

STATE OF ALASKA

DEPT. OF ENVIRONMENTAL CONSERVATION DIVISION OF SPILL PREVENTION AND RESPONSE CONTAMINATED SITES PROGRAM

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File: 2265.38.006

September 10, 2010

Archie and Verna Euwer
P.O. Box 2081
Palmer, Alaska 99645

Re: Record of Decision; Children's House
Cleanup Complete Determination

Dear Euwers:

The Alaska Department of Environmental Conservation, Contaminated Sites Program (ADEC) has completed a review of the environmental records associated with the Children's House located at 291 E. Paulson Ave., Wasilla, 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.

This decision is based on the administrative record for the Children's House which is located in the offices of the ADEC in Anchorage, Alaska. This letter summarizes the decision process used to determine the environmental status of this site and provides a summary of the regulatory issues considered in the Cleanup Complete determination.

Introduction

Site Name and Location:

Children's House
291 E. Paulson Ave.
Wasilla, AK 99687
Lot 1, Block 2, Thomas Addition #1 Subdivision, Plat #1972-75 (dated October 13, 1972), Palmer
Recording Office, Alaska

Name and Mailing Address of Contact Party:

Verna and Archie Euwer
P.O. Box 2081
Palmer, Alaska 99645

Database Record Key and File Number:

ADEC Reckey: #98220128601
File: 2265.38.003
Hazard ID: 3027

Regulatory authority under which the site is being cleaned up:
18 AAC 75

Background

The Children's House contaminated site is located at 291 E. Paulson Ave. in Wasilla. On October 12, 1998, a spill was reported to ADEC that an unknown quantity of fuel oil from overfilling and leakage from a rusting bottom of a unregulated 500 gallon underground storage tank (UST) contaminated the surrounding soil and groundwater. The UST had reportedly not been used for several years and the release was reported when the UST was removed to be replaced by a 300 gallon above ground storage tank (AST) to serve as the fuel supply for heating purposes of the residence. The residence on the property was operating or had operated as a day care. The residence was a split level house with a concrete slab acting as the floor of the bottom living level and about four (4) ft. below ground surface (bgs). Around the north side of the residence, a chained link fence existed and the property within that fence has been used as a playground area. The UST was located within the fenced in area.

Cleanup was conducted soon after the release occurred in 1998 and a follow-up cleanup was performed in 1999. All of the subsurface soil contamination was not removed because it was along the foundation of the residence and removing it would have compromised the integrity of the building.

In July 2001 a groundwater investigation determined that that groundwater onsite was contaminated with diesel range organics (DRO) above applicable cleanup levels. Follow-up sampling in October 2001 also showed exceedances to DRO in the same one monitoring well that was installed just downgradient of the removed UST. Groundwater fluctuates between 6- 9 feet below ground surface.

The residence and surrounding residences are connected to the City of Wasilla's public water and sanitary sewer systems.

Between 1998 and 2009, the residence was apparently not used as a day care. In 2009, discussion occurred whereas the residence may again be used as a day care. However, staff from ADEC's Environmental Health and within the Department of Health and Social Services notified Ms. Euwer and a possible operator that among other issues, that outstanding issues must be satisfactorily addressed regarding the contamination prior to those agencies issuing permits and/or approval to satisfy requirements by those programs for the residence to operate as a day care.

Site Characterization and Cleanup Actions

On September 29, 1998, staff from Utility Management Services (UMS) were retained by the Euwers to inspect the property after contamination was discovered during replacement of a UST heating oil tank located near the northwest corner of the onsite residence. UMS observed soil staining after the UST was removed but no holes in the bottom of the UST. Sheening was observed on the groundwater which was at about 8.0 ft. below ground surface (bgs). Excavation of the contaminated soils occurred based on visual and use of a photoionization detector (PID). However, excavation could not continue to the south because of the residence onsite, to the west because of a fence and to the north because of playground equipment. Laboratory analytical data for diesel range organics (DRO) of samples collected at the groundwater interface at about 8 ft. bgs showed that on the excavation bottom to the south detected 8,710 mg/kg (sample MK BTM South), on the excavation bottom to the southwest detected 11,100 mg/kg (sample MK SW BTM), and on the bottom to the north showed 1,340 mg/kg (sample MK BTM North). PID measurements and laboratory sample MK East (below 10.4 mg/kg practical quantitation limit (PQL) for DRO) showed that all contamination to the east was removed. Approximately 100 cy of soil was stockpiled in the southwest corner of the property of which about 50 cy was suspected as being contaminated. MUS's December 7, 1998 cleanup report noted that there were no known drinking water wells in the area with the nearest drinking water well located about 2,000

ft. up-gradient of the site, i.e., the City of Wasilla's Class A drinking water well. MUS reported that based upon monitoring at two nearby gasoline stations, that groundwater in the area is to the south. MUS reported that the soil onsite between 4 and 8 ft. bgs consisted of sandy silt, gravel and cobbles.

In August 1999, further characterization and cleanup work was performed. On August 3, 1999, a monitoring well was installed by Beaver Lake Excavating (BLEC) but it was unknown whether anyone met the qualified person definition under 18 AAC 75. AlaskChem Engineering's *Interim Remediation and Sampling Report* dated August-September 1999 reported that the monitoring well was already backfilled when they (Ralph Hulbert) arrived onsite. No information was contained in the report of the construction of the monitoring well. AlaskChem's 1999 report noted that BLEC reported that when the monitoring well (MW-1) was installed that diesel fuel was detected on the groundwater, and AlaskChem noted that the soil cuttings from the installation on the ground was stained and had a diesel odor. MW-1 was installed about 10 ft. to the west of the southwest corner of the onsite residence or about 40 feet downgradient from the location of the former UST, and groundwater was reported by AlaskChem at about 7.5 ft. bgs but by BLEC to AlaskChem at 11.0 ft. bgs. AlaskChem measured that the depth of MW-1 was about 9.5 ft. bgs. AlaskChem submitted a water sample from MW-1 that showed 1.45 mg/L DRO however its report indicated that the well was probably not constructed properly because after development and purging, mud was found in the well and it was slow to recharge compared to the surrounding excavation. AlaskChem's report however indicated that the well was developed and purged the same day, i.e., on September 2, 1999.

During work overseen by AlaskChem, overburden was removed and further excavation of the contamination occurred. AlaskChem noted that the remaining contamination was in the smear zone about 6 inches above and 12 inches below the existing water table. After removing some of the contamination, it was estimated that about 50-60 cy of newly excavated contaminated soil was added to the stockpile/cell generated in October 1998, which was estimated also as 50-60 cy. AlaskChem halted further excavation because of the following reasons:

- The bulk of the contamination had been removed.
- The highest remaining contamination was along the foundation and could not be removed without compromising the integrity of the residence.
- Further excavation to the southwest could not be done because of site conditions, i.e., exact site conditions were undisclosed in the report. (However, during a meeting with ADEC staff on December 5, 2001, Ms. Euwer noted that the second excavation was stopped short of getting all of the contamination in the one area because the operators had incorrectly determined that utilities were in the area when in fact the utilities were located on the northside of the property).
- The soil cell was full. (During the December 2001 meeting, Errol Euwer noted that the main reason that the second excavation stopped was because they ran out of room to stockpile soil onsite).

It was unclear from AlaskChem's report how deep the excavation occurred within the surface of the area. Figure 2 in AlaskChem's report showed an area about 60 ft. by 30 ft. removed on the "surface" and about 15 ft. by 30 ft. removed to groundwater (attached). Figure 2 further shows that the excavation extended about 20 ft. to the north of the former UST and the entire length of the residence along the west side. During a December 5, 2001 meeting at ADEC, Ms. Euwer and son Errol noted that the second excavation removed about 1-3 feet off the ground surface.

Confirmation soil samples were selected based upon the highest PID results and analyzed for DRO and BTEX in the laboratory. All four confirmation samples exceeded the 250 mg/kg 18 AAC 75 Method Two cleanup level for DRO ranging from 711 to 6,100 mg/kg. BTEX constituents were undetected or

well below their respective Method Two cleanup levels. It was unclear from AlaskChem's report whether the area of the 1998 excavation was also included in the 1999 excavation.

A follow-up report dated April 12, 2000 by MUS summarized AlaskChem's 1999 work activities and noted that based upon data from three nearby contaminated sites that groundwater flowed to the south, and that all nearby residences were connected to the City of Wasilla's public water and sewer systems. The 2000 MUS report recommended further groundwater monitoring but no further excavation.

On July 24, 2000, ADEC provided comments to AlaskChem's 1999 report and to MUS's 2000 letter. ADEC noted that MW-1 was not constructed to ADEC's requirements and considered the DRO results as questionable and requested installing another monitoring well and perform groundwater monitoring.

On June 20, 2001, ADEC conditional approved of Gilfilian Engineering & Environmental Testing, Inc.'s (GE²T) April 30, 2001 work plan to landspread the stockpiled soil onsite and install another monitoring well down gradient of the former UST.

In 2001, GE²T installed three additional monitoring wells (MW) G-1 (located along the southwest edge of the former UST and near former sampling location ECC-4); G-2 (located about 60 ft. west of the southwest corner of the residence and about 60 ft. southwest of the former UST); and G-3 (located about 70 ft. south/southwest of the former UST). GE²T's reports *July 2001 Release Investigation* dated August 16, 2001 and *October 2001 Release Investigation and Ground Water Monitoring Event* dated December 5, 2001 stated that MW G-1 was installed on July 16, 2001 while MWs G-2 and G-3 were installed on October 30, 2001. MW G-1's depth was 9.0 ft. bgs while MWs G-2 and G-3's depths were to 15.0 ft. bgs. The GE²T August report noted that MWs G-2 and G-3 were installed because of findings from MW G-1. Figure 1 of the December 5, 2001 report is attached showing the locations of the monitoring wells in proximity to other features on the lot.

In July 2001, GE²T reported that DRO was detected in MW G-1 above Table C cleanup levels at 37.4 mg/L while BTEX and gasoline range organics (GRO) were non-detect (ND). A sample collected from MW-1 in July 2001 showed ND for BTEX and DRO but 0.12 mg/L GRO. The report noted that DRO and GRO analysis failed to meet quality control criteria for precision. Petroleum sheening and odor was observed from MW G-1. Groundwater was detected at 6.01 ft. bgs. Soil samples collected at the groundwater interface showed contaminant levels ND or well below their respective cleanup levels for DRO, BTEX and GRO.

In October 2001, GE²T installed MWs G-2 and G-3, and soil data collected from G-2 and G-3 at the groundwater interface (i.e., about 8 ft. bgs) and at G-3 at 6.0 ft. bgs showed ND or contaminant levels well below their respective cleanup levels for DRO, BTEX and GRO. Samples collected from groundwater from G-1, G-2 and G-3 showed that at only G-1 were any exceedances to Table C cleanup levels detected, i.e., at 18.2 mg/L DRO. The December 5, 2001 report showed that DRO had decreased from 37.1 mg/L during the previous sampling event in July 2001 however DRO still remained at 18.2 mg/L in groundwater in monitoring well G-1.

Per sampling conducted on October 31, 2001, GE²T estimated that groundwater flowed to the southwest at a gradient of 0.0016 ft./ft.

In letters dated 2001, 2003 and 2004, ADEC informed the property owners that further information needed to be provided prior to ADEC considering a closure determination for the site.

- A drinking water well survey within a ¼ mile radius of the site.
- An evaluation whether vapors in the building from the underlying contamination may pose a risk to occupants.

- An estimate of the volume and location of contaminated soil remaining onsite
- A workplan to be provided that delineated a groundwater sampling schedule and a reporting schedule
- Status of the stockpile because it had remained onsite since 1998 and apparently no remediation (the CSP had approved that the soil could be landspread onsite in its June 20, 2001 letter) did occur for the stockpiled soil.
- Clarification on how much material was stored in the stockpile(s).

On February 5, 2003, ADEC received sampling results that Errol Euwer provided to the CSP. The submittal provides analytical data for monitoring wells G-1, G-2, G-3 and the contaminated soil stockpile. Review of laboratory analytical data shows that GRO and BTEX constituents were non-detect for the groundwater at all three monitoring wells. DRO was detected at 2.5 mg/l in G-1, non-detect at G-2 (detection level was 0.495 mg/L) and was not analyzed for at G-3. The data shows that groundwater exceeds 18 AAC 75 Table C cleanup level of 1.5 mg/L at G-1. Review of the laboratory analytical data for the soil sample from the stockpile shows that it was analyzed for BTEX and DRO. The report showed that the soil sample was non-detect for BTEX constituents. The sample showed that DRO was detected at 29.2 mg/kg. This level is below the most stringent Method 1 (100 mg/kg) or Method 2 cleanup levels (250 mg/kg) in 18 AAC 75 for DRO. While the levels had decreased, it appeared that the data was questionable because of several sampling procedures errors, e.g. the samples were not collected by a qualified person, there was no information where they sampled or what screening device was used to select the area sampled or whether the samples met holding times, and whether any duplicate samples were collected. No workplan had been provided to CSP for this sampling effort.

On June 9, 2009, ADEC conditionally approved of Tutka's work plan to sample three existing monitoring wells and sample the existing stockpile onsite. ADEC required that the soil near the foundation be sampled where prior sampling analysis showed elevated petroleum levels remained after the 1998 and 1999 excavations. ADEC also requested that contamination beneath the building be investigated to determine if a complete vapor intrusion pathway exists and proposed three methods to evaluate this pathway. ADEC also required confirmation that no drinking water well is located within ¼ mile of the subject residence and a Conceptual Site Model (CSM) be submitted for the site.

Tutka informed ADEC that it would pursue the option to determine whether a complete vapor intrusion pathway existed by sampling soil and groundwater at the prior highest known remaining contaminant locations soil and groundwater existed (i.e., soil near the northwest corner of the foundation by former 1998 sampling location MK BTM South that detected 8,710 mg/kg DRO and 1999 sampling location ECC-4 that detected 6,100 mg/kg DRO, and at MW G-1 well where elevated DRO levels in groundwater had been detected).

Tutka performed the site investigation on June 25 and July 2, 2009. During this time, Tutka performed the following: estimated the volume of the onsite stockpile; sampled the existing stockpile; developed a CSM; performed a review of drinking water wells within ¼ mile of the site; and sampled the three existing monitoring wells.

Tutka's July 21, 2009 report *Site Characterization Report Wasilla Children's House Home Heating Oil Fuel Spill* dated July 21, 2009 for their activities noted that they advanced one boring using direct push methodology about 12 feet from the northwest corner of the residence and about 11 feet to the north-northeast of monitoring well G-1. This location was near where sample ECC-4 was collected by AlaskChem in 1999 that showed 6,100 mg/kg DRO, i.e. about 8 ft. to the southwest of the former UST.

A figure from that report is attached (labeled as Figure 3) to show contaminant concentrations in monitoring wells and in the one soil boring.

The Tutka report noted the following:

- The existing stockpile was about 80 cy of soil/gravel, and was located on the west side of the property with no liner and no cover, but plastic sheeting was found throughout the stockpile.
- Field screening was used to determine three sampling locations, and samples were collected between 18 inches to 30 inches from the surface of the stockpile. The three results (plus a duplicate) showed no contaminant in any of the samples above the most stringent 18 AAC 75.341 Method Two cleanup level (for migration to groundwater pathway). These results showed DRO between 88 and 120 mg/kg; GRO and benzene, toluene, ethylbenzene and xylenes (BTEX) below detection levels (and cleanup levels).
- A single boring was advanced with a GeoProbe direct push unit to 8.0 feet bgs about 12 feet from the northwest corner of the residence and about 11 feet to the north-northeast of monitoring well G-1. A soil sample and a duplicate were collected at 7-8 ft. bgs. Groundwater was encountered at 7 ft. bgs. Samples were analyzed for volatile organic compounds (VOCs)(EPA Method 8260); GRO (AK Method 101); DRO (AK Method 102); and polycyclic aromatic hydrocarbons (PAHs)(EPA Method 8270).

The only constituent that was reported was for indeno (1,2,3-cd)pyrene at 0.007 mg/kg and well below its 18 AAC 75.341 Method Two cleanup level of 41.0 mg/kg (and that was in the duplicate sample). The only other constituents that were detected were noted in either the sample or its duplicate were as either J qualifier (estimated) or B qualifier (a possible laboratory contaminant) (i.e., DRO at 18 mg/kg JB; phenanthrene at 0.003 mg/kg JB; anthracene at 0.0014 mg/kg JB; fluoranthene at 0.0034 mg/kg JB; pyrene at 0.0055 mg/kg JB; and, benzop(a)pyrene at 0.0063 mg/kg J). However, these other contaminants reported as J and/or B qualifier were several orders of magnitude less than the most stringent (migration to groundwater) cleanup level in 18 AAC 75.341.

- Groundwater from monitoring wells G-1, G-2 and G-3 (plus a duplicate for G-1) were collected and analyzed for BTEX, GRO and DRO. In addition, samples from MW G-1 were analyzed for volatile organic compounds (EPA Method 8260) and PAHs (Method 8270).

No detections for any constituent in any of the groundwater samples were observed and all laboratory PQLs were below the respective 18 AAC 75.345 Table C cleanup levels for each contaminant.

- A drinking water well survey showed that seven drinking water wells were located within ¼ miles from the subject property but were presumed not to be used for drinking water because the area's residences are within the City of Wasilla's drinking water system. In addition, the City of Wasilla's Class A water source is about 2,000 feet up-gradient of the subject property.

In September 2010, Tutka was contracted to decommission the four monitoring wells on site. In a report dated September 9, 2010 stated that Tutka properly decommissioned the four wells.

Table 1. Soil sample Results (in mg/kg)

Sample Location	Sampling Date	Depth (feet)	Benzene	Toluene	Ethylbenzene	Total Xylenes	GRO	DRO
MK BTM North (about 15 ft. north of the former UST)*	9/30/1998	8.0	-	-	-	-	-	1,340
MK BTM South (on south edge of former UST)	9/30/1998	8.0	-	-	-	-	-	8,710
MK SW BTM (on southwest edge of former UST)*	9/30/1998	8.0	-	-	-	-	-	11,100
ECC-1 (about 25 ft. southwest of the former UST)	8/4/1999	7.5	ND (0.015)	ND (0.06)	ND (0.06)	0.165	-	3,900
ECC-2 ¹⁾ (about 20 ft. to the southwest of the former UST)	8/4/1999	7.5	ND (0.01)	ND (0.042)	ND (0.042)	0.14	-	711
ECC-3 ¹⁾ (about 15 ft. to the northwest of the former UST)	8/4/1999	7.5	ND (0.0095)	ND (0.038)	ND (0.038)	ND (0.0851)	-	1,590
ECC-4 (about 8 ft. to the southwest of the former UST)	8/4/1999	7.5	ND (0.016)	ND (0.064)	0.178	1.092	-	6,100
G-1 (located along the southwest edge of the former UST) (G-1-7)	7/16/2001	7.0	ND (0.015)	ND (0.031)	ND (0.031)	ND (0.031)	3.1	86.4
(G-1-8)	7/16/2001 duplicate	7.0	ND (0.0082)	ND (0.016)	ND (0.016)	ND (0.016)	ND (1.6)	65.4
G-2 (located about 60 ft. southwest of the former UST) (G-2 S-1)	10/30/2001	8.0	ND (0.00795)	0.0341	ND (0.0318)	ND (0.0636)	ND (1.59)	ND (11.0)
(G-2 S-1)	10/30/2001 duplicate	8.0	ND (0.00852)	ND (0.0341)	ND (0.0341)	ND (0.0682)	ND (1.70)	ND (10.9)
G-3 (located about 70 ft. south/southwest of the former UST) (G-2 S-2)	10/30/2001	6.0	ND (0.0142)	ND (0.0569)	ND (0.0569)	ND (0.1138)	ND (2.85)	ND (10.9)
G-3 S-3	10/30/2001	9.0	ND (0.00713)	ND (0.0285)	ND (0.0285)	ND (0.057)	ND (1.43)	ND (10.5)
09WCH008SS (located about 12 feet from the northwest corner of the residence and about 11 feet to the north-northeast of monitoring well G-1)	7/2/2009	7.0-8.0	ND (0.011)	ND (0.028)	ND (0.028)	ND (0.028)	ND (3.8)	18JB
(09WCH009SS)	7/2/2009 duplicate	7.0-8.0	ND (0.012)	ND (0.03)	ND (0.03)	ND (0.03)	ND (3.9)	24.0
Stockpile Sample X-4 (18 inches below the surface of the pile)	6/25/2009	18 inches	ND (0.012)	ND (0.03)	ND (0.03)	ND (0.03)	ND (3.0)	120.0
Stockpile Sample X-7 (30 inches below the surface of the pile)	6/25/2009	30 inches	ND (0.012)	ND (0.031)	ND (0.031)	ND (0.031)	ND (3.1)	88.0
Stockpile Sample X-8 (24 inches below the surface of the pile)	6/25/2009	24 inches	ND (0.011)	ND (0.027)	ND (0.027)	ND (0.027)	ND (2.7)	95.0
Ingestion/Inhalation Clean up level			150/11	8,100/220	10,100/110	20,300/63	1,400/1,400	10,250/12,500
Migration to Groundwater Cleanup Level			0.025	6.5	6.9	63	300	250

ND = Analyte not detected;

- = Not sampled for;

JB = J is estimated quantity below reporting limits and B is compound detected in method blank and sample.

() = the laboratory practical quantitation level

In bold = sample results exceeding 18 AAC 75.341 Method Two cleanup levels;

* Soil from this area was apparently excavated per Figure 2 of the AlaskChem *Interim Remediation and Sampling Report* dated August-September 1999;

1) = AlaskChem 1999 report noted that the laboratory may have misreported sample ECC-2 as ECC-3 and vice versa.

Table 2. Groundwater Results (in mg/L)

Sample Location	Sampling Date	Depth of MW BGS (ft.)	Depth of GW BGS (ft.)	Benzene	Toluene	Ethylbenzene	Total Xylenes	GRO	DRO
MW-1 (about 40 ft. southwest of the former UST)	9/2/1999	9.5	7.5	-	-	-	-	-	1.45
	7/16/2001		8.87	ND (0.001)	NR	NR	NR	0.12	ND (0.4)
G-1 (located along the southwest edge of the former UST)	7/16/2001	9.0	6.01	NR	NR	NR	NR	ND (0.04)	37.4
	Duplicate			ND (0.001)	NR	NR	NR	0.12	15.9
	10/30/01		6.75	ND (0.0005)	0.00734	ND (0.002)	ND (0.002)	ND (0.09)	18.2
	6/25/2009 1)		6.68 2)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.002)	ND (0.05)	ND (0.48)
	Duplicate 1)			ND (0.001)	ND (0.001)	ND (0.001)	ND (0.002)	ND (0.05)	ND (0.48)
G-2 (located about 60 ft. southwest of the former UST)	10/31/01	15.0	7.18	ND (0.0005)	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.09)	ND (0.495)
	6/25/2009		7.14 2)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.002)	ND (0.05)	ND (0.48)
G-3 (located about 70 ft. south/southwest of the former UST)	10/31/01	15.0	7.69	0.000602	ND (0.002)	ND (0.002)	ND (0.002)	ND (0.09)	ND (0.5)
	6/25/2009		7.61 2)	ND (0.001)	ND (0.001)	ND (0.001)	ND (0.002)	ND (0.05)	ND (0.5)
Table C Groundwater Cleanup Level				0.005	1.0	0.7	10.0	2.2	1.5

ND = Analyte not detected;

- = Not sampled for;

NR = Not reported in laboratory report;

() = the laboratory practical quantitation level

In bold = sample results exceeding 18 AAC 75.345 Method C cleanup levels;

1) = samples were also analyzed for PAHs using EPA Method 8270 but no constituent was above their respective 18 AAC 75.345 Table C cleanup level

2) Per conversation with Scott Nygard of Tutka on October 5, 2009 conversation and per his field notes provided on November 3, 2009.

Contaminants of Concern

- Diesel Range Organics (DRO)
- Gasoline Range Organics (GRO)
- Benzene
- Toluene
- Ethylbenzene
- Xylenes

Cleanup Levels

The soil cleanup levels for this site are established in 18 AAC 75.341, Method Two, Table B2 Under 40 inch Zone, Migration to Groundwater.

<u>Contaminant</u>	<u>Site Cleanup Level (mg/kg)</u>
• DRO	250
• GRO	300
• Benzene	0.025
• Toluene	6.5
• Ethylbenzene	6.9
• Xylenes	63

The groundwater cleanup levels for this site are established in 18 AAC 75.345 Table C Groundwater Cleanup Levels.

<u>Contaminant</u>	<u>Site Cleanup Level (mg/L)</u>
• DRO	1.5
• GRO	2.2
• Benzene	0.005
• Toluene	1.0
• Ethylbenzene	0.7
• Xylenes	10

Pathway Evaluation

The exposure pathways for human health that were evaluated include the following: ingestion of soil and groundwater, indoor and outdoor inhalation of vapors, and dermal contact with soil.

Soil contamination remaining onsite is below the most stringent migration to groundwater 18 AAC 75.341 Method Two cleanup levels for all petroleum constituents. Contaminant levels in groundwater are also below all petroleum constituents' 18 AAC 75.345 Table C cleanup levels.

The subject residence and surrounding properties are connected to the City of Wasilla's public water system and therefore, the ingestion of groundwater pathway is incomplete.

Because all constituents were below their applicable soil and groundwater cleanup levels, the indoor air pathway, outdoor inhalation and ingestion are considered incomplete. The migration to groundwater pathway is also considered an incomplete pathway because soil contaminant levels are below applicable cleanup levels.

The exposure pathway analysis above was supported by the most recent ADEC Exposure Tracking Model (ETM) ranking. The ETM results showed all pathways to be one of the following: De Minimis Exposure, Exposure Controlled, or Pathway Incomplete.

The ingestion/dermal contact pathway is considered incomplete because DRO levels, including in the existing stockpile on site, are below applicable cleanup levels. While DRO levels within

the stockpile are below health based cleanup levels, ADEC recommends that minimal contact with petroleum contaminated soil occur for children. Currently the soil stockpile remains outside of the fenced in day care. The DRO levels within the stockpile are also below the most stringent 18 AAC 75 Method Two cleanup levels, i.e., migration to groundwater. If the stockpile is landspread onsite, the stockpile should be landspread outside of the area where children have access to the soils to minimize any contact with the petroleum contaminated soils or the soil be transported off site where it can be properly disposed of, i.e., not within 100 feet of an environmentally sensitive area such as a wetland or within the protective radius of a drinking water well.

ADEC Decision

The cleanup actions to date have served to excavate and adequately remove contaminated soil from the site. Based on the information available, ADEC has determined no further assessment or cleanup action is required. There is no longer a risk to human health or the environment, and this site will be designated as closed on the Department's database.

Although a Cleanup Complete determination has been granted, ADEC approval is required for off-site soil disposal in accordance with 18 AAC 75.325(i). However, since this site has met the most conservative soil cleanup levels, this letter will serve as your approval for future off-site movement and disposal of soil associated with this release. It should be noted that movement or use of potentially contaminated soil in a manner that results in a violation of 18 AAC 70 water quality standards is unlawful and that contaminated soil cannot be placed within the protective radiuses of drinking water wells.

This determination is in accordance with 18 AAC 75.380(d) and does not preclude ADEC from requiring additional assessment and/or cleanup action if future information indicates that 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, 410 Willoughby Avenue, Suite 303, Juneau, Alaska 99801, 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, Juneau, Alaska 99801, 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.

Cost Recovery

Please be aware that under Alaska Statute 46.03.760, AS 46.03.822 and AS 46.03.070 the ADEC is required to recover expenses incurred in providing regulatory oversight for hazardous substance spills. Expenses for which we must seek reimbursement include staff time associated with general or technical assistance, work plan review, project oversight, general project management, legal services, interest, travel, equipment and supplies, as well as our contractor costs.

If you have questions about this closure decision, please contact the ADEC project manager, Rich Sundet at (907) 269 – 7578.

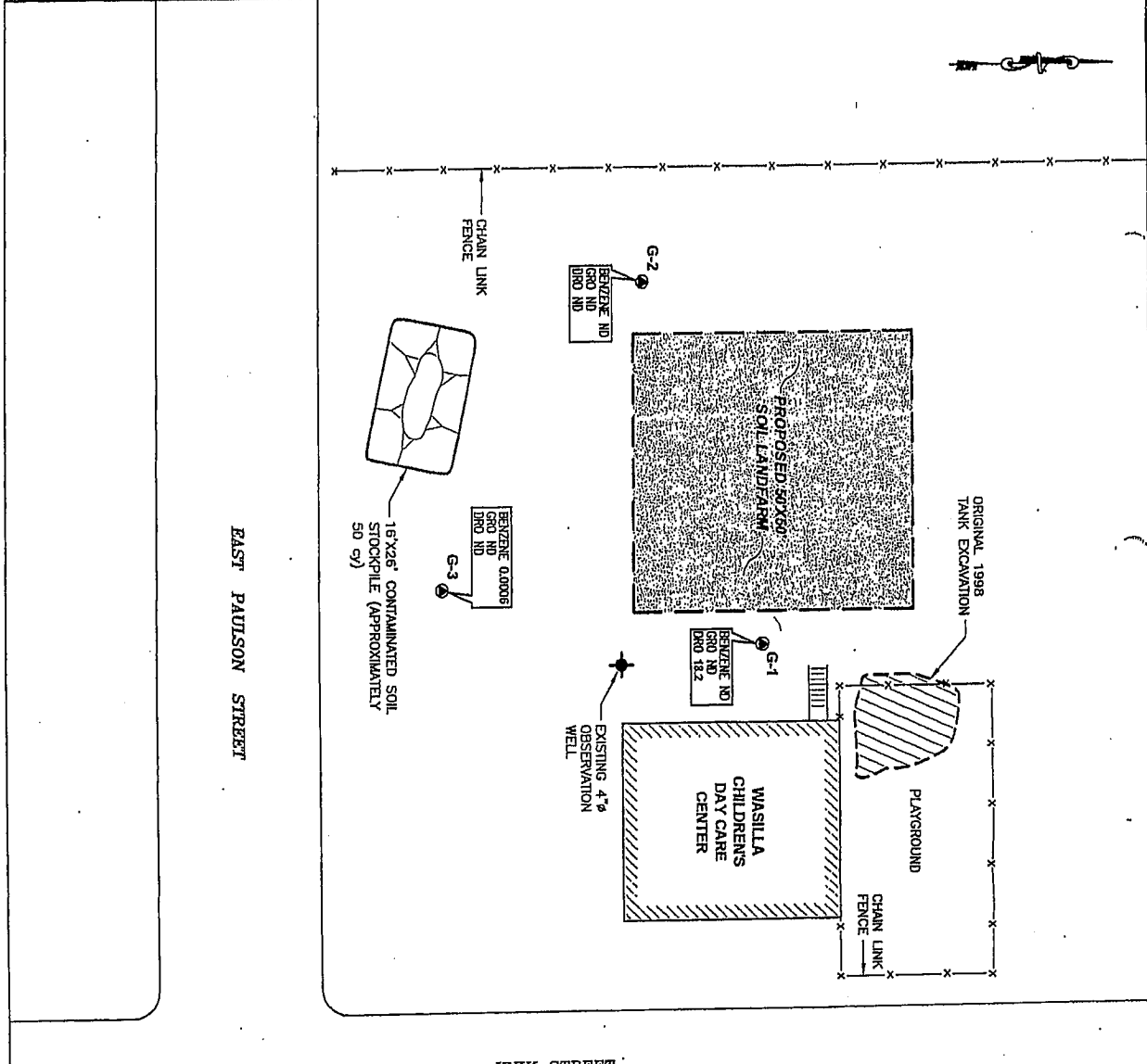
Sincerely,



Rich Sundet
Environmental Manager

Enclosures As stated: Figure 1 from Gilfilian's December 5, 2001 report;
Figure 2 from AlaskChem's 1999 report; and,
Figure 3 from Tutka's 2009 report

Cc: Keith Guyer, Tutka Environmental, Anchorage w/enclosures
Robert Gerwin, Health & Social Services, Anchorage w/enclosures
Amy Hill, Environmental Health, Palmer w/enclosures
Ruth Padua, Wasilla, via e-mail, w/enclosures



KNIK STREET

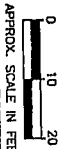
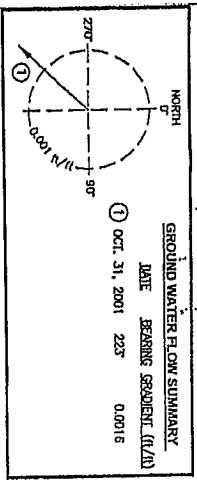
EAST PAULSON STREET

LEGEND

- MONITORING WELL LOCATION
- ND NOT DETECTED ABOVE PRACTICAL QUANTITATION LIMITS

NOTES:

1. BOLD/RED TEXT INDICATES CONTAMINANT CONCENTRATIONS ABOVE CLEANUP LEVELS FOR THIS SITE.
2. RESULTS ARE IN mg/L
3. SOIL SAMPLES WERE TAKEN AT THE TIME OF DRILLING WITH NON-DETECTABLE RESULTS FOR BENZENE, GRO, AND DRO.



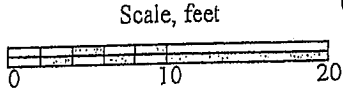
PROJECT No. 00048
 DATE 11/30/01
 DRAWING 00048F1
 DRAWN CEH
 APPROVED CJS

SITE PLAN WITH GROUND WATER ANALYTICAL RESULTS
WASILLA CHILDREN'S HOUSE
 291 EAST PAULSON STREET
 WASILLA, ALASKA

Gilfillan Engineering & Environmental Testing, Inc.
 2605 Denali Street, Suite 203
 Anchorage, Alaska 99503

Figure 2 Site Sketch
291 E. Paulsen Ave.,

AlaskChem Engineering
 August 1999



⊕ECC-n Sample locations

⊕MW-1 New monitoring well

Extent of surface excavation

Extent of excavation at groundwater

Original 1998 tank excavation and samples

Reference origin;
 x→, y↑

ECC-3
 1,590 mg/kg DRO

⊕MKSW

⊕MK South

⊕ECC-4

ECC-4
 6,100 mg/kg DRO
 Child care building and residence; 40 x 36 ft

ECC-1
 3,900 mg/kg DRO

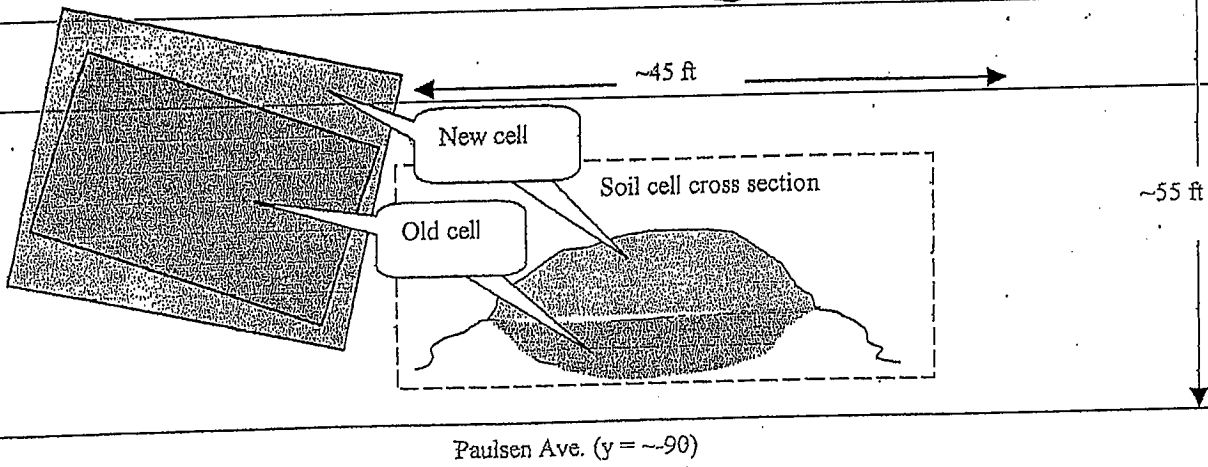
⊕ECC-1

⊕ECC-2

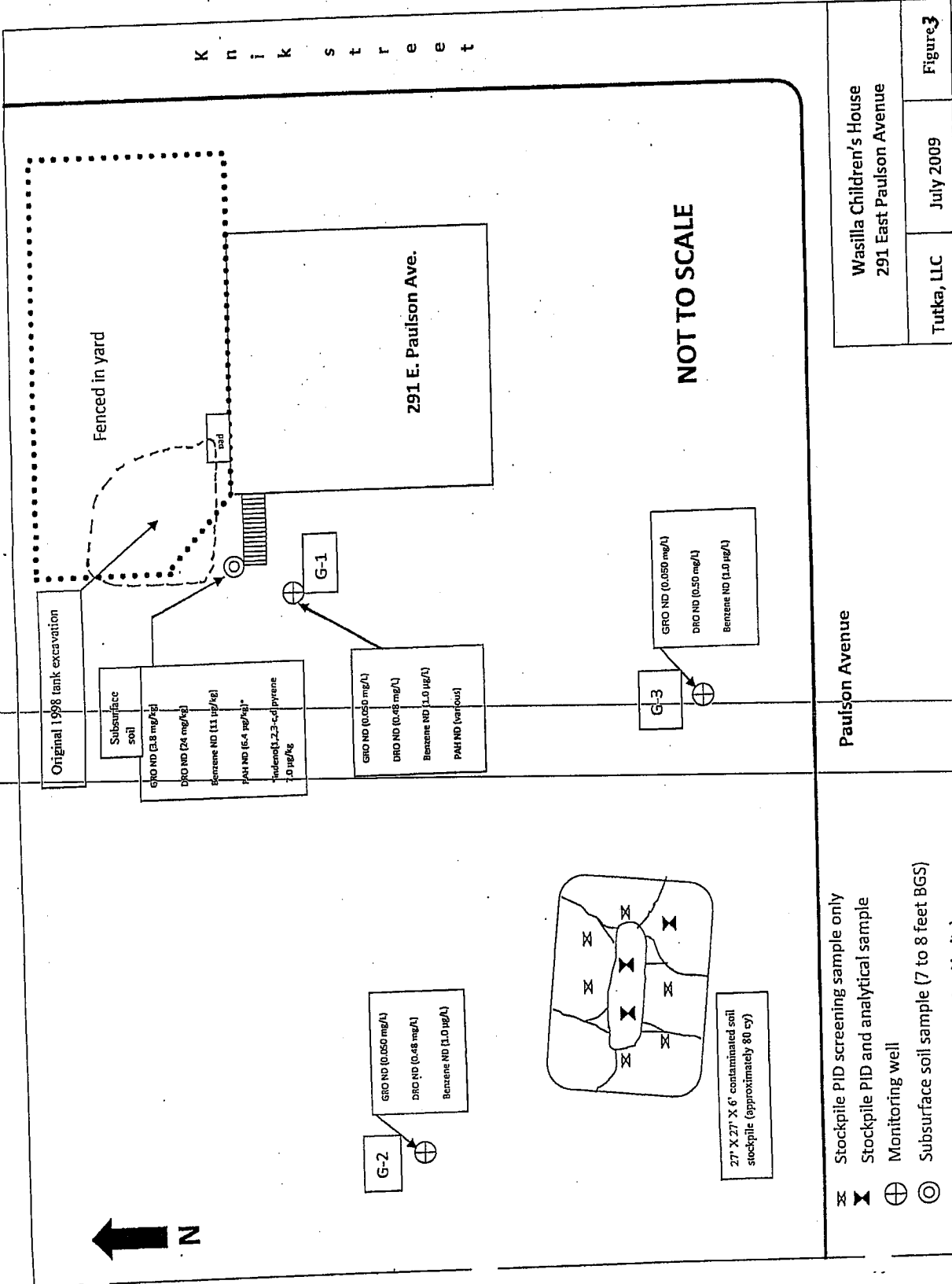
Soil stockpile cells;
 1998 & 1999

ECC-2
 711 mg/kg DRO

⊕MW-1



K n i k s t r e e t



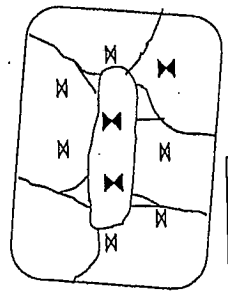
Subsurface soil

GRO ND (3.8 mg/kg)
DRO ND (24 mg/kg)
Benzene ND (111 µg/kg)
PAH ND (6.4 µg/kg)*
Indeno(1,2,3-cd)pyrene 1.0 µg/kg

GRO ND (0.050 mg/L)
DRO ND (0.48 mg/L)
Benzene ND (1.0 µg/L)
PAH ND (various)

GRO ND (0.050 mg/L)
DRO ND (0.50 mg/L)
Benzene ND (1.0 µg/L)

GRO ND (0.050 mg/L)
DRO ND (0.48 mg/L)
Benzene ND (1.0 µg/L)



- ⊗ Stockpile PID screening sample only
- ⊗ Stockpile PID and analytical sample
- ⊕ Monitoring well
- ⊙ Subsurface soil sample (7 to 8 feet BGS)
- ND Not Detected (Reporting Limits)