

www.compostquality.ca

# **SUMMARY OF ANALYSIS REPORT**

To: Essex-Windsor SWA CQA Member#: 07-1200

360 Fairview Ave West Essex, Ontario N8M 3G4

Attention: Sample I.D.: ROW "R-21"

**Report#:** C21330-10404 **Sample Date:** 2021-11-25

C21330-70001 Reported Date: 2021-12-6

C22060-70003

Compost Manufactured in: Ontario

Feedstock: Leaf & Yard Residues

### **CQA COMPOST QUALITY & VALUE TESTING PARAMETERS REPORT**

SAMPLE ID	RECOMMENDED END USE/MARKET
ROW "R-21"	Category AA
Regulatory	See Appendix I
Product Quality	See Appendix II
Product Value/ Soil	See Appendix III
Suitability*	(Soil, Enviro, Manure Compost)

The Compost Quality Alliance (CQA) is a voluntary quality monitoring program established by the Compost Council of Canada and the compost producers utilizing recognized standardized testing methodologies and uniform operating protocols to provide customer assurance in compost selection its use, and proper end-use utilization.

All analysis of this compost product was conducted and provided by A&L Canada Laboratories Inc. for the Compost Quality Alliance (CQA).

Haifeng Song, Senior Chemist

Ian McLachlin, Vice-President

A proud member of



A&L Canada Laboratories Inc. London, Ontario Canada (519) 457-2575

\*PLEASE NOTE: Major Nutrients under the Fertilizer Act and Regulations (CFIA)



Please see Appendix III for nutrient content (of impact to claims and labelling if used in declarations).

Compost is classified in Schedule II as a supplement, and as such nutrient guarantees are not mandatory. However, if any claims are made regarding nutritional value of the product, such as for composted manure, the product would then be classified as a supplement and a fertilizer, and the label would have to include the guarantees for the major nutrients. The guarantees for the major nutrients include the minimum amounts of Total Nitrogen (N), Available Phosphoric Acid (P205) and Soluble Potash K20. Source: T-4-120 - Regulation of Compost under the Fertilizers Act and Regulations. http://www.inspection.gc.ca/plants/fertilizers/trade-memoranda/t-4-120/eng/1307910204607/1307910352783



# Appendix I Ontario Compost Guidelines 2012 & CFIA Fertilizer Act & Regulations



#### A. Maximum Concentrations for Trace Metals in Compost - Ontario

		Category AA	Category A	Category B		
Trace Elements	Test Results	Maximum Concentration within Product				
	(ug/g)		(mg/kg dry weight	)		
Arsenic (As)	4.94	13	13	75		
Cadmium (Cd)	BDL	3	3	20		
Chromium (Cr)	18.09	210	210	1060		
Cobalt (Co)	2.18	34 34		150		
Copper (Cu)	38.69	100	400	760		
Lead (Pb)	17.30	150	150	500		
Mercury (Hg)	BDL	0.8	0.8	5		
Molybdenum (Mo)	2.00	5 5		20		
Nickel (Ni)	9.88	62 62 1		180		
Selenium (Se)	BDL	2	2	14		
Zinc (Zn)	104.60	500	700	1850		

### B. Foreign Matter in Compost - Ontario+

	Test Results	Category AA	Category A	Category B
Foreign Matter		Contains < 1% F	M greater than	Contains < 2% FM greater
Percent (%) FM > 3mm/500mL	0	3mm and 0.5%	plastics. Shall	than 3mm and 0.5%
Percent (%) Plastics > 3mm/500mL	0	not contain any	FM greater than	plastic. No FM >
Pieces 25mm/500mL	0	25mm/	500mL	25mm/500mL
Sharp Foreign Matter		No oborn mottor	that can cause	No more than 3 pieces of
Pieces > 3mm/500mL	0	No sharp matter that can cause human or animal injury		sharp matter no greater
Pieces > 12.5mm/500mL	0	naman or a	ininai injury	than 12.5mm/500mL

#### C. Maturity/Stability - Ontario+

Method	Test Results	Required Limits		
CO <sub>2</sub> Respiration Rate	0.80	≤ 4 mg of carbon in the form of carbon dioxide pe		
CO <sub>2</sub> Respiration Rate	0.80	gram of organic matter per day		
O <sub>2</sub> Uptake Respiration Rate		≤ 400 mg oxygen/kg of volatile solids (or organic		
O <sub>2</sub> Uptake Respiration Rate		matter)/hour		

#### D. Pathogens - Ontario+

Pathogen	Test Results	Required Limits
E. coli (MPN/g dry)	24	<1000 MPN/g total solids calculated on a dry weight basis
Salmonella (P-A/25g(ml))	NEGATIVE	<3 MPN/4g total solids calculated on a dry weight basis

+The following references are from the Ontario Compost Quality Standards Guidelines July 2012

\*BDL = Below Detectable Limits

#### E. CFIA - Ontario

Parameter	Test Results
Total Organic Matter (%)	55.68%
Moisture (%)	38.48%



# Appendix II Finished Compost Quality



Parameter	Test Results
pH	8.5
Carbon to Nitrogen Ratio	15:1
Particle Size/Texture (inch)+	1/4 Inch
Soluble Salts (ms/cm)	2.6
Sodium Base Saturation (%Na)	3.17%
Major Nutrients	
Available Potassium (%K)	19.51%
Available Magnesium (%Mg)	21.27%
Available Calcium (%Ca)	56.05%

<sup>+</sup> Majority of sample passes through this sieve size

#### Reference Compost Quality Parameters for CQA

Use	pН	C:N	Moisture	Particle Size	Soluble Salts	%Na
Remediation	5.8-8.5	10-40	NA	<2 in	<20	<3%
Soil Amendment	5.8-8.5	10-30	NA	<1/2 in	<6	<2%
Landscaping	5.8-8.5	12-22	<50%	<1/2 in	<5	<2%
Planting Media	5.5-7.8	12-22	<50%	<1/2 in	<4	<2%
Turf Establishment & Topdressing	5.5-7.8	12-22	<50%	<3/8 in	<3	<1%
Greenhouse Seeding	6-7	12-22	<25%	<1/4 in	<2	<0.5%
Greenhouse Establishement	6-7	12-22	<30%	<1/2 in	2-3.5	<0.5%
Field Nursery	5.8-8	10-30	<50%	<1/2 in	<3.5	<1%
Agricultural Soil Amendments	6-8	10-30	<50%	<1/2 in	<20	none
Potting Soil	5.5-7.2	12-22	<50%	<1/4 in	<2	<1%

Unrestricted Use: Category AA and Category A - Compost that can be used in any application, such as agricultural lands, residential gardens, horticultural operations, the nursery industry, and other businesses. Category A criteria for trace elements are achievable using best source separated MSW feedstock, municipal biosolids, pulp and paper mill biosolids, or manure.

Restricted Use: Category B - Compost that has a restricted use because of the presence of sharp foreign matter or higher trace element content. Category B compost may require additional control when deemed necessary by a province or territory.

Note: For a compost to meet the unrestricted use category, it must meet the unrestricted (Category A) requirements for all trace elements and sharp foreign matter. If the compost fails one criterion of the guideline for unrestricted use but meets the criteria for restricted (Category B) use, then is is classified as a Category B product. Products that do not meet the criteria for either Category A or B must be used or disposed of appropriately.



# Appendix III

# Compost Agricultural Product Value as is basis



Agricultural End-Use	Analysis Result	Unit	Quantity in lbs/T							
	Physical Parameters									
Dry Matter	61.52%	%								
рН	8.5									
Bulk Density	484	kg/m3								
C:N Ratio	15:1									
Fertilizer Equivalent Minerals										
Nitrogen Total	1.98%	%	39.6							
Ammonium Nitrogen	50.32	ppm	0.10							
Total Phosphate (P as P205)	0.38%	%	7.6							
Total Potash (K as K20)	0.89%	%	17.8							
Calcium	2.47%	%	49.4							
Magnesium	0.51%	%	10.2							
Sulfur	1587.52	ppm	3.2							

The Compost Quality Assurance program goes beyond the provincial requirements to establish full value and appropriate end-use. The Compost Report and Compost End-use table in Appendix II, has 10 different compost application uses from soil remediation, through to potting soil blends. Of note are available soluble salt limits and the percent available sodium for sensitive plants. Appendix III, lists the primary agricultural use parameters and quantitative nutrient content that reflects this compost samples agricultural end-use, and application value. This value includes macro and micro nutrients, soil building properties such as the addition of organic matter, increasing moisture holding capacity, and the soils slow release nutrients. These parameters improve beneficial soil health components soil structure and stability.

Major Nutrients - Compost is classified in Schedule II (CFIA Fertilizer Act & Regulations) as a supplement, and as such, nutrient guarantees are not mandatory. However, if any claims are made regarding nutritional value of the product, such as for composted manure, the product would then be classified as a supplement and a fertilizer, and label would have to include the guarantees for the major nutrients. The guarantees for the major nutrients include the minimum amounts of Total Nitrogen (N), Available Phosphoric Acid (P205) and Soluble Potash (K20).

#### Report Number: C21330-10404 **Account Number: 98043**

# A & L Canada Laboratories Inc.

2136 Jetstream Road, London, Ontario, N5V 3P5 Telephone: (519) 457-2575 Fax: (519) 457-2664

Potassium

**Phosphorus** 



Magnesium

To: ESSEX-WINDSOR SWA 360 FAIRVIEW AVE WEST

SUITE 211

ESSEX, ON N8M 3G4

519-776-6370

For: ROW "R-21"

Lime

Reported Date:

Sample

Printed Date: Dec 6, 2021

Lab

pН

**COMPOST REPORT** 

Available

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Calcium

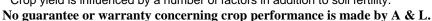
Number	Number	рн	Index		Organic Matter %	P ppm	Крр	m	Mg ppm	Ca ppm
ROW "R-21"	74582	8.5	6.9		45.2	255	239	7	815	3532
Sulfur	Zinc	Manganese	Iron	Copper	Boron	Sodium	Nitrate-N	Soluble	Nitrogen	Chloride
S ppm	Zn ppm	Mn ppm	Fe ppm	Cu ppm	B ppm	Na ppm	NO3-N ppm	Salt ms/cm	(Total) (%)	ppm
228	14.4	20	106	1.4	3.4	230	20	2.6	1.98	2640

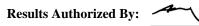
#### INTERPRETATION

CEC		Percent Base Saturation				P	Proportional Equivalents (meq)				Cation Ratio	
meq/100g	% BS	% K	% Mg	% Ca	% Na	K	Mg	Ca	Na	Mg/K	Ca/Mg	
31.5	100.0	19.51	21.27	56.05	3.17	6.15	6.70	17.66	1.00	1:1	3:1	15:1
Optimum	Range:	3 - 5	8 - 20	60 - 80		0.5 - 1.3				7:1	5:1	

CQA

<sup>\*</sup> Crop yield is influenced by a number of factors in addition to soil fertility.





<sup>\*</sup> Results reported on a dry weight basis.

The results of this report relate to the sample submitted and analyzed.

## A & L Canada Laboratories Inc.

REPORT NUMBER: C21330-10404 ACCOUNT NUMBER: 98043 2136 Jetstream Rd, London, Ontario, N5V 3P5 Telephone: (519) 457-2575 Fax: (519) 457-2664



## **REPORT OF ANALYSIS**

**TO:** ESSEX-WINDSOR SWA 360 FAIRVIEW AVE WEST

SUITE 211 RE: ROW "R-21"

ESSEX, ON N8M 3G4

**DATE RECEIVED:** 2021-11-26 **DATE REPORTED:** 2021-12-06

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CQA2100515

LAB NO.	SAMPLE ID	ANALYSIS	RESULT	UNIT		METHOD
74582	ROW "R-21"	Nitrogen (Total)	2.0	%	TMECC.04.02-D	

201220 10404

Results Authorized By:



**REPORT NO.** C21330-70001

# A & L Canada Laboratories Inc.

ACCOUNT NUMBER 98043 2136 Jetstream Road, London, ON, N5V 3P5 Tel: (519) 457-2575 Fax: (519) 457-2664



TO:ESSEX-WINDSOR SWA 360 FAIRVIEW AVE WEST SUITE 211 ESSEX, ON N8M 3G4 FOR:ROW R-21

Phone:800-563-3377 Fax:519-776-6370

## **CERTIFICATE OF ANALYSIS**

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**PROJECT NO:** 

PO#: LAB NUMBER:3307002 SAMPLE ID:ROW R-21 SAMPLE MATRIX:COMPOST DATE SAMPLED:2021-11-25 DATE RECEIVED:2021-11-26 DATE REPORTED:2021-12-03 DATE PRINTED:2021-12-06

PARAMETER	Result	UNIT	DETECTIO LIMIT	METHOD REFERENCE
Arsenic	4.94	ug/g	1.00	EPA 3050B/6010B(mod) *
Cadmium	BDL	ug/g	1.00	EPA 3050B/6010B(mod) *
Cobalt	2.18	ug/g	1.00	TMECC 4.06;EPA 3050/6010(mod)*
Chromium	18.09	ug/g	1.00	TMECC.04.06;EPA 3050/6010(mod*
Copper	38.69	ug/g	1.00	TMECC 4.06;EPA 3050/6010(mod)*
Mercury	BDL	ug/g	0.10	EPA 7471 *
Molybdenum	2.0	ug/g	1.0	TMECC.04.06;EPA 3050/6010(mod*
Nickel	9.88	ug/g	1.00	TMECC 4.06;EPA 3050/6010(mod)*
Lead	17.30	ug/g	1.00	EPA 3050B/6010B(mod) *
Selenium	BDL	ug/g	1.00	EPA 3050/6010 (mod) *
Zinc	104.60	ug/g	1.00	TMECC 4.06;EPA 3050/6010(mod)*

\* - accredited test

BDL - Below detectable levels

The results of this report relate to the sample submitted and analyzed.

C21330-70001

**Results Authorized By:** 

**REPORT NO.** C21330-70001

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PO#: LAB NUMBER:3307002 SAMPLE ID:ROW R-21 SAMPLE MATRIX:COMPOST DATE SAMPLED:2021-11-25 DATE RECEIVED:2021-11-26 DATE REPORTED:2021-12-03 DATE PRINTED:2021-12-06

PARAMETER	Result	UNIT D	ETECTION LIMIT	METHOD REFERENCE
E. coli	24	MPN/g dry	3	TMECC 07.01
Salmonella spp.	NEGATIVE	P-A/	1 CFU	MFLP-75 *
		25.0g(ml)		
Total sharps > 2.8 mm*	0	pieces/500ml		TMECC 03.08
Total sharps > 12.5 mm	0	pieces/500ml		TMECC 03.08
Total FM > 2.8 mm*	0.01	%	0.01	TMECC 03.08
Total FM > 25 mm	1	pieces/500ml		TMECC 03.08
Total plastics > 2.8 mm*	0.01	%	0.01	TMECC 03.08
Total Organic Matter @ 550 deg C	55.68	%	0.10	LOI@550C
Moisture	38.48	%	0.10	TMECC.03.09-A
Sieve 2 Inch (% Passing)	100.00	%	0.10	ASTMD422
Sieve 1 Inch (% Passing)	100.00	%	0.10	ASTMD422
Sieve 1/2 Inch (% Passing)	100.00	%	0.10	ASTMD422
Sieve 3/8 Inch (% Passing)	99.80	%	0.01	ASTMD422
Sieve 1/4 Inch (% Passing)	94.20	%	0.10	ASTMD422
Compost Stability Index	8			TMECC.05.08-B
Respiration-mgCO2-C/g OM/day	0.80	mgCO2-C/	0.01	TMECC.05.08-B
		gOM/day		
Respiration - mgCO2-C/g TS/day	0.50	mgCO2-C/ gTS/day	0.01	TMECC.05.08-B

Maturity Index: 8 - Inactive, highly matured compost, very well aged, possibly over-aged, like soil; no limitations for usage.

\* - accredited test

BDL - Below detectable levels

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C21330-70001

**Results Authorized By:** 

**REPORT NO.** C21330-70001

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TO:ESSEX-WINDSOR SWA 360 FAIRVIEW AVE WEST SUITE 211 ESSEX, ON N8M 3G4 FOR: ROW R-21

Phone:800-563-3377 Fax:519-776-6370

## **CERTIFICATE OF ANALYSIS**

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**PROJECT NO:** 

PO#: LAB NUMBER:3307002 SAMPLE ID:ROW R-21 SAMPLE MATRIX:COMPOST DATE SAMPLED:2021-11-25 DATE RECEIVED:2021-11-26 DATE REPORTED:2021-12-03 DATE PRINTED:2021-12-06

PARAMETER	Result Dry Weight	Result As Received	UNIT	DETECTION LIMIT	METHOD REFERENCE
Total Calida (an rangiyad)		61.52	%	0.10	Cravimatria
Total Solids (as received)		61.52		0.10	Gravimetric
Nitrogen & Carbon					
Total Organic Carbon		30.93	%	0.10	Combustion
Ammonia (NH3/NH4-N)	81.79	50.32	ug/g	.01	Colourimetric
Metals					
Potassium	11980.00	7370.10	ug/g	5.00	TMECC.04.04*
Total Potassium (as K20)	1.44	0.89	%	0.05	ICP
Phosphorus	2721.50	1674.27	ug/g	5.00	TMECC.04.03 *
Total Phosphorus (as P205)	0.62	0.38	%	0.05	ICP
Aluminum	2789.50	1716.10	ug/g	5.00	TMECC.04.07 *
Boron	38.89	23.93	ug/g	1.00	TMECC.04.05 *
Calcium	4.01	2.47	%	0.01	TMECC.04.05*
Iron	6390.00	3931.13	ug/g	5.00	TMECC.04.05 *
Magnesium	0.83	0.51	%	0.01	TMECC.04.05 *
Manganese	156.75	96.43	ug/g	1.00	TMECC.04.05 *
Sodium	0.08	0.05	%	0.01	TMECC.04.05 *
Sulphur	2580.50	1587.52	ug/g	5.00	TMECC.04.05 *
Additional Parameters					
Bulk Density (as Recieved)		484	kg/m3	10	Gravimetric

BDL - Below detectable levels

The results of this report relate to the sample submitted and analyzed.



**Results Authorized By:** 

<sup>\* -</sup> accredited test

**REPORT NO.** C22060-70003

# A & L Canada Laboratories Inc.

ACCOUNT NUMBER 98043 2136 Jetstream Road, London, ON, N5V 3P5 Tel: (519) 457-2575 Fax: (519) 457-2664



TO:ESSEX-WINDSOR SWA 360 FAIRVIEW AVE WEST SUITE 211 ESSEX, ON N8M 3G4

Phone:800-563-3377 Fax:519-776-6370



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## **CERTIFICATE OF ANALYSIS**

PROJECT NO:
PO#:
LAB NUMBER:607004
SAMPLE ID:ROW 'T2-C-20'

SAMPLE MATRIX:COMPOST DATE SAMPLED:2022-02-24 DATE RECEIVED:2022-03-01 DATE REPORTED: DATE PRINTED:2022-03-08

PAGE:

PARAMETER	RESULT	UNIT	DETECTION LIMIT	METHOD REFERENCE
Total sharps > 2.8 mm*	BDL	pieces/500ml		TMECC 03.08
Total sharps > 12.5 mm	BDL	pieces/500ml		TMECC 03.08
Total FM > 2.8 mm*	BDL	%	0.01	TMECC 03.08
Total FM > 25 mm	BDL	pieces/500ml		TMECC 03.08
Total plastics > 2.8 mm*	BDL	%	0.01	TMECC 03.08

#### Comment:

- 1.FM(Foreign matter) = glass,metal,plastic
- 2.Sharps = foreign matter pieces of a size or shape that can cause human or animal injury
- 3.8 mesh screen = 2.36 mm
- 4.\*2.8mm screen is used since 3.0mm screen does not exist

Results reported on a dry weight basis

\* - accredited test

BDL - Below detectable levels

The results of this report relate to the sample submitted and analyzed.

C22060-70003

**Results Authorized By:** 

Jul

**REPORT NO.** C22060-70003

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TO:ESSEX-WINDSOR SWA 360 FAIRVIEW AVE WEST SUITE 211 ESSEX, ON N8M 3G4

Phone:800-563-3377 Fax:519-776-6370



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## **CERTIFICATE OF ANALYSIS**

PROJECT NO: PO#: LAB NUMBER:607005 SAMPLE ID:ROW 'R-21' SAMPLE MATRIX:COMPOST DATE SAMPLED:2022-02-24 DATE RECEIVED:2022-03-01 DATE REPORTED: DATE PRINTED:2022-03-08

PAGE:

PARAMETER	RESULT	UNIT	DETECTION LIMIT	METHOD REFERENCE
Total sharps > 2.8 mm*	BDL	pieces/500ml		TMECC 03.08
Total sharps > 12.5 mm	BDL	pieces/500ml		TMECC 03.08
Total FM > 2.8 mm*	BDL	%	0.01	TMECC 03.08
Total FM > 25 mm	BDL	pieces/500ml		TMECC 03.08
Total plastics > 2.8 mm*	BDL	%	0.01	TMECC 03.08

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C22060-70003

**Results Authorized By:** 

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