PARACEL LABORATORIES LTD.
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Ottawa, Ontario K1G 4J8
p: 1-800-749-1947
e: paracel@paracellabs.com
www.paracellabs.com

February 25, 2013

Mr. James A Wilson
Nunatta Environmental Services Inc.
P.O. Box 267
1575 Federal Road, Iqaluit, NU
X0A-0H0

Re: QA/QC Plan Document

Dear Mr. Wilson,

As per your request, we have reviewed your document entitled:

Quality Assurance and Quality Control Plan
Hydrocarbon-Impacted Soil Landfarm Facility
1575 Federal Road.
City of Iqaluit, Nunavut
Water Licence Number - NWB4NUN0511-Type "B"
Dated: October 2011

In terms of sample handling after collection, we have examined the plan to make sure that once collected, the integrity of the samples is maintained until the analysis is initiated in the laboratory. To this end, you have addressed the important matters of using the proper sample containers, using preservatives where required, handling appropriately, and shipping the samples to the lab in a timely manner. All of the procedures you have outlined are necessary to ensure that will arrive in the best possible condition.

Paracel believes that reference to the two CCME documents *CCME Protocol Manual for Water Quality Sampling - PN 1461* and *CCME Guidance Manual on Sampling, Analysis, and Data management for Contaminated Sites - PN 1101* is important as these documents provide additional detail on sample collection, handling, and field quality control should additional questions come up during your program.

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As a quick reference guide, I have attached two tables that are essentially our bottle order forms. These tables are for CCME Ground Water and Surface Water testing as noted at the bottom of the forms, and both tables include information of soil samples. All parameters related to your program are listed along with bottle size and type, preservative if required, and hold time. These tables can be used to request containers from the lab or as a guide in the field to ensure the correct containers are being used.

Thank you for your continued support of Paracel and we look forward to working with you in the future. Should you require any further information, please contact me anytime at the lab.

Sincerely,
Paracel Laboratories Ltd.

Dale Robertson, B.Sc.
Lab Director

Encs. 2

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Company Name:
Contact Name:
Client Project No.:
Delivery Method:

Regulation Required?:
If DW, which Regulation?:
If Water, Surface or Ground?

Date Requested:
Date Required By:

Lab Info:
Received By:
Assigned To:
Case #:
Completed By:

Additional Supplies Required:

Special Instructions:

Matrix	Test	Quantity	Blanks		Bottle	Preservative	Hold Time *
			Field	Trip			
Water - Inorganics	Bacteria (2 bottles if > 2 tests)				250 mL Sterile PE	30 mg $Na_2S_2O_3$	48 hours
	BOD/CBOD				500 mL HDPE		4 days
	Chlorine [4]				100 mL Amber Glass		24 hours
	COD (if >7days)				40 mL Amber Glass	H_2SO_4	30 days
	Cyanide (free)				125 mL HDPE	10N NaOH	14 days
	General Water Chemistry [1]				500 mL HDPE		7 days for nitrite otherwise 28 days
	Glycols				40 mL Amber Glass		14 days
	Metals (excluding Cd, Cr^{vi} and Hg) [5]				125 mL HDPE	HNO_3	60 days
	Cadmium (low-level)				125 mL HDPE	HNO_3	60 days
	Chromium, hexavalent (low-level)				40 mL Amber Glass	10N NaOH/NH_3 buffer	28 days
	Mercury (low-level)				100 mL Amber Glass	HCl	28 days
	Nutrients (TKN, NH_4)				100 mL Amber Glass	H_2SO_4	28 days
	Phosphorous, total				100 mL Amber Glass	H_2SO_4	30 days
	Phenol				40 mL Amber Glass	H_2SO_4	30 days
	Sulphide				125 mL HDPE	2N Zinc Acetate	7 days
	TOC / DOC				40 mL Amber Glass	H_2SO_4	10 days
Water - Organics	PCB/Pesticides/Herbicides [3]				1 L Amber Glass		14 days
	PAHs				1 L Amber Glass		14 days
	SVOCs				1 L Amber Glass		14 days
	PHC F2-F4 (ext. C_{10} to C_{50}) [2]				500 mL Amber Glass		7 days
	TPH(d)				500 mL Amber Glass		7 days
	TPH(g)				2 x 40 mL Amber Glass/Septa Cap		7 days
	TPH(ho)/Oil & Grease				1 L Amber Glass		14 days (unpreserved)
	VOC/BTEX/F1 [2]				2 x 40 mL Amber Glass/Septa Cap	no headspace	7 days
	1,4-Dioxane				1 L Amber Glass (if run as A/BN)		14 days
Soil	All tests *exemptions below				120 or 250 mL Glass Jar		* see below
	Grain Size				250 mL Glass Jar or 1L zip lock bag		indefinite
	VOC/BTEX/F1				60, 120 or 250 mL Glass Jar	no headspace	7 days
	Anions/Conductivity						30 days as received (indefinite when dried)
	SVOCs (A/BNs)/PAHs/OC Pesticides						60 days
	Cyanide (free)						14 days as received
	Dioxins and Furans						indefinite
	Fraction Organic Carbon						28 days as received (indefinite when dried)
	Metals (including SAR, HWE B)						180 days (indefinite when dried)
	Chromium (Hexavalent)						30 days as received
	Mercury						28 days
	pH						30 days as received
	PHC F2-F4 (ext. C_{10} to C_{50})						14 days

[1] Includes fluoride, pH, nitrate
[2] VOCs/F1, F2-F4 - 14 days if preserved with HCl or sodium bisulphat
[3] No CCME SW criterion for PCBs - may default to PWQO which must be analyzed by HR/GC/MS - to be suble
[4] Routine MDLs will not meet CCME FWA
[5] Many metals criteria are hardness dependent. Ensure that Ca and Mg are included in metals sc
* Hold times generally follow MOE 179 and/or EPA method

The analytical parameters and associated sample collection instructions presented in this form may be revised from time to time due to changes in regulatory and/or method requirements. Users of this form are responsible for ensuring they have downloaded the most current version from Paracel's website.

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	Cadmium (low level)				125 mL HDPE	Field filter, HNO_3	60 days
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	Mercury (low-level)				100 mL Amber Glass	Field filter, HCl	28 days
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