900	69,800	66,600	81,600	71,900	71,400
557	319 J	303 J	242 J	245 J	2,150	500

. 1993), the practical protocol to determine MDL specifies mathematically to take a minimum of 7
seven replicates by 3.143.
r of 2 to 10, serving as a "safety factor," laboratories hope to quantify the environmental sample
actor" it may be manually entered.