THE STATE of ALASKA
GOVERNOR BILL WALKER

Department of Environmental Conservation

DIVISION OF SPILL PREVENTION AND RESPONSE
Contaminated Sites Program

555 Cordova Street
Anchorage, AK 99501
Phone: 907-269-7503
Fax: 907-269-7687
www.dec.alaska.gov

File: 240.38.015

May 24, 2017

First National Bank of Alaska (FNBA)
c/o Robert Reges
Reeves Amodio LLC
500 L Street, Suite 300
Anchorage, AK 99501

Re: Decision Document: **Residence – 629 Tazlina Terrace**
Cleanup Complete Determination

Dear Mr. Reges:

The Alaska Department of Environmental Conservation, Contaminated Sites Program (ADEC) has reviewed the environmental records associated with the Residence – 629 Tazlina Terrace site (site) located at 629 Tazlina Terrace, Copperville, Glennallen, Alaska. Based on the information provided to date, ADEC determined that the contaminant concentrations remaining on site do not pose an unacceptable risk to human health or the environment. Soil contamination remains onsite at concentrations above the applicable cleanup levels, however, sufficient characterization has been completed and ADEC has made a determination that the remaining contaminants in soil have achieved steady-state equilibrium such that they will not migrate to groundwater. 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 site which is located in the ADEC office in Anchorage, Alaska. This decision letter summarizes the site history, cleanup actions and levels, and standard site closure conditions that apply.

Site Name and Location:
Residence – 629 Tazlina Terrace
629 Tazlina Terrace
Copperville, Glennallen, AK 99588

DEC Site Identifiers:
File No.: 240.38.015
Hazard ID.: 25920

Name and Mailing Address of Contact Party:
First National Bank of Alaska (FNBA)
c/o Robert Reges
Reeves Amodio LLC
500 L Street, Suite 300
Anchorage, AK 99501

Regulatory Authority for Determination
18 AAC 75

Site Description and Background

Contamination associated with three heating oil storage tanks was identified in August 2012 at this one-acre residential property, with the most extensive release originating from the damaged fill pipe of a 1,000-gallon underground storage tank (UST), designated UST1 in **Figure 1** below. Surface spills were associated with two aboveground tanks (ASTs) including AST1 with a capacity of 500 gallons, and AST2 with a capacity of 290 gallons. Contaminated soil at the AST locations was excavated with confirmation samples collected at excavation limits demonstrating that the remaining soil met site-specific cleanup levels. The AST releases did not extend to groundwater.

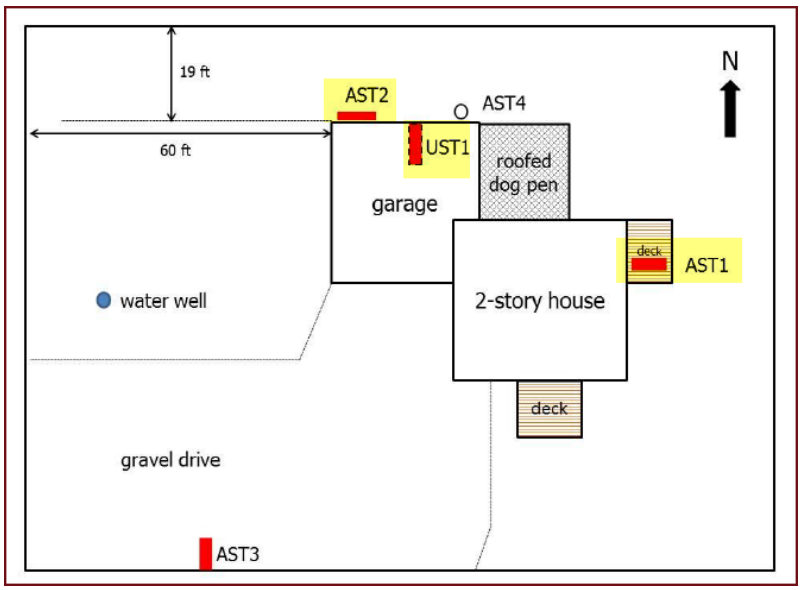

Figure 1: Fuel Storage Tank Locations in 2012
Heating oil releases were associated with UST1, AST1 and AST2. (Figure 1 adapted from Figure 6 of the *Characterization and Remediation Investigation at 629 Tazlina Terrace, Glennallen, AK 99588, Revised* report dated February 19, 2014 and prepared by TERRASAT, Inc.).

The residence on the property has an attached garage that was built over UST1, with the fill and vent pipes formerly extending outside of the foundation perimeter (See **Figure 2**). UST1 was filled with slurry and closed in place as removal of the tank would have jeopardized the garage structure. **Figure 3** shows the approximate location of UST1 following backfilling and grading. Soil contamination exceeding applicable site cleanup standards remains beneath and adjacent to closed-in-place UST1.

Groundwater present at about 22 feet below ground surface (bgs) is used as a drinking water aquifer in the area. The drinking water well was tested by EPA Method 524.2 in 2012 with non-detect results for all compounds.

Three monitoring wells constructed in August 2015 contained one or more detectable petroleum hydrocarbon compounds during the first three of four quarterly groundwater monitoring events with no detections during the last event. All detected compounds were an order of magnitude or more below the applicable cleanup level. Long-term groundwater monitoring completed in February 2017, and drinking water well sampling indicated that the release did not impact the on-property drinking water well or other wells in the area, and does not pose a future risk to drinking water.

Contaminants of Concern

Applicable cleanup levels were exceeded in soil only; no contaminants were detected above applicable cleanup levels in groundwater. During characterization and cleanup activities at the site, samples were collected from soil and groundwater and analyzed for gasoline range organics (GRO), diesel range organics (DRO), residual range organics (RRO), BTEX (benzene, toluene, ethylbenzene and xylenes), and the polynuclear aromatic hydrocarbons (PAHs) acenaphthene, acenaphthylene, anthracene, benz[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, benzo[g,h,i]pyrene, chrysene, dibenz[a,h]anthracene, fluoranthene, fluorene, indeno[1,2,3-c,d]pyrene, naphthalene, phenanthrene, and pyrene. The on-property drinking water well was tested by EPA 524.2 with non-detect results for all compounds.

The following contaminants were detected above the applicable cleanup levels in soil and are considered Contaminants of Concern at the site:

Soil:
Gasoline range organics (GRO)[1]
Diesel range organics (DRO)
Benzene
Xylenes (total)

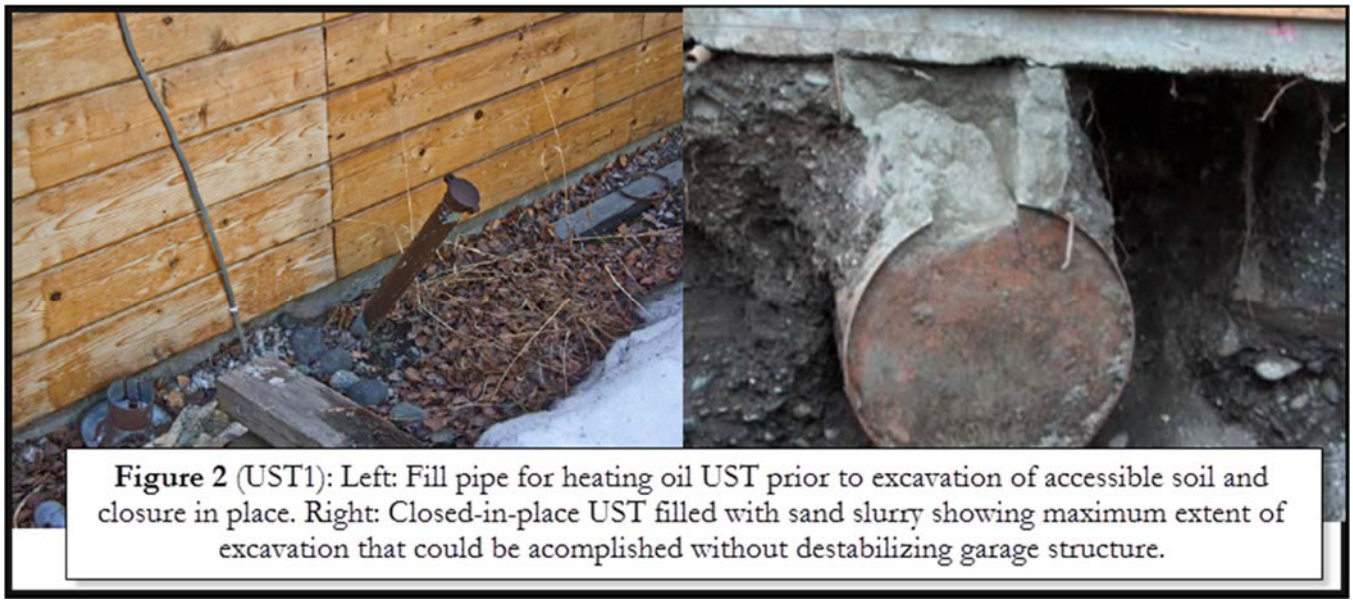

Figure 2 (UST1): Left: Fill pipe for heating oil UST prior to excavation of accessible soil and closure in place. Right: Closed-in-place UST filled with sand slurry showing maximum extent of excavation that could be acomplished without destabilizing garage structure.

Cleanup Levels
The contaminants listed below exceed 18 AAC 75.341 Tables B1 and B2 migration to groundwater levels remain in site soils. Contaminants migrated to groundwater but were not detected in the on-property drinking water well, located hydrologically upgradient from the contaminant source areas, and were an order of magnitude or more below cleanup levels during long-term groundwater monitoring of three monitoring wells. Contaminant levels did not exceed ingestion, inhalation, or human health levels for the Contaminants of Concern.

Table 1 – Approved Cleanup Levels

Contaminant	Soil, Migration to Groundwater (mg/kg)	Groundwater (mg/L)	Soil, Human Health (mg/L)
GRO[2]	300	2.2	1,400
DRO	250	1.5	10,250
Benzene	0.022	0.0046	11
Xylenes (total)	1.5	0.190	57

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

[1]GRO was determined to be a contaminant of concern in soil associated with the UST1 release based on results from samples UST 04 and TAZ 06, both collected from the same depth a few feet apart. Sample UST 04 contained 267 mg/kg GRO and 3,710 mg/kg DRO, while sample TAZ 06 contained 5,440 mg/kg DRO but was not analyzed for GRO. By applying the same ratio of GRO to DRO as contained in UST 04, TAZ 06 would be expected to contain GRO concentrations above the 300 mg/kg migration to groundwater cleanup level and below the human health cleanup level.
[2] Ibid.

Characterization and Cleanup Activities

Environmental work conducted under the regulatory authority of the Contaminated Sites Program began in 2012 and was completed with the decommissioning of the three monitoring wells and piezometer on the property on May 19, 2017.[3]

Soil associated with surface releases from two ASTs ("AST1" and "AST2") and subsurface releases from a damaged fill pipe on an underground heating oil tank ("UST1") was contaminated above the 18 AAC 75.341 Tables B1 and B2 migration to groundwater cleanup levels by GRO, DRO, benzene and total xylenes. (See tank locations, **Figure 1** above).

Contaminant characterization and cleanup of the AST1, AST2 and UST1 took place in August and September 2012. A total of 218 tons of petroleum hydrocarbon-contaminated soil was excavated from the three tank locations and transported to Alaska Soil Recycling for treatment. Approximately 15 tons of soil was excavated from the AST1 location to a depth of approximately 4 feet below ground surface (bgs) with confirmation samples demonstrating that applicable cleanup levels (migration to groundwater) were met and that contamination did not extend to groundwater.

Contamination at the locations of UST1 and AST2 was comingled and removal of accessible soil, that is soil that could be removed without compromising the garage structure, comprised a single excavation. Approximately 203 tons of contaminated soil were excavated to a maximum depth of 17.5 feet from the UST1 location and to a maximum depth of 6.5 ft at the AST2 location, with confirmation samples demonstrating that applicable cleanup levels were met at the AST2 location at that depth.

Contamination at the UST1 location resulted from fuel released at the damaged connection between the tank and the fill pipe. The fill pipe was observed to be corroded and disconnected from the tank. Virtually all of UST1 is beneath the garage slab, with the top of the tank approximately 18 inches beneath the slab as shown on **Figure 2.** The vent and fill pipes originally extended beyond the garage perimeter to the north and were cut off at the time the tank was closed in place and filled with slurry, during August and September 2012 work. The contents of UST1, consisting of 360 gallons of heating oil and water, were pumped out and disposed of prior to tank closure. Samples were collected adjacent to the side of and beneath the north end of the tank, at depths of three and six feet below the ground surface and respectively contained DRO concentrations of 3,710 mg/kg and 5,440 mg/kg. These soils were collected just inside the garage perimeter and are presumed to represent the most highly contaminated soil remaining at the site. GRO was presumed to exceed the 300 mg/kg migration to groundwater cleanup level as per footnote 1. BTEX and RRO levels did not exceed cleanup levels.

The drinking water well on the property serves the residence and was tested in 2012 by EPA Method 524.2 with non-detect results for all compounds.

Figure 3. View of the north end of the property after infilling and grading the excavation, after removal of contaminated soil. (Adapted from *Characterization and Remediation, Revised* report dated February 19, 2014).

[3]See *Report of Well Decommissioning at 629 Tazlina Terrace, Copperville, Alaska, May 22, 2017,* prepared by TERRASAT, Inc.

Contamination was not suspected or observed at the locations of two other ASTs at the property, also shown on Figure 1; these were AST3, a 500-gallon tank used to store and dispense diesel for refueling vehicles that was removed from the site, or AST4, a 24-gallon liquid propane tank, newly installed in 2012.

ADEC's March 13, 2014 review letter for the report of the work described above required additional characterization of soil contamination and an investigation of the migration to groundwater pathway to determine whether groundwater, present at about 22 feet bgs, was impacted by the releases. Groundwater flow direction over all monitoring events was to the east as shown on **Figure 4**.

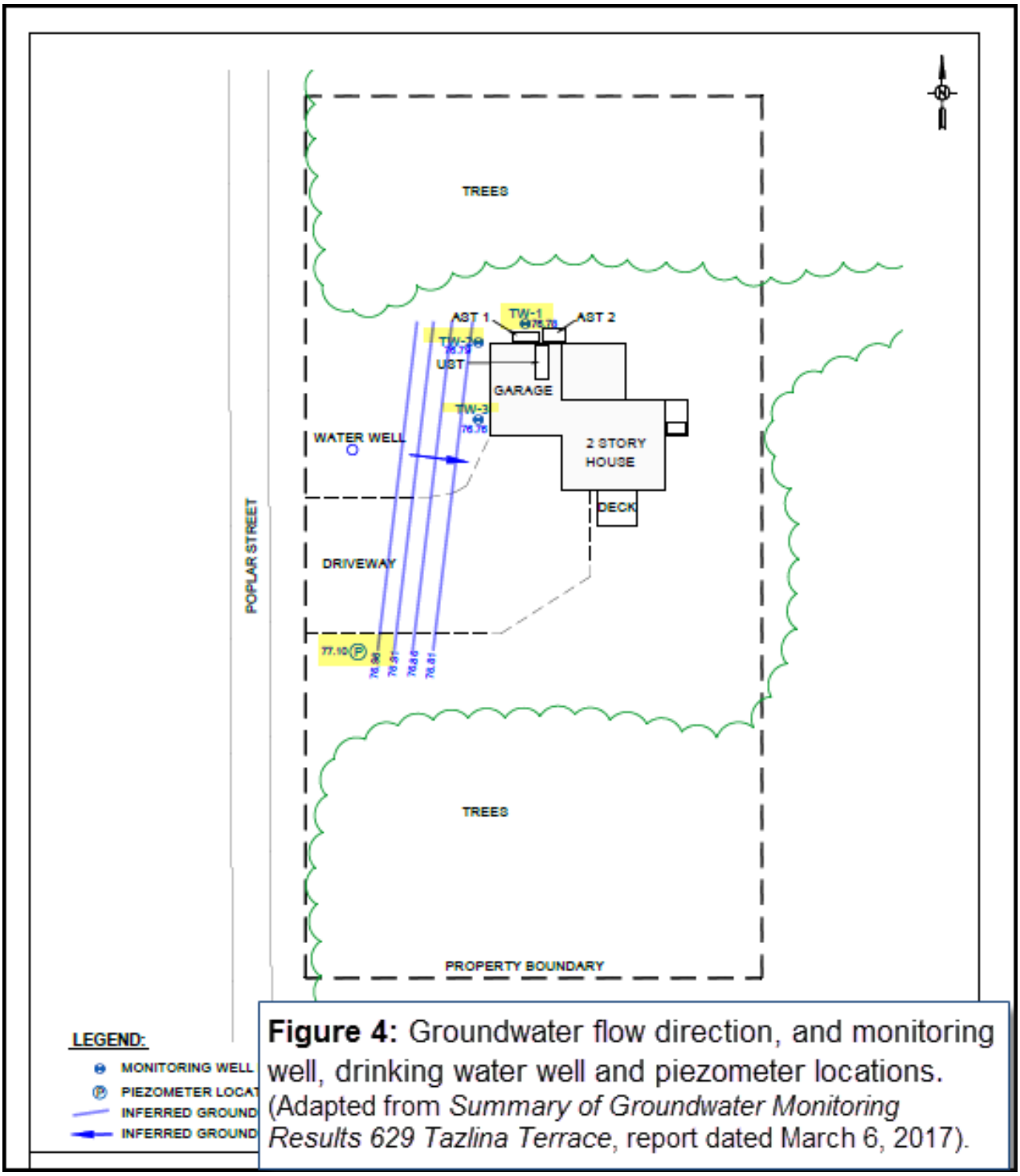

Figure 4: Groundwater flow direction, and monitoring well, drinking water well and piezometer locations. (Adapted from *Summary of Groundwater Monitoring Results 629 Tazlina Terrace*, report dated March 6, 2017).

Consultant TERRASAT, Inc. estimated in correspondence dated July 15, 2014 that approximately 85 tons of soil contaminated above migration to groundwater cleanup levels for the compounds of concern remains in soil beneath the garage, with the approximate location of the remaining volume of contaminated soil shown on **Figure 5**.

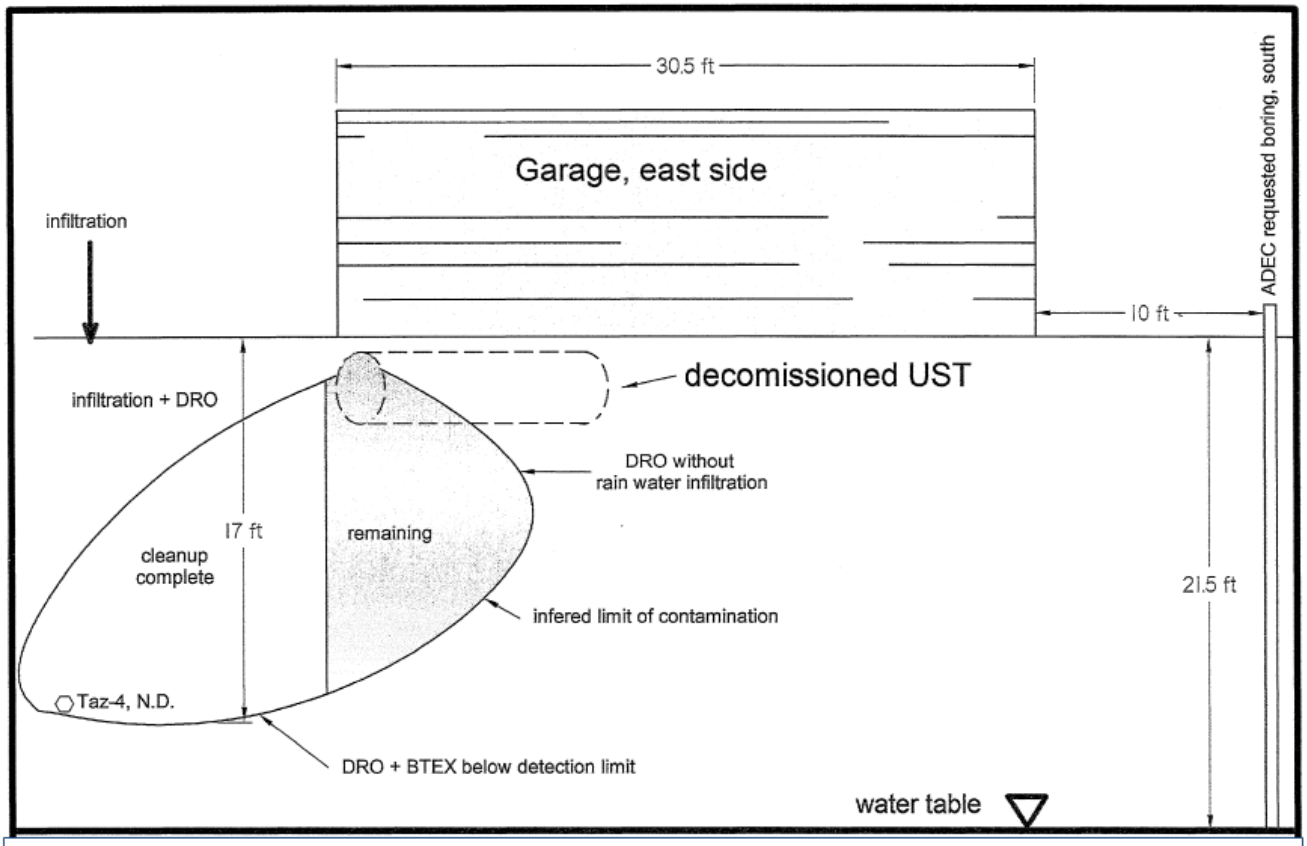

Figure 5: Inferred location of remaining soil contamination beneath garage slab and structure exceeding 18 AAC 75.341 Tables B1 and B2 Method Two, Under 40-inch Precipitation Zone cleanup levels for DRO, GRO and xylenes. Since contaminants were later confirmed to have reached groundwater, contamination likely extends to groundwater beneath the contaminant mass but has reached steady state and is no longer migrating based on long-term monitoring results. (Figure from TERRASAT submittal, April 29, 2014).

In August 2015, three borings were completed as groundwater monitoring wells (TW-1, TW-2 and TW-3) and a driven piezometer was installed by TERRASAT. One soil sample was collected just above the soil/groundwater interface in each of the borings. The benzene concentration of 0.0725 mg/kg in the soil sample from boring TW2 exceeded the migration to groundwater cleanup level of 0.022 mg/kg. Groundwater monitoring results were non-detect for DRO and BTEX in samples from the three wells.

Based on the elevated benzene level in soil at the groundwater interface, and the area use of the potentially impacted aquifer, ADEC required long-term groundwater monitoring comprised of a minimum of four quarterly monitoring events with groundwater levels measured to confirm that groundwater flow direction was away from the on-property drinking water well or other area wells. Consultant Hobbit Environmental undertook the last three of the four quarterly monitoring events and reported the results in a letter report with subject line *Summary of Groundwater Monitoring Results, 629 Tazlina Terrace, Copperville, Alaska,* dated March 6, 2017. The report was received by ADEC on March 23, 2017 with a letter by First National Bank counsel requesting a cleanup complete determination. The report findings confirmed that the water well on the property was upgradient with respect to groundwater flow direction during all four monitoring events.

Table 1 below lists the results of the four groundwater monitoring events, showing that benzene, toluene, ethylbenzene and xylenes were detected during the second and third events below cleanup levels and at concentrations at least one order of magnitude below the 18 AAC 75.345 Table C groundwater cleanup levels. No contaminants were detected during the fourth monitoring event.

Table
Groundwater Analytical Results
629 Tazlina Terrace
Copperville, Alaska

Parameter	PQL	Date	TW1	TW2	TW2 Duplicate	TW3	Trip Blank	Decontamination Blank	Table C 18 AAC 75
Terrasat Groundwater Samples									
Benzene	0.500	Aug 2015	ND	ND	NS	ND	ND	NS	4.6
Toluene	1.00		ND	ND	NS	ND	ND	NS	1100
Ethylbenzene	1.00		ND	ND	NS	ND	ND	NS	15
Xylenes	3.00		ND	ND	NS	ND	ND	NS	190
DRO	556		ND	ND	NS	ND	NS	NS	1500
Hobbit Groundwater Samples									
Benzene	0.20	May 2016	0.24	ND	NS	ND	ND	1.2	4.6
		Aug 2016	ND	ND	ND	ND	NS	NS	
		Nov 2016	ND	ND	ND	ND	ND	NS	
Toluene	1.00	May 2016	4.1	2.2	NS	ND	ND	8.9	1100
		Aug 2016	ND	2.1	ND	ND	NS	NS	
		Nov 2016	ND	ND	ND	ND	ND	NS	
Ethylbenzene	0.20	May 2016	0.55	0.34	NS	ND	ND	0.76	15
		Aug 2016	ND	0.32	ND	ND	NS	NS	
		Nov 2016	ND	ND	ND	ND	ND	NS	
Xylenes	0.60	May 2016	3.43	2.18	NS	ND	ND	4.9	190
		Aug 2016	0.65	1.98	ND	ND	NS	NS	
		Nov 2016	ND	ND	ND	ND	ND	NS	
GRO	100	May 2016	ND	ND	NS	ND	NS	NS	2200
		Aug 2016	ND	ND	NS	ND	NS	NS	
		Nov 2016	ND	ND	ND	ND	NS	NS	
DRO	250	May 2016	ND	ND	NS	ND	NS	NS	1500
		Aug 2016	ND	ND	NS	ND	NS	NS	
		Nov 2016	ND	ND	ND	ND	NS	NS	

Table 1: (Table 3 of *Summary of Groundwater Monitoring Results, 629 Tazlina Terrace, Copperville, Alaska* report prepared by Hobbit Environmental, dated March 6, 2017).

Decommissioning of the three monitoring wells and piezometer was completed on May 19, 2017 and documented in the *Report of Well Decommissioning at 629 Tazlina Terrace, Copperville, Alaska* dated May 22, 2017.

Cumulative Risk Evaluation

Pursuant to 18 AAC 75.325(g), when detectable contamination remains on-site following a cleanup, a cumulative risk determination must be made that the risk from hazardous substances does not exceed a cumulative carcinogenic risk standard of 1 in 100,000 across all exposure pathways and does not exceed a cumulative noncarcinogenic risk standard at a hazard index of one across all exposure pathways.

Based on a review of the environmental record, ADEC has determined that residual contaminant concentrations meet the human health cumulative risk criteria 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 this pathway evaluation is included in Table 2.

Table 2 – Exposure Pathway Evaluation

Pathway	Result	Explanation
Surface Soil Contact	De Minimis Exposure	Contamination is not present in surface soil (0 to 2 feet below ground surface).
Subsurface Soil Contact	De Minimis Exposure	Contamination remains in the subsurface at concentrations above the migration to groundwater cleanup level. Concentrations are below applicable ingestion and human health cleanup levels.
Inhalation – Outdoor Air	Pathway Incomplete	One sample contained volatiles in subsurface soil at a depth of 20 ft below ground surface and at a low concentration that could not reasonably create an outdoor air inhalation risk.
Inhalation – Indoor Air (vapor intrusion)	De Minimis Exposure	Remaining concentrations of volatile compounds are below residential target levels.
Groundwater Ingestion	De Minimis Exposure	Groundwater contaminants in the aquifer used locally for drinking water did not exceed cleanup levels, and groundwater flow direction is away from area drinking water wells.
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	The contaminants of concern do not have the potential to bioaccumulate in plants or animals.
Exposure to Ecological Receptors	Pathway Incomplete	Ecological receptors were not and in the future will not be impacted since all contamination is in subsurface soil, the great majority of which is present beneath a garage.

Notes to Table 2: "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. "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.

ADEC Decision

Soil contamination at the site has been cleaned up to concentrations below the approved human health cleanup levels suitable for residential land use. The contaminated soil remaining beneath the garage structure could not be removed without jeopardizing the building structure. No groundwater contamination exceeded cleanup levels during long-term monitoring, and groundwater flow direction was consistently away from area and on-property drinking water wells during all monitoring events. The remaining contamination present in subsurface soil exceeds migration to groundwater cleanup levels for the compounds of concern but does not exceed human health, ingestion or inhalation levels for any compound.

Soil contamination remains onsite at concentrations above the applicable migration to groundwater cleanup levels, however sufficient characterization has been completed and ADEC has made a determination that the remaining contaminants in soil have achieved steady-state equilibrium and will not migrate to groundwater. No further remedial action will be required unless new information becomes available that indicates residual contaminants may pose an unacceptable risk. This site will receive a "Cleanup Complete" designation on the Contaminated Sites Database, subject to the standard conditions listed below.

Standard Conditions

1. Any proposal to transport soil or groundwater off-site requires ADEC approval in accordance with 18 AAC 75.325(i). A "site" as defined by 18 AAC 75.990 (115) means an area that is contaminated,

including areas contaminated by the migration of hazardous substances from a source area, regardless of property ownership.

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

This determination is made in accordance with 18 AAC 75.380 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 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, PO 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) 269-7527 or email at Eileen.Olson@alaska.gov.

Sincerely,

Eileen Olson
Project Manager

cc: Spill Prevention and Response, Cost Recovery Unit