

HYDRO REVIEW WORKSHEET

File: 6199rev.doc

LEAKSITE #: 6199

DATE: 08/23/95

Site Name: Valley Truck Parts and Service.

P.M.: DXB

Hydro: JWS

Leak Report Date: 4/14/93

Consultant: Widseth Smith Nolting **Report:** April 1995 RI

CAUSE OF RELEASE: Overfills at 560 gal. tank

TANK INFORMATION:

TANK #	CAPACITY	CONTENTS	AGE	CONDITION	REMOVED
1	560	waste oil	unk	fair	4/13/93
2	1000	waste oil	unk	fair	4/13/93

SOIL EXCAVATION:

CUBIC YARDS OF SOIL EXCAVATED: 20 cy

SOIL TREATMENT METHOD: landfilled

Date Approved: not

SOIL CONTAMINATION REMAINING: unknown

MAXIMUM SOIL CONTAMINATION LEVELS:

BORING #	DEPTH	PLD INST	GRO ppm	DRG ppm	OTHER benzene
SB-15	12'	136	ND	103	ND
SB-1	10-12	400	NA	NA	NA
SB-2	9-11	320	NA	NA	NA
SB-4*	10-12	190	NA	NA	NA
SB-7	10-12	400	NA	NA	NA
SB-8*	8-10	300	NA	NA	NA
SB-9*	8-10	180	NA	NA	NA
SB-12*	10-12	300	NA	NA	NA

* Final depth samples, vertical extent not defined.

GENERAL SITE STRATIGRAPHY: *Lacustrine clay, ~150 feet thick.*

IMPACTED UNIT: *Top 0-15 feet of the clay.*

FP RECOVERY Dates: *none* to Amount:
 GW RECOVERY Dates: *none* to Amount:

LONG TERM MONITORING Dates: *7/7/94* to *9/7/94*

GROUNDWATER CONTAMINANT LEVELS (latest round): *9/7/94*

WELL #	Screen interval (ft bgs)	BENZENE _u	GRO	DRO	D. O.
		g/L	ug/L	ug/L	
MW-1	3-14	ND	NA	1500	
MW-2	3-14	ND	NA	ND	
MW-3	3-14	ND/4@jul	NA	3010	

TREND OF GROUNDWATER CONTAMINANT LEVELS: *not established*

HYDROGEOLOGIC PARAMETERS:

$$\frac{dh}{dl}_{(hor.)} = 0.01$$

$$K = 1E-07$$

$$n_a = 0.20$$

AVG. GROUNDWATER VELOCITY: *0.1 ft/year*

GROUNDWATER FLOW DIRECTION: *W to S ?*

$$\frac{dh}{dl}_{(vert.)} = 0.$$

DEPTH TO GROUNDWATER: *6 ft bgs*

DRINKING WATER RECEPTORS:

AQUIFER CLASSIFICATION: *OW*

NO. OF WELLS IN IMPACTED UNIT WITHIN 2 MILE RADIUS: *0*

NO. OF WELLS IN IMPACTED UNIT WITHIN 1/2 MILE DOWNGRAIENT: *0*

DISTANCE TO NEAREST RECEPTOR WELL (feet):

DRINKING WATER WELLS IMPACTED? **N** IF YES, EXPLAIN
SITUATION:

RISK OF CROSS CONTAMINATION TO A DRINKING WATER UNIT: *very low*

SURFACE WATER RECEPTORS:

IMPACT OR RISK OF IMPACT TO A SURFACE WATER? **N**
CONTAMINANT LEVELS IN WELL NEAREST RECEIVING WATER:

VAPOR RECEPTORS:

IS THERE A VAPOR RISK? **N**
VAPOR SURVEY RESULTS OR ACTIONS TAKEN:

CORRECTIVE ACTION APPROVAL: Type:
Date Approved:

MONITORING IMPLEMENTED: Date: 7/7/94 **to**

CLEANUP GOAL: 100 HRLs

MAXIMUM RESIDUAL GROUNDWATER CONTAMINANT LEVELS (ug/L):

Sample Location: MW-3 **Date:** 9/7/94
B-ND T-ND E-ND X-ND GRO-NA DRO-3010
Other:

RELEVANT INFORMATION NOT COVERED ABOVE:

PETROFUND COMMENTS:

CONSULTANT'S RECOMMENDATION: *Very low risk due to lack of receptors and available water supply. Perform one additional groundwater monitoring round for DRO and BTEX. If analytical results indicate no change or decrease, request closure and well abandonment.*

PCA DECISION: *Approve RI. (Send standard approval letter)*

REMEDIAL INVESTIGATION REPORT WORKSHEET

Fact Sheet #6

Minnesota Pollution Control Agency

LUST Cleanup Program

April 1993

This worksheet documents specific information gathered during the remedial investigation (RI) and must be submitted with the RI/corrective action design (CAD) report to fulfill U.S. Environmental Protection Agency requirements. The purpose of the worksheet is to facilitate Minnesota Pollution Control Agency (MPCA) evaluation of site priority. RI/CAD reports submitted without this worksheet, or with an incomplete worksheet, will be rejected as inadequate.

Date form completed: April 6, 1995

SITE INFORMATION:

Leak Number: 6199

Type of product released: Heating Oil, Waste Oil, _____, _____

Source of release (circle all that apply): **tanks, lines, dispenser, overfill, spill, unknown**

Estimated volume of product released: UNK gal.

Date investigation field work initiated: 3/13/92

Date investigation field work completed: 9/7/94

CONTAMINATED SOIL:

Date removed: 3/13/92

Volume removed: 20 cubic yd.

Treatment method for soil removed: Landfill

Estimated volume of contaminated soil remaining above action levels: UNK cubic yd.

GROUND WATER:

Ground water impacts: [yes(Y)/no(N)/suspected(S)]: YES

Extent of ground water contamination defined? (Y/N): YES

[If ground water is impacted, complete a ground water receptor survey in accordance with MPCA fact sheet #23. The results of the ground water receptor survey must be included in the RI/CAD report.]

FREE PRODUCT:

Free product observed (Y/N/S): NO

(If yes or suspected, report to MPCA within 24 hours, submit free product worksheet within 45 days of discovery)

Maximum thickness of free product: NA ft. (or tenths of ft. if less than 1 ft.)

Interim free product recovery method: NA

Volume of free product recovered to date: NA gal.

D. AUTHORIZATION

On October 27, 1993, Mr. Steve Corcoran, president of Valley Truck Parts & Service, authorized Widseth Smith Nolting to complete a remedial investigation (RI). During the initial phase of the RI, it was discovered that the local groundwater had been impacted by the release. Additional investigation, including the installation of three monitoring wells, was authorized by Mr. Corcoran on April 1, 1994.

E. CHRONOLOGY OF EVENTS

- | | |
|-------------------|---|
| April 13, 1992 | Observe the removal of two underground storage tanks and the excavation of approximately 20 cubic yards of petroleum impacted soils. WSN personnel were on site to coordinate and screen the soil during excavation. |
| November 18, 1994 | Fourteen soil borings were advanced to define the vertical and horizontal extent of petroleum contamination. An environmental technician from WSN was on site to place the borings, collect soil samples during boring advancement, and screen the samples for the presence of petroleum hydrocarbons with a PID. |
| June 15, 1994 | Three additional borings were completed in the northwest corner of the site to further define the extent of groundwater contamination. Three monitoring wells were installed to define groundwater flow direction and monitor water quality. |
| July 7, 1994 | The first round of groundwater samples were taken from the three monitoring wells. The samples were submitted to a qualified laboratory for analyses. Water levels were taken and recorded. |
| September 7, 1994 | The second monitoring well sampling event was completed. The samples were submitted for analyses. Water levels were recorded prior to purging of the well. |
| April 1995 | The Remedial Investigation Report was completed and submitted to the Minnesota Pollution Control Agency (MPCA) for review. |

II. BACKGROUND

A. SITE LOCATION

The project site is located in the city of East Grand Forks, Minnesota, approximately one half mile north of the intersection of U.S. Highway 2 and Minnesota State Highway 220 in Polk County. The site location is denoted on Figure 1. The legal description of the site is as follows:

Township:	152N
Range:	50W
Section:	35
Fraction:	NE1/4-SE1/4-SE1/4-NE1/4
Latitude:	47 degrees 56 minutes 28 seconds
Longitude:	97 degrees 01 minutes 20 seconds

The United States Geological Survey (USGS) topographic map for the area is the Grand Forks Quadrangle.

B. SITE OWNERSHIP/HISTORY

The property currently occupied by Valley Truck Parts & Service, was purchased by Mr. Steve Corcoran and his partners on April 1, 1991. Prior to the purchase by Mr. Corcoran, the site previously named Hoffert Motor Service, was owned and operated by Mr. Frank Hoffert. The two subject USTs were on the property at the time of the sale. The contact at the site is:

Mr. Steve Corcoran
Valley Truck Parts & Service
1717 Central Avenue Box E
East Grand Forks, Minnesota 56401
(218) 773-3486

C. SITE DESCRIPTION

The surface at the site is comprised mostly of concrete and grass with the remainder occupied by the Valley Truck Parts & Service building. As displayed on Figure 2, the dimensions of the facility is approximately 190 x 220 feet. Concrete surrounds the building to the north, south, and on the east side. A grass field is located to the west.

D. OTHER PETROLEUM RELEASE INFORMATION

Prior to the removal of the two USTs, there were no documented releases at the leak site. However, Mr. Corcoran surmised that the petroleum contamination encountered in the vicinity of Tank #2 could have been from the two above ground storage tanks (ASTs) that once occupied

that location. The two ASTs stored heating oil. As shown on Figure 2, the tanks were moved to the west side of the building. The tanks remain at the site but are no longer in service. Petroleum impacted soil was also identified in the basin of Tank #1. The conditions observed during the removal of Tank #1, indicated the release was the result of one or a number of minor over fills.

There are two documented petroleum release sites in the near vicinity of Valley Truck Parts & Service. The closest site is the adjacent lot to the north. The site, MPCA leak #5934, is identified as the American Savings Bank property. There are three groundwater monitoring wells at the site. The second property is the Northwest Technical College, MPCA leak #6543, which is located approximately one-quarter mile east of the subject property. There have also been three wells installed at this site indicating some degree of groundwater contamination.

III. EXCAVATION RESULTS

Two underground storage tanks were removed from Valley Truck Parts & Service on April 13, 1992. As indicated in the "Excavation Report Worksheet for Petroleum Release Sites" attached as Appendix A, the tanks were found to be in relatively good condition. Petroleum contamination was encountered in both tank basins. The contamination surrounding Tank #1 appeared to be from over fills. The petroleum impacted soil beneath Tank #2 is suspected to have come from two ASTs that had previously occupied that location.

Upon removal of Tank #1, black stained soil was observed near the south end of the tank basin. Soil was excavated until clean, odor free soil was apparent. At that time, the tank basin screened clean with a PID and two verification soil samples were collected from the area beneath the former tank. Approximately 20 cubic yards of petroleum impacted soil were removed and transported to a certified landfill in Grand Forks, North Dakota. The analytical results included in the Excavation Report indicate that some contamination remains in the tank basin.

Petroleum contamination was also encountered in the basin of Tank #2. One to two feet of clean sand was first observed beneath the tank. There was no indication that a release had occurred from the UST. However, petroleum impacted soil was discovered beneath the sand during sample collection. The owner of the property, Mr. Steve Corcoran informed WSN on site personnel that two above ground storage tanks had been moved from this location in 1979. Mr. Corcoran stated that the ASTs may have been the source for the contamination. Considering the unknown extent of the contamination, the basin was backfilled and no soil was excavated.

IV. REMEDIAL INVESTIGATION

A. SOIL BORINGS

The remedial investigation included the advancement of 17 soil borings to depths up to 17 feet below ground surface (BGS) following the methods presented in Appendix B. Fourteen of the

soil borings were advanced on November 18, 1993. The remaining three borings, SB-15 through SB-17, were completed on June 15, 1994. The borings were drilled by Valnes Well Drilling of Morris, Minnesota and coordinated by an environmental technician from Widseth Smith Nolting. The soil boring locations are shown on Figure 3.

The soil profile encountered in the soil borings was comprised of a weathered, yellow to brown soft clay with silt. The field logs for the individual borings are provided in Appendix C.

1. Field Screening for Contamination

Soil samples were collected at various intervals using a stainless steel, split-spoon sampler. The samples were screened for organic vapors with a PID as an indication of hydrocarbon contamination following the procedures presented in Appendix B. The PID is capable of detecting organic vapors down to concentrations of one part per million (ppm). The PID readings are included on the boring logs in Appendix C. A summary of the organic vapor concentrations and their respective sample intervals are presented in Table 1. The maximum PID reading recorded for each soil boring is indicated on Figure 4.

2. Soil Sampling

Two soil samples were collected from SB-15 to define the vertical extent that the petroleum had migrated. The samples for laboratory analyses, were taken from the 10 to 12 foot sample interval and from the 15 to 17 foot interval. Both samples were analyzed for diesel range organics (DRO), benzene, toluene, ethyl benzene, and total xylenes (BTEX). The analytical results are summarized in Table 2. Copies of the analytical reports are attached in Appendix D.

3. Groundwater Sampling

Groundwater samples were collected and submitted for laboratory analyses from 7 of the 17 soil borings. Five of the samples were collected on November 18, 1993, and the remaining two samples were taken on June 16, 1994. The samples were collected through the hollow stem augers using the methods presented in Appendix B. All seven samples were analyzed for DRO and the BTEX compounds. The analytical results are summarized in Table 3. Copies of the analytical reports are also included in Appendix D. The analytical results are shown on Figure 5 with their respective soil boring.

B. MONITORING WELLS

Due to the impact to the groundwater, three monitoring wells have been installed at Valley Truck Parts & Service to aid in defining groundwater flow direction and provide sampling points. The wells were constructed on June 15, 1994. The well locations, decided upon after the soil boring investigation had been completed, are displayed on Figure 3. The wells were completed at a depth of approximately 15 feet as above grade wells with over shot protection. Other pertinent

well design information is included on the well construction diagrams attached as Appendix E.

1. Groundwater Sampling

The three monitoring wells have been sampled on two occasions. The first sampling event occurred on July 7, 1994. On September 7, 1994, the second set of samples were collected and submitted to the laboratory for analysis. The first set of samples were analyzed for DRO and those volatile organic compounds (VOCs) listed in Minnesota Department of Health (MDH) method 465D. The second round of samples were submitted and analyzed for DRO and the BTEX compounds. Considering the lack of VOCs detected in the first round sample, it was not necessary to analyze the second round samples for VOCs.

The first round samples were analyzed by MVTL Laboratories in New Ulm, Minnesota. A.W. Research Laboratories in Brainerd, Minnesota tested the second round samples for the appropriate compounds. The analytical results are summarized in Table 4. Copies of the analytical reports are included in Appendix D. As with the soil boring water samples, the results of the last round of monitoring well samples are displayed on Figure 5 to help illustrate the extent of the groundwater contamination.

C. VAPOR ASSESSMENT

Due to the absence of underground utilities and basements, the assessment determined that a vapor survey was not required.

D. GROUNDWATER RECEPTOR SURVEY

A receptor survey has been completed to determine the potential for water well impacts related to the groundwater contamination at the release site. A request was made to the Minnesota Geological Survey (MGS) for well logs within a one mile radius of the site. The MGS did not have in their files any water wells located within the requested one mile radius. However, the United States Geological Survey (USGS) Hydrogeologic Atlas HA-346 states most wells in the local valley lake sediments are screened between 150 and 200 feet BGS. Furthermore, the city of East Grand Forks is supplied by a municipal water system. The system is supplied by river water located approximately one mile from the release site.

V. DISCUSSION

A. WORK PERFORMED

Approximately 20 cubic yards of petroleum impacted soil were excavated. The soil was transported to the Grand Forks City Landfill for disposal. The analytical results for the soil samples collected from the floor and sidewalls of both tank basins indicate petroleum impacted soil remains in both tank basins.

The remedial investigation was necessary to define the lateral extent that the petroleum had migrated from the tank basins via the groundwater. The investigation was concentrated in the vicinity of Tank Basin #2 due to the heavy petroleum contamination encountered in the underlying native soil. The PID readings on Table 1 illustrate that the heaviest petroleum contamination was between depths of 8 and 12 feet. The readings recorded in this interval were between 0 and 400 parts per million. Generally, the PID readings were non detect in the soil samples collected between 15 and 17 feet. Figure 4 includes the maximum readings recorded in each soil boring. The readings indicate that the petroleum appears to be located in an area extending west from Tank Basin #2 to the northwest corner of the facility and then approximately 80 feet to the south along the west side of the building. As displayed on the figure, the PID results in the contamination plume were between 136 and 400 ppm. Two soil samples were collected from SB-15 between 10 to 12 feet and 15 to 17 feet. DRO was detected by the laboratory in the 10 to 12 foot sample at a concentration of 103 ppm and was non-detect in the 15 to 17 foot sample.

Seven groundwater samples were collected to aid in defining the lateral extent of petroleum contamination. As indicated in Table 3, samples were collected through the hollow stem auger from SB-1, SB-3, SB-6, SB-13 and 14, and SB-16 and 17. The analytical results, as indicated in Table 3 were non detect for all but two of the samples; DRO was identified in SB-1 and SB-3 in concentrations of 9 ppm and .3 ppm respectively. Benzene was not detected in either sample. The results of the groundwater tests and the estimated extent of the contamination plume are displayed on Figure 5. When comparing the data from Figure 4 and Figure 5, there is a good correlation between the PID readings and the sample results.

The three monitoring wells have been sampled on two occasions. Benzene was identified in the first round sample from MW-3 during the first sampling event at a concentration of 4.1 parts-per-billion. Benzene was not identified in the second round sample from MW-3 nor has it been found in the other two wells. DRO has been found in MW-1 and MW-3 in both rounds of samples. The maximum concentration in MW-1 was 1.6 ppm and in MW-3 was 3 ppm.

Excluding the BTEX compounds and DRO, there were four VOCs identified in the first round samples. All four compounds are petroleum related.

B. SITE GEOLOGY/HYDROGEOLOGY

The city of East Grand Forks is situated in the Red River Valley, the lake bed of the ancient Lake Agassiz. The lake sediments are reported to be comprised of more than 120 feet of silt and clay. Local groundwater appears to flow south to southwest across the site. The groundwater flow direction for elevations measured on July 7, 1994 and September 7, 1994 are illustrated on Figures 6 and 7. The elevations are listed Table 5. Furthermore, United States Geological Survey (USGS) publications state that the lateral flow of groundwater in the area, due to the lithology, is very slow to stagnant. The "Hydrogeologic Setting and Groundwater Contamination Worksheet" has been completed for the site and is attached as Appendix F.

VI. CONCLUSIONS

1. Two underground, waste oil storage tanks and approximately 20 cubic yards of petroleum contaminated soil have been removed from the north side of Valley Truck Parts & Service. There are no known USTs remaining at the site.
2. Two above ground storage tanks are presumed to have been the primary source of the soil and groundwater contamination. The ASTs remain on site but are no longer in use.
3. Weathered clay with silt is the primary soil type immediately beneath the site.
4. Characterization soil samples collected from both excavations, indicate petroleum contamination remains in both tank basins.
5. The horizontal and vertical extent of the petroleum contamination has been determined. Petroleum was not detected deeper than 17 feet BGS. Seventeen soil borings and three monitoring wells were necessary to define the extent.
6. Groundwater has been impacted by a petroleum release. The water table was encountered at an average depth of six feet BGS.
7. The petroleum impacted groundwater has not migrated beyond the property boundaries of Valley Truck Parts & Service.
8. Two rounds of groundwater samples have been collected from the monitoring wells. Low concentrations of petroleum contamination were identified in MW-1 and MW-3. Benzene has been identified in only one sample during both sampling events.
9. No non petroleum related compounds have been detected at the site.
10. Due to the lack of subsurface structures and utility trenches, there is little risk associated with the migration and/or collection of petroleum vapors.

VII. RECOMMENDATIONS

The results of the remedial investigation demonstrates that the petroleum impacted groundwater has not migrated beyond the property boundaries of Valley Truck Parts & Service. Moreover, considering the lack of water wells in the area and the depth to the first available drinking water source, there appears to be no threat to human health. Widseth Smith Nolting recommends that one additional groundwater sample be collected and analyzed for DRO and the BTEX compounds from the three monitoring well. The results will be submitted to the MPCA for their review. If the analytical reports indicate a decrease or no change in the petroleum concentrations, the site should be closed and the wells removed in accordance with the Minnesota Department of Health Water Well Code.

TABLE 1

SOIL BORING SUMMARY

**Valley Truck Parts & Service
1717 Central Avenue
East Grand Forks, Minnesota**

Soil Boring ID	Boring Interval (ft.)	Headspace Results (ppm)	Petroleum Odor	Soil Classification	Soil Type
SB-1	10-12	400	Strong	CL	Clay
	15-17	0	NR	CL	Clay
SB-2	5-7	0	NR	CL	Clay
	9-11	320	Strong	CL	Clay
	13-15	0	NR	CL	Clay
SB-3	8-10	0	NR	CL	Clay
	10-12	0	Strong	CL	Clay
SB-4	8-10	350	Strong	CL	Clay
	10-12	190	Strong	CL	Clay
				CL	Clay
SB-5	8-10	0	NR	CL	Clay
	10-12	0	Strong	CL	Clay
SB-6	8-10	0	NR	CL	Clay
	10-12	0	NR	CL	Clay
SB-7	8-10	340	Strong	CL	Clay
	10-12	400	Strong	CL	Clay
	15-17	0	NR	CL	Clay
SB-8	8-10	300	Strong	CL	Clay
SB-9	8-10	180	Strong	CL	Clay
SB-10	8-10	0	NR	CL	Clay
	10-12	0	NR	CL	Clay
SB-11	8-10	0	NR	CL	Clay
	10-12	0	NR	CL	Clay

TABLE 1 (Cont'd.)

SOIL BORING SUMMARY

Valley Truck Parts & Service
1717 Central Avenue
East Grand Forks, Minnesota

Soil Boring ID	Boring Interval (ft.)	Headspace Results (ppm)	Petroleum Odor	Soil Classification	Soil Type
SB-12	6.5-8.5	0	NR	CL	Clay
	10-12	300	Strong	CL	Clay
SB-13	7-9	0	NR	CL	Clay
	10-12	0	NR	CL	Clay
SB-14	8-10	0	NR	CL	Clay
	10-12	0	NR	CL	Clay
SB-15	10-12	136	Strong	CL	Clay
	15-17	0	NR	CL	Clay
				CL	Clay
SB-16	8-10	16	Slight	CL	Clay
	10-12	160	Strong	CL	Clay
	15-17	0	NR	CL	Clay
SB-17	10-12	0	NR	CL	Clay
	15-17	0	NR	CL	Clay

NR = Not reported
ppm = Parts per million

Soils classified in field according to D-2488-90

TABLE 2

SOIL BORING ANALYTICAL RESULTS (SOIL)

Valley Truck Parts & Service
1717 Central Avenue
East Grand Forks, Minnesota

Soil Boring	Date Sampled	Depth (ft.)	Benzene ppm	Toluene ppm	Ethyl Benzene ppm	Xylene ppm	DRO ppm
SB-15	6/15/94	10-12	ND	ND	ND	ND	103
		15-17	ND	ND	ND	ND	ND

- = Not analyzed
- ND = Not detected at or above the method detection limits
- DRO = Diesel Range Organics
- GRO = Gasoline Range Organics
- ppm = Parts per million

TABLE 3

SOIL BORING ANALYTICAL RESULTS (GROUNDWATER)

Valley Truck Parts & Service
1717 Central Avenue
East Grand Forks, Minnesota

Parameter (ppb)

Sample Location	Date Sampled	Benzene	Toluene	Ethyl-Benzene	Xylene	DRO
SB-1	11/18/93	ND	ND	241	139	9,000
SB-3	11/18/93	ND	ND	ND	ND	300
SB-6	11/18/93	ND	ND	ND	ND	ND
SB-13	11/18/93	ND	ND	ND	ND	ND
SB-14	11/18/93	ND	ND	ND	ND	ND
SB-16	6/16/94	ND	ND	ND	ND	ND
SB-17	6/16/94	ND	ND	ND	ND	ND

ND = Not detected at or above laboratory detection limits
DRO = Diesel Range Organics

TABLE 4

MONITORING WELL ANALYTICAL RESULTS

**Valley Truck Parts & Service
1717 Central Avenue
East Grand Forks, Minnesota**

Parameter (ppb)

Sample Location	Date Sampled	Benzene	Toluene	Ethyl-Benzene	Xylene	1,2,4-Tri-methylbenzene	DRO	sec-Butyl-benzene	n-Butyl-benzene	Napthalene	MIK
MW-1	7/7/94	ND	ND	ND	ND	1.1	1630	11	6.7	7.7	ND
	9/7/94	ND	ND	ND	ND	--	1500	--	--	--	--
MW-2	7/7/94	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	9/7/94	ND	ND	ND	ND	--	ND	--	--	--	--
MW-3	7/7/94	4.1	ND	ND	ND	ND	2040	ND	ND	ND	ND
	9/7/94	ND	ND	ND	ND	--	3010	--	--	--	--
Field Blank	7/7/94	ND	ND	ND	ND	ND	--	ND	ND	ND	2.2

ND = Not detected at or above laboratory detection limits

DRO = Diesel Range Organics

MIK = Methyl Isobutyl Ketone

-- Not Analyzed For

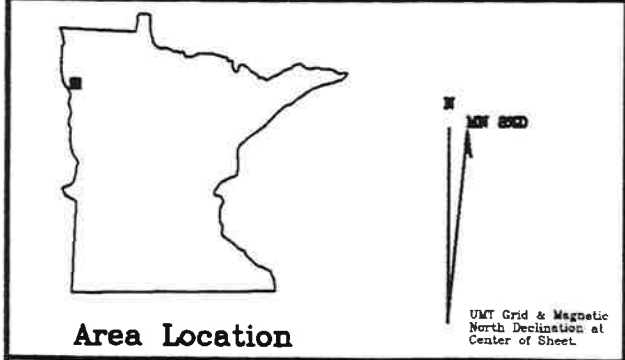
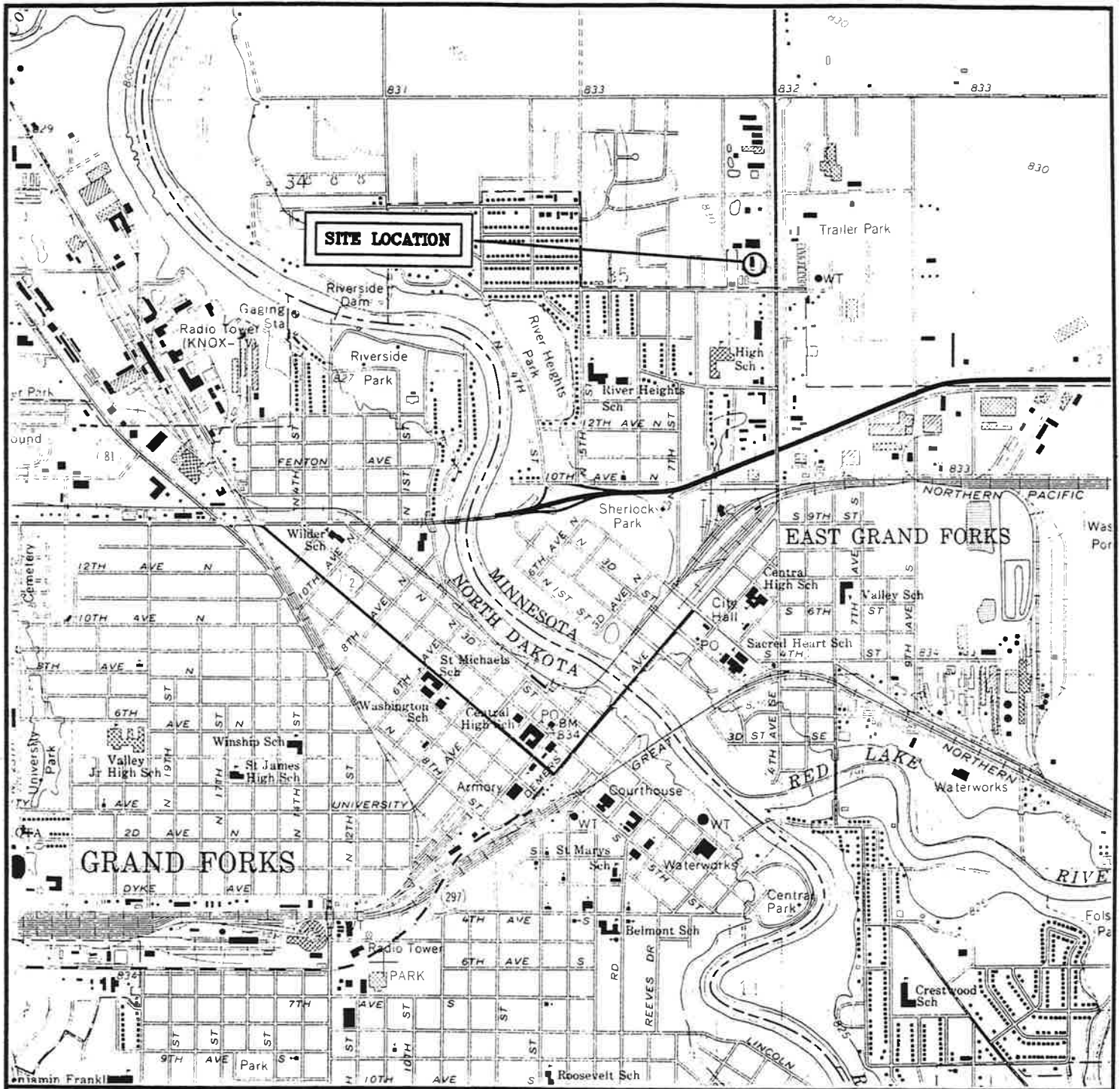
TABLE 5

STATIC GROUNDWATER ELEVATIONS

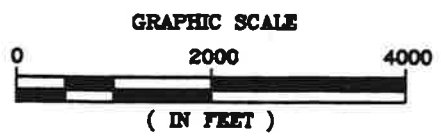
Valley Truck Parts & Service
1717 Central Avenue
East Grand Forks, Minnesota

Well	Top of Casing Elevation*	Date Measured	Depth to Groundwater*	Groundwater Elevation*
MW-1	101.49	7/7/94	4.07	97.42
		9/7/94	7.40	94.09
MW-2	101.38	7/7/94	5.30	96.08
		9/7/94	8.11	93.27
MW-3	101.38	7/7/94	3.99	97.39
		9/7/94	7.79	93.59

* All measurements in feet.



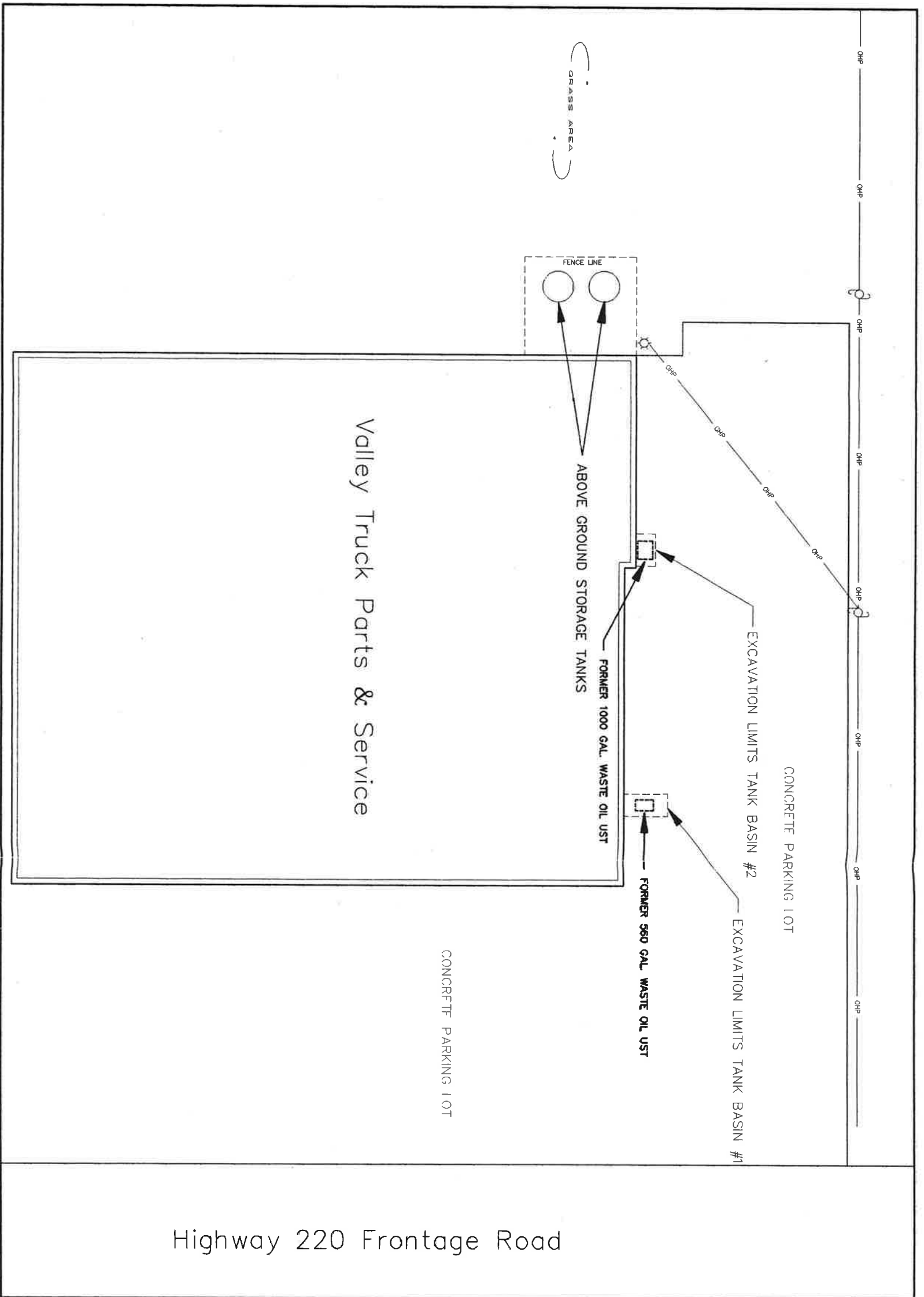
U.S.G.S. Quadrangle Maps: Grand Forks




WIDSETH SMITH NOLTING
 ENGINEERS, ARCHITECTS, LAND SURVEYORS
 AND PROJECT MANAGERS
 CROOKSTON BRainerd ALEXANDRIA
 218-281-6522 218-829-5117 612-762-8149

Site Location Map
 Valley Truck Parts & Service
 East Grand Forks, Minnesota

Figure 1
 March 1995

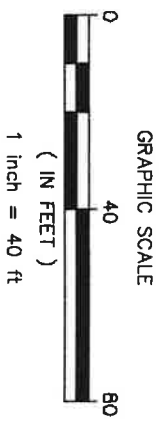



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 218-281-6322 218-829-5117 612-762-8149

Site Map
Figure 2
Valley Truck Parts & Service
East Grand Forks, Minnesota
March 1995

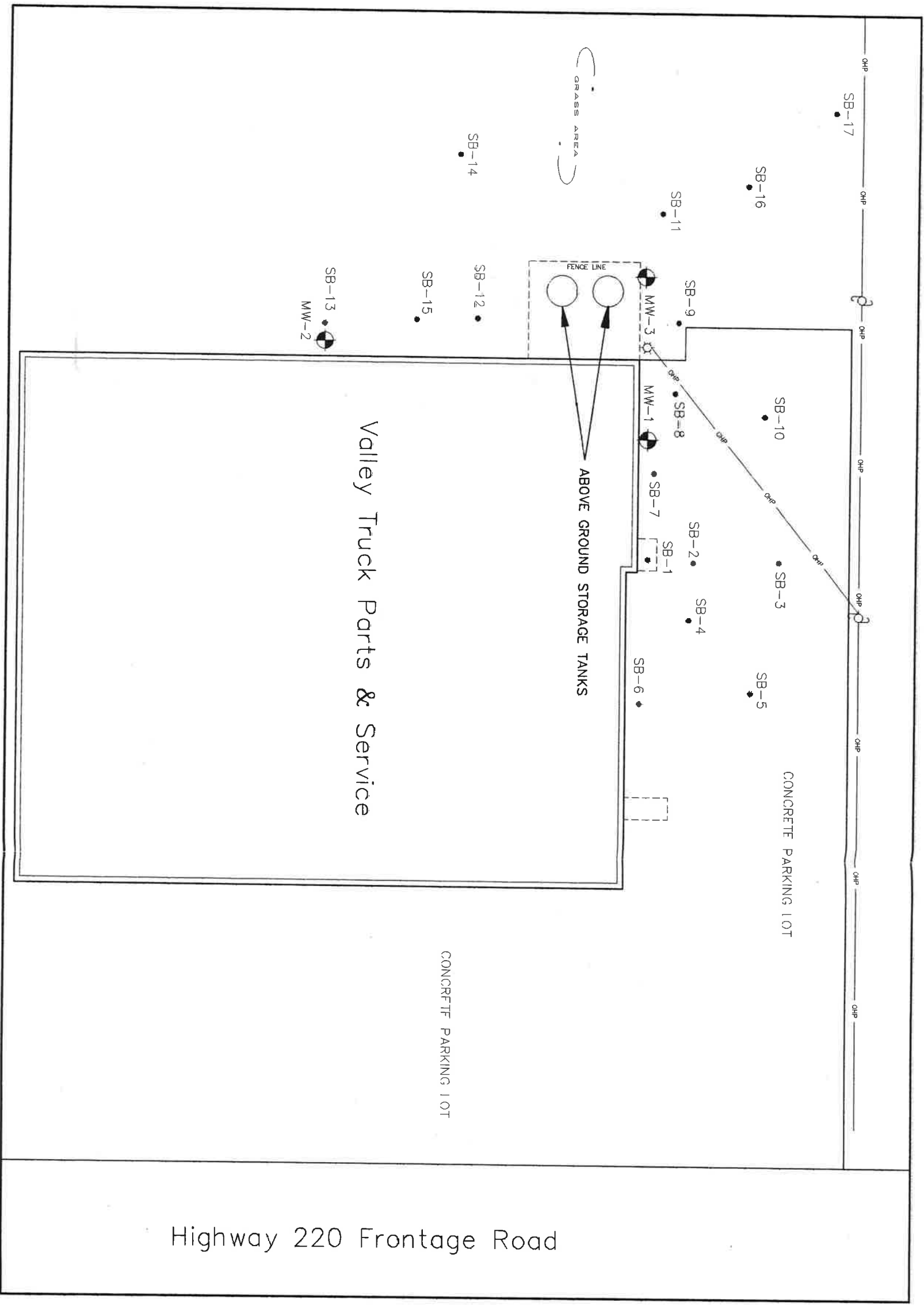
260B224/site

Note: Location of structures and utilities are approximate.
 Verify utilities before starting any subsurface work.



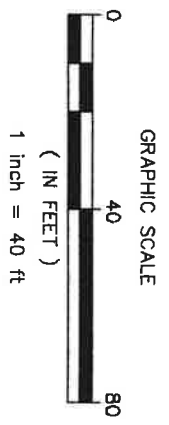
LEGEND:

	OVERHEAD POWER
	POWER POLE
	LIGHT POLE
	MONITORING WELL
	SOIL BORING



LEGEND:

- OVERHEAD POWER
- POWER POLE
- LIGHT POLE
- MONITORING WELL
- SOIL BORING



WIDSETH SMITH NOLTING
 ENGINEERS, ARCHITECTS, LAND SURVEYORS
 AND PROJECT MANAGERS
 CROOKSTON BRAINERD ALEXANDRIA
 218-281-6522 218-829-5117 612-762-8149

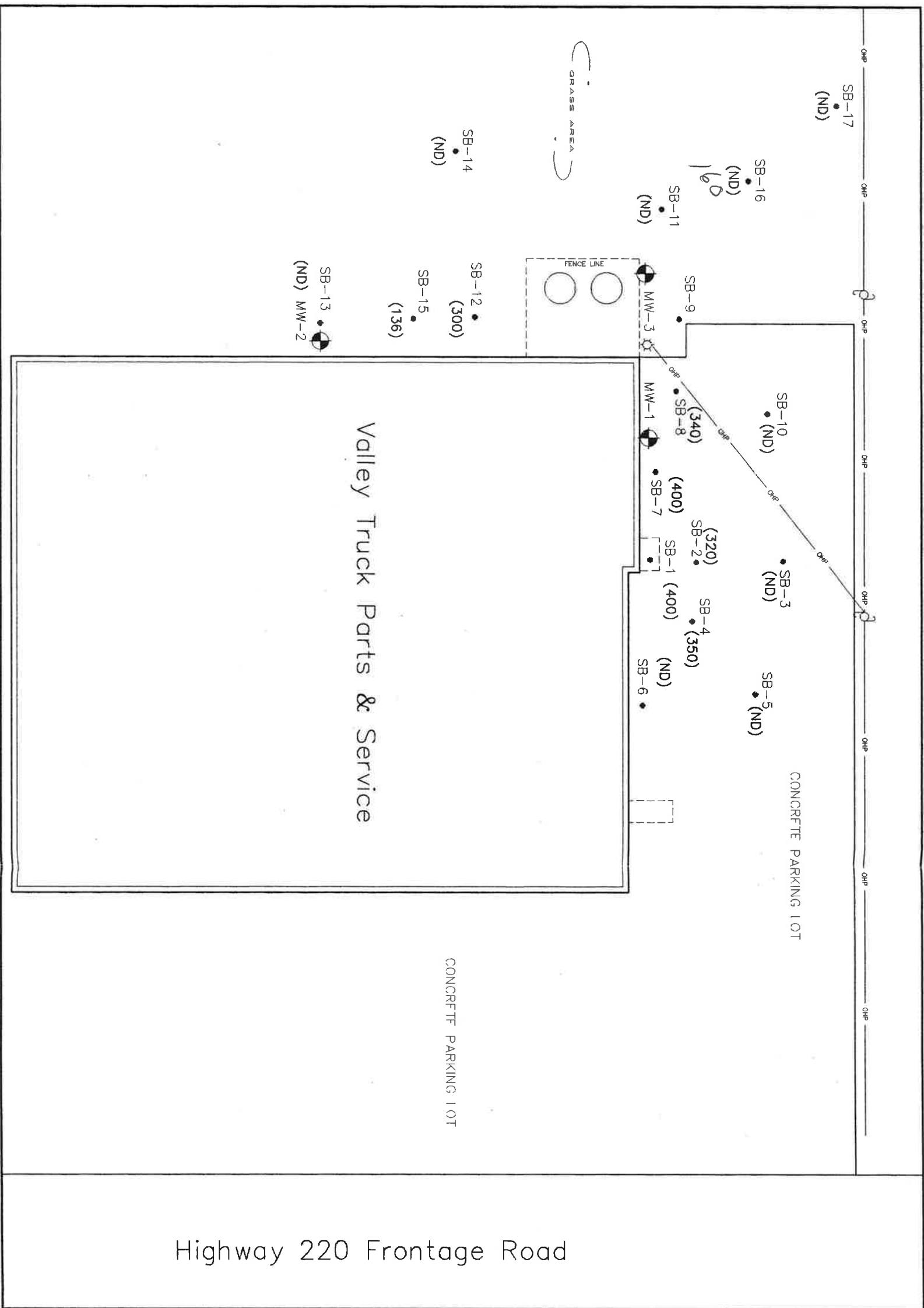
Soil Boring and Monitoring Well Location Map

Valley Truck Parts & Service
 East Grand Forks, Minnesota

Figure 3
 March 1995

260B224/site

Note: Location of structures and utilities are approximate.
 Verify utilities before starting any subsurface work.



WIDSETH SMITH NOLTING
 ENGINEERS, ARCHITECTS, LAND SURVEYORS
 AND PROJECT MANAGERS
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 218-281-6522 218-929-5117 512-762-8149

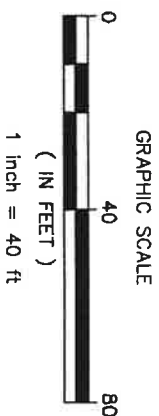
Maximum PID Readings Map
 Valley Truck Parts & Service
 East Grand Forks, Minnesota

Figure 4

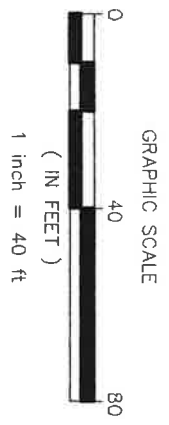
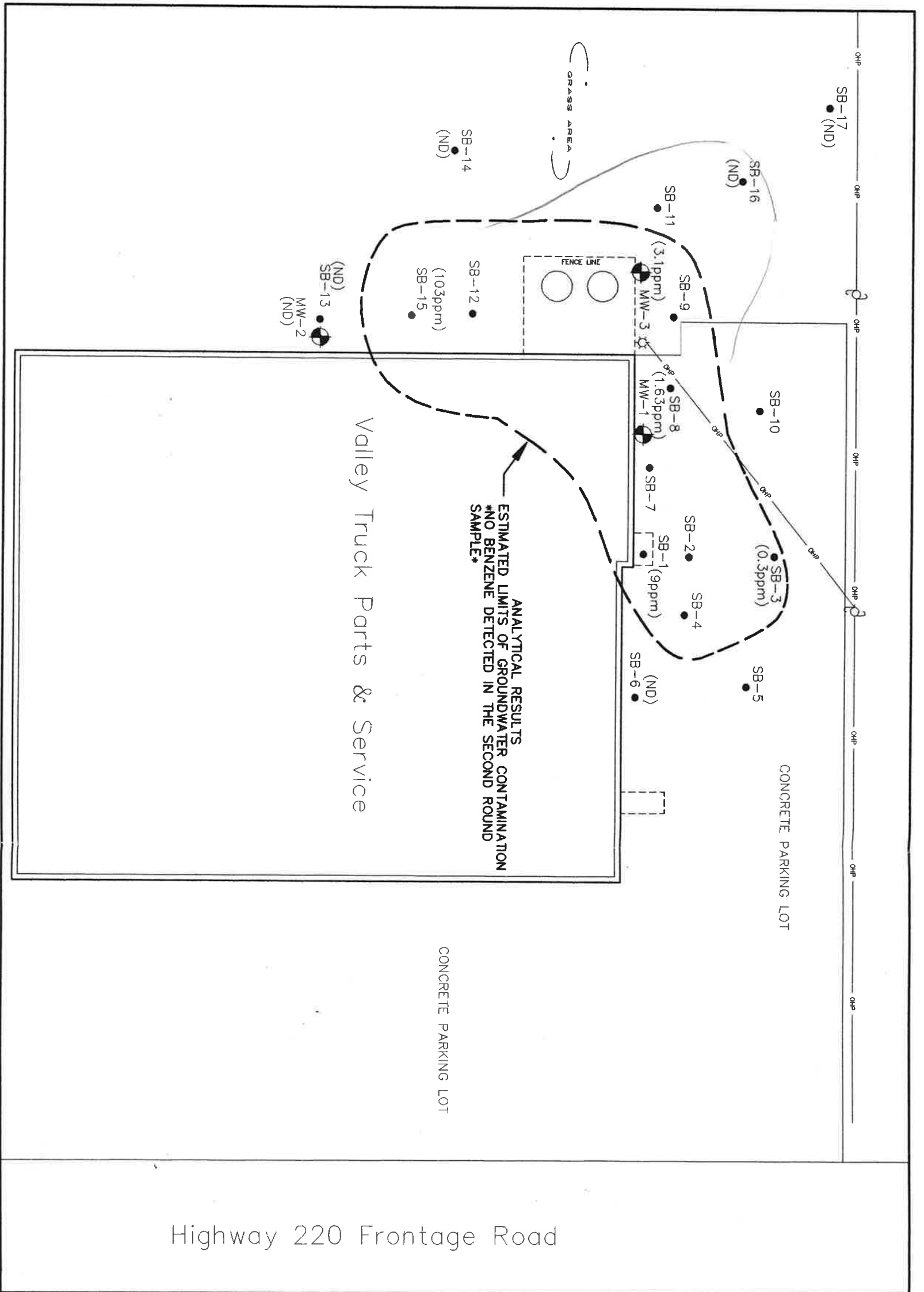
March 1995

260B224/site

Note: Location of structures and utilities are approximate.
 Verify utilities before starting any subsurface work.



LEGEND:	
	OVERHEAD POWER
	POWER POLE
	LIGHT POLE
	MONITORING WELL
	SOIL BORING
	MAX PID
	READINGS (PPM)



LEGEND:

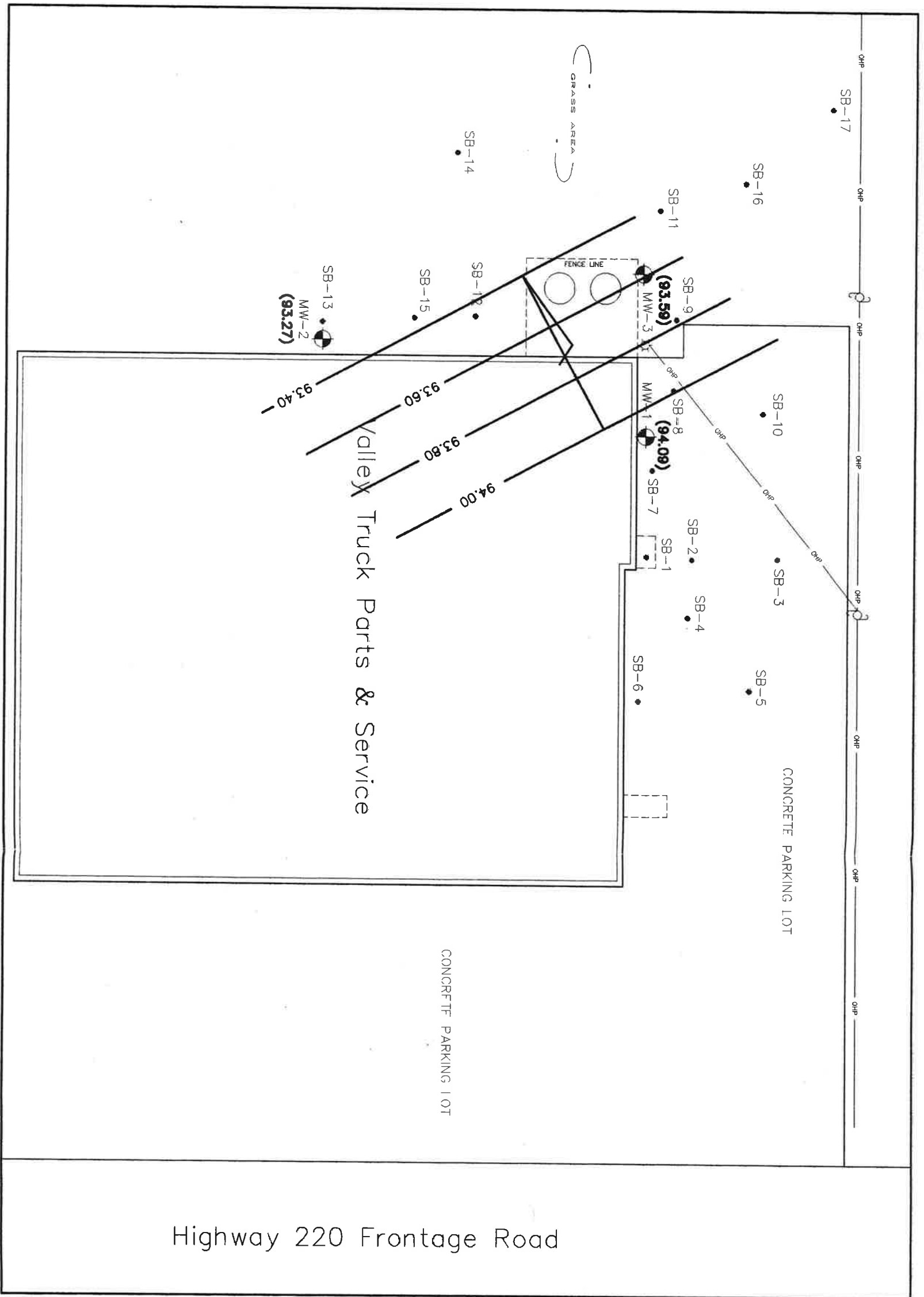
—	OVERHEAD POWER
⊕	POWER POLE
⊙	LIGHT POLE
⊗	MONITORING WELL
●	SOIL BORING
○	DRO
(103ppm)	CONC. (ppm)

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AND PROJECT MANAGERS
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Estimated Limits of Groundwater Contamination
Valley Truck Parts & Service
East Grand Forks, Minnesota
Figure 5
March 1995

260B224/site

Note: Location of structures and utilities are approximate.
Verify utilities before starting any subsurface work.

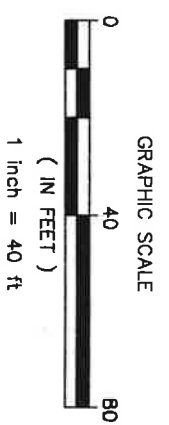


WIDSETH SMITH NOLTING
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 AND PROJECT MANAGERS
 CROOKSTON BRAINERD ALEXANDRIA
 218-261-6582 218-829-5117 612-762-8149

Groundwater Flow Direction
 9/07/94
Valley Truck Parts & Service
 East Grand Forks, Minnesota
Figure 6
 March 1995

260B224/site

Note: Location of structures and utilities are approximate. Verify utilities before starting any subsurface work.



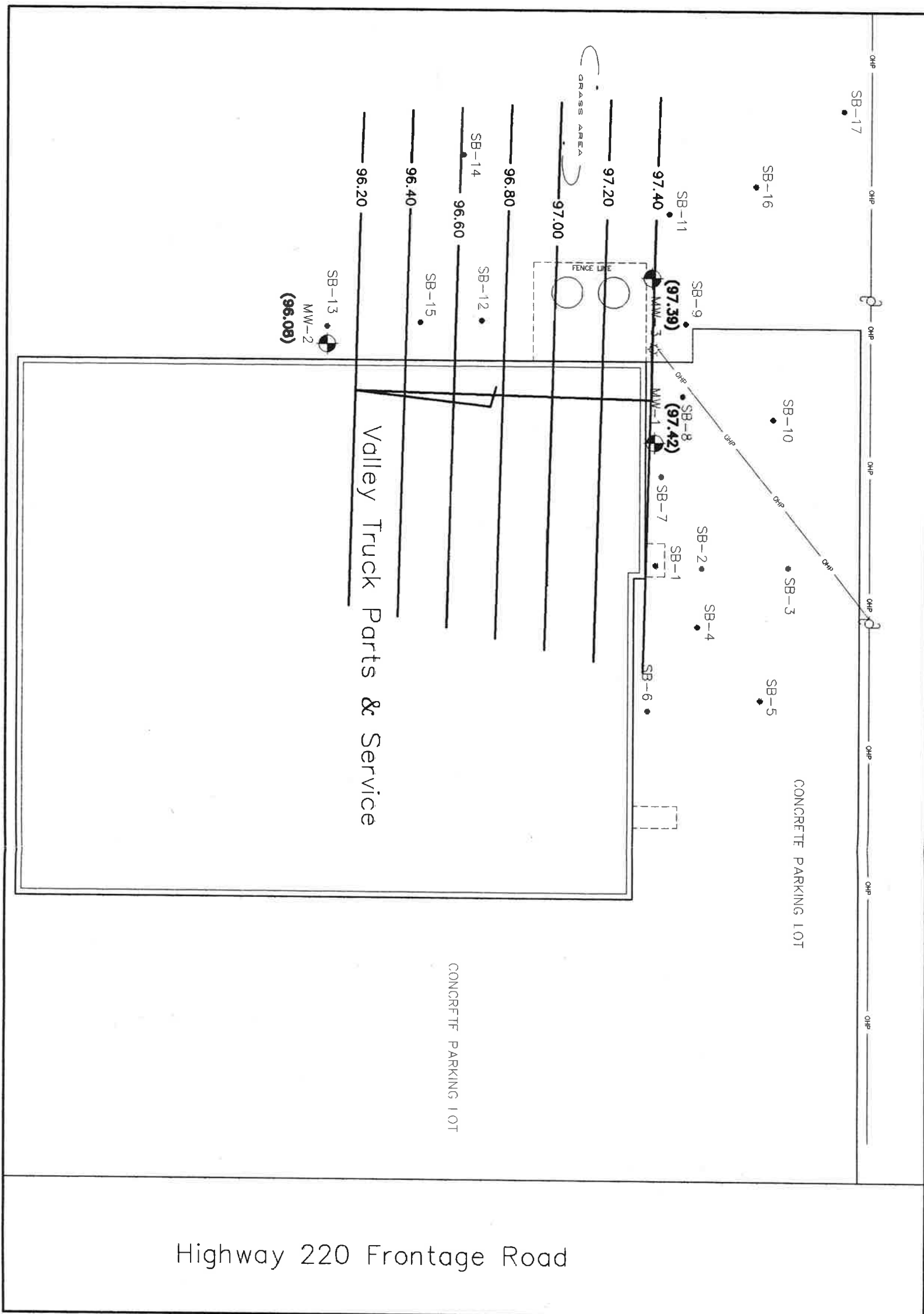
LEGEND:


	OVERHEAD POWER
	POWER POLE
	LIGHT POLE
	MONITORING WELL
	SOIL BORING
	DRO CONCENTRATIONS (ppm)

GROUNDWATER FLOW LEGEND:

	MONITORING WELL LOCATION
	INFERRED GROUNDWATER FLOW
	GROUNDWATER FLOW DIRECTION
	GROUNDWATER ELEVATION CONTOUR

(1346.57)
 (1346.00)



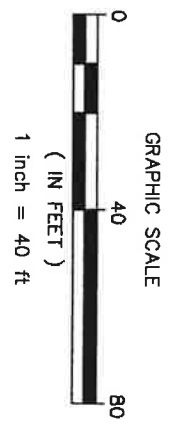


WIDSETH SMITH NOLTING
 ENGINEERS, ARCHITECTS, LAND SURVEYORS
 AND PROJECT MANAGERS
 CRUDSTON BRAINERD ALEXANDRIA
 218-281-6522 218-829-5117 612-762-8149

Groundwater Flow Direction
 7/07/94
Valley Truck Parts & Service
 East Grand Forks, Minnesota
Figure 7
March 1995

260B224/site

Note: Location of structures and utilities are approximate.
 Verify utilities before starting any subsurface work.



LEGEND:

	OVERHEAD POWER
	POWER POLE
	LIGHT POLE
	MONITORING WELL
	SOIL BORING
	DRO CONCENTRATIONS, ppm

GROUNDWATER FLOW LEGEND:

	MONITORING WELL LOCATION
	INFERRED GROUNDWATER FLOW
	GROUNDWATER FLOW DIRECTION
	GROUNDWATER ELEVATION CONTOUR

(1346.57)
 1346.00

EXCAVATION REPORT WORKSHEET FOR PETROLEUM RELEASE SITES

Fact Sheet #4

Minnesota Pollution Control Agency

LUST Cleanup Program

April 1993

Complete the information below and submit to the Minnesota Pollution Control Agency (MPCA) Tanks and Spills Section to document excavation and treatment of petroleum contaminated soil. Conduct excavations in accordance with "Excavation of Petroleum Contaminated Soil" (fact sheet #13). Please attach any available preliminary site investigation reports to this excavation report.

Attach additional pages if necessary. Please type or print clearly.

The excavation reporting deadline is ten months from the date of receipt of the standard letter. A shorter deadline may be established by MPCA staff for high priority sites.

I. BACKGROUND**A. Site:**

Valley Truck Parts & Service
Street: 1717 Central Avenue N.W.
City, Zip: East Grand Forks, 56721
County: Polk
MPCA Site ID#: LEAK00006199

B. Tank Owner/Operator:

Valley Truck Parts & Service
Contact: Steve Corcoran
Street/Box: 1717 Central Avenue N.W.
City, Zip: East Grand Forks, 56721
Telephone: 218-773-3486

C. Excavating Contractor:

Valley Electric & Petroleum Equipment
Contact: Steve Sulland
Telephone: (701) 772-7261
Tank Contractor Certification Number: 0026

D. Consultant:

Widseth Smith Nolting
Contact: Gregory W. Smith
Street/Box: P.O. Box 765
City, Zip: Brainerd, MN 56401
Telephone: 218-829-5117

E. Others on-site during site work (e.g., fire marshal, local officials, MPCA staff, etc.):**II. DATES**

A. Date release reported to MPCA: April 13, 1993

B. Dates site work performed:

Work Performed	Date
<u>Removed 1,000-gallon waste oil UST</u>	<u>April 13, 1993</u>
<u>Removed 560-gallon waste oil UST</u>	<u>April 13, 1993</u>
<u>Removed approximately 20 cubic yards of contaminated soil from tank basin one</u>	<u>April 13, 1993</u>

Excavation Report Worksheet for Petroleum Release Sites

Page 2

April 1993

III. RELEASE INFORMATION

A. Provide the following information for all removed tanks.

Tank 1: Capacity 560 gallons Type Steel Age Unknown

Condition Fair

Product history: Waste oil storage

Approximate quantity of petroleum released, if known:
Unknown

Cause of release: Presumed to be from overfills

Tank 2: Capacity 1,000 gallon Type Steel Age Unknown

Condition: Fair

Product history: Waste oil storage

Approximate quantity of petroleum released, if known:
It appeared no product had been released from this tank.

Cause of release: _____

Tank 3: Capacity _____ Type _____ Age _____

Condition: _____

Product history: _____

Approximate quantity of petroleum released, if known:

Cause of release: _____

Excavation Report Worksheet for Petroleum Release Sites

Page 3

April 1993

B. Provide the following information for all existing tanks.

TANK NO.	CAPACITY	CONTENTS	TYPE	AGE
1	560 gal	Waste oil	Steel	Unknown
2	1,000 gal	Waste oil	Steel	Unknown

C. If the release was associated with the lines or dispensers, briefly describe the problem:

There were no lines or dispensers associated with the two waste oil tanks.

D. If the release was a surface spill, briefly describe the problem:

The cause of the release in the 560 gallon waste oil tank basin appeared to have been from minor overfills. The release in the 1,000 gallon tank basin is presumed to have been from the former above ground storage tanks.

IV. EXCAVATION

A. Dimensions of excavation: Tank Basin #1: 8' x 15'

B. Original tank backfill material (sand, gravel, etc.): Tank Basin #1: Clay; Tank Basin #2: Sand

C. Native soil type (clay, sand, etc.): Clay

D. Quantity of contaminated soil removed (cubic yards): Tank Basin #1: 20 cu. yds; Tank Basin #2: 0
(Note: If more than 400 cubic yards removed, please attach copy of written approval from MPCA.)

E. Was ground water encountered or was there evidence of a seasonally high ground water table? At what depth?

Groundwater was not encountered in either tank basin.

F. If a soil boring was required (see fact sheet #13, "Excavation of Petroleum Contaminated Soil," Part VI Additional Investigation) describe the soil screening and analytical results. Attach the boring logs and laboratory results to this report.

A soil boring was not required.

G. If no soil boring was required, explain.

No soil borings were required at the time of tank removal. Soil borings will be completed on site as part of a remedial investigation.

Excavation Report Worksheet for Petroleum Release Sites

Page 4

April 1993

H. If groundwater was encountered or if a soil boring was conducted, was there evidence of ground water contamination? Specify, e.g., free product (specify thickness), product sheen, ground water in contact with petroleum contaminated soil, water analytical results, etc.

[NOTE: If free product was observed, contact MPCA staff immediately as outlined in "Petroleum Tank Release Reports" (fact sheet #3). Also consult fact sheet #18, "Free Product: Evaluation and Recovery"].

Groundwater was not encountered in either tank basin.

I. Was bedrock encountered in the excavation? At what depth?

Bedrock was not encountered during excavation.

J. Were there other unique conditions associated with this site? If so, explain.

The tank backfill material (sand) in the 1,000 gallon tank basin (Tank #2) screened non-detect for organic vapors using the PID. However, heavy soil contamination was detected approximately two to three feet below the clean, backfill material. The property owner indicated two-10,000 gallon above-ground heating fuel tanks once occupied the location of tank basin #2 and could have been responsible for the apparent petroleum contamination.

V. SAMPLING

A. Briefly describe the field screening methods used to distinguish contaminated from uncontaminated soil:

Three field screening techniques were implemented to distinguish contaminated from uncontaminated soil. They included screening with a PID, smelling the soil, and observing the soil for staining.

B. List soil vapor headspace analysis results. Indicate sampling locations using sample codes (with sampling depths in parentheses), e.g. R-1 (2 feet), R-2 (10 feet), etc. "R" stands for "removed." Samples collected at different depths at the same location should be labeled R-1A (2 feet), R-1B (4 feet), R-1C (6 feet), etc. If the sample was collected from the sidewall or bottom after excavation was complete, label it S-1 (for sidewall) or B-1 (for "bottom"). Be sure the sample codes correspond with the site map required in part VI, below.

Excavation Report Worksheet for Petroleum Release Sites

Page 5

April 1993

Sample Code	Soil Type	Reading ppm	Sample Code	Soil Type	Reading ppm
B-1 (7.5')	Clay	0			
S-1 (3.5')	Clay	0			
S-2 (3.5')	Clay	0			
B-2 (7')	Clay	100			
B-2A (8.5')	Clay	160			
S-3 (4')	Clay	1.2			
S-4 (4')	Clay	1.4			
S-5 (4')	Clay	0			

C. Describe the soil analytical sampling and handling procedures used:

Three soil samples were collected from the tank basins to characterize any remaining contamination. The sample material was taken from freshly exposed soil and placed in the appropriate laboratory provided containers. The samples were properly labeled and placed in an iced cooler. The samples were collected using disposable gloves to reduce the risk of cross-contamination.

D. List below the soil sample analytical results from the bottom and sidewall samples (i.e. soils left in place when excavation is complete). Code the samples with sampling depths in parentheses as follows: sidewall samples S-1 (8 feet), S-2 (4 feet), etc.; bottom samples B-1 (13 feet), B-2 (14 feet), etc. Be sure the sample codes correspond to the site map required in part VI. Do not include analyses from the stockpiled soils.

Sample Code	GRO/DRO	Benzene ppm	Ethylbenzene ppm	Toluene ppm	Xylene ppm	MTBE ppm	Lead ppm
B-1 (7.5')	7.4	--	--	--	--	--	--
B-2A (8.5')	57.1	0.248	5.714	0.636	5.487	NM	NM
S-3 (4')	9.9						

NOTE: ATTACH COPIES OF LABORATORY REPORTS AND CHAIN OF CUSTODY FORMS.

VI. FIGURES

Attach the following figures to this report:

1. Site location map
2. Site map(s) drawn to scale illustrating the following:
 - a. Location (or former location) of all present and former tanks, lines, and dispensers);
 - b. Location of other structures (buildings, canopies, etc.);
 - c. Adjacent city, township, or county roadways;
 - d. Final extent and depth of excavation;
 - e. Location of soil screening samples (e.g. R-1), soil analytical samples (e.g. S-1 or B-1), and soil borings (e.g. SB-1). Also, attach all boring logs.
 - f. North arrow, bar scale and map legend.

VII. SUMMARY

Briefly summarize evidence indicating whether additional investigation is necessary at the site, as discussed in part VI of "Excavation of Petroleum Contaminated Soil" (fact sheet #13). If no further action is recommended, the MPCA staff will review this report following notification of soil treatment.

Upon removal of approximately two feet of clean sand beneath the 1,000 gallon UST, petroleum impacted soil was encountered. Due to the unknown extent of the contamination, it was decided that additional excavation would not be considered until the extent could be defined. All field evidence collected during the removal of the tank, indicated that the 1,000 gallon tank was not the cause of the release. It is presumed that the two above ground storage tanks that had been located in the vicinity of the UST were the source of the release. A remedial investigation will be required to define the extent of the contamination and to determine if the groundwater has been impacted.

Soil sample SS-7 was taken from the stockpile. The sample represents the worst case material excavated from the basin containing Tank #1. In accordance with the MPCA waste oil sampling guidelines, the sample was analyzed for the eight RCRA metals and VOCs. As indicated on the attached analytical reports, the VOCs identified were all petroleum related compounds. The report also demonstrates that none of the metals were detected above concentrations commonly found in soil.

VIII. SOIL TREATMENT INFORMATION

A. *Soil treatment method used (thermal, land application, other). If you choose "other" specify treatment method:* Certified Landfill

B. *Location of treatment site/facility:* Grand Forks, North Dakota

Excavation Report Worksheet for Petroleum Release Sites

Page 7

April 1993

C. *Date MPCA approved soil treatment (if thermal treatment was used after May 1, 1991, indicate date that the MPCA permitted thermal treatment facility agreed to accept soil):* There was no approval received from the MPCA. The soil was hauled directly from the release site to the landfill.

D. *Identify the location of stockpiled contaminated soil:*
No stockpiling of contaminated soil was needed.

IX. CONSULTANT (OR OTHER) PREPARING THIS REPORT

Company Name: Widseth Smith Nolting
Street/Box: P.O. Box 765
City/Zip: Brainerd, MN 56401
Telephone: 218-829-5117
Contact: Gregory W. Smith

Signature: Gregory W. Smith Date: 4/6/95

If additional investigation is not required at the site, please mail this form and all necessary attachments to:

**(Project Manager)
Minnesota Pollution Control Agency
Hazardous Waste Division
Tanks and Spills Section
520 Lafayette Road
St. Paul, Minnesota 55155-4194**

If additional investigation is required at the site, include this form as an appendix to the Remedial Investigation/Corrective Action Design report. **Excavation reports indicating a remedial investigation (RI) is necessary will not be reviewed by MPCA staff until the RI has been completed.**

Northeast Technical Services, Inc.

315 CHESTNUT STREET • P.O. BOX 1142 • VIRGINIA, MINNESOTA 55792 • (218) 741-4290 • FAX (218) 741-4291

Lab Number: 93-2243

TO: Valley Truck Parts

MN Environmental Lab No:
#027-137-157

Date Collected: 04/13/93

Date Received: 04/16/93

Date Reported: 05/04/93

Sample Description: SS-7(P-1)

Parameter	Result
Silver	<2.0 mg/Kg
Arsenic	12 mg/Kg
Barium	333 mg/Kg
Cadmium	<1.0 mg/Kg
Chromium	27 mg/Kg
Mercury	<1.0 mg/Kg
Lead	96 mg/Kg
Seelenium	<0.2 mg/Kg

Report approved by:
JOHN H. SEURER 
ANALYTICAL SERVICES
NORTHEAST TECHNICAL SERVICES, INC.

Analyses were performed by methods approved by the U.S. Environmental Protection Agency and the Minnesota Department of Health.

Northeast Technical Services, Inc.

315 CHESTNUT STREET • P.O. BOX 1142 • VIRGINIA, MINNESOTA 55792 • (218) 741-4290 • FAX (218) 741-4291

Analytical Report for Volatile Organic Compounds

Lab Number: 93-2243

Date Received: 04/16/93

Sample Description: WSN, Valley Truck Parts, SS-7
Soil

Date Analyzed: 04/26/93

Parameter	Units	Result	MDL
Chloroethane	ug/Kg	BDL	500.0
Chloromethane	ug/Kg	BDL	500.0
Bromomethane	ug/Kg	BDL	500.0
Dichlorodifluoromethane	ug/Kg	BDL	50.0
Vinyl Chloride	ug/Kg	BDL	500.0
Methylene Chloride	ug/Kg	BDL	250.0
Trichlorofluoromethane	ug/Kg	BDL	500.0
1,1-Dichloroethylene	ug/Kg	BDL	250.0
1,1-Dichloroethane	ug/Kg	BDL	250.0
Trans-1,2-Dichloroethylene	ug/Kg	BDL	250.0
Chloroform	ug/Kg	BDL	250.0
1,2-Dichloroethane	ug/Kg	BDL	250.0
1,1,1-Trichloroethane	ug/Kg	BDL	250.0
Carbon Tetrachloride	ug/Kg	BDL	250.0
Bromodichloromethane	ug/Kg	BDL	250.0
1,2-Dichloropropane	ug/Kg	BDL	250.0
Trans-1,3-Dichloropropene	ug/Kg	BDL	250.0
1,1,2-Trichloroethylene	ug/Kg	BDL	250.0
Dibromochloromethane	ug/Kg	BDL	250.0
1,1,2-Trichloroethane	ug/Kg	BDL	250.0
Cis-1,3-Dichloropropene	ug/Kg	BDL	250.0
Bromoform	ug/Kg	BDL	250.0
1,1,2,2-Tetrachloroethane	ug/Kg	BDL	250.0
1,1,2,2-Tetrachloroethylene	ug/Kg	BDL	250.0

Northeast Technical Services, Inc.

315 CHESTNUT STREET • P.O. BOX 1142 • VIRGINIA, MINNESOTA 55792 • (218) 741-4290 • FAX (218) 741-4291

Analytical Report for Volatile Organic Compounds

Lab Number: 93-2243

Date Received: 04/16/93

Sample Description: WSN, Valley Truck Parts, SS-7
Soil

Date Analyzed: 04/26/93

Parameter	Units	Result	MDL
Chlorobenzene	ug/Kg	BDL	250.0
Benzene	ug/Kg	BDL	250.0
Toluene	ug/Kg	18200	250.0
Ethyl Benzene	ug/Kg	10600	250.0
1,2-Dichlorobenzene	ug/Kg	BDL	250.0
1,3-Dichlorobenzene	ug/Kg	BDL	250.0
1,4-Dichlorobenzene	ug/Kg	BDL	250.0
Cis-1,2-Dichloroethylene	ug/Kg	BDL	250.0
1,3-Dichloropropane	ug/Kg	BDL	250.0
1,2,3-Trichloropropane	ug/Kg	BDL	250.0
Allyl Chloride	ug/Kg	BDL	250.0
1,2-Dibromoethane	ug/Kg	BDL	250.0
Methyl Ethyl Ketone	ug/Kg	BDL	1500.0
Methyl Isobutyl Ketone	ug/Kg	BDL	250.0
Tetrahydrofuran	ug/Kg	BDL	1500.0
M-Xylene & P-Xylene	ug/Kg	36900	500.0
O-Xylene	ug/Kg	15300	250.0
Isopropylbenzene (Cumene)	ug/Kg	BDL	250.0
1,1,1,2-Tetrachloroethane	ug/Kg	BDL	250.0
1,1,2-Trichlorotrifluoroethane	ug/Kg	BDL	250.0
Ethyl Ether	ug/Kg	BDL	250.0
Acetone	ug/Kg	BDL	1500.0
Dibromomethane	ug/Kg	BDL	250.0
Bromochloromethane	ug/Kg	BDL	250.0
Methyl tert-butyl ether	ug/Kg	BDL	250.0
Styrene	ug/Kg	BDL	250.0
n-Propylbenzene	ug/Kg	5600	500.0

Northeast Technical Services, Inc.

315 CHESTNUT STREET • P.O. BOX 1142 • VIRGINIA, MINNESOTA 55792 • (218) 741-4290 • FAX (218) 741-4291

Analytical Report for Volatile Organic Compounds

Lab Number: 93-2243
Sample Description: WSN, Valley Truck Parts, SS-7
Soil

Date Received: 04/16/93
Date Analyzed: 04/26/93


Parameter	Units	Result	MDL
Bromobenzene	ug/Kg	BDL	250.0
2-Chlorotoluene	ug/Kg	BDL	250.0
1,3,5-Trimethylbenzene	ug/Kg	10500	250.0
4-Chlorotoluene	ug/Kg	BDL	250.0
tert-Butylbenzene	ug/Kg	BDL	500.0
1,2,4-Trimethylbenzene	ug/Kg	27200	250.0
sec-Butylbenzene	ug/Kg	7810	500.0
p-Isopropyltoluene	ug/Kg	BDL	500.0
n-Butylbenzene	ug/Kg	13500	500.0
1,2-Dibromo-3-chloropropane	ug/Kg	BDL	500.0
1,2,4-Trichlorobenzene	ug/Kg	BDL	250.0
Hexachlorobutadiene	ug/Kg	BDL	250.0
Naphthalene	ug/Kg	6120	500.0
1,2,3-Trichlorobenzene	ug/Kg	BDL	250.0
2,2-Dichloropropane	ug/Kg	BDL	250.0

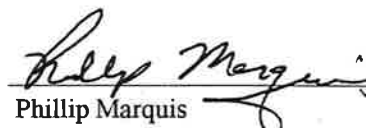
Analysis were performed by Minnesota Department of Health Method 465D.

MDL = Method Detection Limit

BDL = Below Detection Limit

Report approved by:


Brian Borgman
Chemist


Phillip Marquis
Lab Manager

Northeast Technical Services, Inc.

315 CHESTNUT STREET • P.O. BOX 1142 • VIRGINIA, MINNESOTA 55792 • (218) 741-4290 • FAX (218) 741-4291

Lab Number: 93-2242

TO: Valley Truck Parts

MN Environmental Lab No:
#027-137-157

Client #: 0

Date Collected: 04/13/93
Date Received: 04/16/93
Date Extracted: 04/20/93
Date Analyzed: 04/20/93
Date Reported: 05/05/93

Sample Description: SS-3B-ZA(8.5ft.)
Matrix: Soil

%Moisture: 25.9


PARAMETER	UNITS	RESULT	MDL	PQL
Benzene	ppb	248	33	112
Toluene	ppb	636	38	132
Ethylbenzene	ppb	5714	43	147
Total Xylenes (m-,p-,o-)	ppb	5487	81	275
Diesel Range Organics (DRO)	ppm	57.1	4.7	

MDL = Method Detection Limit
BDL = Below Detection Limit
PQL = Practical Quantitation Limit
PNQ = Present, Not Quantifiable

Report approved by:



Richard Crum
Analytical Chemist



Phillip Marquis
Organics Manager

Analyses were performed by Wisconsin DNR Modified GRO/DRO method.

Northeast Technical Services, Inc.

315 CHESTNUT STREET • P.O. BOX 1142 • VIRGINIA, MINNESOTA 55792 • (218) 741-4290 • FAX (218) 741-4291

Lab Number: 93-2241

TO: Valley Truck Parts

MN Environmental Lab No:
#027-137-157

Client #: 0

Date Collected: 04/13/93
Date Received: 04/16/93
Date Extracted: 04/20/93
Date Analyzed: 04/20/93
Date Reported: 05/04/93


Sample Description: SS-1A(B)(7.5A)
Matrix: Soil

%Moisture: 27.8

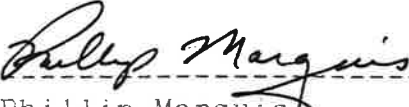
PARAMETER	UNITS	RESULT	MDL	PQL
Diesel Range Organics (DRO)	ppm	7.4	4.7	

MDL = Method Detection Limit
BDL = Below Detection Limit
PQL = Practical Quantitation Limit
PNQ = Present, Not Quantifiable

Report approved by:



Richard Crum
Analytical Chemist



Phillip Marquis
Organics Manager

Analyses were performed by Wisconsin DNR Modified GRO/DRO method.

Northeast Technical Services, Inc.

315 CHESTNUT STREET • P.O. BOX 1142 • VIRGINIA, MINNESOTA 55792 • (218) 741-4290 • FAX (218) 741-4291

Lab Number: 93-2240

TO: Valley Truck Parts

MN Environmental Lab No:
#027-137-157

Client #: 0

Date Collected: 04/13/93
Date Received: 04/16/93
Date Extracted: 04/20/93
Date Analyzed: 04/20/93
Date Reported: 05/04/93


Sample Description: SS-1(5-3)(4.0ft.)
Matrix: Soil

%Moisture: 26.9

PARAMETER	UNITS	RESULT	MDL	PQL
Diesel Range Organics (DRO)	ppm	9.9	4.7	

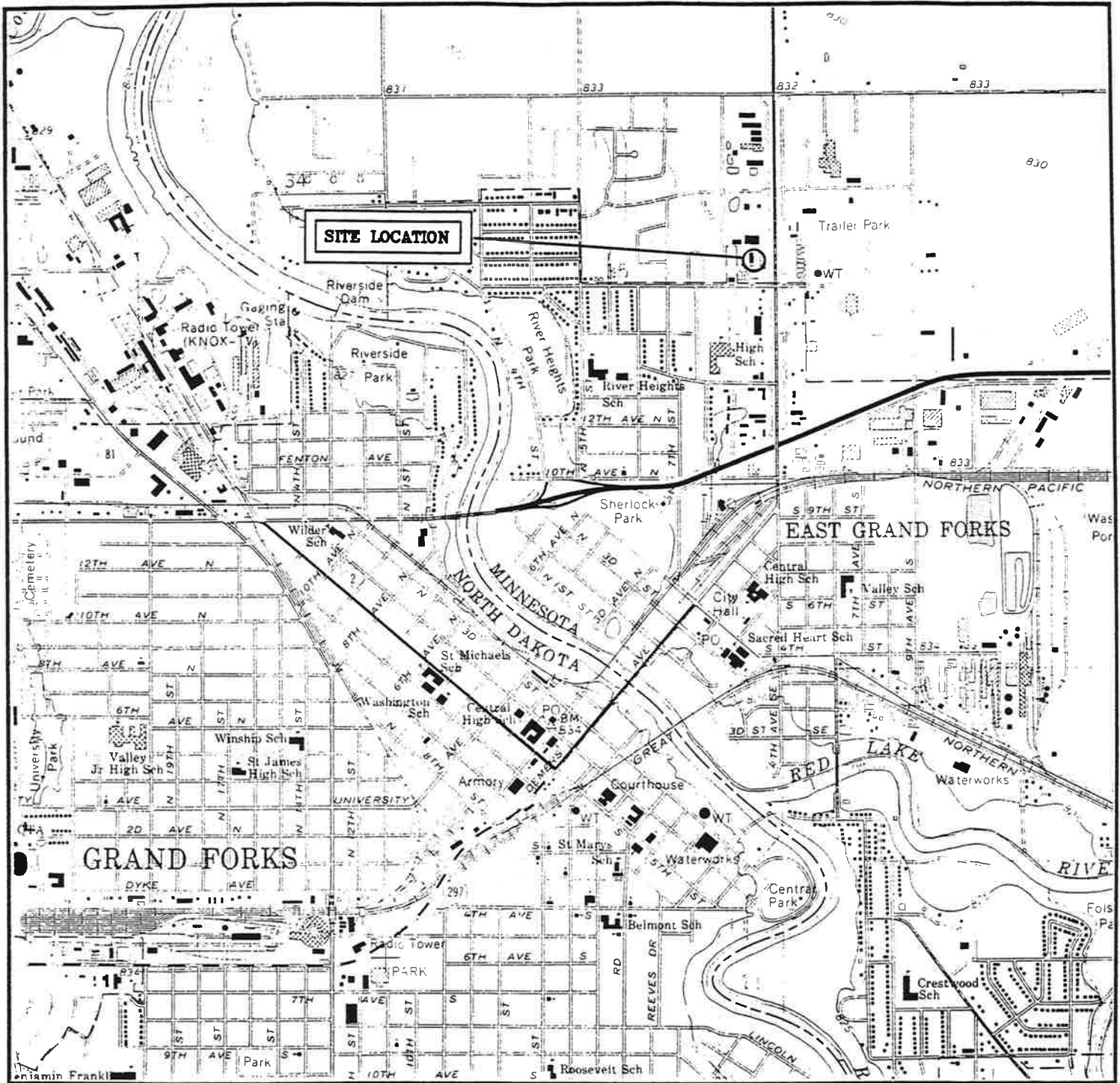
MDL = Method Detection Limit
BDL = Below Detection Limit
PQL = Practical Quantitation Limit
PNQ = Present, Not Quantifiable

Report approved by:


Richard Crum
Analytical Chemist


Phillip Marquis
Organics Manager

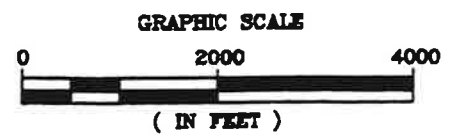
Analyses were performed by Wisconsin DNR Modified GRO/DRO method.



Area Location

UTM Grid & Magnetic
 North Declination at
 Center of Sheet.

U.S.G.S. Quadrangle Maps: Grand Forks



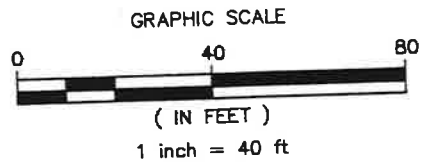
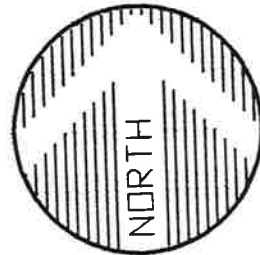
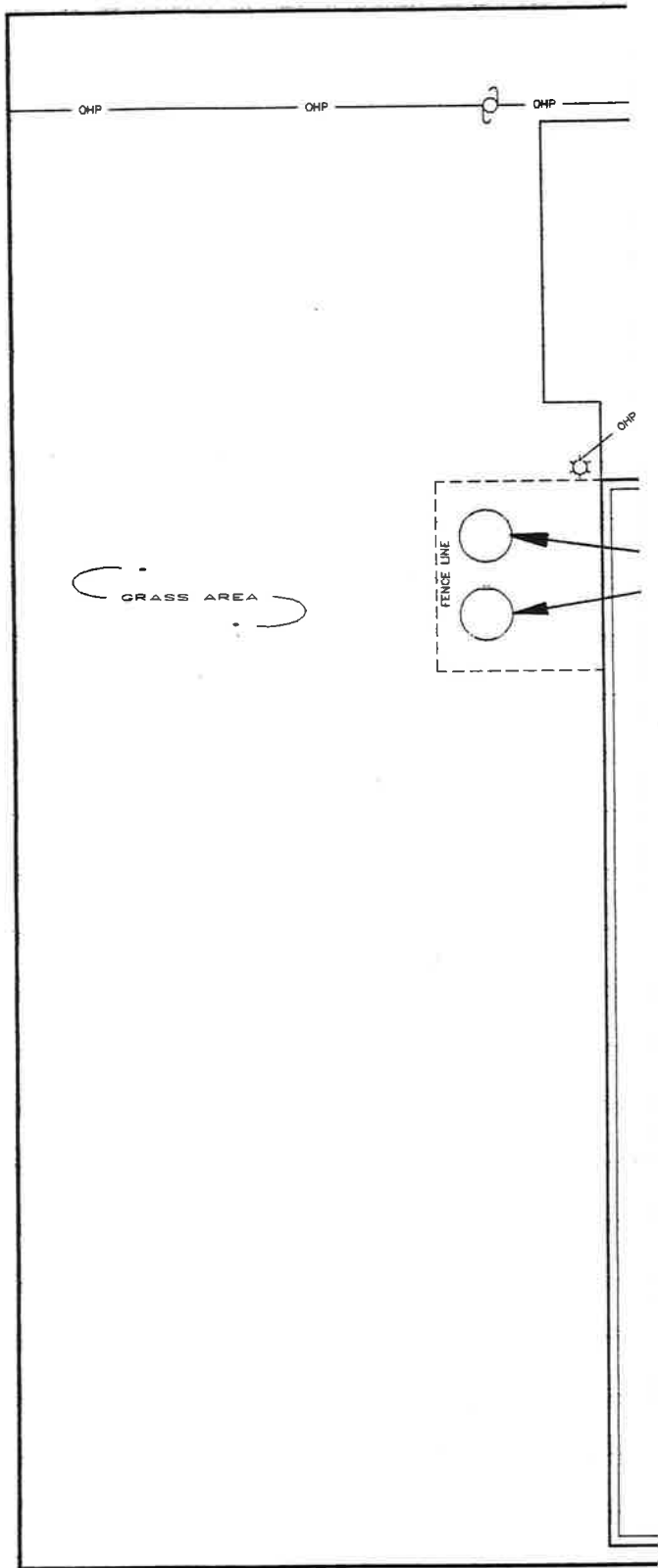
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Site Location Map

Figure 1

Valley Truck Parts & Service
 East Grand Forks, Minnesota

March 1995



LEGEND:

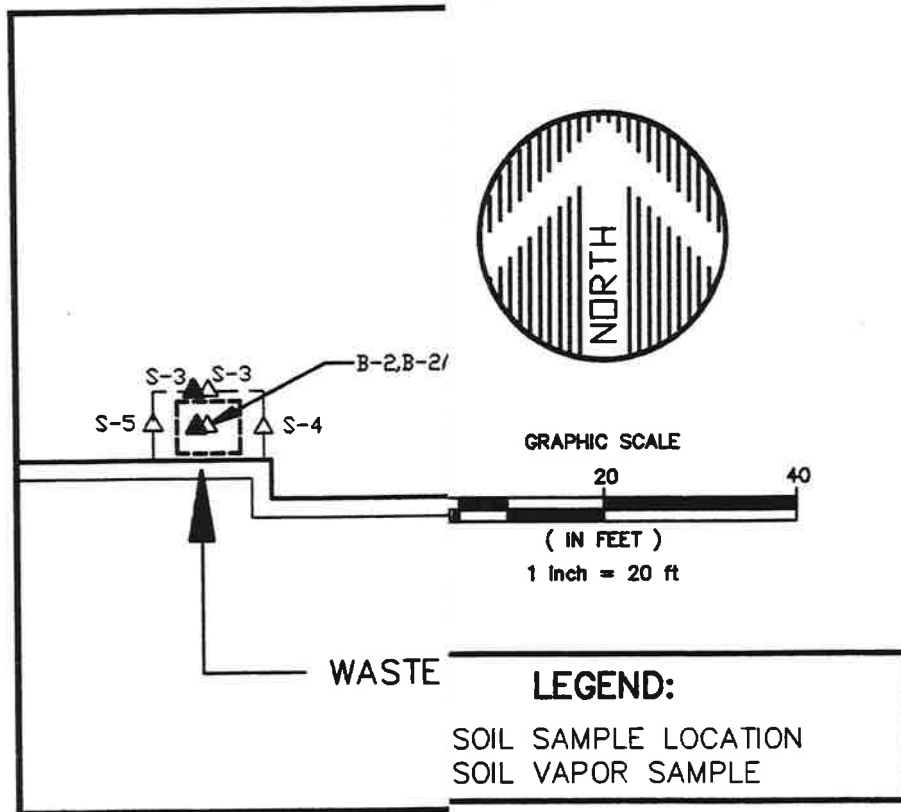
—	OVERHEAD POWER
⌵	POWER POLE
⊙	LIGHT POLE
●	MONITORING WELL
•	SOIL BORING



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Valmate.
 East



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APPENDIX - B

Field Methods and Procedures

FIELD METHODS AND PROCEDURES

1.0 SOIL SAMPLING

Soil samples were obtained from soil borings advanced by either hollow stem auger (HSA) or mud-rotary methods. Soil sampling was done by driving or pushing a 2-inch O.D. split-spoon sampler 1.5 to 2.0 feet into the soil. The relative density of cohesionless soils and the consistency of cohesive soils are recorded based on the resistance to the sampler.

2.0 DECONTAMINATION OF DRILLING EQUIPMENT

The downhole drilling equipment and associated tools were steam cleaned prior to the start of any project work. In addition, the downhole drilling equipment was cleaned with a soap solution using a high pressure spray after completion of each soil boring. The split barrel sampler was also cleaned between samples to minimize cross-contamination. The cleaning procedure consisted of scrubbing the sampler with a brush in a soap and water solution followed by a tap water rinse. The soap and water were changed regularly during the sampling. Fluids used in on-site cleaning of the split barrel sampler and drilling equipment were disposed on the site.

3.0 SOIL CLASSIFICATION

As the samples were obtained in the field, they were visually and manually classified by a WSN representative in accordance with ASTM: D2488-84. The classification of soil boring samples, soil boring depths, identification of the various strata, the soil consistency, water level information, and pertinent information regarding the method of maintaining and advancing the drill holes are presented on boring logs. Charts describing the soil classification procedure, the descriptive terminology, and symbols used on the boring logs are included with the logs.

4.0 SOIL ORGANIC VAPOR MONITORING

Soil samples were screened for organic vapors with an HNU Model 101 photoionization detector (PID) equipped with a 10.2 eV lamp and calibrated for a direct equivalent reading of parts per million benzene. Organic vapor concentrations were recorded using the jar headspace method. Under favorable conditions, organic vapor concentrations were also recorded by placing the PID probe within 1 to 2 inches of a fresh soil surface. During cold weather, PID headspace readings were taken in a heated space.

5.0 SOIL SAMPLING FOR CHEMICAL ANALYSIS

Soil samples submitted for chemical analysis were collected using decontaminated sampling equipment and new latex gloves. Soil samples were placed in clean jars with teflon-lined lids and stored in coolers containing ice packs. The cooler was then shipped or delivered to the analytical laboratory using standard chain-of-custody forms and procedures.

6.0 GROUNDWATER LEVEL MEASUREMENTS

Groundwater level measurements were obtained using an electronic measuring instrument. The instrument is equipped with a probe which emits an electric signal when in contact with water. Measurements were obtained by lowering the probe into the well and recording the depth of the probe when the electric signal indicated contact with water. Measurements were referenced to the top of the monitoring well casing and recorded to the nearest 0.01 feet. The manufacturer's reported accuracy for the instrument is 0.04 feet.

7.0 WELL DEVELOPMENT

Wells were developed after installation and prior to sampling to restore the natural hydraulic conductivity of the formation and remove sediment to reduce well-water turbidity. Wells were developed by extracting up to 30 well volumes from each well to minimize turbidity from native silts, clays, and/or drilling fluid. The well volume was determined by measuring the length of the column of water present in the well and then calculating the volume of the water column.

8.0 GROUNDWATER SAMPLING FOR CHEMICAL ANALYSIS

Groundwater samples from monitoring wells were obtained using a stainless steel bailer equipped with a bottom-closing ball-check valve. Samples were collected with bailers cleaned in a soapy water wash, and then rinsed with deionized or distilled water. Bailer blanks of distilled water were collected at the site.

Prior to sampling, the monitoring wells were purged to introduce fresh formation water into the wells. The monitoring wells were purged by removing water from the wells with the stainless steel bailer. A minimum of three monitoring well water volumes were evacuated prior to sample collection where suitable groundwater recharge occurred. In some cases, the evacuated groundwater was monitored for pH, specific conductance and temperature during the purging process. Water level measurements were recorded prior to purging.

Groundwater samples were collected in clean glass containers affixed with labels listing the type of analysis and sample identification. Appropriate preservation techniques were used for those samples as required. The sample bottles were appropriately labeled with the work order number, location number, date sampled, and initials of the individual sampler. A chain-of-custody form was completed and was shipped with the samples to the laboratory. Upon arrival at the laboratory, the samples were checked in and signed over to the appropriate laboratory personnel. At that time, a copy of the chain-of-custody form was retained and returned to the project manager.

Field filtration was performed on groundwater samples collected for analysis of dissolved metals. A groundwater sample was collected in a temporary transfer container from which the sample was passed through a filter into a labelled collection container. The transfer and collection containers consist of laboratory cleaned bottles. Following filtering the samples were preserved.

9.0 SURVEYING

Surface elevations of the soil borings were surveyed and elevations were recorded to the nearest 0.1 feet. The top of casing elevations for the monitoring wells were measured to the nearest 0.01 feet.

APPENDIX - C

Soil Boring Logs

Log Of Test Borings



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 218-281-6522 218-829-3117 612-762-8149

Project Number 260B224	
Project Name Valley Truck Parts & Service	
Location East Grand Forks, Minnesota	
Boring Number SB-1	Surface Elevation --

Sample # and Time	Sample Type	Recovery (Inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Start Date: <u>11/18/94</u> Time: <u>825</u> Completion Date: <u>11/18/94</u> Time: <u>935</u>	Description
	HSA					5		Gravel Backfill With Cobbles
						10		LACUSTRINE, Yellow Brown, Soft, CLAY WITH SILT
	SS	24	M	400	CL			Strong fuel oil odor
						15		
932	SS	24	W	0	CL			
						20		End of Boring at 17.0'
						25		
						30		

Water Level Measurements (feet)						Drilling Method HSA 3.5" ID	
Date	Time	Sample Depth	Casing Depth	Cave-in Depth	Water Level	Backfill Method	
-	-	-	-	-	-	Field Representative GSS	

Log Of Test Borings



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Project Number 260B224	
Project Name Valley Truck Parts & Service	
Location East Grand Forks, Minnesota	
Boring Number SB-2	Surface Elevation -

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Start Date: <u>11/18/93</u> Time: <u>939</u> Completion Date: <u>11/18/93</u> Time: <u>1018</u>	Description
	HSA					5		8" Concrete, 6" Gravel LACUSTRINE, Yellow Brown, Soft, CLAY WITH SILT
	SS	2	M	-	CL	7		HNU=0ppm on 5' cuttings, 8' cuttings appear stained
1003	SS	24	M	320	CL	10		Strong fuel oil odor
	SS	24	W	0	CL	15		End of Boring at 15.0'

Water Level Measurements (feet)						Drilling Method	Backfill Method
Date	Time	Sample Depth	Casing Depth	Cave-in Depth	Water Level		
11/18/94	1645	-	-	-	7.2	HSA 3.5" ID	
							Field Representative GSS

Log Of Test Borings



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Project Number 260B224	
Project Name Valley Truck Parts & Servicer	
Location East Grand Forks, Minnesota	
Boring Number SB-3	Surface Elevation -

Sample # and Time	Sample Type	Recovery (Inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Start Date: <u>11/18/93</u> Time: <u>1021</u> Completion Date: <u>11/18/93</u> Time: <u>1053</u>
	HSA					5 ▼	Description 8" Concrete, 6" Gravel LACUSTRINE, Yellow Brown, Soft, CLAY WITH SILT
	SS	24	M W	0	CL	10	
	SS	24	W	0	CL		
						15 20 25 30	End of Boring at 12.0'

Water Level Measurements (feet)						Drilling Method HSA 3.5" ID
Date	Time	Sample Depth	Casing Depth	Cave-in Depth	Water Level	
11/18/94	1106	-	-	-	6.9	Backfill Method
11/18/94	1645	-	-	-	6.3	
						Field Representative GSS

Log Of Test Borings



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Project Number 260B224	
Project Name Valley Truck Parts & Service	
Location East Grand Forks, Minnesota	
Boring Number SB-4	Surface Elevation -

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Start Date: <u>11/18/93</u> Time: <u>1056</u> Completion Date: <u>11/18/93</u> Time: <u>1118</u>	Description
	HSA					5		8" Concrete, 6" Gravel LACUSTRINE, Yellow Brown, Soft, CLAY WITH SILT
	SS	24	M W	350	CL	10		Gray-Black stained with strong fuel oil odor
	SS	24	W	190	CL			Strong fuel oil odor
						15		End of Boring at 12.0'
						20		
						25		
						30		

Water Level Measurements (feet)						Drilling Method HSA 3.5" ID	
Date	Time	Sample Depth	Casing Depth	Cave-in Depth	Water Level	Backfill Method	
-	-	-	-	-	-	Field Representative GSS	

Log Of Test Borings



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Project Number 260B224	
Project Name Valley Truck Parts & Service	
Location East Grand Forks, Minnesota	
Boring Number SB-5	Surface Elevation -

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Description
	HSA					5 ▼	8" Concrete-6" Gravel LACUSTRINE, Yellow Brown, Soft, CLAY WITH SILT
	SS	24	M W	0	CL	10	
	SS	24	W	0	CL		
						15	
						20	
						25	
						30	
							End of Boring at 12.0'

Water Level Measurements (feet)						Drilling Method	Backfill Method
Date	Time	Sample Depth	Casing Depth	Cave-in Depth	Water Level		
11/18/94	1647	-	-	-	6.3	HSA 3.5" ID	
							Field Representative GSS

Log Of Test Borings



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Project Number 260B224	
Project Name Valley Truck Parts & Service	
Location East Grand Forks, Minnesota	
Boring Number SB-6	Surface Elevation -

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Start Date: <u>11/18/93</u> Time: <u>1227</u> Completion Date: <u>11/18/93</u> Time: <u>1243</u>	Description
	HSA					5 ▼		Topsoil LACUSTRINE, Yellow Brown, Soft, CLAY WITH SILT
	SS	24	W	0	CL	10		
	SS	24	W	0	CL			
						15		End of Boring at 12.0'
						20		
						25		
						30		

Water Level Measurements (feet)						Drilling Method	
Date	Time	Sample Depth	Casing Depth	Cave-in Depth	Water Level	HSA 3.5" ID	
11/18/94	1648	-	-	-	6.5	Backfill Method	
						Field Representative	
						GSS	

Log Of Test Borings



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Project Number 260B224

Project Name Valley Truck Parts & Service

Location East Grand Forks, Minnesota

Boring Number SB-7

Surface Elevation -

Sample # and Time	Sample Type	Recovery (Inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Start Date: <u>11/18/93</u> Time: <u>1252</u> Completion Date: <u>11/18/93</u> Time: <u>1318</u>	Description
	HSA					5		8" Concrete, 6" Gravel LACUSTRINE, Yellow Brown, Soft, CLAY WITH SILT
	SS	24	W	340	CL	10		Stained materials, strong odor
	SS	24	W	400	CL			Stained materials with sheen on SS (strong odor)
						15		
	SS	24	W	0	CL			
						20		End of Boring at 17.0'
						25		
						30		

Water Level Measurements (feet)						Drilling Method
Date	Time	Sample Depth	Casing Depth	Cave-in Depth	Water Level	HSA 3.5" ID
-	-	-	-	-	-	Backfill Method
						Field Representative GSS

Log Of Test Borings



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Project Number 260B224	
Project Name Valley Truck Parts & Service	
Location East Grand Forks, Minnesota	
Boring Number SB-8	Surface Elevation -

Sample # and Time	Sample Type	Recovery (Inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Start Date: <u>11/18/93</u> Time: <u>1328</u> Completion Date: <u>11/18/93</u> Time: <u>1350</u>	Description
	HSA					5		8" Concrete, 6" Gravel LACUSTRINE, Yellow Brown, Soft, CLAY WITH SILT
	SS	24	M	300	CL	10		Strong fuel oil odor
						15		End of Boring at 10.0'
						20		
						25		
						30		

Water Level Measurements (feet)						Drilling Method HSA 3.5" ID	
Date	Time	Sample Depth	Casing Depth	Cave-in Depth	Water Level	Backfill Method	
-	-	-	-	-	-	Field Representative GSS	

Log Of Test Borings



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Project Number 260B224	
Project Name Valley Truck Parts & Service	
Location East Grand Forks, Minnesota	
Boring Number SB-9	Surface Elevation -

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Start Date: <u>11/18/93</u> Time: <u>1415</u> Completion Date: <u>11/18/93</u> Time: <u>1430</u> Description
	HSA					5	Topsoil LACUSTRINE, Yellow Brown, Soft, CLAY WITH SILT 5' cuttings stained black with fuel oil odor
	SS	19	W	180	CL	10	Strong fuel oil odor
						15	End of Boring at 10.0'
						20	
						25	
						30	

Water Level Measurements (feet)						Drilling Method HSA 3.5" ID	
Date	Time	Sample Depth	Casing Depth	Cave-in Depth	Water Level	Backfill Method	
-	-	-	-	-	-	Field Representative GSS	

Log Of Test Borings



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Project Number 260B224

Project Name Valley Truck Parts & Service

Location East Grand Forks, Minnesota

Boring Number SB-10

Surface Elevation -

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Start Date: <u>11/18/93</u> Time: <u>1433</u> Completion Date: <u>11/18/93</u> Time: <u>1451</u>
							Description
	HSA					5	8" Concrete, 6" Gravel LACUSTRINE, Yellow Brown, Soft, CLAY WITH SILT
	SS	24	W	0	CL	10	
	SS	24	W	0	CL		
						15	End of Boring at 12.0'
						20	
						25	
						30	

Water Level Measurements (feet)						Drilling Method
Date	Time	Sample Depth	Casing Depth	Cave-in Depth	Water Level	
-	-	-	-	-	-	HSA 3.5" ID
						Backfill Method
						Field Representative GSS

Log Of Test Borings



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Project Number 260B224

Project Name Valley Truck Parts & Service

Location East Grand Forks, Minnesota

Boring Number SB-11

Surface Elevation -

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Description
	HSA					5	Start Date: <u>11/18/93</u> Time: <u>1505</u> Completion Date: <u>11/18/93</u> Time: <u>1522</u> Topsoil LACUSTRINE Yellow Brown, Medium-Stiff, CLAY WITH SILT
	SS	24	M	0	CL	10	
	SS	24	W	0	CL		
						15	End of Boring at 12.0'
						20	
						25	
						30	

Water Level Measurements (feet)						Drilling Method	
Date	Time	Sample Depth	Casing Depth	Cave-in Depth	Water Level	HSA 3.5" ID	
-	-	-	-	-	-	Backfill Method	
						Field Representative GSS	

Log Of Test Borings



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Project Number 260B224	
Project Name Valley Truck Parts & Service	
Location East Grand Forks, Minnesota	
Boring Number SB-12	Surface Elevation -

Sample # and Time	Sample Type	Recovery (Inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Start Date: <u>11/18/93</u> Time: <u>1525</u> Completion Date: <u>11/18/93</u> Time: <u>1552</u>	Description
	HSA					5		Topsoil LACUSTRINE, Yellow Brown, Medium-Stiff, CLAY WITH SILT
	SS	24	M	0	CL	10		
	SS	24	W	300	CL			Stained with strong fuel oil odor
						15		End of Boring at 12.0'
						20		
						25		
						30		

Water Level Measurements (feet)						Drilling Method HSA 3.5" ID	
Date	Time	Sample Depth	Casing Depth	Cave-in Depth	Water Level	Backfill Method	
-	-	-	-	-	-		
						Field Representative GSS	

Log Of Test Borings



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Project Number 260B224	
Project Name Valley Truck Parts & Service	
Location East Grand Forks, Minnesota	
Boring Number SB-13	Surface Elevation -

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Start Date: <u>11/18/93</u> Time: <u>1555</u> Completion Date: <u>11/18/93</u> Time: <u>1630</u>	Description
	HSA					5		Topsoil LACUSTRINE, Yellow Brown, Medium-Stiff, CLAY WITH SILT
	SS	24	M	0	CL	10		
	SS	24	W	0	CL	15		
						20		
						25		
						30		
								End of Boring at 12.0'

Water Level Measurements (feet)						Drilling Method	Backfill Method
Date	Time	Sample Depth	Casing Depth	Cave-in Depth	Water Level		
-	-	-	-	-	-	HSA 3.5" ID	
							Field Representative GSS

Log Of Test Borings



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Project Number 260B224

Project Name Valley Truck Parts & Service

Location East Grand Forks, Minnesota

Boring Number SB-14

Surface Elevation -

Start Date: 11/18/93 Time: 1638

Completion Date: 11/18/93 Time: 1717

Description

Sample # and Time	Sample Type	Recovery (Inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Description
	HSA					5	Topsoil LACUSTRINE, Yellow Brown, Medium-Stiff, CLAY WITH SILT
	SS	24	M	0	CL	10	
	SS	24	W	0	CL		
						15	End of Boring at 12.0'
						20	
						25	
						30	

Water Level Measurements (feet)

Date	Time	Sample Depth	Casing Depth	Cave-in Depth	Water Level	Drilling Method
-	-	-	-	-	-	HSA 3.5" ID
						Backfill Method
						Field Representative GSS

Log Of Test Borings



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Project Number 260B224

Project Name Valley Truck Parts & Service

Location East Grand Forks, Minnesota

Boring Number SB-15

Surface Elevation -

Start Date: 6/15/94 Time: 1230

Completion Date: 6/15/94 Time: 1330

Description

Sample # and Time	Sample Type	Recovery (Inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Description
	HSA					5 ▼	LACUSTRINE, Yellow Brown, Medium-Stiff, CLAY WITH SILT Sheen is visible on the water in the bore hole
1324	SS	24	M	136	CL	10	Strong fuel oil odor
1338	SS	24	W	0	CL	15	
						20	End of Boring at 17.0'
						25	
						30	

Water Level Measurements (feet)

Date	Time	Sample Depth	Casing Depth	Cave-in Depth	Water Level	Drilling Method
6/15/94	1352	-	-	-	6.2	HSA 3.5" ID
						Backfill Method
						Field Representative GSS

Log Of Test Borings



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Project Number 260B224	
Project Name Valley Truck Parts & Service	
Location East Grand Forks, Minnesota	
Boring Number SB-16	Surface Elevation -

Sample # and Time	Sample Type	Recovery (inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Start Date: <u>6/15/94</u> Time: <u>1638</u> Completion Date: <u>6/15/94</u> Time: <u>1720</u>	Description
	HSA					5		LACUSTRINE Yellow Brown, Medium-Stiff, CLAY WITH SILT
						5		Black clay with possible staining and slight oil odor
	SS	24	W	16	CL	10		Slight petroleum odor
	SS	19	W	160	CL	10		Strong fuel oil odor
						15		
	SS	24	W	0	CL	15		
						20		End of Boring at 17.0'
						25		
						30		

Water Level Measurements (feet)						Drilling Method HSA 3.5" ID	
Date	Time	Sample Depth	Casing Depth	Cave-in Depth	Water Level	Backfill Method	
-	-	-	-	-	-	Field Representative GSS	

Log Of Test Borings



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Project Number 260B224	
Project Name Valley Truck Parts & Service	
Location East Grand Forks, Minnesota	
Boring Number SB-17	Surface Elevation -

Sample # and Time	Sample Type	Recovery (Inches)	Moisture	PID Readings (ppm)	U.S.C.S. Symbol	Depth (feet)	Start Date: <u>6/15/94</u> Time: <u>1735</u> Completion Date: <u>6/15/94</u> Time: <u>1755</u> Description
	HSA					6	LACUSTRINE, Yellow Brown, Medium-Stiff, CLAY WITH SILT
	SS	19	W	160	CL	10	
	SS	24	W	0	CL	15	
						20	End of Boring at 17.0'
						25	
						30	
						35	
						40	

Water Level Measurements (feet)						Drilling Method
Date	Time	Sample Depth	Casing Depth	Cave-in Depth	Water Level	
6/16/94	1825	-	-	-	5.0	HSA 3.5" ID
						Backfill Method
						Field Representative GSS