

## Analytical Report

Bill To: AC Environmental  
 Report To: AC Environmental  
 Unit 109  
 117 Pembina Road  
 Sherwood Park, AB, Canada  
 T8H 0J4  
 Attn: Kris Shepherd  
 Sampled By:  
 Company:

Project:  
 ID:  
 Name:  
 Location: Edmonton  
 LSD:  
 P.O.:  
 Acct code:

Lot ID: **586004**  
 Control Number: A029543  
 Date Received: Nov 7, 2007  
 Date Reported: May 13, 2008  
 Report Number: 1118603

**Reference Number** 586004-1  
**Sample Date** October 31, 2007  
**Sample Location**  
**Sample Description** Diesel & AC Carbon Polymer  
**Sample Matrix** Waste - industrial

Analyte	Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments	
<b>Leachate Inorganic - TCLP</b>						
Antimony	TCLP Leachate	mg/L	<0.002	0.002	500	Acceptable
Arsenic	TCLP Leachate	mg/L	<0.002	0.002	5	Acceptable
Barium	TCLP Leachate	mg/L	<0.01	0.01	100	Acceptable
Beryllium	TCLP Leachate	mg/L	<0.001	0.001	5	Acceptable
Boron	TCLP Leachate	mg/L	<0.02	0.02	500	Acceptable
Cadmium	TCLP Leachate	mg/L	<0.0001	0.0001	1	Acceptable
Chromium	TCLP Leachate	mg/L	<0.005	0.005	5	Acceptable
Cobalt	TCLP Leachate	mg/L	<0.001	0.001	100	Acceptable
Copper	TCLP Leachate	mg/L	<0.01	0.01	100	Acceptable
Iron	TCLP Leachate	mg/L	<0.1	0.1	1000	Acceptable
Lead	TCLP Leachate	mg/L	<0.001	0.001	5	Acceptable
Mercury	TCLP Leachate	mg/L	<0.0001	0.0001	0.2	Acceptable
Nickel	TCLP Leachate	mg/L	<0.005	0.005	5	Acceptable
Selenium	TCLP Leachate	mg/L	<0.002	0.002	1	Acceptable
Silver	TCLP Leachate	mg/L	<0.001	0.001	5	Acceptable
Thallium	TCLP Leachate	mg/L	<0.0005	0.0005	5	Acceptable
Uranium	TCLP Leachate	mg/L	<0.005	0.005	2.0	Acceptable
Vanadium	TCLP Leachate	mg/L	<0.001	0.001	100	Acceptable
Zinc	TCLP Leachate	mg/L	0.01	0.01	500	Acceptable
Zirconium	TCLP Leachate	mg/L	<0.01	0.01	500	Acceptable
pH	Initial		4.5			n/a
pH	Final		5.0			n/a
<b>Microtox</b>						
Interpretation (AEUB, G-50)			Fail			n/a
EC50	15 minutes	% Sample	11			n/a
EC50	5 minutes	% Sample	11			n/a
EC20	15 minutes	% Sample	<10			n/a
EC20	5 minutes	% Sample	<10			n/a
Lab Treatment			None			n/a
Sample Type			Chemical Product			n/a
pH	Clarified Sample-Initial		7.2			n/a
Turbidity	As Received		High			n/a
Colour	As Received		Pale Yellow			n/a
Colour	As Tested		Clear			n/a
Turbidity	As Tested		Slight			n/a
pH	Clarified Sample-		Not Adjusted			n/a

**Analytical Report**

Bill To: AC Environmental  
 Report To: AC Environmental  
 Unit 109  
 117 Pembina Road  
 Sherwood Park, AB, Canada  
 T8H 0J4  
 Attn: Kris Shepherd  
 Sampled By:  
 Company:

Project:  
 ID:  
 Name:  
 Location: Edmonton  
 LSD:  
 P.O.:  
 Acct code:

Lot ID: **586004**  
 Control Number: A029543  
 Date Received: Nov 7, 2007  
 Date Reported: May 13, 2008  
 Report Number: 1118603

**Reference Number** 586004-1  
**Sample Date** October 31, 2007  
**Sample Location**  
**Sample Description** Diesel & AC Carbon Polymer  
**Sample Matrix** Waste - industrial

Analyte	Units	Result	Nominal Detection Limit	Guideline Limit	Guideline Comments	
<b>Microtox - Continued</b>						
	Final					
Colour Corrected Data		Yes			n/a	
<b>Soil Acidity</b>						
pH	1:2 Soil:Water	pH	8.2	2-12.5	Acceptable	
<b>Waste Characterization</b>						
Flash Point		°C	62	61	Acceptable	
Flash			Yes		n/a	
Paint Filter	Interpretation		Solid Waste		n/a	
<b>Mono-Aromatic Hydrocarbons - Leachate</b>						
Benzene		mg/L	0.13	0.01	0.5	Acceptable
Ethylbenzene		mg/L	0.06	0.01	0.5	Acceptable
Toluene		mg/L	0.27	0.01	0.5	Acceptable
Total Xylenes (m,p,o)		mg/L	0.32	0.02	0.5	Acceptable



Approved by:

Anthony Neumann, MSc  
 Laboratory Operations Manager

## Methodology and Notes

Bill To: AC Environmental Report To: AC Environmental Unit 109 117 Pembina Road Sherwood Park, AB, Canada T8H 0J4 Attn: Kris Shepherd Sampled By: Company:	Project: ID: Name: Location: Edmonton LSD: P.O.: Acct code:	Lot ID: <b>586004</b> Control Number: A029543 Date Received: Nov 7, 2007 Date Reported: May 13, 2008 Report Number: 1118603
--	---	---

### Method of Analysis

Method Name	Reference	Method	Date Analysis Started	Location
Flashpoint (Closed cup)	ASTM	Flash Point by Pensky-Martens Closed Cup Tester - Procedure B, D 93-02b	16-Nov-07	BTG Edmonton
Leachate Inorganic (TCLP) ICP-MS	US EPA	* Toxicity Characteristic Leaching Procedure, SW-846, EPA 1311	15-Nov-07	BTG Edmonton
Leachate Organic (TCLP-BTEX)	US EPA	* Toxicity Characteristic Leaching Procedure, SW-846, EPA 1311	15-Nov-07	BTG Edmonton
Microtox-15 Minute Multiple Concentration, EC50	Environment Canada	* Biological Test Method: Toxicity Test Luminescent Bacteria, 1/RM/24	21-Nov-07	BTG Edmonton
Paint Filter Liquids Test	US EPA	* Paint Filter Liquids Test, 9095B	15-Nov-07	BTG Edmonton
pH and Conductivity in general soil 1:2	McKeague	* 1:2 Soil:Water Ratio, 4.12	15-Nov-07	BTG Edmonton

*\* Bodycote method(s) based on reference method*

### References

ASTM	Annual Book of ASTM Standards
Environment Guideline	Toxicity Test Using Luminescent Bacteria Alberta Environmental Protection,
McKeague	Manual on Soil Sampling and Methods of Analysis
US EPA	US Environmental Protection Agency Test Methods

### Comments:

- Microtox charcoal and Dean and Stark analysis added to samples 1, 2 & 3 as the original Microtox analysis indicated toxicity above D50 requirements.
- This report was issued to include addition of Microtox analysis on samples 1, 2 & 3 requested by Kris of AC Environmental on Nov 20/07. Report 1076511 is an addendum to report 1072508.
- This report was issued to separate the samples on to individual reports. Reports 1089263-1089265 are an addendum to report 1077104.
- This report was re-issued to change sample descriptions as requested by Kris of AC Environmental on May 12th. Revised reports 1118603-1118605 replace original reports 1089263-1089265.

Please direct any inquiries regarding this report to our Client Services group.

Results relate only to samples as submitted.

The test report shall not be reproduced except in full, without the written approval of the laboratory.

## Quality Control

Bill To: AC Environmental  
 Report To: AC Environmental  
 Unit 109  
 117 Pembina Road  
 Sherwood Park, AB, Canada  
 T8H 0J4

Project:  
 ID:  
 Name:  
 Location: Edmonton  
 LSD:  
 P.O.:  
 Acct code:

Lot ID: **586004**  
 Control Number: A029543  
 Date Received: Nov 7, 2007  
 Date Reported: May 13, 2008  
 Report Number: 1118603

Attn: Kris Shepherd  
 Sampled By:  
 Company:

### Leachate Inorganic - TCLP

Blanks	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Antimony	mg/L	<0.002	0.150	-0.114	0.414	yes
Arsenic	mg/L	<0.002	0.008	-0.181	0.197	yes
Barium	mg/L	<0.01	0.27	-0.72	1.27	yes
Beryllium	mg/L	<0.001	0.005	-0.055	0.065	yes
Boron	mg/L	<0.02	0.58	-1.67	2.82	yes
Cadmium	mg/L	<0.0001	0.0002	-0.0148	0.0152	yes
Chromium	mg/L	<0.005	0.266	-0.301	0.833	yes
Cobalt	mg/L	<0.001	0.003	-0.051	0.057	yes
Copper	mg/L	<0.01	0.28	-0.80	1.36	yes
Iron	mg/L	<0.1	0.4	-7.1	7.9	yes
Lead	mg/L	<0.001	0.026	-0.100	0.152	yes
Mercury	mg/L	<0.0001	0.0000	-0.0010	0.0010	yes
Nickel	mg/L	<0.005	0.224	-0.454	0.902	yes
Selenium	mg/L	<0.002	-0.047	-0.425	0.331	yes
Silver	mg/L	<0.001	0.005	-0.088	0.098	yes
Thallium	mg/L	<0.0005	0.0008	-0.0064	0.0080	yes
Uranium	mg/L	<0.005	0.000	-0.183	0.183	yes
Vanadium	mg/L	<0.001	0.006	-0.015	0.027	yes
Zinc	mg/L	<0.01	0.36	-1.35	2.07	yes
Zirconium	mg/L	<0.01	0.02	-0.36	0.40	yes

Material Used: Edmonton Method Blank  
 Date Acquired: November 15, 2007  
 Acquired By: Aleksandra Robert

Control Sample	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Antimony	mg/L	0.041	0.041	0.035	0.047	yes
Arsenic	mg/L	0.042	0.040	0.034	0.046	yes
Barium	mg/L	0.20	0.20	0.18	0.22	yes
Beryllium	mg/L	0.021	0.020	0.017	0.022	yes
Boron	mg/L	0.39	0.40	0.35	0.45	yes
Cadmium	mg/L	0.0021	0.0020	0.0017	0.0023	yes
Chromium	mg/L	0.102	0.099	0.092	0.107	yes
Cobalt	mg/L	0.021	0.020	0.018	0.022	yes
Copper	mg/L	0.20	0.20	0.18	0.21	yes
Iron	mg/L	3.8	3.9	3.6	4.3	yes
Lead	mg/L	0.021	0.020	0.018	0.022	yes
Mercury	mg/L	0.0028	0.0030	0.0021	0.0039	yes
Nickel	mg/L	0.100	0.099	0.090	0.108	yes
Selenium	mg/L	0.040	0.040	0.034	0.046	yes
Silver	mg/L	0.021	0.021	0.019	0.023	yes
Thallium	mg/L	0.0108	0.0100	0.0090	0.0110	yes
Uranium	mg/L	0.107	0.098	0.086	0.110	yes
Vanadium	mg/L	0.019	0.019	0.017	0.021	yes

## Quality Control

Bill To: AC Environmental  
 Report To: AC Environmental  
 Unit 109  
 117 Pembina Road  
 Sherwood Park, AB, Canada  
 T8H 0J4

Project:  
 ID:  
 Name:  
 Location: Edmonton  
 LSD:  
 P.O.:  
 Acct code:

Lot ID: **586004**  
 Control Number: A029543  
 Date Received: Nov 7, 2007  
 Date Reported: May 13, 2008  
 Report Number: 1118603

Attn: Kris Shepherd  
 Sampled By:  
 Company:

**Leachate Inorganic - TCLP - Continued**

Control Sample	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Zinc	mg/L	0.20	0.20	0.18	0.22	yes
Zirconium	mg/L	0.21	0.20	0.18	0.22	yes
Material Used: Metals High						
Date Acquired: November 15, 2007						
Acquired By: Aleksandra Robert						
Antimony	mg/L	0.002	0.002	0.000	0.004	yes
Arsenic	mg/L	0.002	0.002	-0.001	0.005	yes
Barium	mg/L	0.01	0.01	0.01	0.01	yes
Beryllium	mg/L	0.001	0.001	0.001	0.001	yes
Boron	mg/L	0.02	0.02	0.02	0.02	yes
Cadmium	mg/L	0.0001	0.0001	-0.0001	0.0003	yes
Chromium	mg/L	0.005	0.005	0.004	0.006	yes
Cobalt	mg/L	0.001	0.001	0.001	0.001	yes
Copper	mg/L	0.01	0.01	0.01	0.01	yes
Iron	mg/L	0.2	0.2	0.2	0.2	yes
Lead	mg/L	0.001	0.001	0.001	0.001	yes
Mercury	mg/L	0.0008	0.0008	0.0006	0.0010	yes
Nickel	mg/L	0.005	0.005	0.005	0.005	yes
Selenium	mg/L	0.002	0.002	0.002	0.002	yes
Silver	mg/L	0.001	0.001	0.001	0.001	yes
Thallium	mg/L	0.0005	0.0005	0.0004	0.0006	yes
Uranium	mg/L	0.005	0.005	0.004	0.006	yes
Vanadium	mg/L	0.001	0.001	0.001	0.001	yes
Zinc	mg/L	0.01	0.01	0.01	0.01	yes
Zirconium	mg/L	0.01	0.01	0.01	0.01	yes
Material Used: Metals Low						
Date Acquired: November 15, 2007						
Acquired By: Aleksandra Robert						

**Microtox**

Control Sample	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
EC50	% Sample	14	19.9	10.9	28.9	yes
Material Used: Phenol						
Date Acquired: November 21, 2007						
Acquired By: Mihaela Istratrescu						

**Soil Acidity**

Blanks	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
pH	pH	6.6	6.5	5.6	7.4	yes
Material Used: Edmonton Method Blank						
Date Acquired: November 15, 2007						
Acquired By: Cristian Arce						

**Quality Control**

Bill To: AC Environmental  
 Report To: AC Environmental  
 Unit 109  
 117 Pembina Road  
 Sherwood Park, AB, Canada  
 T8H 0J4  
 Attn: Kris Shepherd  
 Sampled By:  
 Company:

Project:  
 ID:  
 Name:  
 Location: Edmonton  
 LSD:  
 P.O.:  
 Acct code:

Lot ID: **586004**  
 Control Number: A029543  
 Date Received: Nov 7, 2007  
 Date Reported: May 13, 2008  
 Report Number: 1118603

**Soil Acidity - Continued**

Control Sample	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
pH	pH	6.4	6.4	6.1	6.7	yes
Material Used:	2007 Farnsoil Standard					
Date Acquired:	November 15, 2007					
Acquired By:	Cristian Arce					

**Waste Characterization**

Control Sample	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Flash Point	°C	54	54	53	56	yes
Material Used:	Flash Pt					
Date Acquired:	November 16, 2007					
Acquired By:	Eman Ismaeel					

**Mono-Aromatic Hydrocarbons - Leachate**

Blanks	Units	Measured	Mean	Lower Limit	Upper Limit	Passed QC
Benzene	mg/L	<0.01	0.01	-2.99	3.01	yes
Ethylbenzene	mg/L	<0.01	0.01	-2.99	3.01	yes
m,p-Xylene	mg/L	<0.01	0.00	-9.99	9.99	yes
o-Xylene	mg/L	<0.01	0.01	-2.99	3.01	yes
Toluene	mg/L	<0.01	0.01	-2.99	3.01	yes
Material Used:	Method Blank - Organics					
Date Acquired:	November 15, 2007					
Acquired By:	Alexsandra Robert					

Calibration Check	Units	Measured	Target	% Recovery	Criteria (%)	Passed QC
Benzene	ng	47.3	50.00	94.60	71.40 - 117.60	yes
Ethylbenzene	ng	51.9	50.00	103.84	78.80 - 120.80	yes
m,p-Xylene	ng	103.7	100.00	103.73	80.80 - 118.60	yes
o-Xylene	ng	52.3	50.00	104.68	80.80 - 121.60	yes
Toluene	ng	54.3	50.00	108.68	77.50 - 121.30	yes
Material Used:	Calibration Check - Organics					
Date Acquired:	November 15, 2007					
Acquired By:	Alexsandra Robert					