



THE STATE
of **ALASKA**
GOVERNOR BILL WALKER

**Department of
Environmental Conservation**

DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Sites Program

410 Willoughby Avenue, Suite 303
P.O. Box 111800
Juneau, AK 99811-1800
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www.dec.alaska.gov

File: 1529.38.021

February 22, 2017

Via electronic mail only

Amber Al-Haddad
Director of Public Works and Capital Projects
City & Borough of Wrangell
PO Box 531, Wrangell, Alaska 99929

Re: Decision Document: Wrangell Power Plant
Cleanup Complete Determination – Institutional Controls

Dear Ms. Al-Haddad,

The Alaska Department of Environmental Conservation, Contaminated Sites Program (DEC) has completed a review of the environmental records associated with the Wrangell Power Plant, located at 1064 Case Avenue in Wrangell, Alaska. Based on the information provided to date, it has been 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 as long as the institutional controls are maintained and effective and no new information becomes available that indicates residual contamination poses an unacceptable risk.

This Cleanup Complete with Institutional Controls (ICs) determination is based on the administrative record for the Wrangell Power Plant which is located in the offices of the DEC in Juneau, Alaska. This decision letter summarizes the site history, cleanup actions, regulatory decisions, and specific conditions required to effectively manage remaining contamination at this site.

Site Name and Location:

Wrangell Power Plant
1043 Case Avenue
Wrangell, AK 99929
Block 83 Lot 10C Einar Ottesen Resubdivision

Name and Mailing Address of Contact Party:

Amber Al-Haddad
City and Borough of Wrangell
PO Box 531
Wrangell, AK 99929

DEC Site Identifiers:

File No.: 1529.38.021
Hazard ID.: 25529

Regulatory Authority for Determination:

18 AAC 75

Site Description and Background

The power plant at 1064 Case Avenue belongs to the City of Wrangell and is operated by Municipal Light and Power providing electricity to residents and businesses in conjunction with the Swan-Tyee Electrical Intertie System. The City and Borough of Wrangell (City) provides water and sewer to the Site and to the adjacent residential properties in the area.

In June 2010, while excavating a utility corridor approach to the power plant, City workers identified petroleum contaminated soil in the southeast quarter of the property. The path of excavation encountered a subsurface vault housing a previously abandoned piping junction between a large aboveground fuel storage tank (AST) and the power plant building. City workers identified strongly contaminated soil and immediately transported it to the City-owned soil storage facility on Spur Road where it was placed between high density polyethylene (HDPE) liners. The volume of this stockpile reached ten cubic yards. The lightly contaminated material was left stockpiled between HDPE liners at the project site. The volume of the on-site stockpile reached three cubic yards. Following the contaminated soil interim removal the electrical switch gear installation project excavation was left open and construction was suspended. The petroleum release was reported to DEC.

Contaminants of Concern

During the site investigation and cleanup activities at this site, samples were collected from soil and groundwater for analyses for benzene, toluene, ethylbenzene and total xylenes (BTEX) and other volatile organic compounds (VOCs), polycyclic aromatic hydrocarbon (PAH) semi-volatile organic compounds, (SVOCs), and gasoline (GRO), diesel (DRO) and residual (RRO) range petroleum hydrocarbons. Based on these analyses, the following contaminants were detected above the applicable cleanup levels and are considered Contaminants of Concern (COC) at this site:

- Diesel Range Organics (DRO)
- Residual Range Organics (RRO)
- 1-methylnaphthalene (PAH)
- 2-methylnaphthalene (PAH)
- Naphthalene (PAH)

Cleanup Levels

Title 18 Alaska Administrative Code (AAC) 75.340 authorizes DEC to set soil cleanup levels for this site. Therefore, the most stringent levels of all applicable pathways under Method Two soil cleanup levels for the over 40-inch precipitations zone, established in 18 AAC 75.341(c), Table B1, and 18 AAC 75.341 (d), Table B2 apply to the site. The groundwater criteria list in Table C at 18 AAC 75.345(b)(1) also apply. The following table displays the contaminants of concern cleanup levels for completed pathways at this site:

Table 1 – Approved Cleanup Levels

Contaminant	Soil Cleanup Level	Groundwater
DRO	230 mg/kg	1.5 mg/L
RRO	8,300 mg/kg	1.1 mg/L
1-methylnaphthalene	0.41 mg/kg	0.011 mg/L
2-methylnaphthalene	1.3 mg/kg	0.036 mg/L
naphthalene	0.038 mg/kg	0.0017 mg/L

mg/L = milligrams per liter
mg/kg = milligrams per kilogram

Characterization and Cleanup Activities

Characterization and cleanup activities conducted under the regulatory authority of the Contaminated Sites Program began in June, 2010. These activities are described below.

After coordinating with DEC to obtain an approved sampling work plan (letter dated August 2, 2010), Travis Petersen Environmental Consultants Inc. (TPEC) performed a Site Characterization in two site visits. In the first event in August 2010, TPEC collected soil samples in the exposed excavation for field screening and laboratory analysis but no additional excavation was performed. All field screening samples in the vicinity of the abandoned fuel lines exhibited visible signs and olfactory clues of petroleum contamination. Samples from both the on-site and off-site stockpiles also exhibited obvious signs of petroleum contamination. The samples were analyzed by a laboratory for GRO, DRO, RRO, and volatile (VOCs including benzene, toluene, ethylbenzene, total xylenes) and polycyclic aromatic (PAHs) hydrocarbon compounds. The laboratory results identified DRO, RRO and PAHs as the COCs.

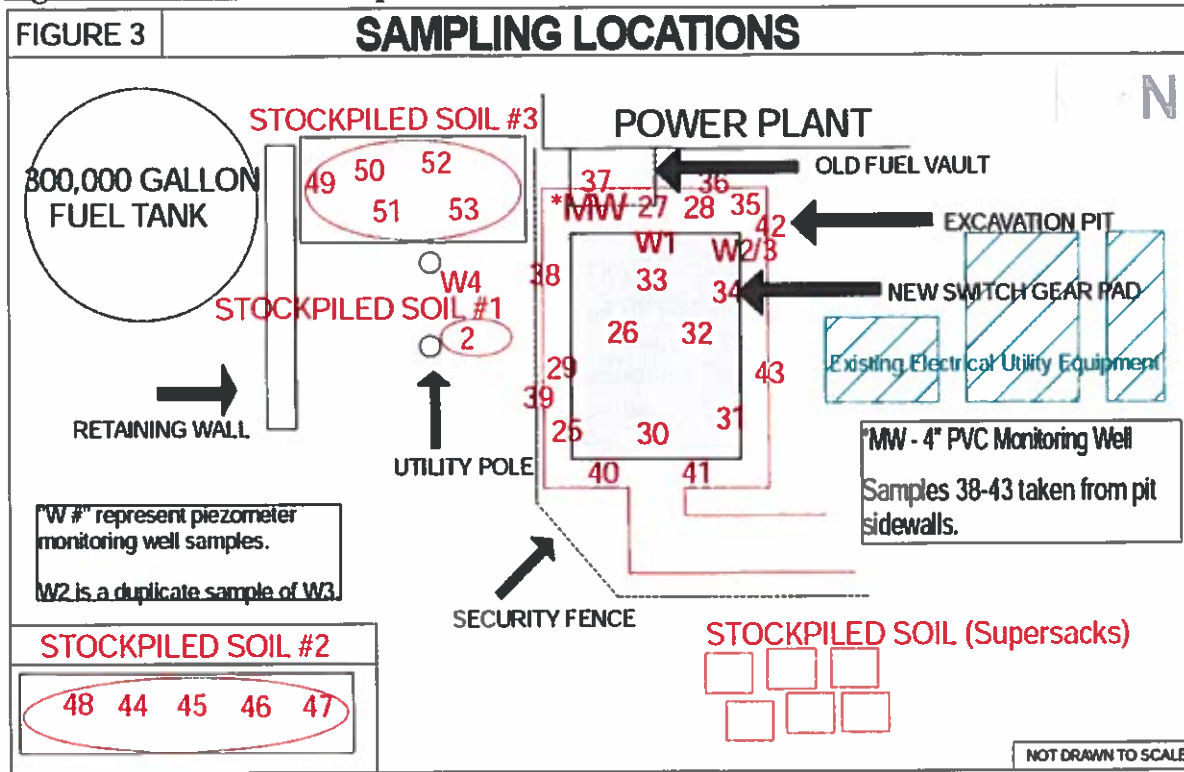
DEC letter dated October 6, 2010 approved the initial TPEC sampling data from the August event and requested additional subsurface investigation of soil and groundwater to determine the vertical and horizontal extent of contamination. In addition, DEC requested the City submit a disposal plan for the ten cubic yards of contaminated soil, temporarily stored in a stockpile on City-owned property on Spur Road.

Construction of the electrical switch gear installation resumed in conjunction with additional TPEC-directed excavation to determine the extent of contamination. Soil was field screened to segregate contaminated soil by degree of contamination and confirmation samples were collected at the soil-water or obstruction interface. TPEC directed the backhoe operator to remove soil from the edges of the pit until utility lines were reached, then removed contaminated soil from the pit bottom until it became difficult for the excavator to maneuver. Due to structural obstacles and the depth of contamination at groundwater, complete removal was deemed not possible and made it difficult for TPEC to provide an estimate of the extent of contamination remaining at the site.

The pit was advanced to five feet BGS and, based on the highest of field screen PID readings, TPEC collected confirmation soil samples from the pit base, the sidewalls, and from the on-site soil stockpiles. The final report identified soil at the piping junction vault adjacent to the power house foundation as the location of the most concentrated petroleum contamination in the vadose soil zone above the water table but did not estimate a volume of contamination in the saturated soil zone. The previously excavated ten cubic yard stockpile was moved from the Spur Road site to City-owned property on 3rd Avenue and forty eight cubic yards of contaminated soil was added to it from the second removal action at the site.

In accordance with the work plan, TPEC advanced piezometers to a depth BGS of between six and six and one half feet to characterize the groundwater for DRO and RRO contamination in the pit. These piezometers however, were not productive. The piezometers that was installed did not purge adequately so TPEC inserted a slotted two-inch polyvinylchloride pipe and it purged adequately. TPEC collected water sample #4 and field duplicate and sent them to the laboratory for analyses to characterize groundwater for contamination.

Figure 3 Soil and water sample locations



All soil samples analyzed had DRO contamination above the cleanup levels. Samples collected near the old piping vault (samples #26, and #27 and its duplicate sample #28) had the highest concentrations of DRO. Sample #27 and its duplicate also had concentrations of 1-methylnaphthalene, 2-methylnaphthalene, and naphthalene. These soil samples were taken two feet deeper (at five feet BGS) than the samples collected during the first field visit.

Table 2 displays the highest levels detected in soil remaining at the site with the sample depth and the results for groundwater. Levels shown in bold are above the applicable cleanup levels and represent the contaminant(s) of concern.

Table 2 the greatest levels of analytes detected in remaining soil and groundwater at the site.

Hydrocarbon range and compounds of	Greatest level in soil mg/kg	Sample name and depth below the	Groundwater mg/L
DRO	19,600	28 at 5 feet	MW at 1.14 mg/L
RRO	2490	38 at 5 feet	MW at 0.496 mg/L
1-methylnaphthalene	21.2	28 at 5 feet	
2-methylnaphthalene	23.1	28 at 5 feet	
naphthalene	4.1	28 at 5 feet	

The DEC workplan approval letter dated August, 2010 stated that disposal of contaminated material from this site for use in closing the landfill under DEC Permit 0113-BA000 is acceptable provided the requirements of the permit are met. The City landscaped the 58 cubic yards of contaminated material removed at the Wrangell Power Plant at the Wrangell Landfill. The landfill is a fenced and closed facility not accessible to the public.

The groundwater sample from the well had analytical results below the cleanup level. In 2012, City workers removed the piezometer wells, backfilled the pit with clean soil, installed the electrical switch gear, and placed a concrete slab over the top.

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, DEC has determined that residual contaminant concentrations meet the cumulative risk criteria for human health.

Table 3 Cumulative Risk Calculation

Chemical	Institutional Child	Inhalation (Volatiles) HI Child	Inhalation (Particulates) HI Child	Dermal HI Child	Noncarcinogenic HI Child	Ingestion Risk	Inhalation (Volatiles) Risk	Inhalation (Particulates) Risk	Dermal Risk	Carcinogenic Risk
Methylnaphthalene, 1-	-04	-	-	1.13E-04	4.78E-04	8.34E-08	-	-	3.05E-08	1.14E-07
Methylnaphthalene, 2-	-03	-	-	2.15E-03	9.11E-03	-	-	-	-	-
Naphthalene	-03	5.31E-02	2.16E-07	7.62E-04	5.63E-02	-	2.01E-06	8.20E-12	-	2.01E-06
*Total Risk/HI	-03	5.31E-02	2.16E-07	3.02E-03	6.59E-02	8.34E-08	2.01E-06	8.20E-12	3.05E-08	2.12E-06

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. A summary of this pathway evaluation is included in Table 4.

Table 4 – Exposure Pathway Evaluation

Pathway	Result	Explanation
Surface Soil Contact	Pathway Incomplete	Contamination is not present in surface soil (0 to 2 feet below ground surface).
Sub-Surface Soil Contact	Exposure Controlled	Contamination remains in the sub-surface above direct contact cleanup levels. A concrete slab lays over the contaminated area and an institutional control prevents any excavation.
Inhalation – Outdoor Air	Pathway Incomplete	Any volatile compounds present are below inhalation cleanup levels.

Inhalation – Indoor Air (vapor intrusion)	Exposure Controlled	Levels of volatile hydrocarbons detected in remaining soil are below inhalation levels. Building occupants are trained in hazardous materials exposure.
Groundwater Ingestion	Exposure Controlled	Residual groundwater contamination is localized and no drinking water wells are present. An NEC has been recorded restricting installation of water wells without prior DEC approval.
Surface Water Ingestion	Pathway Incomplete	Surface water is not used as a drinking water source in the vicinity of the site.
Wild and Farmed Foods Ingestion	Pathway Incomplete	Contaminants of concern do not have the potential to bioaccumulate in plants or animals.
Exposure to Ecological Receptors	Pathway Incomplete	Contamination is only present in the sub-surface and is not migrating off-site.

Notes to Table 4: “De-Minimis Exposure” means that in DEC’s judgment receptors are unlikely to be affected by the minimal volume or concentration of remaining contamination. “Pathway Incomplete” means that in DEC’s judgment contamination has no potential to contact receptors. “Exposure Controlled” means there is an institutional control in place limiting land or groundwater use and there may be a physical barrier in place that prevents contact with residual contamination.

DEC Decision

Petroleum contamination remains on-site in soil and groundwater above approved cleanup levels; however the source of petroleum contamination has been removed. DEC has determined there is no unacceptable risk to human health or the environment as long as the contamination is properly managed.

The use of institutional controls control any potential future exposure and risk to human health or the environment. A Notice of Environmental Contamination has been recorded in the State Recorder’s Office as an institutional control (IC) that identifies the nature and extent of contamination at the property and the conditions that the owners and operators are subject to in accordance with this decision document. DEC has determined the residual soil contamination does not pose an unacceptable migration to groundwater concern.

Institutional controls necessary to support this closure determination include:

1. A restriction against future excavation of the utility corridor at the Wrangell Power Plant property without coordinating with DEC prior to beginning such action. In the event that the remaining contaminated soil becomes accessible by excavation or through some other action that fits the site circumstances, or other information becomes available which indicates that the site may pose an unacceptable risk to human health, safety, welfare or the environment, the land owner and/or operator are required under 18 AAC 75.300 to notify DEC and evaluate the environmental status of the contamination in accordance with applicable laws and regulations; further site characterizations and cleanup may be necessary under 18 AAC 75.325-.390.
2. A restriction on installing groundwater wells or using groundwater from the site without prior DEC approval.

Standard site closure conditions that apply to all sites include:

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. (See attached site figure.)
2. Movement or use of contaminated material in a manner that results in a violation of 18 AAC 70 water quality standards is prohibited.
3. 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 being considered a potential drinking water source. In the event that groundwater from this site is to be used for other purposes in the future, such as aquaculture, additional testing and treatment may be required to ensure the water is suitable for its intended use.

DEC has determined the cleanup is complete as long as the institutional controls are properly implemented and no new information becomes available that indicates residual contamination may pose an unacceptable risk. The DEC Contaminated Sites Database will be updated to reflect the change in site status to “Cleanup Complete with Institutional Controls” and will include a description of the contamination remaining at the site.

The institutional controls will be removed in the future if documentation is provided that shows concentrations of all residual hazardous substances remaining at the site are below the levels that allow for unrestricted exposure to, and use of, the contaminated media and that the site does not pose a potential unacceptable risk to human health, safety or welfare, or to the environment. Standard conditions 1-3 above will remain in effect after ICs are removed.

This determination is in accordance with 18 AAC 75.380 and does not preclude DEC from requiring additional assessment and/or cleanup action if the institutional controls are determined to be ineffective or if new information indicates that contaminants at 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, 555 Cordova Street, Anchorage, Alaska 99501-2617, 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, 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.

Amber Al-Haddad
Wrangell Power Plant

February 22, 2016

If you have questions about this closure decision, please feel free to contact me at (907) 465-5210 or by email at bruce.wanstall@alaska.gov

Sincerely,



Bruce Wanstall
Project Manager

Enclosures: Copy of recorded NEC-IC Agreement

cc: Sally Schlichting, Unit Manager, Contaminated Sites Program
DEC Spill Prevention and Response, Cost Recovery Unit

cc

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Recording District 104 Wrangell

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Page 1 of 4



Notice of Environmental Contamination

Grantor: State of Alaska
Department of Environmental Conservation
Contaminated Sites Program

Grantee: Wrangell Municipal Light and Power
Power Plant Property

Legal Description: Block 83 Lot 10C Einar Ottesen Resubdivision (Parcel No. 02-026-115)

Recording District: Wrangell District

Return to: Bruce Wanstall

State Business- No Charge

*ADEC - Contaminated Sites Program
410 Willoughby Ave. Suite 303
P.O. Box 111800
Juneau, AK 99811-1800*

NOTICE OF ENVIRONMENTAL CONTAMINATION

As required by the Alaska Department of Environmental Conservation, pursuant to 18 AAC 75.375, the Wrangell Municipal Light and Power, as the owner and operator of the subject property, hereby provides public notice that the property located at: 1064 Case Avenue in Wrangell, Alaska, 99929, and more particularly described as follows:

Block 83 Lot 10C Einar Ottesen Resubdivision (Parcel No. 02-026-115)

has been subject to a discharge or release and subsequent cleanup of oil or other hazardous substances, regulated under 18 AAC 75, Article 3, revised as of April 8, 2012. This release and cleanup are documented in the Alaska Department of Environmental Conservation (ADEC) contaminated sites database at http://www.dec.state.ak.us/spar/csp/db_search.htm under Hazard ID number 25529.

ADEC reviewed and approved, subject to this and other institutional controls, the cleanup as protective of human health, safety, welfare, and the environment. No further cleanup is necessary at this site unless new information becomes available that indicates to ADEC that the site may pose an unacceptable risk to human health, safety, welfare, or the environment. ADEC determined, in accordance with 18 AAC 75.325 – 390 site cleanup rules, that cleanup has been performed to the maximum extent practicable even though residual diesel and polycyclic aromatic compounds contaminated soil and groundwater exists on-site. Further cleanup was determined to be impracticable because of the utility corridor, a concrete vault, and shallow groundwater.

Attached is a site survey or diagram drawn to scale that shows the property boundaries, locations of existing structures, the area that has been cleaned up, the approximate location and extent of remaining soil and/or groundwater contamination and the locations where confirmation soil samples were collected.

The owner/operator agrees to the terms and conditions of this Corrective Action Complete Determination, as stated in decision letter for the Wrangell Power Plant, dated (insert auto-generated date). Failure to comply with the terms and conditions of the determination may result in ADEC reopening this site and requiring further remedial action in accordance with 18 AAC 75.380.

Jeff Jabusch, Borough Mgr.
Signature of Authorized Representative, Title
Responsible Party/Company Representative

1-17-17
Date

Jeff Jabusch, Borough Manager
Printed Name of Authorized Representative, Title
Responsible Party/Company Name



Institutional controls necessary to support this closure determination include:

1. A restriction against future excavation of the utility corridor without coordinating with ADEC prior to beginning such action. In the event that the remaining contaminated soil becomes accessible by excavation or through some other action that fits the site circumstances, or other information becomes available which indicates that the site may pose an unacceptable risk to human health, safety, welfare or the environment, the land owner and/or operator are required under 18 AAC 75.300 to notify ADEC and evaluate the environmental status of the contamination in accordance with applicable laws and regulations; further site characterizations and cleanup may be necessary under 18 AAC 75.325-.390.
2. A restriction on installing groundwater wells or using groundwater from the without DEC approval.

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2. Movement or use of contaminated material in a manner that results in a violation of 18 AAC 70 water quality standards is prohibited.
3. 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 being considered a potential drinking water source. In the event that groundwater from this site is to be used for other purposes in the future, such as aquaculture, additional testing and treatment may be required to ensure the water is suitable for its intended use.

ADEC has determined the cleanup is complete as long as the institutional controls are properly implemented and no new information becomes available that indicates residual contamination may pose an unacceptable risk. The DEC Contaminated Sites Database will be updated to reflect the change in site status to "Cleanup Complete with Institutional Controls" and will include a description of the contamination remaining at the site.

The institutional controls will be removed in the future if documentation is provided that shows concentrations of all residual hazardous substances remaining at the site are below the levels that allow for unrestricted exposure to, and use of, the contaminated media and that the site does not pose a potential unacceptable risk to human health, safety or welfare, or to the environment. Standard conditions 1-3 above will remain in effect after ICs are removed.

This determination is in accordance with 18 AAC 75.380 and does not preclude DEC from requiring additional assessment and/or cleanup action if the institutional controls are determined to be ineffective or if new information indicates that contaminants at this site may pose an unacceptable risk to human health or the environment.



This NEC remains in effect until a written determination from ADEC is recorded that states that soil and/or groundwater at the site has been shown to meet the most stringent soil cleanup levels in method two of 18 AAC 75.340 and/or groundwater meets the cleanup levels in Table C in 18 AAC 75.345 and that off-site transportation of soil and/or groundwater is not a concern.

For more information on the contaminated site in this Notice of Environmental Contamination, please see ADEC Contaminated Sites Program file number 1529.38.021 for the site named Wrangell Power Plant, Hazard ID# 25529.

Bruce Wanstall
 Bruce Wanstall
 Signature of Authorized ADEC Representative

01/26/2017
 Date

Site Figure

