File

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300

CERTIFIED MAIL
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November 6, 2008

Mr. Tom Langseth
Langseth Environmental Services, Inc.
7517 Portland Ave.
Tacoma, WA 98404-3323

Re: Opinion under WAC 173-340-515(5) on Remedial Action(s) for the following Hazardous Waste Site:

- Name: Mizukami Project
- Address: 4524 20th Street East, Fife, WA
- Facility/Site No.: 9436194
- VCP No.: SW0623

Dear Mr. Langseth:

Thank you for submitting your independent remedial action report(s) for the Mizukami Project facility (Site) for review by the Washington State Department of Ecology (Ecology) under the Voluntary Cleanup Program (VCP). Ecology appreciates your initiative in pursuing this administrative option for cleaning up hazardous waste sites under the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

This letter constitutes an advisory opinion regarding whether the remedial action performed is sufficient to meet the specific substantive requirements of MTCA and its implementing regulations, Chapter 70.105D RCW and Chapter 173-340 WAC, for characterizing and addressing the following release(s) at the Site:

- Petroleum Products in Soil and Groundwater.

Ecology is providing this advisory opinion under the specific authority of RCW 70.105D.030(1)(i) and WAC 173-340-515(5).

This opinion does not resolve a person's liability to the state under MTCA or protect a person from contribution claims by third parties for matters addressed by the opinion. The state does not have the authority to settle with any person potentially liable under MTCA except in accordance with RCW 70.105D.040(4). The opinion is advisory only and not binding on Ecology.

Ecology's Toxics Cleanup Program has reviewed the following information regarding your remedial action(s):

1. Langseth Environmental Services, Inc. (Langseth), Site Assessment Report, July 11, 2003.

2. Langseth, Voluntary Cleanup Report, October 27, 2004.

3. Robinson Noble Saltbush, Inc. (RNS), Initial Remedial Groundwater and Soil Investigation, April 2005.

4. RNS, Remedial Investigation: Groundwater and Additional Soil Borings, January 2006.

5. RNS, Groundwater Monitoring Report (November 2007), March 2008.

6. RNS, Groundwater Monitoring Report (March 2008), July 2008.

7. RNS, Final Groundwater Monitoring Report, August 2008.

The documents listed above will be kept in the Central Files of the Southwest Regional Office of Ecology (SWRO) for review by appointment only. Appointments can be made by calling the SWRO resource contact at (360) 407-6365.

The Site is defined by the extent of contamination caused by the following release(s):

- Petroleum Products in Soil and Groundwater.

The Site is more particularly described in Enclosure A to this letter, which includes a detailed Site diagram. The description of the Site is based solely on the information contained in the documents listed above.

Based on a review of the independent remedial action report and supporting documentation listed above, **Ecology has determined that the remedial action described in the report is not sufficient to meet the specific substantive requirements contained in MTCA and its implementing regulations, Chapter 70.105D RCW and Chapter 173-340 WAC, for characterizing and addressing the following release(s) at the Site:**

- Petroleum Products in Soil and Groundwater.

Based on a review of the above-listed documents, Ecology has the following comments:

1. Please note that the VCP number has been incorrectly stated as SW0632 instead of SW0623 on the last three groundwater monitoring reports. To assure future reports are filed correctly and work performed is attributed to the Mizukami Project, please use the correct VCP number SW0623.

2. The location of the soil contamination still remaining on the Site does not appear to be correctly shown on the maps in the latest groundwater monitoring reports from March, July, and August 2008. According to the April 2005 Initial Remedial Groundwater and Soil Investigation Report, boring TB3 was found to have a concentration of diesel-range petroleum hydrocarbons (TPH-D) of 2,200 milligrams per kilogram (mg/kg). This exceeds the MTCA Method A cleanup level for TPH-D of 2,000 mg/kg. Please note that Figure 1, Site Detail and Boring Location Map, from the April 2005 report shows the wrong orientation for north. The north arrow on this map points east. If the location of TB-3 is assumed to be shown correctly on the map, then a correct description of the location of boring TB-3 would be just southeast of the fill area and just north of the driveway. The latest maps show the existing contamination area northeast of the fill area. Please double check the location of boring TB3 and its relationship to the fiber optics lines.

3. Monitoring Well 7 (MW7) was requested by Ecology in its June 22, 2006 Opinion Letter in the location of TB1 (in the fill area) where groundwater contamination of TPH-D was found at 50,000 micrograms per liter (µg/L). Though the report states that monitoring well was placed in the same location, the maps included in the Mach, July, and August 2008 reports show MW7 as being located within the footprint of the former building and **upgradient** of the source area. Please provide evidence that MW7 is located within the previously excavated area very near the location of TB1. To be effective, this monitoring well must be located in the source area or downgradient. If the location of MW7 is determined to be upgradient and not within the fill area where TB1 was located, another well will be required in the fill location.

4. Monitoring Well 4 (MW4) was only successfully sampled during the February 2005 sampling. Since that time it has been noted as dry or blocked with bentonite. This is a critical well for identifying the extent of groundwater contamination in the northern direction. Without it, the extent of groundwater contamination in this direction has not been defined, nor can it be monitored to determine whether contamination has moved off the property. MW4 needs to be replaced and monitored for three additional quarters.

5. Once the extent of soil and groundwater contamination has been adequately characterized, a feasibility study and a disproportionate cost analysis should be performed in accordance with WAC 173-340-350 (8) and WAC 173-340-350 (3)(e). A brief screening of various technologies that can be used to address the remaining soil and groundwater contamination and the disproportionate costs that would be generated in comparison with the environmental benefits should be discussed. You should consider the cost and difficulty involved in removing the remaining contaminated soil located near the fiber optics lines during this study.

6. Deed restrictions under MTCA used to be referred to as restrictive covenants and are now called environmental covenants. Details about environmental covenants can be found at http://www.ecy.wa.gov/programs/tcp/vcp/vcp2008/vcpRequirements.html and in WAC 173-340-440. Also see section 4.5.3.3 on institutional controls in the Guidelines for Property Cleanups under the Voluntary Cleanup Program (Publication No. 08-09-044). An Ecology-approved boilerplate is located at http://www.ecy.wa.gov/programs/tcp/vcp/Model%20Covenant_070515.doc.

   If the feasibility study and disproportionate cost analysis determine that a deed restriction is the best method to deal with the remaining soil contamination located near TB3, and Ecology agrees with the determination, then a draft environmental covenant will need to be submitted to Ecology for review. Documentation of the location of the fiber optic lines will need to be included as part of the draft. Once Ecology has approved the draft, all necessary signatures need to be collected before returning the environmental covenant to Ecology for the final signature. The environmental covenant must be recorded with Pierce County and the final copy, with Pierce County's stamp, submitted to Ecology.

7. In accordance with WAC 173-340-410 (3), long-term monitoring will be required if on-site disposal, isolation, or containment is the selected cleanup action for a site or a portion of a site. Such measures will be required until residual hazardous substance concentrations no longer exceed site cleanup levels. A long-term monitoring plan will be required if an environmental covenant is selected as the cleanup action for this

Site. The long-term monitoring will ensure the contamination present in the soil at this Site does not further impact the groundwater. A long-term monitoring plan should be submitted to Ecology for review and approval. Please refer to WAC 173-340-820 for a summary of the general requirements for the plan. At a minimum, the monitoring plan should include the following information:

- Proposed monitoring schedule for the 5-year review period (suggested monitoring should occur every 18 months to account for seasonal variations);
- Sample collection and handling procedures;
- Sample analyses and analytical methods to be used:
- Quality assurance/quality control (QA/QC) procedures;
- Investigational-derived waste (IDW) handling procedures

8. As a reminder, in accordance with WAC 173-340-840(5) and Ecology Toxics Cleanup Program Policy 840 (Data Submittal Requirements), data generated for Independent Remedial Actions shall be submitted simultaneously in both a written and electronic format. For additional information regarding electronic format requirements, see the website http://www.ecy.wa.gov/eim. Be advised that according to the policy, any reports containing sampling data that are submitted for Ecology review are considered incomplete until the electronic data has been entered. Please ensure that data generated during on-site activities is submitted pursuant to this policy. **Data must be submitted to Ecology in this format for Ecology to issue a No Further Action determination.** Be advised that Ecology requires up to two weeks to process the data once it is received.

Please note that this letter does not provide an opinion on the sufficiency of any other remedial actions conducted at the Site or whether further remedial action is necessary to characterize and address all contamination at the Site. To obtain such an opinion, you must submit an independent remedial action report to Ecology upon completion of the cleanup action for the Site and request such an opinion under the VCP.

Please also note that this opinion is based solely on the information contained in the documents listed above. Therefore, if any of the information contained in those documents is materially false or misleading, then this opinion will automatically be rendered null and void.

The state, Ecology, and its officers and employees make no guarantees or assurances by providing this opinion, and no cause of action against the state, Ecology, its officers or employees may arise from any act or omission in providing this opinion.

Again, Ecology appreciates your initiative in conducting an independent remedial action and requesting technical consultation under the VCP. As the cleanup of the Site progresses, you may request additional consultative services under the VCP, including assistance in identifying applicable regulatory requirements and opinions regarding whether remedial actions proposed for or conducted at the Site meet those requirements.

If you have any questions regarding this opinion, please contact me at (360) 407-6347.

Sincerely,

Connie Groven

Connie Groven
Site Manager
SWRO Toxics Cleanup Program

CGG/ksc:Opinion on Completed RA 000308

Enclosures (1): Description of the Site

Cc: Thomas Smith, RNS
Ken Bell, CMKM LLC
Sharon Bell, Pierce County Health Department
Marian Abbett, Ecology
Scott Rose, Ecology
Dolores Mitchell, Ecology (W/o enclosures)

Enclosure A
Description of the Site

The Site was a residential house and lot located at 4524-20th Street East in Fife, Washington (Mizukami Site Map attached). A 500-gallon heating oil underground storage tank (UST) located on the east side of the house was removed in 2003. After the UST removal, one soil sample was taken from the bottom of the excavation at 6 feet (') deep and tested for diesel-range petroleum hydrocarbons (TPH-D) utilizing the NWTPH-Dx method. The test results showed non-detection with a reported method detection limit of 20 milligrams per kilogram (mg/kg). The excavation was backfilled with excavated material from the pit and imported clean fill (Soil Sample Location Map A, Langseth Environmental Services, Inc [Langseth]).

Subsequent to removal of the UST, an above-ground storage tank (AST) was installed to store home heating fuel. The AST was installed directly in the vicinity of the former UST (Soil Sample Location Map A, Langseth). The AST service line was connected to the former UST service line mistakenly and during the winter, between 150-200 gallons of diesel fuel was drained into the surrounding soil. Since the AST was in the vicinity of the former UST, the diesel was drained into the former UST excavation.

After preliminary investigation, a contractor excavated and disposed of approximately 33 tons of diesel-contaminated soil. The confirmation soil samples from the bottom and sides of the excavation still showed some contamination remained in place. Subsequently, an additional 16 tons of soil were removed and disposed off-site. After removal of the additional contaminated soil, confirmation samples were taken and the results were below the MTCA Method A Soil Cleanup Level for diesel of 2,000 mg/kg. The final excavation size was 18' by 19' by 3.5' to 6.5' deep. The excavation was backfilled with clean soil (Soil Sample Location Map B, Langseth).

On February 10, 2005, a consultant installed six direct-push borings in and around the fill area, which were advanced to 8' below ground surface (bgs). Soil samples were taken from 3' bgs and tested for TPH-D, heavy oil-range petroleum hydrocarbons (TPH-O), carcinogenic polycyclic aromatic hydrocarbons (cPAHs), and volatile organic compounds (VOCs). Figure 1, Site Detail and Boring Location Map, Robinson, Noble, Saltbush, Inc. (RNS), shows the locations of the push probe samples. Test location TB-1 is in the middle of the previously excavated area.

A concentration of 2,200 mg/kg TPH-D was detected 3' bgs in TB-3, which exceeds the MTCA Method A Soil Cleanup Level of 2,000 mg/kg for TPH-D. TB-3 is reported to be located close to a fiber optics lines, therefore, further excavation would endanger the fiber

optics lines. An environmental covenant may be needed to address the contamination remaining in place in vicinity of the fiber optics lines.

Six groundwater samples were collected from direct-push borings after pumping enough water from each hole that water became clear. The groundwater samples were tested for TPH-D, TPH-O, benzene, toluene, ethylbenzene, xylene (BTEX), and cPAHs. TB-1, TB-3, and TB-4 showed elevated concentrations of TPH-D above the MTCA cleanup level of 500 micrograms/liter (ug/l). TB-1 and TB-3 also showed concentrations of benzene above the Method A groundwater cleanup level of 5 µg/l at 19 µg/L and 32 µg/L, respectively. It is also reported that the laboratory could not measure cPAHs due to the high concentration of diesel in the samples after laboratory dilution. Also, the review of the chromatograms indicated the presence of gasoline-range petroleum hydrocarbons (TPH-G).

In November 2005, ten direct push soil borings were drilled to approximately 15' bgs at various locations at the site and in the public right-of-way. The soil and groundwater samples from the push probe samples were tested by an on-site mobile laboratory. Based on the analytical data and field findings, five additional auger borings were placed reaching 10' bgs and finished as groundwater monitoring wells. Figure 2, Contaminated Direct Push Location Map, RNS, shows the locations of the soil borings, and the groundwater monitoring wells. Thirty soil samples were taken from the 10 soil borings, B1 through B10, from approximate depths of 5', 8.5', and 12' bgs. During the installation of the five groundwater monitoring wells, MW-1 through MW-5, two soil samples were taken from each well from depths of approximately 6.5' and 9.5' bgs.

The soil samples were tested for TPH-D, TPH-O, TPH-G, BTEX, methyl tertiary-butyl ether (MTBE), 1,2 dichloroethane (EDC), and total naphthalene. This was in compliance with Table 830-1 except the soil samples were not tested for cPAHs and total lead as required. The soil boring results were all below laboratory detection levels except in borings B4, B6, B7, and B8 where concentrations of diesel and heavy oil were detected above method detection levels but below MTCA Method A Soil Cleanup Level of 2,000 mg/kg for diesel. Figure 2, Contaminated Direct Push Location Map, RNS, shows the results for the soil samples in the vicinity of the City of Fife's right of way, locations of the push probe soil borings from various studies, and locations of the groundwater monitoring wells.

The groundwater samples from the monitoring wells, MW-1 to MW-5, and groundwater from the ten soil borings were analyzed for TPH-D, TPH-O, TPH-G, BTEX, MTBE, ethylene dibromide (EDB), EDC, total naphthalene, and cPAHs. The results for the groundwater samples were all below laboratory detection levels or below MTCA Method A Groundwater Cleanup Levels (Table 4, RNS). The groundwater monitoring wells were screened from 3.5' to 10' bgs. Depth to water in various groundwater monitoring wells

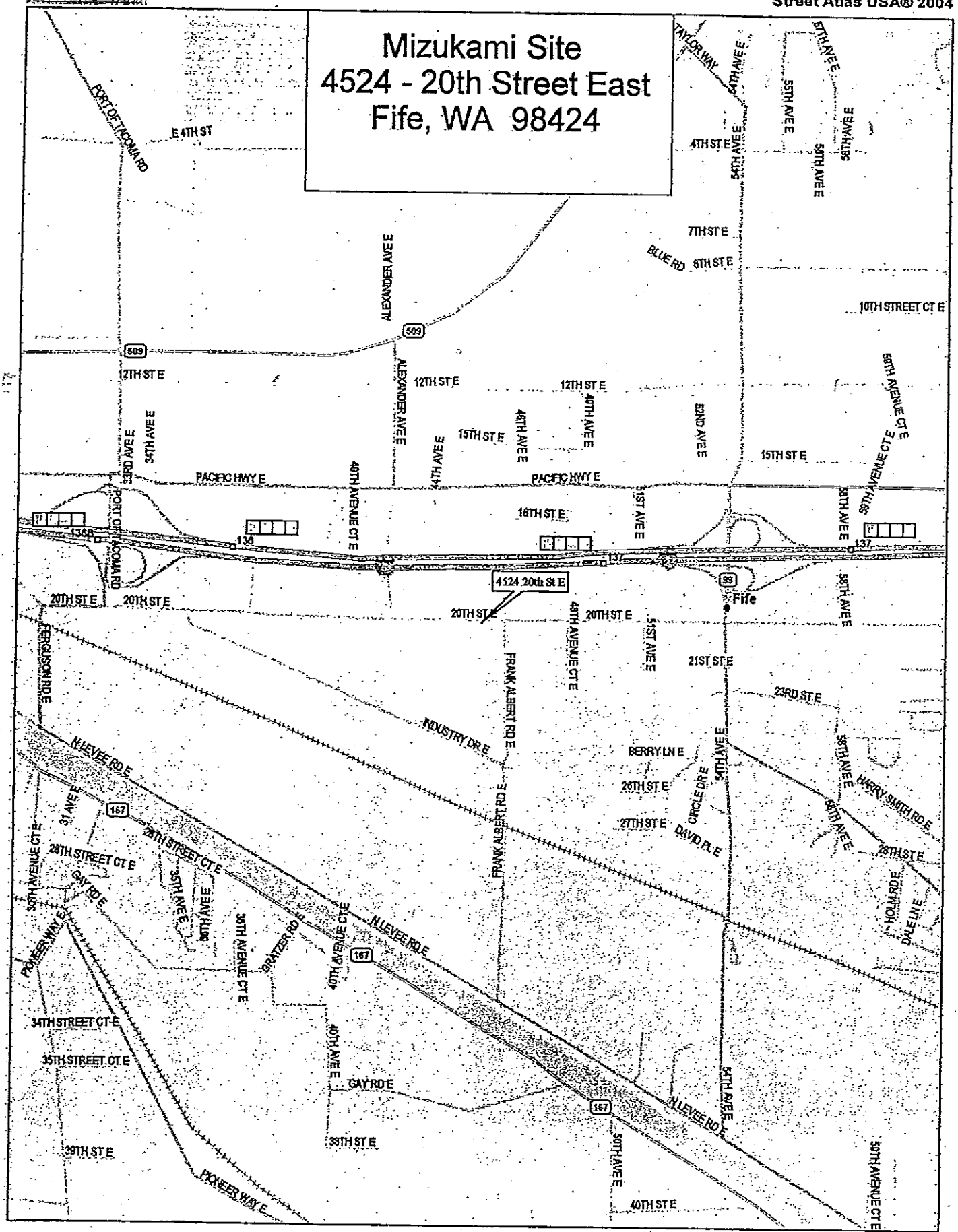
varied from 1' to 5.2'. Groundwater flow direction appears to be to the northeast (Figure 3, Groundwater Contour Map, RNS).

A June 22, 2006 Opinion Letter from Ecology required another monitoring well be installed in the location of TB-1 where the concentration of 50,000 µg/L of TPH-D was found in the groundwater from the push probe sample. The Opinion Letter also required three more consecutive quarters of groundwater monitoring. An environmental covenant was required in the area of TB-3, were a concentration of 2,200 mg/kg of diesel was found in the soil, if the location was too near fiber optics lines running along the eastern border of the property for further excavation.

Before additional groundwater sampling could be completed, construction of a warehouse began on the adjoining property. The Mizukami house was demolished and this property is now part of the parking lot of the warehouse. During construction, MW-2 and MW-5 were covered with fill. After construction, MW-2 was reconstructed. MW-6, in a new location to the southeast, replaced MW-5. MW-7 is reported to be located near TB-1 and is the well required by Ecology at the source location.

Three additional quarters of groundwater monitoring have been completed from MW-1, MW-2, MW-3, MW-6, and MW-7. MW-4 was not able to be sampled. It appears that MW-4 is compromised, and is no longer useable. The results from the three additional quarters of groundwater monitoring were all below MTCA Method A Groundwater Cleanup Levels (Tables 5-7, RNS). The groundwater flow direction varies as shown in the attached Potentiometric Surface Contour Maps, RNS, dated November 14, 2007, March 6, 2008, and June 12, 2008.

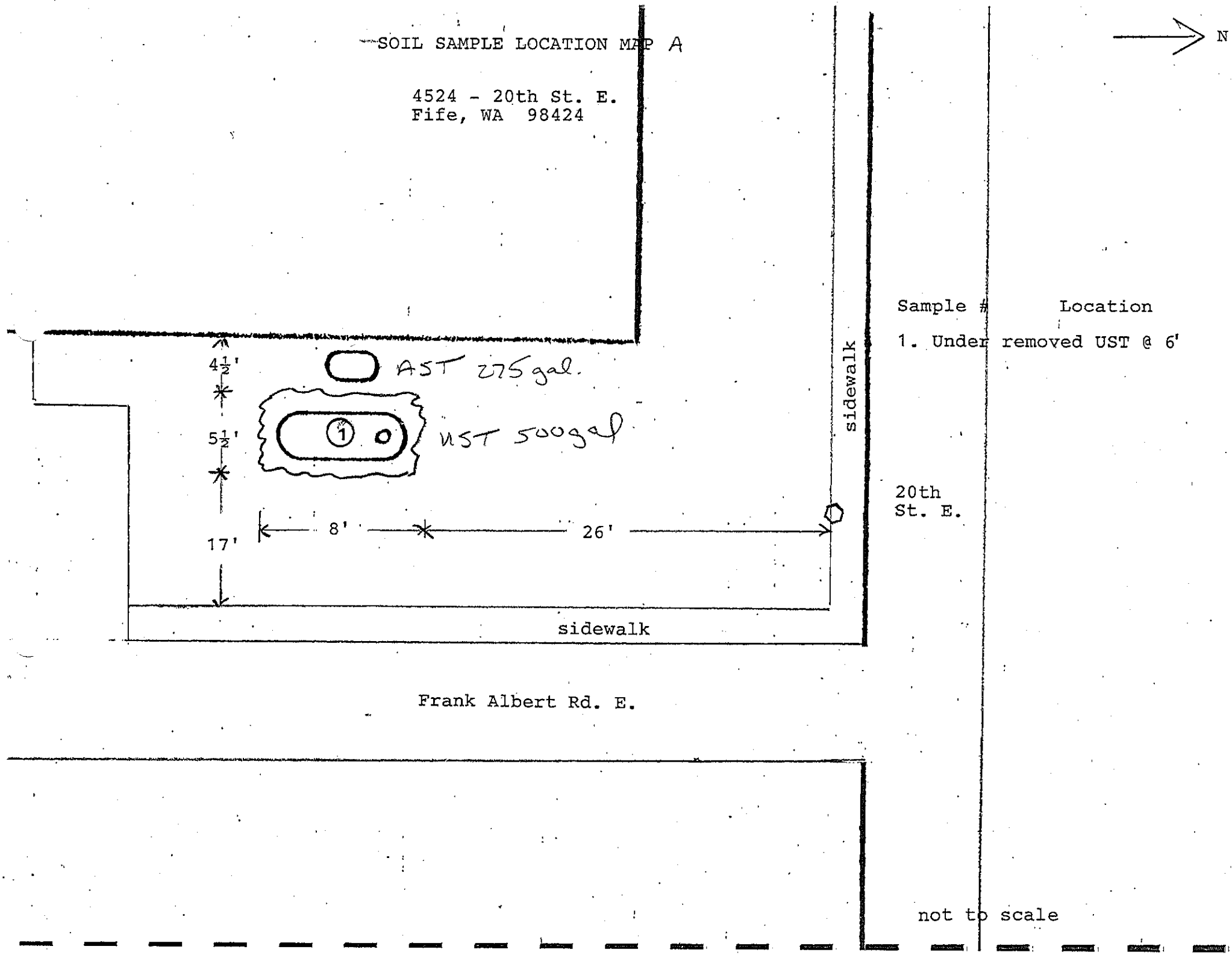
Mizukami Site
4524 - 20th Street East
Fife, WA 98424



Scale 1 : 17,600

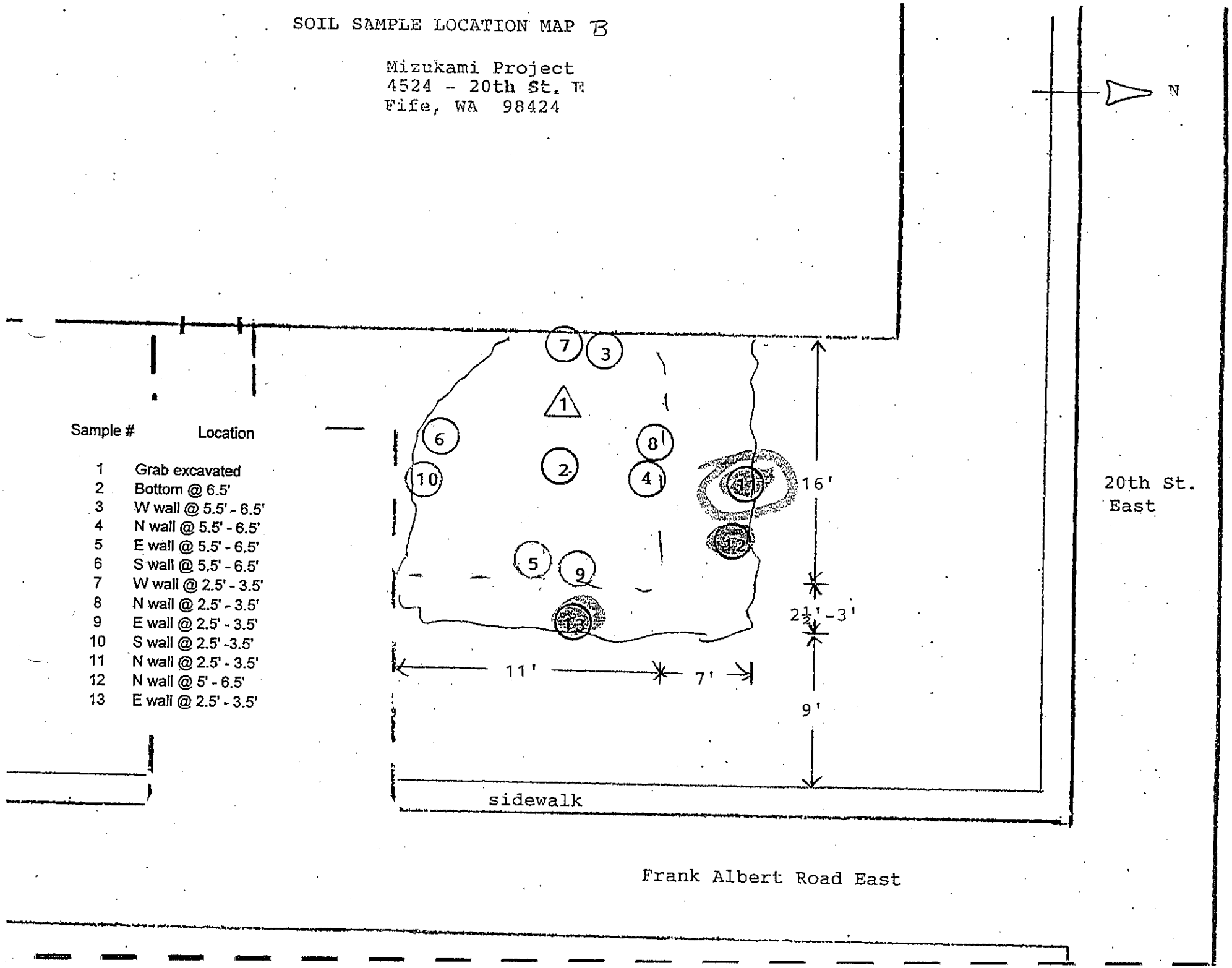
1" = 1,466.7 ft

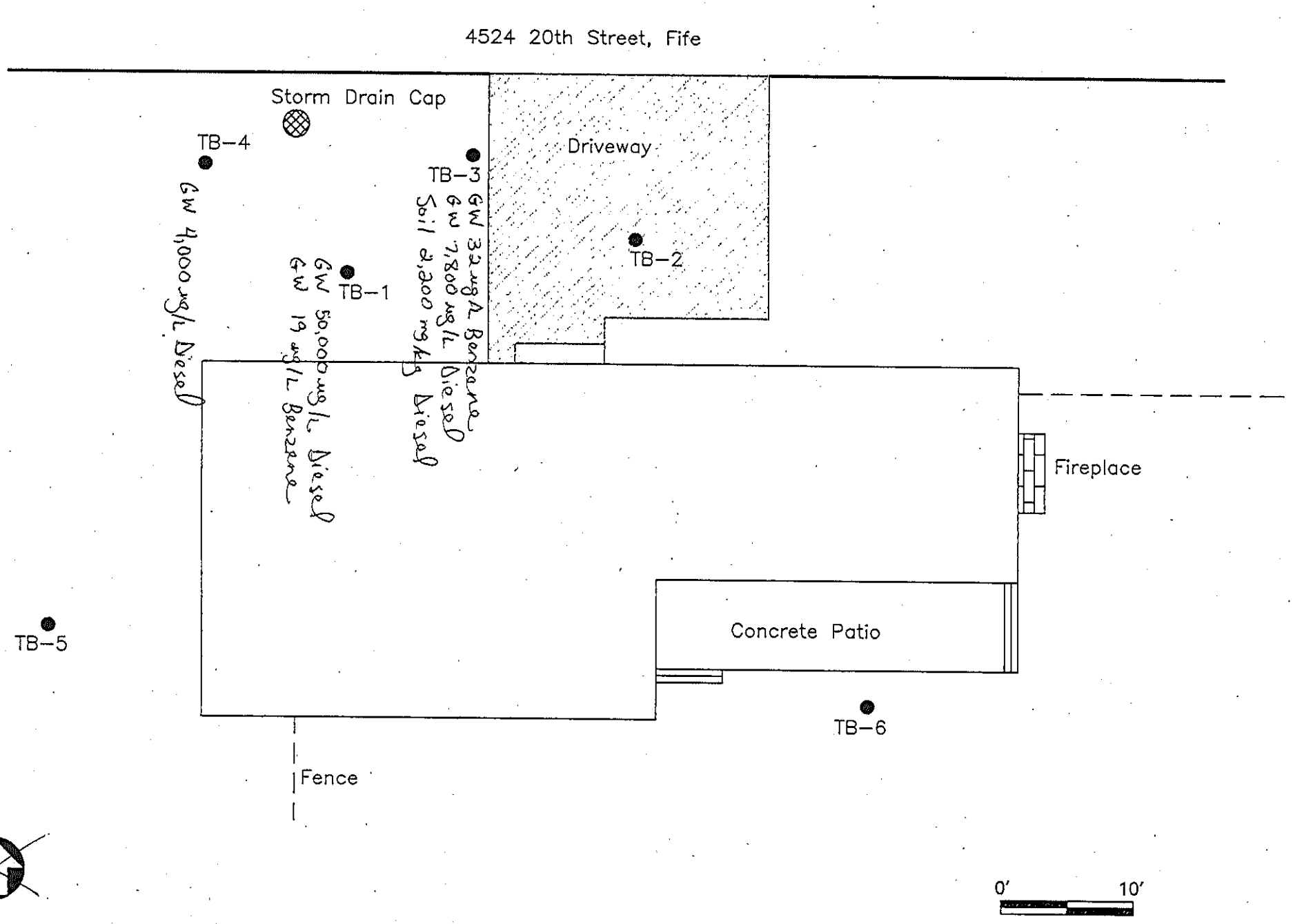
Data Zoom 13-5


SOIL SAMPLE LOCATION MAP A
4524 - 20th St. E.
Fife, WA 98424
N
Sample # Location
1. Under removed UST @ 6'
AST 275 gal.
UST 500gal
1
4½'
5½'
8'
26'
17'
sidewalk
sidewalk
20th St. E.
Frank Albert Rd. E.
not to scale

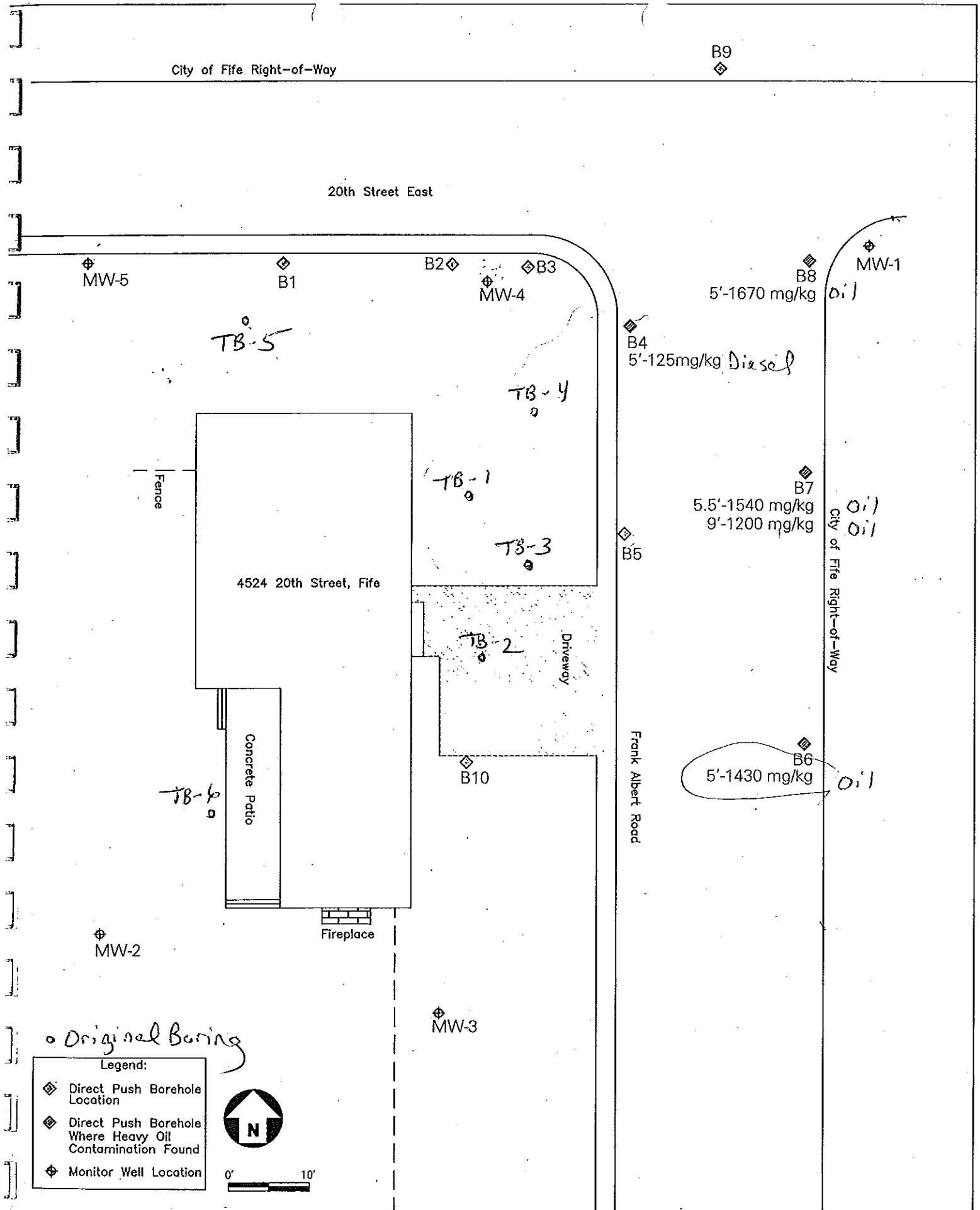
SOIL SAMPLE LOCATION MAP B

Mizukami Project
4524 - 20th St. E
Fife, WA 98424





ROBINSON NOBLE SALTBUSH INC. GROUNDWATER & ENVIRONMENTAL SCIENTISTS	PM: JFH April 2005 2203-001A	Pierce County T 20 N/R 4 E - 28 Scale 1" = 10'	Figure 1 Site Detail and Boring Location Map Langseth Environmental Services, Inc.



ROBINSON NOBLE SALTBUSH INC. GROUNDWATER & ENVIRONMENTAL SCIENTISTS	PM: JFH January 2006 2203-001A	Pierce County T 20 N/R 4 E - 28 Scale 1" = 15'	Figure 2 Contaminated Direct Push Location Map Langseth Environmental Services, Inc.

Table 3: Applicable MTCA Method A Cleanup Limits

Target Analyte	MTCA Method A Cleanup Limit
Gasoline	800 µg/L
Diesel	500 µg/L
Oil	500 µg/L
Total cPAHs	0.1 µg/L
Benzene	5 µg/L
Toluene	1,000 µg/L
Ethylbenzene	700 µg/L
Total Xylenes	1,000 µg/L
Napthalene	160 µg/L

The following tables summarize the historical test results for the subject site, four consecutive quarters of monitoring successfully below the applicable MTCA Method A Cleanup Levels.

Table 4: January 2006 Sampling Event Analytical Results (µg/L) Sampled 11/16/05

Analyte/ Sample ID	MW1	MW2	MW3	MW4	MW5
Gasoline	<100	<100	<100	<100	<100
Diesel	<200	<200	<200	<200	<200
Oil	<400	<400	<400	<400	<400
cPAH	<0.1	<0.1	<0.1	<0.1	<0.1
Benzene	<1.0	<1.0	<1.0	<1.0	<1.0
Toluene	<1.0	<1.0	<1.0	<1.0	<1.0
Ethylbenzene	<1.0	<1.0	<1.0	<1.0	<1.0
Xylenes	<1.0	<1.0	<1.0	<1.0	<1.0
Naphthalene	<5.0	<5.0	<5.0	<5.0	<5.0

Table 5: November 2007 Sampling Event Analytical Results (µg/L)

Analyte/ Sample ID	MW1	MW2	MW3	MW4	MW6	MW7
Gasoline	<100	<100	<100	NT	<100	<100
Diesel	<200	<200	<200	NT	<200	<200
Oil	<400	<400	<400	NT	<400	<400
cPAH	<0.1	<0.1	<0.1	NT	<0.1	<0.1
Benzene	<1.0	<1.0	<1.0	NT	<1.0	<1.0
Toluene	<2.0	<2.0	<2.0	NT	<2.0	<2.0
Ethylbenzene	<1.0	<1.0	<1.0	NT	<1.0	<1.0
Xylenes	<3.0	<3.0	<3.0	NT	<3.0	<3.0
Naphthalene	<0.5	<0.5	2.0	NT	<0.5	3.0

NT denotes well not tested due to dry well

Table 6: March 2008 Sampling Event Analytical Results (µg/L)

Analyte/ Sample ID	MW1	MW2	MW3	MW4	MW6	MW7
Gasoline	<100	<100	<100	NT	<100	<100
Diesel	<200	<200	<200	NT	<200	<200
Oil	<400	<400	<400	NT	<400	<400
cPAH	<0.1	<0.1	<0.1	NT	<0.1	<0.1
Benzene	<1.0	<1.0	<1.0	NT	<1.0	<1.0
Toluene	<2.0	<2.0	<2.0	NT	<2.0	<2.0
Ethylbenzene	<1.0	<1.0	<1.0	NT	<1.0	<1.0
Xylenes	<3.0	<3.0	<3.0	NT	<1.0	<3.0
Naphthalene	<0.5	<0.5	<0.5	NT	<0.5	<0.5

NT denotes well not tested due to dry well

Table 7: June 2008 Sampling Event Analytical Results (µg/L)

Analyte/ Sample ID	MW1	MW2	MW3	MW4	MW6	MW7
Gasoline	<100	<100	<100	NT	<100	<100
Diesel	<200	<200	<200	NT	<200	<200
Oil	<400	<400	<400	NT	<400	<400
cPAH	<0.1	<0.1	<0.1	NT	<0.1	<0.1
Benzene	<1.0	<1.0	<1.0	NT	<1.0	<1.0
Toluene	<2.0	<2.0	<2.0	NT	<2.0	<2.0
Ethylbenzene	<1.0	<1.0	<1.0	NT	<1.0	<1.0
Xylenes	<3.0	<3.0	<3.0	NT	<3.0	<3.0
Naphthalene	<0.5	<0.5	<0.5	NT	<0.5	<0.5

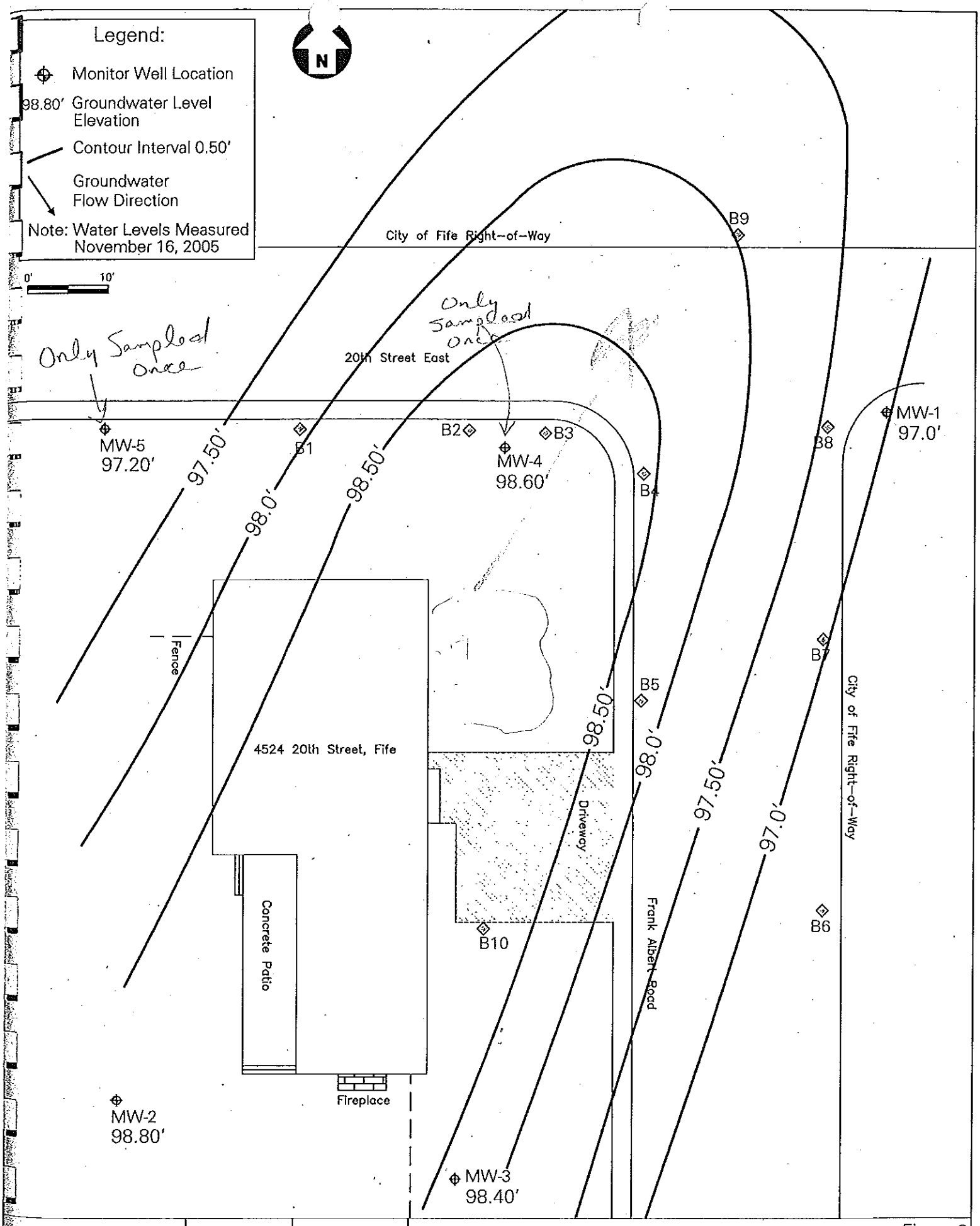
NT denotes well not tested due to integrity of well previously compromised

The June 2008 sampling event is the final monitoring event scheduled for the subject site since the removal of the contaminated soil in July 2004. As noted in the tables above, no detections of target analytes above MTCA Method A Cleanup Limits for ground water were found. The results of the past quarterly monitoring events indicate generally good quality ground water remains below the site and no impact to the ground water has been observed.

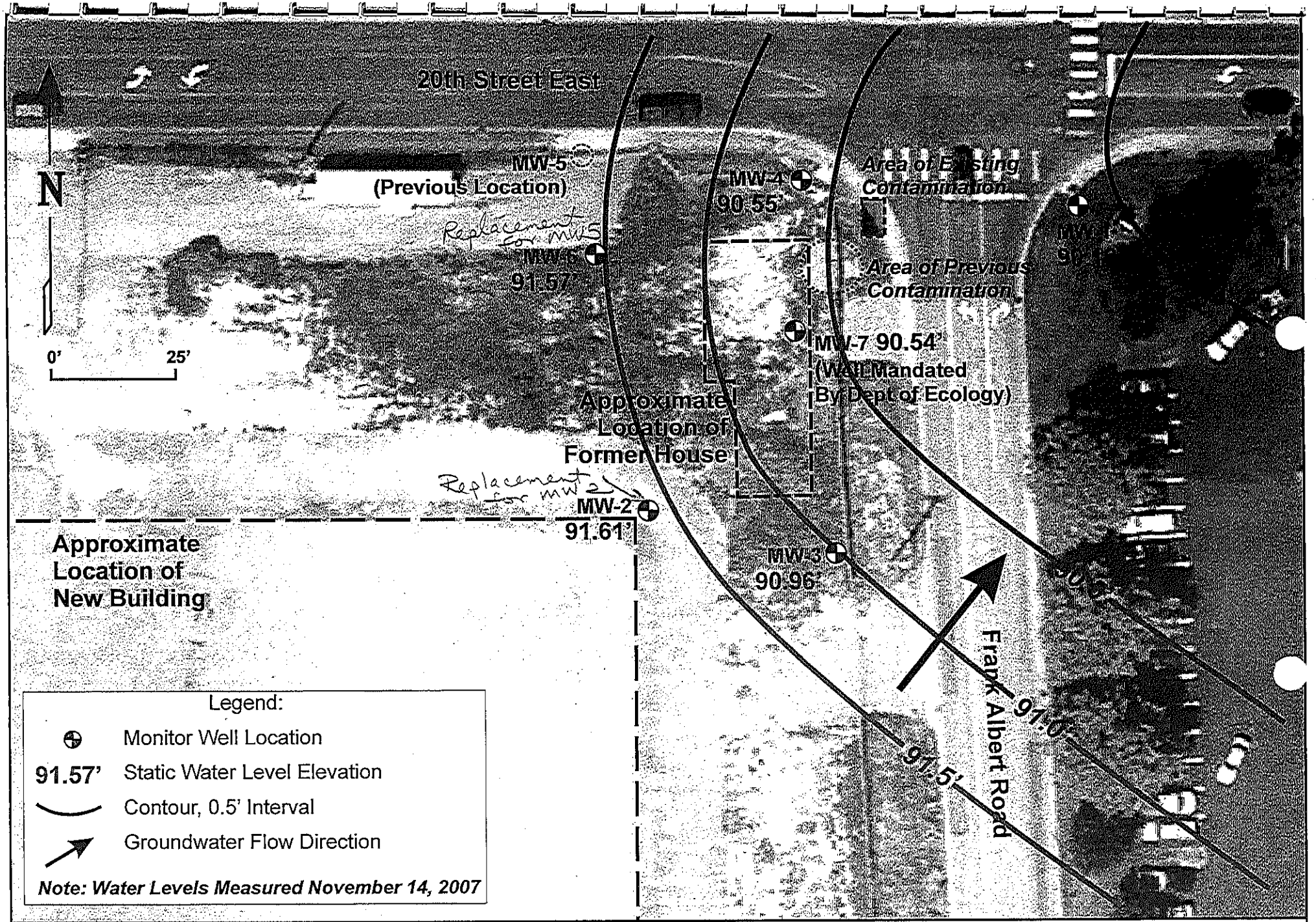
6.0 Recommendations

We recommend the site located at 4524 20th Street East in Fife, Washington be closed and a No Further Action (NFA) status (with restrictive covenants) be granted from the Washington State Department of Ecology based on this investigation and the following previous reports for the subject site:

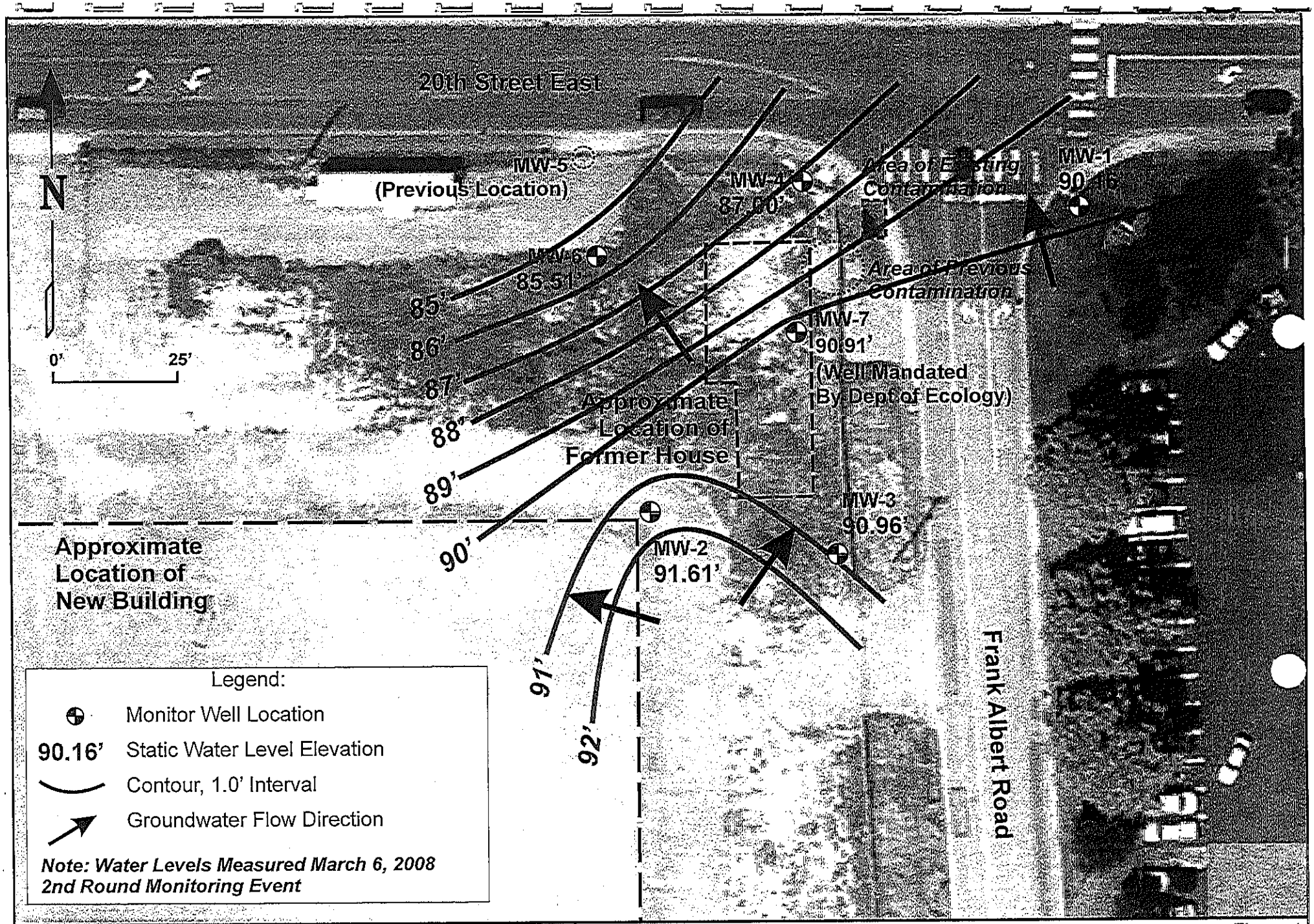
- *Site Assessment Report*
  Langseth Environmental Services, Inc., July 2003
- *Voluntary Cleanup Report*
  Langseth Environmental Services, Inc., October 2004
- *Initial Remedial Groundwater and Soil Investigation*
  Robinson, Noble & Saltbush, Inc., April 2005



ROBINSON NOBLE SALTBUSH INC. GROUNDWATER & ENVIRONMENTAL SCIENTISTS	PM: JFH January 2006 2203-001A	Pierce County T 20 N/R 4 E - 28 Scale 1" = 15'	Figure 3 Groundwater Contour Map Langseth Environmental Services, Inc.



ROBINSON NOBLE SALTBUSH INC. GROUNDWATER & ENVIRONMENTAL SCIENTISTS 1947 60 Years 2007	Note: Image taken from USGS Terra Server Website	PM: TWS March 2008 2203-001A	Pierce County T 20 N/R 03 E - 12 Scale 1" = 25'	Figure 2 Potentiometric Surface Contour Map Langseth Environmental Services: 20th Street/Remedial Investigation

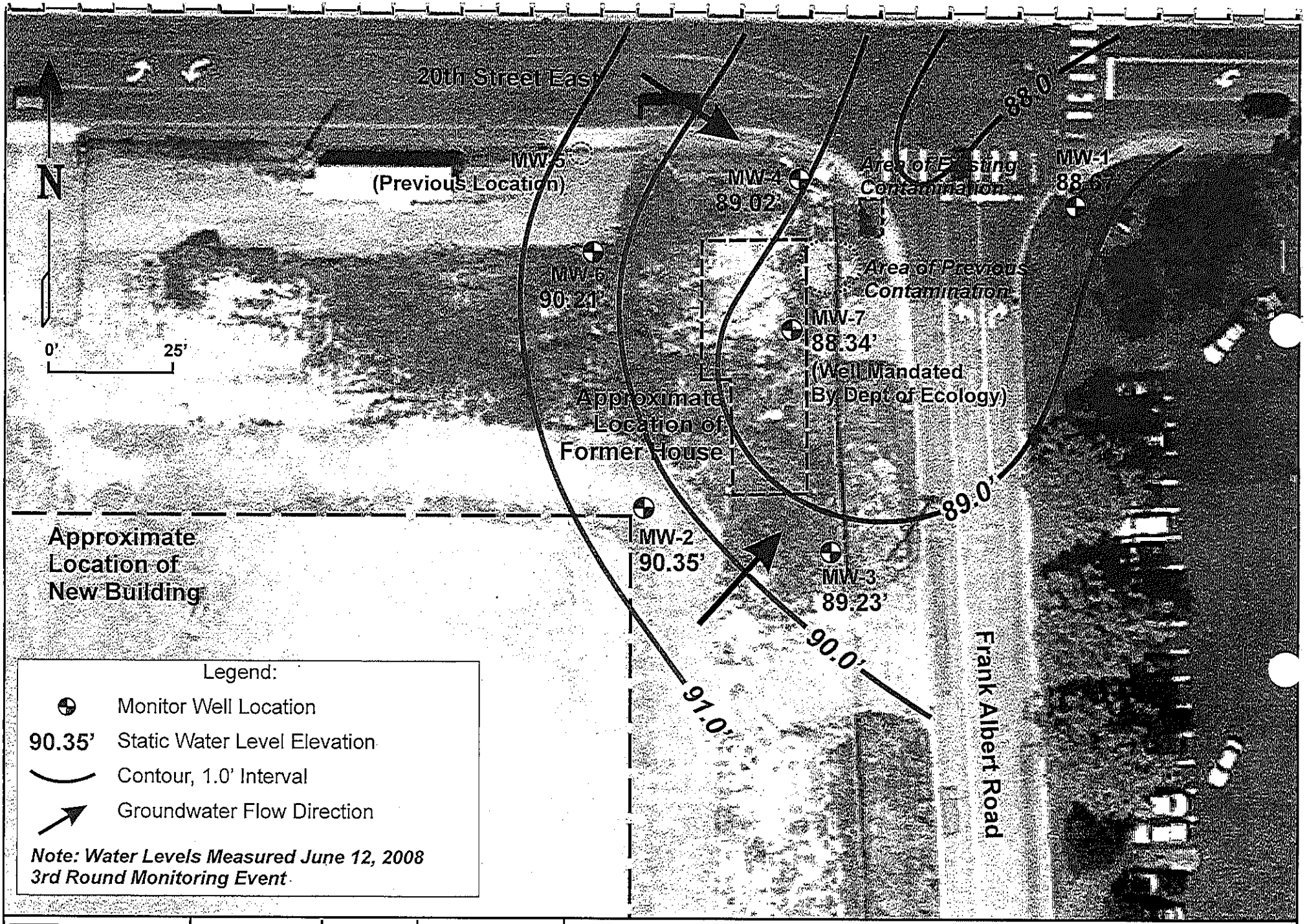


ROBINSON NOBLE SALTBUSH INC. GROUNDWATER & ENVIRONMENTAL SCIENTISTS 1947 60 Years 2007	Note: Image taken from USGS Terra Server Website	PM: TWS July 2008 2203-001A	Pierce County T 20 N/R 03 E - 12 Scale 1" = 25'

Figure 1

Potentiometric Surface Contour Map

Langseth Environmental Services: 20th Street/Remedial Investigation



ROBINSON NOBLE SALTBUSH INC. GROUNDWATER & ENVIRONMENTAL SCIENTISTS 1947 60 Years 2007	Note: Image taken from USGS Terra Server Website	PM: TWS July 2008 2203-001A	Pierce County T 20 N/R 03 E - 12 Scale 1" = 25'	Figure 1 Potentiometric Surface Contour Map Langseth Environmental Services: 20th Street/Remedial Investigation