THE STATE of ALASKA
GOVERNOR SEAN PARNELL

Department of Environmental Conservation

DIVISION OF SPILL PREVENTION & RESPONSE
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File No: 1529.38.022

January 17, 2014

Dick Buhler
Silver Bay Logging, Inc.
16119 SE 1st Street Apt. B17
Vancouver, Washington 98684

Re: Decision Document: Wrangell Sawmill
Cleanup Complete Determination

Dear Mr. Buhler:

The Alaska Department of Environmental Conservation (DEC) has reviewed the environmental records for the Wrangell Lumber Sawmill located in Wrangell, Alaska. Based on the information provided to date, the DEC has determined that the contaminant concentrations remaining on site do not pose an unacceptable risk to human health or the environment, and this site will be closed.

This decision is based on the Wrangell Sawmill Contaminated Site administrative record, which is located in the offices of the DEC in Juneau, Alaska. This letter summarizes the decision process used to determine the environmental status of this site and provides a summary of the regulatory issues considered in the Cleanup Complete Determination.

Site Name and Location:
Wrangell Sawmill
7 Mile Zimovia Highway
Wrangell, Alaska 99929

Name and Mailing Address of Contact Party:
Laureen Curtner
Silver Bay Logging, Inc.
16119 SE 1st Street Apt. B17
Vancouver, Washington 98684

DEC Site Identifiers:
File No: 1529.38.022
Hazard ID: 25786

Regulatory Authority for Determination:
18 Alaska Administrative Code 75

Site Description and Background

The former Wrangell Sawmill located on Shoemaker Bay began operating in the mid-1950s, processing lumber for shipment to Japan, and carrying on the legacy of Wrangell's sawmill operations that had begun in 1889.

Figure 1: Alaska Pulp Corporation: circa 1950's - estimated date (Photo: by Frank Roppel)

The mill site covers approximately 50-acres. Of that, 22-acres is paved with asphalt or concrete and drains into a large oil/water separator before discharging into Shoemaker Bay. North of the mill site is a 7-acre area known as Mt. Seley. In 1991, it was capped with a 10-18-inch layer of compacted clay and rock and then covered with a 12-30-inch layer of protective shot rock.

The facility was operated by the Alaska Pulp Corporation until 1995, and employed as many as 240 workers and 32 longshoremen during its peak. In 1995, due to declining timber sales, the facility was sold to Richard Buhler of Silver Bay Logging.

Prior to Silver Bay Logging's purchase, thirteen environmental areas were inspected in response to questions and issues raised that resulted with Southeast Management Service's (SMS) inspection on 9/24-27/1996. Fifteen soil and concrete samples along with six water samples were collected in addition to an underwater evaluation of the mill's shoreline. SMS concluded that no significant environmental concerns or problems appeared present on the Sawmill site at this time.

Silver Bay Logging re-opened the Mill in 1998 which carried on limited operations until 2008.

After nearly a decade, the Silver Bay Logging, Inc., finally ceased operating the mill. The decommissioning, demolition and removal of the lumber yard's processing and operational facilities began shortly after its closure. Little remained on the property except for concrete foundations and a few buildings. As the Sawmill began to wind down operations in 2006, a Phase I Environmental Evaluation (Phase I) was completed by Nortech Environmental Engineering & Industrial Hygiene Consultants (Nortech). The Phase I investigated the property to determine past or present contamination both on-site and what could have impacted adjacent properties. The Phase I concluded that the primary environmental concern was petroleum contamination in the surface soils at the sort yard tank farm. The stained surface soils were linked to poorly sealed fittings in the transfer lines connected to the tanks. Nortech recommended characterization of the surface and subsurface soils for gasoline residual organics (GRO), diesel range organics (DRO), residual range organics (RRO), benzene, ethylbenzene, toluene, and total xylenes (BTEX) and polyaromatic hydrocarbons (PAHs). Nortech also concluded Silver Bay

needed to take care of the abandoned miscellaneous tanks, drums, batteries and debris littered around the facility and Mt. Seley.

A Phase II Environmental Site Assessment (Phase II) was requested by Hoffman & Blasco, Inc., who represented Silver Bay Logging, Inc. as legal counsel. Nortech carried out the Phase II on 10/12-13/2011 to evaluate the environmental conditions identified in their 2006 Phase I Environmental Evaluation. Sixty samples from the sawmill site and Mt. Seley were collected for field screening and 14 were submitted for laboratory analysis. The results indicated that contaminated soils exceeding the DEC's cleanup levels existed on-site. The Wrangell Sawmill was added to the Contaminated Sites Program (CSP) database on December 13, 2011.

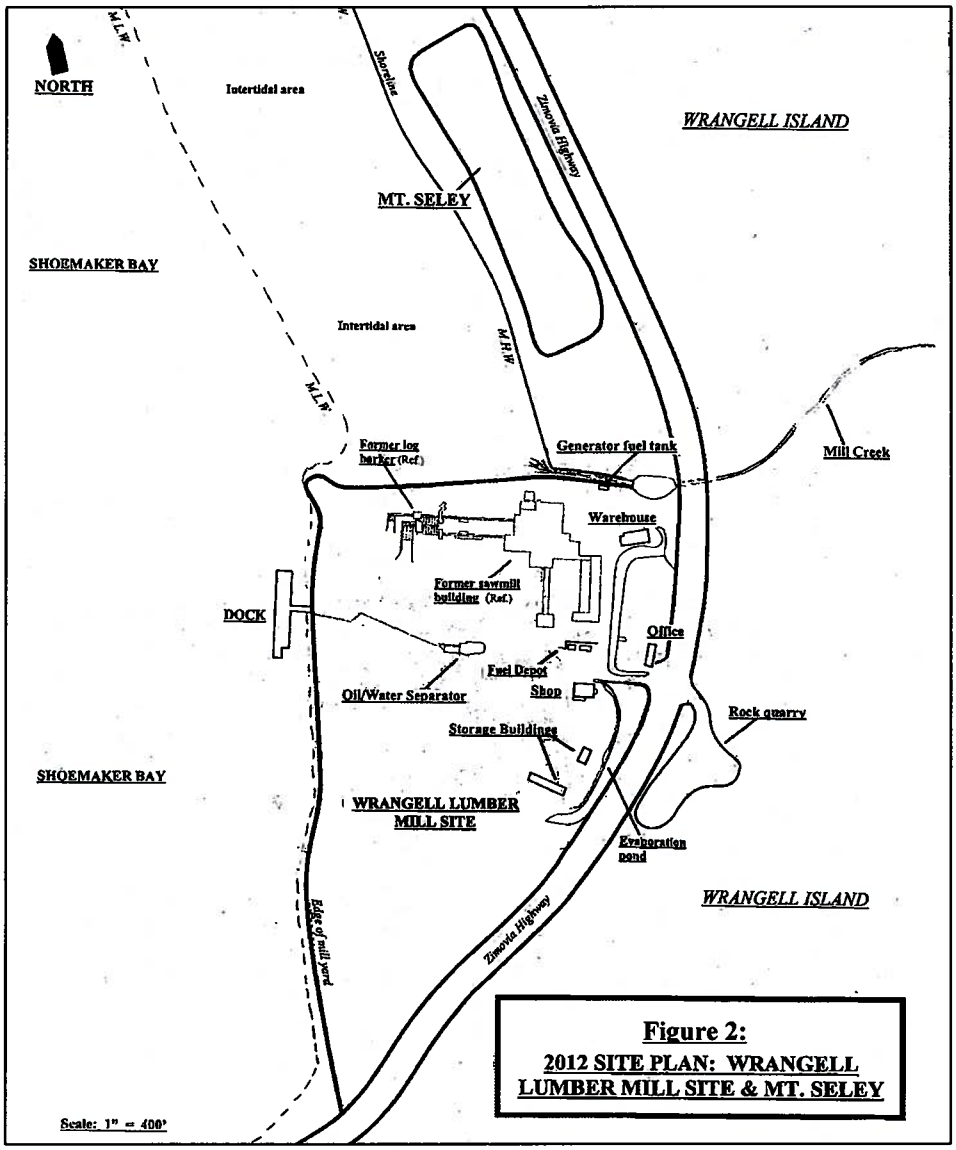


Figure 2:
2012 SITE PLAN: WRANGELL LUMBER MILL SITE & MT. SELEY

Contaminants of Concern

The following petroleum contaminants of concern (those above approved cleanup levels) were identified during the course of the site investigations summarized in the Characterization and Cleanup Activities section of this decision letter.

- Diesel Range Organics (DRO)
- Residual Range Organics (RRO)
- Gasoline Range Organics (GRO)

Diesel range organics (DRO), RRO, and GRO were detected in soil above the ingestion cleanup levels established in 18 AAC 75.341 (d), Table B2. The gasoline compounds benzene, ethylbenzene, toluene, and xylenes (total) were detected but at concentrations well below DEC cleanup levels. Laboratory analysis also confirmed areas suspected for RCRA-8 metals and polyaromatic hydrocarbons (PAHs) met DEC cleanup levels.

Cleanup Levels

Soil cleanup levels approved for this site are Method Two, Over 40 inch Zone, Direct Contact, as set forth in 18 AAC 341(d), Table B2 Petroleum Hydrocarbon Cleanup Levels.

Contaminant	*Cleanup Level (mg/kg)*
Diesel Range Organics	8,250
Residual Range Organics	8,300
Gasoline Range Organics	1,400

The entire mill site was built on filled tidelands and is immediately adjacent to steep uplands; thus, no useable groundwater aquifer is present. Migration to groundwater soil cleanup levels are therefore not applicable for this site. However, contamination in soil at the site may not cause an exceedance of the surface water quality standards under 18 AAC 70. These criteria are:

Contaminant	Criteria
TAqH	15 ug/L
TAH	10 ug/L
Petroleum, Oil and Grease	Shall not produce a sheen on surface water

Characterization and Cleanup Activities

Characterization and cleanup activities conducted under the regulatory authority of the Contaminated Sites Program began in 2012. These activities are described below:

DEC sent Mr. Dick Buhler, owner of Silver Bay Logging, a Cleanup Plan Request letter in March 2012 formally requesting a work plan to address the known areas of contamination at the site. On March 26, 2012, Tom Hanna of Southeast Management Services (SMS) and DEC staff visited the Wrangell Lumber

mill facility to inspect the areas described in the Nortech reports. Of note, significant changes to the property had occurred in between the 2005 Phase I and 2011 Phase II reports by Nortech. This included deconstruction and removal of most of the buildings and structures. Most of the site's tanks and associated pipes, and other facility equipment had also been removed; however, the collection and storage of numerous fuel storage tanks, drums, propane cylinders, and lead acid batteries from the mill's obsolete satellite logging camps were dispersed across the Sawmill property and on Mt. Seley. Based on the site visit, eleven areas of concern were identified. In April 2012, SMS prepared a *Soil Cleanup and Closure Plan* to address the eleven areas of environmental concern identified in Nortech's Phase I and Phase II reports. Contaminated material was proposed for excavation from eight of the areas and was to be bioremediated on-site in a rock quarry on the uphill side of Zimovia Highway (still a part of the mill's property). The other three areas/compliance issues identified but not expected to be addressed were; years of operation and general household issues; the absence of a Spill Prevention, Control and Countermeasure (SPCC) Plan; and the Berger crane area.

A SPCC Plan was no longer required for the facility because it was in its final stages of demolition and the two remaining fuel tanks would be removed once the cleanup of the mill site is complete. The Berger crane had been removed since the 2011 report. SMS took a laboratory sample that showed cleanup criteria had been met.

DEC approved the submitted cleanup plan and excavations began during May and June 2012. As soon as excavation work commenced, it was immediately discovered that the volume of contaminated soil would be considerably larger than originally anticipated. As a result, the contaminated stockpile was relocated to a cleared concrete area on the mill site property that was large enough to accommodate the soil volumes. The modified cleanup area is a pre-existing concrete pad contoured and culverted to drain surface water runoff to the oil/water separator facility for treatment before discharge into Shoemaker Bay. Because of this, the stockpiles were not required to be lined or covered.

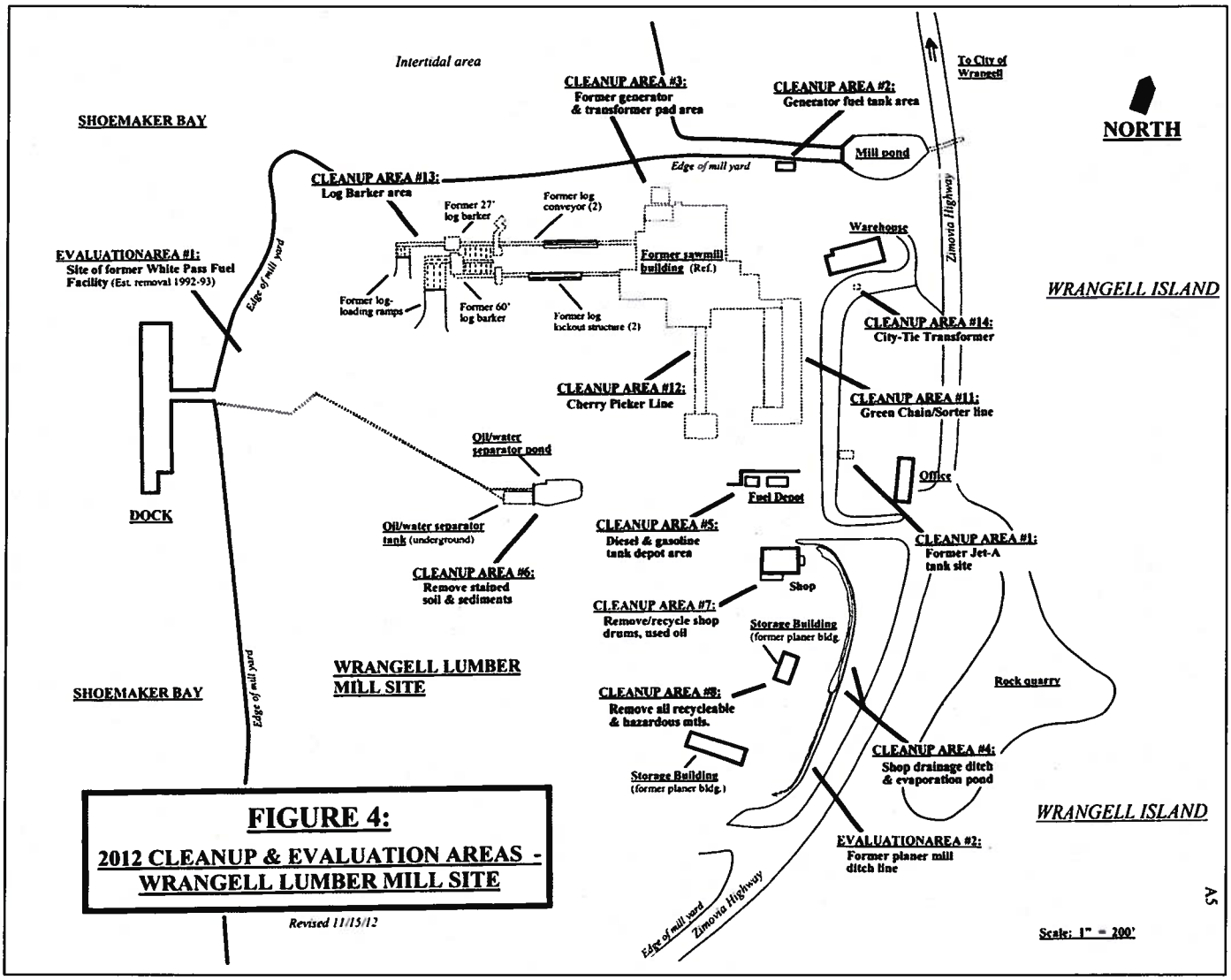
In June 2012, DEC requested an amended cleanup plan to address the changed cleanup conditions at the site. Levels of GRO above cleanup criteria were discovered at the fuel depot site, adding GRO as a new contaminant of concern. Furthermore, several issues warranted documentation in a revised Cleanup Plan. These included: an entirely new contaminated site discovered at the green chain/sorter line when dark-stained surface soil was found; results of shallow hand excavations revealed the presence of oily contaminated soils; increased volume of contaminated soils; and the relocation of the stockpile (biocell staging area).

The areas identified by the Nortech Reports and the newly discovered site confirmed by SMS are as follows:

1. Office Jet-A tank site
2. Generator tank site
3. Emergency Generator/Transformer Pad site
4. Shop drainage ditch and pond site
5. Fuel Depot
6. Oil/water separator
7. Mt. Seley Test Pit # 3 (TP3)/
8. Mt. Seley Test Pit # 8 (TP8)
9. Green Chain/ Sorter Line

2012 Excavations

The following sections detail the cleanup work done at multiple areas identified across the Wrangell Sawmill property. Figure 4 below depicts these areas.



Area 1- Office Jet-A tank site: The site was excavated on 7/1/12, leaving an 8'x30'x4.5' hole directly under the tank location. Sample results of the excavated stockpile showed low detections of DRO and RRO, 11-120 mg/kg and 52-110 mg/kg respectively. The stockpiled material was then used as backfill and the area was confirmed to meet cleanup criteria. No soils were removed for bioremediation.

Area 2- Generator tank site: The site was excavated on 5/17/12 once the concrete foundation was moved back. After excavating 12"-18" directly under the tank's former discharge pipe location, little contamination was found. Confirmation samples for DRO and RRO were below cleanup levels at 160-180mg/kg and 220-440 mg/kg, respectively. The area was confirmed to meet cleanup criteria and no soil was removed for bioremediation.

Area 3- Emergency generator/ transformer pad site: Initial excavations began on 5/15/12. After an 8' wide space was opened between the foundations of the generator building and sawmill transformer, a significant amount of contamination was found almost immediately. By 5/19/12, the excavation had extended to nearly 100' x 80' x 14' and eventually revealed four possible source areas. High levels of DRO and RRO directed the excavations early on but high concentrations of DRO drove the excavation and characterization until 8/22/12. Confirmation samples eventually revealed DRO levels that ranged from 31-3000 mg/kg. The emergency/ transformer pad site was also evaluated for GRO, BTEX, PCB's, and nine semi-volatile organic compounds (SVOCs). All GRO and BTEX samples were non-detect. One PCB analyte (Aroclor 1260) and the nine SVOCs were detected but all below DEC cleanup criteria.

Area #4- Shop Ditch Line and Sump: By 6/4/12 contaminated soil and sediments had been removed from the entire 254' ditch line and the sump sediment deposits were excavated to approximately 2' depth. Confirmation samples throughout the sump and ditch line showed low levels of DRO and RRO, 28-1,400 mg/kg and 110- 1,300 mg/kg, respectively.

The excavations to the evaporation pond behind the maintenance shop exposed high RRO contaminated soil, 10,000- 14,000 mg/kg. The upper end of the ponded area had been excavated to 4' depths and by 7/1/12, confirmation samples all met DRO and RRO cleanup criteria. The excavations, however for the lower end of the pond ended with a 20' x 70' x 4' area that eventually reached a clean clay layer and cleanup criteria by 7/21/12. Laboratory analyses for DRO, RRO, RCRA-8 metals, and SVOCs met DEC cleanup levels. A total of 400 c.y. of contaminated soils were removed and stockpiled.

Figure 3: The Shop Drainage Ditch and Shop site

Area #5- Fuel Depot: The fuel depot bulkhead was removed on 6/4/12. Considerable diesel-contaminated soil was found and excavated to 2.5' below the concrete surface until clean soil appeared. As the excavation continued toward the gasoline tanks location, high PID readings were encountered at a depth of 4-5 feet bgs. Characterization samples showed GRO concentrations were above DEC cleanup criteria. As a result, GRO and the gasoline compounds, BTEX, were added as potential COCs for this location. Excavations continued over the course of the summer. After a July 20, 2012 site visit, DEC recommended the evaluation of SVOCs and RCRA-8 metals for this area. On 9/16/12 the final excavations took place. An additional 10'-15' section of the concrete surface was removed and soil was excavated to 12' depths. Along the embankment DRO levels were 3,900-4,400mg/kg. All other COC confirmation samples confirmed RRO, GRO, BTEX, SVOCs, and RCRA-8 metals also were below cleanup levels. Approximately, 1,090 c.y. of contaminated soil was removed for treatment.

Figure 4: Fuel Depot, circa 2000

Area #6: Oil/water separator: The oil/water separator is designed for the gravity separation of hydrocarbons, petroleum products and settleable solids from water. The oil/water separator has been used at the mill to treat surface water runoff since 1992. Excavation activity began on 5/18/12 and started with the removal of all alder growth around the pond's sides. The sediment deposits on the north and south embankment were excavated to 2' depths. Characterization sampling on 6/5/12 showed that the south embankment met DRO/RRO cleanup criteria but additional excavation was needed along the north bank because RRO levels exceeded cleanup criteria. Excavations took place again on 6/29/12 and confirmation sampling resulted in DRO/RRO levels of 25 mg/kg-750 mg/kg and 130mg/kg- 3,600mg/kg, respectively. SVOCs and RCRA-8 metals were evaluated and were below DEC cleanup criteria. An estimated 115 c.y. of contaminated soil and sediments were removed and stockpiled for treatment.

Figure 5: 6/30/12 excavation of oil/water separator

Area #7- (TP3) & Area #8-(TP8): Excavations at the two sites located on the capped wood-waste disposal facility took place on 7/22/12. The first excavation took place at TP3 removing the 32"- thick clay/rock cap creating a 16' x 12' x 15' area that exposed fresh underlying sawdust and wood chips. Confirmation samples showed DRO and RRO levels of 1,100 mg/kg – 480 mg/kg, respectively and no soil was removed for treatment.

The location of TP8 was unclear in the Nortech report. To better understand where Nortech detected contamination, SMS made two 12'x 8'x 1.5' excavation pits. Confirmation samples for both of these excavation sites had very low DRO and RRO levels and no soil was removed for treatment.

Area #9- Green Chain/Sorter Line: Black stained sawdust and gravel were noticed on 5/19/12. Exploratory sampling found high DRO/RRO levels that lead to the start of a series of excavations that began on 6/29/12. A long 4'-wide concrete foundation structure[1] was uncovered and excavations were made on both sides of the foundation at 2-4'-depths until clean appearing soils were found. The foundation was identified as the former Sorter Line and paralleled the Green Chain Line, refer to Figure 6. The extent of the excavation continued 150' south of the starting point until clean soil was found. To the northeast, greasy-blue contaminated soil was excavated around the foundation and completely uncovered by the end of the day of 6/30/12. Characterization samples found contaminated sections of DRO and RRO well above DEC cleanup criteria. Substantial excavation had taken place in this area and sample results still showed contaminated soil remained. Excavations continued on 7/20/12 and removed the middle portion of the foundation structure and an additional 25' of the concrete foundation's north end. On 8/20/12, two areas of contaminated soil were removed in the north end-- the northwest corner and embankment and north of the sorter foundation. Confirmation samples found the bottom northwest corner met cleanup criteria, however the embankment still had RRO levels of 9,700 mg/kg. The last two excavations of 2012 took place on 9/15 and 10/25/2012. The 9/15/12 excavation removed an additional 2'-3' of contaminated soil just north of the sorter foundation. RRO levels along the southwest corner were above cleanup criteria. The northwest embankment, required the removal of a 5' x 20' x 3' area, however, DRO/RRO levels continued to be elevated at 11,000 mg/kg and 18,000 mg/kg, respectively. On 10/25/12, contaminated soil was removed from a 2.5'x 20'x14' area in front of the broken sorter foundation that ended at 10'-11' depths. Confirmation samples along the bottom and the

Figure 6: Looking south along the former green chain line area on 6/29/12. Excavations exposed 4'-wide foundations which later were discovered to be the former hydraulic-powered 'action pack'

Figure 7: View on 7/20/12- looking toward the north end of the green chain/ sorter line after the former 'action pack' foundation had been removed for continued excavation of contaminated soil

[1] The 10'x10'x18"-thick concrete foundation block uncovered during this excavation was identified later to be the mill's hydraulic power "action-pack" unit for the 150'-long lumber sorting line. The power 'action-pack' provided the sorter line with hydraulic fluid.

embankment showed levels of DRO/RRO at 1,700 mg/kg and 4,500 mg/kg respectively, meeting DEC cleanup criteria.

By the end of 2012, approximately 860 c.y. of contaminated soil had been removed from the Green Chain/Sorter Line area for bioremediation treatment. The majority of the area met DEC cleanup criteria with the exception of a small pocket in the northwest corner embankment, to be removed during the spring 2013 excavations.

Figure 8: 9/18/13 view of the former Green Chain/ Sorter line- now backfilled

Additional Characterization

In September 2012, DEC formally requested SMS to collect additional characterization data at five areas on the property. Further investigation of schematic diagrams and reports revealed areas on the mill property that had not been evaluated for the presence of petroleum contamination. The exploratory excavations identified three new areas to be excavated*:

10. The Cherry Pickers- assumed operated with petroleum*.
11. The Barker-assumed operated with petroleum*.
12. The City Tie- transformer operations*.

Area #10-The Cherry Pickers: The former cherry picker consisted of four hydraulically operated cranes on concrete blocks that removed and sorted sawed lumber from a long chain grate that came out of the sawmill building. After black stained soil and gravels were noticed, SMS hand-dug shallow excavations that confirmed the presence of petroleum contaminated soil. DEC included the Cherry Picker Site in the September letter based on this new found contaminated area.

Figure 9: View on 8/21/12 looking toward the south-end of the former cherry picker line.

Figure 10: 9/18/13 view of the former Cherry Picker Line- Now backfilled

The series of excavations began on 8/20/12, starting at the south-end of the former cherry picker line that opened up an area approximately 2'x4'x50'. A characterization sample taken at a 1' depth had a high DRO level of 26,000 mg/kg thus prompting the continued excavation activities. By the time excavations reached the north end, a 188'-long excavation had been overseen by SMS. Confirmation samples showed that four areas

would needed further removal action. In September 2012, excavations continued to the northeast and northwest locations and all confirmation samples in these areas met DRO/RRO cleanup levels. To the south, several sections continued to remain above cleanup criteria that would require additional cleanup activity. On 10/26/12, a concrete block that persistently revealed contaminated soil was broken back 12' and the embankment was excavated along a 20' length at a 6'-depth. The newly exposed soil confirmed that DRO/RRO levels of 870-3,300mg/kg- 170-6,200 mg/kg respectively met regulatory compliance. Approximately 1,040 c.y. of contaminated materials were removed and stockpiled for treatment. SVOCs and RCRA-8 metals were also evaluated and were below DEC cleanup levels.

Area #11- City-Tie Transformer site: Four 8"- 12"-deep soil samples were taken along the periphery of the existing concrete foundation block that remained at the former city-tie transformer site. The exploratory samples showed two upgradient DRO levels of 19,000 mg/kg and 33,000 mg/kg and RRO levels of 8,200 mg/kg; the latter which was just below DEC cleanup criteria. The samples downgradient of the pad had very low DRO/RRO levels meeting cleanup levels. Excavations began on 10/26/12 along the south side and downslope of the transformer pad. Gray blue soil was removed to a 5'- depth bgs when clean looking muskeg soil was reached. Characterization samples showed DRO/RRO levels were elevated above regulatory compliance at 1.5 below ground surface (bgs). Pockets of contaminated soil found below the transformer pad's south side keep this site from meeting cleanup compliance in 2012. This contamination was addressed in 2013.

Figure 11: City-Tie Transformer Pad

Figure 12: The 10/26/12 view of the city-tie transformer site excavation

Area #12- Log Barker Area: The former barker area is located along the northwest corner of the mill site facility. All operating equipment had been removed by 2012 leaving only the two earth-filled log loading ramps. The 9/14/2012 exploratory excavations found contaminated soil within 1' bgs of the surface. A characterization sample taken 2.5' bgs had DRO/RRO levels of 10,000 mg/kg and 17,000 mg/kg located under the south log conveyor. Excavations extended eastward to 9'-depths and 143' of the original starting point. DRO/RRO cleanup criteria were met along the north

Figure 13: The 10/24/12 view of the log barker area. Arrow in the back shows the log kickout structure and lower arrow indicates the point of origin.

embankment and excavation bottom. Substantial contamination remained along the west and south embankments guiding the excavations throughout September. By the time excavations had ceased for the year, the excavation area had enlarged to 160'-wide by up to 210'-long Three areas remained that required additional excavation in 2013 to meet DEC cleanup criteria.

Figure 14: July 2013 view of the extensive excavations that completed the cleanup of this area

Additional Areas of Concern

In the September 2012 DEC request, two potential areas of concern were evaluated that did not require excavation:

13. The White Pass fuel storage.
14. The Planer Mill- transformer operations.

The former White Pass fuel depot and the Planer Building surface water ditch line along the back side of the former Maintenance Shop and former Planer building can be seen in Figure 4 above. Analytical results for both sites found no indication of contaminated soil therefore no further analysis was required. A brief discussion of each is provided below.

Area #13- Former White Pass Fuel Depot Site: The former fuel depot was installed at the Sawmill sometime in the late-1980s and removed in 1992 or early 1993. The concrete pad where the White Pass Company fueled its trucks was still in place. Two trenches were dug on both sides of the upper end where the White Pass tankers were fueled. Laboratory analysis showed DRO/RRO levels of 440-870 mg/kg and

870- 1,900 mg/kg, respectively. Three additional exploratory excavations were made where the fuel storage tanks and product barrels were kept. Sample results again showed DRO/RRO were very low and easily met DEC cleanup criteria.

Area #14- Planer Building Ditch Line: The former planer mill's transformer area and the surface water drainage ditch line along the edge of the mill's asphalted road was evaluated on 9/15-16/2012. The planer mill's three transformers were located along the eastside of the northernmost storage building. The asphalt surface at the former transformer location sloped 50' down toward the Maintenance Shop's (*Area #4*) drainage ditch, where the planer ditch line began. No oil sheen or staining was observed on the surface. Laboratory samples were taken 14' downstream of the sump and directly below the edge of the asphalt surface and showed DRO/RRO levels were 250mg/kg and 1,100mg/kg. The ditch line made a 90° turn extending about 270' from the ditch line sump. DRO/RRO levels in the soil were 760 mg/kg and 3,900 mg/kg. A water sample was evaluated for GRO, BTEX, DRO, RRO, SVOCs and RCRA metals. All laboratory results confirmed the former planer building's transformer area and ditch line met DEC's cleanup criteria.

Hazardous Waste Disposal: In May 2012, Steve Haavig of Carson Dorn Inc., inspected and inventoried the Sawmill' s used oil, hazardous waste, and excess maintenance materials stored in various containers and drums. About 4,000 gallons of used oil was recycled locally as energy recovery. Eight of nine drums were taken to Wrangell Household Hazardous Waste Collection and consolidated into four drums for disposal. Some 20-30 lbs. of shattered battery pieces were bagged and removed. One drum remained because of disposal limitations per event but was disposed of during the 2013 Waste Collection event.

2013 Excavations

Three areas remained above DEC cleanup levels. The 2013 work at these areas is detailed below.

1.a. Log Barker Site- April 30, 2013: Excavations resumed on 4/30/13 with removal of the top concrete surface to the northwest corner embankment and the underlying 3' of fill. The embankment was excavated back 12' and down to a depth of 7' bgs until the visual signs of the contaminant layer were reduced. Confirmation samples showed DRO/RRO levels were 760- 5,600 mg/kg and 250 -900 mg/kg, respectively. 35-40 c.y. of contaminated soil was removed for treatment. The area near the north embankment floor removed 5 c.y. of contaminated soil. Two confirmation samples indicated cleanup criteria were met in this location. When the excavations along the ramp sidewall took place, the wood-&-pile sidewall partially collapsed and had to be removed. Approximately 10-15 c.y. of soil were removed for bioremediation and DRO/RRO confirmation samples were 83 mg/kg and 150 mg/kg, respectively.

2.a. Northwest Corner of Green Chain/Sorter Line- May 1, 2013: A 30'- long excavation, removed 10' of concrete foundation and then excavated to 2.5'-3.5' bgs. The four confirmation samples met regulatory criteria.

3.a. City-Tie Transformer Site - April 30, 2013: The thick brush along the southwest corner was cleared on 4/40/13. The pockets of contamination that remained were located and excavated. A layer of 3-4' of contaminated soil was removed along and under the concrete pad together with an area about fifteen feet away which was excavated to 4'-6'-depths until clean muskeg soil appeared. Nine confirmation samples were taken. Unexpectedly high DRO levels were encountered and the decision to excavate the area further was made and expected to continue the next morning.

3.b. Buried Oil Tank Removal- May 1-3, 2013: Continuing from the previous day's excavation, suspicious grayish soil with a diesel odor was encountered at the lower end of the city-tie transformer excavation and were identified for removal. Almost immediately into the excavations, the top of an unknown buried oil tank was discovered and punctured by the backhoe. Diesel began to flow but was quickly contained. The contents of the tank were slowly siphoned out, most of which was water. On 5/3/13, the tank was removed and revealed obvious contaminated soil. The soil was excavated to a depth of 6" below the tank and 1.5' along the east side of the footprint. In addition, the area of the confirmation sample site at the City-Tie Transformer site that did not meet cleanup criteria from the 4/30/13 work was also removed.

Twenty-six confirmation samples were taken at the city-tie transformer/buried tank area. Confirmation samples within both locations all met cleanup levels and nearly 200 c.y. of contaminated soil was removed for bioremediation treatment.

Water Quality Compliance

DEC requested that the water draining from the facility be sampled for compliance with the water quality criteria total aromatic hydrocarbons (TAH) and total aqueous hydrocarbons (TAqH). On July 23, 2013 SMS inspected the bioremediation area and the sampling options. Conclusions of the surface water drainage pathway inspection were:

- Surface water from the bioremediation treatment area flows through the oil/water separator pond through a system of drainage swales and culverts and therefore receives thorough treatment;
- No water was flowing in the open drainage ditch or the pipe that connected the culverts; and
- Sampling options were found to be infeasible and unsafe.

The surface water drainage area leading from the bioremediation area was inspected again on August 23, 2013 after a period of heavy rain fall. SMS observed only trickles of water at the discharge pipe between Biocell1 and 2. SMS concludes that the high organic content of the soils held onto the water during rainy periods and made up only a small portion of the total volume of water discharging into Zimovia Strait.

The oil/water separator is designed to capture oil droplets greater than 20 microns and limit oil (total petroleum) concentrations to less than 15 mg/l at a flow rate of 600 gal/min., effectively eliminating any sheen from exiting the oil/water separator and from entering Zimovia Strait. Point source discharge from the oil/water separator is required to be managed through a water discharge permit for any future facility at this site.

Bioremediation

DEC approved the vibratory screening of the 9,645 cubic yards of stockpiled contaminated material to 1" minus, thus reducing the volume of contaminated soil required for bioremediation treatment to a volume of 3,560 c.y. By June 1, 2013, all the screened material was distributed in a series of four biocells (Figure 15). Based on soil volume and concentration of petroleum hydrocarbons, 25,000 lbs of urea and 3,130 lbs of fertilizer were added to the cells and mixed thoroughly during the first pass of June 2013. On July 23, 2013, SMS took 15 shallow soil samples across the biocells as a status check of the progress made. The results, while not intending to be comprehensive, showed DRO/RRO levels below DEC cleanup criteria at levels of 1,600- 5,300 mg/kg and 1,300- 6,800 mg.kg. The biocells were turned and

tilled by Silver Bay Logging staff at least three times from June – August 2013. SMS inspected the biocells multiple times throughout the summer and took three analytical samples from Biocell #1 at 8"-10" depths. Again, all samples were below cleanup criteria. By September 2013, the biocell layout had increased from four to five cells with a soil thickness ranging from 24"-32". Confirmation sampling for the 5 biocells took place on 9/17-18/2013. A total of 111 samples were collected. The following tables, figures and digital images present the sampling results, data on volumes, and the locations and configuration of the cells. The final mean soil concentrations at the 95th upper confidence limit (UCL) are listed in Table 2. The final concentrations met the DRO (8,250 mg/kg) and RRO (8,300 mg/kg) cleanup levels for the site.

Table 1: Biocell Volumes and number confirmation of samples taken

Biocell #	Soil vol. c.y.	# of samples
1	800	25
2	710	22
3	650	20
4	650	23
5	750	21
Total:	**3,560**	**111**

Table 2: Statistical Results of the 95% UCL:

	Bio-Cell 1		**Bio-Cell 2**		**Bio-Cell 3**		**Bio-Cell 4**		**Bio-Cell 5**	
	DRO mg/kg	RRO mg/kg	DRO mg/kg	RRO mg/kg	DRO mg/kg	RRO mg/kg	DRO mg/kg	RRO mg/kg	DRO mg/kg	RRO mg/kg
Mean	2840	2664	3060	2491	2040	2495	1773	2209	2424	2890
Standard Deviation	634	561	1015	926	356	728	352	424	621	455
95% Confidence (+/-)	249	220	424	387	156	319	144	173	266	194
95% UCL (mean + confidence)	3089	2884	3484	2878	2196	2814	1917	2382	2689	3085

Table 3: Stockpile Soil Volumes *Before* and *After* Vibratory Screening:

Cleanup Area	Unscreened Soil Volumes (c.y.)	Estimated volume of screened soil to 2"-minus (c.y.)	Estimated Final 1"-minus soil volume (c.y.)	Total estimated Reduction %
Office Jet-A Tank Site	-	-	-	-
Generator Site	-	-	-	-
Generator/Transformer Pad Site	1,160	870	580	50
Shop Drainage Ditch & Pond Site	400	300	160	60
Oil/Water Separator Site	115	103	70	
Fuel Depot	1,090	870	690	47
Mt. Seley- test pit #8	-	-	-	-
Mt. Seley-test pit #3	-	-	-	-
Green Chain/Sorter Line site	860	690	430	53
Green chain/sorter line-2013 Excavations	30	20	15	50
Cherry Picker Line site	1,040	855	520	46
Log Barker Area	4,660	2,330	930	80
Log Barker 2013 Excavations	55	40	15	64
City-Tie Transformer site	35	32	30	45
City- Tie 2013 Excavations	200	150	100	50
Totals	**9,645**	**6,260**	**3,850**	**63%**

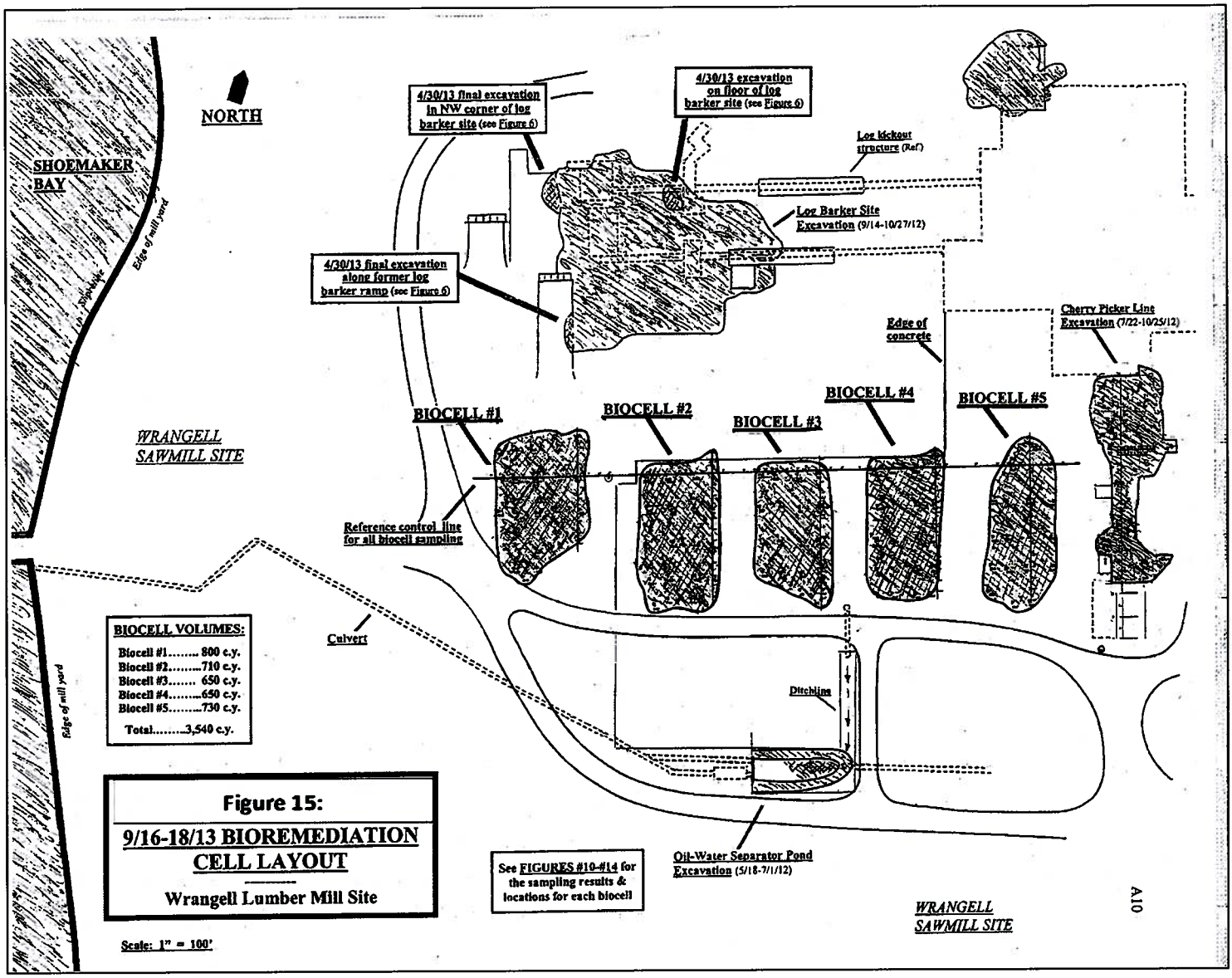

NORTH
SHOEMAKER BAY
Edge of mill yard
Shoreline
4/30/13 final excavation in NW corner of log barker site (see Figure 6)
4/30/13 excavation on floor of log barker site (see Figure 6)
Log kickout structure (Ref.)
Log Barker Site Excavation (9/14-10/27/12)
4/30/13 final excavation along former log barker ramp (see Figure 6)
Edge of concrete
Cherry Picker Line Excavation (7/22-10/25/12)
BIOCELL #1
BIOCELL #2
BIOCELL #3
BIOCELL #4
BIOCELL #5
WRANGELL SAWMILL SITE
Reference control line for all biocell sampling
Culvert
Ditchline
BIOCELL VOLUMES:
Biocell #1..... 800 c.y.
Biocell #2.....710 c.y.
Biocell #3..... 650 c.y.
Biocell #4.....650 c.y.
Biocell #5.....730 c.y.
Total.....3,540 c.y.
Figure 15:
9/16-18/13 BIOREMEDIATION CELL LAYOUT
Wrangell Lumber Mill Site
Scale: 1" = 100'
See FIGURES #10-#14 for the sampling results & locations for each biocell
Oil-Water Separator Pond Excavation (5/18-7/1/12)
WRANGELL SAWMILL SITE
A10

Figure 16: July 23 view showing the northeast corner of Biocell #3, where B3-5 and B3-6 were taken to determine current conditions

Figure 17: July 23 view showing 4 of the 5 Biocells that have been turned and tilled

Cumulative Risk Evaluation

Pursuant to 18 AAC 75.325(g), when detectable contamination remains on-site following a cleanup, a cumulative risk determination must be made that the risk from hazardous substances does not exceed a cumulative carcinogenic risk standard of 1 in 100,000 across all exposure pathways and does not exceed a cumulative noncarcinogenic risk standard at a hazard index of one across all exposure pathways. Based on a review of the environmental record, ADEC has determined that residual contaminant concentrations do not pose a cumulative human health risk.

Exposure Pathway Evaluation

Following investigation and cleanup at the site, exposure to the remaining contaminants was evaluated using DEC's Exposure Tracking Model (ETM). Exposure pathways are the conduits by which contamination may reach human or ecological receptors. ETM results show all pathways to be Pathway Incomplete. A summary of this pathway evaluation is included in Table 4.

Table 4 – Exposure Pathway Evaluation

Pathway	Result	Explanation
Surface Soil Contact	Pathway Incomplete	Concentrations of DRO/RRO are below the ingestion levels listed in 18 AAC 75.341 Table B2. The treated soil has been landspread and used as fill on site and the remaining levels of contamination are below direct contact levels.
Sub-Surface Soil Contact	Pathway Incomplete	Concentrations of DRO/RRO are below the ingestion levels listed in 18 AAC 75.341 Table B2. The treated soil will be landspread and/or used as fill on site and the remaining levels of contamination are below direct contact levels.
Inhalation – Outdoor Air	Pathway Incomplete	Volatile compounds are not present in surface or subsurface soil above commercial or residential target levels.
Inhalation – Indoor Air (vapor intrusion)	Pathway Incomplete	There are no buildings onsite. Any remaining contamination is well below inhalation levels.
Groundwater Ingestion	Pathway Incomplete	Site is connected to the City of Wrangell Drinking water system. The entire mill site is built on filled tidelands and thus, no useable groundwater aquifer is present.
Surface Water Ingestion	Pathway Incomplete	Surface water is not used as a drinking water source in the vicinity of the site. The commercial buildings in the area are served by city water.
Wild and Farmed Foods Ingestion	Pathway Incomplete	The mill site is an industrial complex and no wild foods would be collected here. The area surrounding the mill site has the potential for humans to hunt, berry pick and/or wild foods ingestion, however there is no off site contamination source and this pathway is incomplete. Contaminants of concern do not have the potential to bioaccumulate in plants or animals.
Exposure to Ecological Receptors	Pathway Incomplete	Shoemaker Bay is located next to this facility. No sheens were detected in the marine waters during the course of the cleanup effort. Following cleanup, remediated soils containing only weathered, non-volatile petroleum hydrocarbons are isolated both in upland areas on the site as well as by distance from any direct migration pathway to marine waters and therefore pose no risk to ecological receptors.

Summary and DEC Decision

Following demolition of the mill in 2011, environmental assessment and cleanup commenced to prepare the property for sale and redevelopment. Contamination at the site was primarily petroleum, but was heavy and widespread at 11 source areas across the facility. Cleanup activities throughout 2012 and 2013 resulted in the excavation of 9,360 cubic yards of contaminated soil. Bioremediation of this material and final confirmatory sampling show DRO and RRO levels are below the ingestion cleanup levels designated for the site and established in 18 AAC 75.341 (d), Table B2. Some of the remediated material will be used along the embankment behind the office and to fill depressions on the site or used as cover elsewhere on the facility. About 1,000 yards will remain for other uses onsite.

DEC appreciates the continued efforts of Silver Bay Logging, Inc. to help coordinate the cleanup of the Wrangell Sawmill Site. A strong and cooperative relationship between Silver Bay Logging and DEC resulted in a cleanup that was both expeditious and thorough. Based on the information available, DEC has determined that the site is no longer a risk to human health or the environment and no further assessment or cleanup action is required. This site will receive a "Closed" designation on the Contaminated Sites Database, subject to the following standard conditions.

Standard Conditions

1. Any proposal to transport soil or groundwater off-site requires DEC approval in accordance with 18 AAC 75.325(i). A "site" [as defined by 18 AAC 75.990 (115)] means an area that is contaminated, including areas contaminated by the migration of hazardous substances from a source area, regardless of property ownership.

2. Movement or use of contaminated material in a manner that results in a violation of 18 AAC 70 water quality standards is prohibited.

This determination is in accordance with 18 AAC 75.380 and does not preclude DEC from requiring additional assessment and/or cleanup action if future information indicates that this site may pose an unacceptable risk to human health or the environment.

Appeal

Any person who disagrees with this decision may request an adjudicatory hearing in accordance with 18 AAC 15.195 – 18 AAC 15.340 or an informal review by the Division Director in accordance with 18 AAC 15.185. Informal review requests must be delivered to the Division Director, 410 Willoughby Avenue, Suite 303, Juneau, Alaska 99801, within 15 days after receiving the department's decision reviewable under this section. Adjudicatory hearing requests must be delivered to the Commissioner of the Department of Environmental Conservation, 410 Willoughby Avenue, Suite 303, Juneau, Alaska 99801, within 30 days after the date of issuance of this letter, or within 30 days after the department issues a final decision under 18 AAC 15.185. If a hearing is not requested within 30 days, the right to appeal is waived.

If you have questions about this closure decision, please feel free to contact Sally Schlichting at (907) 465-5076.

Sincerely,

For: Denise Elston
Project Manager

cc: Tom Hanna, SE Management Services, via email
Jeff Jabusch, Borough Manager, City & Borough of Wrangell, via email
Paul Hoffman, Attorney, Hoffman and Blasco, via email
Sally Schlichting, DEC Contaminated Sites Program, SE Field Operations, via email
DEC SPAR Cost Recovery, via email