Anaheim Office
Lab No. 20-276-0000
October 14, 2020

Reuser, Inc.
370 Santana Dr.
Cloverdale, CA 95425

Attn: Merle

Attached are the results of analysis carried out on three samples recently submitted to our laboratory.

02

As indicated on the last page the top bar graph indicates no chemical characteristics are limiting the maximum rate of use. The 43% example rate is equivalent to 8 cubic yards per 1000 square feet for blending to a 6 inch depth. At an 8 cubic yard rate of use this material would supply abundant immediately available nitrogen, organic matter and manganese.

The material is moderately alkaline in reaction. Soluble salts are low. Soluble sodium and boron are favorably low.

The carbon to nitrogen ratio of 51.2 indicates there will likely be some nitrogen draw as the material further decomposes. The degree of nitrogen draw will depend upon the wood species and how the wood has been treated.

Virtually all of the amendment passes the 1/2-inch screen with approximately 93% passing the 1/4-inch screen and 70.4% passing the 2.36 mm (about 1/8 inch). The very fine fraction is moderately low. This shows an excellent particle size distribution for improving structure in a wide range of soil types. Bulk density is relatively light and there is moderate mineral present. Actual organic matter content is fair at 160 pounds per cubic yard. The organic percentage is 73.5%. Moisture content is in an appropriate range.

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As indicated on the last page the top bar graph indicates no chemical characteristics are limiting the maximum rate of use. The 35% example rate is equivalent to 6.5 cubic yards per 1000 square feet for blending to a 6-inch depth.

98.8% of the material passes the 1/2-inch screen and about 88% of the material by weight passing the ¼ inch screen and 62.1% passing the 2.36 mm (about 1/8 inch). The very fine fraction is moderately low.

The organic percentage is high. This is a lightweight material. The material is slightly alkaline in reaction. Soluble salts are low. Soluble sodium and boron are also favorably low.

The carbon to nitrogen ratio of 57.1 indicates there will likely be some nitrogen draw as the material further decomposes. The degree of nitrogen draw will depend upon the wood species and how the wood has been

treated. At an example use rate of 35% or 6.5 cubic yards incorporated to a 6-inch depth, this material will supply an abundant amount of nitrogen, potassium, manganese and organic matter and a moderate amount of iron.

Actual organic matter content is a favorable 279 pounds per cubic yard. Moisture content is in an appropriate range.

136

This is a very fine textured material with approximately 97.7% of the amendment passing a 1/4-inch screen, 78.4% passing a 2.36 mm (about 1/ 8 inch) and 40.9% of the material passing a 0.50mm screen.

The organic percentage is a high 98.6% which is to be expected. This is a lightweight material. Each cubic yard of the product contains about 139 pounds of organic matter.

The total nitrogen level is low and this results in a high carbon to nitrogen ratio. There will likely be some nitrogen draw as the material further decomposes. The degree of nitrogen draw will depend upon the wood species and how the wood has been treated. There is some available nitrogen in the ammonium form.

The product contains some available potassium but not much in the way of available phosphorus, calcium or magnesium. The iron level is relatively low and iron should be supplemented if this material is used as a component in a soil mix.

Salinity is safely low and the strongly acidic pH is normal. As indicated on the last page, the top bar graph shows that all chemical characteristics are non-limiting for use of this as a soil amendment.

This type of product is often used at 25-40% in soil mixes as a perlite or peat substitute. To counteract the nitrogen draw consider adding 1.5 pounds of Nitroform (39-0-0) per cubic yard. The iron level could be improved and the product could be darkened with the addition of 1 pound of iron sulfate per cubic yard.

If we can be of any further assistance, please feel free to contact us.

Joe Kiefer, CCA

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Waypoint ANALYTICAL

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COMPOST / AMENDMENT EVALUATION

Send To :	Project :	
Reuser, Inc. 370 Santana Drive Cloverdale CA 95425		Report Number : **20-276-0000** Customer Number : 00306 Date printed : 10/14/2020 Date received : 10/02/2020 Page : 1 of 6 Lab Number : 85162

Sample Id : **02**

Nutrient	Total - Dry Weight	Extractable - Dry Weight	Saturation Extract	Sufficiency Factor
Nitrogen (N)	0.86 %	1859 ppm		3.4
NH_4-N		1857 ppm		
NO_3-N		2 ppm		
Phosphorus (P)		56 ppm		0.2
Phosphorus (P_2O_5)		128 ppm		
Potassium (K)		855 ppm	1.0 meq/L	0.9
Potassium (K_2O)		1035 ppm		
Calcium (Ca)		992 ppm	1.1 meq/L	0.2
Magnesium (Mg)		247 ppm	0.6 meq/L	0.4
Sodium (Na)			0.2 meq/L	
Sulfur (S)				
Sulfate (SO_4)			0.2 meq/L	0.1
Chloride (Cl)				
Copper (Cu)		0.8 ppm		0.3
Zinc (Zn)		2 ppm		0.2
Manganese (Mn)		74 ppm		3.2
Iron (Fe)		46 ppm		0.5
Dilute Acid Fe		0.02 %		
Boron (B)			0.03 ppm	0.1

Test	Result
pH (sat paste)	8.3 s.u.
% Half Sat.	275
TEC	208 meq/kg
Qualitative Lime	Low
Salinity (EC of sat ext.)	0.6 dS/m
SAR (Sodium adsorption ratio)	0.25
Sodium as % of ECe	4 %
Bulk Density - Dry	218 lbs/yd³
Bulk Density - As Received	438 lbs/yd³
Moisture - As Received	50.2 %
Organic	73.5 %
Weight of organic / yd³	160 lbs/yd³
Weight of mineral / yd³	58 lbs/yd³
C/N Ratio	51.2

Gradation	
Wt Percent Retained 1"	0.0 %
Wt Percent Retained 1/2"	0.8 %

Fraction Passing 1/2 inch Screen - Dry Weight Basis	
Screen Opening	% Passing
Passing 9.5mm	97.9 %
Passing 6.4mm (1/4")	93.1 %
Passing 4.75mm	88.0 %
Passing 2.36mm	70.4 %
Passing 1.00mm	41.3 %
Passing 0.50mm	27.7 %

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Sample Id : **02**

POTENTIAL RATE LIMIT FACTORS

Test	% Volume rate limit	Cubic yard amendment per 1000 sf to 6" / Volume % amendment blend with sandy loam
		1 (5) · 2 (11) · 3 (16) · 4 (22) · 5 (27) · 6 (32) · 7 (38) · 8 (43)
EC sat. ext.	No Limit	
Sodium sol.	No Limit	
Chloride sol.		
Boron sol.	No Limit	
NH_4 -N	89 %	
Available		
Nitrogen	No Limit	
PO_4 P	No Limit	
Copper	No Limit	
Zinc	No Limit	

Rate limit estimates based on amending a non-problematic sandy loam

RELATIVE IMMEDIATE NUTRIENT AND ORGANIC VALUE

* Example Rate 43 %	Slight	Moderate	Abundant
Nitrogen			
Phosphorus			
Potassium			
Calcium			
Magnesium			
Copper			
Zinc			
Manganese			
Iron			
Sulfate			
Organic Matter			

* If no chemical characteristics are rate limiting, the example rate is based on organic content of the amendment (up to a max of 43%).

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Sample Id : **21**

Nutrient	Total - Dry Weight	Extractable - Dry Weight	Saturation Extract	Sufficiency Factor
Nitrogen (N)	1.04 %	1136 ppm		2.9
NH_4-N		1118 ppm		
NO_3-N		18 ppm		
Phosphorus (P)		96 ppm		0.4
Phosphorus (P_2O_5)		220 ppm		
Potassium (K)		2000 ppm	3.7 meq/L	2.4
Potassium (K_2O)		2420 ppm		
Calcium (Ca)		2185 ppm	1.9 meq/L	0.5
Magnesium (Mg)		543 ppm	0.8 meq/L	0.8
Sodium (Na)			1.7 meq/L	
Sulfur (S)				
Sulfate (SO_4)			0.3 meq/L	0.1
Chloride (Cl)				
Copper (Cu)		1.5 ppm		0.4
Zinc (Zn)		11 ppm		0.8
Manganese (Mn)		76 ppm		2.6
Iron (Fe)		195 ppm		1.5
Dilute Acid Fe		0.02 %		
Boron (B)			0.17 ppm	0.6

Test	Result
pH (sat paste)	7.6 s.u.
% Half Sat.	199
TEC	263 meq/kg
Qualitative Lime	Low
Salinity (EC of sat ext.)	1.1 dS/m
SAR (Sodium adsorption ratio)	1.46
Sodium as % of ECe	14 %
Bulk Density - Dry	281 lbs/yd³
Bulk Density - As Received	472 lbs/yd³
Moisture - As Received	40.5 %
Organic	99.2 %
Weight of organic / yd³	279 lbs/yd³
Weight of mineral / yd³	2 lbs/yd³
C/N Ratio	57.1

Gradation	
Wt Percent Retained 1"	0.0 %
Wt Percent Retained 1/2"	1.2 %

Fraction Passing 1/2 inch Screen - Dry Weight Basis	
Screen Opening	% Passing
Passing 9.5mm	99.2 %
Passing 6.4mm (1/4")	88.1 %
Passing 4.75mm	80.0 %
Passing 2.36mm	62.1 %
Passing 1.00mm	36.3 %
Passing 0.50mm	23.1 %

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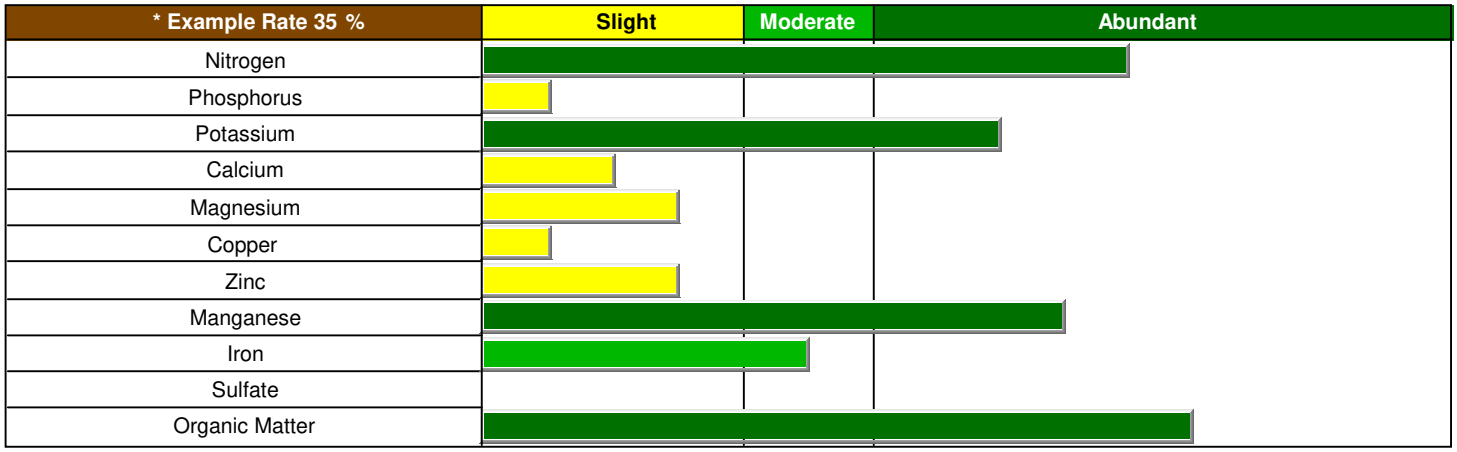
Sample Id : **21**

POTENTIAL RATE LIMIT FACTORS

Test	% Volume rate limit	Cubic yard amendment per 1000 sf to 6"							
		1	2	3	4	5	6	7	8
		Volume % amendment blend with sandy loam							
		5	11	16	22	27	32	38	43
EC sat. ext.	No Limit								
Sodium sol.	No Limit								
Chloride sol.									
Boron sol.	No Limit								
NH_4 -N	No Limit								
Available									
Nitrogen	No Limit								
PO_4 P	No Limit								
Copper	No Limit								
Zinc	No Limit								

Rate limit estimates based on amending a non-problematic sandy loam

RELATIVE IMMEDIATE NUTRIENT AND ORGANIC VALUE



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Sample Id : **136**

Nutrient	Total - Dry Weight	Extractable - Dry Weight	Saturation Extract	Sufficiency Factor
Nitrogen (N)	0.42 %	217 ppm		0.4
NH_4-N		204 ppm		
NO_3-N		13 ppm		
Phosphorus (P)		14 ppm		0
Phosphorus (P_2O_5)		32 ppm		
Potassium (K)		1293 ppm	2.3 meq/L	1.5
Potassium (K_2O)		1565 ppm		
Calcium (Ca)		1208 ppm	1.7 meq/L	0.4
Magnesium (Mg)		309 ppm	1.1 meq/L	0.6
Sodium (Na)			0.4 meq/L	
Sulfur (S)				
Sulfate (SO_4)			0.5 meq/L	0.2
Chloride (Cl)				
Copper (Cu)		1.4 ppm		0.9
Zinc (Zn)		6 ppm		0.9
Manganese (Mn)		23 ppm		1.6
Iron (Fe)		36 ppm		0.6
Dilute Acid Fe		0.07 %		
Boron (B)			0.16 ppm	0.5

Test	Result
pH (sat paste)	3.8 s.u.
% Half Sat.	286
TEC	103 meq/kg
Qualitative Lime	None
Salinity (EC of sat ext.)	0.4 dS/m
SAR (Sodium adsorption ratio)	0.37
Sodium as % of ECe	9 %
Bulk Density - Dry	141 lbs/yd³
Bulk Density - As Received	253 lbs/yd³
Moisture - As Received	44.1 %
Organic	98.6 %
Weight of organic / yd³	139 lbs/yd³
Weight of mineral / yd³	2 lbs/yd³
C/N Ratio	140.6

Gradation	
Wt Percent Retained 1"	0.0 %
Wt Percent Retained 1/2"	3.5 %

Fraction Passing 1/2 inch Screen - Dry Weight Basis	
Screen Opening	% Passing
Passing 9.5mm	99.2 %
Passing 6.4mm (1/4")	97.7 %
Passing 4.75mm	95.1 %
Passing 2.36mm	78.4 %
Passing 1.00mm	55.3 %
Passing 0.50mm	40.9 %

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		Volume % amendment blend with sandy loam							
		5	11	16	22	27	32	38	43
EC sat. ext.	No Limit								
Sodium sol.	No Limit								
Chloride sol.									
Boron sol.	No Limit								
NH_4 -N	No Limit								
Available									
Nitrogen	No Limit								
PO_4 P									
Copper	No Limit								
Zinc	No Limit								

Rate limit estimates based on amending a non-problematic sandy loam

RELATIVE IMMEDIATE NUTRIENT AND ORGANIC VALUE

* Example Rate 43 %	Slight	Moderate	Abundant
Nitrogen			
Phosphorus			
Potassium			
Calcium			
Magnesium			
Copper			
Zinc			
Manganese			
Iron			
Sulfate			
Organic Matter			

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