

VII. APPENDIX

This appendix contains the following items:

- summary sheets for the 14 excavated quadrants at the S1/S4 beach area
- four progress reports produced during the summer field season

DESCRIPTION OF QUADRANT / ADDITIONAL INFORMATION

RI 2004 Field Season

EXCAVATION LOG

	Date	Type*	Location	Material #	Depth	Comments
	3 July	H	top corner of grid	CEPA	0-30cm	

* H Heavy Equipment, M Manual, V Vacuum

>2000 ppm, CEPA, Tier II, Tier I.

ANALYSIS LOG:

	Date	Sample [△]	Type [◇]	Results (ppm)	Comments
	3 July	009	S	<1.0	Tier I
	4 July	016	S	17	Tier II

△ Prefix RI04-

◇ S Soil, W Wood, M Metal, O Other

CERTIFICATION THAT ALL SOIL CONTAINING > 50 PPM PCBs IS REMOVED FROM QUADRANT

<u>Allison Kutter</u>	<u>5 July 04</u>	<u>MLH</u>	<u>04/07/08</u>
Queen's Representative	Date	Engineer Representative	Date
<u>[Signature]</u>	<u>July 8, 2004</u>		
QC Representative	Date		

DESCRIPTION OF QUADRANT / ADDITIONAL INFORMATION

RI 2004 Field Season

EXCAVATION LOG

Date	Type*	Location	Material #	Depth	Comments
July 3	H	NW extent of CEPA	CEPA	0-30	Steep area at base of cliff

* H Heavy Equipment, M Manual, V Vacuum

>2000 ppm, CEPA, Tier II, Tier I.

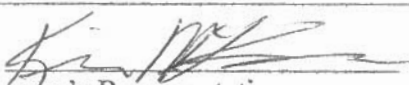
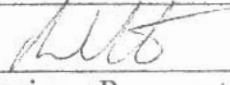
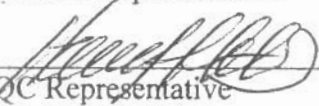
ANALYSIS LOG:

Date	Sample [△]	Type [◇]	Results (ppm)	Comments
July 3	006	S	16	Tier II
July 3	007	S	5.9	Tier II
July 3	008	S	5.8	Tier II
July 3	009	S	<1.0	Tier I ^{Kim} Circum
July 3	010	S	2.6; <1.0	Tier I Field Duplicate
July 3	011	S	16; 17	Tier II Lab Duplicate
July 4	014	S	21	Tier II
July 4	015	S	7.6	Tier II

△ Prefix RI04-

◇ S Soil, W Wood, M Metal, O Other

CERTIFICATION THAT ALL SOIL CONTAINING > 50 PPM PCBs IS REMOVED FROM QUADRANT

	<u>July 7th 2004</u>		<u>04/07/08</u>
Queen's Representative	Date	Engineer Representative	Date
	<u>July 8/04</u>		
QC Representative	Date		

DESCRIPTION OF QUADRANT / ADDITIONAL INFORMATION

RI 2004 Field Season

EXCAVATION LOG

Date	Type*	Location	Material #	Depth	Comments
4 July 04	H	CEPA area W. half of Grid	CEPA	0-30	Steep slope, Tier II
6 July 04	H	SE corner of grid	CEPA	0-30	will not be excavated

* H Heavy Equipment, M Manual, V Vacuum

>2000 ppm, CEPA, Tier II, Tier I.

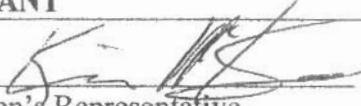
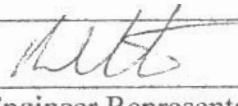
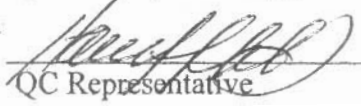
ANALYSIS LOG:

Date	Sample [△]	Type [◇]	Results (ppm)	Comments
4 July 04	019	S	21	Tier II
4 July 04	020	S	9.1	Tier II
4 July 04	020	S	9.2	Field Duplicate
4 July 04	021	S	18	} Tier II
4 July 04	022	S	36 ; 31	
6 July 04	036	S	20	

△ Prefix RI04-

◇ S Soil, W Wood, M Metal, O Other

CERTIFICATION THAT ALL SOIL CONTAINING > 50 PPM PCBs IS REMOVED FROM QUADRANT

	7 th July 04		04/07/08
Queen's Representative	Date	Engineer Representative	Date
	July 8/04		
QC Representative	Date		

QUADRANT NUMBER 4DPAGE 1 of 1

DESCRIPTION OF QUADRANT / ADDITIONAL INFORMATION

RI 2004 Field Season

EXCAVATION LOG

Date	Type*	Location	Material #	Depth	Comments
July 6 th	H	NE Extent of CEPA	CEPA	0-30	

* H Heavy Equipment, M Manual, V Vacuum

>2000 ppm, CEPA, Tier II, Tier I.


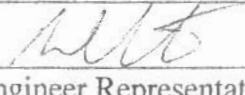
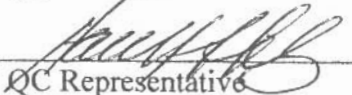
ANALYSIS LOG:

Date	Sample [△]	Type [◇]	Results (ppm)	Comments
July 6 th	037	S	6.7	Tier II
"	038	S	2.3	Tier I
"	039	S	11	Tier II
"	040	S	7.3	Tier II
"	041	S	19; 16	Tier II Lab Duplicate

△ Prefix RI04-

◇ S Soil, W Wood, M Metal, O Other

CERTIFICATION THAT ALL SOIL CONTAINING > 50 PPM PCBs IS REMOVED FROM QUADRANT

 Queen's Representative	<u>July 7th 2004</u> Date	 Engineer Representative	<u>July 8, 04</u> Date
 QC Representative	<u>July 8/04</u> Date		

DESCRIPTION OF QUADRANT / ADDITIONAL INFORMATION

RI 2004 Field Season

4E

EXCAVATION LOG

Date	Type*	Location	Material #	Depth	Comments
JULY 1st	N/A				CEPA LINE moved after testing
JULY 6th	H	NW Corner	TIER II	N/A	used to construct platform
JULY 10th	H	SW Corner	CEPA	0-30cm	

* H Heavy Equipment, M Manual, V Vacuum # >2000 ppm, CEPA, Tier II, Tier I.


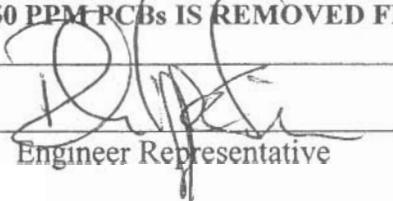
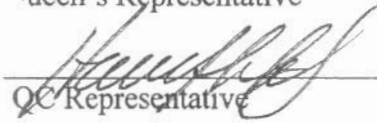
ANALYSIS LOG:

Date	Sample [△]	Type [◇]	Results (ppm)	Comments
JULY 11th	105	S	7.3	Composite sample of former small CEPA area → TIER II
				All CEPA removed from grid

△ Prefix RI04-

◇ S Soil, W Wood, M Metal, O Other

CERTIFICATION THAT ALL SOIL CONTAINING > 50 PPM PCBs IS REMOVED FROM QUADRANT

	07 Sept 04. Date		09 Sept 04 Date
	Sept 8/04 Date		

DESCRIPTION OF QUADRANT / ADDITIONAL INFORMATION

RI 2004 Field Season

5C

EXCAVATION LOG

	Date	Type*	Location	Material #	Depth	Comments
	July 5th	H	North edge	CEPA	N/A	Platform/Stockpile enters grid
	July 6th	H	Northern area	CEPA	30cm	Excavation of top area begins
	July 9th	H	Upper half of CEPA area	CEPA	30cm	Further excavation down slope
	Aug 17th	H	Lower section CEPA pile	CEPA	N/A	CEPA stockpile removed begins
	Aug 20th	H	"	CEPA	30cm	Stockpile removed; excavation of first 30cm with grapple

* H Heavy Equipment, M Manual, V Vacuum

>2000 ppm, CEPA, Tier II, Tier I.

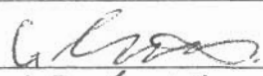
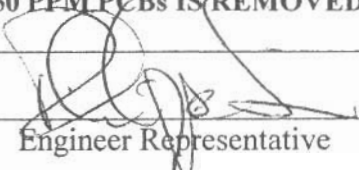
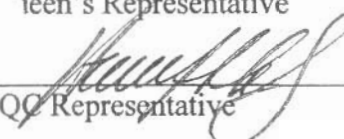
ANALYSIS LOG:

	Date	Sample [△]	Type [◇]	Results (ppm)	Comments
	July 3	004	S	19	Confirmatory sample TIER II delineated
	July 10	106	S	29	} TIER II remains
	July 10	107	S	24	
	Aug 25	628	S	27	TIER II remains
					All CEPA removed from Grid

△ Prefix RI04-

◇ S Soil, W Wood, M Metal, O Other

CERTIFICATION THAT ALL SOIL CONTAINING > 50 PPM PCBs IS REMOVED FROM QUADRANT

 RI04 Representative	07 Sept 04 Date	 Engineer Representative	09 Sept 04 Date
 QC Representative	Sept 09 04 Date		

DESCRIPTION OF QUADRANT / ADDITIONAL INFORMATION

RI 2004 Field Season

5D

EXCAVATION LOG

Date	Type*	Location	Material #	Depth	Comments
July 6th	H	Upper half of grid	CEPA	30cm	Scraped down slope
July 9th	H	Next 1/4 of grid down	CEPA	30cm	As above; incorp into stockpile
Aug 17th	H	Bottom 1/4 of grid	CEPA	—	Stockpile removed
Aug 21st	H	SE corner	CEPA	30-50cm	Variable depth
Aug 22nd	H	Continuing west	CEPA	30-100cm	As above (due to stockpile work)

* H Heavy Equipment, M Manual, V Vacuum

>2000 ppm, CEPA, Tier II, Tier I.


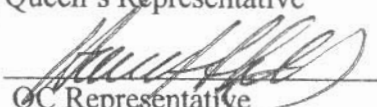
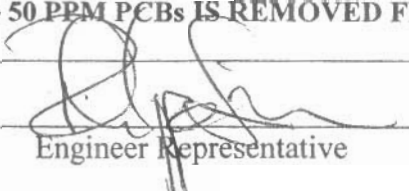
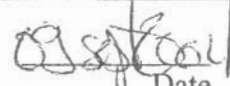
ANALYSIS LOG:

Date	Sample [△]	Type [◇]	Results (ppm)	Comments
July 1st	—	—	—	CEPA rope adjusted after conf sampling
July 7th	050	S	3.4	TIER I
July 7th	050 D	S	5.0	TIER I
July 7th	052	S	4.4	TIER I
July 7th	053	S	3.8	TIER I
July 7th	054	S	10	TIER II
July 10th	104	S	9.3	TIER II
July 10th	103	S	2.4	TIER I
Aug 20th	552	S	15	TIER II } Thought to have been
Aug 20th	555	S	35	TIER II } excavated to 30cm with
Aug 21st	610 B	S	5.6	610B is a composite @ 30cm TIER II
Aug 21st	611	S	5.2	611 is a composite @ 30cm TIER II
		See over		

△ Prefix RI04-

◇ S Soil, W Wood, M Metal, O Other

CERTIFICATION THAT ALL SOIL CONTAINING > 50 PPM PCBs IS REMOVED FROM QUADRANT

 Queen's Representative  QC Representative	07 Sept 04 Date Sept 8/04 Date	 Engineer Representative  Date
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DESCRIPTION OF QUADRANT / ADDITIONAL INFORMATION

RI 2004 Field Season

6D

EXCAVATION LOG

Date	Type*	Location	Material #	Depth	Comments
July 6th	H	Above barrier	N/A	N/A	stockpile enters 6D
July 8th	H	Central below barrier	Boulders	N/A	Removed for 'H' access
July 9th	H	Barrier	Barrier	N/A	Barrier removed, stockpile now covers former barrier area
Aug 18th	H	Upper 1/3 of grid	CEPA	N/A	stockpile removal begun
Aug 20th	H	" "	CEPA	N/A	stockpile removed
Aug 21st	H	NE Corner	CEPA	A ~ 50m	2nd phase of excavation

* H Heavy Equipment, M Manual, V Vacuum

>2000 ppm, CEPA, Tier II, Tier I.

ANALYSIS LOG:

Date	Sample ^Δ	Type [◇]	Results (ppm)	Comments
Aug 20th	556	S	18	Not valid; still stockpile material Further excavation necessary As above
Aug 20th	557	S	28	
Aug 21st	614	S	30	
Aug 21st	610B	S	5.6	Composite @ original surface ~30cm
Aug 21st	611	S	5.2	composite @ depth of excavation
Aug 21st	612	S	1.3	confirmatory point samples
Aug 21st	613	S	11	
Aug 23rd	623	S	4.0	
Aug 23rd	625	S	16	TIER I Area extends to SD, SE + 6E
Aug 23rd	560	S	22	TIER II
Aug 23rd	560D	S	19	TIER II
Aug 23rd	558	S	2.9	TIER I
Aug 23rd	559	S	7.3	TIER II
Aug 23rd	624	S	6.1	Average of Lab duplicates TIER II

Δ Prefix RI04-

◇ S Soil, W Wood, M Metal, O Other

CERTIFICATION THAT ALL SOIL CONTAINING > 50 PPM PCBs IS REMOVED FROM QUADRANT

<u>G. [Signature]</u> Queen's Representative	<u>08 Sept 04.</u> Date	<u>[Signature]</u> Engineer Representative	<u>8/10/2004</u> Date
<u>[Signature]</u> QC Representative	<u>Sept 8/04</u> Date		

DESCRIPTION OF QUADRANT / ADDITIONAL INFORMATION

RI 2004 Field Season

6D

EXCAVATION LOG

	Date	Type*	Location	Material #	Depth	Comments
	Aug 22nd	H	Top Half	CEPA	30-50cm	Excavation and handling simultaneous
	Aug 23rd	H	Further downslope	CEPA	30-50cm	As above
	Aug 29th	H	Bottom half of CEPA	CEPA	30-50cm	Cleaning up around stockpile to over winter

* H Heavy Equipment, M Manual, V Vacuum

>2000 ppm, CEPA, Tier II, Tier I.

ANALYSIS LOG:

	Date	Sample [△]	Type [◇]	Results (ppm)	Comments
	Aug 23rd	626	S	6.1	TIER II (average of lab duplicates)
	Aug 23rd	627	S	8.8	TIER II
	Aug 25th	617	S	12	TIER II
	Aug 30th	641	S	7.5	TIER II (average of lab duplicate)
	Aug 30th	642	S	2.1	TIER I
	Aug 30th	643	S	9.9	TIER II
	Aug 30th	644	S	12	TIER II Wet area remains. To be sampled before sign off
	Sept 04	743	S	21; 28(25)	TIER II. Wet area is TIER II.
					All CEPA removed.

△ Prefix RI04-

◇ S Soil, W Wood, M Metal, O Other

CERTIFICATION THAT ALL SOIL CONTAINING > 50 PPM PCBs IS REMOVED FROM QUADRANT

<u>G. [Signature]</u>	<u>08 Sept 04</u>	<u>[Signature]</u>	<u>Sept 05 2004</u>
Queen's Representative	Date	Engineer Representative	Date
<u>[Signature]</u>	<u>Sept 8 04</u>		
QC Representative	Date		

DESCRIPTION OF QUADRANT / ADDITIONAL INFORMATION

RI 2004 Field Season

6E

EXCAVATION LOG

Date	Type*	Location	Material #	Depth	Comments
Aug 21st	H	Upper CEPA area	BOULDERS	N/A	BOULDERS removed east beyond CEPA
Aug 21st	H	Top of CEPA area	CEPA	30-100cm	Begin phase 2 of excavation
Aug 22nd	H	Further downslope	CEPA	30-50cm	Right up to CEPA line
Aug 30th	H	Bottom 1/2 of CEPA	CEPA	30-50cm	Right up to east line

* H Heavy Equipment, M Manual, V Vacuum

>2000 ppm, CEPA, Tier II, Tier I.

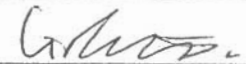
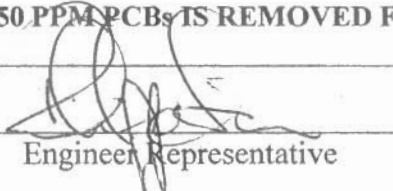
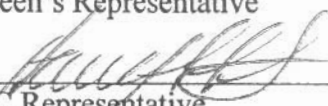
ANALYSIS LOG:

Date	Sample [△]	Type [◇]	Results (ppm)	Comments
Aug 21st	610B	S	5.6	Near surface
Aug 21st	611	S	5.2	At depth
Aug 23rd	623	S	4.0	TIER I
Aug 23rd	624	S	2.2	TIER I
Aug 30th	642	S	2.1	TIER I
Aug 30th	640	S	6.0	TIER II
Aug 30th	640D	S	4.0	TIER I
				All CEPA removed from grid.

△ Prefix RI04-

◇ S Soil, W Wood, M Metal, O Other

CERTIFICATION THAT ALL SOIL CONTAINING > 50 PPM PCBs IS REMOVED FROM QUADRANT

 Queen's Representative	<u>08/sep/04</u> Date	 Engineer Representative	<u>Sept 2004</u> / Date
 QC Representative	<u>Sept 8/04</u> Date		



12 July 2004.

Lou Spagnuolo,
Indian and Northern Affairs Canada
Nunavut Regional Office
Iqaluit, Nunavut
X0A 0H0

Resolution Island 2003 – Progress Report #1

Dear Lou,

A great deal of progress has been made in our first two weeks on site. Thanks to your help Kevin and I arrived on site 28 June 04 followed by two other team members a few days later. Due to bad weather the equipment was delayed in Iqaluit but did finally arrive on late in the day on the 30 June 04. Within two days all the equipment in the laboratory was up and running and we started the analysis of PCB samples from the S1/S4 beach on 1 July 04.

S1/S4 Beach Excavation

The excavation at the beach is going well. We initially re-established the grid markers and marked off the areas to be excavated. The flags, spray paint and ropes need to be set up each year due to wear and tear over the winter. The steepest areas have been excavated and five grids (3B, 3C, 4B, 4C, 4D) have been completed in that area. Accessing the high point of the cliff was difficult and was only possible because an exceptionally skilled operator, Dave Lorenzen returned to the site this year. The CEPA was pulled down and used as a pad and then the pad of soil gradually moved down as 0-30 cm was excavated. At the highest part of the area designated for excavation the PMT agreed that only CEPA soil would be removed. Once the initial excavation of CEPA is made on such a steep grade it is essentially impossible to make it back up the slope and less soil is available to make a pad. A temporary stockpile of CEPA material has been established behind B2. This stockpile is necessary because there is no room for screening at the S1/S4 beach area and the screener is arriving on the ship. Excavation has temporarily ceased at the S1/S4 beach as Dave is off site for this week.

S1/S4 Valley

The flags, ropes and spray paint have been re-established and replaced where necessary. A few samples were taken to verify that the location of the Tier I and Tier II ropes are



still correct and were not affected by movement of soil during spring runoff. All areas are now all clearly marked and the excavation can commence as scheduled by QC.

Barriers

The new PCB barriers were inspected and the funnel and gate system are in good shape. As we have described previously there is more silt coming down the valley than expected and therefore the gate was plugged when we arrived on site. We plan to install an additional settling pond and modify some of the materials used in the gate to rectify the problem this summer. Preparations for these modifications are already underway on site. The old filters have been sampled and replacements are being installed on site. The silt has been shoveled out of the funnel area. Testing on site determined the silt to be Tier II. The S1/S4 beach was carefully inspected during spring runoff to try and determine the best location for a permanent barrier once excavation is complete. This will need to be looked at again once excavation is complete. Dr Kerry Rowe should be arriving on site today for a short visit. His input on the barrier design and modification will be a great benefit for the project.

TPH remediation

The landfarm which was set up last year has been sampled. The rototilling regime was started on 2 July 04 and is being maintained by our personnel. One plot is rototilled each day and two plots are rototilled every fourth day as long as the weather is fine. The imploded tank drainage pathway was inspected and 5 water samples were taken along the pathway. The best location for a settling pond and barrier was determined and this will be installed in August. Six coolers were filled with TPH contaminated soil and shipped south. This soil is being used in the laboratory reactors set up by Krysta and will provide more information on the best way to remediate the TPH contaminated soil on site.

Tier II landfill

The area which was highly contaminated with TPH was marked off for QC before excavation. The excavated soil was placed beside the imploded tank and will drain through the landfarm treatment area which will be established at the imploded tank. Once excavation was complete the entire landfill footprint was thoroughly sampled and these samples should arrive in Kingston today for analysis. The borrow areas and the berms were also sampled and will be analyzed for TPH, PCBs and metals.

There are now 9 monitoring wells at the Tier II landfill and wells 1a, 2, 3a, 4 and 5b have been purged and sampled. These samples are presently being analyzed for metals, PCBs and TPH. There is presently no water in wells 1b, 3b, 5a and 6. Soil monitoring points have been set up at all nine wells.

Other Work

The CEPA area of the concrete floors of Building S4 have been clearly marked and the building is currently being demolished. Two barrel samples were taken from S4. The camp water has been sampled and analysis is in progress. Water samples were taken on site at the furniture dump, the S1/S4 valley, the S1/S4 beach, the Pb beach dump stream, and the maintenance (Co dump) leachate pathway. The northern barrier in the S1/S4 valley has been sampled.

Sincerely,

A handwritten signature in cursive script, appearing to read "Allison".

Allison Rutter



28 July 2004

Lou Spagnuolo,
Indian and Northern Affairs Canada
Nunavut Regional Office
Iqaluit, Nunavut
X0A 0H0

Resolution Island 2004 – Progress Report #2

Dear Lou,

The work at Resolution Island is proceeding well. A number of activities were on hold while QC focused on gravel production but excavation of the Tier II soils in the S1/S4 valley is now underway and progressing well.

S1/S4 Valley

Excavation of the Tier II soil started on 24 July. Progress has been steady and excavation and the accompanying analyses, grid mapping and paperwork are ongoing in 21 grids. Both the southern and northern barriers installed in 1994 have been removed. Tier II soil in the area stretching from the cliff to the 1994 northern barrier area has been scraped and left in large piles.

Barriers

Kerry Rowe was on site from 12 -14 July and provided valuable input on the barrier design and modification both for the PCB barriers and for a settling pond and barrier in the TPH contamination in the drainage pathway from the imploded tank. The barrier modifications are ongoing. Sand bags have been filled and have been installed in place of rocks in the current barrier. New filter cassettes using graded sand and gravel and GAC have been designed and are being constructed on site. Construction of the additional sedimentation trap in the S1/S4 valley is planned for 6-14 August. Sediment which had collected in the furniture dump barrier funnel has been shoveled out and work is being done to divert more water to the barrier funnel in this area.

TPH remediation

The landfarm has been sampled and preliminary results confirm last year's results; the fertilized plot and the aerated daily plot are remediating more quickly than the control plot and the plot which is aerated every 4 days. The next sampling will occur this week. The rototilling regime is being maintained and generally the weather has cooperated. The analysis of 5 water samples taken along the imploded tank drainage pathway confirmed that there is no TPH (<1.0 ppm) in the water along that pathway. Soil samples have been taken at the base of the cliff at the end of the drainage pathway. The water eventually drains into the stream near the S1/S4 beach.

The contaminated area at the beach POLs has not yet been drained. Sampling and analysis will commence as soon as we can get access to the area.

Tier II landfill

The initial round of analysis of eight samples from the landfill footprint found only one sample which contained TPH, PCBs and lead. A number of the other samples contained only TPH but most of these were in the area which had been excavated. Not all TPH contaminated soil could be removed by excavator and the small amount of remaining soil was sampled. More samples are being analyzed to better characterize the footprint of the landfill. Samples from the borrow areas and the berms have also been analyzed for TPH, PCBs and metals. All samples had PCBs concentration below the detection limit of 1.0 ppm and TPH below the detection limit of 40 ppm. Metal analysis also did not indicate anything unusual.

The 9 monitoring wells at the Tier II landfill are all constructed and are being sampled weekly and analyzed for metals, PCBs and TPH. Unfortunately most of the new wells are dry. Of the nine wells, numbers 2, 3A and 4 have been successfully sampled three times, 1A twice and 5B once; no water samples have been obtained from 1B, 3B and 5A and 6. The analysis indicated a trace of PCBs (0.03 ppb) and TPH (3.3 ppm) in well number 3A from the initial sampling, and TPH (1.0 ppm) in well 4 on the second sampling. However, all other initial data found no PCBs or TPH and nothing unusual in the metals analysis.

S1/S4 Beach

The excavation of the beach is on hold until the ship comes in and the containers are received. ASU personnel assisted in the installation of a berm at the CEPA stockpile for this soil. The upper barrier at the beach was removed and placed in three old flowerpot containers. Four samples were taken to confirm that the barrier is still Tier II and can be placed in the Tier II landfill.

If the ship does not come in this week perhaps a larger CEPA stockpile can be established which would allow the excavation of the CEPA at the S1/S4 beach to be completed this year.

Iqaluit Barrels

ASU assisted in the identification and containerization of the 156 Iqaluit barrels. Many labels have been lost due to the weather conditions and therefore identification of which barrels contained PCB contaminated soil and which contained concrete was difficult. In addition, many of the lids were permanently rusted in place. ASU in cooperation with the project technical advisor identified the contents of all the barrels. Currently, 68 concrete-containing barrels have been transferred to overpack drums in preparation for shipping and the relevant labels affixed. The few remaining concrete-containing barrels will be transferred to overpacks when the sealift arrives. The contents of the soil-containing will be transferred to the steel conical containers when they are received by sea lift.

Other Work

Building S4 has been demolished and a protocol has been provided to QC for the removal of the concrete. The two barrel samples which were taken from S4 were analyzed and QC was informed that the contents can be incinerated. One air sample was taken at the B2 building for PCBs and chlorobenzenes. The monitoring wells and the soil monitoring points have been sampled at the airstrip dump. Water samples were taken on site at the officer's mess and from the stream leading from the beach waterfall. In order to characterize the TPH, water samples have been taken at the beach where hydrocarbon was observed to be leaching from rock fractures at the ocean shore.

Sincerely,

A handwritten signature in black ink, appearing to read "Allison Rutter", written in a cursive style.

Allison Rutter



16 August 2004

Lou Spagnuolo,
Indian and Northern Affairs Canada
P.O.Box 2200
Iqaluit, NU
X0A 0H0

Resolution Island 2004 – Progress Report #3

Dear Lou,

Our tasks are progressing well on site however we are experiencing some delays due to the poor weather this year. Significant progress has been made in the excavation of Tier II soil in the S1/S4 valley and construction of the TPH settling ponds and barrier in the imploded tank drainage pathway are complete.

S1/S4 Valley

Much of our activity in last two weeks has been focussed on the confirmatory testing and mapping of the S1/S4 valley. Tier II soil has been scraped into piles in this area to facilitate removal once the Tier II landfill is ready to receive material. In the valley portion our analysis has confirmed that all Tier II soil has been scraped into piles except for two portions of the road which have been left to allow access to the area. In three areas CEPA soil was found beneath the Tier II soil. This CEPA soil was removed and added to the stockpile of CEPA soil behind B2. There is still more Tier II to be excavated around the S1/S4 building areas. There has been no excavation since 8 August.

TPH Remediation

Two settling ponds have been set up in the imploded tank drainage pathway. Both ponds were excavated by Dave Lorenzen of QC. The initial pond was lined with PVC and has a pipe installed at the bottom of the pond and absorbent booms on the surface of the pond. Because any fuel will float on the surface of the water this should minimize the movement of TPH down the drainage pathway. Any overflow during heavy rainfall or spring runoff (which does not go through the pipe) will have to pass through the booms before flowing over a weir. The second settling pond is lined with HDPE. Water flows out of the second settling pond through a barrier. The barrier contains granulated activated carbon and sand/gravel which will adsorb any remaining the TPH and small particles of soil.

The second sampling of the TPH landfarm has been completed and samples are currently on their way back to Kingston for analysis. Rototilling continues to be done daily when it does not rain.



The contaminated area at the beach POL tanks has still not been completely drained. The persistent heavy rains make draining the pond difficult. Diversion of influent water is obviously not as effective as would be desired.

PCB Barrier

The construction of the additional sediment trap for the barrier in the S1/S4 valley is presently underway. The area in front of the barrier has been excavated and two gabions have been filled. The two layers of GCL have been laid. Progress is steady but like the TPH ponds most of the construction is occurring in the rain and fog. Last years filters have all been thoroughly sampled and will be analyzed at the ASU in Kingston.

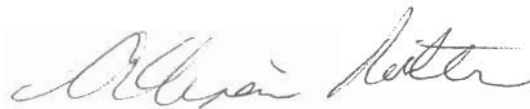
PCB Storage Facility

The ASU personnel have aided in the reorganizing of the beach PCB storage facility, identifying and, if necessary, sampling various items. The Iqaluit blue barrels which contain concrete are now all in overpack drums and new individually numbered Environment Canada labels are currently being placed on these drums. PCB contaminated wood has been transferred by QC personnel from the red steel vaults into the steel conical containers. These steel conical containers are also being labelled with the Environment Canada labels.

A number of samples have been taken to determine disposal options. Swab samples for PCB analysis were taken of five of the empty red steel vaults, one empty metal barrel which previously contained soil from the furniture dump and one emptied older metal conical container which contained soil from the S1/S4 buildings area. One of the red vaults contained a significant amount of water. On site analysis of this water determined that PCBs were present in the water and the water was disposed of by pouring it on the CEPA soil stockpile. Four samples for PCB analysis were taken of the blue plastic barrels (which previously contained Iqaluit soil) and four samples were taken of the lids from the Iqaluit concrete barrels. The liner of the B2 building is being shredded as the soil is removed from the building. Three samples were also taken of this liner. These swab and plastic samples will be sent to Kingston to be analyzed at the ASU.

Other Work

Three more barrel samples have been taken and are on their way to Kingston for analysis at the ASU. The monitoring wells have been resampled and water was obtained from six of the nine wells. The Tier II landfill was mapped by GPS for UMA in order to determine the volume.

A handwritten signature in black ink, appearing to read 'Allison Rutter', is centered on the page.

Dr Allison Rutter



15 September 2004

Lou Spagnuolo,
Indian and Northern Affairs Canada
P.O.Box 2200
Iqaluit, NU
X0A 0H0

Resolution Island 2004 – Progress Report #4

Dear Lou,

The last members of our field team arrived back on 11 September 2004. Overall we had a successful field season and while the extremely poor weather made things more difficult we were still able to complete all our tasks.

S1/S4 Valley and Buildings Area

A significant portion of the Tier II soil in the S1/S4 valley has been scraped up and put into large piles. In the buildings area less work was completed but some grids have been worked on. As you know the soil piles will remain in the valley until next year. At the beginning of the season there were a total of 108 grids in the entire valley and buildings area containing Tier II soil. The number of grids in the valley in which all the Tier II soil has been scraped into piles or removed entirely is 47. Tier II soil which formed part of the roads in the valley has been left intact in 7 grids to facilitate removal of the piles of Tier II soil next year. Work was done on 19 grids in the building/roads areas and 23 grids were untouched. A total of 19 grids (11 in the valley and 8 around the buildings) were eliminated because they have been determined have very small amounts of soil and were very difficult to access.

S1/S4 Beach

The excavation of soil at the S1/S4 beach went very well this year. In the last few weeks a small amount of work was completed in this area. In total 14 grids were signed off. CEPA soil still remains in the 4 grids closest to the sea (7E, 7F, 8E and 8F). A road will have to be built next season to access this lower area.

TPH Remediation

The two settling ponds in the imploded tank drainage pathway have been completed. Weirs have been set up in both ponds for sediment control. Five samples for TPH and nutrients were taken along the imploded tank drainage.



The final sampling of the trial TPH landfarm has been completed. Results from the landfarm have been very positive and indicate that TPH in the soil can be remediated even in the inclement weather at Resolution Island. Results show that both fertilizing the soil and aeration are important. Six more coolers of TPH contaminated soil were shipped south. This soil will allow Krysta to continue her reactor experiments.

The imploded tank landfarm has been set up using all the soil in the imploded tank drainage pathway which is greater than 8000 ppm as well as the soil removed earlier in the season from the Tier II landfill footprint. The landfarm was divided into quadrants and 42 samples were taken for TPH analysis. Additional samples were taken to assess hydrocarbon degraders and nutrients.

The contaminated area at the beach POL tanks was not completely drained however enough data was obtained to delineate the area. QC provided an excavator in the last few days which allowed us to obtain depth samples and also to determination of depth of the TPH contamination. The excavator was also used to obtain a sample from the area of the pond which did not get drained. Analysis of these samples indicate that no further areas of soil contaminated with TPH greater than 8000 ppm are present in the area.

PCB Barrier

The construction of the additional sediment trap for the barrier in the S1/S4 valley was completed. Through the use of chevrons and an extra gabion, two additional sediment traps were set up in the two pathways through which water flows into the barrier. This will, we hope, alleviate the clogging of filters and the build up of sediment in the funnel. The two layers of GCL have been covered with a black liner and the appropriate materials have been installed as filters in the funnel.

PCB Storage Facility

All the steel conical containers filled with CEPA soil have been labelled with individually numbered Environment Canada labels. The additional 30 containers filled with wood and other materials were similarly labelled.

Additional swab samples for PCB analysis were taken of two more emptied older metal conical container which previously contained soil from the S1/S4 buildings area. Samples for PCB analysis, which were taken of the blue plastic barrels (which previously contained Iqaluit soil), were determined to be contaminated at the CEPA level and have been containerized appropriately. Samples were taken of the lids from the Iqaluit concrete barrels were determined to be Tier II and can be disposed of in the Tier II landfill. The liner of the B2 building was also determined to be contaminated at the CEPA level.

We will send you our annual PCB letter, for forwarding to Environment Canada, as soon as the conical containers have left the island.

Other Work

The air sampling has been completed. There are 3 PCB in air samples and 4 chlorobenzene samples. Thirteen background plant samples were taken. Willows were found in all of the 10 locations which we are monitoring and will be analyzed for low level PCBs. The last two monitoring well sample sets have been taken. An extra sampling of wells 5A and 5B were taken. The final sample of the camp drinking water and a sample of the drinking water lake was taken. The confirmatory samples taken after the concrete excavation from the floor of S4 have been analyzed for PCBs and are all < 1.0 ppm.

A handwritten signature in cursive script, reading "Allison Rutter". The signature is written in dark ink and is centered on the page.

Dr Allison Rutter