

Appendix H

Progressive and Final Reclamation Work Undertaken

Year: 2011

Reference: 3BC-ALT1015, Part B, Item 1e.

Progressive Reclamation Work Undertaken in 2011:

A. Summary of 2011 Activities

Progressive reclamation work was undertaken in 2011 as per Appendix N in the 2010 Annual Report. The 2011 summer work was unable to be fully completed as the proposed ex-situ reclamation as the excavation work experienced challenges.

Site	Volume Soil Excavated and placed into Landfarm (m3)	Hydrocarbon Fraction	Concentration of hydrocarbon (ppm)
B-145 Cat House Site	32.6	F1 (C6-C10) F2 (C10-C16) F3 (C16-C34) F4 (C34-C50)	2,400 7,700 70 <10*
Airstrip Diesel Pipeline (Area 1) Site	51.8	F1 (C6-C10) F2 (C10-C16) F3 (C16-C34) F4 (C34-C50)	340 3,500 86 <10*
Airstrip Met Shack Site	0**	F1 (C6-C10) F2 (C10-C16) F3 (C16-C34) F4 (C34-C50)	No work conducted No work conducted No work conducted No work conducted

*RDL = 10 ppm

** No excavation work was done at this site due to buried electrical utilities.

Reference: CCME (2008) Guidelines for Petroleum Hydrocarbons in Soils:

F1 (C6-C10) @ 320 ppm, F2 (C10-C16) @ 260 ppm, F3 (C16-C34) @ 1,700 ppm, F4 (C34-C50) @ 3,300 ppm.

The pilot scale in-situ bioremediation study for petroleum hydrocarbon biodegradation was conducted in summer 2011 at the following sites:

- 1) Oxidator Building Site;
- 2) Baker's Dozen Site.

The work status for these sites will be continuing during the summer of 2012.

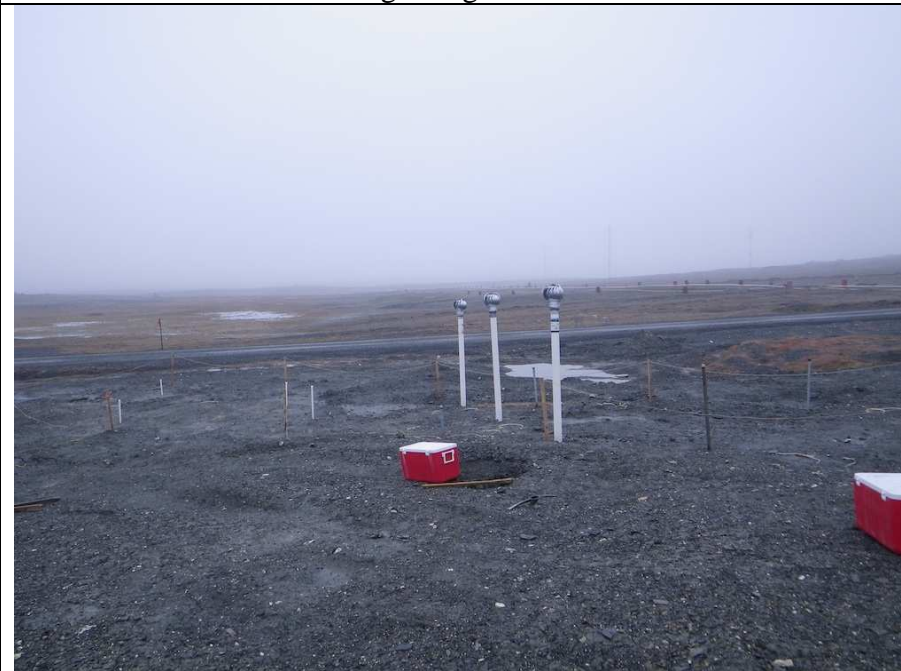
The monitoring program of the Landfarm Treatment Facility (Biopile) was conducted to monitor the total viable bacterial population required for the degradation of hydrocarbons. This work status will be continuing during the summer of 2012.

B. Photographic Records:

As the requirements for photographic records were established in **3BC-ALT1015**, the following were taken in 2011:



In-situ Site Oxidator Building - August 2011.



In-situ Baker's Dozen - August 2011.



Airstrip Diesel Pipeline (Area 1) Excavation - August 2011.



B-145 Cat House Excavation "Door Area" - August 2011.



B-145 Cat House Excavation “Back Valve Area” - August 2011.



Airstrip Met Shack Site Excavation - August 2011.



CFS Alert Landfarm (Biopile) Treatment Facility (ALT-11) – August 2011.

Future works proposed for 2012:

A. Contaminated Sites In-Situ Bioremediation Work:

Description: To continue the pilot scale in-situ bioremediation study for petroleum hydrocarbon biodegradation at the following sites:

- 1) Oxidator Building;
- 2) Baker's Dozen.

Soil samples will be collected for chemical and microbiological analyses including laboratory studies involving microcosm mineralization assays.

B. Rotation of Soils in the Landfarm (Biopile) Treatment Facility:

Description: To aerate and increase oxygen content in the contaminated soil to promote microbial and bacterial activity that biologically remediates contaminated soils within the landfarm.

C. Glycol Monitoring of Runway De-Icing Area:

Description: To examine the effects of de-icing activities on the areas immediately adjacent to, and down gradient of, the runway de-icing area. Samples will be collected and analysed for glycol to determine subsurface migration.

D. Airfield Tank Farm Lower Area Delineation

Description: To assess, investigate, and delineate the extent of contamination by conducting soil sampling down-gradient of ALT-8 as mentioned in Appendix D.

E. Photographic Records:

DND will make effort to ensure that photographic records of the site conditions in 2012, and in subsequent years, to ensure commitment to maintaining the licence.