I. PCB Storage Facilities

In 2001, an estimated 985 m³ of CEPA soil was excavated from the S1/S4 Buildings Area. Of this, 115 m³ was of material containing >2000 ppm PCBs and this was placed directly into steel containers. Problems were encountered with the new large (3.1 m³) steel containers as some were found to leak. Nine of these were filled with > 2000 ppm material so they were placed inside the facility (Photograph III-2). Sixty-one smaller steel containers (1.3 m³) were also filled with >2000 ppm material and these were stored outside the Main PCB Storage Facility (Photograph III-3). The remaining 835 m³ of soil was screened to two inches. Most of this (835 m³) was placed in the Main PCB Storage Facility along with the 630 m³ positioned there last year (Photographs III-4 to III-6); eleven large steel containers were mistakenly filled with screened material and these were placed outside the facility. The blue barrels containing CEPA soil and concrete which were brought to the site from Iqaluit in 1997, were removed from the building to make room for the screened soil and placed outside, adjacent to the building (Photograph III-7).

The Beach PCB Storage Facility comprises three sea-cans equipped with steel liners and various steel containers (Photograph III-8). This year, one barrel containing the transformer found in the airstrip dump was added to Seacan #1. Seacan #3 contained 9 barrels of waste oil contaminated at low levels with PCBs (max 14.6 ppm). Since these do not contain CEPA product, the seacan was emptied by taking these barrels to the hazardous waste storage area. This seacan is, therefore, not currently part of the Beach PCB storage facility; it was used to store the equipment that was used for the extraction of phenols from water (Section E). Thirteen steel containers were added to the Beach PCB Storage Facility this year. Twelve of these were filled with PCB contaminated wood (3 large "flowerpots" and 9 red steel vaults) and one (vault) contained PCB contaminated transformer racks.

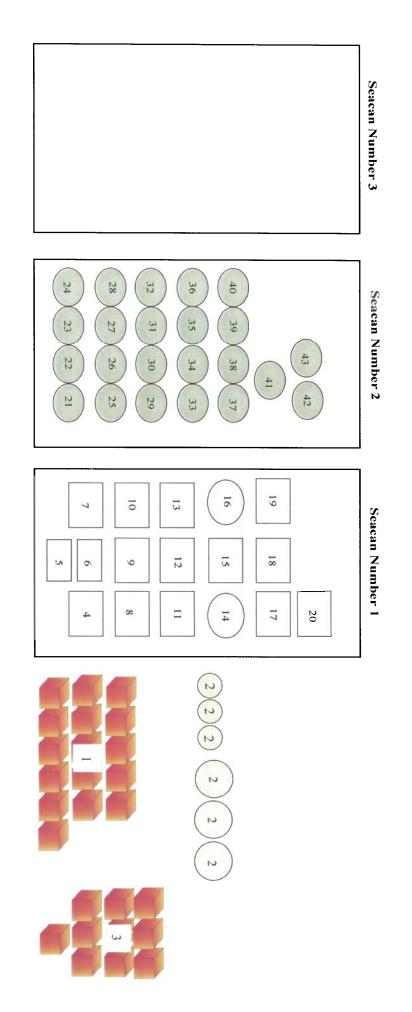
Maps III-7 and III-8 show the contents of the two PCB Storage Facilities. Tables III-12 and III-13 list the contents of the facilities. The storage of the bulk CEPA soil in the Main PCB Storage Facility is a temporary arrangement. Now that the disposal of this material has been approved by the Nunavut Impact Review Board (NIRB) it is planned that shipment of the material to the St Amboise disposal facility will commence next year. It is also planned to continue excavation of the CEPA soil in the S1/S4 valley area and elsewhere. No action was taken this year with the CEPA soil on the DND property.

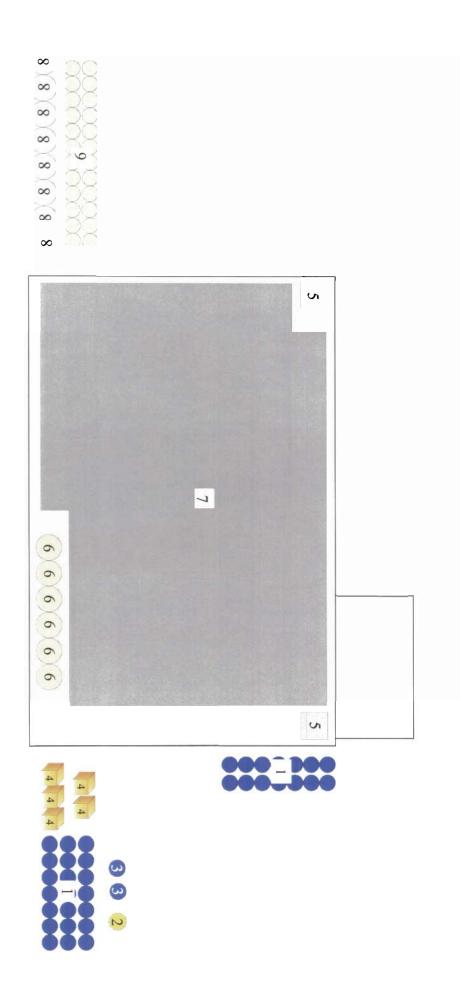
The information in this section was communicated to Scott Mitchell, INAC on 1 November 2001 so that he could forward it to Environment Canada as required.

Map III-9 and Table III-14 show the contents of the hazardous waste storage facility (Photograph III-9).

Some materials stored in the PCB registered and in the hazardous storage facility are not currently in the correct containers for off-site disposal. For instance, some the CEPA wood is in the large "flowerpots" which need to be repaired while the remainder is in the steel vaults which are very heavy and not ideal for transportation. At this point in the project, most materials to be shipped off-site at the end of the project are known. As part of next year's work a plan should be drawn up to deal with all materials to be shipped off site at the end of the project as well as other materials which will be left on site. Such items would include batteries and CEPA wood in the first category and steel vaults and creosoted timbers in the latter.

Map III-7: Plan of the Beach PCB Storage Facility (see Table III-12 for Key to Contents)





Map III-8: Plan of the Main PCB Storage Facility (see Table III-13 for Key to Contents)

7 6 6 5 4 Map III-9: Plan of the Hazardous Waste Storage Facility (see Table III-14 for Key to Contents)



Photograph III-2: Steel Containers Within the Building at the Main PCB Storage Facility; These Containers Leaked and Were Therefore Placed Inside on the Liner.



Photograph III-3: Steel Containers of Soil Contaminated with PCBs Above the 2000 ppm Level at the Main PCB Storage Facility



Photograph III-4: One of the Old International Trucks Delivering a Load of Screened CEPA Soil to the Main PCB Storage Facility



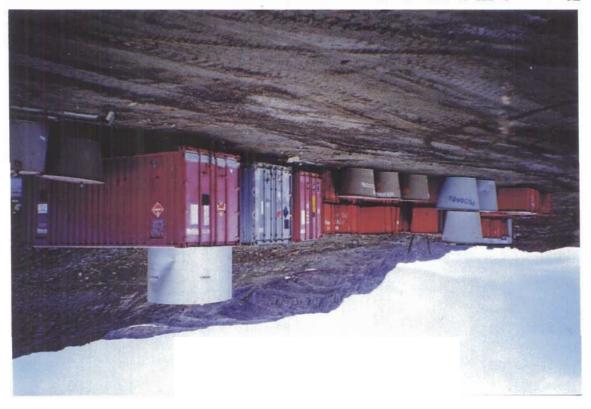
Photograph III-5: Decontaminating a Loader After it was Used to Consolidate the CEPA Soil in the Main PCB Storage Facility



Photograph III-6: Soil Stored Within the Old Maintenance Buildings at the Main



Photograph III-7: View of the Main PCB Storage Facility Showing Outside Storage of Plastic Drum Originally from Iqaluit and Steel Containers Just Visible Beyond the Building.



Photograph III-8: The SeaCans and Various Steel Containers That Comprise the Beach PCB Storage Facility



Photograph III-9: A View of the Inside of the Hazardous Waste Storage Facility.

Table III-12: List of Contents of the New Beach PCB Storage Facility

Location on Map III-7	Container	Description	Concentration PCBs (ppm)
1	WN10461	Steel Vault – wood from S1	50 - 25000
1	PN00233	Steel Vault – wood from S1	50 - 25000
1	PN00271	Steel Vault – wood from S3	50 - 60000
1	PN00272	Steel Vault – wood from S1	50 - 25000
1	PN00278	Steel Vault – wood from S1	50 - 25000
1	PN00279	Steel Vault – wood from S1	50 - 25000
1	PN00277	Steel Vault – wood from S1	50 - 25000
1	PN00280	Steel Vault – wood from S3	50 - 60000
1	PN00281	Steel Vault – wood from S3	50 - 60000
1	PN00282	Steel Vault – wood from S3	50 - 60000
1	PN00283	Steel Vault – wood from S3	50 - 60000
1	PN00285	Steel Vault – wood from S3	50 - 60000
1	PN00286	Steel Vault – wood from S3	50 - 60000
1	WN01461	Steel Vault – wood from S3	50 - 60000
1	PN00019	Steel Vault – barriers from furniture dump	50 - 200
1	PN00020	Steel Vault – barriers from furniture dump	50 - 200
2	WN10460	Small flowerpot – soil plus debris	2000 - 5000
2	WN10462	Small flowerpot – soil plus debris	2000 - 5000
2	PN00270	Small flowerpot – soil plus debris	2000 - 5000
2	PN00483	Large flowerpot – wood pieces from S1/S4 area	50 - 350
2	PN00484	Large flowerpot– wood pieces from S1/S4 area	50 - 350
2	PN00485	Large flowerpot – wood pieces from S1/S4 area	50 - 350
3	-	5 Vaults filled with wood from S3	50 - 500
3	-	4 Vaults filled with wood from S1	50 - 1000

Location on Map III-7	Container	Description	Concentration PCBs (ppm)
3	-	1 Vault filled with PCB contaminated electrical racks	-
Seacan Num	ber 1		
4	PN00258 (RI99-C183)	Drained Unit rectifier 22 gal – drained transformer	-
5	PN00300 (RI99-C099)	Drained Filter choke 11 gal – small drained transformer	52 %
6	PN00250 (RI99-C201)	Drained Filter choke 11 gal – small drained transformer	32 %
7	PN00255 (RI99-C096)	Drained Unit rectifier 60 gal – drained transformer	59 %
8	PN00292	Drained transformer	-
9	PN00293	Capacitor bank (telecommunications capacitor)	-
10	PN00296	Drained transformer	-
11	PN00253 (RI99-C200)	Drained Filter choke 11 gal – small drained transformer	52 %
12	PN00254 (RI99-C181)	Drained Unit rectifier 22 gal – small drained transformer	-
13	PN00294	Small drained transformer	-
14	PN00259 (RI99-C101)	Drained Askarel retard coil 18 gal – small drained transformer	65 %
14	PN00022	Barrel containing transformer PN00259, bank of capacitors, and a transformer core	-
15	PN00261 (RI99-C182)	Drained Unit rectifier 22 gal – small drained transformer	-
16	In Barrel PN00021 (PN00256) (RI99-C093)	Drained Filament transformer 4 gal – small drained transformer	62 %

Location on Map III-7	Container	Description	Concentration PCBs (ppm)
16	In Barrel PN00021 (PN00260) (RI99-C102)	Drained Filament transformer 10 gal - small drained transformer	73 %
16	PN00021	Barrel containing two transformer PN00256 and PN00260	-
17	PN00291	Drained transformer	-
18	PN00263	Drained Unit rectifier 28 gal	·-
19	PN00251 (RI99-C098)	Drained Askarel retard coil 18 gal – small drained transformer	70 %
19	PN00292 replaced PN00257 (RI99-C097)	Drained Unit rectifier 60 gal – drained transformer	40 %
19	PN00296 replaced PN00262 (RI99-100)	Filament transformer – small drained transformers	-
20	NR 93412	Transformer found at the Airstrip Dump in blue plastic barrel	-
Seacan Numl	per 2		
21	PN00297	Blue plastic barrel – floor tiles	50 - 1100
22	PN00240	Blue plastic barrel – floor tiles	50 - 1100
23	PN00015	Blue plastic barrel – floor tiles	50 - 1100
24	PN00225	Blue plastic barrel – floor tiles	50 - 1100
25	PN00298	Blue plastic barrel – floor tiles	50 - 1100
26	PN00147	Blue plastic barrel – floor tiles	50 - 1100
27	PN00224	Blue plastic barrel – floor tiles	50 - 1100
28	PN00219	Blue plastic barrel – floor tiles	50 - 1100
29	WN10787	Blue plastic barrel – floor tiles	50 - 1100
30	PN00227	Blue plastic barrel – floor tiles	50 - 1100
31	PN00299	Blue plastic barrel – floor tiles	50 - 1100

Location on Map III-7	Container	Description	Concentration PCBs (ppm)
32	PN00269	Barrel in overpack – PCB oil from draining transformers	40 %
33	PN00290	Blue plastic barrel – capacitors	-
34	PN00229	Blue plastic barrel – floor tiles	50 - 1100
35	PN00221	Blue plastic barrel – floor tiles	50 - 1100
36	PN00288	Blue plastic barrel – capacitors	-
37	PN00289	Blue plastic barrel – capacitors	= = = = = = = = = = = = = = = = = = = =
38	PN00223	Blue plastic barrel – floor tiles	50 - 1100
39	PN00222	Blue plastic barrel – floor tiles	50 - 1100
40	PN00017	Blue plastic barrel – ballasts	-
41	PN00029	Blue plastic barrel – floor tiles 50 -	
42	PN00248	Blue plastic barrel – capacitors -	
43	PN00030	Blue plastic barrel - sphagsorb	-

Seacan Number 3

Empty of PCB containing materials: currently not part of PCB storage facility.

Table III-13: List of Contents of the New Main PCB Storage Facility

Location on Map III-8	PCB Label	Container	Description	Concentration PCBs (ppm)
1	see Table III-13A	156 Plastic Barrels	Soil and concrete from Iqaluit cleanup	50-200
2	PN00287	Overpack drum	Soil from Furniture Dump	75
3	WR70430	Black Plastic Barrel	Soil from Furniture Dump 100 L	50-100
3	WR70563	Black Plastic Barrel	Soil from Furniture Dump 100L	50-100
4	PN00264	Wooden box	Soil from Furniture Dump	35
4	PN00265	Wooden box	Soil from Furniture Dump	420
4	PN00268	Wooden box	Soil from Furniture Dump	510
4	PN00266	Wooden box	Soil from Furniture Dump	340
4	PN00267	Wooden box	Soil from Furniture Dump	520
5	-	Wranglers	Tyvek© suits used in the facility	-
6	PN00401 to PN00409 (inclusive)	9 large flower pots	Soil from S1 area	2000-14000
7	-	Lined Building	Soil from the furniture dump and S1/S4 areas. Estimated volume 1465 m ³	50-2000
8	PN00410 to PN00420 (inclusive)	11 large flower pots	Soil from S3 area	50 - 2000
9	PN00421 to PN00481 (inclusive)	61 small flower pots	Soil from S1 area	2000-14000

Table III-13A: PCB Labels on Barrels Containing CEPA Material from Iqaluit

PN00105	PN00176	WN10495	PN00132	WN10422	WN12654
PN00106	PN00177	WN10496	PN00133	WN10423	WN12656
PN00107	PN00178	WN10497	PN00143	WN10465	WN12657
PN00108	PN00179	WN12324	PN00151	WN10466	WN12658
PN00109	PN00180	WN12326	PN00152	WN10469	WN12660
PN00110	PN00181	WN12327	PN00153	WN10471	WN12661
PN00111	PN00182	WN12328	PN00155	WN10472	WN12662
PN00112	PN00183	WN12329	PN00156	WN10478	WN12663
PN00113	PN00184	WN12331	PN00157	WN10480	WN12664
PN00114	PN00185	WN12332	PN00160	WN10481	WN12665
PN00115	PN00186	WN12333	PN00161	WN10482	WN12666
PN00116	PN00187	WN12334	PN00162	WN10483	WN12667
PN00117	PN00188	WN12340	PN00163	WN10484	WN12669
PN00118	PN00189	WN12341	PN00164	WN10485	WN12670
PN00119	PN00190	WN12345	PN00165	WN10486	WN12671
PN00120	PN00191	WN12346	PN00166	WN10487	WN12672
PN00121	PN00192	WN12347	PN00167	WN10488	WN12673
PN00122	PN00193	WN12348	PN00168	WN10489	WN12674
PN00123	PN00196	WN12349	PN00170	WN10490	WN12675
PN00124	PN00198	WN12350	PN00171	WN10491	WN12677
PN00125	WN00411	WN12351	PN00172	WN10492	WN12679
PN00126	WN00412	WN12353	PN00173	WN10493	WN12680
PN00127	WN00413	WN12354	PN00174	WN10624	
PN00128	WN00414	WN12355	PN00175	WN10627	
PN00129	WN00415	WN12356	WN10417	WN10642	
PN00130	WN00416	PN00131	WN10419	WN10644	

Table III-14: List of Contents of the Hazardous Waste Storage Facility

Location on Map III-9	Container	Description	Comment	
1	30 Wooden boxes	Mercury contaminated soil	Mercury concentration max 18.4 ppm	
2	29 Wooden boxes	Metal contaminated soil	Metals in the range: Cu max 500 ppm Pb max 10000 ppm Zn max 3000 ppm	
3	Barrels on pallets	Waste oil and other materials to be shipped south for disposal	-	
4	Blue barrel RI99-S1 Paint	Paint products and thermometers	Mercury in thermometers	
5	Barrel	Batteries from S3	NiCd batteries	
6	2 Overpack drums	Batteries	Moved from opposite garage	
7	Overpack	Batteries	Moved from the mechanical shop	
8	Waste wrangler	Soil and batteries from the Battery Dump	-	
9	Waste wranglers	Clean booms	-	
10	Red metal vault labelled airport batteries	Batteries from airstrip	In waste wrangler in vault	
11	Waste wranglers	-	Empty	
12	Barrels	Waste oils and fuels	Waiting to be placed on pallets	

J. Background Water Studies

In order to establish background data, water samples were collected from several locations and analysed for PCBs, TPH and a suite of 30 elements. Analytical procedures were used to give low detection limits. Results are given in Tables III-15 and III-16. For PCBs, low but measurable levels were found in water flowing passed the old officer's mess and behind the imploded tank. Results for eight elements in the DLCU criteria agree well with results obtained in the original 1993 site assessment. Copper, cobalt, nickel and zinc levels are relatively constant and represent background values. For arsenic, cadmium, chromium and lead all results were below the method detection limits. For the other 22 elements, there were no surprises and levels of elements such as sodium, calcium and sulfur are not very high which mirrors the situation of the lake water where the total dissolved solids are very low.

Table III-15: Sampling Locations and Collection Dates of Background Water Samples

Sample Number	Sample Description and Location	Date Collected
RI01-W007	Water flowing in the beach dump stream	20 July
RI01-W008	Water flowing behind imploded tank	20 July
RI01-W009	Water flowing by the old officer's mess	20 July
RI01-W024	Water flowing behind imploded tank	22 August
RI01-W025	Water flowing from the cobalt dump	22 August

Table III-16: Analytical Results Obtained from Background Water Samples

Element	Units	W007	W008	W009	W024	W025
PCBs	ppb	<0.02	0.03	0.04	< 0.02	< 0.02
TPH	ppm	<1.0	<1.0	<1.0	-	-
Ag	ppm	<0.01	<0.01	<0.01	-	-
Al	ppm	1.5	<0.1	<0.1	-	-
As	ppm	<0.003	< 0.003	< 0.003	< 0.003	< 0.003
В	ppm	<1	<1	<1	-	-
Ba	ppm	0.005	< 0.005	0.014	-	-

Be	ppm	< 0.01	< 0.01	< 0.01	-	-
Ca	ppm	2.3	2.8	12.6	-	-
Cd	ppm	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
Co	ppm	0.017	0.011	0.024	0.023	0.014
Cr	ppm	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
Cu	ppm	0.014	0.015	0.017	0.020	0.015
Fe	ppm	< 0.050	0.112	0.050	2//	-
K	ppm	0.41	1.04	1.52	-	-
Mg	ppm	1.24	0.72	1.57		-
Mn	ppm	0.06	0.08	0.06	-	-
Mo	ppm	< 0.005	< 0.005	< 0.005	-	- 2
Na	ppm	3.0	6.9	5.4	-	-
Ni	ppm	0.061	0.036	0.127	0.082	0.021
P	ppm	<1	<1	<1	-	-
Pb	ppm	<0.010	< 0.010	<0.010	< 0.010	< 0.010
S	ppm	8.6	5.4	11.0	-	-
Sb	ppm	< 0.005	< 0.005	< 0.005	-	-
Se	ppm	<0.01	< 0.01	< 0.01	-	-
Si	ppm	<0.10	<0.10	2.447	-	-
Sn	ppm	<0.10	< 0.10	<0.10	-	_
Sr	ppm	<0.10	< 0.10	< 0.10	-	-
Ti	ppm	<0.10	<0.10	<0.10		-
Tl	ppm	< 0.025	< 0.025	< 0.025	-	-
U	ppm	<0.2	<0.2	<0.2	-	-
V	ppm	<0.003	< 0.003	< 0.003	-	-
Zn	ppm	0.035	0.048	0.162	0.073	0.122

K. Quality Control Data

Quality control was maintained through the analysis of standards, duplicates, and blanks.

1. PCB Quality Control/Quality Assurance

Samples were analyzed for PCBs using test kits in the field and GC/ECD in the laboratories at Resolution Island and Queen's University. Table III-17 gives the results for blanks and spiked samples for QA/QC samples run by the GC/ECD method at the ASU laboratory in Kingston. Table III-18 gives the results for blanks and spiked samples for QA/QC samples run by the GC/ECD method at the mobile laboratory at Resolution Island. The relative standard deviations given in the Tables III-19 and III-20 demonstrate that the analyses were effective but, as expected, the standard GC/ECD method gave superior precision.

Table III-17: PCB Concentrations in Blank and Spiked QA/QC Samples at the ASU Laboratory in Kingston

Sample	Units	PCB Concentrations (ppm)
Blank	μg/g	<1.0; <1.0; <1.0; <1.0; <1.0
Control	μg/g	4.0; 4.7; 4.7; 4.2; 4.0
Control Target	μg/g	5.0

Table III-18: PCB Concentrations in Blank and Spiked QA/QC Samples at the Mobile Laboratory at Resolution Island

Sample	Units	PCB Concentrations (ppm)
Blank	μg/g	<1.0; <1.0; <1.0; <1.0; 1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <1.0; <
		<1.0; <1.0; <1.0
Control	μg/g	5.1; 6.1; 5.0; 4.0; 5.6; 3.8; 4.6; 5.4; 5.2; 3.9; 4.3; 5.6; 3.9; 6.5; 5.4; 4.5; 6.0; 3.6; 3.6; 3.4; 4.9; 5.4; 5.6; 4.1; 6.0
Control Target	μg/g	5.0

Table III-19: PCB Concentrations in Laboratory Duplicate Analysis by GC/ECD in Samples From Various Locations at the Site; Data is from both Laboratories

Sample Number (prefix: RI01-)	Sample Location	PCB Concentrations (ppm)	Standard Deviation	Relative Standard Deviation (RSD) (%)
S1S4-B2	S1/S4 Valley – 3M absorbent material	51;55	2.8	5.3
BES8	S1/S4 Valley	12;16	2.8	20
039	Airstrip Dump	122 ; 97	17.7	16
076	S1/S4 Valley	3.8;8.3	3.2	53
078	Beach Dump	<1.0;<1.0	0	0
082	Beach Dump	<1.0;<1.0	0	0
120	S1/S4 Valley	>50;>350	-	-
149	Airstrip Dump	<1.0;<1.0	0	0
150	S1/S4 Valley	>50;59	-	-
168	S1/S4 Valley	119;118	0.7	0.6
172	S1/S4 Valley	<1.0;<1.0	0	0
173	S1/S4 Valley	8;13	3.5	33
190	S1/S4 Valley	>350;>350	0	0
200	S1/S4 Valley	94 ; 94	0	0
201	Furniture Dump	2.4; 2.2	0.1	4.3
205	S1/S4 Valley	7.2 ; 6.5	0.5	7.3
216	S1/S4 Valley	15.4; 28.8	9.5	43
224	S1/S4 Valley	6.9 ; 8.1	0.8	11
239	Wood pile by the shredder	2.8 ; 3.1	0.2	6.8
245	Beach Dump	<1.0;<1.0	0	0
289	Beach Dump	<1.0;<1.0	0	0
Average RSD	-	-	-	11

Table III-20: PCB Concentrations in Duplicate Analysis by Test Kit in Soil Samples From Various Locations at the Site and Conducted at the Mobile Laboratory

Sample Number (prefix: RI01-)	Sample Location	PCB Concentrations (ppm)	Standard Deviation	Relative Standard Deviation (RSD) (%)
024	S1/S4 Valley	0.7;1.0	0.21	25
153	S1/S4 Valley	16;20	2.8	16
160	S1/S4 Valley	18;25	4.9	23
198	S1/S4 Valley	40;>50	-	-
241	S1/S4 Valley	202;203	0.71	0.4
Average RSD	-	-	-	16

2. Metal Quality Control/Quality Assurance (QA/QC)

Soil samples were analysed for metals by acid dissolution (aqua regia) followed by ICP/OES analysis; a few samples were also analysed directly by XRF. Table III-21 gives results for blank and reference materials. Table III-22 shows the results for replicate determination. Results are generally good but contaminated samples which are much more heterogeneous show greater variation for duplicate analyses.

Table III-21: Metal Concentrations in Blank and Reference Samples by ICP

Sample	Copper Concentrations (ppm)	Lead Concentrations (ppm)	Zinc Concentrations (ppm)
Blank	<3.0; <3.0; <3.0: <3.0	<10; <10; <10; <10	<15; <15; <15; <15
Reference Material (NRC MESS-3)	29; 31; 32; 32	17; 18; 19; 19	131; 136; 138; 143
Reference Material Target Range	27 - 35	15 - 20	114 - 157

Table III-22: Metal Concentrations in Laboratory Replicate Analysis by ICP in Samples from the Airstrip and Beach Dumps

Sample Number (prefix: RI01-)	Copper Concentrations (ppm)	Lead Concentrations (ppm)	Zinc Concentrations (ppm)
070	57 ; 57	294 ; 507	207 ; 101
093	76 ; 57	65 ; 199	92;91
114	77;87	133 ; 115	221 ; 176
137	59 ; 57	207 ; 466	125 ; 89
144	41 ; 48	<10;<10	42 ; 41
201	45 ; 39	<10;<10	31;24
274	62;66	26;23	221;163
289	146 ; 145 ; 606 ; 184	497 ; 509 ; 488 ; 720	164; 169; 204; 166

L. List of Chemicals On Site

Table III-23 list the chemicals used by the Queen's University team at Resolution Island. MSDS data sheets are available at the site for all these chemicals.

Table III-23: List of Chemicals that Queen's University has at Resolution Island

Chemical	Approximate Quantities	Comment
Acetone	5 bottles × 4 L	For cleaning laboratory glassware
Chloroform	500 mL	-
Hexane	3 bottles × 4L	For swab samples and PCB analyses
Methylene chloride	59 bottles × 4L	For the extraction of PCBs from
		soil, water, and wood samples
Carbon disulphide	4 × 4L	For air sampling
Sodium Carbonate	1 pail × 20 kg	-
Sodium Sulphate	5 pails × 20 kg	Drying agent used in PCB Analyses
Methanol	3.5 bottles × 1L	For extraction of PCBs from soil by PCB Test Kits
4-aminophenazone	50 g in a 250 mL glass bottle	Reagent used for phenols analysis
Copper sulphate	50 g in a 250 mL glass bottle	Reagent used for phenols analysis
Phosphoric acid	50 mL in a 250 mL glass bottle	Reagent used for phenols analysis
Potassium ferricyanide	50 g in a 250 mL glass bottle	Reagent used for phenols analysis
Sodium borate	50 g in a 250 mL glass bottle	Reagent used for phenols analysis
Sodium potassium tartrate	50 g in a 250 mL glass bottle	Reagent used for phenols analysis
Urea	3 bags	For bioremediation studies
Compressed gases - helium	8	Carrier gas for gas chromatography
Compressed gases -hydrogen	1	For GC flame ionization detector
Compressed gases - nitrogen	8	For GC electron capture detector
Compressed gases - air	1	For GC flame ionization detector
Spray paint cans	50 cans	Generally used in fieldwork
Fertilizer (N, P, K)	3 bags	For bioremediation studies
pH buffer solutions	Small quantities	Standard solutions for analysis
DCBP	500mL	Used in PCB analysis
Aroclor PCB standards	Small quantities	Used for PCB analysis