

Certificate of Analysis

Nunatta Environmental Services Inc.

P.O. Box 267
Iqaluit, NU X0A 0H0
Attn: Jim Wilson

Phone: (867) 979-1488
Fax: (867) 979-1478

Client PO:
Project: Landfarm Water
Custody: 11330

Report Date: 5-Sep-2013
Order Date: 29-Aug-2013

Order #: 1335285

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
1335285-01	Cell #4 A
1335285-02	Cell #4 B
1335285-03	Black Tank

Approved By:



Mark Foto, M.Sc. For Dale Robertson, BSc
Laboratory Director

Any use of these results implies your agreement that our total liability in connection with this work, however arising shall be limited to the amount paid by you for this work, and that our employees or agents shall not under circumstances be liable to you in connection with this work

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Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
BTEX by P&T GC-MS	EPA 624 - P&T GC-MS	30-Aug-13	3-Sep-13
PHC F1	CWS Tier 1 - P&T GC-FID	30-Aug-13	3-Sep-13
PHC F2 - F4	CWS Tier 1 - GC-FID, extraction	4-Sep-13	4-Sep-13

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OTTAWA
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Ottawa, ON K1G 4J8

MISSISSAUGA
6845 Kitimat Rd. Unit #27
Mississauga, ON L5N 6J3

NIAGARA FALLS
5415 Morning Glory Crt.
Niagara Falls, ON L2J 0A3

SARNIA
123 Christina St. N.
Sarnia, ON N7T 5T7

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	Client ID:	Cell #4 A	Cell #4 B	Black Tank	-
	Sample Date:	29-Aug-13	29-Aug-13	29-Aug-13	-
	Sample ID:	1335285-01	1335285-02	1335285-03	-
	MDL/Units	Water	Water	Water	-

Volatiles

Benzene	0.5 ug/L	<0.5	<0.5	<0.5	-
Ethylbenzene	0.5 ug/L	<0.5	<0.5	<0.5	-
Toluene	0.5 ug/L	<0.5	<0.5	<0.5	-
m,p-Xylenes	0.5 ug/L	<0.5	<0.5	<0.5	-
o-Xylene	0.5 ug/L	<0.5	<0.5	<0.5	-
Xylenes, total	0.5 ug/L	<0.5	<0.5	<0.5	-
Toluene-d8	Surrogate	88.7%	88.5%	89.2%	-

Hydrocarbons

F1 PHCs (C6-C10)	25 ug/L	<25	<25	<25	-
F2 PHCs (C10-C16)	100 ug/L	<100	<100	<100	-
F3 PHCs (C16-C34)	100 ug/L	<100	<100	<100	-
F4 PHCs (C34-C50)	100 ug/L	<100	<100	<100	-
F1 + F2 PHCs	125 ug/L	<125	<125	<125	-
F3 + F4 PHCs	200 ug/L	<200	<200	<200	-

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Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L						
F2 PHCs (C10-C16)	ND	100	ug/L						
F3 PHCs (C16-C34)	ND	100	ug/L						
F4 PHCs (C34-C50)	ND	100	ug/L						
Volatiles									
Benzene	ND	0.5	ug/L						
Ethylbenzene	ND	0.5	ug/L						
Toluene	ND	0.5	ug/L						
m,p-Xylenes	ND	0.5	ug/L						
o-Xylene	ND	0.5	ug/L						
Xylenes, total	ND	0.5	ug/L						
Surrogate: Toluene-d8	70.2		ug/L		87.7	50-140			

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Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	ND	25	ug/L	ND				30	
Volatiles									
Benzene	ND	0.5	ug/L	ND				30	
Ethylbenzene	ND	0.5	ug/L	ND				30	
Toluene	ND	0.5	ug/L	ND				30	
m,p-Xylenes	ND	0.5	ug/L	ND				30	
o-Xylene	ND	0.5	ug/L	ND				30	
Surrogate: Toluene-d8	71.6		ug/L	ND	89.5	50-140			

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Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Hydrocarbons									
F1 PHCs (C6-C10)	1950	25	ug/L	ND	97.7	68-117			
F2 PHCs (C10-C16)	1750	100	ug/L	ND	97.1	60-140			
F3 PHCs (C16-C34)	3610	100	ug/L	ND	97.1	60-140			
F4 PHCs (C34-C50)	2060	100	ug/L	ND	83.0	60-140			
Volatiles									
Benzene	36.7	0.5	ug/L	ND	91.7	50-140			
Ethylbenzene	37.5	0.5	ug/L	ND	93.8	50-140			
Toluene	43.1	0.5	ug/L	ND	108	50-140			
m,p-Xylenes	95.9	0.5	ug/L	ND	120	50-140			
o-Xylene	40.5	0.5	ug/L	ND	101	50-140			
Surrogate: Toluene-d8	72.4		ug/L		90.4	50-140			

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Qualifier Notes:

None

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable

ND: Not Detected

MDL: Method Detection Limit

Source Result: Data used as source for matrix and duplicate samples

%REC: Percent recovery.

RPD: Relative percent difference.

CCME PHC additional information:

- The method for the analysis of PHCs complies with the Reference Method for the CWS PHC and is validated for use in the laboratory. All prescribed quality criteria identified in the method has been met.
- F1 range corrected for BTEX.
- F2 to F3 ranges corrected for appropriate PAHs where available.
- The gravimetric heavy hydrocarbons (F4G) are not to be added to C6 to C50 hydrocarbons.
- In the case where F4 and F4G are both reported, the greater of the two results is to be used for comparison to CWS PHC criteria.

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Client Name: <u>Nunatta</u>	Project Reference: <u>Land farm water</u>	TAT: <input checked="" type="checkbox"/> Regular <input type="checkbox"/> 3 Day <input type="checkbox"/> 2 Day <input type="checkbox"/> 1 Day Date Required: _____
Contact Name: <u>Jim Wilson</u>	Quote #	
Address: <u>BW 267 Igloolik, NU</u>	PO #	
Telephone: <u>867-979-1488</u>	Email Address: <u>nunatta@northwestel.net</u>	

Criteria: ☐ O. Reg. 153/04 (As Amended) Table ☐ RSC Filing ☐ O. Reg. 558/00 ☐ PWQO ☐ CCME ☐ SUB (Storm) ☐ SUB (Sanitary) Municipality: _____ ☐ Other: _____

Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)

Required Analyses

Parcel Order Number:					Sample Taken		F1	B										
Sample ID/Location Name					Matrix	Air Volume	# of Containers	Date	Time	F1	B							
1	Cell #4 A				SW	0	3	Aug 29	10:00	✓	✓							
2	Cell #4 B				SW	0	3	↓	↓	✓	✓							
3	Black Tank				SW	0	3	↓	↓	✓	✓							
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Comments: *Received extra sample: Black Tank. Add to COC per Jim. -mye Method of Delivery: Paracel Courier

Relinquished By (Sign): <u>[Signature]</u>	Received by Driver/Depot: <u>[Signature]</u>	Received at Lab: <u>SUNDEPORN</u>	Verified By: <u>[Signature]</u>
Relinquished By (Print): <u>Jim Wilson</u>	Date/Time: <u>30/08/13 9:43am</u>	Date/Time: <u>AUG 30, 2013 11:12</u>	Date/Time: <u>Aug 30/13 2:29</u>
Date/Time: <u>Aug 29: 10:30</u>	Temperature: <u>16.7</u> °C	Temperature: <u>16.7</u> °C	pH Verified [] By: <u>N/A</u>