THE STATE of ALASKA
GOVERNOR MIKE DUNLEAVY

Department of Environmental Conservation

DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Sites Program

610 University Avenue
Fairbanks, AK 99709-3643
Phone: 907-451-2143
Fax: 907-451-2155
www.dec.alaska.gov

File: 2245.26.009

October 22, 2020

Mr. Chris Nall
City of Palmer
Public Works Department
231 W. Evergreen Avenue
Palmer, AK 99645

Re: **Decision Document: City of Palmer Public Works Equipment Yard Cleanup Complete Determination**

Dear Mr. Nall:

The Alaska Department of Environmental Conservation, Contaminated Sites Program (ADEC) has completed a review of the environmental records associated with the City of Palmer Public Works Equipment Yard located at 1316 South Bonanza Street in Anchorage, 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 determination is based on the administrative record for the City of Palmer Public Works Equipment Yard, located in the ADEC office in Anchorage, Alaska. This decision letter summarizes the site history, cleanup actions, regulatory decisions, and standard site closure conditions that apply.

Site Name and Location:
City of Palmer Public Works Equipment Yard
Palmer, AK 99645
1316 South Bonanza
Palmer, AK 99645

Name and Mailing Address of Contact Party:
City of Palmer
Public Works Department
231 E. Evergreen Avenue
Palmer, AK 99645

ADEC Site Identifiers:
File No.: 2245.26.009
Hazard ID.: 23482

Regulatory Authority for Determination:
18 AAC 75 and 18 AAC 78

Site Description and Background
The City of Palmer Public Works Equipment Yard is located at 1316 South Bonanza Avenue in Palmer, Alaska, legal description Lots A-1 and A-2 of Palmer Industrial Park, Replat of Tracts A, B, E, and H-2, in Section 4, Township 17N, Range 2E in the Seward Meridian. The site is currently paved, with several structures located on the property that serve as shop garages. The City of Palmer owned the property during the initial discovery of soil contamination in 1991 and still owns the property today. The current land use of the property remains as the City of Palmer Public Works Equipment Yard.

On August 13, 1991, one 1,500-gallon diesel underground storage tank (UST) and two 1,500-gallon gasoline USTs, as well as the associated piping and dispensers, were removed from the site by the City of Palmer Public Works Department and Gilfilian Engineering Inc. The USTs were located in the southeast corner of the equipment yard, in a north-south configuration, with the piping extending underground to the west approximately 30 feet (ft). The Site Assessment Report was submitted on September 6, 1991.

Inspection of the tanks upon removal showed them to be structurally sound. Photoionization detector (PID) readings were taken from under the location of the tanks, the dispensers, and the piping joints. PID readings indicated contamination in the soil at these locations. The volume of the release was estimated to be between 50-500 gallons. The contamination around the gasoline tanks was determined to be from the fill end, and the contamination around the joints and dispensers determined to be most likely due to loose pipe fittings or poorly bedded pipes, resulting in an accumulation of releases over time. Contaminated soil remained under the USTs after excavation to a depth of 22 ft below ground surface (bgs), at the gas dispenser location, at the pipe joints, and in the soil stockpile located approximately 540

Contaminants of Concern
During the characterization and cleanup activities at this site, samples were collected from soil and were analyzed for benzene, toluene, ethylbenzene, xylenes (BTEX), volatile organic compounds (VOCs), polynuclear aromatic hydrocarbons (PAHs), and gasoline range organics (GRO). Samples collected in 1991 were sampled for extractable petroleum hydrocarbons (EPH) and volatile petroleum hydrocarbons (VPH), which are generally comparable to diesel range organics (DRO) and gasoline range organics (GRO), respectively. Based on these analyses, the following contaminants were detected above the applicable cleanup levels and are considered Contaminants of Concern (COCs) at this site:

- GRO
- Benzene
- Toluene
- Ethylbenzene
- Xylenes

Cleanup Levels
Soil cleanup levels applicable to the site are the most stringent ADEC Method Two cleanup levels listed for the migration to groundwater pathway in Tables B1 and B2 of 18 AAC 75.341. This site is in the under 40-inch zone for precipitation. Approved cleanup levels for the contaminants of concern are listed below in Table 1.

Table 1 – Approved Cleanup Levels

Contaminant	Soil (mg/kg)
GRO	300
Benzene	0.022
Toluene	6.7
Ethylbenzene	0.13
Xylenes	1.5

mg/kg = milligrams per kilogram

Characterization and Cleanup Activities

During the 1991 UST removal, contaminated soil was excavated to approximately 7 ft bgs beneath the piping joints, 22 ft bgs beneath the USTs, and 6 ft bgs beneath the dispensers. Fourteen soil samples were submitted to Chemical & Geological Laboratories of Alaska for analysis of EPH for the diesel tank, and VPH and BTEX for the gasoline tank. Two samples, collected from 21 ft bgs and 22 ft bgs beneath the north gasoline UST, exceeded the cleanup levels for VPH, benzene, and total BTEX. The highest concentrations in these samples included benzene at 17.3 mg/kg, BTEX at 1571.3 mg/kg, and VPH at 2720 mg/kg.

Approximately 120 cubic yards of soil was excavated and stockpiled on the southwest corner of the yard, 540 ft to the west of the excavation and 100 ft from the nearest structure, on 10 mil plastic with the edges turned up to prevent leakage. The top of the pile was covered with a plastic tarp and sand alone the edges to hold the tarp in place. Excavated soils consisted of silty sandy gravels with occasional cobbles and boulders, with a band of silt at 3.5 to 6 ft below grade. The excavation was left open and barricaded. Groundwater was not encountered during the excavation.

In 1992, Gilfilian Engineering spread the soil on the asphalt parking apron at the Palmer Airport to receive remediation through volatilization of petroleum hydrocarbons by aeration. Four samples were collected from the spread soil in 1992 and tested for VPH, EPH, benzene, and total BTEX. The samples results were below ADEC soil cleanup levels at that time, and ADEC approved disposal of the soil.

Although several approaches for investigation and cleanup were proposed and discussed following removal of the USTs, additional action did not occur until 2019, when Shannon & Wilson, Inc. advanced two soil borings to evaluate current conditions at the site. The borings were advanced to 60 ft bgs at the location of the former UST array, and 30 ft bgs at the location of the former gasoline dispenser. The borings were screened every 5 ft, starting at 20 ft in the UST location and 5 ft in the dispenser location. Groundwater was not encountered during drilling.

Shannon & Wilson collected four analytical soil samples; three samples from the former UST array and one sample from the former gasoline dispenser locations. The four samples and one duplicate sample were analyzed for GRO, BTEX, VOCs, and PAHs. All soil sample results were below the ADEC cleanup levels. The remaining soil concentrations compared to the most stringent clean up levels are shown below in Table 2. The 2019 boring locations are shown in Figure 2 – Site Plan Map

Table 2 – Maximum Soil Concentrations Remaining in 2019

Contaminant	Maximum Soil Concentration (mg/kg)	ADEC Soil Cleanup Level (mg/kg)
GRO	0.819 J	300
Benzene	0.00471 J	0.022
Toluene	0.0423	6.7
Ethylbenzene	0.00997 J	0.13
Xylenes	0.101	1.5

*J = estimated concentration less than the limit of quantitation.

Cumulative Risk Evaluation

Pursuant to 18 AAC 78.600(d)], 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 soil contamination at the site has been cleaned up to concentrations below the approved cleanup levels suitable for residential land use.

Exposure Pathway Evaluation

Following investigation and cleanup at the site, exposure to the remaining contaminants was evaluated using ADEC'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 the pathway evaluation is included in Table 3.

Table 3 – Exposure Pathway Evaluation

Pathway	Result	Explanation
Surface Soil Contact	Pathway Incomplete	Excavations are expected to have removed surface soil contamination (0 to 2 ft bgs).
Sub-Surface Soil Contact	De Minimis Exposure	Contamination may remain in the sub-surface but is below human health and ingestion cleanup levels.
Inhalation – Outdoor Air	De Minimis Exposure	Contamination may remain in the sub-surface but is below human health and inhalation cleanup levels.
Inhalation – Indoor Air (vapor intrusion)	Pathway Incomplete	Soil around the USTs was excavated to 22 ft bgs, and residual sub-surface contamination remaining at the site is below ADEC cleanup levels. The closest building to the residual contamination is located 50 ft away.

Groundwater Ingestion	Pathway Incomplete	Soil samples collected in 2019 did not exceed ADEC cleanup levels and contamination is not expected to migrate to the groundwater. Groundwater was not encountered in excavation or 2019 drilling to 60 ft bgs. Groundwater in the vicinity is poor quality and not expected to be used as a drinking water source.
Surface Water Ingestion	Pathway Incomplete	Surface water is not present in the vicinity of the site.
Wild and Farmed Foods Ingestion	Pathway Incomplete	Wild or farmed foods are not collected at the site
Exposure to Ecological Receptors	Pathway Incomplete	Ecological receptors are not expected to be exposed to contamination at the site

Notes to Table 3: "De Minimis Exposure" means that in ADEC's judgment receptors are unlikely to be adversely affected by the minimal volume or concentration of remaining contamination. "Pathway Incomplete" means that in ADEC's judgment contamination has no potential to contact receptors.

ADEC Decision
Soil contamination at the site has been cleaned up to concentrations below the approved cleanup levels suitable for residential land use. This site will receive a "Cleanup Complete" designation on the Contaminated Sites Database, subject to the following standard conditions.

Standard Conditions

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

2. 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.

This determination is in accordance with 18 AAC 78.276(f) and does not preclude ADEC 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, 555 Cordova Street, Anchorage, Alaska 99501-2617, 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, 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) 451-2127, or email at Janice.Wiegers@alaska.gov.

Sincerely,

Janice Wiegers
Project Manager

cc: Spill Prevention and Response, Cost Recovery Unit (via email)
Dan McMahon, Shannon & Wilson Inc., Anchorage (via email)

Figure 1 - Vicinity map of 1316 South Bonanza Street, Palmer Alaska

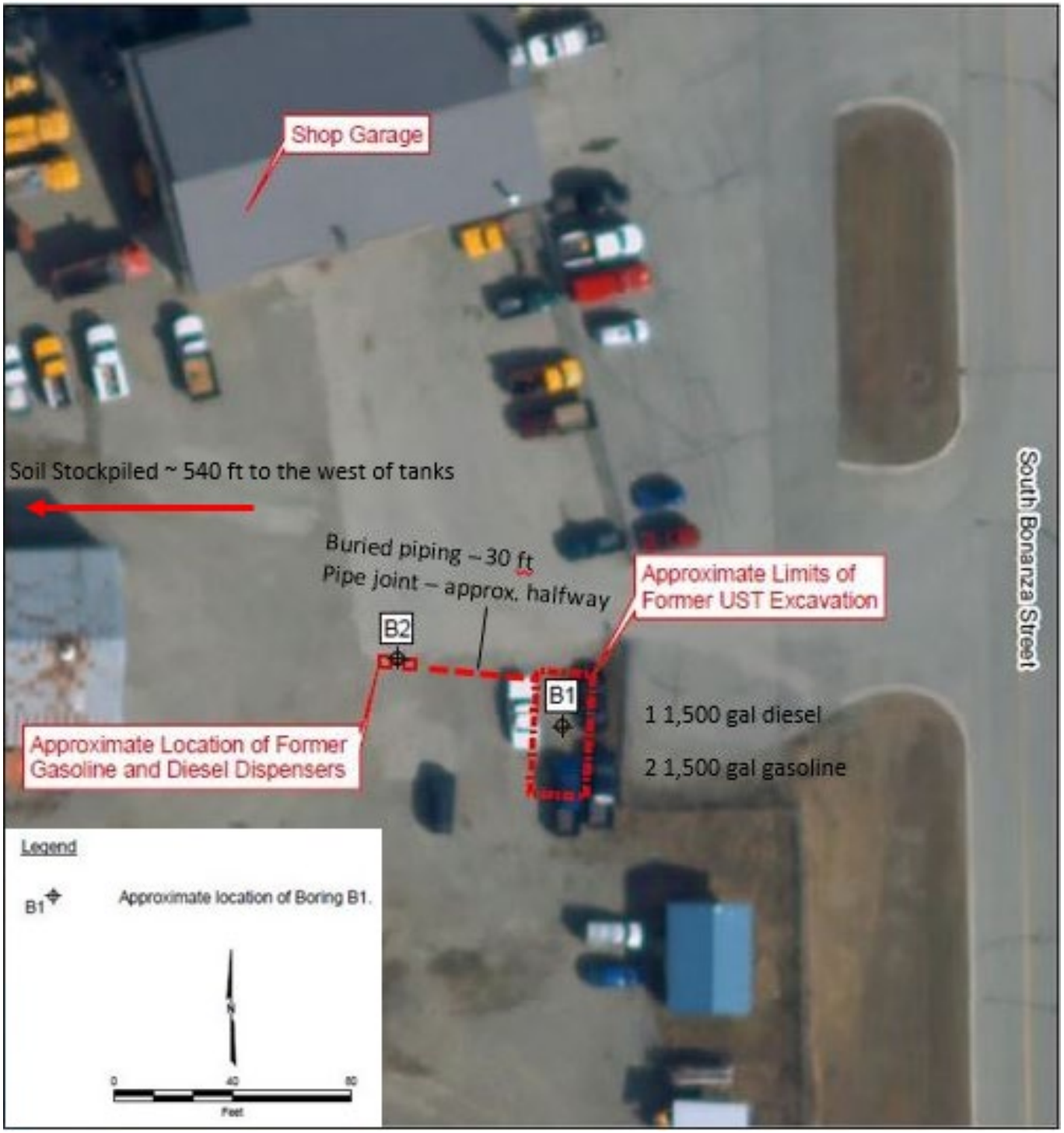

Figure 2 - Site Plan of Palmer Public Works Equipment Yard and boring locations of 2019 Soil Sampling provided by Shannon & Wilson, Inc.