

2017 Annual Report



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ALS Global ASR Sampling Analysis Results



INDUSTRIAL METALS (2011) 550 MESSIER STREET

550 MESSIER STREET WINNIPEG, MANITOBA R2J 0G5

PH (204) 233-1908 FAX (204) 233-1933

ENVIRONMENTAL MONITORING

Industrial Metals operated in 2017 and recycled approximately 178,500 tonnes of scrap metal. In accordance with Clause 25 of the Environment Act Licence (No. 2856 RRRR), the following is an annual report of site operations as required by Manitoba Sustainable Development. This report includes details of the annual monitoring occurring at the Industrial Metals property. The following sections describe the results of the noise testing, air quality testing, soil testing, groundwater testing, and ASR testing.

SECTION 1

Noise Monitoring

The Standard Operating Procedures and Monitoring Program includes four sites around the perimeter of the property that as representative locations for noise leaving the property. Industrial Metals' shredder maintenance manager conducted the noise level monitoring. As discussed with Manitoba Sustainable Development, noise levels, in decibels, were recorded using a digital sound level meter using an iPhone application. Noise levels at each location on the property were recorded several times during the day, in a sampling event. The average noise level for each location was determined. Sampling began in January 2017, and was completed monthly, during operating hours, while equipment was in use. The main point sources of outdoor noise production at the site include heavy equipment operation (backhoes, skid steers), the metal shredder, hauling trucks, metal placement, and the train transport. Results of the noise level monitoring during 2017 are summarized in the table below:

Data (2017)	Units	Sampling Location					
Date (2017)	Units	North	West	South	East		
January 20	dBA	69.7	72.1	70.4	80.1		
February 23	dBA	68.8	72.5	70.1	79.5		
March 24	dBA	71.3	72.5	71.3	79.9		
April 19	dBA	70.3	70.9	67.8	81.6		
May 25	dBA	69.1	71.4	69.9	80.4		
June 26	dBA	72.2	70.3	69.9	88.8		
July 21	dBA	70.0	69.8	73.4	82.4		
August 23	dBA	78.4	78.4	80.2	85.8		
September 21	dBA	101.1*	78.1	78.6	84.1		



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Date (2017)	Units		Sampling L	ocation	
Date (2017)	Ulits	North	West	South	East
October 26	dBA	82.6*	76.5	79.4	90.7
November 22	dBA	85.9	71.8	72.9	91.8
December 18	dBA	73.6	74	72.7	85.7
Yearly Average	dBA	76.1	73.2	73.1	84.2

^{*}measurements occurred while train was operating onsite.

Sampling locations corresponded with the location plan attached to the Standard Operating Procedures and Monitoring Plan.

Industrial Metals received no noise complaints for the site in 2017.

Noise Reduction Program

Industrial Metals has taken the following steps to reduce noise levels on the property:

- Installed a noise reduction wall along the western edge of the shredder pad. The wall consisted of three-53 foot trailer sections placed end to end and stacked two high. The wall was approximately 160 feet long and 20 feet high.
- Informed suppliers of acceptable materials to be received onsite, such as those without combustible fuels and hazardous materials, which reduce the potential for explosions and other noise impacts
- Inspected incoming loads for potentially explosive materials and those materials not accepted are sent back with the suppliers
- Detected incoming loads for radiation at the scale before entering the site
- Maintained mechanical equipment onsite (i.e. material transport vehicles, material sorting equipment and the shredder) regularly
- Reduced explosive noises from the shredder operation by containing within the hammermill
- Continually maintained equipment at the site to reduce potential noise impacts
- Explored new methods for reducing noise impacts and explosion prevention technologies through supplier meetings and conferences attended by Industrial Metals staff.



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No loads were rejected from the site based on potentially explosive materials or radioactive materials.

Shredder Explosions

The following table is a summary of explosion events occurring at the shredder in 2016:

Date	Time	Description and Cause of Explosion	Outcome or Action Taken	Intensity * 1 - 10
3/5/17	1:38 pm	Small explosion in the shredder with a small visible flame. Cause unknown	The shredder operation continued. The flame was extinguished in seconds. No need for fire suppression or emergency services	2 - 3
31/5/17	shredder with a small visible flame. Cause was a drum containing solvent of some		The shredder operation continued. The flame was extinguished in seconds. No need for fire suppression or emergency services	2 - 3
8/6/17	9:58 am	Small explosion, barely audible with small fire. Cause was likely a small propane tank	The shredder operation continued. The flame was extinguished in seconds. No need for fire suppression or emergency services	3.5
3/10/17	1:30 pm	Small explosion with a small visible flame. Cause likely from a minivan with a small amount of fuel trapped in a fuel line	The shredder operation continued. The flame was extinguished in seconds. No need for fire suppression or emergency services	2.5
27/10/17	10:18 am	Midsize explosion with small visible fire. Nothing unusual being fed into shredder at the time of the incident, so cause unknown	The shredder operation continued. The flame was extinguished in seconds. No need for fire suppression or emergency services	4 - 5

^{*} Intensity Scale: 1 – audible with no visible fire;

^{5 –} audible with fire contained in the hammermill;

^{10 –} audible with fire visible outside the hammermill



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SECTION 2

Air Quality and Monitoring

The air quality is maintained at acceptable levels in the site buildings and around the perimeter of the property, in accordance with the Manitoba Ambient Air Quality Criteria and to the Environment Act Licence (No. 2856 RRRR). Monitoring air quality helps to determine if levels of air borne particulates exceed published levels, and if a potential threat to human and environmental health and safety exists. In accordance with the Manitoba Ambient Air Quality Guidelines, Maximum Acceptable Levels (MAL) are not to be exceeded in any urban centre including areas that are in the vicinity of industries with atmospheric emissions.

Dust emissions are minimized from the onsite operations, in accordance with the Environment Act Licence requirements, which include:

- the use of skirts on all drop chutes of the shredder
- the use of covered bins for ASR collection.

In addition, water is used to suppress dust from dry ground conditions onsite, if it becomes a nuisance to surrounding properties. During dry and windy periods during the summer of 2017a water truck was used for water spraying, to reduce dust production. Dates of site watering were not recorded. Industrial Metals received no complaints regarding air quality or dust production.

Baseline air quality sampling was conducted by Oswald Wohlgemut (Environmental Scientist at JR Cousin Consultants Ltd.) on July 6, 7, and 8, and included sampling three different sites on the property over 24 hour periods. Details on the results of the air quality testing were included in the Industrial Metals 2016 Annual Report.

A qualified environmental sampling firm will conduct additional air quality analysis during the summer of 2018. Results will be provided to Manitoba Sustainable Development upon completion.



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SECTION 3

Soil Quality Monitoring

Oswald Wohlgemut (Environmental Scientist at JR Cousin Consultants Ltd.) completed baseline soil quality sampling on January 11 and June 8, 2017. Three separate locations were tested at depths of 0.3 m below the surface and at 1.3 m to 1.5 m below the surface. The soil testing results were included in the Industrial Metals 2016 Annual Report.



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SECTION 4

Groundwater Quality Monitoring

Baseline groundwater quality sampling was conducted by Oswald Wohlgemut (Environmental Scientist at JR Cousin Consultants Ltd.) on January 11, 2017. The Industrial Metals property has a deep aquifer well for non-potable water, located in the shredder building. The results of this groundwater testing were included in the Industrial Metals 2016 Annual Report.



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SECTION 5

ASR Sampling Analysis

Approximately 15,764 metric tonnes of ASR waste were produced from the site in 2017. The shredder maintenance manager (personnel at Industrial Metals) conducted ASR sampling in February, April, July and October 2017. The ASR sampling was conducted in accordance with Attachment 'A' of the Environment Act Licence, which details volume of ASR and length of sampling time used to obtain representative samples. The samples were collected in glass jars supplied by the laboratory and were tested quarterly. The detailed laboratory analysis results are attached in the Appendix.

The laboratory analysis results were compared with contaminant threshold levels as identified in the Special Waste (Shredder Residue) Regulation 113/2003, and the Hazardous Waste Regulation 195/2015.



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The results of the ASR laboratory analysis are summarized in the table below:

Parameter Measured	Units	Reg 113/2003 Special Waste	Reg 195/2015 Leachate	February 2017	April 2017	July 2017	October 2017
Benzene (VOC)	mg/L		0.5	<0.025	<0.025	< 0.025	<0.025
Ethylbenzene (VOC)	mg/L		0.24	<0.025	<0.025	< 0.025	< 0.025
Toluene (VOC)	mg/L		2.4	0.042	<0.025	< 0.025	< 0.025
Xylenes (VOC)	mg/L		30	0.111	<0.075	< 0.075	< 0.075
Polychlorinated Biphenyl (PCB)	mg/L	50		< 0.0004	<0.0004	< 0.0004	< 0.0004
Arsenic	mg/L		2.5	< 0.02	< 0.02	< 0.02	< 0.02
Boron	mg/L		500	1.22	0.87	1.25	0.60
Cadmium	mg/L	15	0.5	0.157	0.154	0.141	0.033
Chromium	mg/L		5	< 0.05	<0.05	< 0.05	< 0.05
Copper	mg/L			< 0.05	<0.05	< 0.05	1.21
Iron	mg/L			103	345	163	4.45
Lead	mg/L	15	5	0.219	3.25	0.24	8.17
Magnesium	mg/L			34.1	26.6	48.1	61.0
Mercury	mg/L		0.1	< 0.01	< 0.01	< 0.01	< 0.01
Nickel	mg/L			1.06	2.23	1.01	0.271
Tin	mg/L			< 0.005	<0.005	< 0.005	< 0.005
Uranium	mg/L		10	<0.005	< 0.005	< 0.005	< 0.005
Zinc	mg/L			283	372	483	84



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Based on the results of the ASR analysis, there were no parameters that exceeded the regulations and would qualify the waste as a Hazardous Waste Material. Therefore, the ASR material was hauled to a Class 1 Waste Management Facility for final disposal.



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SECTION 6

Public Correspondence:

Industrial Metals did not receive any public complaints in 2017.

<u>Appendix</u>

ALS Global ASR Sampling Analysis Results



Industrial Metals (2011) ATTN: JOSH CHISICK

550 Messier Street

Winnipeg MB R2J 0G5

Date Received: 09-FEB-17

Report Date: 06-MAR-18 14:07 (MT)

Version: FINAL REV. 2

Client Phone: 204-233-1908

Certificate of Analysis

Lab Work Order #: L1888844

Project P.O. #: NOT SUBMITTED

Job Reference: INDUSTRIAL METALS - 550 MESSIER STREET

C of C Numbers: Legal Site Desc:

Comments: 6-MAR-2018 AMENDED REPORT - Date sampled on CofC was incorrect - changed to 7-FEB-

17

Hua Wo

Chemistry Laboratory Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

ADDRESS: 1329 Niakwa Road East, Unit 12, Winnipeg, MB R2J 3T4 Canada | Phone: +1 204 255 9720 | Fax: +1 204 255 9721 ALS CANADA LTD Part of the ALS Group An ALS Limited Company



L1888844 CONTD.... PAGE 2 of 4 Version: FINAL REV.

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1888844-1 ASR - 2							
Sampled By: CLIENT on 07-FEB-17							
Matrix: ASR Leachate metals by TCLP							
-							
Leachate prep TCLP 1st Preliminary pH	8.69		0.10	pН		16-FEB-17	R3655966
2nd Preliminary pH	3.17		0.10	pH		16-FEB-17	R3655966
Extraction Solution Initial pH	4.93		0.10	рН		16-FEB-17	R3655966
Final pH	6.41		0.10	pН		16-FEB-17	R3655966
Miscellaneous Parameters	0.11		0.10	P			110000000
Mercury (Hg)-Total	<0.010		0.010	mg/L	16-FEB-17	24-FEB-17	R3661379
Leachate Procedure for Reg 347	40.010		0.010	9/ =			110001070
Initial pH	8.57		0.10	pH units		14-FEB-17	R3652943
Final pH	6.10		0.10	pH units		14-FEB-17	R3652943
Total Metals by ICP-MS							
Antimony (Sb)-Leachable	<0.050		0.050	mg/L	17-FEB-17	22-FEB-17	R3659719
Arsenic (As)-Leachable	<0.020		0.020	mg/L	17-FEB-17	22-FEB-17	R3659719
Barium (Ba)-Leachable	0.938		0.050	mg/L	17-FEB-17	22-FEB-17	R3659719
Beryllium (Be)-Leachable	<0.050		0.050	mg/L	17-FEB-17	22-FEB-17	R3659719
Boron (B)-Leachable	1.22		0.50	mg/L	17-FEB-17	22-FEB-17	R3659719
Cadmium (Cd)-Leachable	0.157		0.0050	mg/L	17-FEB-17	22-FEB-17	R3659719
Calcium (Ca)-Leachable	381		0.50	mg/L	17-FEB-17	22-FEB-17	R3659719
Chromium (Cr)-Leachable	<0.050		0.050	mg/L	17-FEB-17	22-FEB-17	R3659719
Cobalt (Co)-Leachable	0.130		0.020	mg/L	17-FEB-17	22-FEB-17	R3659719
Copper (Cu)-Leachable	<0.050		0.050	mg/L	17-FEB-17	22-FEB-17	R3659719
Iron (Fe)-Leachable	103		0.50	mg/L	17-FEB-17	22-FEB-17	R3659719
Lead (Pb)-Leachable	0.219		0.050	mg/L	17-FEB-17	22-FEB-17	R3659719
Magnesium (Mg)-Leachable	34.1		0.50	mg/L	17-FEB-17	22-FEB-17	R3659719
Manganese (Mn)-Leachable	7.46		0.0050	mg/L	17-FEB-17	22-FEB-17	R3659719
Molybdenum (Mo)-Leachable	<0.0050		0.0050	mg/L	17-FEB-17	22-FEB-17	R3659719
Nickel (Ni)-Leachable Potassium (K)-Leachable	1.06 11.3		0.050 0.50	mg/L	17-FEB-17 17-FEB-17	22-FEB-17 22-FEB-17	R3659719 R3659719
Selenium (Se)-Leachable	<0.020		0.020	mg/L mg/L	17-FEB-17	22-FEB-17 22-FEB-17	R3659719
Silver (Ag)-Leachable	<0.020		0.020	mg/L	17-FEB-17	22-FEB-17	R3659719
Strontium (Sr)-Leachable	1.35		0.000	mg/L	17-FEB-17	22-FEB-17	R3659719
Thallium (TI)-Leachable	<0.010		0.010	mg/L	17-FEB-17	22-FEB-17	R3659719
Tin (Sn)-Leachable	<0.0050		0.0050	mg/L	17-FEB-17	22-FEB-17	R3659719
Uranium (U)-Leachable	<0.0050		0.0050	mg/L	17-FEB-17	22-FEB-17	R3659719
Vanadium (V)-Leachable	<0.050		0.050	mg/L	17-FEB-17	22-FEB-17	R3659719
Zinc (Zn)-Leachable	283		10	mg/L	17-FEB-17	22-FEB-17	R3659719
Zirconium (Zr)-Leachable	<0.050		0.050	mg/L	17-FEB-17	22-FEB-17	R3659719
BTEX for O. Reg 347				-			
Benzene	<0.025	VTHS	0.025	mg/L		16-FEB-17	R3654211
Ethylbenzene	<0.025	VTHS	0.025	mg/L		16-FEB-17	R3654211
m+p-Xylenes	0.066	VTHS	0.050	mg/L		16-FEB-17	R3654211
o-Xylene	0.045	VTHS	0.025	mg/L		16-FEB-17	R3654211
Styrene	<0.025	VTHS	0.025	mg/L		16-FEB-17	R3654211
Toluene	0.042	VTHS	0.025	mg/L		16-FEB-17	R3654211
Xylenes (Total)	0.111		0.075	mg/L		16-FEB-17	R3654211
Surrogate: 4-Bromofluorobenzene	105.0		70-130	%		16-FEB-17	R3654211
PCBs for O. Reg 347 Aroclor 1242	<0.00020		0.00020	mg/L	23-FEB-17	23-FEB-17	R3659744
Aroclor 1242 Aroclor 1248	<0.00020		0.00020	mg/L	23-FEB-17 23-FEB-17	23-FEB-17 23-FEB-17	R3659744
Aroclor 1246 Aroclor 1254	<0.00020		0.00020	mg/L	23-FEB-17 23-FEB-17	23-FEB-17 23-FEB-17	R3659744
Aroclor 1260	<0.00020		0.00020	mg/L	23-FEB-17 23-FEB-17	23-FEB-17 23-FEB-17	R3659744
Total PCBs	<0.00020		0.00020	_	23-FEB-17	23-FEB-17	R3659744
TOTAL F GDS	<0.00040		0.00040	mg/L	23-FED-1/	∠3-FED-1/	K3039/44

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

L1888844 CONTD.... PAGE 3 of 4 Version: FINAL REV.

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L1888844-1 ASR - 2							
Sampled By: CLIENT on 07-FEB-17							
Matrix: ASR							
PCBs for O. Reg 347 Surrogate: 2-Fluorobiphenyl	88.9		40-160	%	23-FEB-17	23-FEB-17	R3659744

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

L1888844 CONTD....

Reference Information

PAGE 4 of 4 Version: FINAL REV

Sample Parameter Qualifier Key:

Qualifier	Description
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.
VTHS	Volatile test was conducted on sample with headspace. Results may be biased low.

Test Method References:

Tool Motiloa Itolololi			
ALS Test Code	Matrix	Test Description	Method Reference**
BTX-TCLP-WT	Waste	BTEX for O. Reg 347	SW846 8260
HG-TCLP-CVAF-WP	Waste	Mercury Total by TCLP prep	EPA245.7 V2.0
Maraum, in filtared and u	nfiltared wate	ro is avidized with Promine manaphlaride	and analyzed by cold vanour atomic fluorescence anastrometry

Mercury in filtered and unfiltered waters is oxidized with Bromine monochloride and analyzed by cold-vapour atomic fluorescence spectrometry.

LEACH-TCLP-WT Waste Leachate Procedure for Reg 347 EPA 1311

Inorganic and Semi-Volatile Organic contaminants are leached from waste samples in strict accordance with US EPA Method 1311, "Toxicity Characteristics Leaching Procedure" (TCLR). Text results are reported in leachest accordance with US EPA Method 1311, "Toxicity

Characteristic Leaching Procedure" (TCLP). Test results are reported in leachate concentration units (normally mg/L).

MET-TCLP-MS-WP Waste Total Metals by ICP-MS U.S. EPA 200.8-T

Total Metals by ICP-MS: This analysis is carried out using sample preparation procedures adapted from Standard Methods for the examination of Water and Wastewater Method 3030E and analytical procedures adapted from U.S EPA Method 200.8 for analysis of metals by inductively coupled-mass spectrometery.

PCB-TCLP-WT Waste PCBs for O. Reg 347 SW846 8270

PREP-TCLP-INORG-WP Waste Leachate prep TCLP EPA SW846 1311

The TCLP leachate method is used to characterize material based on the ability of contaminants to partition or leach into a simulated landfill solution. The leachate is designed to determine the mobility of contaminants present in liquid, solid and multiple phase samples under acidic conditions. This method may be applied to liquid samples, multiple phase samples and solid materials.

The last two letters of the above test code(s) indicate the laboratory that performed analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA
-	

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory. UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

^{**} ALS test methods may incorporate modifications from specified reference methods to improve performance.

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Industrial Metals (2011) ATTN: JOSH CHISICK

550 Messier Street

Winnipeg MB R2J 0G5

Date Received: 20-FEB-18

Report Date: 28-FEB-18 11:01 (MT)

Version: FINAL

Client Phone: 204-233-1908

Certificate of Analysis

Lab Work Order #: L2058464
Project P.O. #: NOT SUBMITTED

Job Reference: INDUSTRIAL METALS - 550 MESSIER STREET

C of C Numbers: Legal Site Desc:

Craig Riddell, B.Sc.Ag Account Manager

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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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L2058464 CONTD.... PAGE 2 of 4 Version: FINAL

Sample Details/Pa	arameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2058464-1 A	SR Q2							
	LIENT on 20-APR-17 @ 11:00							
, ,	OIL/WASTE							
Leachate metals								
Leachate prep	•							
1st Preliminary		7.98		0.10	pН		22-FEB-18	R3968117
2nd Preliminary		3.19		0.10	pH		22-FEB-18	R3968117
Extraction Solut	tion Initial pH	4.97		0.10	рH		22-FEB-18	R3968117
Final pH		6.11		0.10	pН		22-FEB-18	R3968117
Mercury Total					_			
Mercury (Hg)-To		<0.010		0.010	mg/L	22-FEB-18	23-FEB-18	R3969307
Total Metals by		0.050		0.050		00 555 40	00 555 40	D0000074
Antimony (Sb)-l		<0.050		0.050	mg/L	23-FEB-18	23-FEB-18	R3969071
Arsenic (As)-Le Barium (Ba)-Lea		<0.020		0.020	mg/L	23-FEB-18	23-FEB-18	R3969071
Beryllium (Be)-Le		0.684		0.050	mg/L	23-FEB-18 23-FEB-18	23-FEB-18 23-FEB-18	R3969071
Boron (B)-Leacl		<0.050 0.87		0.050 0.50	mg/L mg/L	23-FEB-18 23-FEB-18	23-FEB-18 23-FEB-18	R3969071 R3969071
Cadmium (Cd)-		0.87		0.0050	mg/L	23-FEB-18	23-FEB-18 23-FEB-18	R3969071 R3969071
Calcium (Ca)-Le		287		3.0	mg/L	23-FEB-18	23-FEB-18	R3969071
Chromium (Cr)-		<0.050		0.050	mg/L	23-FEB-18	23-FEB-18	R3969071
Cobalt (Co)-Lea		0.133		0.020	mg/L	23-FEB-18	23-FEB-18	R3969071
Copper (Cu)-Le		<0.050		0.050	mg/L	23-FEB-18	23-FEB-18	R3969071
Iron (Fe)-Leach		345		0.50	mg/L	23-FEB-18	23-FEB-18	R3969071
Lead (Pb)-Leac		3.25		0.050	mg/L	23-FEB-18	23-FEB-18	R3969071
Magnesium (Mg		26.6		0.50	mg/L	23-FEB-18	23-FEB-18	R3969071
Manganese (Mr		8.76		0.010	mg/L	23-FEB-18	23-FEB-18	R3969071
Molybdenum (M	no)-Leachable	0.0087		0.0050	mg/L	23-FEB-18	23-FEB-18	R3969071
Nickel (Ni)-Lead	chable	2.23		0.050	mg/L	23-FEB-18	23-FEB-18	R3969071
Potassium (K)-l	Leachable	12.2		1.5	mg/L	23-FEB-18	23-FEB-18	R3969071
Selenium (Se)-l	Leachable	<0.020		0.020	mg/L	23-FEB-18	23-FEB-18	R3969071
Silver (Ag)-Lead	chable	<0.050		0.050	mg/L	23-FEB-18	23-FEB-18	R3969071
Strontium (Sr)-L		1.22		0.0050	mg/L	23-FEB-18	23-FEB-18	R3969071
Thallium (TI)-Le		<0.010		0.010	mg/L	23-FEB-18	23-FEB-18	R3969071
Tin (Sn)-Leacha		<0.0050		0.0050	mg/L	23-FEB-18	23-FEB-18	R3969071
Uranium (U)-Le		<0.0050		0.0050	mg/L	23-FEB-18	23-FEB-18	R3969071
Vanadium (V)-L		<0.050		0.050	mg/L	23-FEB-18	23-FEB-18	R3969071
Zinc (Zn)-Leach		372		10	mg/L	23-FEB-18	23-FEB-18	R3969071
Zirconium (Zr)-L	Leachable	<0.050		0.050	mg/L	23-FEB-18	23-FEB-18	R3969071
Leachate Proc	edure for Reg 347							
Initial pH	-	7.76		0.10	pH units		26-FEB-18	R3970487
Final pH		6.06		0.10	pH units		26-FEB-18	R3970487
BTEX for O. Re	eg 347							
Benzene		<0.025		0.025	mg/L		27-FEB-18	R3971380
Ethylbenzene		<0.025		0.025	mg/L		27-FEB-18	R3971380
m+p-Xylenes		<0.050		0.050	mg/L		27-FEB-18	R3971380
o-Xylene		<0.025		0.025	mg/L		27-FEB-18	R3971380
Styrene		<0.025		0.025	mg/L		27-FEB-18	R3971380
Toluene		<0.025		0.025	mg/L		27-FEB-18	R3971380
Xylenes (Total)	0	<0.075		0.075	mg/L		27-FEB-18	R3971380
Surrogate: 4-Bro	103.0		70-130	%		27-FEB-18	R3971380	
PCBs for O. Re Aroclor 1242	eg 347	-0.00000		0.00000	m c /l	20 EED 40	20 EED 40	D2070404
Aroclor 1242 Aroclor 1248		<0.00020		0.00020	mg/L	28-FEB-18 28-FEB-18	28-FEB-18 28-FEB-18	R3972104
Aroclor 1254		<0.00020 <0.00020		0.00020 0.00020	mg/L mg/L	28-FEB-18 28-FEB-18	28-FEB-18 28-FEB-18	R3972104 R3972104
Aroclor 1260					_	28-FEB-18	28-FEB-18	1
AIUCIUI 1260		<0.00020		0.00020	mg/L	∠0-LER-18	∠0-FER-18	R3972104

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

L2058464 CONTD.... PAGE 3 of 4 Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2058464-1 ASR Q2							
Sampled By: CLIENT on 20-APR-17 @ 11:00							
Matrix: SOIL/WASTE							
PCBs for O. Reg 347 Total PCBs	<0.00040		0.00040	mg/L	28-FEB-18	28-FEB-18	R3972104
Surrogate: 2-Fluorobiphenyl	53.4		40-160	%	28-FEB-18	28-FEB-18	R3972104

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

L2058464 CONTD....

PAGE 4 of 4 Version: FINAL

Reference Information

Test Method References:

ALS Test Code Matrix Test Description Method Reference**

BTX-TCLP-WT Waste BTEX for O. Reg 347 SW846 8260

HG-TCLP-CVAF-WP Waste Mercury Total by TCLP prep EPA245.7 V2.0

Mercury in filtered and unfiltered waters is oxidized with Bromine monochloride and analyzed by cold-vapour atomic fluorescence spectrometry.

LEACH-TCLP-WT Waste Leachate Procedure for Reg 347 EPA 1311

Inorganic and Semi-Volatile Organic contaminants are leached from waste samples in strict accordance with US EPA Method 1311, "Toxicity Characteristic Leaching Procedure" (TCLP). Test results are reported in leachate concentration units (normally mg/L).

MET-TCLP-MS-WP Waste Total Metals by ICP-MS U.S. EPA 200.8-T

Total Metals by ICP-MS: This analysis is carried out using sample preparation procedures adapted from Standard Methods for the examination of Water and Wastewater Method 3030E and analytical procedures adapted from U.S EPA Method 200.8 for analysis of metals by inductively coupled-mass spectrometery.

PCB-TCLP-WT Waste PCBs for O. Reg 347 SW846 8270
PREP-TCLP-INORG-WP Waste Leachate prep TCLP EPA SW846 1311

The TCLP leachate method is used to characterize material based on the ability of contaminants to partition or leach into a simulated landfill solution. The leachate is designed to determine the mobility of contaminants present in liquid, solid and multiple phase samples under acidic conditions. This method may be applied to liquid samples, multiple phase samples and solid materials.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory. UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.





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Address:	550 Messier Street			Email 1:	jchisick@indus	trialmetals.ca		Œmei	rgency (1	2 Bus. t	Days) -	100%	Surcha	irge - Conti	act ALS	to Confir	m TAT	
	Winnipeg, MB, R2J	0G5		Email 2:	dan@industrial	metals.ca		S ame	e Day or V	Veekend	d Emerg	jency -	Contac	at ALS to C	ALS to Confirm TAT			
Phone:	204-233-1908	Cell# :		Email 3:							Α	naly	₃is R∉	equest				
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Industrial Metals (2011) ATTN: JOSH CHISICK

Winnipeg MB R2J 0G5

550 Messier Street

Date Received: 20-FEB-18

Report Date: 28-FEB-18 10:56 (MT)

Version: FINAL

Client Phone: 204-233-1908

Certificate of Analysis

Lab Work Order #: L2058461
Project P.O. #: NOT SUBMITTED

Job Reference: INDUSTRIAL METALS - 550 MESSIER STREET

C of C Numbers: Legal Site Desc:

Craig Riddell, B.Sc.Ag Account Manager

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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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L2058461 CONTD.... PAGE 2 of 4 Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2058461-1 ASR Q3							
Sampled By: CLIENT on 13-JUL-17 @ 10:00							
Matrix: SOIL/WASTE							
Leachate metals by TCLP							
Leachate prep TCLP							
1st Preliminary pH	9.16		0.10	pН		22-FEB-18	R3968117
2nd Preliminary pH	3.82		0.10	pH		22-FEB-18	R3968117
Extraction Solution Initial pH	4.97		0.10	pH		22-FEB-18	R3968117
Final pH	6.37		0.10	pН		22-FEB-18	R3968117
Mercury Total by TCLP prep							
Mercury (Hg)-Total	<0.010		0.010	mg/L	22-FEB-18	23-FEB-18	R3969307
Total Metals by ICP-MS							
Antimony (Sb)-Leachable	<0.050		0.050	mg/L	23-FEB-18	23-FEB-18	R3969071
Arsenic (As)-Leachable	<0.020		0.020	mg/L	23-FEB-18	23-FEB-18	R3969071
Barium (Ba)-Leachable	1.18		0.050	mg/L	23-FEB-18	23-FEB-18	R3969071
Beryllium (Be)-Leachable	<0.050		0.050	mg/L	23-FEB-18	23-FEB-18	R3969071
Boron (B)-Leachable	1.25		0.50	mg/L	23-FEB-18	23-FEB-18	R3969071
Cadmium (Cd)-Leachable	0.141		0.0050	mg/L	23-FEB-18	23-FEB-18	R3969071
Calcium (Ca)-Leachable	391		3.0	mg/L	23-FEB-18	23-FEB-18	R3969071
Chromium (Cr)-Leachable	<0.050		0.050	mg/L	23-FEB-18	23-FEB-18	R3969071
Cobalt (Co)-Leachable	0.154		0.020	mg/L	23-FEB-18	23-FEB-18	R3969071
Copper (Cu)-Leachable Iron (Fe)-Leachable	<0.050		0.050	mg/L	23-FEB-18	23-FEB-18 23-FEB-18	R3969071
Lead (Pb)-Leachable	163 0.240		0.50 0.050	mg/L	23-FEB-18 23-FEB-18	23-FEB-18	R3969071
Magnesium (Mg)-Leachable	48.1		0.050	mg/L mg/L	23-FEB-18	23-FEB-18	R3969071 R3969071
Manganese (Mn)-Leachable	11.3		1.0	mg/L	23-FEB-18	23-FEB-18	R3969071
Molybdenum (Mo)-Leachable	0.0077		0.0050	mg/L	23-FEB-18	23-FEB-18	R3969071
Nickel (Ni)-Leachable	1.01		0.050	mg/L	23-FEB-18	23-FEB-18	R3969071
Potassium (K)-Leachable	13.8		1.5	mg/L	23-FEB-18	23-FEB-18	R3969071
Selenium (Se)-Leachable	<0.020		0.020	mg/L	23-FEB-18	23-FEB-18	R3969071
Silver (Ag)-Leachable	<0.050		0.050	mg/L	23-FEB-18	23-FEB-18	R3969071
Strontium (Sr)-Leachable	1.47		0.0050	mg/L	23-FEB-18	23-FEB-18	R3969071
Thallium (TI)-Leachable	<0.010		0.010	mg/L	23-FEB-18	23-FEB-18	R3969071
Tin (Sn)-Leachable	<0.0050		0.0050	mg/L	23-FEB-18	23-FEB-18	R3969071
Uranium (U)-Leachable	<0.0050		0.0050	mg/L	23-FEB-18	23-FEB-18	R3969071
Vanadium (V)-Leachable	<0.050		0.050	mg/L	23-FEB-18	23-FEB-18	R3969071
Zinc (Zn)-Leachable	483		10	mg/L	23-FEB-18	23-FEB-18	R3969071
Zirconium (Zr)-Leachable	<0.050		0.050	mg/L	23-FEB-18	23-FEB-18	R3969071
Leachate Procedure for Reg 347							
Initial pH	8.44	LTIS	0.10	pH units		26-FEB-18	R3970487
Final pH	4.71	LTIS	0.10	pH units		26-FEB-18	R3970487
BTEX for O. Reg 347							
Benzene	<0.025	LTV	0.025	mg/L		27-FEB-18	R3971380
Ethylbenzene	<0.025	LTV	0.025	mg/L		27-FEB-18	R3971380
m+p-Xylenes	<0.050	LTV	0.050	mg/L		27-FEB-18	R3971380
o-Xylene	<0.025	LTV	0.025	mg/L		27-FEB-18	R3971380
Styrene	<0.025	LTV	0.025	mg/L		27-FEB-18	R3971380
Toluene	<0.025	LTV	0.025	mg/L		27-FEB-18	R3971380
Xylenes (Total)	<0.075		0.075	mg/L		27-FEB-18	R3971380
Surrogate: 4-Bromofluorobenzene	103.3		70-130	%		27-FEB-18	R3971380
PCBs for O. Reg 347							
Aroclor 1242	<0.00020		0.00020	mg/L	28-FEB-18	28-FEB-18	R3972104
Aroclor 1248	<0.00020		0.00020	mg/L	28-FEB-18	28-FEB-18	R3972104
Aroclor 1254	<0.00020		0.00020	mg/L	28-FEB-18	28-FEB-18	R3972104
Aroclor 1260	<0.00020		0.00020	mg/L	28-FEB-18	28-FEB-18	R3972104

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

L2058461 CONTD.... PAGE 3 of 4 Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2058461-1 ASR Q3 Sampled By: CLIENT on 13-JUL-17 @ 10:00 Matrix: SOIL/WASTE PCBs for O. Reg 347 Total PCBs Surrogate: 2-Fluorobiphenyl	<0.00040 59.4		0.00040 40-160	mg/L %	28-FEB-18 28-FEB-18	28-FEB-18 28-FEB-18	R3972104 R3972104

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

L2058461 CONTD....

PAGE 4 of 4 Version: FINAL

Reference Information

Sample Parameter Qualifier Key:

Qualifier	Description
LTIS	Limited sample was available for TCLP or SPLP inorganics & semi-volatiles extraction (<100 grams). Extraction fluid volume &/or other elements of the method were scaled down proportionately to permit analysis. Test results from modified leach procedures may be unsuitable for regulatory purposes.
LTV	Limited sample was available for TCLP volatiles extraction (< 25 grams). Extraction fluid volume was scaled down proportionately to permit analysis. Test results from modified TCLP procedures may be unsuitable for regulatory purposes.
MS-B	Matrix Spike recovery could not be accurately calculated due to high analyte background in sample.

Test Method References:

Tool motified Notes of Society										
ALS Test Code	Matrix	Test Description	Method Reference**							
BTX-TCLP-WT	Waste	BTEX for O. Reg 347	SW846 8260							
HG-TCLP-CVAF-WP Waste Mercury Total by TCLP prep EPA245.7 V2.0										
Mercury in filtered and u	nfiltered wate	rs is oxidized with Bromine monochloride	and analyzed by cold-vapour atomic fluorescence spectrometry.							

Mercury in filtered and unfiltered waters is oxidized with Bromine monochionde and analyzed by cold-vapour atomic fluorescence spectrometry

LEACH-TCLP-WT Waste Leachate Procedure for Reg 347 EPA 1311

Inorganic and Semi-Volatile Organic contaminants are leached from waste samples in strict accordance with US EPA Method 1311, "Toxicity Characteristic Leaching Procedure" (TCLP). Test results are reported in leachate concentration units (normally mg/L).

MET-TCLP-MS-WP Waste Total Metals by ICP-MS U.S. EPA 200.8-T

Total Metals by ICP-MS: This analysis is carried out using sample preparation procedures adapted from Standard Methods for the examination of Water and Wastewater Method 3030E and analytical procedures adapted from U.S EPA Method 200.8 for analysis of metals by inductively coupled-mass spectrometery.

PCB-TCLP-WT Waste PCBs for O. Reg 347 SW846 8270
PREP-TCLP-INORG-WP Waste Leachate prep TCLP EPA SW846 1311

The TCLP leachate method is used to characterize material based on the ability of contaminants to partition or leach into a simulated landfill solution. The leachate is designed to determine the mobility of contaminants present in liquid, solid and multiple phase samples under acidic conditions. This method may be applied to liquid samples, multiple phase samples and solid materials.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory. UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

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Company:	Industrial Metals (2011) W1082	?7		Standard Other					Regular (Standard Turnaround Times - Business Days)										
Contact: JOSH CHISICK			✓PDF	Excel	□Digital	Fax	Priority (2-4 Business Days) - 50% Surcharge - Contact ALS to Confirm TAT												
Address:	550 Messier Street			Email 1:	Email 1: jchisick@industrialmetals.ca							ſ							
	Winnipeg, MB, R2J 0G5			Email 2:	dan@industrialn	netals.ca		Oão	me Day	or W	eekend	Emerg	ency -	Contac	t ALS t	o Confir	m TAT		
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Lab W	ork Order # **** use only)			ALS Contact:	Craig Riddell	Sampled By:		METAL-TCLP-WP		(24) BTX-TCLP-WI	LEACH-ZHE-Wī		PCB-TCLP-WT	LEACH-TCLP-WI					r of Co
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Industrial Metals (2011) ATTN: JOSH CHISICK 550 Messier Street

Winnipeg MB R2J 0G5

Date Received: 20-FEB-18

Report Date: 28-FEB-18 10:55 (MT)

Version: FINAL

Client Phone: 204-233-1908

Certificate of Analysis

Lab Work Order #: L2058458
Project P.O. #: NOT SUBMITTED

Job Reference: INDUSTRIAL METALS - 550 MESSIER STREET

C of C Numbers: Legal Site Desc:

Craig Riddell, B.Sc.Ag Account Manager

[This report shall not be reproduced except in full without the written authority of the Laboratory.]

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

ALS CANADA LTD Part of the ALS Group An ALS Limited Company



L2058458 CONTD.... PAGE 2 of 4 Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2058458-1 ASR Q4							
Sampled By: CLIENT on 26-OCT-17 @ 11:00							
Matrix: SOIL							
Leachate metals by TCLP							
Leachate prep TCLP							
1st Preliminary pH	9.17		0.10	pН		22-FEB-18	R3968117
2nd Preliminary pH	2.15		0.10	pН		22-FEB-18	R3968117
Extraction Solution Initial pH	4.97		0.10	pH		22-FEB-18	R3968117
Final pH	5.50		0.10	рH		22-FEB-18	R3968117
Mercury Total by TCLP prep							
Mercury (Hg)-Total	<0.010		0.010	mg/L	22-FEB-18	23-FEB-18	R3969307
Total Metals by ICP-MS							
Antimony (Sb)-Leachable	<0.050		0.050	mg/L	23-FEB-18	23-FEB-18	R3969071
Arsenic (As)-Leachable	<0.020		0.020	mg/L	23-FEB-18	23-FEB-18	R3969071
Barium (Ba)-Leachable	1.51		0.050	mg/L	23-FEB-18	23-FEB-18	R3969071
Beryllium (Be)-Leachable	<0.050		0.050	mg/L	23-FEB-18	23-FEB-18	R3969071
Boron (B)-Leachable	0.60		0.50	mg/L	23-FEB-18	23-FEB-18	R3969071
Cadmium (Cd)-Leachable	0.0333		0.0050	mg/L	23-FEB-18	23-FEB-18	R3969071
Calcium (Ca)-Leachable	422		3.0	mg/L	23-FEB-18	23-FEB-18	R3969071
Chromium (Cr)-Leachable	<0.050		0.050	mg/L	23-FEB-18	23-FEB-18	R3969071
Copper (Cu) Leachable	0.023		0.020	mg/L	23-FEB-18	23-FEB-18	R3969071
Copper (Cu)-Leachable Iron (Fe)-Leachable	1.21		0.050	mg/L	23-FEB-18	23-FEB-18	R3969071
Lead (Pb)-Leachable	4.45 8.17		0.50	mg/L	23-FEB-18 23-FEB-18	23-FEB-18 23-FEB-18	R3969071 R3969071
Magnesium (Mg)-Leachable	61.0		0.050 0.50	mg/L mg/L	23-FEB-18	23-FEB-18	R3969071
Manganese (Mn)-Leachable	1.97		0.010	mg/L	23-FEB-18	23-FEB-18	R3969071
Molybdenum (Mo)-Leachable	<0.0050		0.010	mg/L	23-FEB-18	23-FEB-18	R3969071
Nickel (Ni)-Leachable	0.271		0.050	mg/L	23-FEB-18	23-FEB-18	R3969071
Potassium (K)-Leachable	4.1		1.5	mg/L	23-FEB-18	23-FEB-18	R3969071
Selenium (Se)-Leachable	<0.020		0.020	mg/L	23-FEB-18	23-FEB-18	R3969071
Silver (Ag)-Leachable	<0.050		0.050	mg/L	23-FEB-18	23-FEB-18	R3969071
Strontium (Sr)-Leachable	0.585		0.0050	mg/L	23-FEB-18	23-FEB-18	R3969071
Thallium (TI)-Leachable	<0.010		0.010	mg/L	23-FEB-18	23-FEB-18	R3969071
Tin (Sn)-Leachable	<0.0050		0.0050	mg/L	23-FEB-18	23-FEB-18	R3969071
Uranium (U)-Leachable	<0.0050		0.0050	mg/L	23-FEB-18	23-FEB-18	R3969071
Vanadium (V)-Leachable	<0.050		0.050	mg/L	23-FEB-18	23-FEB-18	R3969071
Zinc (Zn)-Leachable	84		10	mg/L	23-FEB-18	23-FEB-18	R3969071
Zirconium (Zr)-Leachable	<0.050		0.050	mg/L	23-FEB-18	23-FEB-18	R3969071
Leachate Procedure for Reg 347							
Initial pH	8.56		0.10	pH units		26-FEB-18	R3970487
Final pH	5.36		0.10	pH units		26-FEB-18	R3970487
BTEX for O. Reg 347							
Benzene	<0.025		0.025	mg/L		27-FEB-18	R3971380
Ethylbenzene	<0.025		0.025	mg/L		27-FEB-18	R3971380
m+p-Xylenes	<0.050		0.050	mg/L		27-FEB-18	R3971380
o-Xylene	<0.025		0.025	mg/L		27-FEB-18	R3971380
Styrene	<0.025		0.025	mg/L		27-FEB-18	R3971380
Toluene	<0.025		0.025	mg/L		27-FEB-18	R3971380
Xylenes (Total)	<0.075		0.075	mg/L		27-FEB-18	R3971380
Surrogate: 4-Bromofluorobenzene	100.8		70-130	%		27-FEB-18	R3971380
PCBs for O. Reg 347	.0.00000		0.00000	, /I	00 FFD 40	20 555 40	D2070404
Aroclor 1242	<0.00020		0.00020	mg/L	28-FEB-18	28-FEB-18	R3972104
Aroclor 1248 Aroclor 1254	<0.00020		0.00020	mg/L	28-FEB-18	28-FEB-18	R3972104
Aroclor 1254 Aroclor 1260	<0.00020		0.00020	mg/L	28-FEB-18	28-FEB-18	R3972104
ATUCIUI 1200	<0.00020		0.00020	mg/L	28-FEB-18	28-FEB-18	R3972104

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

L2058458 CONTD.... PAGE 3 of 4 Version: FINAL

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	Batch
L2058458-1 ASR Q4							
Sampled By: CLIENT on 26-OCT-17 @ 11:00							
Matrix: SOIL							
PCBs for O. Reg 347 Total PCBs	<0.00040		0.00040	mg/L	28-FEB-18	28-FEB-18	R3972104
Surrogate: 2-Fluorobiphenyl	60.9		40-160	%	28-FEB-18	28-FEB-18	R3972104

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

L2058458 CONTD....

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Version: FINAL

Reference Information

Test Method References:

ALS Test Code	Matrix	Test Description	Method Reference**		
BTX-TCLP-WT	Waste	BTEX for O. Reg 347	SW846 8260		
HG-TCLP-CVAF-WP	Waste	Mercury Total by TCLP prep	EPA245.7 V2.0		
Mercury in filtered and unfiltered waters is oxidized with Bromine monochloride and analyzed by cold-vapour atomic fluorescence spectrometry.					

LEACH-TCLP-WT Waste Leachate Procedure for Reg 347 EPA 1311

Inorganic and Semi-Volatile Organic contaminants are leached from waste samples in strict accordance with US EPA Method 1311, "Toxicity Characteristic Leaching Procedure" (TCLP). Test results are reported in leachate concentration units (normally mg/L).

MET-TCLP-MS-WP Waste Total Metals by ICP-MS U.S. EPA 200.8-T

Total Metals by ICP-MS: This analysis is carried out using sample preparation procedures adapted from Standard Methods for the examination of Water and Wastewater Method 3030E and analytical procedures adapted from U.S EPA Method 200.8 for analysis of metals by inductively coupled-mass spectrometery.

PCB-TCLP-WT Waste PCBs for O. Reg 347 SW846 8270
PREP-TCLP-INORG-WP Waste Leachate prep TCLP EPA SW846 1311

The TCLP leachate method is used to characterize material based on the ability of contaminants to partition or leach into a simulated landfill solution. The leachate is designed to determine the mobility of contaminants present in liquid, solid and multiple phase samples under acidic conditions. This method may be applied to liquid samples, multiple phase samples and solid materials.

** ALS test methods may incorporate modifications from specified reference methods to improve performance.

The last two letters of the above test code(s) indicate the laboratory that performed analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location
WT	ALS ENVIRONMENTAL - WATERLOO, ONTARIO, CANADA
WP	ALS ENVIRONMENTAL - WINNIPEG, MANITOBA, CANADA

Chain of Custody Numbers:

GLOSSARY OF REPORT TERMS

Surrogates are compounds that are similar in behaviour to target analyte(s), but that do not normally occur in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery. In reports that display the D.L. column, laboratory objectives for surrogates are listed there.

mg/kg - milligrams per kilogram based on dry weight of sample

mg/kg wwt - milligrams per kilogram based on wet weight of sample

mg/kg lwt - milligrams per kilogram based on lipid-adjusted weight

mg/L - unit of concentration based on volume, parts per million.

< - Less than.

D.L. - The reporting limit.

N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory. UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical results in unsigned test reports with the DRAFT watermark are subject to change, pending final QC review.

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Report To						L2000-400-4	30.0		Serv	ice Re	ques	sted (R	ush for	routine	analys	is subje	ect to av	ailability	y)		
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Lab W						ALS Craig Riddell Sampled By:					(24) BTX-TCLP-WI	LEACH-ZHE-WI	PCB-TCLP-WT	LEACH-TCLP-WI		İ			Number of Containers		
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Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as provided on a separate Excel tab. Also provided on another Excel tab are the ALS location addresses, phone numbers and sample container / preservation / holding time table for common analyses.																					
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