THE STATE of ALASKA
GOVERNOR MICHAEL J. DUNLEAVY

Department of Environmental Conservation

DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Sites Program

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File no: 1529.38.006

April 19, 2019

Lisa Von Bargen
Borough Manager
City and Borough of Wrangell
P.O. Box 531
Wrangell, AK 99929

Re: Decision Document: Wrangell Junkyard
Cleanup Complete Determination

Dear Lisa:

The Alaska Department of Environmental Conservation, Contaminated Sites Program (DEC) has completed a review of the environmental records associated with the Wrangell Junkyard, located at mile 4 Zimovia Highway in Wrangell. Based on the information provided to date, the department has determined that the contaminant concentrations remaining on site do not pose an unacceptable risk to human health or the environment and no further remedial action will be required unless new information becomes available that indicates residual contaminants may pose an unacceptable risk.

This Cleanup Complete determination is based on the administrative record for the Wrangell Junkyard, which is located in the DEC office in Juneau, Alaska. This decision letter summarizes the site history, cleanup actions and levels, and standard site closure conditions that apply.

Site Name and Location:
Wrangell Junkyard
4 Mile Zimovia Highway
Wrangell, Alaska

Name and Mailing Address of Contact Party:
Lisa Von Bargen, Borough Manager
City and Borough of Wrangell
P.O. Box 531
Wrangell, AK 99929

DEC Site Identifiers:
File No.: 1529.38.006
Hazard ID.: 3295

Regulatory Authority for Determination:
18 AAC 75

Site Description and Background

The 2.51-acre Wrangell Junkyard contaminated site is located on a west facing hillside in a residential area approximately four miles south of Wrangell on Zimovia Highway. The property is zoned residential and is bordered by residential parcels to the north and south; Mental Health Land Trust (MHLT) property on the upper eastern boundary, and slopes down to Zimovia Highway toward Zimovia Strait to the west, approximately 150 feet west of the Site (see aerial image below). Upgradient of the site, on MHLT land, forested wetlands are present, with extensive bogs and ponds. Surface water drainages carry water from the MHLT parcel along the north and south sides of the property. The site is underlain by a shallow clay/till layer that is present at depths of three to five feet throughout the site. Productive groundwater is reported present at the site at a depth of 15 feet within a clay/silt layer based on historic information about the nearest well. This well was located on the Byford residence immediately to the north, but has been out of service since at least 2002. No wells in the vicinity were in service as of the early 2000s.

Photo 1: Aerial view of the Wrangell Junkyard

Photo credit: City and Borough of Wrangell

The Wrangell Junkyard was operated as Byford Salvage from the early 1960s to the mid-1990s by Virgil Byford. The facility accepted drums of various oils, lubricants and other wastes; polychlorinated biphenyl (PCB) transformers, tires, batteries, boats, and miscellaneous scrap metal. In addition, the owner operated a foundry in one of the two main shop buildings and also salvaged approximately 1,500 automobiles at the site. By the late 1990s, Byford was deceased and the property had transferred to a new owner, Mr. Curtis Gibb, who shipped out the marketable metal for salvage for a short period of time before abandoning the property and leaving the state. No effort was made by either owner/operator to properly store and contain wastes. A large volume of lead acid batteries were stockpiled, crushed, and in some cases partially burned on the property. All materials including potentially hazardous wastes were poorly contained and allowed to be crushed, to leak, and to spill on the property, which drains toward Zimovia Strait. Following a DEC site inspection in 1999, the department initiated steps to conduct a preliminary assessment at the site.

Contaminants of Concern and Cleanup Levels

The highest concentrations of contaminants identified at the site over the course of three investigations are identified in the table below, compared with approved cleanup levels. The contaminants listed are established as the Contaminants of Concern for the site.

Wrangell receives an estimated 83 inches of precipitation annually. The cleanup levels approved for the site are the most restrictive of the migration to groundwater pathway or human health pathway for the method two, >40" precipitation climate zone at 18 AAC 35.341; the Table C Groundwater Cleanup levels under 18 AAC 75.345; and NOAA SQuiRT sediment criteria in accordance with 18 AAC 75.340(i) and 18 AAC 75.345(e).

Table 1: Contaminants of Concern, Site Concentrations, and Cleanup Levels

Contaminant	Location	Media	Concentration	Cleanup Level	Units (Source)
Antimony	subsurface	soil	2460	4.6	mg/kg (method 2)
Aroclor 1242 (PCB)	surface Area 6	soil	140	1	mg/kg (method 2)
Aroclor 1254 (PCB)	surface	soil	4	1	mg/kg (method 2)
Arsenic	subsurface	soil	314	0.2	mg/kg (method 2)
Benzo(a)pyrene	drum cache	soil	14	0.17	mg/kg (method 2)
Benzo(b)fluoranthene	drum cache	soil	19	1.7	mg/kg (method 2)
Bis(2-ethylhexyl)phthalate	surface	soil	690	88	mg/kg (method 2)
Cadmium	surface	soil	11.1	9.1	mg/kg (method 2)
Chromium (total)	subsurface	soil	4950	$1X10^5$	mg/kg (method 2)
Chromium (total)	Zimovia	sediment	61	15.9	mg/kg (NOAA SQuiRT)
Copper	subsurface	soil	24900	370	mg/kg (method 2)
Copper	Zimovia	sediment	19	18.7	mg/kg (NOAA SQuiRT)
Dibenzo(a,h)anthracene	drum cache	soil	4.6	0.17	mg/kg (method 2)
Dibenzo(a,h)anthracene	drainage	surface water	0.95	0.25	ug/l (Table C)
Diesel Range Organics	drum cache	soil	40,000	230	mg/kg (method 2)
Lead	drainage	surface water	719	15	ug/l (Table C)
Lead	subsurface	soil	155000	400	mg/kg (method 2)
Lead	Zimovia	sediment	1200	30.24	mg/kg (NOAA SQuiRT)
Mercury	drum cache	soil	4.2	0.36	mg/kg (method 2)
Naphthalene	surface	soil	0.19	0.038	mg/kg (method 2)
Nickel	Zimovia	sediment	35	15.9	mg/kg (NOAA SQuiRT)
Pentachlorophenol	surface	soil	0.71	0.0043	mg/kg (method 2)
Silver	subsurface	soil	247	11	mg/kg (method 2)
Thallium	subsurface	soil	6.8	0.19	mg/kg (method 2)
Zinc	subsurface	soil	8850	4900	mg/kg (method 2)

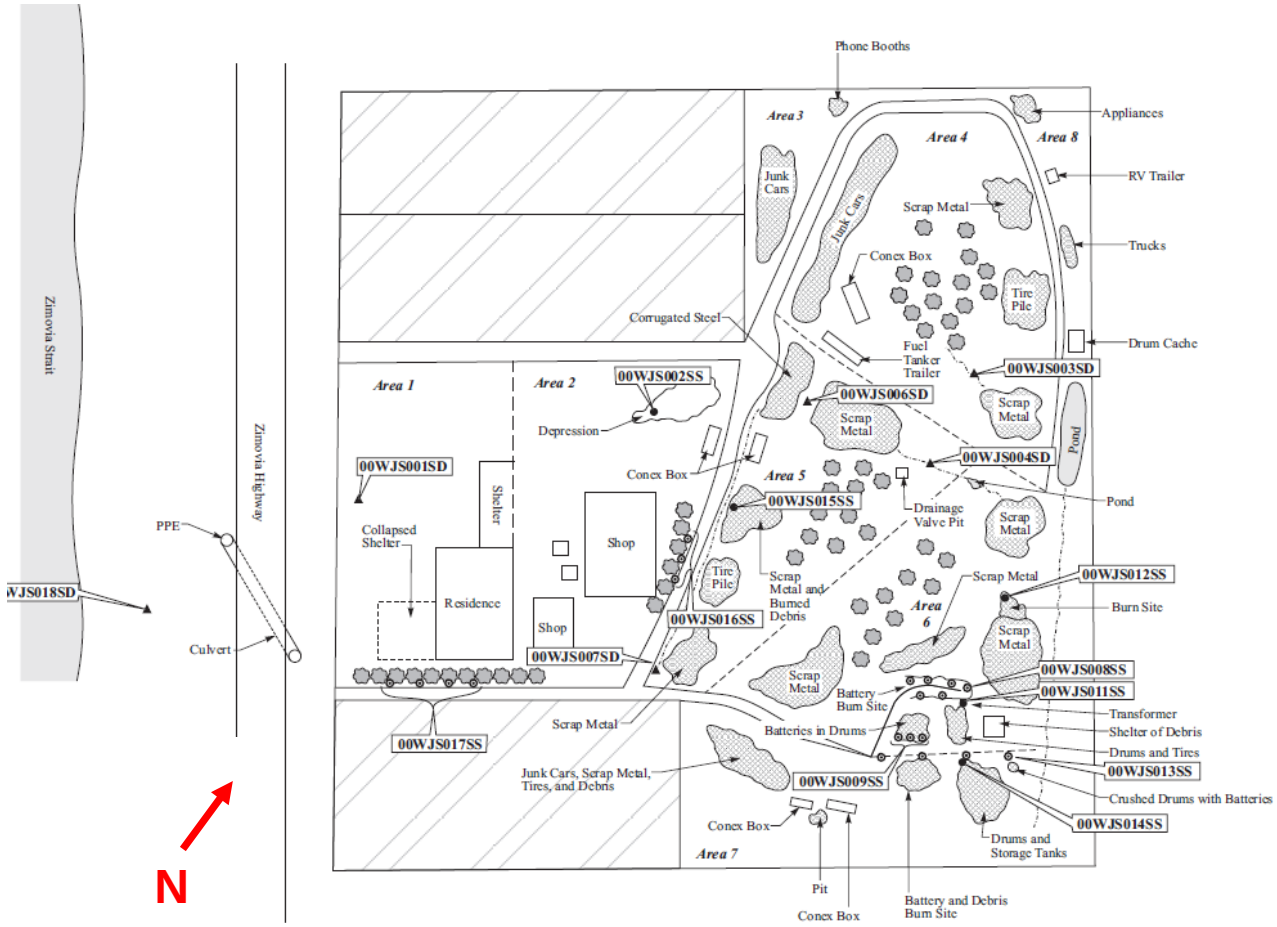
Characterization and Cleanup Activities

2000 CERCLA Preliminary Assessment

In 2000, the DEC attempted to reach then-owner Curtis Gibb to gain access to the site, but the owner, having moved out of state, was not responsive. DEC contracted with Ecology and Environment to conduct a Preliminary Site Assessment under the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). In 2001, the final Preliminary Assessment report was submitted documenting the results of 18 soil and sediment samples collected for a variety of

analytes. Contamination was reported above DEC cleanup levels for semi-volatile organic compounds (SVOCs), PCBs, and several heavy metals, particularly lead, which was found as high as 120,000 mg/kg. The PCB Aroclor 1242 was found at a concentration of 140 mg/kg in a battery burn site called Area 6. A concentration of 1200 mg/kg lead was found in Zimovia beach sediments downgradient of the site. Significant concentrations of lead in soil found throughout the site were determined the result of large amounts of crushed batteries and poor handling practices over decades of salvage operations. No water samples were collected. Figure 1, taken from the report provides a diagram of the site, with sample locations and areas of concern.

Figure 1: Site Diagram (Ecology & Environment 2000)



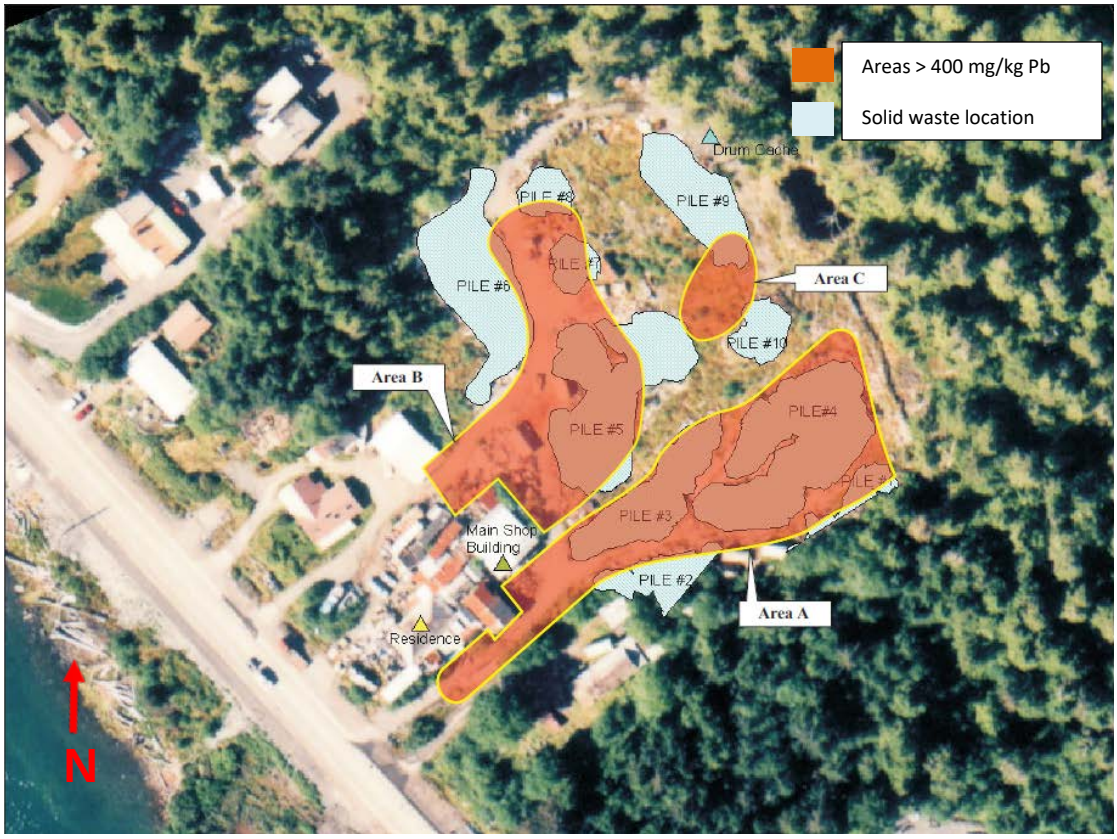
2002 Site Characterization and Removal Cost Estimate

In 2002, Ecology & Environment conducted a follow-up site characterization and removal estimate for DEC, documented in a report titled, *Wrangell Junkyard Site Characterization and Removal Cost Estimate.* Extensive debris, scrap metal and other solid waste impeded a complete site characterization during this effort. Sixty-four surface samples and 11 subsurface samples were collected. No operating drinking water wells were identified within 1/8 mile of the site. Intertidal groundwater was sampled from a temporary wellpoint installed near Zimovia Strait.

Lead concentrations in soil exceeding the DEC cleanup level of 400 mg/kg were measured in 43 of 65 sample locations, with concentrations as high as 98,500 mg/kg, although only two subsurface samples, had concentrations above the 400 mg/kg cleanup level. Concentrations of lead in the downgradient

wellpoint were non-detect for the filtered sample. The total volume of soil contaminated with lead was estimated at 3,490 cubic yards. See Figure 2.

Figure 2: Site Diagram of the Wrangell Junkyard, denoting contaminated areas (Ecology & Environment, June 2002)



The second owner, Curtis Gibb, abandoned the property sometime around 2000 and moved to the lower '48. After an accumulation of unpaid property taxes, the parcel was foreclosed by the City of Wrangell in approximately 2009. Mr. Gibb could not be located and later research showed he passed away in 2015.

2014-15 EPA Targeted Brownfields Assessment

Upon assuming possession of the property, the City, which lacked the funding to carry out the necessary environmental work, collaborated with DEC to obtain the services of EPA's Targeted Brownfields Assessment program. However, due to the large volume of debris on the site, EPA could not proceed with the work until the property was cleared. Over the next several years, the City worked to clear metal debris from the site. Finally in 2014, the site was sufficiently cleared for EPA to conduct a more comprehensive assessment and estimate of the volume of contaminated soil present at the site. Results of this effort were documented in the report, *Wrangell Junkyard Targeted Brownfields Assessment*, dated July 2015. Samples were analyzed for 21 metals, diesel and residual range organics, dioxins, PCBs, and semi-volatile compounds. Large areas of soil across the site were found to be saturated with lead contamination, and contamination from other metals, petroleum, and semi-volatile organic compounds was also present. In addition, elevated concentrations of heavy metals were documented in sediments in the intertidal area across the highway from the site. The volume of soil contaminated with lead, the primary contaminant of concern, was estimated by EPA at 4,000 cubic yards. The highest

concentrations found at the site that exceeded approved cleanup levels are documented in Table 1 above.

Following the results of the 2014-15 work by EPA, the agency initiated the process to conduct an emergency removal action. In 2015, the EPA Region 10 Emergency Removal Program, (ERP), invoked its CERCLA authority and began preparing a Comprehensive Time Critical Removal Action (TCRA) to implement removal of contaminated soil from the Wrangell Junkyard that exhibited concentrations exceeding the Resource Conservation and Recovery Act (RCRA) thresholds for hazardous materials requiring remedial disposal at a RCRA approved facility. The EPA ERP and its contractors met with DEC and the City in Wrangell in July 2015.

However, EPA's ERP was unable to secure year-end funding to implement the TCRA. To mitigate the risk of contaminant migration off-site, DEC proceeded to take immediate steps using the emergency account of the Oil & Hazardous Response Fund to initiate cleanup work. The department's objective was to complete cleanup of hazardous liquid and solid debris and contaminated soil to residential land use cleanup standards with minimal site restoration. The proposed work included excavation, shipment, and disposal of contaminated soil, sediments, and wastes present at the site. Upon approval to access the emergency account, the department proceeded to issue a term contract to NRC Alaska to carry out the cleanup, which included stabilizing all lead contaminated soil with a phosphate-based product called EcoBond. When applied to the soil, it renders the lead non-leachable, and changes the waste characteristic from hazardous to polluted, non-hazardous material.

2016 Removal Action

The excavation and cleanup took place in 2016. Nearly the entire 2.51-acre site was saturated with lead down to the underlying clay/silt layer. In addition, batteries, drums, tires, automotive parts, construction materials, and other solid wastes buried at the site were removed, disposed of locally, or shipped out. A total of 22 drums and 57 containers of contaminated debris were shipped to permitted facilities in the lower 48. Lead contaminated soil was found to be significantly more extensive than previously estimated. Contamination extended onto adjacent residential properties, to the east and upgradient onto MHLT Land, and to the west into the DOT right-of-way. Cleanup was not conducted in the intertidal sediments, in order to allow this area to undergo natural recovery.

Upon completion of the cleanup, the total volume of lead contaminated soil treated with Ecobond was approximately 18,350 cubic yards. This included 300 cubic yards from the MHLT parcel and 620 cubic yards from the two neighboring residential properties. The treated soil was stockpiled on site. Results of the cleanup effort were documented in the September 30, 2016 cleanup report from NRC titled, *Remedial Action Report Wrangell Junkyard*, approved by DEC on December 21, 2016.

Confirmation samples for total lead were collected throughout the excavation base (268 samples) and sidewalls (46 samples) based on field screening with an x-ray fluorescence detector (XRF). Results for all the samples met the DEC cleanup level of 400 mg/kg for total lead. In addition, samples were collected for benzene, toluene, ethylbenzene, and xylenes (BTEX), diesel range organics (DRO), residual range organics (RRO), PCBs, and RCRA-8 metals. Polycyclic aromatic hydrocarbons (PAHs) were not included because results during characterization at the start of the project were below cleanup levels.

All confirmation sampling results met applicable cleanup levels, with the exception of benzene, which exceeded the 0.022 mg/kg cleanup level for migration to groundwater with a result of 0.0594 mg/kg in

one sample at the site. The same sample had a 0.0314 mg/kg detection for toluene, and was non-detect for DRO, RRO, ethylbenzene and total xylenes.

Following the confirmation sampling, each area of the excavation was backfilled with clean material from an offsite quarry. Simultaneously, the stockpile for the treated material was constructed on the closed out areas of the site. Following completion of the cleanup, backfilling and removal of equipment and staging areas, the site was graded and contoured around the stockpile. The post cleanup site conditions are shown below.

Photo 2: Drone aerial of site following 2016 cleanup

Image courtesy of NRC Alaska

2018 Stockpile Sampling

In March of 2018, soil and pore water within the stockpile were sampled for total RCRA 8 and Toxicity Characteristic Leaching Procedure (TCLP) metals, DRO, RRO, volatile organic compounds (VOCs), and PAHs in support of one of the proposed disposal alternatives. Soil sample results from the waste showing exceedances of applicable cleanup levels included: Total lead at a maximum of 6,250 mg/kg; cadmium at 3.22 mg/kg; total chromium at 191 mg/kg; DRO at 313 mg/kg; naphthalene at 2.65 mg/kg; benzo(a)anthracene at 0.424 mg/kg; and benzo(a)pyrene at 0.382 mg/kg. All other analytes were below the cleanup levels.

2018 Shipping and Disposal Effort

The 18,350 cubic yards were stockpiled onsite from 2016 to 2018, during which time DEC worked with EPA, contractors, the City and Borough of Wrangell, the Wrangell Cooperative Association, community members, the Department of Natural Resources, and the U.S. Forest Service on options for economically disposing of the volume of lead polluted soil. In late May 2018, DEC issued a contract with NRC Alaska to ship all the treated lead soil to a permitted solid waste facility in Oregon.

Beginning June 2, 2018, DEC contractors mobilized to Wrangell to initiate transport and disposal of the stabilized, lead-contaminated soil from the former junkyard site to Columbia Ridge Landfill in Arlington, Oregon. The work consisted of loading the material into heavy-duty, reinforced sacks called Flexible Intermodal Bulk Containers (FIBCs) each with an approximate capacity of 8 cubic yards. The FIBCs were transported along the Wrangell road system to the former Silver Bay Logging sawmill

facility located about two miles southeast of the junkyard site where they were staged for barge transport south.

By October of 2018, NRC had completed transport and disposal of 26,912 tons of soil, stockpile liners, and investigation derived waste. These wastes were loaded at the site into 2,482 FIBCs and 80, 20" open top shipping containers, then transported to the Silver Bay facility where they were loaded onto a series of four barges and shipped south to a disposal facility in Arlington, Oregon.

Post-stockpile verification sampling was conducted to ensure no lead contaminated soil above cleanup levels remained onsite. Eighteen samples were collected, of which 10 were analyzed for total lead based on XRF screening, and 10 were analyzed for DRO and RRO based on photoionization detector (PID) field screening. Total lead concentrations ranged from 2.65 mg/kg to 13.9 mg/kg. DRO and RRO were detected in four samples ranging from 18.4 mg/kg to 26.7 mg/kg for DRO and from 9.08 mg/kg to 14.3 mg/kg for RRO.

Following results of the verification sampling, the site was re-contoured according to a site restoration plan approved by the City and DEC. The restoration plan included subsurface drainage features and preserving and enhancing drive ways on the site. In April 2019, NRC Alaska submitted the final *Site Restoration and Closure Sampling Report*, approved by DEC on April 19, 2019. The report documented the above results and restoration work.

Photo 3: Drone aerial of final site conditions – October 2018

Image courtesy of NRC Alaska

<u>Highest Concentrations Remaining at the Site</u>

Sample results following the cleanup effort in 2016 and the shipment and disposal effort in 2018 were reviewed. The highest concentrations of contaminants remaining at the site are shown in the table below, along with approved cleanup levels. Benzene, which was not previously identified as a contaminant of concern at the site, was the only contaminant detected above the applicable cleanup

level in the confirmation sampling. Five other samples collected near this sample showed levels of benzene and other petroleum contaminants that met cleanup levels, therefore the elevated concentration of benzene found represents a de-minimis volume of contaminated soil.

Table 2: Highest Concentrations of COCs

Contaminant	Location	Media	Concentration	Cleanup Level	Units (Source)
Aroclor 1254 (PCB)	confirmation sample	soil	0.23	1	mg/kg (method 2)
Benzene	confirmation sample	soil	**0.0594**	0.022	mg/kg (method 2)
Diesel Range Organics	confirmation sample	soil	176	230	mg/kg (method 2)
Lead	confirmation sample	soil	327	400	mg/kg (method 2)
Residual Range Organics	confirmation sample	soil	402	8300	mg/kg (method 2)
Toluene	confirmation sample	soil	0.03	6.7	mg/kg (method 2)

Cumulative Risk Evaluation

Pursuant to 18 AAC 75.325(g), a cumulative risk determination must be made that the risk of any remaining concentrations of 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. Cumulative risk was calculated using the concentrations above for Aroclor 1254, benzene, and toluene. Petroleum and lead are not included in cumulative risk calculations. The results for this site met the cumulative risk standards, with a total carcinogenic risk calculated at less than 1 in 100,000 and a noncarcinogenic risk of less than one across all exposure pathways.

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 one of the following: De-Minimis Exposure, Exposure Controlled, or Pathway Incomplete.

DEC Decision

Nearly all soil across the entire site was removed down to the confining clay layer present throughout the property at depths ranging from 3-5 feet. Due to these site features and the cleanup, no groundwater was present, therefore no groundwater samples were collected. Previous groundwater seep sampling conducted by Ecology & Environment (2002) downgradient of the site found no detectable concentration of lead in a filtered groundwater sample. Furthermore, soil concentrations for contaminants meet migration to groundwater cleanup levels, with the exception of one sample on the adjacent parcel to the north, which had a concentration of 0.0594 mg/kg for benzene that was 2.7 times the migration to groundwater cleanup level of 0.022 mg/kg, but well below the human health level of 8.1 mg/kg. The confirmation sample was collected from the excavation floor in the dense clay till layer, and represents a de-minimis volume, based on the results of five other samples in the vicinity which were below the applicable cleanup levels for BTEX, DRO, and RRO.

In terms of surface water and sediments near the site, removal of the contaminant source area throughout the site included all surface water drainage pathways (which were subsequently re-routed) and has stopped contaminant migration off site. This will allow any residual concentrations of metals in downgradient marine sediments to naturally recover.

Contamination at the site has been cleaned up to concentrations meeting approved cleanup levels suitable for residential land use. This site will receive a "Cleanup Complete" designation on the Contaminated Sites Database. The following standard condition applies:

Standard Condition

Groundwater throughout Alaska is protected for use as a water supply for drinking, culinary and food processing, agriculture including irrigation and stock watering, aquaculture, and industrial use. Contaminated site cleanup complete determinations are based on groundwater as a potential drinking water source. Should groundwater from this site be used for other purposes, such as aquaculture, additional testing and treatment may be required to ensure the water is suitable for its intended use.

This this cleanup complete 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 contaminants at this site may pose an unacceptable risk to human health, safety, or welfare or to 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 or by mail to P.O. Box 111800, Juneau, Alaska, 99811-1800, within 20 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, or by mail to P.O. Box 111800, Juneau, Alaska 99811-1800, 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 me at (907) 465-5076 or email me at sally.schlichting@alaska.gov.

Sincerely,

Sally Schlichting
Unit Manager

cc: Burrell C. Byford, adjacent property owner: P.O. Box 231, Wrangell, AK 99929-0231
Michelle Woods, adjacent property owner: P.O. Box 108, Wrangell 99929
David Griffin, Southeast Area Lands Manager Trust Land Office, adjacent property owner
Dan Strucher, Senior Project Manager NRC Alaska
Shane O'Neill, Superintendent of Projects, NRC Alaska
Jason Ginter, Principal, Nortech
John Halverson, Contaminated Sites Program Manager
Spill Prevention and Response, Cost Recovery Unit