ii. PCBs

The mean concentration of PCBs in 24 of 42 soil samples analyzed were well below the DCC, although it was 24 times greater than the mean background concentration. One of the five plant samples analyzed showed the influence of general disposal of PCBs in the area, but PCBs were not detected in a water sample.

iii. Other Contaminants

Pesticides and PAHs were detectable in soil samples, but none exceeded criteria; the PAH signature (not surprisingly) indicates a petroleum source. No other organic contaminants were found in the soil.

iv. Barrels

The analyses targeted substances as defined in the barrel protocol. This approach is designed to identify barrel contents that can be incinerated on-site, and those that must be sent South for disposal. Approximately half the marked barrels contained substances (i.e. one or more of lead, chlorine, cadmium, or chromium) at concentrations that would preclude incineration on-site.

v. Recommendations

The North 40 Dump is situated within a river valley, and receives a considerable volume of water throughout the thaw period, which results in a potential leachate production problem within the dump. The pattern of drainage throughout the site has also created a direct path for the migration of contaminants in water passing through the site to Koojesse Inlet in the south. Although no evidence of contaminants was found in water collected in the current investigation, they have been detected previously in water collected from the site. In addition, the removal of gravel and sand from the area introduces the possibility that fuel-contaminated soils will be incorporated into fill for transport off-site, and used in various construction activities within the town. This was particularly evident in the southeastern portion of the site where soils heavily contaminated with petroleum products leaking from barrels were directly adjacent to the sand extraction site. Detailed cleanup recommendations are provided in Chapter V, Section C.5. These are aimed at closure of the dump and the reverting of drainage.

3. Dump Site #1 - Sylvia Grinnell Park Dump

This dump is situated on the side of a large boulder outcrop in Sylvia Grinnell Park 1.7 km southwest of the town of Iqaluit. The dump overlooks Sylvia Grinnell River and can be accessed from an unmaintained dirt road which runs southwest off the end of the old gravel runway in the West 40. The toe of the slope is not directly accessible by vehicle. Samples were taken in the drainage through the vehicle dump, and along the toe of the landfill. Vegetation samples were taken from each of three locations, and one water sample was taken from a drainage channel. Sediment samples were also taken from the river near the dump, as part of the Historic Ocean Disposal study.

i. Inorganic Elements

The mean concentrations of lead and zinc in seven samples analyzed exceeded the DCC, and four of the samples contained at least one element at concentrations in excess of the DCC. In two of these, lead concentrations exceed Tier I; two also had zinc concentrations above the Tier II level, and the lead concentration of one of these also exceeded Tier II. These results are consistent with the metallic content of the dump. Inorganic elements were not found in significant concentrations in plant or water samples. Concentrations in three river sediment samples analyzed were also low, with the exception of chromium, which was also elevated in background marine sediment samples. Overall, the results suggest that migration of inorganic elements from the dump is not affecting the river sediments.

ii. PCBs

The mean and maximum concentrations were significantly elevated but did not exceed the DCC in eight soil samples analyzed. The same result was found in three sediment samples. PCBs in one plant sample analyzed were elevated above background, but no PCBs were detected in the one water sample analyzed.

iii. Other Contaminants

Pesticides and PAHs, though detectable in a total of three samples analyzed, did not exceed the criteria.

iv. Recommendations

The contamination of concern at this site originates from the metallic debris deposited in the dump. Although there is evidence that PCBs may have been discarded here at some time, residual concentrations, at least in drainage from the dump, are low. The results suggest that the area at the base of the dump is contaminated with metals from the debris present there. In addition to the remediation of contaminated soils at the dump site, its physical stability needs to be addressed as described in Chapter V, Section D.5.

4. Dump Site # 2 - Summer Camp Dump

This site is approximately 2 km south of Iqaluit in an area referred to locally as the West 40. It is situated on the west side of the causeway access road immediately southwest of Dump Site #3, the site of the new municipal landfill, and opposite a Transport Canada POL tank farm. The site occupies approximately 1 hectare of a low-lying area on the edge of the foreshore flats in an embayment. Three soil samples were collected in a drainage channel from this site. The vegetation was too sparse to allow the collection of any specimens. One sediment sample was collected at the high intertidal zone of the embayed area adjacent to the dump.

i. Inorganic Elements

The mean and maximum concentrations of inorganic elements in two samples analyzed were well below the DCC. Concentrations in the sediment sample were comparable to background sediments.

ii. PCBs

Two soil samples were analyzed; PCBs were not detected in one, and were well below the DCC in the other. PCBs in the marine sediment sample were comparable to those in background sediments.

iii. Other Contaminants

Pesticides at detectable, but not significantly elevated, concentrations were found in the one sample analyzed.

iv. Recommendations

The degree of contamination in the area occupied by Dump Site #2 does not represent a threat to the surrounding environment. Migration of contaminated leachate originating in Dump Site #3 through Dump Site #2 and into the marine ecosystem must be addressed as part of the overall cleanup. Erosion of areas where wastes are buried is a potential environmental risk, and erosion protection should be put in place. Further details are given in Chapter V, Section E.5.

5. Dump Site #3 - The New Landfill

Dump Site #3 is located 1.7 km south of Iqaluit, near the POL tank farm. In the fall of 1994, a new interim municipal landfill was constructed in the southern half of the area. Drainage was altered as a part of the landfill construction, but flows through Dump Site #2. In a previous investigation by UMA Engineering, 20 boreholes were drilled at this site, from which samples were collected. The current ESG program focused on drainage channels and catchment areas into which contaminants could migrate. Five soil samples were collected from the north and two from the southern ends of the site. Vegetation and water samples were collected from the north end, and a water sample was taken from a borehole at the south end of the site.

i. Inorganic Elements

Mean levels of inorganic elements in the six samples analyzed were below the DCC, but maximum concentrations of lead, cadmium and zinc exceeded DCC Tier II in one sample, obtained in drainage on the south side of the northernmost debris pile. No elevated concentrations of inorganic elements were found in plants. Zinc was detected in water samples, in the same areas zinc exceeded Tier II in soil. Water collected from a borehole contained elevated levels of copper.

ii. PCBs

PCBs were found at significantly elevated concentrations in seven soil samples, but concentrations did not exceed the DCC, and two plant specimens analyzed contained PCB concentrations comparable to background levels. Water from the pool that drains to a flat marshy area and then through Dump Site #2 had PCB concentrations over the CCME FAL remediation criteria.

iii. Other Contaminants

Neither pesticides nor ABNs were present at significant concentrations. PAHs in one soil sample exceeded the BC MOE level B criteria.

iv. Recommendations

Migration of contaminants to the north or northeast of Dump Site #3 in drainage has been mitigated through the construction of dykes across these openings. Eastern and western migration of contaminants is prevented by the large bedrock outcrops present in those regions. However, drainage to the south remains open. Therefore, taking into consideration evidence suggesting that contaminants present in the soils are migrating from the site via leachate, and the fact that drainage from the site ultimately enters Frobisher Bay to the south, any cleanup plans for this site should attempt to prevent water infiltration of the contaminated area and incorporate monitoring of leachate before discharge from the site. Cleanup recommendations are given in more detail in Chapter V, Section F.5.

6. Dump Site #4 - Municipal Dump

This dump is situated on the top of a steep slope overlooking Koojesse Inlet, 1.2 km south of the town of Iqaluit, and immediately north of Dump Site #3. Prior to 1979 the site was used as a bagged sewage disposal area - hence the local nickname, "Honey Bag Hill". The focus of the sampling program was on drainage from the main area of waste deposition, which ultimately enters Koojesse Inlet. A total of six soil samples, including one field duplicate, was collected from five drainage paths running from the north face of the dump. Three vegetation samples were collected from each of three different sampling locations where sufficient material was available. Two marine sediment samples were collected from the tidal flats below the dump.

i. Inorganic Elements

Four of the six soil samples collected at Dump Site #4, including one field duplicate, were analyzed for inorganic elements. Mean concentrations of all elements investigated were below the DCC. One sample had a concentration of copper which exceeded Tier II, and an elevated concentration of zinc. The plant sample from this location also contained an elevated concentration of zinc.

ii. PCBs

Five of the six soil samples collected, including one field duplicate, were analyzed for PCBs. None of the soil samples contained PCBs at concentrations which exceeded the DCC, but the levels detected in one sample were significantly elevated above background. PCB concentrations in two marine sediment samples were comparable to background concentrations.

iii. Other Organic Contaminants

One soil sample from Dump Site #4 was analyzed for pesticides. The total concentration of pesticides did not exceed any criteria.

iv. Recommendations

Designs for the decommissioning of this dump should include measures to control leachate production and prevent waste materials from entering the inlet. See Chapter V, Section G.5 for further details.

7. Dump Site #5 - Apex Dump

Dump Site #5 is situated on the top of a near-vertical, south-facing slope overlooking Tarr Inlet, approximately 150 m southeast of the community of Apex and 4 km from Iqaluit. Leachate migration from this site into Tarr Inlet represents a potential violation of the Fisheries Act. Therefore, potential pathways of contaminant migration into the marine environment formed the focus of the sampling program. A total of six soil samples, including one field duplicate, were collected in drainage paths off the south toe of the dump. Two samples of vegetation and a single water sample were collected. Three samples of marine sediment were collected from one location near the site, and further out into the inlet.

i. Inorganic Elements

All six soil samples collected at Dump Site #5 were analyzed for inorganic contaminants, and mean concentrations were all well below the DCC, and comparable to background concentrations. In one sample, lead and zinc were present at concentrations over Tier I and Tier II levels, respectively. In sediment samples, levels of copper and lead in the sample collected in the intertidal zone exceeded the threshold effect levels of proposed Canadian sediment quality guidelines.

ii. PCBs

All six soil samples, including the field duplicate, were analyzed for PCBs and none contained PCBs at concentrations exceeding the DCC. Marine sediment samples taken close to the dump contained PCB concentrations higher than any of the soil samples, in excess of sediment quality criteria, and one was the second highest PCB concentration in sediment found in the Iqaluit region.

iii. Other Organic Contaminants

One of the marine sediment samples collected near the site was analyzed for dioxins and furans. The sample, collected in the high intertidal zone in a drainage path emanating from the middle of the dump contained levels of dioxins and furans five times the level detected in a remote background sample; concentrations of PAHs and pesticides were also elevated. One soil sample analyzed for pesticides had a total concentration of pesticides exceeding the remediation criteria.

iv. Recommendations

There is migration of pesticides, inorganic elements and PCBs from Dump Site #5 into the marine environment, and this represents a potential violation of the Fisheries Act. Remedial action is required to prevent further contamination of the marine habitat by wastes present in the Apex Dump. Inorganic elements are elevated in soils at the base of the dump which are being eroded by tidal action and ice scouring. The dump face needs to be stabilized. Further discussion appears in Chapter V, Section H.5.

8. Summary

The sampling program for this study was designed to be comprehensive, but it is possible that some "hot spots" have been missed. During DEW Line Cleanup Environmental Workshops with participants from various government agencies, it was decided that it is not necessary to remove all stained soil at a given site, but to focus instead on limiting the extent to which contaminants could migrate from their sources into other parts of the Arctic ecosystem. This approach was also applied to the Iqaluit study. Thus, sampling programs placed emphasis on drainage courses leading away from worked areas and landfills. In order to trace migration pathways, vegetation samples were also examined. In this way chronic inputs of low concentrations into the ecosystem could be identified and sources marked for remediation. Data obtained from the concurrent study into the environmental consequences of historical ocean disposal has also provided useful information in this regard.

E. Implementation

1. Overview

The cleanup of the dumps and the former military base at Iqaluit will be a significant undertaking. There are, however, advantages relative to other northern sites in that mobilization and demobilization costs of equipment and personnel may be reduced by the availability of local resources. The regular sealifts will also facilitate the shipment of hazardous material to the South.

The cleanup plans for the six dump sites and the Upper Base can be summarized as follows:

- removal of approximately 60 m^3 of soil containing PCBs at concentrations above 50 ppm to a registered PCB storage facility;
- removal from contact with the Arctic ecosystem of approximately 170 m^3 of soil, containing contaminants in excess of DCC Tier II level;
- disposal of a considerable amount of debris generated by the removal of visible debris from existing dumps and by the demolition of buildings/facilities at the Upper Base;
- establishment of a new landfill or landfills to contain demolition and visible debris as well as approximately 1350 m^3 of soils containing contaminants in excess of the DCC Tier I concentrations;
- disposal of the very large number of barrels and their contents, primarily located at the North 40 site, according to the DLCU Barrel Protocol; and
- stabilization of existing dump sites.

2. Specific Recommendations

There are approximately 60 m^3 of soil in areas around Pole Vault Building 222 that contain PCBs at concentrations in excess of the level (50 ppm) regulated under the Storage of PCB Material Regulations arising from the Canadian Environmental Protection Act. This "CEPA" soil, material from the floor of this building and

Communications Building S-28, and any PCB-containing electrical equipment found in and around the buildings should be removed. These materials should be contained in 205 litre drums and placed in a registered PCB storage facility within the confines of the airstrip.

Approximately 170 m^3 of soil, containing contaminants in excess of DCC Tier II level or equivalent, require excavation and containerization. It is envisaged that these containers will ultimately be transported to Resolution Island, or a DEW Line site, for encapsulation in a specially engineered secure disposal facility referred to as a Northern Disposal Facility. Alternatively, consideration could be given to the construction of such a facility in Iqaluit. It should be stressed, however, that the design of this type of facility is expressly for the long-term containment of Tier II soils, and not for other types of debris.

Demolition debris from the Upper Base, visible debris from all of the dump sites and the Upper Base, and approximately 1350 m^3 of DCC Tier I soils from the seven sites require disposal. It is proposed that this be accomplished in the following manner:

- Two new landfills should be created. One should be near the Upper Base in order to receive much of the debris generated there. It should be constructed immediately to the northwest of the base and must be outside the watershed for the Town's water supply lake. The other should be constructed in the area immediately east of the North 40 and south of the road leading to the Upper Base - well above the flood plain the waste currently occupies. Constructing a landfill at the end of the "road to nowhere" located between the town and Apex, as previously suggested by others, is unacceptable to the residents of Iqaluit, as is ocean dumping. The new landfill located in Dump Site #3 is required for the disposal of the Town's waste for the next few years. It is not large enough to place the additional materials generated in the cleanup of the seven sites presently under consideration.

- All hazardous materials, as defined by the DLCU Protocol and including batteries and liquids in barrels, that are not suitable for incineration require shipment to a southern disposal facility.

- Non-hazardous materials can be divided into three categories: metallic components that can be shredded, untreated wood and all other materials. The latter category should be buried in either of the two proposed new landfills.

- It might be preferable to ship metals to the South for recycling in shredded form. This would be desirable as the total volume of material to be buried is large and there is limited space available. If southern disposal is uneconomical, the shredded metals should be buried in the two new engineered landfills.

- Barrels and their contents should be treated according to the DLCU Barrel Protocol. Shredding of the barrels is recommended. The approximately 700 tar barrels should be buried in a cell of the new North 40 landfill.

- Asbestos should be removed from the buildings and their surroundings at the Upper Base. This should be doubly encapsulated and placed in either of the two new engineered landfills.

- Creosoted timbers and painted material should be placed in either of the two new engineered landfills. Other wood may be burned, but the ash from this should be treated as hazardous waste, unless determined to be otherwise by leachate testing.

The implementation of cleanup of the Upper Base will require several tasks to be conducted in an orchestrated fashion. Removal of CEPA soil from around Building PV222 should be carried out before the building is demolished. Complete cleanup cannot be effected until the building is removed because some of the CEPA soil is below the structure. Care will be required so as not to contaminate heavy equipment used on-site. Every effort should be made during cleanup activities to avoid the contamination of drainage paths/catchments leading to the Lake Geraldine watershed. Asbestos needs to be removed from Building PV222 and all other buildings prior to their demolition.

Stabilization of the faces of Dump Sites 1, 4 and 5 may be enhanced (after the addition of fill material and recontouring) by replanting the surfaces with local early successional species like broad-leaved willow-herb (*Epilobium latifolium*), willows (*Salix* spp.), and certain types of grasses (*Trisetum spicatum* and *Poa arctica*). While revegetation is a proven method of slope stabilization in the South, it has not been widely practiced in the North nor has it been studied extensively. The use of synthetic erosion control mats may also assist in stabilizing the steep slopes on some of the landfills. Therefore, it is proposed that a small study be conducted to determine the best method of placing cover over the three West 40 dumps and the Apex dump so as to:

- minimize the amount of clean fill needed to freeze the contents of the dumps in permafrost;
- maximize the rate at which plant growth is established; and
- stabilize the added fill and prevent its erosion on the steep faces of these dumps.

In sensitive areas like the tidal flats of sites 2, 4 and 5, reclamation activities should be carried out in a manner that will minimize erosion and fouling of waters.

Confirmatory testing following removal of contaminated media is required - particularly in those areas from which drainage enters the watershed of the town's water supply lake. The DEW Line Cleanup confirmatory testing program should be implemented.

Table II-1: Site Designations

Location	Designation
1.Upper Base	
Pole Vault Building 222	PV222
Communications Building S-28	S-28
Radar Station	Main Site
Landfill	Upper Base Landfill
Outfall	Upper Base Outfall
2. Dump Sites	
North 40	North 40 Dump
West 40, Sylvia Grinnell Park Dump	Dump Site #1
West 40, Summer Camp Area Dump	Dump Site #2
West 40, USAF Dump/ New Landfill	Dump Site #3
West 40, Current Municipal Dump	Dump Site #4
Apex Dump	Dump Site #5

Table II-2: Codes Used for Sample Designation

Prefix	Description
1. Soils	
G	General site sample
L	Landfill or dump
O	Outfall
QB	Soil delineation sample
2. Sediment	
BF	Sediment sample from shore of freshwater lake
3. Water	
WF	Freshwater sample
PW	Potable water from town sources
GW	Ground water from boreholes
4. Other Samples	
P	Barrel sample
SW	Surface swab
ASB	Insulation material
W	Wood sample
B	Asphalt/creosote

a. Each prefix is followed by a number starting at 5900. Thus G5900 is the first sample collected from a general location at the site.

b. The designation often implies only suspected land usage. Thus an O prefix indicates a sample that is believed to have been influenced by outfall discharge. It should be pointed out that the area could also have been subject to unknown inputs.

Table II-3: Sampling Program by Sample Type

Type	Number of Samples	
	Locations	Field Replicates
Soil/Sediment:		
Site Background (G)	7	1
General (G)	89	7
Delineation (QB)	157	10
Landfill/Dump (L)	70	6
Outfall	5	1
Freshwater Sediment (BF)	2	-
Total	**330**	**25**
Other:		
Water (WF, GW, PW)	15	1
Plant	75	-
Surface Swab (SW) [a]	8	16
Insulation (ASB)	1	-
Wood (W)	4	-
Asphalt/Creosote (B)	2	-
Barrel (P)	570 [b]	-

a All wall swabs were collected in triplicate.

b 37 of these barrels were identified but not sampled.

Table II-4: Analytical Program by Sample Type

Type	Total[a] Number Collected	Type of Analysis & Number Analyzed[a]					
		Inorganic Elements	PCBs	PCDDs/ PCDFs[b]	Pesticides[c]	PAHs[d]	ABNs[e]
Soil/Sediment:							
Site Background (G)	8	8	8	-	-	-	-
General (G)	96	67	75	15	4	8	3
Delineation (QB)	167	-	149	-	-	-	-
Outfall (O)	6	5	5	-	1	-	-
Landfill/Dump (L)	76	54	56	-	11	10	4
Freshwater Sediment (BF)	2	2	2	-	-	-	-
Total	**355**	**136**	**295**	**15**	**16**	**18**	**7**
Other:							
Water (WF, GW, PW)	16	13	13	1	3	-	-
Plant	75	16	32	11	-	-	-
Surface Swab (SW)	24	-	14	-	-	-	-
Barrel (P)	570	533 [f]	533	-	-	-	-
Insulation Material [g]	1	-	-	-	-	-	-
Wood (W)	4	-	-	-	-	-	-
Asphalt/Creosote	2	-	-	-	-	-	-

a Including field duplicates.

b PCDDs/PCDFs = polychlorinated dibenzodioxins and dibenzofurans: concentrations of individual dioxin (6) and furan (5) isomers and toxic equivalents were determined for each sample.

c Concentrations of 22 individual pesticides and pesticide metabolites were determined for each sample.

d PAH = polycyclic aromatic hydrocarbons: concentrations of 36 individual compounds and metabolites were determined for each sample.

e ABN = Acid/Base/Neutral: concentrations of 54 individual compounds, obtained after three extractions at different solution pHs, were determined for each sample

f Analyzed for chlorine, chromium, lead, cadmium and PCBs only.

g Analyzed for asbestos only.

Table II-5: Analytical Program by Site

Type of Analysis	Area & number analyzed[a]				
	Background	Upper Base	Dumps	Lake Geraldine	Total for All Sites
Inorganic Soil	8	79	49	-	136
Inorganic Vegetation	5	7	4	-	16
Inorganic Water	-	3	7	3	13
Aroclor Soil	8	85	53	-	146
Aroclor Vegetation	5	23	4	-	32
Aroclor Water	-	3	5	5	13
Coplanar PCB	-	6	-	-	6
Soil PCB Congener	3	8	2	-	13
Vegetation PCB Congener	3	6	1	-	10
Water PCB Congener	-	1	1	-	2
Soil PCDDs & PCDFs[b]	-	15	-	-	15
Vegetation PCDDs/PCDFs	-	11	-	-	11
Water PCDDs/PCDFs	-	-	-	1	1
Soil Pesticides[c]	-	7	9	-	16
Water Pesticides[c]	-	-	-	3	3
PAHs[d]	-	9	9	-	18
ABNs[e]	-	4	3	-	7
Swabs	-	14	-	-	14
Barrels[f]	-	-	533	-	533
Insulation[g]	-	1	-	-	1

a Including field duplicates.

b PCDDs & PCDFs = polychlorinated dibenzodioxins and dibenzofurans: concentrations of individual dioxin (6) and furan (5) isomers and toxic equivalents were determined for each sample.

c Concentrations of 22 individual pesticides and pesticide metabolites were determined for each sample.

d PAH = polycyclic aromatic hydrocarbons: concentrations of 36 individual compounds and metabolites were determined for each sample.

e ABN = Acid/Base/Neutral: concentrations of 54 individual compounds, obtained after three extractions at different solution pHs, were determined for each sample

f Analyzed for chlorine, chromium, lead, cadmium and PCBs only.

g Analyzed for asbestos only.

Table II-6: Vegetation Collected for Analysis

Species	Family/Group	n	Common Name	Habit	Site(s) Sampled[a]
Trisetum spicatum	Grass	1	-	Medium tufted grass	D
Carex membranacea	Sedge	1	-	Medium sedge	B
Eriophorum scheuchzeri	Sedge	1	Cottongrass	Medium sedge	H
Salix arctica	Willow	51	Arctic willow	Low shrub	All Sites
Salix arctophila	Willow	4	Arctic willow	Low shrub	B, F
Salix fuscescens	Willow	3	Arctic willow	Low shrub	B, D
Salix glauca	Willow	2	Blue-green willow	Low shrub	H, J
Salix herbacea	Willow	3	Least willow	Low shrub	B
Salix myrtillifolia	Willow	3	-	Low shrub	B, D, G
Salix planifolia	Willow	2	Arctic willow	Low shrub	B, E
Salix polaris	Willow	1			E
Salix reticulata	Willow	1	Net-veined willow	Low shrub	D
Salix richardsonii	Willow	2	Richardson's willow	Low shrub	F, G

[a]
A: Background
B: Building PV222
C: Building S-28
D: Main Site
E: Upper Base Landfill
F: Upper Base Outfall
G: North 40 Dump
H: Dump Site #1
I: Dump Site #3
J: Dump Site #4
K: Dump Site #5

Table II-7: Samples Exceeding Inorganic Element Cleanup Criteria

Sample	Tag #	Cu	Ni	Co	Cd	Pb	Zn	Cr	As	Sample Description
					ppm					
Upper Base										
1. Building PV-222										
G5902	3	128				354				drainage 10m NE of G5900, pool edge
G5908	9				10.4					S side comm. dish rear support, 15m E PV222
G5913	14	2500				**9860**	1080			burn pile 12m E of pole stumps
2. Main Site										
G5939	41					244				drainage 8m from NW side of POL pad
G5954A	57						920			E side of Heating Plant under third from the N hood
G5954B	57						840			field duplicate of G5954A
G5955	no tag	520				**2760**	2640		49	material collected from Power Plant tank floor
G5957	59						620			2m S of Heating Plant
G5962	64					227				2m from W side entrance of Tower #3
3. landfill										
L5901A	77						600			drainage depression 6m S of N end of landfill
L5901B	77						660			field duplicate of L5901A
North 40 Dump										
L6004	97	119								top of N drainage ditch 30m, S of circular road
L6030	126					249				S edge of Area B
Dump Site #1										
L6055	154					409				15m down-stream from vehicle dump
L6056	155					414				toe of dump beside the most easterly drum pile
L6057	165					**1140**	720			toe of dump on N side of second-most easterly drum pile
L6058	164						12820			burn-pit stain on W side of second-most easterly drum pile
Dump Site #3										
L6046	142				5.2	**840**	1080			depression in middle of N debris pile
WF6001	142						0.14			Dump Site #3, standing water in N-most debris pile
GW6000	145	0.012								Dump Site #3, from UMA borehole 13 on S edge of dump
Dump Site #4										
L6041	137	145								N side of most easterly drainage ditch at toe of dump
Dump Site #5										
L6054						257	631			rocky N edge of dump in grassy overhang

Values in bold indicate lead concentrations exceeding DCC-II.

Table II-8: Samples Exceeding Aroclor PCB Cleanup Criteria

Sample	Tag #	Aroclor 1242	Aroclor 1254	Aroclor 1260	Aroclor Total	Location
			ppm			
Upper Base						
1. Building PV222						
G5900	1	<0.054	0.16	16	**16**	drainage 12m from NE corner of PV222
G5902	3	<0.070	4.1	38	**42**	drainage 10m NE of G5900, pool edge
G5903	5	<0.021	0.61	5.2	**5.8**	drainage, 38m NE PV222, 5m S concrete support
G5905	4	<0.017	0.53	8.7	**9.2**	E drainage PV222, 7m N down-slope of G5902
G5908	9	<0.0034	0.14	3.4	3.5	S side comm. dish rear support, 15m E PV222
G5920A	22	<0.013	0.37	6.3	**6.7**	S side PV222, 8.5m from E room wall
G5920B	22	<0.011	0.50	8.2	**8.7**	field duplicate of G5920A
G5921	23	<0.11	13	160	**170***	edge of tar stain, 22m S of PV222
G5924	26	<0.0053	0.084	1.7	1.8	drainage gully 35m SE of PV222 below debris
G5925	27	<0.014	0.70	7.6	**8.3**	stain 7m NE of G5924 below debris slope
G5931P†	33	<0.00056	0.098	1.2	1.3	*Salix arctica* in an extensive stain, 10m from SW corner of PV222
G5933P†	35	NDR(0.0024)	0.074	1.0	1.1	*Salix arctica* on edge of pool 15m N PV222 beside gravel road
G5935	37	<0.071	3.1	110	**110***	10m N side PV222 beside large rock outcrop
G5981	166	<0.30	7.8	100	**110***	drainage 10m NE of PV222
G5982P†	167	<0.00087	0.22	1.65	1.9	*Salix arctica* E of PV222 beside large antenna fragments
2. Main Site						
G5962	64	0.047	3.0	1.1	4.1	2m from W side entrance of Tower #3
Dump Site #3						
WF6002	142	0.0086	<0.0043	<0.0026	0.0086	Dump Site #3, drainage channel on W side of S-most debris pile (L6047)

Values in bold indicate PCB concentrations exceeding DCC-II.

* Indicates concentrations exceeding CEPA regulations (50 ppm or 50,000 ppb).

† Plant sample values exceed the DCC-I **soil** criteria. Soil from this area should be excavated.

Note: A delineation sample QB32 taken from the floor of Building S-28 had levels of PCBs in excess of CEPA.

Table II-9: Samples Exceeding Pesticide Cleanup Criteria

Sample	Tag #	Parameter exceeding criteria	Concentration ppm	Location
Upper Base				
1. Building PV222				
G5927	29	p,p'-DDT	1.4	large rocky pooling area, 56m S of PV222
2. Main Site				
G5972	74	Total pesticides	9.3	30m E of BQ6, beside little pond
3. Outfall				
O5903	85	p,p'-DDT	0.93	drainage 25m SW of end of outfall pipe
Apex Dump Site #5				
L6052	151	Total pesticides	3.5	S side of rocky spur protruding from center of dump

Table II-10: Samples Exceeding Dibenzodioxin and Dibenzofuran Cleanup Criteria

Sample	Tag #	2,3,7,8-TCDD TEQs [a] (ppb)	Location
Upper Base			
1. Building S-28			
G5945	47	1.2	drainage 15m E of E side of S-28

a TEQs = Toxic Equivalents.