

Control Laboratories

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Account No:
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 Batch:
 DEC 22 D2
 CODE:
 BioChar IBI

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Date Received: 12/19/2022
 Sample ID: SL2B2121422
 Lab ID. Number: 2120506-01

International BioChar Initiative (IBI) Laboratory Tests for Certification Program

	Dry Basis Unless Stated:	Range	Units	Method
Moisture (time of analysis)		51.3	% wet wt.	ASTM D1762-84 (105c)
Bulk Density		14.5	lb/cu ft	
Organic Carbon		66.9	% of total dry mass	Dry Combust-ASTM D 4373
Hydrogen/Carbon (H:C)		0.23 0.7 Max	Molar Ratio	H dry combustion/C(above)
Total Ash		25.5	% of total dry mass	ASTM D-1762-84
Total Nitrogen		0.61	% of total dry mass	Dry Combustion
pH value		10.07	units	4.11USCC:dil. Rajkovich
Electrical Conductivity (EC20 w/w)		0.726	dS/m	4.10USCC:dil. Rajkovich
Liming (neut. Value as-CaCO3)		15.8	%CaCO3	AOAC 955.01
Carbonates (as-CaCO3)		6.6	%CaCO3	ASTM D 4373
Butane Act.		6.3	g/100g dry	ASTM D 5742-95
Surface Area Correlation		333	m2/g dry	G

All units mg/kg dry unless stated:		Range of		Reporting		Particle Size Distribution		
	Results	Max. Levels	Limit (ppm)	Method		Results	Units	Method
Arsenic (As)	4.7	13 to 100	0.46	J	< 0.5mm	17.4 percent	F	
Cadmium (Cd)	1.5	1.4 to 39	0.18	J	0.5-1mm	11.2 percent	F	
Chromium (Cr)	17.3	93 to 1200	0.46	J	1-2mm	15.3 percent	F	
Cobalt (Co)	1.7	34 to 100	0.46	J	2-4mm	26.1 percent	F	
Copper (Cu)	13.6	143 to 6000	0.46	J	4-8mm	16.5 percent	F	
Lead (Pb)	3.1	121 to 300	0.18	J	8-16mm	13.6 percent	F	
Molybdenum (Mo)	0.54	5 to 75	0.46	J	16-25mm	0.0 percent	F	
Mercury (Hg)	ND	1 to 17	0.001	EPA 7471	25-50mm	0.0 percent	F	
Nickel (Ni)	9.6	47 to 420	0.46	J	>50mm	0.0 percent	F	
Selenium (Se)	ND	2 to 200	0.92	J	Basic Soil Enhancement Properties			
Zinc (Zn)	167	416 to 7400	0.92	J	Total (K)	10303 mg/kg	E	
Boron (B)	47.3	Declaration	4.6	TMECC	Total (P)	2050 mg/kg	E	
Chlorine (Cl)	3834	Declaration	20.0	TMECC	Ammonia (NH4-N)	11.4 mg/kg	A	
Sodium (Na)	2239	Declaration	462	E	Nitrate (NO3-N)	1.4 mg/kg	A	
Iron (Fe)	3249	Declaration	23.1	E	Organic (Org-N)	6128 mg/kg	Calc.	
Manganese (Mn)	1300	Declaration	0.46	J	Volatile Matter	15.1 percent dw	D	

* "ND" stands for "not detected" which means the result is below the reporting limit.

Method A Rayment & Higginson	G Butane Activity Surface Area Correlation Based on McLaughlin, Shields, Jagiello, & Thiele's 2012 paper: Analytical Options for Biochar Adsorption and Surface Area
D ASTM D1762-84	J EPA3050B/EPA 6020
E EPA3050B/EPA 6010	
F ASTM D 2862 Granular	

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