CANADIAN Kraft Paper
PO Box 1590 • The Pas, Manitoba • R9A 1L4 Telephone (204) 623-7411

March 28, 2024, TM-10078
Code #09-LF-009

Agnes Wittmann
Director
Environmental Approvals Branch
Manitoba Environment and Climate Change
14 Fultz Blvd.
Winnipeg, Manitoba
R3Y 0L6

Re: Canadian Kraft Paper – Continuation of Biosolids Landspreading Trial at Round The Bend Farms

Dear Ms. Wittmann,

Canadian Kraft Paper Industries (CKP) is a high performance, unbleached sack kraft papermill located in The Pas, Manitoba. Since October 2017 CKP, with approval from Manitoba Environment and Climate Change(MECC), has undertaken a Landspreading Pilot Study Project on CKP property. The Pilot Study involved removing biosolids from the effluent treatment system onsite and applying it to industrial lands at the CKP mill site. With the Pilot Study approval ending in 2022, CKP has begun exploring other options with respect to landspreading biosolids. This led to the to the continuation of landspreading at the mill site and the establishment of an agricultural trial site at Round the Bend Farms (RTBF), located in the Carrot River Valley, west of The Pas, MB.

CKP is a member of the University of Toronto Pulp and Paper Research Consortium, as members we have access to various research scientists and students working closely with the pulp and paper sector to address a broad range of operational challenges including finding solutions related to energy efficiency and environmental footprints of mills. Through the consortium and other funding mechanisms, CKP has hired a post doctoral research scientist, Emmanuel Badewa, who is currently working to investigate the feasibility of utilizing biosolids as a soil amendment on agricultural land. The end goal is to have the biosolids produced onsite classified as a fertilizer and utilized by local farmers. Pulp and Paper biosolids are currently being used as fertilizers in other jurisdictions across Canada.

As per the 2023 Notice of Aleration (NOA), 5 different treatments of biosolid and fertilizer were applied to RTBF (Table 1). The 2023 trial showed that plots which received treatments saw increased vegetation growth when compared to the control. With the knowledge gained from the first year of the agricultural trial and the interest expressed by the local farming community, CKP is submitting this NOA for 2024 to continue the agricultural landspreading trial at RTBF this upcoming growing season. The continuation of this trial aligns with the Province's commitment to landfill waste diversion and a circular economy, along

with the mill's goal of exploring alternative biosolids management practices apart from the existing landfilling and landspreading on CKP's property.

TRIAL OVERVIEW

The focus of the trial is to explore the benefit of the biosolids on soil health and crop productivity to determine if biosolids can be effectively used as a fertilizer. If successful, this could help reduce the demand for nitrogen fertilizer and improve soil microbial activity/diversity of the local farmland. Upon a successful trial, CKP would work toward registering the biosolids produced onsite as a fertilizer with the Canadian Food Inspection Agency. This will not only benefit the nearby agricultural community but will also divert biosolids from the onsite landfill extending the landfill life. The reduction in landfill waste also aligns with MECC's directive to promote a circular economy.

CKP is seeking approval to continue the agricultural biosolids landspreading trial located on RTBF which is owned and operated by Shawn and Edith Sexsmith. The trial will consist of 6 different amendments that range from a control to different ratios of biosolids mixed with nitrogen fertilizer (Table 1), the same plan that was carried out in 2023.

The biosolids being used for the trial will be sourced from previous landspread sites on CKP property, thus the biosolids used will have been exposed to weathering for a minimum of one year. The primary biosolids source for the trial will be from the South Settling Basin (SSB), dredged in 2022. The secondary biosolids source will be from the Aerated Settling Basin (ASB) which was dredged in 2021. The biosolids will be transported from CKP's property to the trial site on RTBF in Spring 2024 once road weight restrictions have been lifted. The biosolids will be transported to the trial site in large woven polypropylene bags using a semi truck and flat bed trailer.

Table 1: Summary information for biosolids landspreading at RTBF.

Site/Size	Location	Plants	6 Amendments	Description
Round the Bend Farm (0.25ha)	53°44'12.2"N 101°38'52.9"W	Canola/ Wheat	1) Control	No amendment
			2) Fertilizer (urea)	Urea nitrogen fertilizer
			3) Secondary Biosolids 50% + urea 50%	Biosolids from the ASB that was land applied on CLF1 zone 2 ASB, co -applied with urea
			4) Mixed Biosolids 50% + urea 50%	Primary-secondary biosolids mix (1:1), co-applied with urea
			5) Primary Biosolids 50% + urea 50%	Biosolids from the SSB that was land applied on Site 2A zone 1 and 3, co- applied with urea
			6) Mixed Biosolids 100%	Primary-secondary biosolids mix (1:1)

Note: Based on the land area (0.25ha), biosolids applied will be less than 5 bone dry tonnes (BDT) of biosolids per year.

To ensure the dryland agricultural capability of the trial site receiving the biosolids meets the nutrient management regulation, a review of the soil survey report for the area was undertaken (Appendix B, B1-B3). The soil survey report reviewed indicated the Pasquia and Le Pas soil series of Northern Manitoba is underlying by Peaty Calcareous Gleysol-Silty clay/loam. According to the Canada Land Inventory Soil Capability Classification, for agriculture and the current management practice at the site, RTBF's land is classified as a Class 4. This categorization results in the adoption of conservation practices such as fences to exclude livestock (Bison) from the site, field-edge filter strips, calculation of the fertilizer and amendment rate using the soil test results. Also, the information suggested the adopted of the N2 nutrient management zone, as defined in Nutrient Management Regulation, Man Reg 62/2008.

The trial site is a 50 m x 50 m area at RTBF, located in the Carrot Valley farming area west of The Pas, Manitoba (53°44'12.2"N, 101°38'54.3"W) (Appendix A, A1). The soil in the area was formed from deposited glacial drifts and alluvium parent material, grouped as peaty calcareous gleysol in the Pasquia series (Ehrlich et al., 1960 - Report of Detailed Soil Survey of Pasquia map area in Northern Manitoba). The soil is medium textured silt loam soil at 0-15 cm (<1% Sand, 73.3 Silt, 26.5% Clay) and loam soil at 0-60 cm (<1% Sand, 88.5 Silt, 11.4% Clay). Historically, the trial site was used as a pasture - to grow grass for bison and managed with bison manure. The trial site will be moldboard plowed (20-25 cm depth) and harrowed (10 cm depth) in the spring prior to seeding.

For the experimental design, treatments will be established in a randomized, complete block design, replicated four times, for a total of 48 plots of 27 m^2 (3 m × 9 m) (Appendix A, A2). The trial location will be divided into two adjacent sections for canola and wheat cultivation, each crop section will be divided into 24 plots separate plots. All plots will be separated from each other by a 2-m buffer zone. The application rate considered was calculated for each crop type (Table 2) based on the post application soil and biosolids information (Table 3 and 4). Rates of biosolids were calculated using 0.25 nitrogen efficiency coefficient. This helps to target optimum available nitrogen and phosphorus levels for canola and wheat crops while considering the metal loading limits for agricultural land. This rate calculation was done according to the Tri-Provincial Manure Application and User Guidelines. The biosolids and urea will be spread by hand considering the size of the plot and incorporated within 1 hour with a rototiller (10 cm depth) to minimize ammonia volatilization losses.

Table 2: Description of Nitrogen (N) application treatments to be applied at RTBF by crop.

Crops	Treatment	Biosolids Application rate (Mg/ha)	Total N applied (kg N ha^{-1})			Total Carbon (C) applied (kg C ha^{-1})
			Urea-N	Biosolids-N	Total N	
Canola (Hybrid)	Control (No Nitrogen)	0	0	0	0	0
	Fertilizer (urea)	0	157	0	157	0
	Secondary Biosolids + urea 50%	26.7	78.5	306.4	385	8878
	Mixed Biosolids 50% + urea 50%	35.9	78.5	308.5	387	10232
	Primary Biosolids + urea 50%	55.0	78.5	312.6	391	12385
	Mixed Biosolids 100%	71.8	0	616.9	616.9	20464
Wheat (CWRS)	Control (No Nitrogen)	0	0	0	0	0
	Fertilizer (urea)	0	123	0	123	0
	Secondary Biosolids + urea 50%	20.9	61.5	240.1	302	6955
	Mixed Biosolids 50% + urea 50%	28.1	61.5	241.7	303	8016
	Primary Biosolids + urea 50%	43.1	61.5	244.9	306	9703
	Mixed Biosolids 100%	56.3	0	483.3	483.3	16033

To mitigate any potential environmental effects, the RTBF trial will implement the following:

- The site is surrounded by grass that will serve as a buffer. Also, the site has a class A slope - little or no slope; 0-3% gradient. A berm was established in 2023 for trial activities and will be maintained in 2024 trial.
- In addition, the site is flat, and fenced to prevent livestock access (Appendix C, C1-C4).
- The trial plot will set back from any ground water wells (>50m), designated residential area (>1000m), property line with a residence (>10m), waterway (>30m), major swamp or wetland (>8m), and not subjected to annual land inundation.

These steps will ensure the trial will have little to no effect on the surrounding environment.

BACKGROUND SOIL TESTING

On September 21, 2023, post application soil sampling was carried on the RTBF trial site at the center of each plot. Samples were collected by use of a shovel at two depths (0-10 cm and 10-20 cm) which were

verified with a tape measure. A composite sample was then calculated using the average for using each sample collected RTBF.

Each composite sample was analyzed for metals, particle size/composition, pH, available phosphate-phosphorus, and numerous forms of nitrogen (Table 3). Analyzing the soils testing results, the available phosphorus and nitrate level in the soil at the proposed site are below the regulated limits (Table 3). Thus, at the proposed site on RTBF (Appendix A, A1), CKP is requesting to spread a biosolid approximate amount of 5 bone dry tonnes in 2024 (Appendix A, A2). See Table 4 for the chemical characteristics of the biosolids that will be utilized from the landspread locations on CKP property.

Table 3: 2023 post application soil testing, depths 0-10 cm and 10-20 cm.

Chemical Properties	**Composite 0-10 cm**	**Composite 10-20 cm**	**CCME Soil Guideline (Agricultural)***
Sample Date	September 21, 2023	September 21, 2023	-
Soil Texture	Silty Clay Loam	Silty Clay Loam	-
pH	6.99	7.27	6 to 8
Total Nitrogen (%)	1.29	0.99	-
Ammonium (mg/kg)	6.04	2.88	-
Nitrate (mg/kg)	88.02	61.59	-
Available Phosphate-P	5.01	2.94	-
Phosphorus (mg/kg)	43.31	21.72	-
Potassium (mg/kg)	437.73	234.86	-
Aluminium (mg/kg)	76.76	69.27	-
Calcium (mg/kg)	7190.30	6852.59	-
Copper (mg/kg)	4.09	3.95	63
Iron, Fe (mg/kg)	237.93	255.09	-
Potassium, K (mg/kg)	437.73	234.86	-
Magnesium, Mg (mg/kg)	1432.66	1335.33	-
Manganese, Mn (mg/kg)	38.12	33.76	-
Molybdenum, Mo (mg/kg)	-	0.06	5
Sodium, Na (mg/kg)	134.62	154.55	-
Nickel, Ni (mg/kg)	1.41	1.62	45
Phosphorus, P (mg/kg)	43.31	21.72	-
Sulphur, S (mg/kg)	171.23	158.57	500
Zinc, Zn (mg/kg)	29.53	18.61	250

Units with < indicates below or at detection limit.

* Canadian Council of Ministers of the Environment (CCME) Canadian Soil Quality Guidelines for the Protection of Environmental and Human Health

Table 4: The chemical properties of the biosolids proposed for agricultural land application.

Chemical Properties	Primary Biosolids (SSB 2022)[1]	Secondary Biosolids (ASB 2021)	CCME Biosolids Guidelines[2]
Sampled Date	October 17, 2022	October 17, 2022	
Total Solids	29.45	64.7	
Electrical conductivity (dS/m)	1.11	1.26	
pH	7.54	7.05	
Total Carbon (%)	22.5	33.3	
Inorganic Carbon (%)	3.1	3.69	
organic carbon (%)	19.4	29.6	
Total Nitrogen (%)	0.522	1.22	
Ammonium (mg/kg)	8.65	3.5	
Nitrate (mg/kg)	<3.5	90.9	
Available Phosphate-P (mg/kg)	83.85	101	
Phosphorus (mg/kg)	811.5	3360	
Potassium (mg/kg)	196	99	
Magnesium (mg/kg)	188	128	
Arsenic (mg/kg)	0.9	1.96	13
Cadmium (mg/kg)	0.426	6.01	20[a]
Cobalt (mg/kg)	2.53	3.96	34
Chromium (mg/kg)	51.3	43.9	210
Copper (mg/kg)	11.85	84.8	400
Lead (mg/kg)	4.745	12	150
Mercury (mg/kg)	0.0086	0.0635	0.8
Molybdenum (mg/kg)	3.465	4.79	20[a]
Nickel (mg/kg)	31.85	41.9	62
Selenium (mg/kg)	0.35	0.7	2
Zinc (mg/kg)	60.8	879	1850[a]

Units with < indicates below or at detection limit.

[1] using an average of CKP site 2A zone 1 and 3.

[2] Canadian Council of Ministers of the Environment (CCME) guidelines for compost quality- Category A maximum concentration within biosolids product.

[a] Concentrations are the existing standards under the Canadian Food Inspection Agency's Standards for Metals in Fertilizers and Supplements, September 1997 (Trade Memorandum T-4-93).

The post crop harvest testing in 2024, will include an in-depth analysis of soil and plants on the trial plots. Testing of the soil and plants will take place at analytical facilities located at the University of Alberta and Lakehead University (Thunder Bay, ON). Sampling will be carried out on each treatment replicate to determine soil health indicators that encompasses physical, chemical, and biological soil properties. The soil indicators will include, bulk density, water stable aggregate stability, soil pH, cation exchange capacity,

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soil organic carbon, hot water extractable carbon, and microbial community analysis (Appendix A, A3). The trial will also be assessing agronomic rates for the biosolids as soil amendments. Furthermore, the trial will also assess the risk of metal accumulation on soil amended with the biosolids.

The trial is tentatively scheduled to begin in May, at the onset of the spring farming season. As such, CKP is requesting a response regarding this NOA (approval of the trial) by April 19, 2024, to ensure that there is no delay in the work planned for spring 2024.

If you have any further questions, do not hesitate to contact me at (204) 623-8450 or lisa.jones@ckpi.com.

[redacted]

Sincerely,
Lisa Jones
Environmental Team Lead

Attach.
cc: Siobhan Burland Ross, Environmental Approvals Branch, Winnipeg
Robert Boswick, Environmental Approvals Branch, Winnipeg
Cristal Huculak, Environmental Compliance and Enforcement, The Pas
Emmanuel Badewa, CKP Research Scientist
Leigh Johnston, CKP Manager of Mill Services
Tamsin Patience, CKP Director of Mill Services
Landspreading File

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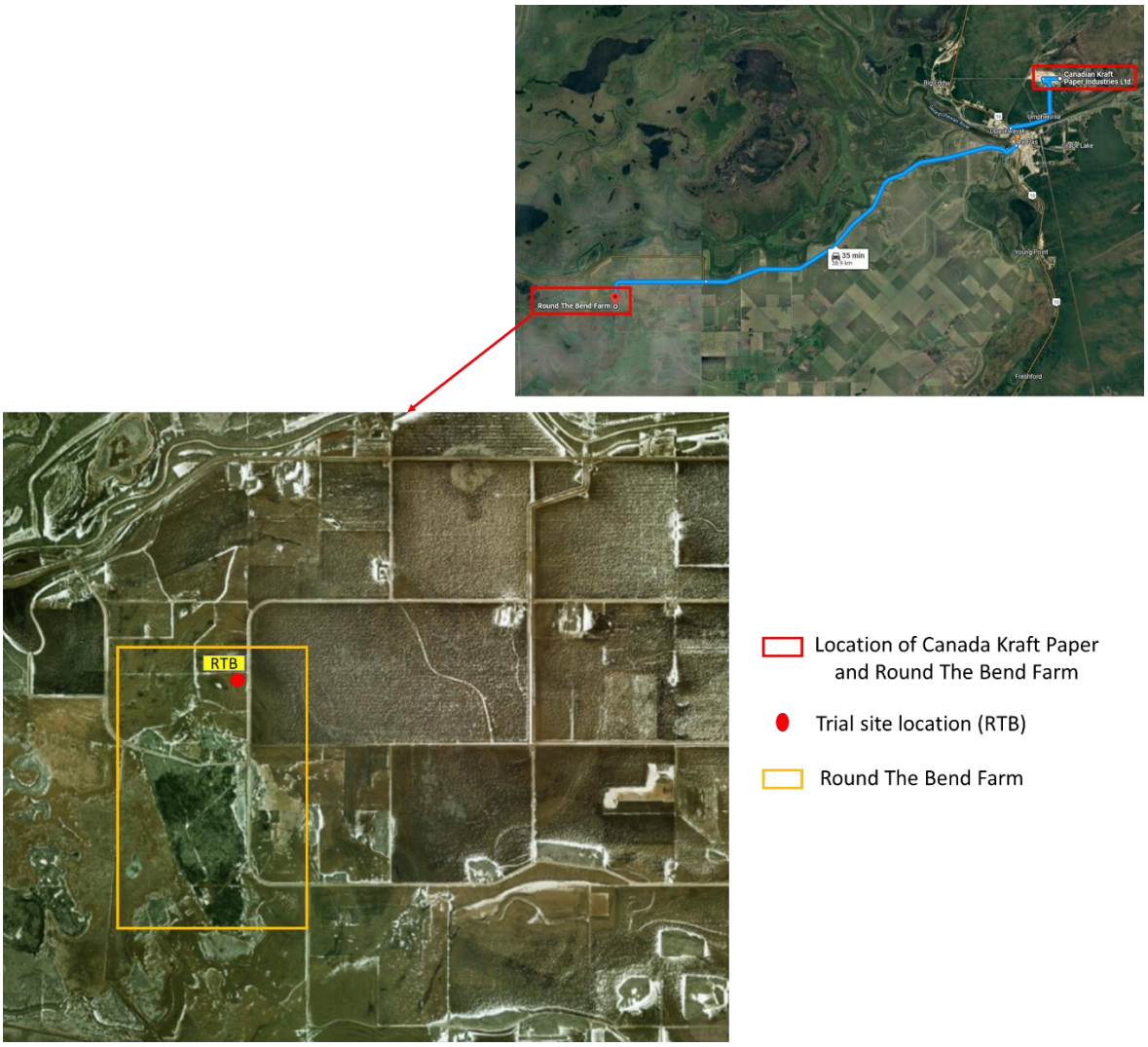
APPENDICES

A: Figures



A1: Location of the trial site on RTBF and the driving distance from the CKP mill site.

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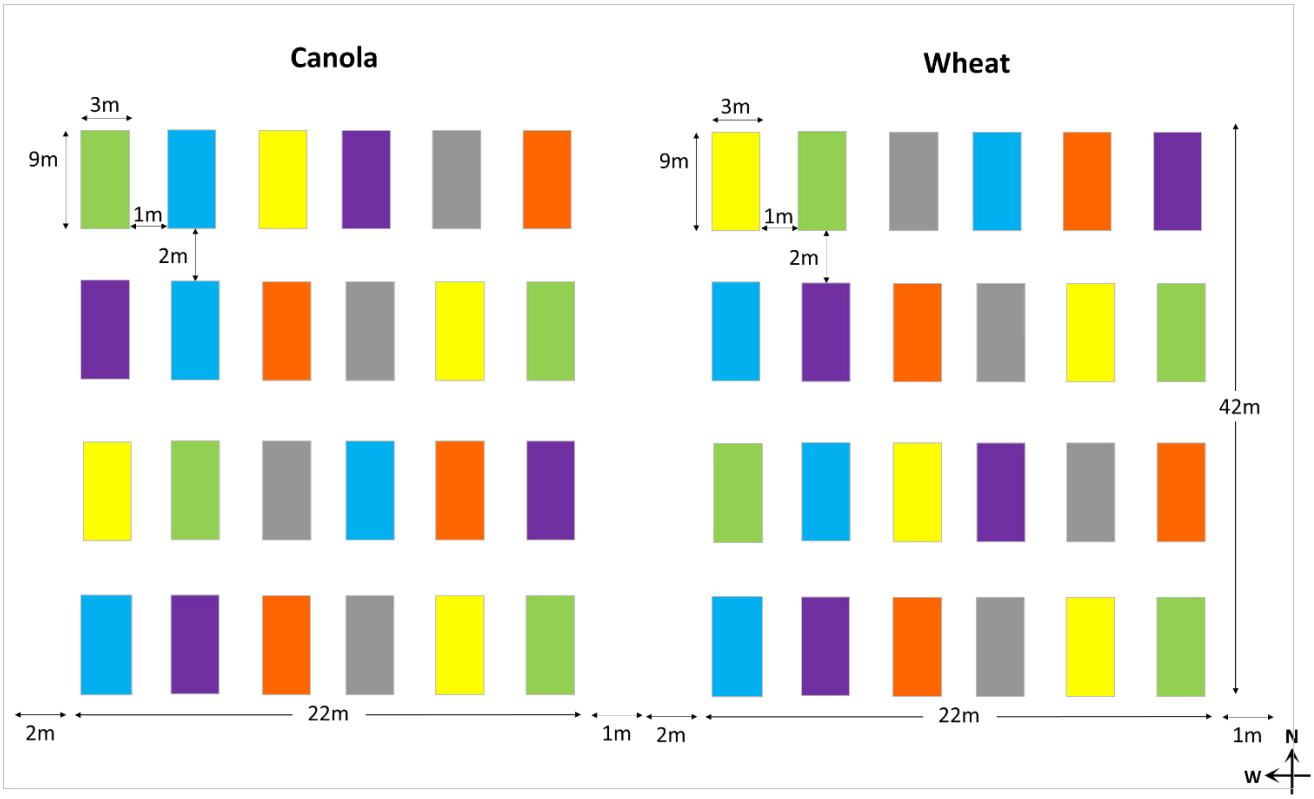

A2: Proposed experimental design showing the treatments and the adjacent sections for the proposed crops, Canola and Wheat.

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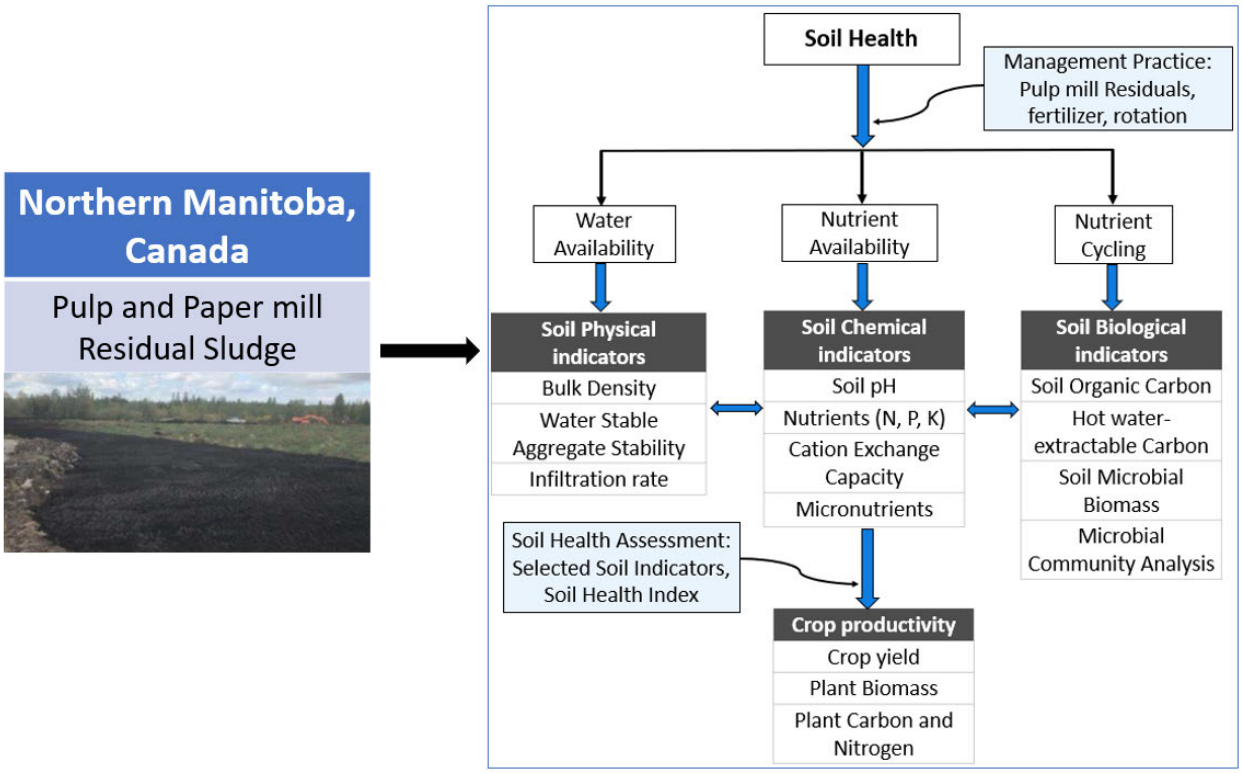

A3: Soil health indicators to be used in this assessment suggested by the Soil Health Institute.

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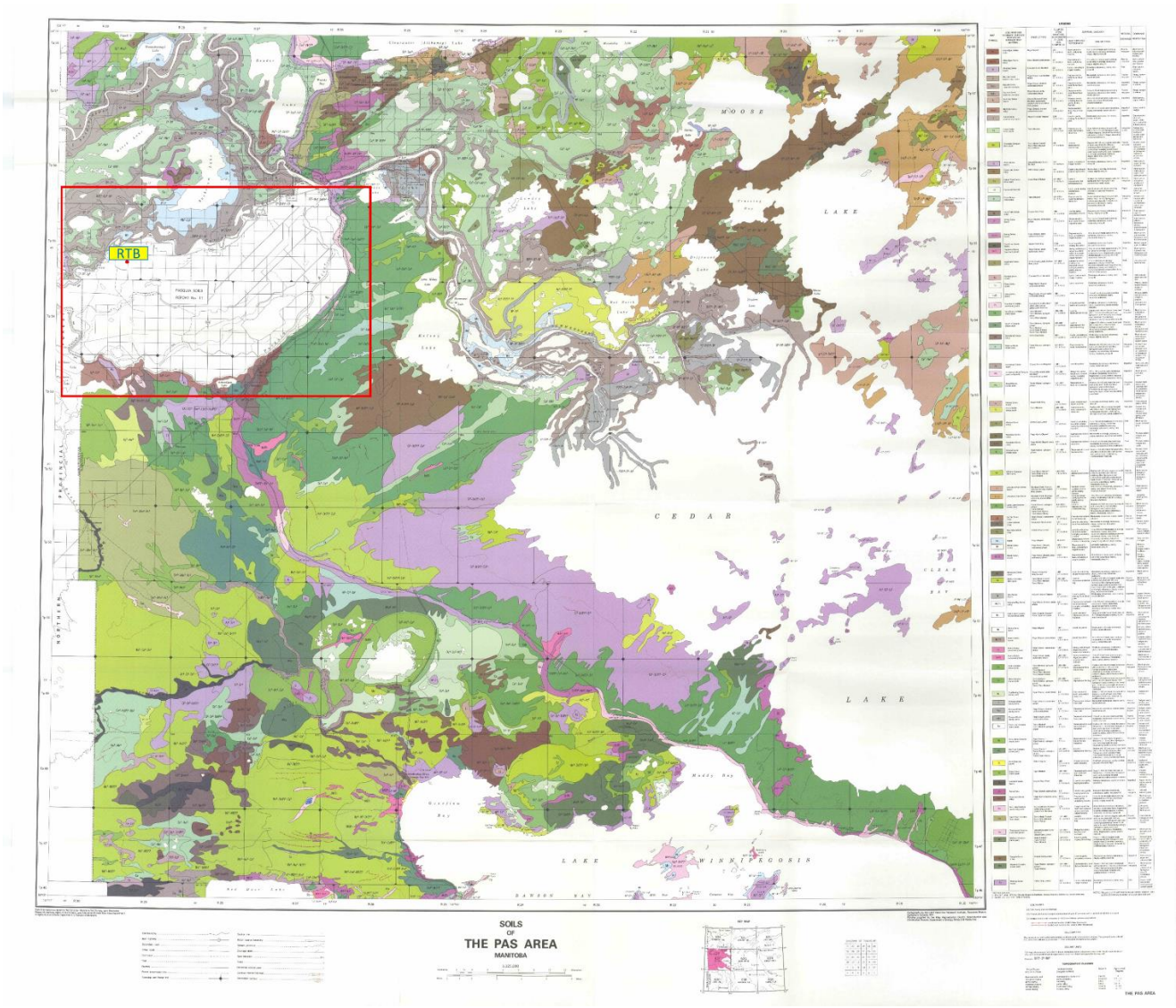
B: Survey maps and trial site information



B1: The location of RTBF trial site on The Pas pedological soil map.

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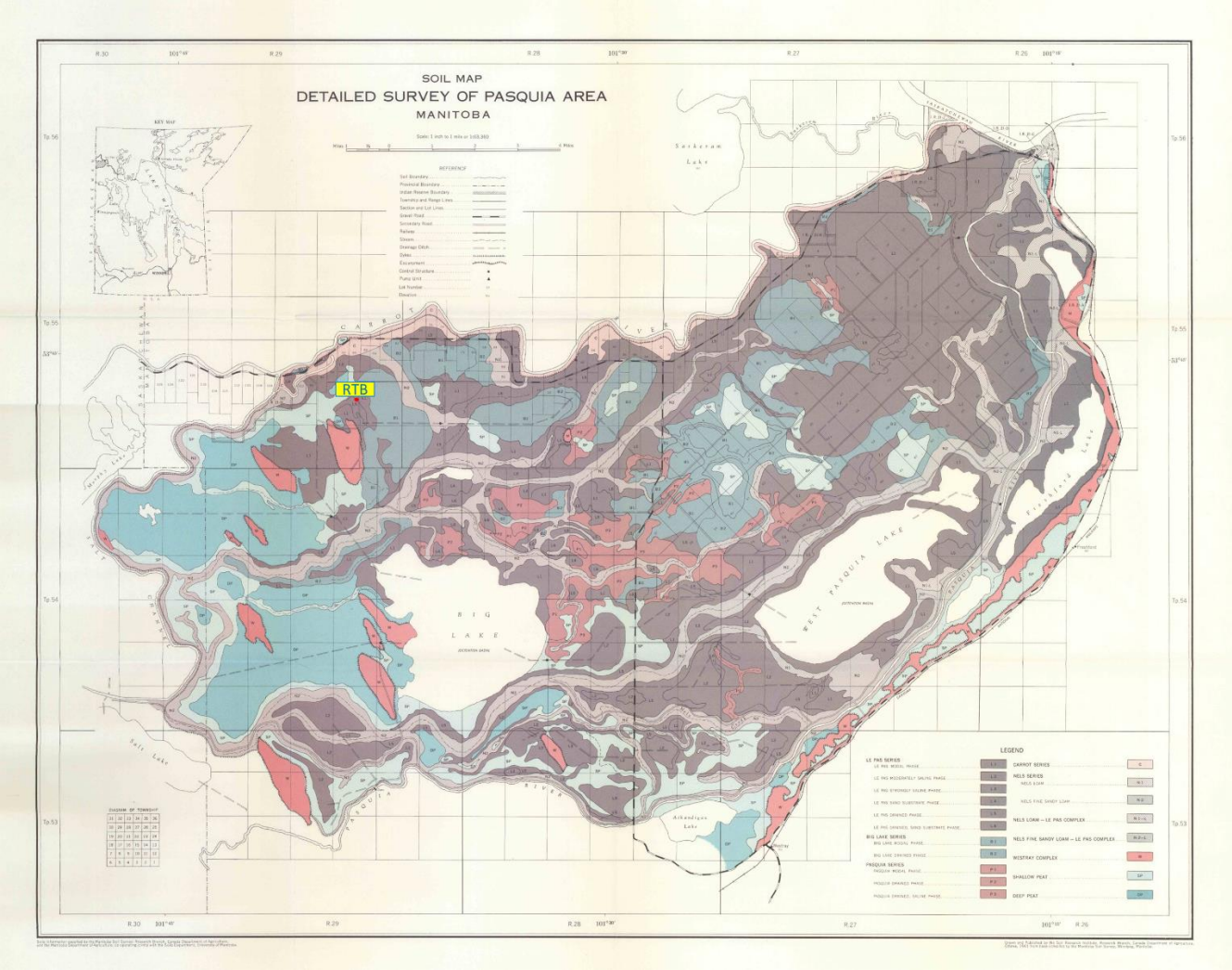

B2: The location of RTBF trial site on detailed soil survey map of old Pasquia area.

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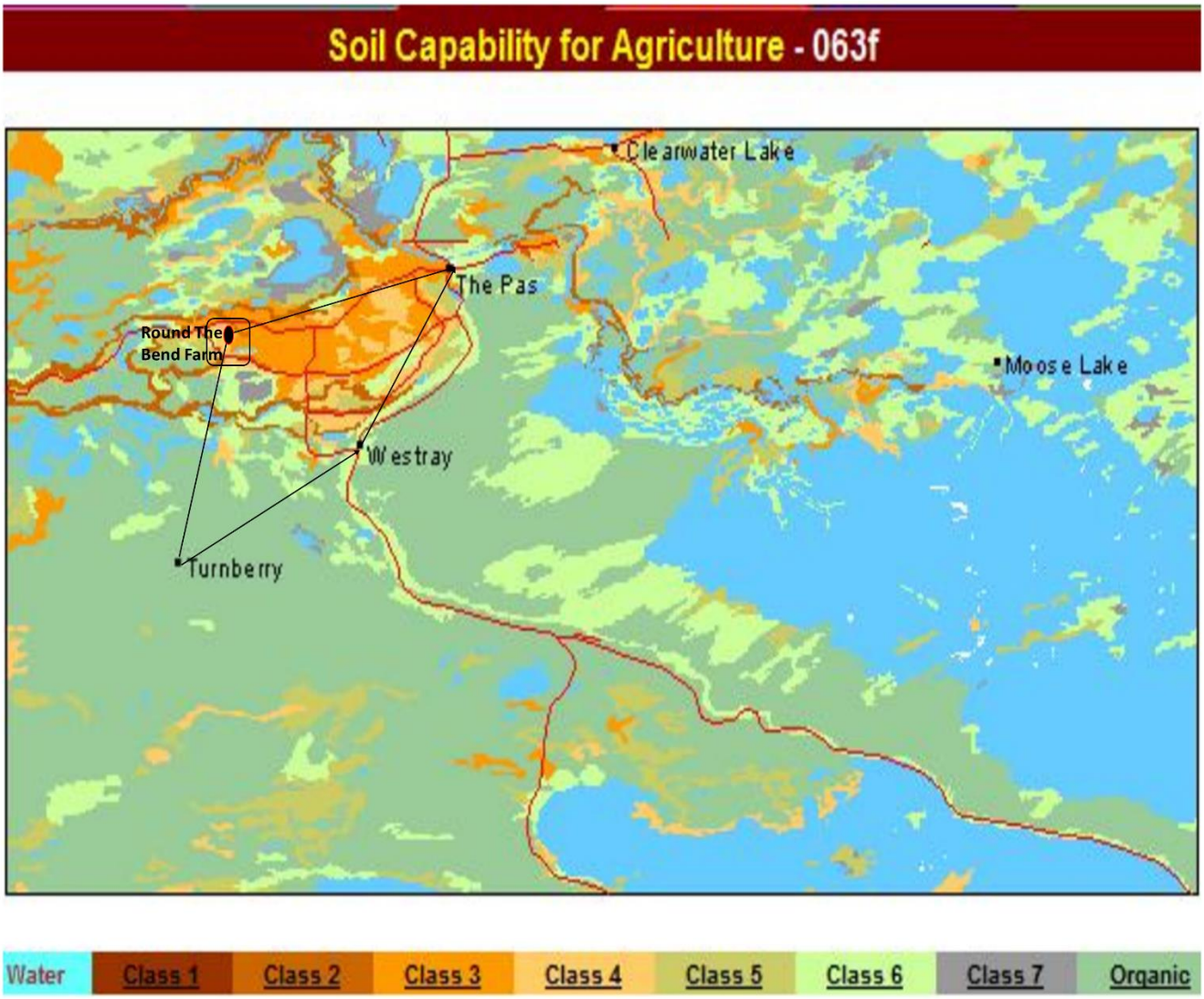

B3: The approximate location of the RTBF trial site on soil capability for Agriculture in Northern Manitoba.

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C: Photos of Trial Site

C1: Photo of RTBF trial site, May 4, 2023, after site was moldboard plowed and harrowed.

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C2: Photo of RTBF wheat trial plots, September 21, 2023.

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C3: Photo of RTBF canola trial plots, September 21, 2023.

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D: Biosolids Certificate of Analysis

D1: Primary Biosolids from Zone 1 (SSB)

Canadian Kraft Paper Industries Limited
ATTN: ERNIE BALLANTYNE
PO Box 1590
The Pas MB R9A 1L4

Date Received: 13-OCT-22
Report Date: 18-NOV-22 10:02 (MT)
Version: FINAL REV. 2

Client Phone: 204-623-8636

Certificate of Analysis

Lab Work Order #: L2736640
Project P.O. #: SV-31293
Job Reference:
C of C Numbers:
Legal Site Desc:

Comments:
18-NOV-2022 Revised report - Full metals reporting.

[redacted]
Hua Wu
Chemistry Laboratory Manager

ADDRESS: 1329 Niakwa Road East, Unit 12, Winnipeg, MB R2J 3T4 Canada | Phone: +1 204 255 9720 | Fax: +1 204 255 9721
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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2736640-3 SITE 2A ZONE 1, 0-15 CM							
Sampled By: CLIENT on 11-OCT-22 @ 14:30							
Matrix: COMPOSITE SOIL							
Total Carbon, TOC and TIC in soil							
Inorganic Carbon as CaCO3 Equivalent							
Inorganic Carbon (as CaCO3 Equivalent)	22.7		0.40	%		21-OCT-22	
Total Carbon by combustion method							
Total Carbon by Combustion	18.5		0.05	%	20-OCT-22	20-OCT-22	R5878623
Total Inorganic Carbon in Soil							
Inorganic Carbon	2.73		0.050	%		21-OCT-22	R5879037
Total Organic Carbon Calculation							
Total Organic Carbon	15.8		0.050	%		22-OCT-22	
Miscellaneous Parameters							
Moisture	65.5		0.10	%		19-OCT-22	R5877597
Available Phosphate-P	30.4		1.0	mg/kg	20-OCT-22	20-OCT-22	R5878090
Specific Gravity	1210		10	kg/m3	22-OCT-22	22-OCT-22	R5879470
Conductivity (1:2)	1.21		0.050	dS m-1	19-OCT-22	19-OCT-22	R5877502
Mercury (Hg)	0.0084		0.0050	mg/kg	19-OCT-22	19-OCT-22	R5877496
Nitrate (as N)	<1.0		1.0	mg/L		16-OCT-22	R5879136
pH (1:2 CaCl2)	7.50		0.10	pH	19-OCT-22	19-OCT-22	R5877478
Particle size - Pipette removal OM & CO3							
% Sand (2.0mm - 0.05mm)	55.7	PSAL	1.0	%	28-OCT-22	29-OCT-22	R5883681
% Silt (0.05mm - 2um)	37.7	PSAL	1.0	%	28-OCT-22	29-OCT-22	R5883681
% Clay (<2um)	6.6	PSAL	1.0	%	28-OCT-22	29-OCT-22	R5883681
Texture	Sandy loam	PSAL			28-OCT-22	29-OCT-22	R5883681
Available Micronutrients (Cu,Fe,Zn,Mn)							
Copper (Cu)	1.98		0.60	mg/kg	27-OCT-22	27-OCT-22	R5882816
Iron (Fe)	197		6.0	mg/kg	27-OCT-22	27-OCT-22	R5882816
Manganese (Mn)	21.7		0.15	mg/kg	27-OCT-22	27-OCT-22	R5882816
Zinc (Zn)	6.95		0.60	mg/kg	27-OCT-22	27-OCT-22	R5882816
Total Available N & NO3-N, NO2-N & NH4							
Available Ammonium-N							
Available Ammonium-N	6.2		2.0	mg/kg	19-OCT-22	19-OCT-22	R5878240
Available Ammonium-N - Calculation							
Total Available Nitrogen	6.2		4.5	mg/kg		20-OCT-22	
Nitrate, Nitrite & Nitrate+Nitrite-N(KCL							
Nitrite-N	<2.0		2.0	mg/kg	19-OCT-22	19-OCT-22	R5878168
Nitrate+Nitrite-N	<4.0		4.0	mg/kg	19-OCT-22	19-OCT-22	R5878168
Nitrate-N	<4.0		4.0	mg/kg	19-OCT-22	19-OCT-22	R5878168
Total Organic Nitrogen - Soil							
Nitrogen, Total Organic - calculation							
Total Organic Nitrogen	0.284		0.020	%		22-OCT-22	
Total Kjeldahl Nitrogen							
Total Kjeldahl Nitrogen	0.285		0.040	%	19-OCT-22	21-OCT-22	R5879057
Available N, P and K							
Available Nitrate-N							
Available Nitrate-N	<2.0	DLM	2.0	mg/kg	19-OCT-22	19-OCT-22	R5878163
Plant Available Phosphorus and Potassium							
Available Phosphate-P	92		10	mg/kg	20-OCT-22	20-OCT-22	R5879059
Available Potassium	166		20	mg/kg	20-OCT-22	20-OCT-22	R5879059
Total N, P, K, S							
Metals in Soil by CRC ICPMS							
Aluminum (Al)	4300		50	mg/kg	19-OCT-22	19-OCT-22	R5877677
Antimony (Sb)	0.21		0.10	mg/kg	19-OCT-22	19-OCT-22	R5877677
Arsenic (As)	0.94		0.10	mg/kg	19-OCT-22	19-OCT-22	R5877677
Barium (Ba)	50.5		0.50	mg/kg	19-OCT-22	19-OCT-22	R5877677

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2736640-3 SITE 2A ZONE 1, 0-15 CM							
Sampled By: CLIENT on 11-OCT-22 @ 14:30							
Matrix: COMPOSITE SOIL							
Metals in Soil by CRC ICPMS							
Beryllium (Be)	0.16		0.10	mg/kg	19-OCT-22	19-OCT-22	R5877677
Boron (B)	10.8		5.0	mg/kg	19-OCT-22	19-OCT-22	R5877677
Bismuth (Bi)	<0.20		0.20	mg/kg	19-OCT-22	19-OCT-22	R5877677
Cadmium (Cd)	0.310		0.020	mg/kg	19-OCT-22	19-OCT-22	R5877677
Calcium (Ca)	103000		50	mg/kg	19-OCT-22	19-OCT-22	R5877677
Chromium (Cr)	75.3		0.50	mg/kg	19-OCT-22	19-OCT-22	R5877677
Cobalt (Co)	2.78		0.10	mg/kg	19-OCT-22	19-OCT-22	R5877677
Copper (Cu)	11.2		0.50	mg/kg	19-OCT-22	19-OCT-22	R5877677
Iron (Fe)	5460		50	mg/kg	19-OCT-22	19-OCT-22	R5877677
Lead (Pb)	4.64		0.50	mg/kg	19-OCT-22	19-OCT-22	R5877677
Lithium (Li)	5.9		2.0	mg/kg	19-OCT-22	19-OCT-22	R5877677
Magnesium (Mg)	49600		20	mg/kg	19-OCT-22	19-OCT-22	R5877677
Manganese (Mn)	167		1.0	mg/kg	19-OCT-22	19-OCT-22	R5877677
Molybdenum (Mo)	4.42		0.10	mg/kg	19-OCT-22	19-OCT-22	R5877677
Nickel (Ni)	43.1		0.50	mg/kg	19-OCT-22	19-OCT-22	R5877677
Phosphorus (P)	758		50	mg/kg	19-OCT-22	19-OCT-22	R5877677
Potassium (K)	720		100	mg/kg	19-OCT-22	19-OCT-22	R5877677
Selenium (Se)	0.32		0.20	mg/kg	19-OCT-22	19-OCT-22	R5877677
Silver (Ag)	0.10		0.10	mg/kg	19-OCT-22	19-OCT-22	R5877677
Sodium (Na)	470		50	mg/kg	19-OCT-22	19-OCT-22	R5877677
Strontium (Sr)	39.4		0.50	mg/kg	19-OCT-22	19-OCT-22	R5877677
Sulfur (S)	2100		1000	mg/kg	19-OCT-22	19-OCT-22	R5877677
Thallium (Tl)	0.055		0.050	mg/kg	19-OCT-22	19-OCT-22	R5877677
Tin (Sn)	<1.0		1.0	mg/kg	19-OCT-22	19-OCT-22	R5877677
Titanium (Ti)	135		1.0	mg/kg	19-OCT-22	19-OCT-22	R5877677
Tungsten (W)	<0.50		0.50	mg/kg	19-OCT-22	19-OCT-22	R5877677
Uranium (U)	0.463		0.050	mg/kg	19-OCT-22	19-OCT-22	R5877677
Vanadium (V)	12.5		0.20	mg/kg	19-OCT-22	19-OCT-22	R5877677
Zinc (Zn)	47.8		2.0	mg/kg	19-OCT-22	19-OCT-22	R5877677
Zirconium (Zr)	<1.0		1.0	mg/kg	19-OCT-22	19-OCT-22	R5877677
Total Nitrogen by combustion method							
Total Nitrogen by LECO	0.393		0.020	%	20-OCT-22	20-OCT-22	R5878623
Total Sulphur by combustion method							
Sulfur (S)-Total	2600		500	mg/kg	20-OCT-22	20-OCT-22	R5878623
Detailed Salinity							
Chloride (Cl) (Saturated Paste)							
Chloride (Cl)	109		20	mg/L	21-OCT-22	21-OCT-22	R5879196
Detail Salinity in mg/kg							
Chloride (Cl)	131		24	mg/kg		27-OCT-22	
Calcium (Ca)	620		30	mg/kg		27-OCT-22	
Magnesium (Mg)	125		30	mg/kg		27-OCT-22	
Potassium (K)	50		30	mg/kg		27-OCT-22	
Sodium (Na)	230		30	mg/kg		27-OCT-22	
Sulfur (as SO4)	473		30	mg/kg		27-OCT-22	
Nitrate-N	<1.2		1.2	mg/kg		27-OCT-22	
SAR, Cations and SO4 in saturated soil							
Calcium (Ca)	519	DLDS	25	mg/L	21-OCT-22	21-OCT-22	R5879657
Potassium (K)	42	DLDS	25	mg/L	21-OCT-22	21-OCT-22	R5879657
Magnesium (Mg)	104	DLDS	25	mg/L	21-OCT-22	21-OCT-22	R5879657
Sodium (Na)	193	DLDS	25	mg/L	21-OCT-22	21-OCT-22	R5879657
SAR	2.02		0.10	SAR	21-OCT-22	21-OCT-22	R5879657
Sulfur (as SO4)	396	DLDS	25	mg/L	21-OCT-22	21-OCT-22	R5879657

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2736640-3 SITE 2A ZONE 1, 0-15 CM							
Sampled By: CLIENT on 11-OCT-22 @ 14:30							
Matrix: COMPOSITE SOIL							
Theoretical Gypsum Requirement							
TGR(brine)	<0.10		0.10	t/ha		27-OCT-22	
TGR(sodic)	<0.10		0.10	t/ha		27-OCT-22	
pH and EC (Saturated Paste)							
% Saturation	119		1.0	%	20-OCT-22	21-OCT-22	R5878938
pH in Saturated Paste	7.06		0.10	pH	20-OCT-22	21-OCT-22	R5878938
Conductivity Sat. Paste	3.06		0.10	dS m-1	20-OCT-22	21-OCT-22	R5878938
VOC routine							
VOC plus F1 by GCMS							
Acetone	4.7	DLHM	1.0	mg/kg	11-OCT-22	29-OCT-22	R5887957
Benzene	<0.010	DLHM	0.010	mg/kg	11-OCT-22	29-OCT-22	R5887957
Bromobenzene	<0.20	DLHM	0.20	mg/kg	11-OCT-22	29-OCT-22	R5887957
Bromochloromethane	<0.20	DLHM	0.20	mg/kg	11-OCT-22	29-OCT-22	R5887957
Bromodichloromethane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Bromoform	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Bromomethane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
n-Butylbenzene	<0.20	DLHM	0.20	mg/kg	11-OCT-22	29-OCT-22	R5887957
sec-Butylbenzene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
tert-Butylbenzene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Carbon disulfide	<0.50	DLHM	0.50	mg/kg	11-OCT-22	29-OCT-22	R5887957
Carbon Tetrachloride	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Chlorobenzene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Chloroethane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Chloroform	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Chloromethane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
2-Chlorotoluene	<0.20	DLHM	0.20	mg/kg	11-OCT-22	29-OCT-22	R5887957
4-Chlorotoluene	<0.20	DLHM	0.20	mg/kg	11-OCT-22	29-OCT-22	R5887957
Dibromochloromethane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,2-Dibromo-3-chloropropane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,2-Dibromoethane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Dibromomethane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,2-Dichlorobenzene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,3-Dichlorobenzene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,4-Dichlorobenzene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Dichlorodifluoromethane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,1-dichloroethane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,2-Dichloroethane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,1-dichloroethene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
cis-1,2-Dichloroethene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
trans-1,2-Dichloroethene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Dichloromethane	<0.20	DLHM	0.20	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,2-Dichloropropane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,3-Dichloropropane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
2,2-Dichloropropane	<0.20	DLHM	0.20	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,1-Dichloropropene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
cis-1,3-Dichloropropene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
trans-1,3-Dichloropropene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Ethylbenzene	<0.030	DLHM	0.030	mg/kg	11-OCT-22	29-OCT-22	R5887957
Hexachlorobutadiene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Hexane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
2-Hexanone (Methyl butyl ketone)	<1.0	DLHM	1.0	mg/kg	11-OCT-22	29-OCT-22	R5887957
Isopropylbenzene	<0.20	DLHM	0.20	mg/kg	11-OCT-22	29-OCT-22	R5887957

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2736640-3 SITE 2A ZONE 1, 0-15 CM							
Sampled By: CLIENT on 11-OCT-22 @ 14:30							
Matrix: COMPOSITE SOIL							
VOC plus F1 by GCMS							
4-Isopropyltoluene	109	DLHC	0.50	mg/kg	11-OCT-22	29-OCT-22	R5887957
MEK	<1.5	DLHM	1.5	mg/kg	11-OCT-22	29-OCT-22	R5887957
MIBK	<1.0	DLHM	1.0	mg/kg	11-OCT-22	29-OCT-22	R5887957
MTBE	<0.40	DLHM	0.40	mg/kg	11-OCT-22	29-OCT-22	R5887957
Styrene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,1,1,2-Tetrachloroethane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,1,2,2-Tetrachloroethane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Tetrachloroethene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Toluene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,2,3-Trichlorobenzene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,2,4-Trichlorobenzene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,1,1-Trichloroethane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,1,2-Trichloroethane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Trichloroethene	<0.020	DLHM	0.020	mg/kg	11-OCT-22	29-OCT-22	R5887957
Trichlorofluoromethane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,2,3-Trichloropropane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,2,4-Trimethylbenzene	0.21	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,3,5-Trimethylbenzene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Vinyl Chloride	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
M+P-Xylenes	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
o-Xylene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Surrogate: 1,4-Difluorobenzene (SS)	114.9		70-130	%	11-OCT-22	29-OCT-22	R5887957
Surrogate: 4-Bromofluorobenzene (SS)	160.4	SHMI	70-130	%	11-OCT-22	29-OCT-22	R5887957

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D2: Primary biosolids- Zone 3 (SSB)

ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2736640-5 SITE 2A ZONE 3, 0-15 CM							
Sampled By: CLIENT on 11-OCT-22 @ 13:30							
Matrix: COMPOSITE SOIL							
Total Carbon, TOC and TIC in soil							
Inorganic Carbon as CaCO3 Equivalent							
Inorganic Carbon (as CaCO3 Equivalent)	28.9		0.40	%		21-OCT-22	
Total Carbon by combustion method							
Total Carbon by Combustion	26.5		0.05	%	20-OCT-22	20-OCT-22	R5878623
Total Inorganic Carbon in Soil							
Inorganic Carbon	3.47		0.050	%		21-OCT-22	R5879037
Total Organic Carbon Calculation							
Total Organic Carbon	23.0		0.050	%		22-OCT-22	
Miscellaneous Parameters							
Moisture	75.6		0.10	%		19-OCT-22	R5877597
Available Phosphate-P	28.1		1.0	mg/kg	20-OCT-22	20-OCT-22	R5878090
Specific Gravity	1070		10	kg/m3	22-OCT-22	22-OCT-22	R5879470
Conductivity (1:2)	1.11	FR5	0.050	dS m-1	19-OCT-22	19-OCT-22	R5877502
Mercury (Hg)	0.0088		0.0050	mg/kg	19-OCT-22	19-OCT-22	R5877496
Nitrate (as N)	<1.0		1.0	mg/L		16-OCT-22	R5879136
pH (1:2 CaCl2)	7.54	FR5	0.10	pH	19-OCT-22	19-OCT-22	R5877478
Particle size - Pipette removal OM & CO3							
% Sand (2.0mm - 0.05mm)	38.9	PSAL	1.0	%	28-OCT-22	29-OCT-22	R5883681
% Silt (0.05mm - 2um)	50.2	PSAL	1.0	%	28-OCT-22	29-OCT-22	R5883681
% Clay (<2um)	10.9	PSAL	1.0	%	28-OCT-22	29-OCT-22	R5883681
Texture	Silt loam	PSAL			28-OCT-22	29-OCT-22	R5883681
Available Micronutrients (Cu,Fe,Zn,Mn)							
Copper (Cu)	2.65		0.60	mg/kg	27-OCT-22	27-OCT-22	R5882816
Iron (Fe)	277		6.0	mg/kg	27-OCT-22	27-OCT-22	R5882816
Manganese (Mn)	37.5		0.15	mg/kg	27-OCT-22	27-OCT-22	R5882816
Zinc (Zn)	11.5		0.60	mg/kg	27-OCT-22	27-OCT-22	R5882816
Total Available N & NO3-N, NO2-N & NH4							
Available Ammonium-N							
Available Ammonium-N	11.1		5.0	mg/kg	19-OCT-22	19-OCT-22	R5878240
Available Ammonium-N - Calculation							
Total Available Nitrogen	11		11	mg/kg		20-OCT-22	
Nitrate, Nitrite & Nitrate+Nitrite-N(KCL							
Nitrite-N	<5.0		5.0	mg/kg	19-OCT-22	19-OCT-22	R5878168
Nitrate+Nitrite-N	<10		10	mg/kg	19-OCT-22	19-OCT-22	R5878168
Nitrate-N	<10		10	mg/kg	19-OCT-22	19-OCT-22	R5878168
Total Organic Nitrogen - Soil							
Nitrogen, Total Organic - calculation							
Total Organic Nitrogen	0.850		0.020	%		22-OCT-22	
Total Kjeldahl Nitrogen							
Total Kjeldahl Nitrogen	0.85		0.10	%	19-OCT-22	21-OCT-22	R5879057
Available N, P and K							
Available Nitrate-N							
Available Nitrate-N	<5.0	DLM	5.0	mg/kg	19-OCT-22	19-OCT-22	R5878163
Plant Available Phosphorus and Potassium							
Available Phosphate-P	75.7		4.0	mg/kg	20-OCT-22	20-OCT-22	R5879059
Available Potassium	226		20	mg/kg	20-OCT-22	20-OCT-22	R5879059
Total N, P, K, S							
Metals in Soil by CRC ICPMS							
Aluminum (Al)	4970		50	mg/kg	19-OCT-22	19-OCT-22	R5877677
Antimony (Sb)	0.79		0.10	mg/kg	19-OCT-22	19-OCT-22	R5877677
Arsenic (As)	0.86		0.10	mg/kg	19-OCT-22	19-OCT-22	R5877677
Barium (Ba)	72.1		0.50	mg/kg	19-OCT-22	19-OCT-22	R5877677

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2736640-5 SITE 2A ZONE 3, 0-15 CM							
Sampled By: CLIENT on 11-OCT-22 @ 13:30							
Matrix: COMPOSITE SOIL							
Metals in Soil by CRC ICPMS							
Beryllium (Be)	0.14		0.10	mg/kg	19-OCT-22	19-OCT-22	R5877677
Boron (B)	7.4		5.0	mg/kg	19-OCT-22	19-OCT-22	R5877677
Bismuth (Bi)	<0.20		0.20	mg/kg	19-OCT-22	19-OCT-22	R5877677
Cadmium (Cd)	0.542		0.020	mg/kg	19-OCT-22	19-OCT-22	R5877677
Calcium (Ca)	65400		50	mg/kg	19-OCT-22	19-OCT-22	R5877677
Chromium (Cr)	27.3		0.50	mg/kg	19-OCT-22	19-OCT-22	R5877677
Cobalt (Co)	2.28		0.10	mg/kg	19-OCT-22	19-OCT-22	R5877677
Copper (Cu)	12.5		0.50	mg/kg	19-OCT-22	19-OCT-22	R5877677
Iron (Fe)	4440		50	mg/kg	19-OCT-22	19-OCT-22	R5877677
Lead (Pb)	4.85		0.50	mg/kg	19-OCT-22	19-OCT-22	R5877677
Lithium (Li)	4.5		2.0	mg/kg	19-OCT-22	19-OCT-22	R5877677
Magnesium (Mg)	16500		20	mg/kg	19-OCT-22	19-OCT-22	R5877677
Manganese (Mn)	181		1.0	mg/kg	19-OCT-22	19-OCT-22	R5877677
Molybdenum (Mo)	2.51		0.10	mg/kg	19-OCT-22	19-OCT-22	R5877677
Nickel (Ni)	20.6		0.50	mg/kg	19-OCT-22	19-OCT-22	R5877677
Phosphorus (P)	865		50	mg/kg	19-OCT-22	19-OCT-22	R5877677
Potassium (K)	850		100	mg/kg	19-OCT-22	19-OCT-22	R5877677
Selenium (Se)	0.38		0.20	mg/kg	19-OCT-22	19-OCT-22	R5877677
Silver (Ag)	0.17		0.10	mg/kg	19-OCT-22	19-OCT-22	R5877677
Sodium (Na)	951		50	mg/kg	19-OCT-22	19-OCT-22	R5877677
Strontium (Sr)	39.6		0.50	mg/kg	19-OCT-22	19-OCT-22	R5877677
Sulfur (S)	2900		1000	mg/kg	19-OCT-22	19-OCT-22	R5877677
Thallium (Tl)	0.066		0.050	mg/kg	19-OCT-22	19-OCT-22	R5877677
Tin (Sn)	2.3		1.0	mg/kg	19-OCT-22	19-OCT-22	R5877677
Titanium (Ti)	108		1.0	mg/kg	19-OCT-22	19-OCT-22	R5877677
Tungsten (W)	<0.50		0.50	mg/kg	19-OCT-22	19-OCT-22	R5877677
Uranium (U)	0.479		0.050	mg/kg	19-OCT-22	19-OCT-22	R5877677
Vanadium (V)	12.0		0.20	mg/kg	19-OCT-22	19-OCT-22	R5877677
Zinc (Zn)	73.8		2.0	mg/kg	19-OCT-22	19-OCT-22	R5877677
Zirconium (Zr)	1.8		1.0	mg/kg	19-OCT-22	19-OCT-22	R5877677
Total Nitrogen by combustion method							
Total Nitrogen by LECO	0.651		0.020	%	20-OCT-22	20-OCT-22	R5878623
Total Sulphur by combustion method							
Sulfur (S)-Total	3200		500	mg/kg	20-OCT-22	20-OCT-22	R5878623
Detailed Salinity							
Chloride (Cl) (Saturated Paste)							
Chloride (Cl)	13		10	mg/L	21-OCT-22	21-OCT-22	R5879196
Detail Salinity in mg/kg							
Chloride (Cl)	100		77	mg/kg		27-OCT-22	
Calcium (Ca)	1910		38	mg/kg		27-OCT-22	
Magnesium (Mg)	250		38	mg/kg		27-OCT-22	
Potassium (K)	81		38	mg/kg		27-OCT-22	
Sodium (Na)	544		38	mg/kg		27-OCT-22	
Sulfur (as SO4)	373		38	mg/kg		27-OCT-22	
Nitrate-N	<7.7		7.7	mg/kg		27-OCT-22	
SAR, Cations and SO4 in saturated soil							
Calcium (Ca)	249		5.0	mg/L	21-OCT-22	21-OCT-22	R5879657
Potassium (K)	10.6		5.0	mg/L	21-OCT-22	21-OCT-22	R5879657
Magnesium (Mg)	32.6		5.0	mg/L	21-OCT-22	21-OCT-22	R5879657
Sodium (Na)	70.8		5.0	mg/L	21-OCT-22	21-OCT-22	R5879657
SAR	1.12		0.10	SAR	21-OCT-22	21-OCT-22	R5879657
Sulfur (as SO4)	48.5		5.0	mg/L	21-OCT-22	21-OCT-22	R5879657

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2736640-5 SITE 2A ZONE 3, 0-15 CM							
Sampled By: CLIENT on 11-OCT-22 @ 13:30							
Matrix: COMPOSITE SOIL							
Theoretical Gypsum Requirement							
TGR(brine)	<0.10		0.10	t/ha		27-OCT-22	
TGR(sodic)	<0.10		0.10	t/ha		27-OCT-22	
pH and EC (Saturated Paste)							
% Saturation	769		1.0	%	20-OCT-22	21-OCT-22	R5878938
pH in Saturated Paste	6.63		0.10	pH	20-OCT-22	21-OCT-22	R5878938
Conductivity Sat. Paste	1.39		0.10	dS m-1	20-OCT-22	21-OCT-22	R5878938
VOC routine							
VOC plus F1 by GCMS							
Acetone	3.6	DLHM	1.0	mg/kg	11-OCT-22	29-OCT-22	R5887957
Benzene	<0.020	DLHM	0.020	mg/kg	11-OCT-22	29-OCT-22	R5887957
Bromobenzene	<0.20	DLHM	0.20	mg/kg	11-OCT-22	29-OCT-22	R5887957
Bromochloromethane	<0.20	DLHM	0.20	mg/kg	11-OCT-22	29-OCT-22	R5887957
Bromodichloromethane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Bromoform	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Bromomethane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
n-Butylbenzene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
sec-Butylbenzene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
tert-Butylbenzene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Carbon disulfide	<0.50	DLHM	0.50	mg/kg	11-OCT-22	29-OCT-22	R5887957
Carbon Tetrachloride	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Chlorobenzene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Chloroethane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Chloroform	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Chloromethane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
2-Chlorotoluene	<0.20	DLHM	0.20	mg/kg	11-OCT-22	29-OCT-22	R5887957
4-Chlorotoluene	<0.20	DLHM	0.20	mg/kg	11-OCT-22	29-OCT-22	R5887957
Dibromochloromethane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,2-Dibromo-3-chloropropane	<0.20	DLHM	0.20	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,2-Dibromoethane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Dibromomethane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,2-Dichlorobenzene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,3-Dichlorobenzene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,4-Dichlorobenzene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Dichlorodifluoromethane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,1-dichloroethane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,2-Dichloroethane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,1-dichloroethene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
cis-1,2-Dichloroethene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
trans-1,2-Dichloroethene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Dichloromethane	<0.20	DLHM	0.20	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,2-Dichloropropane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,3-Dichloropropane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
2,2-Dichloropropane	<0.20	DLHM	0.20	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,1-Dichloropropene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
cis-1,3-Dichloropropene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
trans-1,3-Dichloropropene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Ethylbenzene	<0.030	DLHM	0.030	mg/kg	11-OCT-22	29-OCT-22	R5887957
Hexachlorobutadiene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Hexane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
2-Hexanone (Methyl butyl ketone)	<1.0	DLHM	1.0	mg/kg	11-OCT-22	29-OCT-22	R5887957
Isopropylbenzene	<0.20	DLHM	0.20	mg/kg	11-OCT-22	29-OCT-22	R5887957

* Refer to Referenced Information for Qualifiers (if any) and Methodology

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2736640-5 SITE 2A ZONE 3, 0-15 CM							
Sampled By: CLIENT on 11-OCT-22 @ 13:30							
Matrix: COMPOSITE SOIL							
VOC plus F1 by GCMS							
4-Isopropyltoluene	132	DLHC	0.50	mg/kg	11-OCT-22	29-OCT-22	R5887957
MEK	<1.0	DLHM	1.0	mg/kg	11-OCT-22	29-OCT-22	R5887957
MIBK	<1.0	DLHM	1.0	mg/kg	11-OCT-22	29-OCT-22	R5887957
MTBE	<0.40	DLHM	0.40	mg/kg	11-OCT-22	29-OCT-22	R5887957
Styrene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,1,1,2-Tetrachloroethane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,1,2,2-Tetrachloroethane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Tetrachloroethene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Toluene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,2,3-Trichlorobenzene	<0.50	DLHM	0.50	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,2,4-Trichlorobenzene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,1,1-Trichloroethane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,1,2-Trichloroethane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Trichloroethene	<0.050	DLHM	0.050	mg/kg	11-OCT-22	29-OCT-22	R5887957
Trichlorofluoromethane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,2,3-Trichloropropane	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,2,4-Trimethylbenzene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
1,3,5-Trimethylbenzene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Vinyl Chloride	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
M+P-Xylenes	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
o-Xylene	<0.10	DLHM	0.10	mg/kg	11-OCT-22	29-OCT-22	R5887957
Surrogate: 1,4-Difluorobenzene (SS)	106.8		70-130	%	11-OCT-22	29-OCT-22	R5887957
Surrogate: 4-Bromofluorobenzene (SS)	106.1		70-130	%	11-OCT-22	29-OCT-22	R5887957

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D3: Secondary Biosolids- Capped Landfill 1, ZONE 2 (ASB)

Canadian Kraft Paper Industries Limited
ATTN: ERNIE BALLANTYNE
PO Box 1590
The Pas MB R9A 1L4

Date Received: 19-OCT-22
Report Date: 18-NOV-22 10:02 (MT)
Version: FINAL REV. 2

Client Phone: 204-623-8636

Certificate of Analysis

Lab Work Order #: L2737358
Project P.O. #: SV-32018
Job Reference:
C of C Numbers:
Legal Site Desc:

Comments:
18-NOV-2022 Revised report - Full metals reporting.

[redacted]
Hua Wo
Chemistry Laboratory Manager

ADDRESS: 1329 Niakwa Road East, Unit 12, Winnipeg, MB R2J 3T4 Canada | Phone: +1 204 255 9720 | Fax: +1 204 255 9721
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L2737358-2	CLF1 ZONE 2 ASB, 0-30 CM						
Sampled By:	CLIENT on 17-OCT-22 @ 15:00						
Matrix:	COMPOSITE SOIL						
Total Carbon, TOC and TIC in soil							
Inorganic Carbon as CaCO3 Equivalent							
Inorganic Carbon (as CaCO3 Equivalent)	30.7		0.40	%		26-OCT-22	
Total Carbon by combustion method							
Total Carbon by Combustion	33.3		0.05	%	26-OCT-22	26-OCT-22	R5882125
Total Inorganic Carbon in Soil							
Inorganic Carbon	3.69		0.050	%		26-OCT-22	R5881740
Total Organic Carbon Calculation							
Total Organic Carbon	29.6		0.050	%		27-OCT-22	
Miscellaneous Parameters							
Moisture	35.3		0.10	%		27-OCT-22	R5882518
% Saturation	231		1.0	%		24-OCT-22	R5879996
Available Phosphate-P	195		10	mg/kg	26-OCT-22	26-OCT-22	R5881778
Specific Gravity	1220		10	kg/m3	26-OCT-22	26-OCT-22	R5882117
Conductivity (1:2)	1.26	FR5	0.050	dS m-1	26-OCT-22	26-OCT-22	R5882122
Mercury (Hg)	0.0635		0.0050	mg/kg	25-OCT-22	26-OCT-22	R5881816
Nitrate (as N)	41		20	mg/L		24-OCT-22	R5882750
pH (1:2 CaCl2)	7.05		0.10	pH	26-OCT-22	26-OCT-22	R5882120
Particle size - Pipette removal OM & CO3							
% Sand (2.0mm - 0.05mm)	8.2	UMI	1.0	%	28-OCT-22	29-OCT-22	R5883677
% Silt (0.05mm - 2um)	81.9	UMI	1.0	%	28-OCT-22	29-OCT-22	R5883677
% Clay (<2um)	10.0	UMI	1.0	%	28-OCT-22	29-OCT-22	R5883677
Texture	Silt	UMI			28-OCT-22	29-OCT-22	R5883677
Note: PSA Results Unreliable. Insufficient soil for analysis.							
Available Micronutrients (Cu,Fe,Zn,Mn)							
Copper (Cu)	20.5		0.60	mg/kg	26-OCT-22	26-OCT-22	R5882436
Iron (Fe)	128		6.0	mg/kg	26-OCT-22	26-OCT-22	R5882436
Manganese (Mn)	770		0.15	mg/kg	26-OCT-22	26-OCT-22	R5882436
Zinc (Zn)	302		0.60	mg/kg	26-OCT-22	26-OCT-22	R5882436
Metals in Soil by CRC ICPMS							
Aluminum (Al)	9270		50	mg/kg	25-OCT-22	26-OCT-22	R5881797

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2737358-2 CLF1 ZONE 2 ASB, 0-30 CM							
Sampled By: CLIENT on 17-OCT-22 @ 15:00							
Matrix: COMPOSITE SOIL							
Metals in Soil by CRC ICPMS							
Antimony (Sb)	0.50		0.10	mg/kg	25-OCT-22	26-OCT-22	R5881797
Arsenic (As)	1.96		0.10	mg/kg	25-OCT-22	26-OCT-22	R5881797
Barium (Ba)	345		0.50	mg/kg	25-OCT-22	26-OCT-22	R5881797
Beryllium (Be)	0.29		0.10	mg/kg	25-OCT-22	26-OCT-22	R5881797
Boron (B)	5.9		5.0	mg/kg	25-OCT-22	26-OCT-22	R5881797
Bismuth (Bi)	<0.20		0.20	mg/kg	25-OCT-22	26-OCT-22	R5881797
Cadmium (Cd)	6.01		0.020	mg/kg	25-OCT-22	26-OCT-22	R5881797
Calcium (Ca)	118000		50	mg/kg	25-OCT-22	26-OCT-22	R5881797
Chromium (Cr)	43.9		0.50	mg/kg	25-OCT-22	26-OCT-22	R5881797
Cobalt (Co)	3.96		0.10	mg/kg	25-OCT-22	26-OCT-22	R5881797
Copper (Cu)	84.8		0.50	mg/kg	25-OCT-22	26-OCT-22	R5881797
Iron (Fe)	5190		50	mg/kg	25-OCT-22	26-OCT-22	R5881797
Lead (Pb)	12.0		0.50	mg/kg	25-OCT-22	26-OCT-22	R5881797
Lithium (Li)	5.2		2.0	mg/kg	25-OCT-22	26-OCT-22	R5881797
Magnesium (Mg)	11100		20	mg/kg	25-OCT-22	26-OCT-22	R5881797
Manganese (Mn)	2860		1.0	mg/kg	25-OCT-22	26-OCT-22	R5881797
Molybdenum (Mo)	4.79		0.10	mg/kg	25-OCT-22	26-OCT-22	R5881797
Nickel (Ni)	41.9		0.50	mg/kg	25-OCT-22	26-OCT-22	R5881797
Phosphorus (P)	3360		50	mg/kg	25-OCT-22	26-OCT-22	R5881797
Potassium (K)	660		100	mg/kg	25-OCT-22	26-OCT-22	R5881797
Selenium (Se)	0.70		0.20	mg/kg	25-OCT-22	26-OCT-22	R5881797
Silver (Ag)	4.98		0.10	mg/kg	25-OCT-22	26-OCT-22	R5881797
Sodium (Na)	1310		50	mg/kg	25-OCT-22	26-OCT-22	R5881797
Strontium (Sr)	223		0.50	mg/kg	25-OCT-22	26-OCT-22	R5881797
Sulfur (S)	11200		1000	mg/kg	25-OCT-22	26-OCT-22	R5881797
Thallium (Tl)	0.270		0.050	mg/kg	25-OCT-22	26-OCT-22	R5881797
Tin (Sn)	1.2		1.0	mg/kg	25-OCT-22	26-OCT-22	R5881797
Titanium (Ti)	104		1.0	mg/kg	25-OCT-22	26-OCT-22	R5881797
Tungsten (W)	0.79		0.50	mg/kg	25-OCT-22	26-OCT-22	R5881797
Uranium (U)	1.81		0.050	mg/kg	25-OCT-22	26-OCT-22	R5881797
Vanadium (V)	18.7		0.20	mg/kg	25-OCT-22	26-OCT-22	R5881797
Zinc (Zn)	879		2.0	mg/kg	25-OCT-22	26-OCT-22	R5881797
Zirconium (Zr)	1.7		1.0	mg/kg	25-OCT-22	26-OCT-22	R5881797
Total Available N & NO3-N, NO2-N & NH4							
Available Ammonium-N							
Available Ammonium-N	3.5		2.0	mg/kg	25-OCT-22	25-OCT-22	R5881179
Available Ammonium-N - Calculation							
Total Available Nitrogen	94.4		4.5	mg/kg		26-OCT-22	
Nitrate, Nitrite & Nitrate+Nitrite-N(KCL							
Nitrite-N	<2.0	DLM	2.0	mg/kg	25-OCT-22	25-OCT-22	R5880796
Nitrate+Nitrite-N	90.9		4.0	mg/kg	25-OCT-22	25-OCT-22	R5880796
Nitrate-N	90.9		4.0	mg/kg	25-OCT-22	25-OCT-22	R5880796
Total Organic Nitrogen - Soil							
Nitrogen, Total Organic - calculation							
Total Organic Nitrogen	1.14		0.020	%		02-NOV-22	
Total Kjeldahl Nitrogen							
Total Kjeldahl Nitrogen	1.14		0.16	%	27-OCT-22	01-NOV-22	R5885857
Available N, P and K							
Available Nitrate-N							
Available Nitrate-N	94.4		2.0	mg/kg	26-OCT-22	26-OCT-22	R5881737
Plant Available Phosphorus and Potassium							
Available Phosphate-P	101		10	mg/kg	26-OCT-22	26-OCT-22	R5881817

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2737358-2 CLF1 ZONE 2 ASB, 0-30 CM							
Sampled By: CLIENT on 17-OCT-22 @ 15:00							
Matrix: COMPOSITE SOIL							
Plant Available Phosphorus and Potassium							
Available Potassium	99		20	mg/kg	26-OCT-22	26-OCT-22	R5881817
Total N, P, K, S							
Total Nitrogen by combustion method							
Total Nitrogen by LECO	1.22		0.020	%	26-OCT-22	26-OCT-22	R5882125
Total Sulphur by combustion method							
Sulfur (S)-Total	10400		500	mg/kg	26-OCT-22	26-OCT-22	R5882125
Detailed Salinity							
Ca,K,Mg,Na in Soil (Paste) by ICPOES							
Calcium (Ca)	522		5.0	mg/L		25-OCT-22	R5886097
Magnesium (Mg)	128		5.0	mg/L		25-OCT-22	R5886097
Potassium (K)	8.0		5.0	mg/L		25-OCT-22	R5886097
Sodium (Na)	88.2		5.0	mg/L		25-OCT-22	R5886097
Chloride in Soil (Paste) by Colorimetry							
Chloride (Cl)	<20		20	mg/L		10-NOV-22	R5890098
Conductivity in Soil (Paste) by Meter							
Conductivity Sat. Paste	2.79		0.010	dS/m		30-OCT-22	R5883767
Sodium Adsorption Ratio (Sat. Paste)							
SAR	0.90		0.10	SAR		02-NOV-22	
Sulphate (SO4)							
Sulfur (as SO4)	1590		6.0	mg/L		25-OCT-22	R5886097
pH (1:2 CaCl2)							
pH (1:2 CaCl2)	7.15		0.10	pH		03-NOV-22	R5886860
VOC routine							
VOC plus F1 by GCMS							
Acetone	0.60		0.50	mg/kg	17-OCT-22	22-OCT-22	R5886677
Benzene	<0.0050		0.0050	mg/kg	17-OCT-22	22-OCT-22	R5886677
Bromobenzene	<0.10		0.10	mg/kg	17-OCT-22	22-OCT-22	R5886677
Bromochloromethane	<0.10		0.10	mg/kg	17-OCT-22	22-OCT-22	R5886677
Bromodichloromethane	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
Bromoform	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
Bromomethane	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
n-Butylbenzene	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
sec-Butylbenzene	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
tert-Butylbenzene	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
Carbon disulfide	<0.25		0.25	mg/kg	17-OCT-22	22-OCT-22	R5886677
Carbon Tetrachloride	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
Chlorobenzene	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
Chloroethane	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
Chloroform	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
Chloromethane	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
2-Chlorotoluene	<0.10		0.10	mg/kg	17-OCT-22	22-OCT-22	R5886677
4-Chlorotoluene	<0.10		0.10	mg/kg	17-OCT-22	22-OCT-22	R5886677
Dibromochloromethane	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
1,2-Dibromo-3-chloropropane	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
1,2-Dibromoethane	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
Dibromomethane	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
1,2-Dichlorobenzene	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
1,3-Dichlorobenzene	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
1,4-Dichlorobenzene	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
Dichlorodifluoromethane	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
1,1-dichloroethane	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
1,2-Dichloroethane	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

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ALS ENVIRONMENTAL ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2737358-2 CLF1 ZONE 2 ASB, 0-30 CM							
Sampled By: CLIENT on 17-OCT-22 @ 15:00							
Matrix: COMPOSITE SOIL							
VOC plus F1 by GCMS							
1,1-dichloroethene	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
cis-1,2-Dichloroethene	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
trans-1,2-Dichloroethene	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
Dichloromethane	<0.10		0.10	mg/kg	17-OCT-22	22-OCT-22	R5886677
1,2-Dichloropropane	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
1,3-Dichloropropane	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
2,2-Dichloropropane	<0.10		0.10	mg/kg	17-OCT-22	22-OCT-22	R5886677
1,1-Dichloropropene	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
cis-1,3-Dichloropropene	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
trans-1,3-Dichloropropene	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
Ethylbenzene	<0.015		0.015	mg/kg	17-OCT-22	22-OCT-22	R5886677
Hexachlorobutadiene	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
Hexane	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
2-Hexanone (Methyl butyl ketone)	<0.50		0.50	mg/kg	17-OCT-22	22-OCT-22	R5886677
Isopropylbenzene	<0.10		0.10	mg/kg	17-OCT-22	22-OCT-22	R5886677
4-Isopropyltoluene	0.21		0.10	mg/kg	17-OCT-22	22-OCT-22	R5886677
MEK	<0.50		0.50	mg/kg	17-OCT-22	22-OCT-22	R5886677
MIBK	<0.50		0.50	mg/kg	17-OCT-22	22-OCT-22	R5886677
MTBE	<0.20		0.20	mg/kg	17-OCT-22	22-OCT-22	R5886677
Styrene	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
1,1,1,2-Tetrachloroethane	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
1,1,2,2-Tetrachloroethane	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
Tetrachloroethene	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
Toluene	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
1,2,3-Trichlorobenzene	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
1,2,4-Trichlorobenzene	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
1,1,1-Trichloroethane	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
1,1,2-Trichloroethane	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
Trichloroethene	<0.010		0.010	mg/kg	17-OCT-22	22-OCT-22	R5886677
Trichlorofluoromethane	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
1,2,3-Trichloropropane	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
1,2,4-Trimethylbenzene	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
1,3,5-Trimethylbenzene	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
Vinyl Chloride	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
M+P-Xylenes	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
o-Xylene	<0.050		0.050	mg/kg	17-OCT-22	22-OCT-22	R5886677
Surrogate: 1,4-Difluorobenzene (SS)	110.6		70-130	%	17-OCT-22	22-OCT-22	R5886677
Surrogate: 4-Bromofluorobenzene (SS)	111.6		70-130	%	17-OCT-22	22-OCT-22	R5886677