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July 13, 2012

Denise Elston
Project Manager
Contaminated Sites Remediation Program
Alaska Department of Environmental Conservation
410 Willoughby Avenue, Suite 105
Juneau, Alaska 99801

Dear Ms. Elston:

On behalf of Silver Bay Logging Inc., attached for your review and approval is the document entitled, *7/12 Amendments to the Cleanup Plan - Wrangell Lumber Mill Site*.

This amended cleanup plan was requested in your 6/26/12 letter, to address the increased contaminated soil volumes found at several cleanup sites, and a changed location for stockpiling and bioremediating the excavated soil. It includes an abbreviated summary of cleanup progress thus far, describes an additional cleanup site, proposes gasoline cleanup criteria, and provides a revised soil bioremediation plan. A more complete description and summary of all cleanup sites, including photos and sampling results, will be included in the final cleanup report.

We are looking forward to your approval, and by all means don't hesitate to call if you need further information or wish to discuss any aspect of the cleanup status..

Sincerely yours,



Thomas R. Hanna

Enclosure: Document entitled, *7/12 Amendments to the Cleanup Plan - Wrangell Lumber Mill Site*

cc: Dick Bueller, Silver Bay Logging, Inc.
Paul Hoffman, Hoffman & Blasco, LLC

7/12 AMENDMENTS TO THE CLEANUP PLAN -
WRANGELL LUMBER MILL SITE

6.5-Mile Zimovia Highway
Wrangell, Alaska

July 2012

Prepared for
Silver Bay Logging, Inc.
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**7/12 AMENDMENTS TO THE CLEANUP PLAN -
WRANGELL LUMBER MILL SITE**

July 2012

	<u>Page No.</u>
I. OVERVIEW.....	1
II. SITE DESCRIPTION	1
III. 5/15-7/1/12 SITE EXCAVATION STATUS.....	2
1. 7/1/12 Jet-A Tank Site	2
2. 5/17/12 Generator Tank Site	2
3. 5/15-6/30/12 Transformer/Generator Sites	2
4. 5/19-7/1/12 Shop Ditch Line & Sump	2
5. 6/4-8/12 Fuel Depot	3
6. 5/18-7/1/12 Oil/Water Separator Pond	3
7. 6/5-6/30/12 Green Chain Line	3
IV. AMENDED CLEANUP CRITERIA	4
V. SOIL BIOREMEDIATION PLAN.....	5
1. Changed Bioremediation Site	5
2. Bioremediation Quantities	5
3. Confirmation Sampling	5
VI. PROJECTED SCHEDULE & FINAL REPORT.....	6
VIII. APPENDICES	
<i>Appendix A: Site Figures</i>	<i>A1-A4</i>
<i>Appendix B: 3/26/12 Site Photographs.....</i>	<i>B1-B19</i>
<i>Appendix C: Urea/Fertilizer Estimated Quantities.....</i>	<i>C1</i>
<i>Appendix D: 6/30/12 ADEC letter requesting an amended cleanup plan.....</i>	<i>D1-D3</i>

7/12 AMENDMENTS TO THE CLEANUP PLAN - WRANGELL LUMBER MILL SITE

July 2012

I. OVERVIEW

The Wrangell Lumber mill site's cleanup plan was submitted to the Alaska Dept. of Environmental Conservation (ADEC) for review and approval on 4/9/12. It proposed to excavate and clean eight contaminated soil areas to ADEC cleanup criteria, and dispose of all remaining used oil and hazardous waste stored at the mill site. ADEC approved the cleanup plan on 4/30/12, and cleanup excavations took place on 5/15-19/12, 6/4-5/12, and 6/29-7/1/12. All hazardous wastes and used oil volumes were inventoried by Carson Dorn Inc. on 4/18/12, and all but one of the drums with hazardous waste were taken to the Wrangell Household Hazardous Waste Collection Event on 5/19/12 for disposal.

Once excavations began at the mill site, considerably larger-than-expected volumes of contaminated soil were encountered. As a result, the site for stockpiling and bioremediating the excavated soils was moved to a vacant concreted area at the mill site where there was enough room to accommodate the soil volumes. In addition, a high gasoline concentration was encountered during the fuel depot excavation, and a new contaminated area was found at the mill's former green chain line. On 6/26/12, ADEC requested an amended cleanup plan to address the changed cleanup conditions (Appendix D).

This report provides an abbreviated summary of cleanup progress thus far, describes the additional cleanup site at the green chain line, proposes gasoline cleanup criteria for the fuel depot site, and presents a revised soil bioremediation plan. A more complete description and summary of all cleanup sites, including photos and sampling results, will be included in the final cleanup report.

II. SITE DESCRIPTION

Figure 1 (page A2) provides a map of the City of Wrangell vicinity and the Wrangell Lumber mill site, located 6.5 miles south of the city along the shore of Shoemaker Bay. Figure 2 (page A3) provides a 1990's site plan of the Wrangell Lumber sawmill when it was in full operation. The entire mill site covers about 50 acres, of which 22 acres is paved with asphalt or concrete and drains into a large oil/water separator before discharging to Shoemaker Bay. Also shown on Figure 2 is the closed Mt. Seley woodwaste disposal site immediately north of the mill. Its 7-acre top surface was capped in 1991 with a 10"-18" thick layer of compacted clay and rock that was topped with a 1'-2.5'-thick layer of protective 18"-minus shot rock.

After the sawmill shut down in 2007, the large sawmill building, woodwaste boiler, powerhouse, emergency generator building, lumber processing facilities, planer facility and a large log bundle crane were demolished or removed. Little remains except for their concrete foundations. Figure 3 (page A4) provides a site plan of how the Wrangell Lumber mill site appeared in early May 2012, just prior to the beginning of cleanup excavations. The only buildings remaining were the mill office, equipment repair shop, warehouse, and two storage buildings created out of the former planer facility.

III. 5/15-7/1/12 SITE EXCAVATION STATUS

As of 7/1/12, six of the eight soil site excavations either were completed or were well on the way to completion. The following provides an abbreviated summary of the excavation status at all of the Wrangell Lumber mill sites:

1. Jet-A fuel tank site (*Cleanup Area #1*). The Jet-A tank site near the Wrangell Lumber mill office was excavated on 7/1/12. Photos on page B2 show the 4.5'-deep excavation. A slight diesel odor was detected in about 2-3 c.y. of the excavated gray-colored soils, which were set aside and sampled to determine if cleanup criteria were met. A somewhat larger pile of discolored soil (about 5-6 c.y.) also was sampled, as was the final excavation.
2. Generator fuel tank (*Cleanup Area #2*). The 14'-long block of concrete that had supported the electric generator fuel tank's east end was moved back 30" on 5/17/12. The area under where the tank's discharge pipe had been located was excavated to 12"-18", but there was very little indication of any contamination. Two samples were taken and had very low DRO and RRO levels of 160-180 mg/kg and 220-440 mg/kg. Consequently no soils were removed and the site was confirmed to meet cleanup criteria.
3. Transformer/generator pad site (*Cleanup Area #3*). The transformer/generator pad site cleanup began on 5/15/12, and quickly became a major excavation. The excavation went to 11'-14 depths, uncovered numerous pipes and culverts, and about 1,100 c.y. of contaminated soil were removed. Confirmation sampling showed that all but one area directly under the former transformer pad's discharge sump to meet cleanup criteria. This 11'-deep site was re-excavated and sampled once again on 6/29/12 (Photos on pages B4-B7).
4. Shop ditch & sump (*Cleanup Area #4*). Excavations at the Wrangell Lumber mill's shop drainage ditch and sump (Photo #12, page B7) began soon after 5/19/12. The sump's sediment deposits were excavated to about a 2' depth. Contaminated soils also were removed throughout the 254'-long ditch line, including from along and under the edge of the adjacent asphalt (Photo #13, page B8).

Confirmation sampling showed that the ditch line and sump area met the cleanup criteria. However, contaminated soil still remained at the end of the ditch behind the shop building (photos on page B9). It is expected that this last area will be completed in July.

-
5. Fuel depot (Cleanup Area #5). Excavations at the Wrangell Lumber mill's fuel depot began on 6/4/12 (photos on page B10). Considerable diesel-contaminated soil was found starting at about a 2.5' depth beneath where the diesel tank's discharge pipe and dispenser had been located. Much of the fuel depot's wood bulkhead was removed, and contaminated soil removal was excavated to about 2.5' below the concrete pavement surface before clean-appearing soil began to appear. As the excavations continued toward the west end where the gasoline tanks had been located, high PID readings of 150-260 ppm unexpectedly were encountered about 4'-5' beneath the concrete surface level (Photo #19, page B11). Characterization sample FD-1 had a high GRO level of 1,500 mg/kg which was slightly over the Method-2 ingestion-based criteria of 1,400 mg/kg, and its DRO level was 6,800 mg/kg. However, sample FD-2 was taken several feet lower and was non-detect for both GRO and DRO.

Excavations continued to 10' depths on the site's west end, until stopped by Silver Bay Logging on about 6/8/12 so that better characterization sampling could be carried out. The entire excavation area was sampled on 6/29-30/12 (photos on page B11), the results of which will better determine the extent and location of further excavations.

6. Oil/water separator pond (Cleanup Area #6). Excavations at the oil/water separator pond began with the removal of all alder growth around the pond sides on 5/18/12. The south embankment then was smoothed as the contaminated soils along the waterline were methodically excavated as shown in Photo #22 (page B12). The sediment deposits in the back end of the pond were excavated to 1'-2' depths, after which the north embankment's waterline area was excavated (photos on page B13). Confirmation sampling showed that the north embankment needed further excavation, which was completed and sampled on 6/29-30/12.
6. Mt. Seley tank storage areas (Cleanup Areas #9-#10). No excavations took place at the Mt. Seley cleanup sites (ref. [Figure 5](#), page A6), but will be scheduled as soon as the other cleanup areas at the mill site have been completed.
7. Green Chain Line (Cleanup Area #11). [Figure 4](#) (page A5) shows the green chain line area of the former Wrangell Lumber sawmill, where sawn lumber product exited the mill and was sorted/banded for export. Photo #27 (page B15) shows the area when it was inspected on 5/19/12 and found to have dark stained surface soil. Several shallow hand excavations confirmed the presence of oily contaminated soil, and two soil samples taken from a 2'-deep exploratory excavation on 6/5/12 (Photo #28) had high DRO levels of 5,500-11,000 mg/kg and RRO levels of 15,000-25,000 mg/kg.

Excavations to 1'-5' depths were completed on 6/29-30/12 (photos on page B16), eventually covering an area 165' long and up to 45' wide on its north end. The excavated soils consisted primarily of hard compacted shot rock fill, which appeared to have limited the oil contamination's ability to extend very far under the concrete foundations. The results from the 35 confirmation samples taken on 7/1/12 will determine if further excavation will be necessary.

In addition to the excavation activity, Steve Haavig from Carson Dorn, Inc. of Juneau AK inspected and inventoried the Wrangell Lumber mill's used oil, hazardous waste and excess maintenance materials on 4/18/12. The oil in the mill's 4,000-gallon used oil tank was found to meet the used oil burning specifications, and therefore will be used locally as fuel for energy recovery. On 5/19/12, eight of the nine drums containing hazardous wastes were

taken to the Wrangell Household Hazardous Waste Collection Event and consolidated into four drums for disposal. The one remaining drum is about half filled with dried green paint and rags. It likely will be stored until it can be taken to next year's Wrangell Household Hazardous Waste Collection Event for disposal.¹

IV. AMENDED CLEANUP CRITERIA

Based on the results of Nortech Environmental Engineering's 2011 Phase-II environmental site assessment, the 4/12 cleanup plan identified the contaminants of concern for the Wrangell Lumber mill site to be (1) diesel range organics (DRO), (2) residual range organics (RRO) for all cleanup sites, and (3) semivolatile organics (SVOC) for the equipment shop drainage ditch and its evaporation pond. However, a high GRO sampling result was found during the initial 6/4-5/12 excavations at the fuel deposit. Consequently the Wrangell Lumber mill site's contaminants of concern have been modified to include GRO and the gasoline BETX compounds. Those contaminants, along with selected SVOC compounds, are summarized in Table 1 below.

Table 1: Method-2 Health-Related Cleanup Criteria - Wrangell Lumber Mill Site	
a. GRO.....	1,400 mg/kg
b. DRO.....	8,250 mg/kg
c. RRO.....	8,300 mg/kg
d. BETX compounds:	
1. Benzene	120 mg/kg
2. Ethylbenzene	8,300 mg/kg
3. Toluene.....	17,000 mg/kg
4. Total xylenes.....	166,000 mg/kg
e. Selected SVOC compounds:	
1. Benzo(a)anthracene.....	9,000 ug/kg
2. Benzo(b)fluoranthene.....	9,000 ug/kg
3. Benzo(a)pyrene	900 ug/kg
4. Naphthalene	1,700 mg/kg
5. Fluorene	3,300 mg/kg
6. Pyrene.....	2,500 mg/kg
7. Dibenzofuran.....	170 mg/kg

¹ / Note: Only 4 drums of hazardous wastes can be accepted at the household hazardous waste collection event per year from a "Conditionally Exempt Small Quantity Generator" such as the Wrangell Lumber mill. Unfortunately the contents of the mill site's last drum of hazardous waste could not be fit into the 4-drum limit and will need to be stored until next year.

V. SOIL BIOREMEDIATION PLAN

V.1. Changed Bioremediation Site

Figure 4 (page A5) shows the Wrangell Lumber rock quarry on the uphill side of Zimovia Highway from the mill site, where the bioremediation facility was first proposed. The intended bioremediation area was cleared and leveled, then initially used for stockpiling the first 7 truckloads of contaminated soil on 5/15/12 (Photo #33, page B18). However, the excavations quickly generated larger contaminated soil volumes than the quarry space could handle. As a result, the contaminated soil stockpile was relocated to a cleared concreted area at the mill site.

Figure 6 (page A7) shows the new stockpile/bioremediation area just north of the oil/water separator, where the excavated contaminated soils are now stockpiled (photos on page B17). The bioremediation area is approximately 135'-wide by about 400' long. It is sufficiently large to spread the estimated 3,000 - 4,000 c.y. of contaminated soil in an 18"-24" thick layer. The entire area is contoured and culverted to drain any surface water runoff directly to the mill's oil/water separator facility for treatment.

V.2. Bioremediation Quantities

As of 7/1/12, 2,600 c.y. of contaminated soil have been vibratory-screened to 2"-minus, removing about 600 c.y. of oversized rock. The screened-out rock currently is stockpiled along the west end of the proposed bioremediation area, and will be moved shortly to an out-of-the way location. An additional 1,000 c.y. of unscreened contaminated soil is stockpiled from the more recent excavations at the shop ditch/sump, green chain line and oil/water separator pond. It also is being screened to remove the oversize rock, estimated to be 300 c.y.

Table 2 (Appendix C) summarizes the needed volumes of urea (47% nitrogen) and fertilizer (46% phosphorus) to bioremediate the 3,000 - 3,500 c.y. of screened contaminated soil that is expected to need treatment. The urea and fertilizer are expected to be ordered in the next 1-2 weeks. The stockpiled contaminated soil will be spread in an 18"-24" layer to create the bioremediation cell(s), and the urea and fertilizer will be thoroughly mixed into the soil layer in the first part of August.

Turning over and tilling of the soil is proposed to be repeated about every two weeks to promote the bioremediation process and increase exposure to sunlight. Plastic sheeting of a minimum 6-mil thickness will be placed over the bioremediation cell during heavy rain periods, but will be left off for sunny or light rainfall days.

V.3. Confirmation Sampling

Confirmation sampling across the entire bioremediation cell is anticipated to take place in late fall or early winter, and will be sampled for DRO and RRO. Sampling for GRO and BETX also will be considered for those soils from the fuel depot, but only if significant volumes of gasoline-contaminated soils end up being excavated as that cleanup site is completed.

Confirmation sampling is not proposed for PAH (polynuclear aromatic hydrocarbons), because there have been no high PAH sampling results at any of the Wrangell Lumber mill cleanup sites. All of the Wrangell Lumber mill characterization sample results for PAH thus far, even for those samples having very high DRO and RRO levels, have been well below the ADEC cleanup criteria.

VI. PROJECTED SCHEDULE & FINAL REPORT

Cleanup excavations are anticipated to be completed by the end of July or no later than mid-August depending on the results of confirmation sampling. The setting up of the bioremediation cells and mixing in the urea and fertilizer should be completed by mid-August, after which tilling and aeration of the bioremediation cell(s) will take place about every two weeks until weather conditions in late fall or early winter make further bioremediation progress impractical. At that time the bioremediation cell(s) will be sampled to determine if cleanup criteria have been met.

A final report will be submitted to the Dept. of Environmental Conservation at the end of 2012 or in early-2013, to document all excavations and sampling results at the former Wrangell Lumber mill site. The report's objective will be to confirm that the Wrangell Lumber mill site cleanup areas have met all environmental cleanup criteria, including the bioremediation soil. If test results from the bioremediation cell have not met cleanup criteria by then, a separate report on the subsequent bioremediation activity and additional sampling to confirm compliance will be submitted the following year.

7/12 AMENDMENTS TO THE CLEANUP PLAN -

WRANGELL LUMBER MILL SITE

July 2012

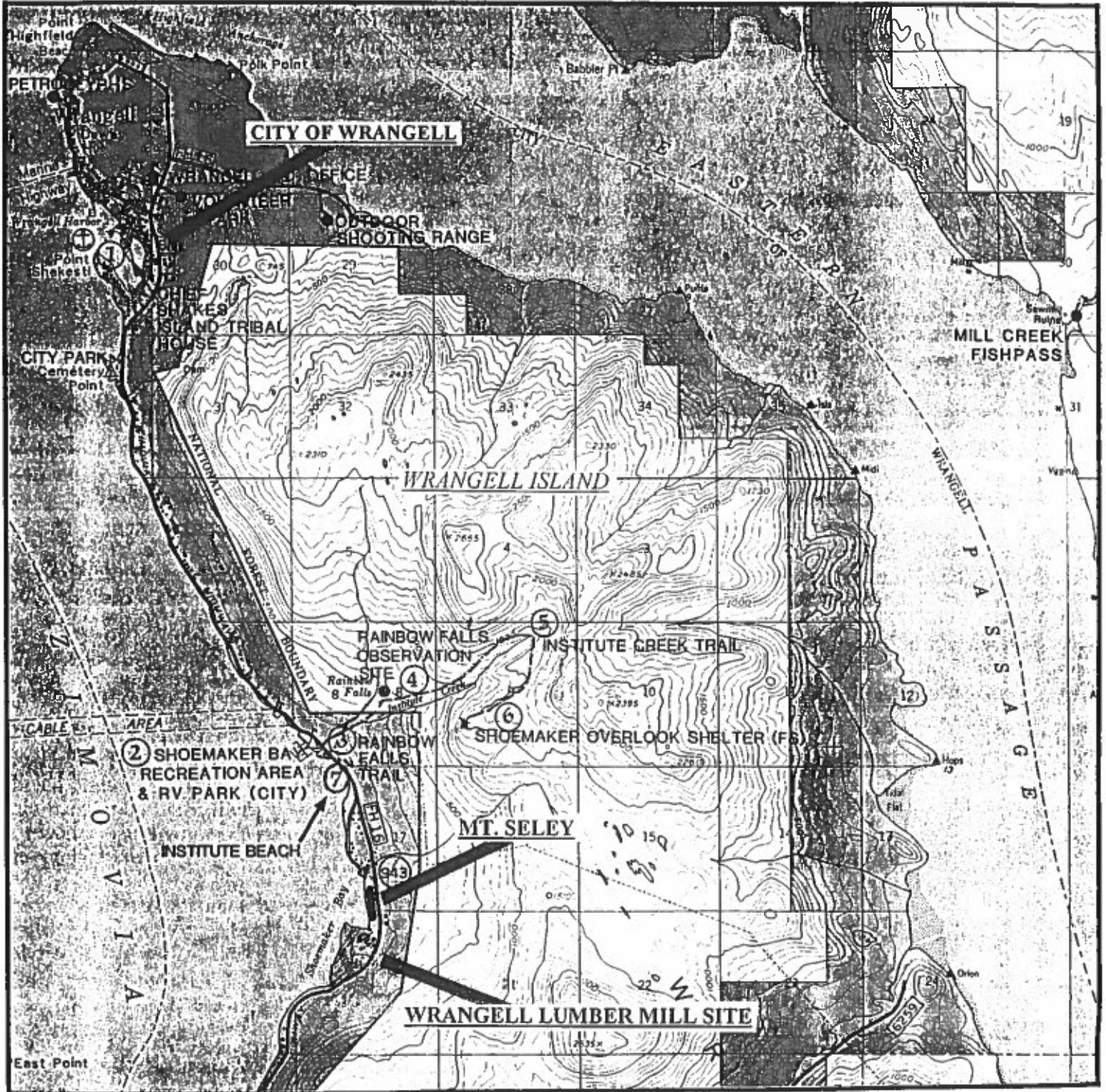
APPENDIX A

Site Figures

1. Vicinity Location: Wrangell Lumber Mill Site & Mt. Seley.....	A2
2. 1990's Site Plan: Wrangell Lumber Sawmill & Mt. Seley.....	A3
3. 2012 Site Plan: Wrangell Lumber Mill Site & Mt. Seley	A4
4. 7/12 Cleanup Areas - Wrangell Lumber Mill Site.....	A5
5. Mt. Seley Cleanup Areas.....	A6
6. 7/12 Proposed Bioremediation Area - Wrangell Lumber Mill Site.....	A7

FIGURE 1:
VICINITY LOCATION: WRANGELL
LUMBER MILLSITE & MT. SELEY

 Wrangell, Alaska



Scale: 1" = 1 mile

NORTH

WRANGELL ISLAND

SHOEMAKER BAY

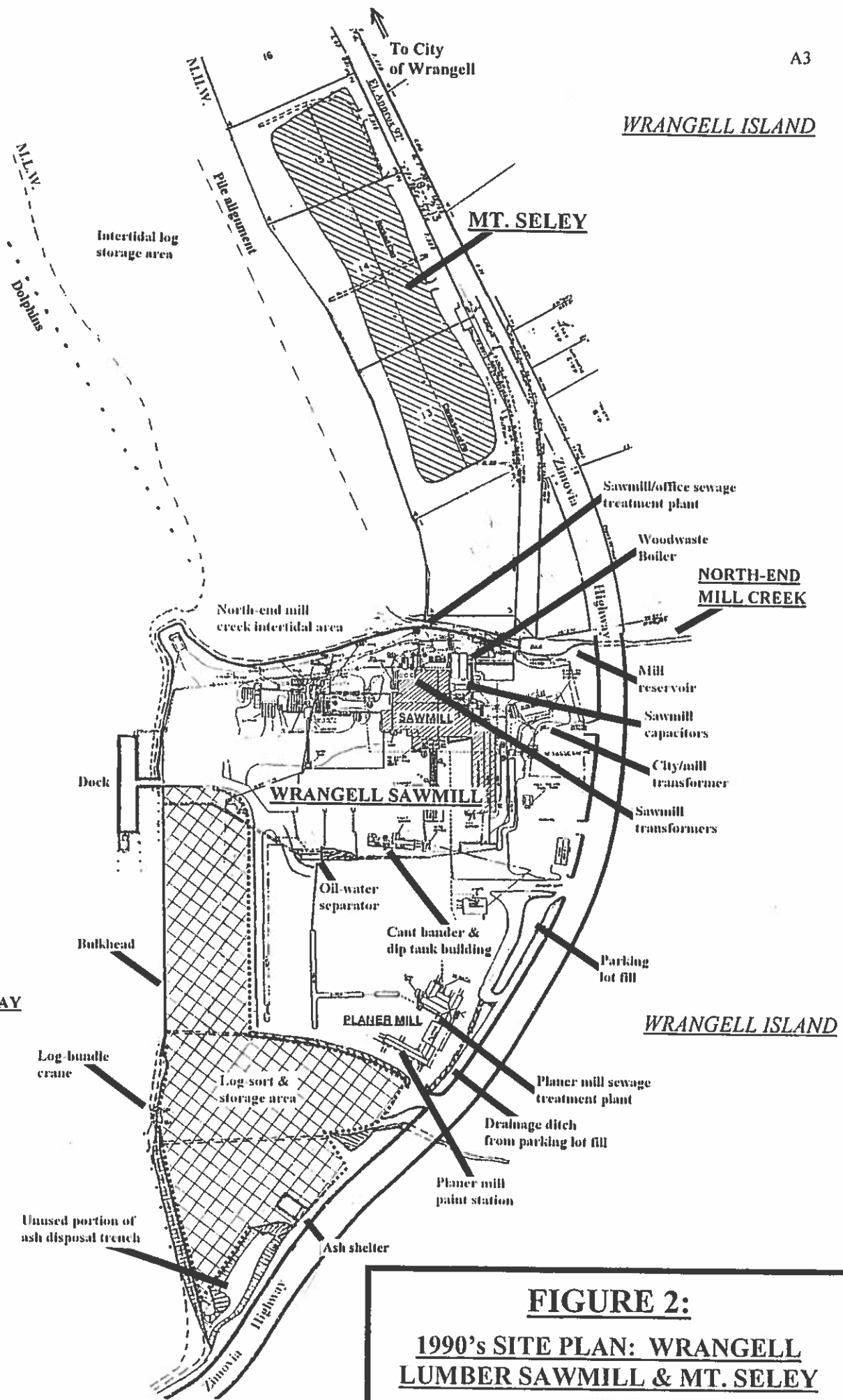


FIGURE 2:
1990's SITE PLAN: WRANGELL LUMBER SAWMILL & MT. SELEY

Scale: 1" = 400'



SHOEMAKER BAY

SHOEMAKER BAY

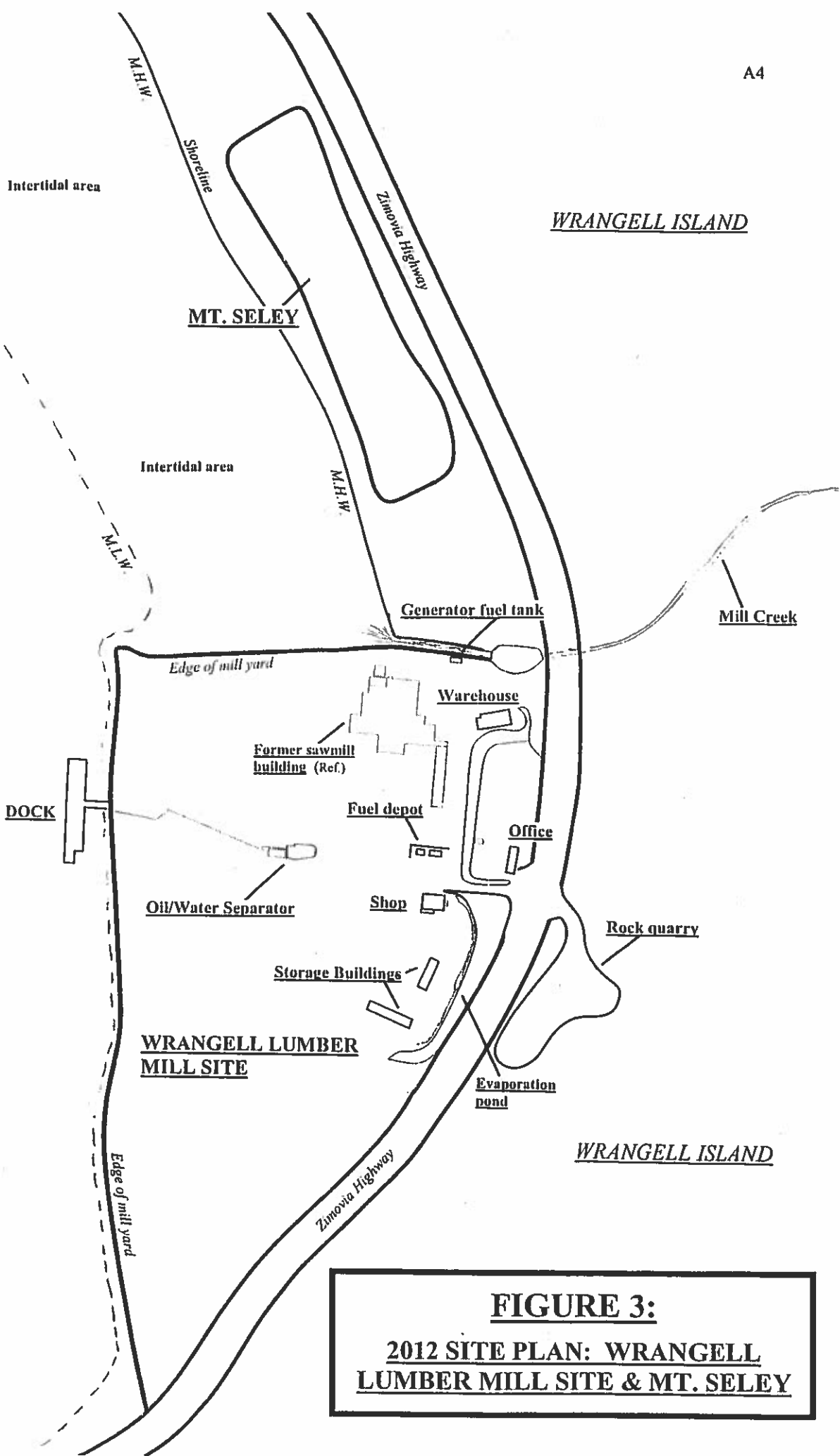
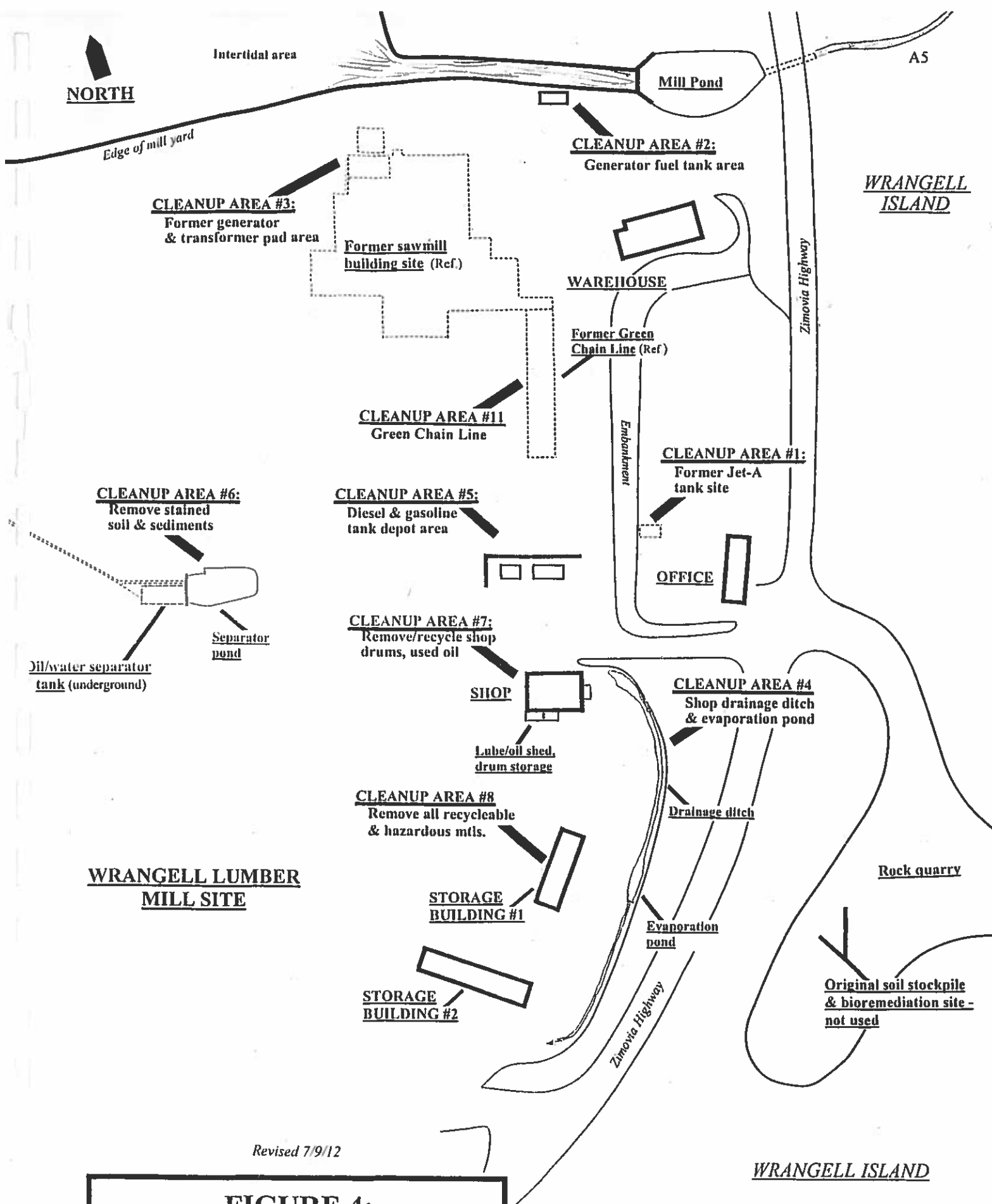


FIGURE 3:
2012 SITE PLAN: WRANGELL LUMBER MILL SITE & MT. SELEY

Scale: 1" = 400'



Revised 7/9/12

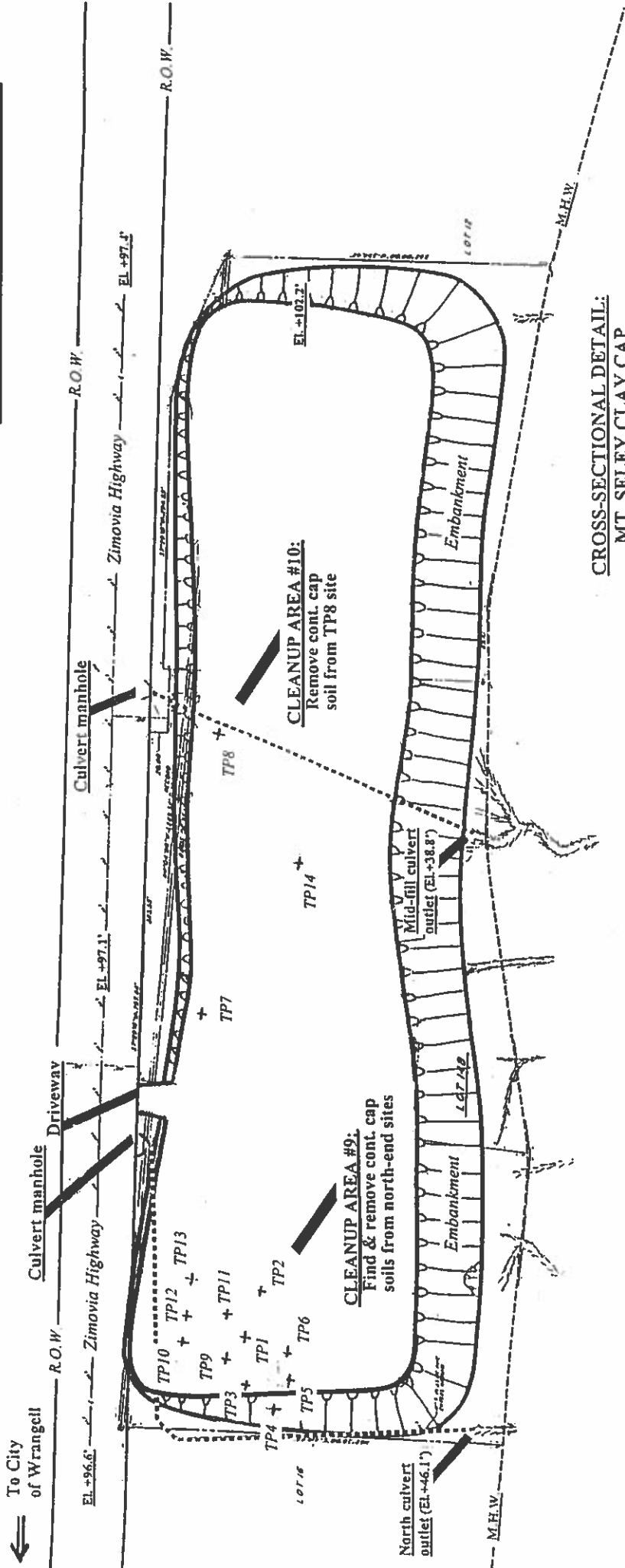
FIGURE 4:
2012 CLEANUP AREAS -
WRANGELL LUMBER MILL SITE

Scale: 1" = 160'

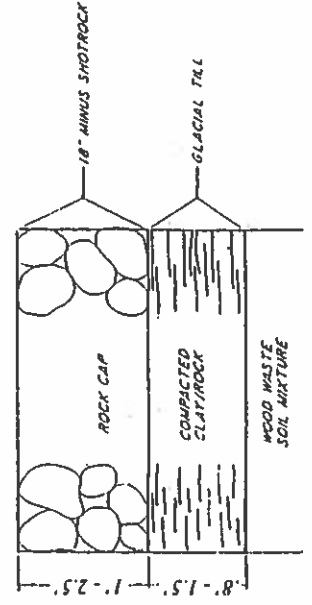
WRANGELL ISLAND

NOTE:

10/13/11 NORTECH test pit locations TP1 through TP14 are shown by small crosses. Three test pits were sampled, & DRO levels for TP3, TP8 & TP1 were 3,470, 308 & 149 mg/m³



CROSS-SECTIONAL DETAIL:
MT. SELEY CLAY CAP



Intertidal area

FIGURE 5:
MT. SELEY CLEANUP AREAS

Scale: 1" = 160'

SHOEMAKER BAY



NORTH

To City of Wrangell

Zimovia Highway

A7

NORTH

WAREHOUSE

OFFICE

Embankment

Embankment

Green Chain Line

7/1/12 fuel depot excavation area

SHOP

Scale: 1" = 100'

Cherry Picker Chain Line

Proposed soil bioremediation treatment area

Former sawmill building site (Ref.)

200' (approx)

Yard drain

Culvert

Mill roadway

FIGURE 6:

7/12 PROPOSED BIOREMEDIATION AREA - WRANGELL LUMBER MILL SITE

7/1/12 unscreened contaminated soil pile

7/1/12 screened contaminated soil pile

7/1/12 oversize rock pile

285'

Discharge swale

135'

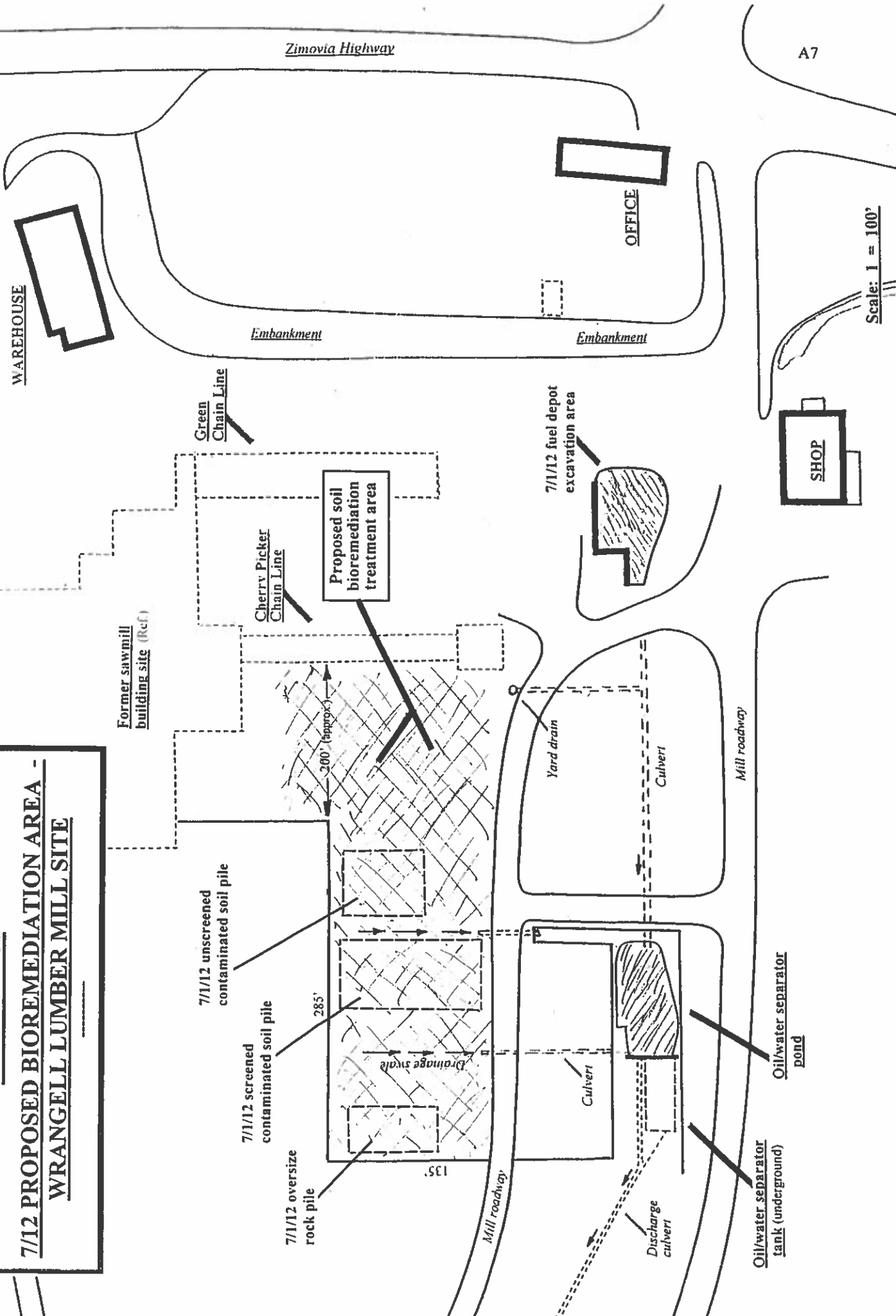
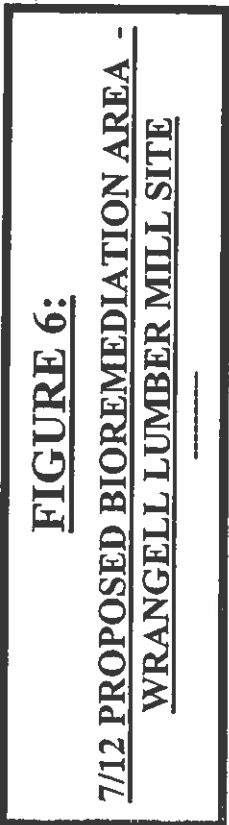
Culvert

Mill roadway

Discharge culvert

Oil/water separator tank (underground)

Oil/water separator pond



7/12 AMENDMENTS TO THE CLEANUP PLAN -
WRANGELL LUMBER MILL SITE

July 2012

APPENDIX B

5/15-7/1 Site Photographs

1.	7/1/12 Jet-A Tank Site	B2
2.	5/17/12 Generator Tank Site.....	B3
3.	5/15-6/30/12 Transformer/Generator Sites.....	B4
4.	5/19-7/1/12 Shop Ditch & Sump	B6
5.	6/4-8/12 Fuel Depot	B9
6.	5/18-7/1/12 Oil/Water Separator Pond	B11
7.	6/5-6/30/12 Green Line Area.....	B14
8.	5/19-6/30/12 Soil Stockpiles.....	B17



Photo #1: 7/1/12 view looking north across the three piles of excavated soil from the Wrangell Lumber mill site's Jet-A Tank cleanup site, showing two of the 5 samples to confirm whether ADEC cleanup criteria have been met. The unmarked arrow shows the 4.5'-deep excavation site, see photo below.



Photo #2: 7/1/12 view looking east towards the Wrangell Lumber mill office, showing the two confirmation sampling sites in the 4.5'-deep excavation of the former Jet-A Tank site.



Photo #3: 5/17/12 view looking west across the former Wrangell Lumber Mill site's generator tank area, just before beginning excavations below where the tank's outlet pipe had been located (arrow).



Photo #4: 5/17/12 view looking west across the Wrangell Lumber mill's electric generator tank site excavation. No soil was removed & the two confirmation samples easily met cleanup criteria (DRO = 160-180 mg/kg, RRO = 220-440 mg/kg).



Photo #5: 5/15/12 view looking west-northwest across the Wrangell Lumber mill site's concrete transformer pad (1) and emergency generator pad (2) just prior to excavations.



Photo #6: 5/17/12 view looking northwest at the 4'-deep characterization sample WS-1 under the generator pad, which had DRO and RRO levels of 17,000 mg/kg and 2,600 mg/kg. The arrow at the bottom of the photo shows the former drain sump for the transformer pad.



Photo #7: 5/15/12 late-afternoon view looking south at the removal of a long 10'-wide section of the former Wrangell Lumber mill's transformer pad.



Photo #8: 5/17/12 view looking east at the backhoe removing remaining contaminated soil at an 11' depth from under a large drain pipe that exited from beneath the sawmill concrete pad.



Photo #9: 5/17/12 view looking northeast across the greatly enlarged Wrangell Lumber mill site's transformer/generator pad excavation, showing (1) what little remained of the emergency generator pad, and (2) the 12'-13'-deep hole required to remove contaminated soil from what appears to have been a long-used open burn area.



Photo #10: 6/5/12 view of the completed west and north ends of the Wrangell Lumber mill site's transformer/generator excavation. Note the completely exposed 10"-dia. former fire protection waterline along the left side of photo, where a rocked support was placed (arrow) after excavating its immediate vicinity to keep the pipe from collapsing as excavations were completed. Compare with previous photo.



Photo #11: 6/29/12 view looking east at the final excavation 11.5' below the former Wrangell Lumber transformer drain sump site, where an earlier 5/17/12 sample had indicated that contaminated soil above the cleanup criteria still remained. However, none could be found in the re-excavation and two additional confirmation samples were taken.



Photo #12: 5/19/12 view looking north from the Wrangell Lumber mill site's shop ditchline sump, showing its grass-covered deposition area and the alder-lined ditch leading to behind the shop building that is just out of view in the upper left of the photo.



Photo #13: 6/4/12 view of the Wrangell Lumber mill site's shop drainage ditch and sump, now cleaned with vegetation removed. The sampling control line started from the former sump outlet, and crossed the shop ditchline 260' away where it turned behind the shop building.



Photo #14: 6/4/12 view of the ditchline ponded area behind the Wrangell Lumber mill site's shop building, showing the initial excavations as well as the cleared-off embankment area (arrow) where some battery pieces were found and carefully removed. About 30 lbs of battery pieces and their adjacent soil were placed in the black drum for disposal as hazardous wastes.



Photo #15: 6/30/12 view of the restarted contaminated soil excavations at the ponded ditchline area behind the Wrangell Lumber mill site's shop building.



Photo #16: 7/1/12 view of the excavation status of the ditchline ponded area behind the Wrangell Lumber mill shop building, where confirmation sampling was completed along its far northwestern end. Contaminated soil still remains along the pond's lower portion, and likely extends a foot or more beneath the asphalt pavement.



Photo #17: 6/4/12 view looking southeast at the initial excavation of the Wrangell Lumber mill site's fuel depot area, showing the bulkhead to still be in place.



Photo #18: 6/4/12 view looking northeast at gray-colored contaminated soil being removed at about a 4' depth below the area where the diesel oil tank's discharge line had been located.



Photo #19: 6/5/12 view looking southeast at a 4'-deep excavation below the concrete surface and near the center line of the Wrangell Lumber mill's fuel tank site, where characterization sample FD-1 at a 3' depth had a high GRO level of 1,500 mg/kg which exceeded ADEC's Method-2 ingestion criteria of 1,400 mg/kg. The DRO and RRO levels were 6,800 mg/kg and 470 mg/kg.



Photo #20: 6/30/12 view of the Wrangell Lumber mill's former fuel tank site excavation, showing the bulkhead to have been completely removed. See next photo.



Photo #21: 6/29/12 view looking down the westward extension of the Wrangell Lumber mill's fuel depot excavation, where a 2' band of gaseous sand (PID levels of 100-300 ppm) remained starting at about a 6'-7' depth. Three characterization samples were taken within and at the assumed bottom of the gaseous layer.



Photo #22: 5/18/12 view looking southeast across the Wrangell Lumber mill's oil/water separator pond after its alder growths had been removed, showing the steep south embankment being smoothed and contoured as its contaminated soil layer is being removed from along and below the waterline.



Photo #23: 5/18/12 view looking down on the Wrangell Lumber mill's oil/water separator pond sediment deposits, about to be excavated to a 1'-2' depth. See photo below.



Photo #24: 5/18/12 continuing excavation of the oily deposits along the Wrangell Lumber mill's oil/water separator's north-side waterline, after the sediment deposits shown in the previous photo had been removed.



Photo #25: 6/30/12 sampling along the north side of the Wrangell Lumber mill site's oil/water separator pond, after excavations to remove additional oil contaminated soil along the waterline because 5/18/12 sampling exceeded cleanup criteria.

Photo #26: 6/30/12 view looking northeast across the Wrangell Lumber mill site's oil/water separator pond, showing one of the 5 sampling sites along the shoreline of the north side's completed re-excitation.





Photo #27: 5/19/12 view looking south across the Wrangell Lumber mill's former green chain area, where dark-stained soils were found extending along the edge of the concrete foundation. Oil-contaminated soil was found in several shallow hand excavations.



Photo #28: 6/5/12 view looking southwest across the 2'-deep exploratory excavation at the north end of the Wrangell Lumber mill's former green chain area. Sample GC1 had DRO/RRO levels of 5,500 & 15,000 mg/kg, and GC-2's levels were 11,000 & 25,000 mg/kg.



Photo #29: 6/29/12 view looking south across the Wrangell Lumber mill's former green line area, exposing 4'-wide foundations as the 1'-4' deep oil-contaminated soil was removed along much of the former sawmill foundation's east edge.



Photo #30: 6/30/12 view looking north across the continuing excavations in the Wrangell Lumber mill's green line area, now 154' long. Excavations along the north end went another 11' before ending later in the day, allowing confirmation sampling to take place on 7/1/12.



Photo #31: 5/19/12 view of the initial contaminated soil stockpile on the Wrangell Lumber mill's concreted area. Arrow points to a roadway culvert inlet, one of several that drained the area to the oil/water separator pond.



Photo #32: 6/30/12 view looking north from the ongoing cleanup of the oil/water separator pond, showing the 12'-13' high contaminated soil pile of about 2,000- c.y. that had been vibratory-screened to 2" minus (1), and the screened-out oversize rock pile of about 600 c.y. (2).



Photo #33: 5/19/12 view of the original contaminated-soil stockpile & bioremediation site in the Wrangell Lumber mill's rock quarry, where 7 truckloads of contaminated soil had been placed before it became apparent that a much larger site would be needed.



Photo #34: 6/5/12 view looking west across the Wrangell Lumber mill's rock quarry, showing that all of the originally stockpiled contaminated soil had been removed. DRO levels of the two soil samples taken where the 7 loads of soil had been placed were 110-280 mg/kg, and RRO levels were 910-1,400 mg/kg.

7/12 AMENDMENTS TO THE CLEANUP PLAN -
WRANGELL LUMBER MILL SITE

 July 2012

APPENDIX C

TABLE 2:
Urea & Fertilizer Estimated Quantities:
Wrangell Sawmill Contaminated Soil Bioremediation -
With Vibratory Screening

	<u>Totals</u>
1. Quantity of soil (cy)	3,200
2. Estimated weight of oil-contaminated soil (lbs.)	7,680,000
3. Estimated DRO/RRO concentration (mg/kg)	15,000
4. Projected amount of oil to be bioremediated (lbs.)	115,200
5. Nitrogen needed (1 lb /10 lb-oil), lbs.	11,520
6. Phosphorus needed (0.1 lb /10 lb-oil), lbs.	1,152
7. Urea needed (@47% N), lbs.	24,511
8. Fertilizer needed (46% phosphorus), lbs.	2,504

7/12 AMENDMENTS TO THE CLEANUP PLAN -
WRANGELL LUMBER MILL SITE

July 2012

APPENDIX D

6/30/12 ADEC Letter
Requesting Amendments to the Cleanup Plan

STATE OF ALASKA

DEPT. OF ENVIRONMENTAL CONSERVATION

DIVISION OF SPILL PREVENTION AND RESPONSE
CONTAMINATED SITES PROGRAM

SEAN PARNELL, GOVERNOR

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File: 1529.38.022

June 26, 2012

Via Electronic and Regular Mail

Mr. Tom Hanna
Southeast Management Services
1061 Mendenhall Peninsula Road
Juneau, Alaska 99801

RE: Workplan Amendment Request for the May 2012 Wrangell Sawmill
Cleanup Effort

Dear Mr. Hanna,

Cleanup activity under the April 9, 2012 workplan entitled: *Proposed Soil Cleanup Plan-Wrangell Lumber Sawmill Site*, and approved by ADEC on April 11, 2012 was conducted by your firm, Southeast Management Services throughout May 2012. The work included overseeing the excavation of contaminated soil on the mill site property, the recycling and disposal of used oils, lubricants, and other materials and hazardous wastes, and the excavation of contaminated soils at Mt Seley storage area. In addition, Mr. Steve Haavig of Carson Dorn, Inc., assisted with the proper disposal and/or recycling the mill's remaining excess petroleum, oils, and containerized materials.

As the cleanup proceeded, additional remedial action beyond the scope of the original workplan was carried out during the May field effort. As you provided in informal updates, some of the additional work included the following:

1. The Workplan objective was to remediate petroleum contaminated soil that resulted from the Wrangell Sawmill's operations and its use as a storage facility for various equipment and tanks originating from the multiple logging camps operated by Silver Bay Logging. It was expected that Cleanup Area #2, *the generator/transformer pad site* would be the most difficult excavation due to the necessary removal of the concrete pad. Excavation revealed contamination layers penetrating deeper than

Tom Hanna
Soil Cleanup Plan Amendment Request- Wrangell Lumber Sawmill Site

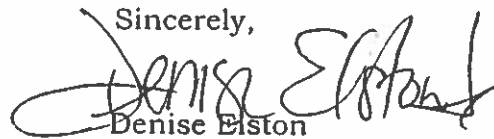
June 24, 2012

expected. The excavated soil has been placed in the bioremediation cell and confirmation sampling has been completed. As you have informally communicated, the ditchline sump behind the shop has been cleaned and looks good, but the ditchline is more contaminated and will require the excavation of more material than originally expected. The fuel depot and its timbers, original scoped for removal in late July- early August, have been removed. The removal revealed oily soil at depth estimated at 8' bgs and is planned for removal and added to the bioremediation cell at the end of June 2012.

2. The original scope of work stated the bioremediation cell location will be at the Wrangell Lumber rock quarry on the uphill side of Zimovia Highway. Due to the unexpected volume of soil, the bioremediation cell will now be located on-site on a pre-existing concrete pad. The same methods as proposed will apply. Confirmation sampling across the bioremediation cell is anticipated to take place in late Fall 2012 for DRO, RRO, and PAHs. If cleanup criteria have not been met, a separate report on the subsequent bioremediation activity and additional sampling to confirm compliance will be submitted to DEC the following year.

Please provide a workplan amendment which documents the above and any other additional work, including additional sampling, and the measures taken to enlarge the treatment area to accommodate the additional soil excavated.

If you have questions about this letter please contact Denise Elston at (907) 465-5207 or by electronic mail at denise.elston@alaska.gov.

Sincerely,

Denise Elston
Project Manager