



SWEP
PTY. LTD.

ABN 26 005 031 569

**ANALYTICAL
LABORATORIES**

Tel: (03) 9701 6007

REPORT ON SAMPLE OF LIME

FILE NO : 2003149931

DATE ISSUED : 6/03/2020

MANNA ENTERPRISES
PO BOX 1775

CLIENT ID : MAN069
PHONE : 08 9316 8020

APPLECROSS, WA 6953

REFERENCE :

REFERENCE ID :

SAMPLE ID : MANNA 50/50

PHONE :

ANALYSIS REQUIRED : Full & Heavy Metals

DATE RECEIVED : 3/03/2020

ITEMS	ABBREVIATION	UNIT	RESULTS
TOTAL CALCIUM	Ca	%	29.7
TOTAL MAGNESIUM	Mg	%	1.16
TOTAL SODIUM	Na	%	0.512
TOTAL POTASSIUM	K	%	0.0698
TOTAL NITROGEN	N	ppm	24.4
TOTAL PHOSPHORUS	P	ppm	575
TOTAL IRON	Fe	ppm	964
TOTAL MANGANESE	Mn	ppm	12.8
TOTAL ZINC	Zn	ppm	3.36
TOTAL COPPER	Cu	ppm	2.71
TOTAL COBALT	Co	ppm	1.36
TOTAL BORON	B	ppm	24.3
TOTAL SULPHUR	S	%	10.1
TOTAL MOLYBDENUM	Mo	ppm	0.545
CALCIUM CARBONATE	CaCO ₃	%	42.3
	(Calculated from Total Calcium)		
MAGNESIUM CARBONATE	MgCO ₃	%	4.06
	(Calculated from Total Magnesium)		
MATERIAL > 2mm		%	Nil
MATERIAL 1.00 - 2.00 mm		%	Nil
MATERIAL 0.85 - 1.00 mm		%	1.8
MATERIAL 0.30 - 0.85 mm		%	1.8
MATERIAL 0.075 - 0.30 mm		%	21.4
MATERIAL < 0.075mm		%	75
Electrical Conductivity		µS/cm	8900
pH		(1:5 Water)	12.2

ITEMS	ABBREVIATION	UNIT	RESULTS
NEUTRALISING VALUE	NV	%	47.2
EFFECTIVE N 2003149931	ENV	%	46.1
MOISTURE CONTENT	MC	%	0.344
TOTAL MERCURY	Hg	ppm	0.159
TOTAL LEAD	Pb	ppm	2.48
TOTAL CADMIUM	Cd	ppm	0.318
TOTAL ARSENIC	As	ppm	0.973
TOTAL CHROMIUM	Cr	ppm	9.1
TOTAL NICKEL	Ni	ppm	1.98
GYPSUM	CaSO4	%	54.3

Notes on Neutralising Value

Neutralising Value is a measure of the amount of acidity a material can neutralise, or in the case of lime, its total liming value. An approximation of Neutralising Value can be made by $\text{CaCO}_3 + (2.5 \times \text{MgO})$.

Effective Neutralising Value is a calculated adjustment of the Neutralising Value, using the fineness of the lime. Lime retained on an 850 μm sieve (the coarser fraction) is estimated to be only 10% effective (fully utilised in the short term). Lime in the 300-850 μm sieve range (medium sized fraction) is estimated to be only 60% effective, while lime passing the 300 μm sieve (finer fraction) is estimated to be 100% effective.

Where a lime has a low Effective Neutralising Value (due to a high proportion of coarse fraction), further grinding should increase its effectiveness to change the pH.

ITEMS	ANALYTICAL METHODS
TOTAL CALCIUM	HCl Evaporation, ICPAES
TOTAL MAGNESIUM	HCl Evaporation, ICPAES
TOTAL SODIUM	HCl Evaporation, ICPAES
TOTAL POTASSIUM	HCl Evaporation, ICPAES
TOTAL NITROGEN	Dumas method, LECO
TOTAL PHOSPHORUS	HCl Evaporation, ICPAES
TOTAL IRON	HCl Evaporation, ICPAES
TOTAL MANGANESE	HCl Evaporation, ICPAES
TOTAL ZINC	HCl Evaporation, ICPAES
TOTAL COPPER	HCl Evaporation, ICPAES
TOTAL COBALT	HCl Evaporation, ICPAES
TOTAL BORON	HCl Evaporation, ICPAES
TOTAL SULPHUR	HCl Evaporation, ICPAES
TOTAL MOLYBDENUM	HCl Evaporation, ICPAES
CALCIUM CARBONATE	Calculated from Total Calcium
MAGNESIUM CARBONATE	Calculated from Total Magnesium
Electrical Conductivity	Method 3A1, water extract*
pH	Method 4A1, water suspension*
MOISTURE CONTENT	Gravimetric method

* Rayment, G.E. & Lyons, D.J. (2011). Soil Chemical Methods - Australasia. CSIRO Publishing, 150 Oxford Street, Collingwood Vic 3066, Australia.