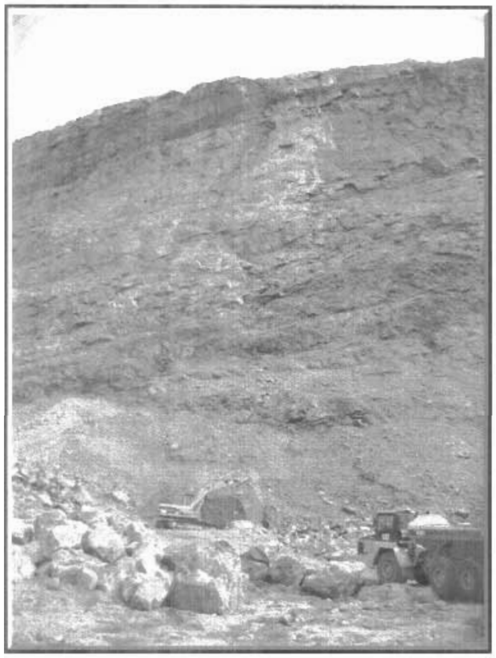
sheets are presented in Appendix 2.



Photograph 3.1: Excavation of CEPA soil at the bottom of the cliff - S1/S4 beach

3.2- S1/S4 Valley

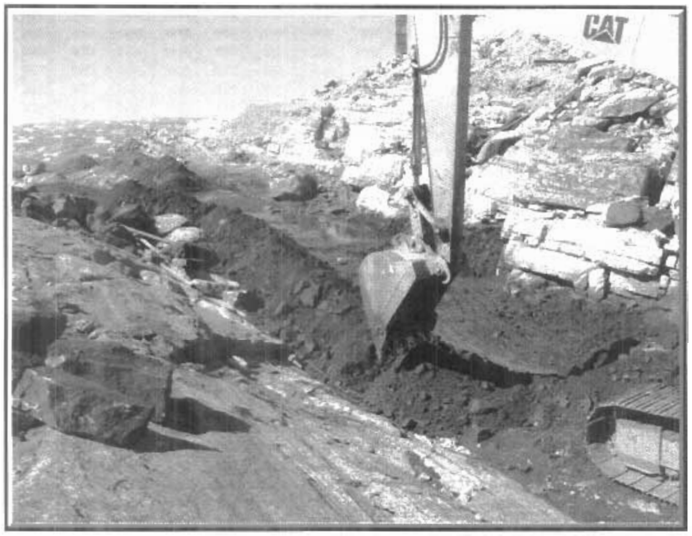
Excavation of PCB Tier II contaminated soils in the S1/S4 valley was initiated on July 24. The excavator worked its way up from the bottom of the valley leaving soil stockpiles along the way. Approximately 3,300 m^3 of the estimated 6,000 m^3 Tier II soil in the S1/S4 valley was excavated and stockpiled on site. The soil stockpiles are ready to be loaded into trucks and hauled to the Tier II landfill. Disposal of these soils in the Tier II landfill, initially scheduled for the 2004 season, was postponed to the 2005 season, due to delays related to bad weather.

During Tier II soil excavation in the S1/S4 valley, new pockets of PCB CEPA soil were identified. These soils were discovered by ASU during routine soil testing to establish the limits between Tier I and Tier II contaminated soil areas. The CEPA soils were excavated and hauled to the B2 processing area. Approximately 108 m^3 of CEPA soil was removed from the valley.

Once the Tier II soil (stockpiled and *in situ*), screener rejects, and debris are removed from the area the only remaining activity will be to address the Tier I soils.

3.3- S4 Building

After demolishing the S4 building (see Section 6.4), a small part of the concrete floor contaminated by PCBs above 50 ppm was removed. The perimeter of the surface area (approximately 1 m x 1 m) was first cut using a concrete saw. The CEPA contaminated concrete surface was then chipped off to a depth of approximately 20 cm using a manually operated hydraulic hammer. Afterwards, the pieces of concrete were containerized in two (2) salvage drums for future off-site shipping and disposal. Approximately 0.2 m^3 of concrete was removed.



Photograph 3.2: Excavation of PCB Tier II soil - S1/S4 Valley

The following table summarizes the quantities of PCB contaminated soil and debris that were excavated and removed from the S1/S4 beach area, the S1/S4 valley area, and the S4 building during the 2004 season.

Table 3.1: Volumes of PCB materials removed in 2004

Area / Material	Estimate (m^3)	Removed (m^3)	Action
S1/S4 Beach			
CEPA soil	*2100*	2,016	Screened and containerized
S1/S4 Valley			
CEPA soil	*0*	108	Screened and containerized
Tier II soil	*6000*	3,300	Temporarily stockpiled on site
S4 Building			
CEPA concrete	*0.2*	0.2	Containerized

The total volume of unscreened CEPA soil excavated during the 2004 season is approximately 2,124 m^3 (*i.e.,* 2,016 + 108). This volume is much higher than the excavation volume objective/estimate of 1,300 m^3 set in the 2004 work plan.

4- PCB CONTAINERIZATION AND STORAGE

This section describes the PCB waste containerization and storage operations conducted during the 2004 season.

4.1- Soil Containerization

Before the soil contained inside the B2 PCB storage facility could be transferred into steel containers, the frozen pile of soil had to be thawed. The ground heater hose was laid on the top of the pile in a tight S pattern. A tarp was placed over the hose to minimize convective heat loss. Every few days, the hose was removed from the pile and the thawed soil was scrapped off the top of the pile using a wheeled front-end loader (*i.e.,* Bobcat). Afterwards, the hose and tarp were repositioned for another period of thawing. After enough thawed soil was scrapped off the top of the pile, containerization operations began (August 4). Soil thawing and containerization operations were conducted simultaneously.

The screened CEPA soil (approximately 700 m^3) stored inside the B2 building was transferred into the steel containers using the conveyor equipment to maintain efficiency and safe conditions. The intake conveyor hopper was placed inside the building while the discharge end was located outside the building. The crew working in the building used a Bobcat loader equipped with an exhaust purifier to feed the conveyor. At the other end of the conveyor belt, the soil was discharged into a lined container, sitting on a containment pad made of HDPE membrane. A loader was used to move the containers (empty and full). Once filled, the containers were brought to the lid and bolting platform

A soil processing pad was setup behind the B2 building in order to receive and screen the excavated CEPA soil from the S1/S4 beach area. At first, the clean soil in the area was excavated down to bedrock. A protective berm was then built along one side of the pad, using clean soil and a geomembrane linen, to prevent potential migration of contamination away from the pad. The natural bedrock outcrop along the back end of the area served the same purpose.

The first few loads of CEPA soil excavated from the S1/S4 beach area were hauled to the processing pad for temporary storage. When the supply ship arrived on site, the new soil screener was set up beside the B2 stockpile. Soil screening and containerization operations were conducted simultaneously by placing the empty flower pot containers underneath the screener. Once filled, the containers were brought to the lid and bolting platform. The efficiency of the containerization operations were thereby greatly improved. The screening rejects, consisting of rocks larger than 2 inches (5 cm) in diameter, fell off the screener and onto a pile located beside the screening unit. When a sufficient volume of rejects had accumulated, they were loaded into a dump truck and hauled nearby to the D8 pile, located approximately 100 m away.

The sealift also brought new fork adapters, specially manufactured for the loaders present on site, to be used in carrying the flower pot containers with less risk of damaging them. Regular forks used the previous years often dented the side of the containers.

A total of 749 steel (3.1 m^3) containers were filled with CEPA soil from both the B2 building stockpile and the S1/S4 beach area during the past season. At the end of the season, the B2 building was empty and no soil remained at the B2 processing pad.

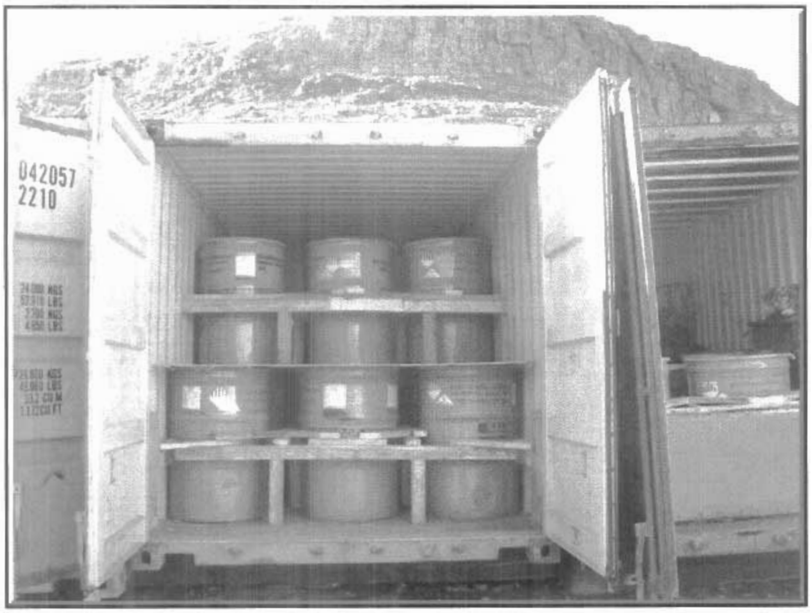
Photograph 4.1: CEPA soil screening and containerization behind B2 building

Since the containers were used before for shipping CEPA soil, they were already identified by a tracking number label. Once filled and closed all the containers were checked to make sure that the two (2) numbered labels (RI tags) were still present on the outside surface. Three (3) copies of each numbered label were manufactured, therefore the third copy can be used to replace any missing label. ASU personnel also placed a registered Environment Canada PCB label on each container. The registered PCB number was also written on each container using paint markers, in case the PCB label was lost or damaged during transportation. The inventory of all the 3.1 m^3 steel flower pot containers including the soil filled containers is presented in Appendix 3 - Table 1.

The containers were temporarily stored at the beach staging area located along the access road west of the B2 building. Later, in preparation for the southbound sealift, most of the containers were moved to the beach barging area using wheel loaders. A total of 516 containers were shipped south for disposal, leaving 233 containers on site (*i.e.,* 149 at the B2 staging area and 84 at the barging area) until the next shipment. Currently, 44 empty containers remain on site.

4.2- PCB Waste Containerization

In order to comply with new Transportation of Dangerous Goods (Clear Language) Regulations (TDGR), CEPA PCB contaminated materials stored on site had to be repackaged in preparation for future off-site shipment and disposal. CEPA PCB contaminated debris (*e.g.,* wood, floor tiles, concrete) as well as CEPA PCB contaminated soil from the Iqaluit upper base clean up project, stored in inappropriate containers, were repackaged. Some waste materials were transferred into 3.1 m^3 steel containers while others were transferred into salvage drums and then packed into marine containers. The inventory of all PCB waste materials transferred into TDGR compliant containers is presented in Appendix 3 - Table 2.



Photograph 4.2: CEPA waste repackaged and secured in a marine container

As per federal PCB Regulations, a monthly inspection of all the PCB storage facilities on site was conducted and logged during the season. Inspection log sheets are available on demand and were presented in the Health and Safety Officer 2004 season report to QC. The location of the PCB storage facilities is presented on the 2004 As-Built Drawings.

5- TIER II LANDFILL

Construction of the Tier II landfill site continued during the 2004 season. Despite the late start of this activity due to adverse weather conditions, major progress was achieved. Gravel production, directly related to the landfill construction, was also a major task conducted during the season.

5.1- Gravel Production

Gravel production was conducted throughout most of the 2004 season, however, quarrying started later than expected due to the unusual presence of a thick ice crust between the ground surface and the snow layer. This condition was responsible for slower thawing of the soil.

Gravel was mainly required for the construction of the Tier II landfill berms. Four (4) borrow pits were quarried for gravel: Radio Hill, Airstrip, East Lower Lake, and Lake #2. Two (2) other permitted borrow pits were not used during the season: S1/S4 Beach and Lower Lake. The volume of material quarried from all borrow pits is summarized in Table 5.1.

Radio Hill Borrow Pit

Radio Hill pit, quarried since 2001, was used again this year for the production of gravel. The general location of the borrow pit is indicated on the 2004 As-Built Drawings. Pit run was excavated and hauled to the screening plant. The excavated material was then processed through screens with two-inch (2") diameter openings. Approximately 10,740 m^3 of gravel were quarried from the borrow pit.

As per Tier II Landfill Construction Specifications, the screened gravel was used as Type 4 material, pit run was used as Type 2 material, and screening rejects were used as Type 1 material. Granular material from the borrow pit was also used for various other activities:

- construction of the sealift barging ramp;
- road maintenance and repairs;
- construction of the beach staging area for flower pot containers;
- construction of the ASU barrier;
- construction of the landfarm cell;
- cover material for the S1/S4 non-hazardous landfill;
- cover material for the airstrip dump

Airstrip Borrow Pit

Quarrying operations at the Airstrip pit continued during the 2004 season. The borrow source is identified on the 2004 As-Built Drawings. Borrow material was mainly quarried from the lower terrace, located northwest of the upper terrace. A short access road was built to allow for hauling of pit run from the lower terrace to the screening plant located on the upper terrace.

At the end of the 2003 season, channels were excavated in the lower terrace to promote drainage of excess moisture. This allowed for an earlier start to the gravel production activities. Stockpiling of unscreened pit run was initiated by pushing material into several piles using the D6 and D7 bulldozers. The borrow material in the lower terrace was found to contain larger quantities of boulders than the material present in the upper terrace. Once sufficient gravel was stockpiled, the material was screened through a grizzly to remove larger boulders. Since the pre-screened material still contained a fair amount of large rocks, the material was then processed through a screener with four-inch (4") diameter openings. Approximately 21,200 m^3 of gravel was quarried from the borrow pit.

As per Tier II Landfill Construction Specifications, the screened gravel was used as Type 3 material, pit run was used as Type 2 material, and screening rejects were used as Type 1 material. Granular material from the borrow pit was also used for road maintenance and repairs, and as cover material for the airstrip dump.

East Lower Lake Borrow Pit

The East Lower Lake Pit, identified on the 2004 As-Built Drawings, was also used during the 2004 season. Approximately 1,750 m^3 of gravel was quarried. The borrow material was mainly used for construction of the road to S1/S4 beach as well as for general road maintenance and repairs.

Lake Borrow Pit #2

The Lake Borrow Pit #2 (Old Water Lake), identified on the 2004 As-Built Drawings, was also used during the 2004 season. Approximately 60 m^3 of gravel was quarried there at the very end of the season. The borrow material was used to fill a depression along the outside base of the East berm at the Tier II landfill.

Table 5.1: Borrow Pits - Summary of Volumes Quarried

Borrow Pit	Volume Quarried (m^3)
Radio Hill	10,740
Airstrip	21,200
East Lower Lake	1,750
Lake #2	60
S1/S4 Beach	0
Lower Lake	0

5.2- Landfill Construction

Initially, Northtech surveyors staked out the exterior boundaries of the berm core at offsets of 10 and 20 metres to ease re-positioning of the construction stakes. The position of the East berm core was also repositioned approximately 4 metres towards the inside of the landfill.

Construction of the berm core was initiated by reconditioning of the top (*i.e.,* last lift placed the previous season). The soil moisture content of the top 30 to 45 cm (12 to 18 inches) was too low to proceed with the placement of new material. Therefore, the entire surface was scarified, wetted and compacted to the specified levels.

Afterwards, construction work resumed on the north, east, and south berms. Construction of the west berm core only started later in the season when the three (3) other berm cores were almost completed. Type 3 soil, hauled from the Airstrip borrow pit, was dumped on top of the compacted berm core base. Soil was placed in 25 cm (10 inch) lifts, levelled with the D6 bulldozer, moisture conditioned, and then compacted using the CAT CS-563D roller-compactor.

Simultaneous to construction of the berm cores the interior bottom surface of the landfill was evened out. Holes and depressions, associated with the bedrock outcrop in the southwest corner, were filled with Type 2 material. All steep slopes and sharp edges were backfilled, covered and levelled to provide a smooth finish.

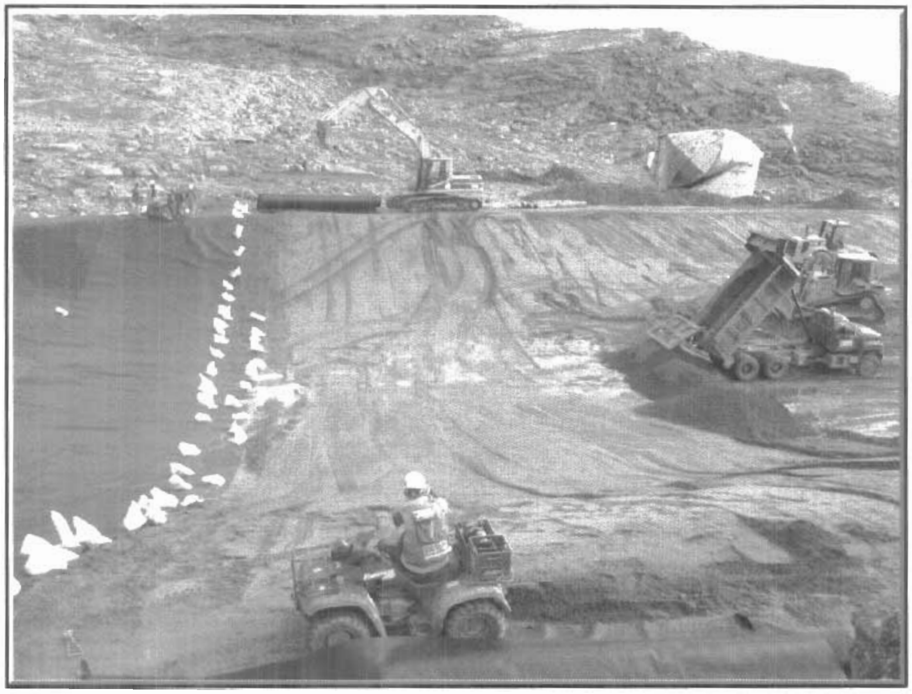
Once the specified elevations of the berm cores were reached, carving of the overbuilt sides was carried out. The exterior and interior walls were carved to approximate slopes of 1:1 and 1:2.5, respectively. Most of the sloping work was conducted with an excavator. The Type 3 material removed was recycled and used for the construction of the other unfinished berm cores.

The position of the short east berm core was corrected simply by carving the excess gravel on the exterior side.

After initiating construction of the west berm core, a ramp was built to allow vehicle and heavy equipment access to the interior of the landfill. The ramp was built adjacent to the west berm near the southwest corner of the landfill. Screener rejects (Type 1) were used to build the access ramp.

Once work was completed on the eastern half of the landfill, and while work was continuing on the western half, Type 4 material was hauled inside, to the east side of the landfill. The protective sand (Type 4) layer was then laid on the bottom, the interior slopes and the berm core top of the landfill. The 20 cm layer was spread over the finished surface and compacted dry in preparation for liner installation. The D6 bulldozer was used to spread the Type 4 material over the bottom and slopes. The layer on top of the berm core was spread using both the small Case loader and the IT 24 loader. Placement of the Type 4 material continued westward as berm core construction and inner sloping was being completed.

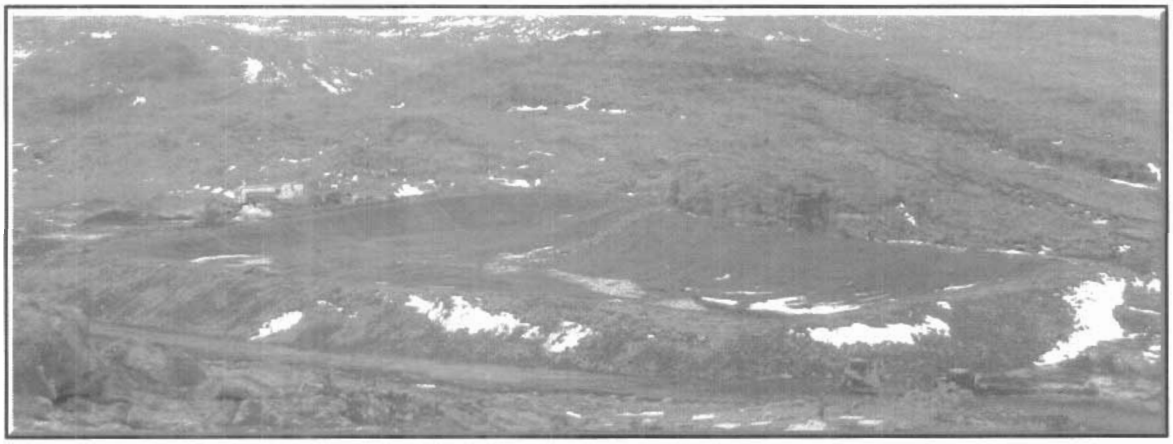
After a large enough surface had been covered with Type 4 material, liner installation began. Two (2) technicians from the specialized liner contractor Z-Tech / Geogard Inc. installed the liner, as per Specifications. First, a layer of geotextile was laid over the bottom, inner slopes and top of the landfill. The geotextile strips were laid over one another by approximately 60 cm and heat-welded together. Afterwards, the textured geomembrane liner strips were laid over the geotextile, and also heat-welded together. Finally, a second geotextile liner was installed over the geomembrane. An excavator was used to lift and position the liner rolls. An ATV and 6 to 8 labourers were used for unrolling the liner, positioning the strips and securing them in place. Sand bags and large cobbles were used to hold the liner edges down and prevent the wind from lifting them off the ground. Sand was placed on the top edge of the liner to hold it in place over winter. Liner installation also progressed from east to west as Type 4 material placement continued. Many days of bad weather (*i.e.*, strong winds, rain, and thick fog) delayed the installation of the liner. Despite this, the three (3) layers of liner (geotextile-geomembrane-geotextile) were installed over the entire surface of the landfill by September 13. See Appendix-4 for the geomembrane QA/QC report



Photograph 5.1: Placement of Type 4 material and liner installation

As in 2003, heavy rainfall during the month of August hampered progression of the landfill construction. During the same period of time, gravel production had to be halted several days due to excess moisture of the pit run. Much time was spent pumping water out of the recently closed off landfill. At times, three (3) pumps were working simultaneously. Mud and muddy water was removed from the landfill by dump trucks loaded with the excavator. The mud was dumped in two (2) main piles along the road below the landfill. Once drained, these soils will be reused for road maintenance. The vacuum truck was also used to remove muddy water as well as water in shallow puddles.

The wet weather conditions not only delayed the completion of the north and west berm cores but also caused erosion damage to the 1:1 outside slope of the south berm core. In order to protect the outside south berm from further damage, Type 2 material was immediately placed and compacted dry along the outer south berm core as per Tier II Landfill Construction Specifications. Eventually, the Type 2 material was also placed along the outer east and west berm cores. As time permitted, a one metre thick layer of Type 1 material (screener reject) was placed on top of the Type 2 material along the outer west, south and east berms, as per Specifications. These activities, scheduled for the 2005 season, were completed by the end of the 2004 season.



Photograph 5.2: Completed landfill at the end of the season

The volumes of each type of material used in the construction of the Tier II landfill are presented in Table 5.2. The 2004 As-Built Drawings present the Tier II landfill construction work conducted during this past season.

Table 5.2: Volumes of granular materials used for landfill construction in 2004

Materials	Type 1	Type 2	Type 3	Type 4	Total
Volumes (m^3)	3,310	4,710	11,090	1,550	20,660

5.3- Related Activities

Monitoring wells and thermistors

Six (6) additional monitoring wells, required for the post-construction landfill monitoring program, were installed, two (2) up-gradient of the landfill site (MW-1, MW1A) and four (4) down-gradient (MW-3A, MW-5, MW-5A, MW-6). Two (2) of the down-gradient wells (MW-3A, MW-5A) were installed in such a way as to intercept the deepest portion of the groundwater aquifer (*i.e.,* well screened on bottom 1 metre) as per ASU requirements. All the other wells were installed, as per Specifications, to intercept the aquifer over its entire thickness (*i.e.,* well screened over 3 metres). The boreholes were drilled to a depth of 4.5 metres using an Air Track Drill. The wells were constructed of 38 mm (1.5 inch) diameter stainless steel tubing and screen. The borehole logs are presented in Appendix 5. The location of these monitoring wells is presented on the 2004 As-Built Drawings.

Installation of two (2) thermistors in the landfill berm core was planned for the 2004 season. However, berm core construction could not be completed early in the season. Drilling in the saturated unfrozen granular material would have been difficult and could have caused damage to the berm core. Therefore, drilling and installation of the thermistors was postponed to the beginning of the 2005 season when the berm core will be frozen solid.

Drainage issues

In 2003, construction of the east berm core blocked off the natural drainage path of the area east of the berm. Runoff water from the area used to flow towards the road and into a drainage ditch along the north side of the road. Since the construction, water from precipitation and snow melt accumulates in the depression formed by the two (2) bedrock outcrops and forms a deep pond.

At the end of the 2003 season, a trench was dug across the road and a culvert was installed in order to drain the area temporarily. During the 2004 spring thaw, the culvert was obstructed by sediment. At the end of the season, the whole area was backfilled with approximately 980 m^3 of pit run and sloped towards the road in order to prevent any accumulation of surface water. Furthermore, the obstructed 6" OD (outside diameter) culvert was replaced with a 24" OD culvert.

Photograph 5.3: Area east of East berm backfilled and sloped towards the southwest; monitoring well MW-1 approximately 10 m from the toe of berm

6- OTHER ACTIVITIES

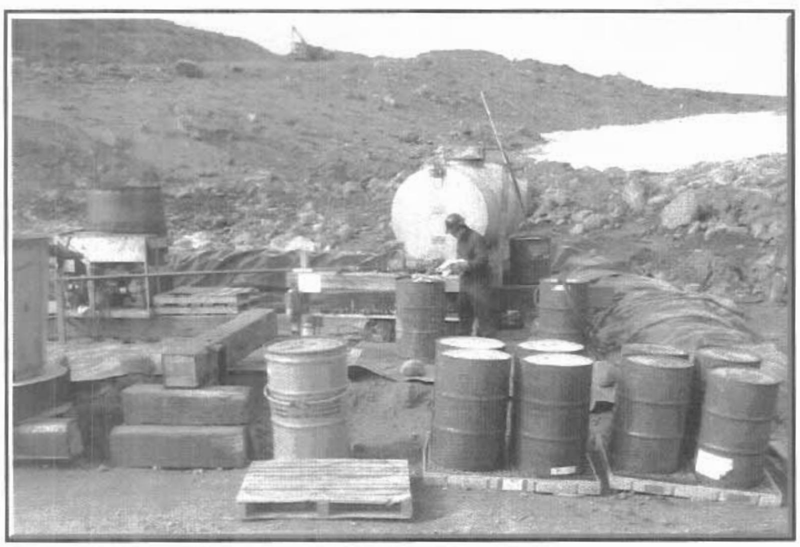
Other activities planned and carried out during the 2004 field season included: incineration of waste POL products, Airstrip dump covering, excavation of hydrocarbon contaminated soil, demolition of the S4 building, removal of creosote telephone poles and timbers, shredding and disposal of non-hazardous waste, assistance to ASU in constructing barriers, drainage of the beach pond. The following sections describe these activities in detail.

6.1- POL Incineration

Management of drums and POL (Petroleum, Oil and Lubricants) waste products continued during the 2004 season. First, a new incineration platform was setup beside the west beach POL tank. Four (4) gravel berms were built and lined with geomembrane. One waste oil burner, a feeding tank, and associated pumps and piping were setup inside the bermed area.

The main activity consisted in the processing and incineration of the remaining drums of waste oil. Associated operations such as drum pumping and drainage, as well as phase separation and water treatment were also carried out.

During the 2004 field season, the incinerator was operated for a total of 228 hours, over a 20-day period. The system ran 18 hours/day for a certain time with two rotating crew, to make sure this activity could be completed on schedule. A total of 153 drums were pumped into the system and 29,552 litres (144 drum equivalent) of waste oil were incinerated. The average burning rate of the incineration system was 130 litres/hr.



Photograph 6.1: Reduced size incineration platform

The water phase which settled at the bottom of the feeding tank was processed through the oil-water separator. The 153 empty drums were temporarily stockpiled nearby and then hauled to the beach shredder. The shredded drums were dumped into the Beach Non-Hazardous landfill

6.2- Airstrip Dump

Following remedial work carried out in 2003, the Airstrip dump required further cover material to provide proper stability and erosion control. A total of 1,550 m^3 of gravel and screener rejects, mostly from the Airstrip borrow pit, was hauled to the Airstrip dump. A bulldozer was used to spread the material which was then compacted using the roller-compactor. The geotechnical stability of the dump will be evaluated during the 2005 season and any required work (*e.g.*, backfilling and regrading) will be conducted.

Finally, a monitoring well was installed approximately 50 metres from the toe of the dump, along the main drainage channel, below the most down gradient well installed in 2003. The borehole was drilled to a depth of 4.5 metres using an Air Track Drill and a stainless steel well was installed according to Tier II Landfill Construction Specifications. The location of the monitoring wells is presented on the 2004 As-Built Drawings.

6.3- Hydrocarbon Contaminated Soil

Petroleum hydrocarbon contaminated (HC) soil was excavated in two (2) areas during the season: 1) Tier II landfill area, and 2) Imploded tank area and stream (down gradient).

At the end of the 2003 season, test pits dug in the west berm footprint revealed old hydrocarbon contamination. These soils had to be excavated before the west berm core could be constructed. At the beginning of the season, approximately 620 m^3 of HC soil was excavated and hauled to the Imploded tank area for temporary storage.

HC soil was also excavated beside the Imploded tank as well as between the tank and the new barrier built down-gradient from the area. Approximately 370 m^3 of HC soil above 8,000 ppm TPH (total petroleum hydrocarbons) concentrations was excavated and stockpiled in the area.

At the end of August, the soil screener used at the Airstrip borrow pit was moved to the Imploded tank area and installed on the bedrock outcrop just west of the tank. There, the 990 m^3 stockpile of HC soils was screened in preparation for bio-treatment by landfarming. The screened soils (approximate volume of 800 m^3) were then spread over the bedrock outcrop, in a 30 cm thick layer, using the D7 bulldozer as per ASU requirements.

A barrier, designed to intercept hydrocarbon contamination from the Imploded tank area, was built by Queen's ASU a few hundred metres down-gradient from the tank. QC hauled screener reject to the site and provided assistance for the construction.

6.4- Demolition of the S4 Building

The last building remaining in the S1/S4 valley area, the S4 building, was demolished during the season. Initially, bulky steel structures such as piping and tanks were removed from inside the building. Steel tanks and associated concrete foundations outside the building were also removed. The building itself was then demolished using the excavator with grapple attachment.

Photograph 6.2: Demolition debris in the camp NH waste landfill

Demolition debris were hauled to the nearby camp non-hazardous landfill located between the access road and the sewage line. The landfilled debris were compacted with the bulldozer and then covered with gravel. After demolishing the building, approximately 0.2 m^3 of PCB CEPA contaminated concrete was removed from the floor (see Section 3.3). The remaining building foundation will be covered with clean gravel once the contaminated soil surrounding the foundation is removed.

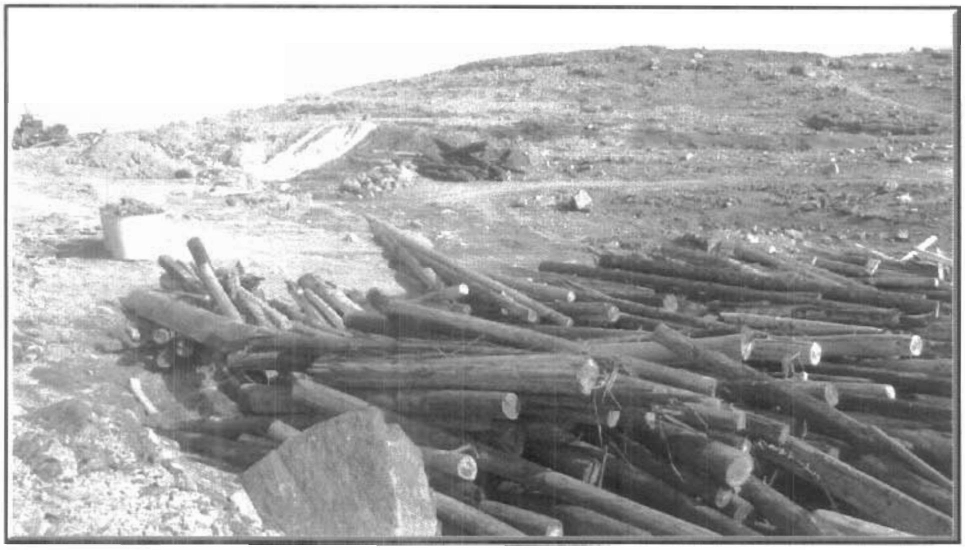
6.5- Non-Hazardous Waste Shredding and Landfilling

Various types of waste and debris from various origins were hauled down to the beach Non-Hazardous (NH) Landfill site for shredding and/or disposal. These waste materials include:

- debris collected from the Beach Dump;
- communication dish debris from the S1/S4 valley area;
- creosote telephone poles and timbers;
- scattered debris gathered from various areas (Airstrip dump and airstrip area), and
- empty drums from the incineration platform.

Lighter metal debris such as empty drums were shredded, and disposed of in the landfill, while bulkier metal debris were dumped directly into the landfill. Occasionally, the landfill debris were compacted by driving the D7 bulldozer on top of the debris pile.

Most creosote telephone poles on site were cut down in 2003. During the 2004 season all remaining poles were cut. All the poles were then collected and stockpiled along the road in various areas. These poles, along with creosote timbers from various locations on site, were collected and hauled down to the beach NH waste landfill. A polyethylene lined cell was setup in the landfill. The stockpiled poles and timbers were placed in the cell. The cell was covered with a polyethylene liner and gravel fill. Remaining poles at Radio Hill and timbers used for operations will eventually be placed in an adjacent cell at project completion.



Photograph 6.3: Creosote poles and timbers stockpiled near Beach NH Landfill; lined cell in landfill (background)

6.6- Beach Pond

The beach pond located between the two (2) beach POL tanks was partially drained during the 2004 season. This was required so Queen's ASU staff could sample the sediments and determine the extent of hydrocarbon contamination. Drainage channels were first cleared of snow, then deepened and widened to allow drainage by gravity. A 3-inch submersible pump was then placed in the pond and run 24 hours/day to accelerate drainage. Heavy rainfall during the season slowed this activity. The pond could not be completely drained due to important groundwater resurgence to the pond, however, ASU were still able to sample the sediments.

6.7- Management Committee

The Contribution Agreement signed between QC and INAC includes provisions for the establishment of a management team. The Project Management Team (PMT) has the responsibility of monitoring the progression of work, of holding project meetings, and of reporting to the Senior Management Team (SMT). The following individuals and/or organizations were part of the 2004 PMT:

INAC - Lou Spagnuolo
Scientific Adviser - Queen's University ASU (Allison Rutter, Graham Cairns)

Site Superintendent - Harry Flaherty
Assistant Site Superintendent - Jeremiah Groves
Health & Safety Officer - Robert Dallaire (Stabilis inc.)
On-site Emergency Medical Technician - Andrew Bullion
On-site Financial Comptroller - Anita Ootoowak
Heavy Equipment Supervisor - Joe Erkidjuk
Technical Adviser - Jacques Dion (Stabilis Inc.)
Project Engineer - Sinanni Inc. (Philippe Simon, Karl Côté, Greg Johnson, Cathy Baptista)

Minutes of PMT meetings held on-site during the season are presented in Appendix 6.

6.8- Project Permitting

Several permits were obtained prior to the 2004 field season. Some of these permits require yearly reporting to various agencies. The main field permits are the land use permit (INAC and Nunavut Impact Review Board - NIRB), the water license (Nunavut Water Board - NWB), and the quarrying permits (INAC).

Land Use Permit

The initial land use permit for the RI clean up project was obtained in 1998. The permit was renewed in 2001 and was set to expire in May 2003. Following a written request to INAC, the permit was extended by one year and reset to expire in May 2004.

A permit application was filed in the fall of 2003. The new permit (N2003X0038), granted in February 2004 is now set to expire in February 2006. Activities allowed under the new permit include the construction of a landfill for the disposal of soil and debris contaminated at Tier II levels by various contaminants such as PCB, metals, and heavy petroleum hydrocarbons. A copy of the new permit is presented in Appendix 7.

Quarrying Permits

A permit application for quarrying sand and gravel from six (6) borrow pits on RI was submitted to INAC before the field season. The Quarrying Permits, issued in April 2004, are valid for a one year period. The location of each borrow pit is presented in the 2004 As-Built Drawings.

Copies of these permits are presented in Appendix 7. The authorized volume of gravel to be quarried from each borrow pit along with the actual volumes quarried during the season are presented in Table 6.1.

The volume of gravel quarried from each borrow pit is below the maximum allowed quantity except for Radio Hill Borrow Pit which exceeded the authorized volume by 7% (i.e., 740 m^3). Since the granular material quarried was mainly used for the construction of the Tier II landfill, the gravel production activities are presented in Section 5.1 of this report.

Table 6.1: Borrow Pit Volumes - Authorized and Quarried

Borrow Pit	Permit Number	Volume (m^3)	
		authorized	quarried
Radio Hill	2004QP0078	10,000	10,740
Airstrip	2004QP0079	25,000	21,200
S1/S4 Beach	2004QP0080	25,000	0
Lower Lake	2004QP0081	5,000	0
East Lower Lake	2004QP0082	10,000	1,750
Lake #2	2004QP0083	20,000	60

Water Licence

The original water licence issued in 1998 for the RI clean up project expired in 2003. A new licence (NWB5RES0308) was issued in August 2003 and is set to expire in 5 years (*i.e.,* August 2008). This licence provides various conditions related to the following operations:

Water use (20 m^3/day);
Sewage disposal;
Solid waste disposal;
Undertaking;
Emergency response planning;
Modifications;
Abandonment and restoration;
Monitoring programs.

An annual report is to be presented to NWB after completion of the field season. Information such as the volume of freshwater used, and the quantities of sewage water and solid waste discharged during the season will be included in this report. Analytical results of water sampled from the drinking water lake are also reported.

6.9- Road Maintenance

Because of the early start to the season (*i.e.,* June 14), important quantities of snow were still present on most roads. Approximately thirteen (13) consecutive days were required to clear the snow from all the roads. Snow removal was also required in roadside ditches to allow for proper drainage of runoff water.

After snow removal operations, and erosion caused by snow melt, most roads required repairs and maintenance. Road work was conducted approximately nine (9) days in a row (*i.e.,* from June 20 to 28) in order to get the roads in good and safe condition for regular traffic.

After heavy rainfall during the month of August, most roads on site sustained damage from erosion. Approximately twelve (12) days road work was required to repair potholes, crevasses, and drainage ditches. Regular road maintenance is also required due to the normal wear of the roads caused by vehicle and heavy equipment traffic. Generally, the roads are simply graded as needed, and the larger holes are backfilled prior to the grading operations. During the 2004 season, approximately 1,500m^3 of gravel was used for all minor and major road repairs as well as for regular maintenance. At the end of the season, small piles of sand, used for road maintenance, were staged all along the road from the beach area to the upper camp area, in preparation for site startup in 2005.