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Site Characterization Summary Report
LaPine Highway Center
51425 Highway 97
LaPine, Oregon 97739
Petroleum Release No. 09-91-0001

May 27, 2003

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A Report Prepared For:

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LaPine Highway Center
51425 Highway 97
LaPine, Oregon 97739
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Kleinfelder Project Number: 25353

Prepared By:

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1.0 INTRODUCTION

This report presents the results of a supplemental site characterization investigation conducted for the LaPine Highway Center in Lapine, Oregon (Figure 1). The site is located southwest of the intersection of U.S. Highway 97 and Huntington Road and the site address is 51425 Highway 97. Site investigation activities have been conducted at the request of the Oregon Department of Environmental Quality (DEQ) to evaluate the extent of a historical petroleum hydrocarbon release from three, underground storage tanks (USTs), that were reportedly decommissioned and removed from the site in January 1991. The scope of the investigation has been designed to address comments presented by the DEQ in their October 8, 2002 and April 16, 2003 letters.

The purpose of the supplemental site investigation was as follows:

- Provide an update on the operational status of monitoring well MW-03, which was reportedly damaged during snow removal activities in March 2001;
- Resume quarterly groundwater monitoring in three, existing monitoring wells;
- Provide information on the final sampling, disposition, and treatment of petroleum contaminated soil (PCS); and
- Delineate remaining petroleum contamination at the site.

Previous site characterization and assessment work was provided for the LaPine Highway Center site by GEM Consulting. Kleinfelder's scope of work did not include compiling a comprehensive summary of previous work completed by others and as such, the reader is directed to the following documentation prepared by GEM Consulting for a review of historical site characterization work at the site:

- Initial Abatement Measures Report, February 1991;
- Beneficial Use Survey Report, dated March 26, 1991; and
- Monitoring Well Installation and Sampling Report, dated November 13, 1995.

2.0 SITE DESCRIPTION

2.1 PHYSICAL SETTING

The site is situated in the southeast quarter, of the northeast quarter of Section 15, Township 22 South, Range 10 East of the Willamette Meridian, LaPine, Oregon (U.S. Geological Survey, LaPine Quadrangle, 1986). Topography of the site and the surrounding area is generally flat but regionally slopes gently to the north-northeast. The site elevation is approximately 4,225 feet above mean sea level. The site occupies an area of approximately ¾-acre in southern Deschutes County, Oregon. The site is located within the LaPine Basin and surface water drains into the Deschutes River. The climate of southern Deschutes County is one of extremes with summer temperatures of up to 100 degrees F and winter temperatures below 0 degrees F. The region is located near the base of the High Cascade Mountain range with approximately 14 inches of annual precipitation, most of which falls as snow during winter.

2.2 SURFACE CONDITIONS

The site is currently occupied by an approximate 2,500 square foot commercial building (LaPine Highway Center) with multiple tenants including a café, chamber of commerce, and real estate office. The building is bordered by asphalt except for an unimproved grass and soil covered area to the west of the commercial building. North of the site is a hardware store. Other commercial properties front Highway 97 and occupy the land directly east and south of the site. Morson Street and two residential properties border the site on the west (Figure 2).

2.3 REGIONAL GEOLOGY

The site lies within the western portion of the High Lava Plains physiographic province of central Oregon (Baldwin, et. al., 1992). The regional geology includes Quaternary and Holocene Age volcanic rocks and alluvial deposits with source areas in the High Cascades to the west and Newberry volcano to the east. The site is situated within the LaPine graben which is a buried, structural feature that lies between the High Cascades and Newberry volcano. The surface is described as a broad plain of Pleistocene Age glaciofluvial, outwash sediments with origins in the High Cascade Mountains to the west. The outwash sediments are believed to have been deposited between 18,000 and 22,000 years ago. Well developed, interbedded lacustrine (lake) clay horizons also suggest intermittent, low energy depositional periods resulting from downstream channel interruptions (damming) (MacLeod and Sherrod, 1992). The outwash sediments are overlain by pyroclastic sediments that include pumice and ash from Mt. Mazama (approximately 6,600 years of age).

2.4 HYDROGEOLOGIC SYSTEM

Groundwater in the LaPine Basin has been divided based upon, geology, aerial extent, and flow characteristics into regional, intermediate, and local flow systems. These are discussed below.

2.4.1 REGIONAL SYSTEM

The regional system is the deepest and occurs in basaltic lavas which underlie the basin at depths in excess of 300 feet below ground surface (bgs). The regional system is recharged in the High Cascade Range to the west and the highlands of Newberry volcano to the east and has an overall flow direction to the east-northeast (Century West Engineering, 1982).

2.4.2 INTERMEDIATE SYSTEM

The intermediate system is comprised of fine-grained, lake, marsh, and alluvial sediments that overlie the basalt basement rocks. This aquifer system generally exhibits low permeability and well yields are reportedly in the 5 to 50 gallon per minute (gpm) range (Century West Engineering, 1982). The depth of the intermediate flow system shows some local variation but generally ranges from approximately 50 to 300 feet bgs. The intermediate flow system is recharged primarily from precipitation around the margins of the basin and to a lesser extent from upward flow from the regional flow system. The intermediate aquifer is comprised of saturated, fine-grained sediments and as such, does not receive recharge from downward migration from the overlying, alluvial aquifer. Similar to the regional system, the flow direction for the intermediate system is to the east-northeast.

2.4.3 LOCAL SYSTEM

The local flow system is made up of unconsolidated, glaciofluvial sediments under water table (unconfined) conditions. These materials blanket most of the LaPine Basin and were deposited as outwash from glaciers emanating from the High Cascades to the west. The "unconfined aquifer" is comprised of well graded, sand and gravel with minor interbeds of low permeability silt and clay. Most domestic wells in the southern LaPine Basin are drilled into this aquifer and depths are generally less than 50 feet bgs. Water levels from wells installed at various depths within the local system generally show similar water levels (5 to 15 feet bgs). This suggests there is no significant vertical movement of water in the unconfined aquifer (Century West Engineering, 1982). Recharge to the unconfined aquifer is primarily from precipitation, surface runoff, and irrigation canal leakage. The Little Deschutes River flows northward and is incised within the outwash plain of the southern LaPine basin. Potentiometric surface contours for the

unconfined aquifer indicate a westerly groundwater flow direction (toward the Little Deschutes River) for this portion of southern Deschutes Counties (Dave Morgan, personal communication). This coincides with the groundwater flow direction observed beneath the LaPine Highway Center site during the April 2003 monitoring event (Figure 3).

2.5 Subsurface Soil Conditions

Based on our subsurface exploration, the soil types appear to be relatively consistent across the site. Subsurface soils are comprised of a light brown, well graded, pumiceous sand underlying the topsoil and extending to depths of four to seven feet bgs. A relatively thin horizon of dark brown, medium dense sand underlies the pumiceous soils and extends to depths ranging from nine to ten feet bgs. A dense, well graded, outwash sand and fine gravel deposit underlies the silty-sand and gravel horizon and extends to depths in excess of 20 feet bgs. Subsurface soil types are also described on the Boring Logs in Appendix A.

3.0 FIELDWORK

The following sections describe field activities, sampling and analytical test methods.

3.1 Geoprobe Drilling

On April 1, 2003, six direct-push borings (GP-01 through GP-06) were advanced using a truck-mounted Geoprobe® direct-push drill rig operated by Cascade Drilling. The borings were advanced to observe subsurface soil conditions and to collect soil and groundwater samples for laboratory analyses. The borings were advanced to depths of 20 feet bgs. The boring locations are indicated on Figure 2, and boring logs are included in Appendix A.

Soil and groundwater samples were collected during drilling, as described in detail in Appendix A. The depth of each boring was determined by the occurrence of groundwater encountered during drilling, and target depths indicated by previous environmental data. Groundwater was generally encountered between 9 and 13 feet bgs. The drilling equipment was decontaminated prior to use at each boring location.

Following completion of the soil borings, the boreholes were backfilled to surface grade with granular bentonite. The bentonite was hydrated with clean water, and the surface restored to near-original condition.

3.2 GEOPROBE SOIL SAMPLING

Soil was sampled during drilling (described in Appendix A) for visual observation, field screening, and archiving for potential laboratory analysis. In general, soil was sampled continuously and discreet soil samples were collected at various intervals beginning at ground surface.

The soil samples were divided into a field-screen sample and an archive sample. The field-screen samples were screened in the field using a portable photoionization detector (PID) to evaluate the relative concentration of volatile organic vapors. Soil was then characterized by a Kleinfelder geologist according to Unified Soil Classification System (USCS) nomenclature. The archived samples were placed in laboratory prepared containers, labeled, and immediately stored in a chilled cooler for potential laboratory analysis. The soil samples were transported under chain-of-custody documentation to the analytical laboratory within 24 hours of sample collection.

3.3 GROUNDWATER SAMPLING

Groundwater samples were collected from the Geoprobe borings and three existing groundwater monitoring wells (MW-01, MW-02, and MW-03) as described in Appendix A. All of the Geoprobe borings were drilled to 20 feet bgs to provide sufficient groundwater yield to permit sample collection.

Groundwater samples were collected using a peristaltic pump and Teflon tubing. New tubing was used at each boring location. Field indications of petroleum hydrocarbons (odor) were observed in groundwater samples collected from two borings (GP-01 and GP-02).

The groundwater samples were placed in laboratory-prepared containers, labeled, and immediately stored in a chilled cooler. The groundwater samples were transported under chain-of-custody documentation to the analytical laboratory within 24 hours of sample collection.

3.4 TREATMENT AREA SOIL SAMPLING

In January 1991, approximately 130 cubic yards of petroleum hydrocarbon contaminated soil (PCS) was excavated from the UST vault. The PCS was reportedly stockpiled on vacant land to the west of the hardware store building located north of the former UST vault. Three grab soil samples (SS-01, SS-02, SS-03) were collected for gasoline range hydrocarbon analysis from representative areas of the PCS treatment stockpile on April 1, 2003. The purpose for sampling was to assess residual gasoline range hydrocarbon concentrations in the soils after having been

exposed to the atmosphere for over 12 years. Grab sample locations are shown on Figure 2. Field observations did not note the presence of soil staining or hydrocarbon odors during sampling.

3.5 Analytical Testing Program

Investigation samples of soil and groundwater were collected and submitted for analytical testing consistent with DEQ guidance applicable to Low-Impact Site Rules for UST Cleanup sites (October 1999). All samples were submitted to North Creek Analytical, Inc., located in Bend, Oregon.

Selected soil samples were submitted for gasoline range petroleum hydrocarbon analysis by Northwest Method TPH-Gx.

Groundwater samples were analyzed for selected volatile organic compounds including benzene, ethylbenzene, toluene, and xylenes (BETX), 1,2-Dibromoethane/1,2-Dichloroethane (EDB/EDC), and methyl tert-butyl ether (MTBE) by EPA Method 8260B. Additionally, groundwater samples were submitted for dissolved lead analysis in accordance with EPA 200 Series Methods, and select polynuclear aromatic hydrocarbon (PAH) analysis (naphthalene) using EPA Method 8260B.

4.0 FINDINGS

The following sections summarize field screening and analytical results of soil and groundwater samples collected during the investigation. A summary of analytical results for soil and groundwater samples is provided in Tables 1 and 2, respectively. Laboratory analytical reports and chain-of-custody documentation are included for reference in Appendix B.

4.1 Soil

The following sections summarize field screening and analytical results for soil samples.

4.1.1 Geoprobe Soil Conditions and Field Screening

Soils encountered during additional site characterization drilling generally consisted of light brown, well graded, pumiceous sand underlying about six inches of topsoil and extending to depths of four to seven feet bgs. A relatively thin horizon of dark brown, medium dense sand underlies the pumiceous soils and extends to depths ranging from nine to ten feet bgs. A dense, well graded, outwash sand and fine gravel deposit underlies the silty-sand and gravel horizon and extends to depths in excess of 20 feet bgs.

The field screening of soil samples detected olfactory indications of petroleum-like odors in two borings (GP-01 and GP-02) at depths between 15 and 20 feet bgs. Soil screening with a PID observed soil readings ranging from 10 to 100 parts per million by volume (ppmv). PID readings are noted on the boring logs in Appendix A.

No visible sheen was observed on the groundwater or the soils collected for observation and/or submittal for laboratory analytical testing. Nor was staining of the soil observed in the soils encountered during drilling.

4.1.2 Petroleum Hydrocarbon Results

Total petroleum hydrocarbons in the gasoline range were detected in one soil sample, collected at a depth of 14 feet bgs in boring GP-02. The reported concentration was 71.7 milligrams per kilogram (mg/kg). All other TPH-Gx concentrations were less than the method detection limit (4 mg/kg). TPH-Gx analytical results are summarized in Table 1.

4.1.3 Treatment Soil Area Results

Total petroleum hydrocarbons in the gasoline range were not detected above method detection limits in three soil samples collected from the former soil treatment area. TPH-Gx analytical results are summarized in Table 1. Laboratory analytical reports are included for reference in Appendix B.

4.2 Groundwater

The following sections summarize analytical results of groundwater samples collected from the Geoprobe borings and existing monitoring wells.

4.2.1 BTEX Results

BTEX analyses were performed on all groundwater samples. Benzene was detected in existing monitoring well MW-02 and in Geoprobe explorations GP-02 through GP-06. Concentrations ranged from 0.65 ug/L to 4.95 ug/L. Toluene, ethylbenzene, and total xylenes were also measured above method detection limits in MW-02 and all the Geoprobe explorations. Toluene, concentrations ranged from 3.84 to 38 ug/L; ethylbenzene concentrations ranged from 3.18 to 552 ug/L; and total xylene concentrations ranged from 2.88 to 1,610 ug/L. Laboratory analytical groundwater data is summarized on Table 2. Laboratory analytical reports are included for reference in Appendix B.

4.2.2 VOC Results

In addition to the BTEX concentrations noted above, samples were analyzed for EDB/EDC and MTBE by EPA Method 8260B. None of these analytes were detected above method detection limits. Laboratory analytical groundwater data is summarized on Table 2. Laboratory analytical reports are included for reference in Appendix B.

4.2.3 PAH Results

Naphthalene was detected in existing monitoring well MW-02 and in Geoprobe explorations GP-01 through GP-03, GP-05, and GP-06. Concentrations ranged from 2.26 ug/L to 189 ug/L. Laboratory analytical groundwater data is summarized on Table 2. Laboratory analytical reports are included for reference in Appendix B. Based upon the nature of the petroleum hydrocarbon contamination at the site (gasoline), no other PAH constituents were evaluated.

4.2.4 Lead Results

Dissolved lead was detected in Geoprobe explorations GP-01, and GP-04 through GP-06. Concentrations ranged from 0.0017 milligrams/liter (mg/L) to 0.0027 mg/L. Laboratory analytical groundwater data is summarized on Table 2. Laboratory analytical reports are included for reference in Appendix B. Based upon the nature of the petroleum hydrocarbon contamination at the site, no other metal constituents were evaluated.

4.3 Monitoring Well Assessment

An existing monitoring well (MW-03), located south (down-gradient) of the former UST vault was reportedly damaged during snow removal activities in March 2001. Kleinfelder evaluated this monitoring well and found the well to be functional for the purpose of water level measurements and sampling. The well monument for MW-03 also remains intact.

The original well monuments for MW-01 and MW-02 were reportedly replaced several years ago with the current, self-fabricated, non-locking monuments. These monuments are in poor condition, are not water-tight, and should be replaced if continued groundwater monitoring becomes warranted.

GEM Consulting had previously reported all well casing elevations to be identical. While possible, this scenario appeared unlikely and as such, Kleinfelder resurveyed each well casing elevation relative to the other monitoring wells. These well elevations were used to develop the Potentiometric Groundwater Map (Figure 3).

5.0 CONCLUSIONS

The following conclusions are based on Kleinfelder's knowledge of the subject property from site observations, information gathered during additional site investigation and groundwater monitoring. These conclusions are subject to the limitations presented in this report, and may change if additional information becomes available.

The site appears to meet a majority of the criteria for closure under DEQ's Low Impact Site guidance.

- The source of the release has been removed from the site and there is no longer petroleum hydrocarbon storage or dispensing equipment present on-site;
- Applicable requirements for site characterization have been completed under OAR 340-122-0205 through 340-122-0240;
- On-site land use has remained the same over the last 12 years (commercial) and is expected to remain so;
- No free product was found in the groundwater monitoring wells or Geoprobe explorations;
- Residual gasoline contaminated soil (in-situ) is not located within three feet of existing ground surface and does not exceed 1,000 mg/kg;
- Treated PCS does not contain residual gasoline range hydrocarbon concentrations above method detection limits;
- Groundwater does not contain BETX, EDB/EDC, MTBE, naphthalene, or lead above Generic Risk-Based Concentrations (RBCs) for the trenchworker exposure senario;
- There does not appear to be residual PCS within utility corridors;
- There is no PCS within 10 lateral feet of a service station building, or 50 lateral feet of a private residence;
- Groundwater monitoring indicates the plume has stabilized or is diminishing in size; and
- The groundwater plume does not leave the property at concentrations exceeding appropriate RBCs.
- The release site is overlain by an asphalt-covered parking area that should prevent incidental exposures to any residual contaminated dust and organic vapors.

6.0 RECOMMENDATIONS

Based on our current understanding of site conditions, site closure under DEQ's Low-Impact Site Rules should be requested by the owner concurrent with submittal of this report to DEQ for review and comment. In the interim, we do not recommend any additional site characterization, sampling, analyses, or remedial activities at the site.

7.0 LIMITATIONS

Kleinfelder has performed the work described in this report in accordance with the generally accepted standard of care existing in the State of Oregon at the time of the assessment. Judgments leading to conclusions and recommendations are generally made with an incomplete knowledge of the subsurface and historical conditions applicable to the study area. More extensive studies including historical review, additional site exploration, soil and groundwater sampling, and chemical analyses may be used to supplement the information presented by this assessment. Kleinfelder should be notified for additional consultation if the LaPine Highway Center owners wish to reduce uncertainties beyond the level associated with this investigation. Our assessment of the property may also change, as new data becomes available during additional site exploration, remediation, or development.

Since activities and regulations beyond our control could change at any time after the completion of this report, our observations, findings, and opinions can be considered valid only as of the date of the report.

This report may be used only by the client and DEQ, and only for the purposes stated, within a reasonable time from its issuance. Land use, site conditions (both on and off-site) or other factors may change, and additional work may be required with the passage of time. Any party other than the client and DEQ who wishes to use this report shall notify Kleinfelder of such intended use by executing the "Application for Authorization to Use" which follows this document in Appendix C. Based on the intended use of the report, Kleinfelder may require that additional work be performed and that an updated report be issued. Non-compliance with any of these requirements by the clients or anyone else will release Kleinfelder from any liability resulting from the use of this report by any unauthorized party.

No warranty, expressed or implied, is made.

8.0 REFERENCES

Baldwin, E.M., Orr, E.L., and Orr, W.N., 1992, Geology of Oregon, Fourth Edition, Kendall/Hunt Publishing Company, Dubuque, IA, 254p.

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TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS
GASOLINE HYDROCARBONS
LaPINE HIGHWAY CENTER
KLEINFELDER PROJECT NO.: 25353

Sample ID	Sample Date	Sample Depth	Sample Type	NW TPH Gx [1] mg/kg
GP01-19	4/1/03	19 ft bgs	Geoprobe	ND<4.0
GP02-14	4/1/03	14 ft bgs	Geoprobe	71.7
GP03-13	4/1/03	13 ft bgs	Geoprobe	ND<4.0
GP04-14	4/1/03	14 ft bgs	Geoprobe	ND<4.0
GP05-16	4/1/03	16 ft bgs	Geoprobe	ND<4.0
GP06-11	4/1/03	11 ft bgs	Geoprobe	ND<4.0
SS01	4/1/03	0.5 ft bgs	Treated Soil Area - Grab	ND<4.0
SS02	4/1/03	0.5 ft bgs	Treated Soil Area - Grab	ND<4.0
SS03	4/1/03	0.5 ft bgs	Treated Soil Area - Grab	ND<4.0

Key:

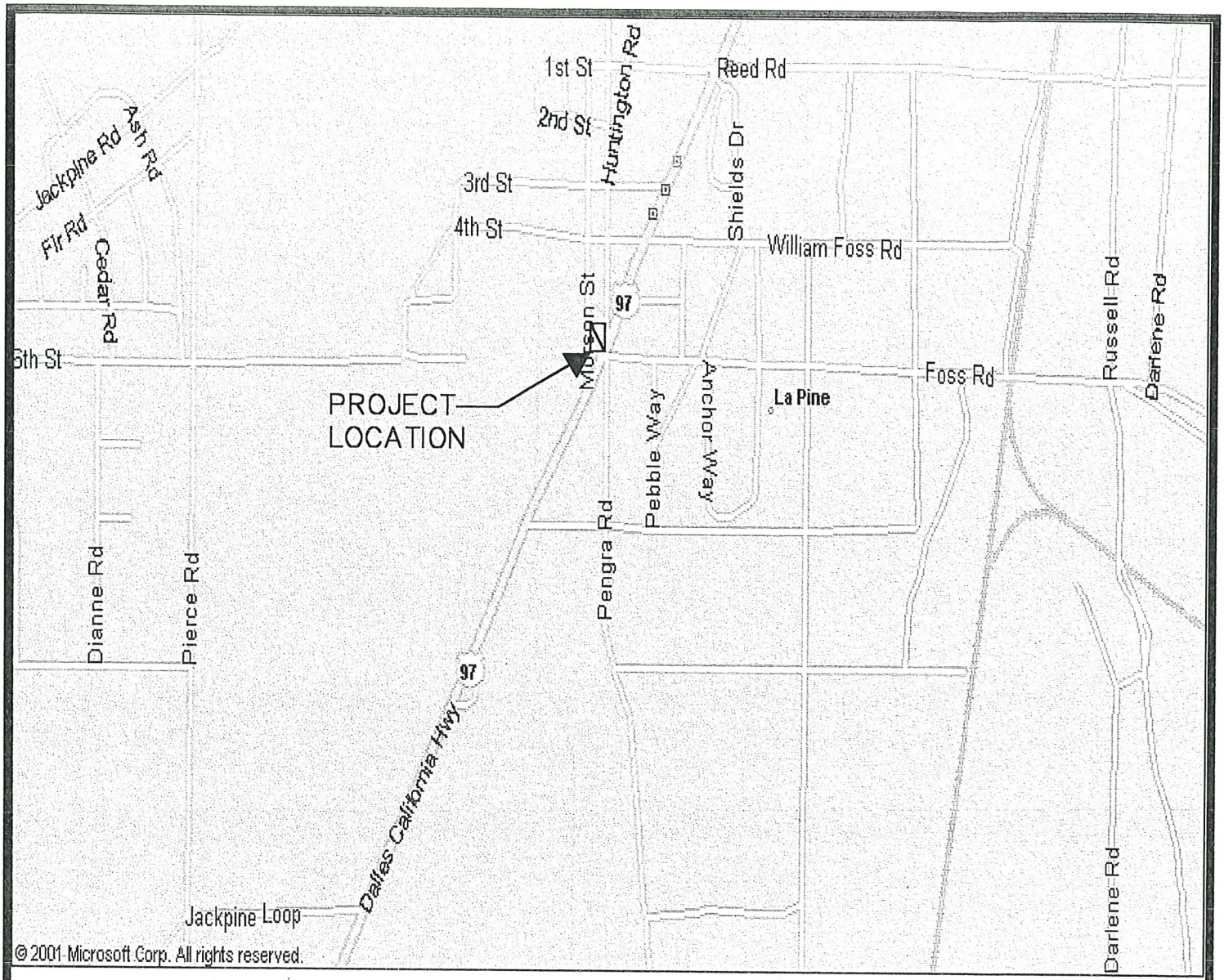
1 Northwest Test Method Gasoline (NW TPH-Gx)
ND Not detected at or above the laboratory reporting limit
bgs below the ground surface

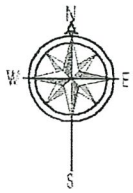
TABLE 2
SUMMARY OF GROUNDWATER ANALYTICAL RESULTS
BTEX, LEAD, EDB/EDC, MTBE, AND NAPHTHALENE ANALYSES
LaPINE HIGHWAY CENTER
KLEINFELDER PROJECT NO.: 25353

Sample ID	Sample Date	Benzene [1] µg/L	Toluene [1] µg/L	Ethylbenzene [1] µg/L	Total Xylenes [1] µg/L	EDB [1] µg/L	EDC [1] µg/L	MTBE [1] µg/L	Naphthalene [1] µg/L	Lead [2] mg/L
MW01-020403	2/4/03	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	ND<0.50	ND<2.0	ND<2.0	ND<0.001
MW02-020403	2/4/03	2.22	19.6	185	235	ND<0.50	ND<0.50	ND<2.0	44.0	ND<0.001
MW03-020403	2/4/03	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<0.50	ND<0.50	ND<2.0	ND<2.0	ND<0.001
GP01	4/1/03	ND<2.50	14.0	212	1610	ND<2.50	ND<2.50	ND<0.50	160	0.00164
GP02	4/1/03	4.55	38.0	552	1400	ND<2.50	ND<2.50	ND<0.50	189	ND<0.001
GP03	4/1/03	4.95	15.2	369	413	ND<2.50	ND<2.50	ND<0.50	151	ND<0.001
GP04	4/1/03	0.79	4.04	3.18	2.88	ND<0.50	ND<0.50	ND<0.50	ND<2.0	0.00273
GP05	4/1/03	0.80	4.24	3.73	14.2	ND<0.50	ND<0.50	ND<0.50	4.12	0.00165
GP06	4/1/03	0.65	3.84	3.84	6.37	ND<0.50	ND<0.50	ND<0.50	2.26	0.0017
DEQ Groundwater in Excavation Tier 1 RBCs [3] ug/l		820	30,000	45,000	55,000	8.6	280	240,000	240	NA
DEQ Groundwater Ingestion (Residential) Tier 1 RBCs [4] ug/l		1.8	8,900	3,200	63,000	0.00062	0.58	20	630	4.0

Key:

1 EPA Method 8260B
2 EPA Method 200 Series
3. Oregon Department of Environmental Quality genertic Risk-Based Concentration (RBCs) for trenchwork scenario (DEQ, 1999).
4. Oregon Department of Environmental Quality genertic Risk-Based Concentration (RBCs) for Groundwater Ingestion (residential) (DEQ, 1999).
ND Not detected at or above the indicated laboratory reporting limit
mg/L milligrams per liter, equivalent to parts per million
µg/L micrograms per liter, equivalent to parts per billion
NA Pathway Not Applicable to the chemical of interest





NOT TO SCALE

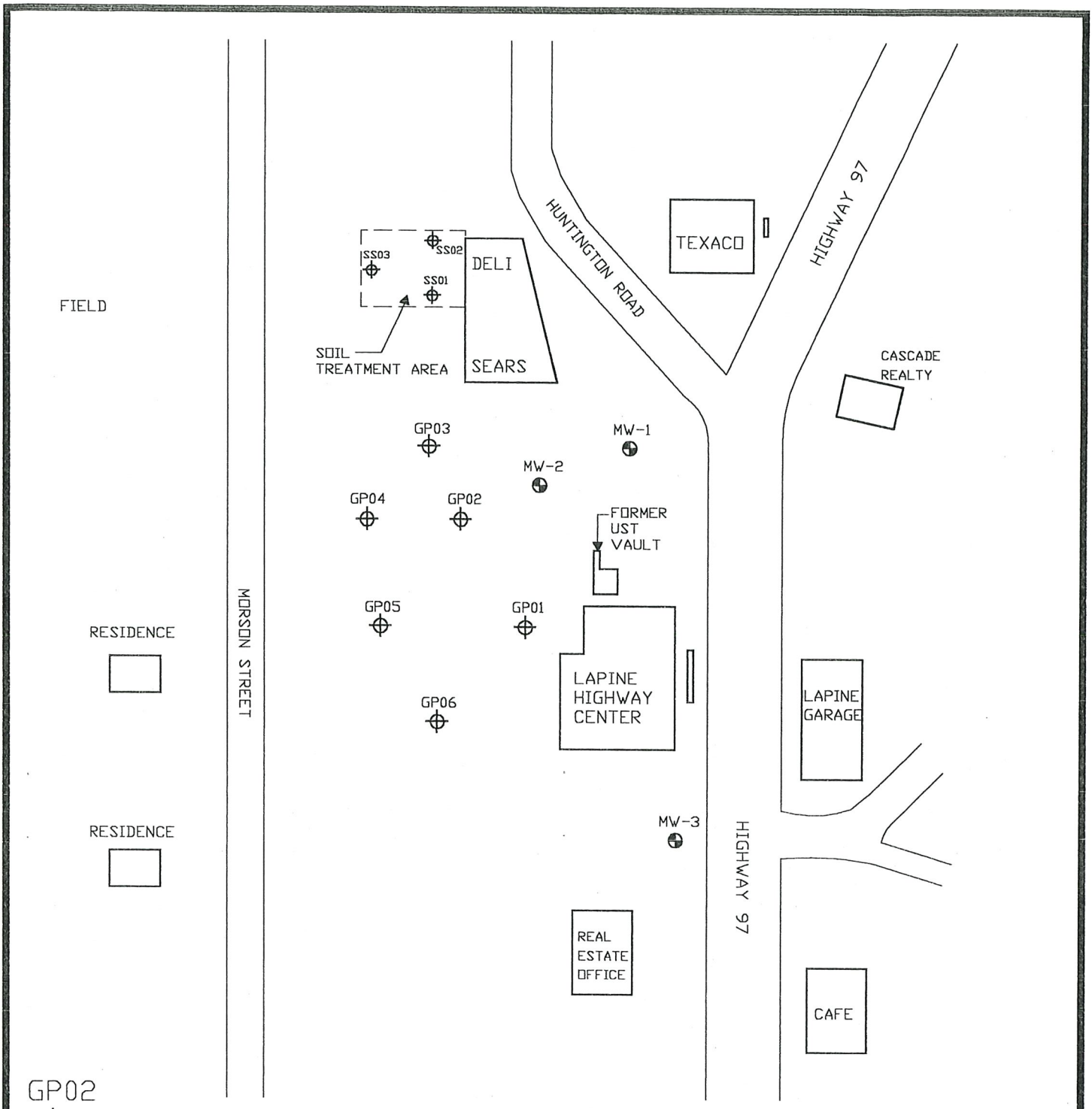
KLEINFELDER
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS
SOILS AND MATERIALS TESTING

L\2003\BEN3R021\LaPineHwyCtr\--vicinity map

VICINITY MAP
LAPINE HIGHWAY CENTER
51425 HIGHWAY 97
LAPINE, OREGON

PROJECT # 25353 A01

FIGURE 1



SITE PLAN RENDERING PROVIDED BY GEM CONSULTING INC.

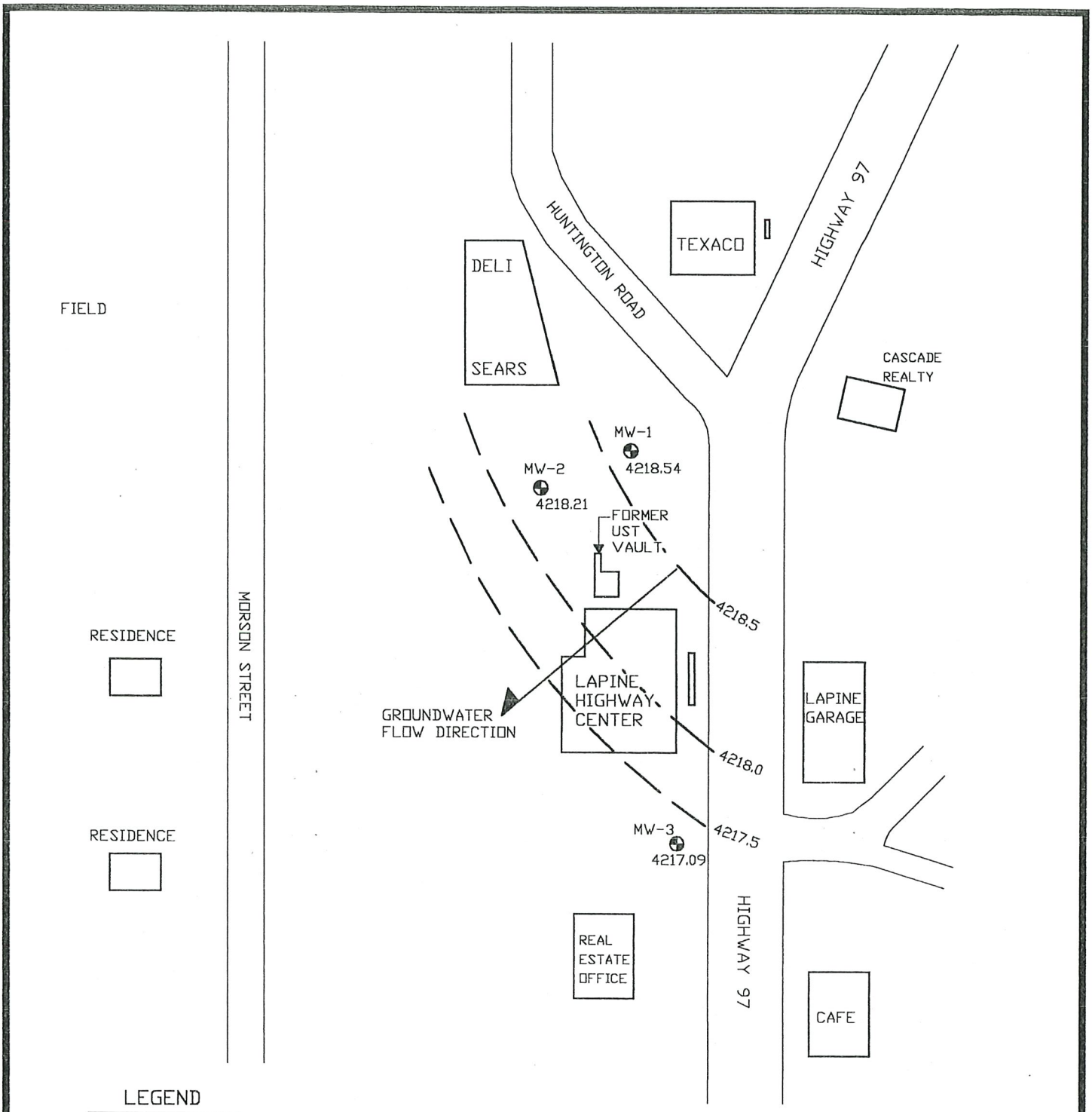
KLEINFELDER
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS
SOILS AND MATERIALS TESTING

L\2003\BEN3R021\LaPineHwyCtr\ExplorationLoc.Map

SITE PLAN / EXPLORATION LOCATION
LAPINE HIGHWAY CENTER
51425 HIGHWAY 97
LAPINE, OREGON

PROJECT # 25353 A01

FIGURE 2



LEGEND

MW-2 GROUNDWATER MONITORING WELL

4218.5 - POTENTIOMETRIC CONTOUR (INFERRED)

4218.54 - GROUNDWATER ELEVATION

SITE PLAN RENDERING PROVIDED BY GEM CONSULTING INC.

0 25 50

SCALE IN FEET

N

KLEINFELDER

GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS
SOILS AND MATERIALS TESTING

L\2003\BEN3R021\LaPineHwyCtr\PotentiometricGroundwater

POTENTIOMETRIC GROUNDWATER MAP–APRIL 2003
LAPINE HIGHWAY CENTER
51425 HIGHWAY 97
LAPINE, OREGON

PROJECT # 25353 A01

FIGURE 3

DEPTH (feet)	WELL/PIEZO CONSTRUCTION	WATER LEVEL	VOCs	PAHs	TPH-GAS, mg/kg	BTEX	PID (ppmv)	RECOVERY %	N-VALUE	SAMPLER *	SAMPLE NUMBER	U.S.C.S. NAME	SOIL DESCRIPTION
0								75				OL	TOPSOIL and organics.
												SW	SAND, light brown-buff, moist, loose to medium dense, well graded, pumiceous.
							0				GP01-3		
								100					- with silt and trace clay from 4 to 6 feet
5													
							0				GP01-6	SP	SAND, dark brown, moist, medium dense, medium-fine grained.
								100					
							10				GP01-9	SW	SAND, dark brown to black, wet, medium dense, well graded.
10		▽											
								100					
							25				GP01-14		- trace fine gravel
15													
								100					
					<4.0		10				GP01-19		- hydrocarbon odor
20													

Testing Program: Lab Analysis (VOCs, PAHs, TPH-GAS, BTEX); Field (PID, Recovery %)

Geoprobe terminated at 20 feet below ground surface (bgs).

Groundwater encountered at 10 feet bgs.

Groundwater sampled at 1235, water color turbid (light brown).

DATE DRILLED: 4-1-03
LOGGED BY: SCOTT WALLACE
REVIEWED BY: RSW

SURFACE ELEVATION (feet): NM
TOTAL DEPTH (feet): 20.0
DIAMETER OF BORING (in): 2"

DRILLING METHOD: GEOPROBE
DRILLER: CASCADE DRILLING
CASING SIZE: N/A

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH TIME. DATA PRESENTED IS A SIMPLIFICATION.

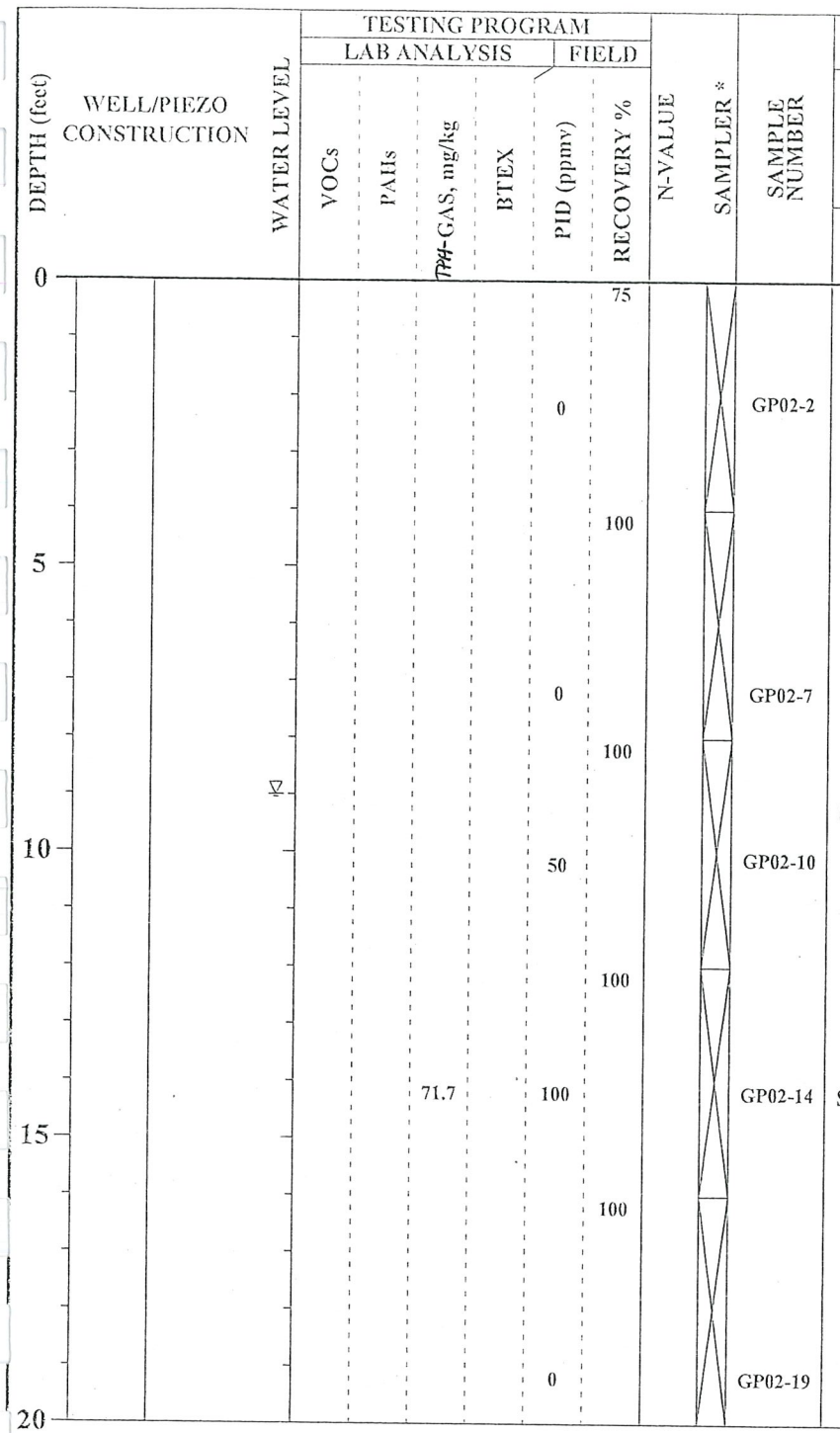
APPROV: ________ BY: ________

KLEINFELDER
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS
SOILS AND MATERIALS TESTING

PROJECT NUMBER: 25353 A01

LAPINE HIGHWAY CENTER
51425 HIGHWAY 97
LAPINE, OREGON
BORING LOG
GP01

FIGURE A - 1



Geoprobe terminated at 20 feet bgs.

Groundwater encountered at 9 feet bgs.

Groundwater sampled at 1220, water color turbid (light brown).

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH TIME. DATA PRESENTED IS A SIMPLIFICATION.

APPROV: _____

BY: _____

DATE DRILLED: 4-1-03
LOGGED BY: SCOTT WALLACE
REVIEWED BY: RSW

SURFACE ELEVATION (feet): NM
TOTAL DEPTH (feet): 20.0
DIAMETER OF BORING (in): 2"

DRILLING METHOD: GEOPROBE
DRILLER: CASCADE DRILLING
CASING SIZE: N/A

KLEINFELDER
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS
SOILS AND MATERIALS TESTING

PROJECT NUMBER: 25353 A01

LAPINE HIGHWAY CENTER
51425 HIGHWAY 97
LAPINE, OREGON
BORING LOG
GP02

FIGURE
A - 2

PAGE 1 of 1

2000 ENVIRO WELL 2 25353A01 2000R 4/21

DEPTH (feet)	WELL/PIEZO CONSTRUCTION	WATER LEVEL	VOCs	PAHs	TPH-GAS, mg/kg	BTEX	PID (ppmv)	RECOVERY %	N-VALUE	SAMPLER *	SAMPLE NUMBER	U.S.C.S. NAME	SOIL DESCRIPTION
0								50				OL	TOPSOIL and organics.
												SW	SAND, light brown-buff, slightly moist, loose to medium dense, well graded, pumiceous.
							0				GP03-3		
								75					
5													- with silt and trace clay from 4 to 6 feet
												SP	SAND, dark brown, moist, medium dense, medium-fine grained.
							0				GP03-7		
								100					
10												SW	SAND, dark brown to black, very moist to wet, medium dense, medium to well graded, with some fine gravel.
		∇					0				GP03-11		
								100					
					<4.0		0				GP03-13		
15													
							0	100			GP03-16		
20													

Geoprobe terminated at 20 feet bgs.

Groundwater encountered at 11 feet bgs.

Groundwater sampled at 1250, water color turbid (light brown).

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH TIME. DATA PRESENTED IS A SIMPLIFICATION.

DATE DRILLED: 4-1-03
LOGGED BY: SCOTT WALLACE
REVIEWED BY: RSW

SURFACE ELEVATION (feet): NM
TOTAL DEPTH (feet): 20.0
DIAMETER OF BORING (in): 2"

DRILLING METHOD: GEOPROBE
DRILLER: CASCADE DRILLING
CASING SIZE: N/A

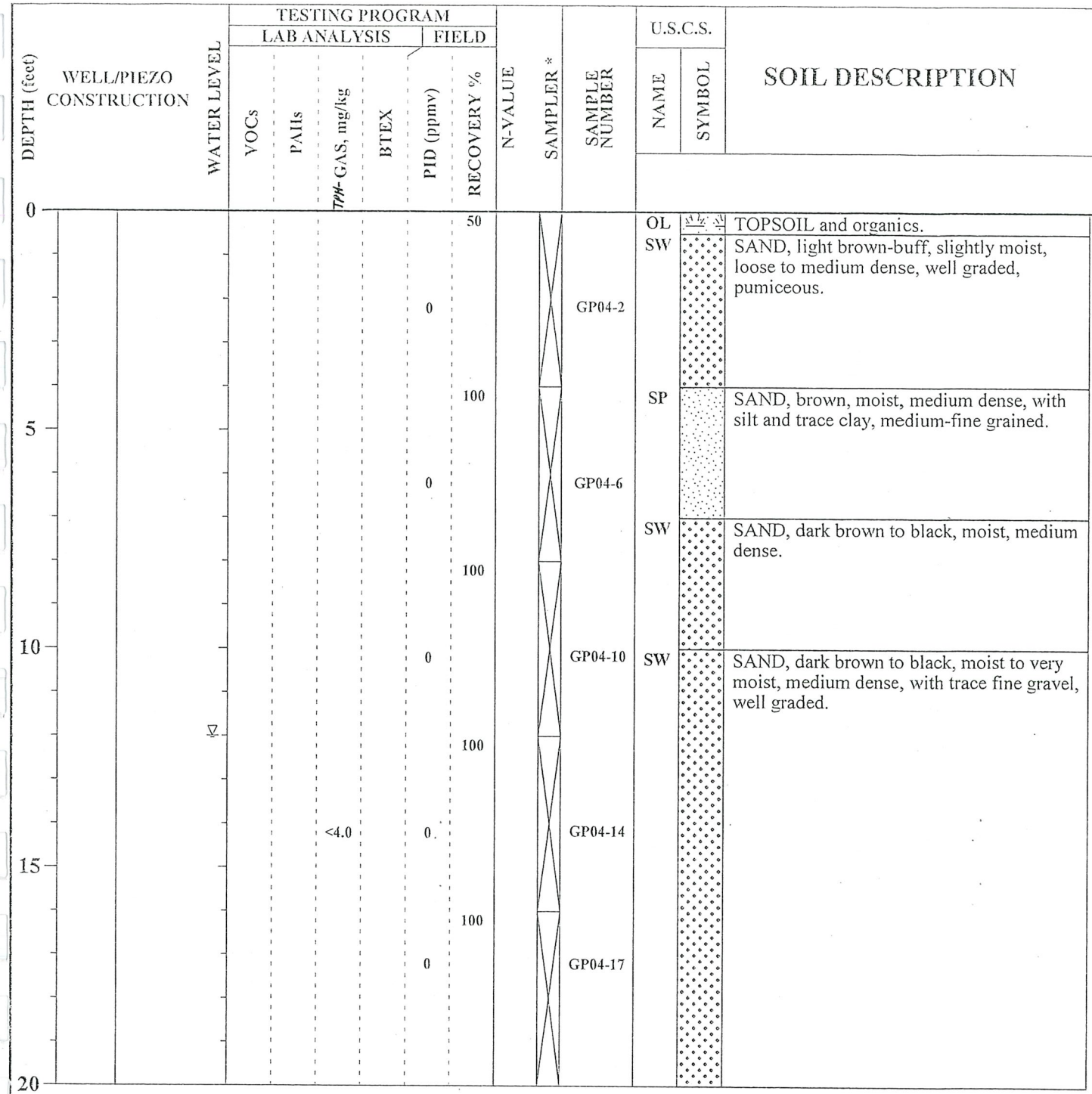
APPROV: ______ BY: ______

KLEINFELDER
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS
SOILS AND MATERIALS TESTING

PROJECT NUMBER: 25353 A01

LAPINE HIGHWAY CENTER
51425 HIGHWAY 97
LAPINE, OREGON
BORING LOG
GP03

FIGURE
A - 3



Geoprobe terminated at 20 feet bgs.

Groundwater encountered at 12 feet bgs.

Groundwater sampled at 1305, water color turbid (light brown).

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH TIME. DATA PRESENTED IS A SIMPLIFICATION.

APPROV: _____

BY: _____

DATE DRILLED: 4-1-03
LOGGED BY: SCOTT WALLACE
REVIEWED BY: RSW

SURFACE ELEVATION (feet): NM
TOTAL DEPTH (feet): 20.0
DIAMETER OF BORING (in): 2"

DRILLING METHOD: GEOPROBE
DRILLER: CASCADE DRILLING
CASING SIZE: N/A

KLEINFELDER
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SOILS AND MATERIALS TESTING

PROJECT NUMBER: 25353 A01

LAPINE HIGHWAY CENTER
51425 HIGHWAY 97
LAPINE, OREGON
BORING LOG
GP04

FIGURE
A - 4

PAGE 1 of 1

DEPTH (feet)	WELL/PIEZO CONSTRUCTION	WATER LEVEL	TESTING PROGRAM: LAB ANALYSIS: VOCs	PAHs	TPH-GAS, mg/kg	BTEX	FIELD: PID (ppmv)	RECOVERY %	N-VALUE	SAMPLER *	SAMPLE NUMBER	U.S.C.S. NAME	U.S.C.S. SYMBOL	SOIL DESCRIPTION
0								50				OL		TOPSOIL and organics.
												SW		SAND, light brown-buff, slightly moist, loose to medium dense, well graded, pumiceous.
							0				GP05-3			
								75						
5							0				GP05-5	SP		SAND, brown, moist, medium dense, with silt and trace clay, medium-fine grained.
								100						
10												SW		SAND, dark brown to black, moist to very moist, medium dense, well graded, with trace fine gravel.
							0				GP05-11			
		▽						100						
							0				GP05-14			
15														
					<4.0		0	100			GP05-16			
20														

Geoprobe terminated at 20 feet bgs.

Groundwater encountered at 13 feet bgs.

Groundwater sampled at 1315, water color turbid (light brown).

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH TIME. DATA PRESENTED IS A SIMPLIFICATION.

APPROV: _____

BY: _____

DATE DRILLED: 4-1-03
LOGGED BY: SCOTT WALLACE
REVIEWED BY: RSW

SURFACE ELEVATION (feet): NM
TOTAL DEPTH (feet): 20.0
DIAMETER OF BORING (in): 2"

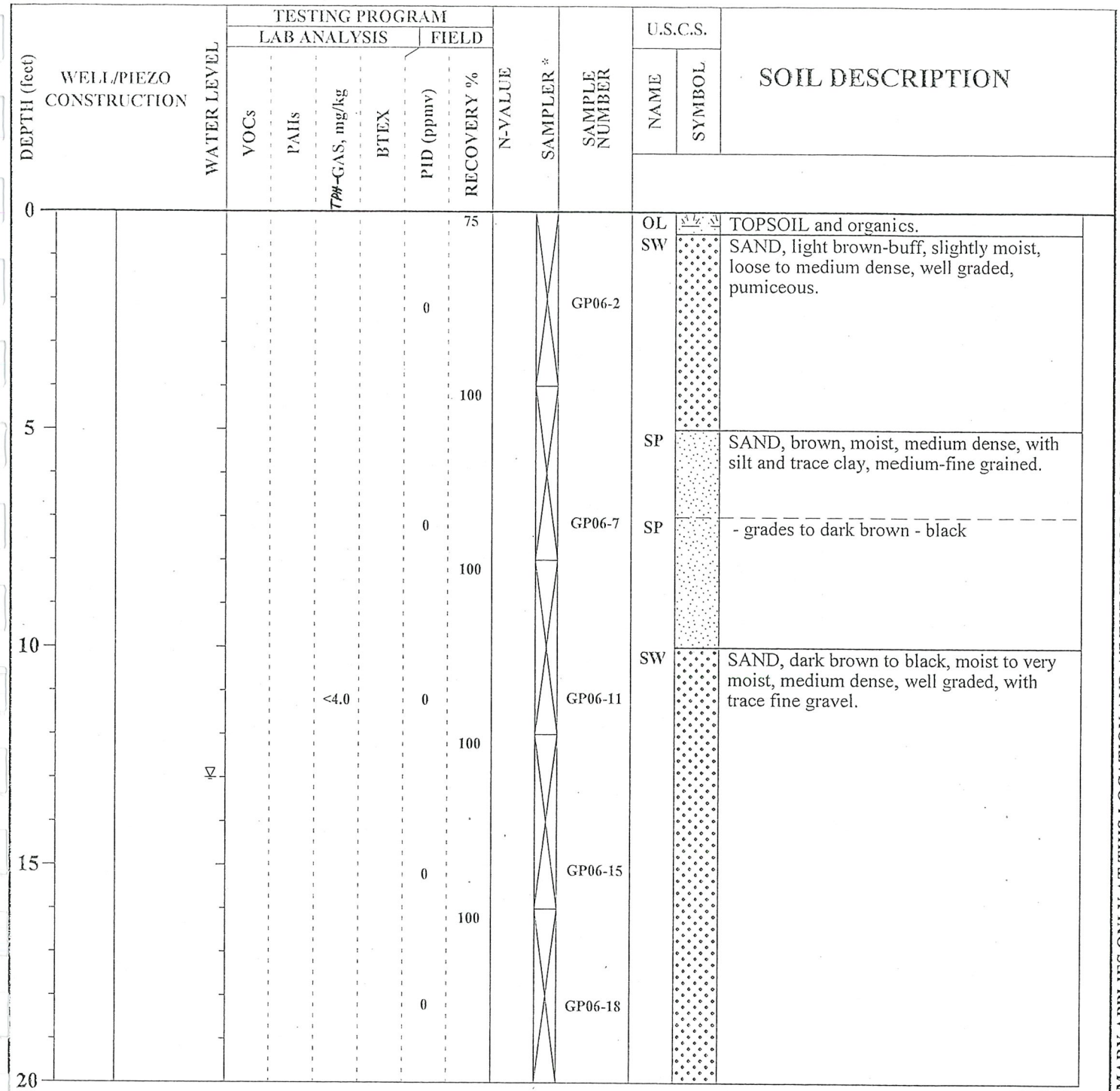
DRILLING METHOD: GEOPROBE
DRILLER: CASCADE DRILLING
CASING SIZE: N/A

KLEINFELDER
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS
SOILS AND MATERIALS TESTING

PROJECT NUMBER: 25353 A01

LAPINE HIGHWAY CENTER
51425 HIGHWAY 97
LAPINE, OREGON
BORING LOG
GP05

FIGURE
A - 5



Geoprobe terminated at 20 feet bgs.

Groundwater encountered at 13 feet bgs.

Groundwater sampled at 1325, water color turbid (light brown).

THIS SUMMARY APPLIES ONLY AT THIS LOCATION AND AT THE TIME OF LOGGING. CONDITIONS MAY DIFFER AT OTHER LOCATIONS AND MAY CHANGE AT THIS LOCATION WITH TIME. DATA PRESENTED IS A SIMPLIFICATION.

BY: _____ APPROV: _____

DATE DRILLED: 4-1-03
LOGGED BY: SCOTT WALLACE
REVIEWED BY: RSW

SURFACE ELEVATION (feet): NM
TOTAL DEPTH (feet): 20.0
DIAMETER OF BORING (in): 2"

DRILLING METHOD: GEOPROBE
DRILLER: CASCADE DRILLING
CASING SIZE: N/A

KLEINFELDER
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SOILS AND MATERIALS TESTING

PROJECT NUMBER: 25353 A01

LAPINE HIGHWAY CENTER
51425 HIGHWAY 97
LAPINE, OREGON
BORING LOG
GP06

FIGURE
A - 6

LOG LEGEND

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS — MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS — MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS — MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS — MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

SOIL SAMPLES

- Cal. (3" OD) Split Spoon
- Cal. Split Spoon (w/ liners)
- SPT (2" OD) Split Spoon
- Shelby Tube
- Grab
- No Recovery

WELL CONSTRUCTION

- Blank casing
- Screened casing
- Cement grout
- Bentonite
- Sand pack or gravel pack
- Native material mixed with bentonite
- Native backfill or cavings
- Bentonite-cement grout

FIELD MEASUREMENTS

- Water level observed during drilling
- Water level observed after drilling
- PID — Photoionization Detector
- ppmv — Parts Per Million by Volume

ANALYTICAL RESULTS

- ND( ) — Not Detected (Detection Limit)
- NA — Not Analyzed
- TPH — Total Petroleum Hydrocarbons
- BTEX — Benzene, Toluene, Ethylbenzene, & Xylenes
- Herb. — Herbicides, EPA Method 8150
- Pest. — Pesticides, EPA Method 8080

KLEINFELDER
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS
SOILS AND MATERIALS TESTING

L\2003\BEN3R000\LaPineHwyCtr\Legend

GEOPROBE LEGEND
LAPINE HIGHWAY CENTER
51425 HIGHWAY 97
LAPINE, OREGON

PROJECT # 25353 A01

FIGURE A-7

APPENDIX A

SITE EXPLORATION METHODS

GEOPROBE BORINGS

The soil borings were drilled using a truck-mounted, hydraulic geoprobe drill rig. A Kleinfelder representative was present during the drilling to assist in obtaining subsurface samples, maintain a log of subsurface soils, make detailed observations of site conditions, and provide technical assistance, as appropriate.

Down-hole drilling and sampling equipment were steam-cleaned prior to drilling each boring. Between each sample interval within the borings, the sampling equipment was cleaned with a trisodium phosphate wash and a distilled water rinse. Decontamination water was placed in a DOT-approved, 55-gallon drum and transported off site by the driller for disposal.

Soil cuttings are not generated with geoprobe drilling equipment; therefore, soil disposal was not necessary. Soil borings were backfilled with granulated bentonite. The bentonite was hydrated with clean water and the surface grade repaired with an asphalt or concrete patch where necessary.

GEOPROBE SOIL SAMPLING

Soil samples were collected during drilling at various sample intervals. Samples were collected using a 1.5-inch inside diameter, 4-feet long, stainless steel core sampler fitted with new, clean, disposable liners. The sampler was fitted with a new liner for each sample collected. New, disposable nitrile gloves were worn and replaced for each sample collected.

Soil samples from each sample interval were placed in laboratory-prepared glassware or kept in the sample liner and capped at both ends. The samples were placed directly into chilled coolers for temporary storage. The samples were stored in the coolers or refrigerated storage until transport to a laboratory for analysis. All soil sample containers were labeled with a sample identification number, sample interval, and the date. Chain-of-Custody procedures were used to document sample handling.

GEOPROBE GROUNDWATER SAMPLING

Groundwater samples were collected using a 4-foot long, stainless steel screen sampler housed in an outside casing. The sample casing was advanced to the maximum depth desired, and then raised up approximately 4 feet while the sampler is left in-place. Groundwater was purged to the surface using a peristaltic pump fitted with new, clean, disposable tubing. New, disposable nitrile gloves were worn and replaced for each groundwater sample collected.

Groundwater samples were placed in laboratory-prepared glassware. The samples were placed directly into chilled coolers for temporary storage. The samples were stored in the coolers or refrigerated storage until transport to a laboratory for analysis. All groundwater sample containers were labeled with a sample identification number, sample interval, and the date. Chain-of-Custody procedures were used to document sample handling.

FIELD SCREENING

Soil samples were divided into a field-screen portion and an archive portion. The field-screen portions were visually inspected for soil staining or discoloration by Kleinfelder field personnel. The field-screen portions were placed into plastic zip-lock bags and time was allowed for collection of soil gases in the bags. The accumulated vapors from the bagged sample were drawn through a portable, MiniRae photoionization detector (PID) for qualitative screening of volatile organic compounds. The vapor readings were recorded in the field notes as the field screening result.

STOCKPILE SOIL SAMPLING

Grab soil samples were collected from the treated PCS stockpile area with a clean stainless steel spoon or trowel to expose undisturbed soil. A second clean stainless steel spoon or trowel was then used to collect and place soils into labeled, laboratory-prepared, clear glass jars with Teflon-lined lids, and stored in an iced cooler (4 degrees C) for shipment to the laboratory.

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503.906.9200 fax 503.906.9210
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541.383.9310 fax 541.382.7588

14 April, 2003

Scott Wallace
Kleinfelder
20350 Empire Ave, Suite A-1
Bend, OR 97701

RE: LaPine Highway Center

Enclosed are the results of analyses for samples received by the laboratory on 04/01/03 16:11. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Teresa Mireles
Client Services

Work Orders included in this report:
C304011

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Kleinfelder	Project: LaPine Highway Center	
20350 Empire Ave, Suite A-1	Project Number: 25353	Reported:
Bend, OR 97701	Project Manager: Scott Wallace	04/14/03 09:15

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GP01-19	C304011-01	Soil	04/01/03 00:00	04/01/03 16:11
GP02-14	C304011-02	Soil	04/01/03 00:00	04/01/03 16:11
GP03-13	C304011-03	Soil	04/01/03 00:00	04/01/03 16:11
GP04-14	C304011-04	Soil	04/01/03 00:00	04/01/03 16:11
GP05-16	C304011-05	Soil	04/01/03 00:00	04/01/03 16:11
GP06-11	C304011-06	Soil	04/01/03 00:00	04/01/03 16:11
GP01	C304011-07	Water	04/01/03 12:35	04/01/03 16:11
GP02	C304011-08	Water	04/01/03 13:30	04/01/03 16:11
GP03	C304011-09	Water	04/01/03 12:50	04/01/03 16:11
GP04	C304011-10	Water	04/01/03 13:05	04/01/03 16:11
GP05	C304011-11	Water	04/01/03 13:15	04/01/03 16:11
GP06	C304011-12	Water	04/01/03 13:25	04/01/03 16:11

North Creek Analytical - Bend

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Teresa Mireles, Client Services

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541.383.9310 fax 541.382.7588

Kleinfelder	Project: LaPine Highway Center	
20350 Empire Ave, Suite A-1	Project Number: 25353	**Reported:**
Bend, OR 97701	Project Manager: Scott Wallace	04/14/03 09:15

Gasoline Hydrocarbons per NW TPH-Gx Method
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
GP01-19 (C304011-01) Soil						Sampled: 04/01/03	Received: 04/01/03		
Gasoline Range Hydrocarbons	ND	4.00	mg/kg dry	1	NW TPH-Gx	04/03/03	04/04/03	3040139	
Surr: a,a,a-TFT	*93.0 %*	*50-150*							
GP02-14 (C304011-02) Soil						Sampled: 04/01/03	Received: 04/01/03		
Gasoline Range Hydrocarbons	**71.7**	4.00	mg/kg dry	1	NW TPH-Gx	04/03/03	04/04/03	3040139	
Surr: a,a,a-TFT	*83.8 %*	*50-150*							
GP03-13 (C304011-03) Soil						Sampled: 04/01/03	Received: 04/01/03		
Gasoline Range Hydrocarbons	ND	4.00	mg/kg dry	1	NW TPH-Gx	04/03/03	04/04/03	3040139	
Surr: a,a,a-TFT	*85.9 %*	*50-150*							
GP04-14 (C304011-04) Soil						Sampled: 04/01/03	Received: 04/01/03		
Gasoline Range Hydrocarbons	ND	4.00	mg/kg dry	1	NW TPH-Gx	04/03/03	04/04/03	3040139	
Surr: a,a,a-TFT	*90.6 %*	*50-150*							
GP05-16 (C304011-05) Soil						Sampled: 04/01/03	Received: 04/01/03		
Gasoline Range Hydrocarbons	ND	4.00	mg/kg dry	1	NW TPH-Gx	04/03/03	04/04/03	3040139	
Surr: a,a,a-TFT	*89.5 %*	*50-150*							
GP06-11 (C304011-06) Soil						Sampled: 04/01/03	Received: 04/01/03		
Gasoline Range Hydrocarbons	ND	4.00	mg/kg dry	1	NW TPH-Gx	04/03/03	04/04/03	3040139	
Surr: a,a,a-TFT	*89.9 %*	*50-150*							

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Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711
541.383.9310 fax 541.382.7588

Kleinfelder	Project: LaPine Highway Center	
20350 Empire Ave, Suite A-1	Project Number: 25353	**Reported:**
Bend, OR 97701	Project Manager: Scott Wallace	04/14/03 09:15

Dissolved Metals per EPA 200 Series Methods
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
GP01 (C304011-07) Water					Sampled: 04/01/03 Received: 04/01/03				
Lead	**0.00164**	0.00100	mg/l	1	EPA 200.8	04/03/03	04/10/03	3040145	M-04
GP02 (C304011-08) Water					Sampled: 04/01/03 Received: 04/01/03				
Lead	ND	0.00100	mg/l	1	EPA 200.8	04/03/03	04/10/03	3040145	M-04
GP03 (C304011-09) Water					Sampled: 04/01/03 Received: 04/01/03				
Lead	ND	0.00100	mg/l	1	EPA 200.8	04/03/03	04/10/03	3040145	M-04
GP04 (C304011-10) Water					Sampled: 04/01/03 Received: 04/01/03				
Lead	**0.00273**	0.00100	mg/l	1	EPA 200.8	04/03/03	04/10/03	3040145	M-04
GP05 (C304011-11) Water					Sampled: 04/01/03 Received: 04/01/03				
Lead	**0.00165**	0.00100	mg/l	1	EPA 200.8	04/03/03	04/10/03	3040145	M-04
GP06 (C304011-12) Water					Sampled: 04/01/03 Received: 04/01/03				
Lead	**0.00170**	0.00100	mg/l	1	EPA 200.8	04/03/03	04/10/03	3040145	M-04

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Kleinfelder	Project: LaPine Highway Center	
20350 Empire Ave, Suite A-1	Project Number: 25353	**Reported:**
Bend, OR 97701	Project Manager: Scott Wallace	04/14/03 09:15

Selected Volatile Organic Compounds per EPA Method 8260B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
GP01 (C304011-07) Water						Sampled: 04/01/03	Received: 04/01/03		
1,2-Dibromoethane	ND	2.50	ug/l	5	EPA 8260B	04/03/03	04/03/03	3040109	
1,2-Dichloroethane	ND	2.50	"	"	"	"	"	"	
Benzene	ND	2.50	"	"	"	"	"	"	
Toluene	**14.0**	2.50	"	"	"	"	"	"	
Ethylbenzene	**212**	2.50	"	"	"	"	"	"	
Xylenes (total)	**1610**	5.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	10.0	"	"	"	"	"	"	
Naphthalene	**160**	10.0	"	"	"	"	"	"	
Surr: 4-BFB	*97.5 %*	*84.5-124*							
Surr: 1,2-DCA-d4	*104 %*	*77.9-123*							
Surr: Dibromofluoromethane	*102 %*	*83.5-119*							
Surr: Toluene-d8	*102 %*	*84.1-116*							
GP02 (C304011-08) Water						Sampled: 04/01/03	Received: 04/01/03		
1,2-Dibromoethane	ND	2.50	ug/l	5	EPA 8260B	04/03/03	04/03/03	3040109	
1,2-Dichloroethane	ND	2.50	"	"	"	"	"	"	
Benzene	**4.55**	2.50	"	"	"	"	"	"	
Toluene	**38.0**	2.50	"	"	"	"	"	"	
Ethylbenzene	**552**	2.50	"	"	"	"	"	"	
Xylenes (total)	**1400**	5.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	10.0	"	"	"	"	"	"	
Naphthalene	**189**	10.0	"	"	"	"	"	"	
Surr: 4-BFB	*97.5 %*	*84.5-124*							
Surr: 1,2-DCA-d4	*103 %*	*77.9-123*							
Surr: Dibromofluoromethane	*103 %*	*83.5-119*							
Surr: Toluene-d8	*102 %*	*84.1-116*							

North Creek Analytical - Bend

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541.383.9310 fax 541.382.7588

Kleinfelder	Project: LaPine Highway Center	
20350 Empire Ave, Suite A-1	Project Number: 25353	**Reported:**
Bend, OR 97701	Project Manager: Scott Wallace	04/14/03 09:15

Selected Volatile Organic Compounds per EPA Method 8260B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
GP03 (C304011-09) Water						Sampled: 04/01/03	Received: 04/01/03		
1,2-Dibromoethane	ND	2.50	ug/l	5	EPA 8260B	04/03/03	04/03/03	3040109	
1,2-Dichloroethane	ND	2.50	"	"	"	"	"	"	
Benzene	**4.95**	2.50	"	"	"	"	"	"	
Toluene	**15.2**	2.50	"	"	"	"	"	"	
Ethylbenzene	**369**	2.50	"	"	"	"	"	"	
Xylenes (total)	**413**	5.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	10.0	"	"	"	"	"	"	
Naphthalene	**151**	10.0	"	"	"	"	"	"	
Surr: 4-BFB	*95.0 %*	*84.5-124*							
Surr: 1,2-DCA-d4	*104 %*	*77.9-123*							
Surr: Dibromofluoromethane	*102 %*	*83.5-119*							
Surr: Toluene-d8	*98.5 %*	*84.1-116*							
GP04 (C304011-10) Water						Sampled: 04/01/03	Received: 04/01/03		
1,2-Dibromoethane	ND	0.500	ug/l	1	EPA 8260B	04/03/03	04/03/03	3040109	
1,2-Dichloroethane	ND	0.500	"	"	"	"	"	"	
Benzene	**0.790**	0.500	"	"	"	"	"	"	
Toluene	**4.04**	0.500	"	"	"	"	"	"	
Ethylbenzene	**3.18**	0.500	"	"	"	"	"	"	
Xylenes (total)	**2.88**	1.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	2.00	"	"	"	"	"	"	
Naphthalene	ND	2.00	"	"	"	"	"	"	
Surr: 4-BFB	*102 %*	*84.5-124*							
Surr: 1,2-DCA-d4	*105 %*	*77.9-123*							
Surr: Dibromofluoromethane	*104 %*	*83.5-119*							
Surr: Toluene-d8	*100 %*	*84.1-116*							

North Creek Analytical - Bend

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Kleinfelder	Project: LaPine Highway Center	
20350 Empire Ave, Suite A-1	Project Number: 25353	**Reported:**
Bend, OR 97701	Project Manager: Scott Wallace	04/14/03 09:15

Selected Volatile Organic Compounds per EPA Method 8260B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
GP05 (C304011-11) Water						Sampled: 04/01/03	Received: 04/01/03		
1,2-Dibromoethane	ND	0.500	ug/l	1	EPA 8260B	04/03/03	04/03/03	3040109	
1,2-Dichloroethane	ND	0.500	"	"	"	"	"	"	
Benzene	**0.800**	0.500	"	"	"	"	"	"	
Toluene	**4.24**	0.500	"	"	"	"	"	"	
Ethylbenzene	**3.73**	0.500	"	"	"	"	"	"	
Xylenes (total)	**14.2**	1.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	2.00	"	"	"	"	"	"	
Naphthalene	**4.12**	2.00	"	"	"	"	"	"	
Surr: 4-BFB	*97.5 %*	*84.5-124*							
Surr: 1,2-DCA-d4	*104 %*	*77.9-123*							
Surr: Dibromofluoromethane	*102 %*	*83.5-119*							
Surr: Toluene-d8	*98.0 %*	*84.1-116*							
GP06 (C304011-12) Water						Sampled: 04/01/03	Received: 04/01/03		
1,2-Dibromoethane	ND	0.500	ug/l	1	EPA 8260B	04/03/03	04/03/03	3040109	
1,2-Dichloroethane	ND	0.500	"	"	"	"	"	"	
Benzene	**0.650**	0.500	"	"	"	"	"	"	
Toluene	**3.84**	0.500	"	"	"	"	"	"	
Ethylbenzene	**0.970**	0.500	"	"	"	"	"	"	
Xylenes (total)	**6.37**	1.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	2.00	"	"	"	"	"	"	
Naphthalene	**2.26**	2.00	"	"	"	"	"	"	
Surr: 4-BFB	*98.0 %*	*84.5-124*							
Surr: 1,2-DCA-d4	*105 %*	*77.9-123*							
Surr: Dibromofluoromethane	*106 %*	*83.5-119*							
Surr: Toluene-d8	*98.5 %*	*84.1-116*							

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Kleinfelder	Project: LaPine Highway Center	
20350 Empire Ave, Suite A-1	Project Number: 25353	**Reported:**
Bend, OR 97701	Project Manager: Scott Wallace	04/14/03 09:15

Percent Dry Weight (Solids) per Standard Methods
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
GP01-19 (C304011-01) Soil					Sampled: 04/01/03 Received: 04/01/03				
% Solids	**83.6**	1.00	% by Weight	1	NCA SOP	04/04/03	04/07/03	3040181	
GP02-14 (C304011-02) Soil					Sampled: 04/01/03 Received: 04/01/03				
% Solids	**82.9**	1.00	% by Weight	1	NCA SOP	04/04/03	04/07/03	3040181	
GP03-13 (C304011-03) Soil					Sampled: 04/01/03 Received: 04/01/03				
% Solids	**80.5**	1.00	% by Weight	1	NCA SOP	04/04/03	04/07/03	3040181	
GP04-14 (C304011-04) Soil					Sampled: 04/01/03 Received: 04/01/03				
% Solids	**83.5**	1.00	% by Weight	1	NCA SOP	04/04/03	04/07/03	3040181	
GP05-16 (C304011-05) Soil					Sampled: 04/01/03 Received: 04/01/03				
% Solids	**81.9**	1.00	% by Weight	1	NCA SOP	04/04/03	04/07/03	3040181	
GP06-11 (C304011-06) Soil					Sampled: 04/01/03 Received: 04/01/03				
% Solids	**93.7**	1.00	% by Weight	1	NCA SOP	04/04/03	04/07/03	3040181	

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Kleinfelder	Project: LaPine Highway Center	
20350 Empire Ave, Suite A-1	Project Number: 25353	**Reported:**
Bend, OR 97701	Project Manager: Scott Wallace	04/14/03 09:15

Gasoline Hydrocarbons per NW TPH-Gx Method - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3040139 - EPA 5035										
Blank (3040139-BLK1)				Prepared: 04/03/03 Analyzed: 04/04/03						
Gasoline Range Hydrocarbons	ND	4.00	mg/kg							
Surr: a,a,a-TFT	*2.64*		"	*2.50*		*106*	*50-150*			
LCS (3040139-BS1)				Prepared: 04/03/03 Analyzed: 04/04/03						
Gasoline Range Hydrocarbons	64.3	4.00	mg/kg	62.5		103	70-130			
Surr: a,a,a-TFT	*2.67*		"	*2.50*		*107*	*50-150*			
Duplicate (3040139-DUP1)		**Source: P3D0092-01**		Prepared: 04/03/03 Analyzed: 04/04/03						
Gasoline Range Hydrocarbons	ND	4.00	mg/kg dry		2.89				40	
Surr: a,a,a-TFT	*2.52*		"	*2.65*		*95.1*	*50-150*			
Duplicate (3040139-DUP2)		**Source: P3D0092-02**		Prepared: 04/03/03 Analyzed: 04/04/03						
Gasoline Range Hydrocarbons	ND	4.00	mg/kg dry		ND				40	
Surr: a,a,a-TFT	*1.41*		"	*2.66*		*53.0*	*50-150*			

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Kleinfelder	Project: LaPine Highway Center	
20350 Empire Ave, Suite A-1	Project Number: 25353	**Reported:**
Bend, OR 97701	Project Manager: Scott Wallace	04/14/03 09:15

Dissolved Metals per EPA 200 Series Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3040145 - EPA 200/3005 Diss										
Blank (3040145-BLK1)				Prepared: 04/03/03 Analyzed: 04/10/03						
Lead	ND	0.00100	mg/l							
LCS (3040145-BS1)				Prepared: 04/03/03 Analyzed: 04/10/03						
Lead	0.0998	0.00100	mg/l	0.100		99.8	85-115			
Duplicate (3040145-DUP1)		**Source: P3D0031-03**		Prepared: 04/03/03 Analyzed: 04/10/03						
Lead	ND	0.00100	mg/l		ND				20	
Matrix Spike (3040145-MS1)		**Source: P3D0031-03**		Prepared: 04/03/03 Analyzed: 04/10/03						
Lead	0.101	0.00100	mg/l	0.100	ND	101	70-130			
Matrix Spike (3040145-MS2)		**Source: P3D0046-01**		Prepared: 04/03/03 Analyzed: 04/10/03						
Lead	0.104	0.00100	mg/l	0.100	0.00256	101	70-130			

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Kleinfelder	Project: LaPine Highway Center	
20350 Empire Ave, Suite A-1	Project Number: 25353	**Reported:**
Bend, OR 97701	Project Manager: Scott Wallace	04/14/03 09:15

Selected Volatile Organic Compounds per EPA Method 8260B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3040109 - EPA 5030B										
Blank (3040109-BLK1)				Prepared & Analyzed: 04/03/03						
1,2-Dibromoethane	ND	0.500	ug/l							
1,2-Dichloroethane	ND	0.500	"							
Benzene	ND	0.500	"							
Toluene	ND	0.500	"							
Ethylbenzene	ND	0.500	"							
Xylenes (total)	ND	1.00	"							
Methyl tert-butyl ether	ND	2.00	"							
Naphthalene	ND	2.00	"							
Surr: 4-BFB	*20.4*		"	*20.0*		*102*	*84.5-124*			
Surr: 1,2-DCA-d4	*21.0*		"	*20.0*		*105*	*77.9-123*			
Surr: Dibromofluoromethane	*20.3*		"	*20.0*		*102*	*83.5-119*			
Surr: Toluene-d8	*19.9*		"	*20.0*		*99.5*	*84.1-116*			
LCS (3040109-BS1)				Prepared & Analyzed: 04/03/03						
Benzene	20.6	0.500	ug/l	20.0		103	80-120			
Toluene	21.2	0.500	"	20.0		106	80-120			
Ethylbenzene	20.7	0.500	"	20.0		104	80-120			
Xylenes (total)	62.4	1.00	"	60.0		104	80-120			
Surr: 4-BFB	*19.8*		"	*20.0*		*99.0*	*84.5-124*			
Surr: 1,2-DCA-d4	*20.5*		"	*20.0*		*102*	*77.9-123*			
Surr: Dibromofluoromethane	*20.5*		"	*20.0*		*102*	*83.5-119*			
Surr: Toluene-d8	*20.4*		"	*20.0*		*102*	*84.1-116*			
Matrix Spike (3040109-MS1)	**Source: P3D0031-03**			Prepared & Analyzed: 04/03/03						
Benzene	20.3	0.500	ug/l	20.0	ND	102	80-124			
Toluene	21.0	0.500	"	20.0	ND	105	79.7-131			
Ethylbenzene	21.2	0.500	"	20.0	ND	106	80-124			
Xylenes (total)	62.7	1.00	"	60.0	ND	104	44.6-154			
Surr: 4-BFB	*19.7*		"	*20.0*		*98.5*	*84.5-124*			
Surr: 1,2-DCA-d4	*20.2*		"	*20.0*		*101*	*77.9-123*			
Surr: Dibromofluoromethane	*20.6*		"	*20.0*		*103*	*83.5-119*			
Surr: Toluene-d8	*20.0*		"	*20.0*		*100*	*84.1-116*			

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Kleinfelder	Project: LaPine Highway Center	
20350 Empire Ave, Suite A-1	Project Number: 25353	**Reported:**
Bend, OR 97701	Project Manager: Scott Wallace	04/14/03 09:15

Selected Volatile Organic Compounds per EPA Method 8260B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3040109 - EPA 5030B										
Matrix Spike Dup (3040109-MSD1)	**Source: P3D0031-03**			Prepared & Analyzed: 04/03/03						
Benzene	20.5	0.500	ug/l	20.0	ND	102	80-124	0.980	25	
Toluene	21.0	0.500	"	20.0	ND	105	79.7-131	0.00	25	
Ethylbenzene	21.3	0.500	"	20.0	ND	106	80-124	0.471	25	
Xylenes (total)	64.1	1.00	"	60.0	ND	107	44.6-154	2.21	25	
Surr: 4-BFB	*20.1*		"	*20.0*		*100*	*84.5-124*			
Surr: 1,2-DCA-d4	*20.7*		"	*20.0*		*104*	*77.9-123*			
Surr: Dibromofluoromethane	*21.8*		"	*20.0*		*109*	*83.5-119*			
Surr: Toluene-d8	*20.6*		"	*20.0*		*103*	*84.1-116*			

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Kleinfelder	Project: LaPine Highway Center	
20350 Empire Ave, Suite A-1	Project Number: 25353	**Reported:**
Bend, OR 97701	Project Manager: Scott Wallace	04/14/03 09:15

Percent Dry Weight (Solids) per Standard Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3040181 - Dry Weight										
Duplicate (3040181-DUP1)		**Source: P3D0012-02**		Prepared: 04/04/03	Analyzed: 04/07/03					
% Solids	93.5	1.00	% by Weight		93.3			0.214	20	
Duplicate (3040181-DUP2)		**Source: P3D0012-03**		Prepared: 04/04/03	Analyzed: 04/07/03					
% Solids	92.6	1.00	% by Weight		92.7			0.108	20	
Duplicate (3040181-DUP3)		**Source: P3D0012-05**		Prepared: 04/04/03	Analyzed: 04/07/03					
% Solids	91.8	1.00	% by Weight		91.9			0.109	20	

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Kleinfelder	Project: LaPine Highway Center	
20350 Empire Ave, Suite A-1	Project Number: 25353	**Reported:**
Bend, OR 97701	Project Manager: Scott Wallace	04/14/03 09:15

Notes and Definitions

M-04	Sample Filtered through 0.45 micron filter in Laboratory prior to analysis.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.
wet	Sample results reported on a wet weight basis (as received)
RPD	Relative Percent Difference

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CHAIN OF CUSTODY REPORT

Work Order #: C304011

CLIENT: KLEINFELDER
REPORT TO: SCOTT WALLACE
ADDRESS: 20350 EMPIRE AVE, STE A-1 BEND, OR 97701
PHONE: 382.4707 FAX: 383.8118

INVOICE TO: KLEINFELDER ATTN: SCOTT WALLACE
P.O. NUMBER:

PROJECT NAME: LAPINE HIGHWAY CENTER
PROJECT NUMBER: 25353
SAMPLED BY: SCOTT WALLACE

TURNAROUND REQUEST in Business Days*
Organic & Inorganic Analyses: ~~10~~ 7 5 4 3 2 1 <1 (STD.)
Petroleum Hydrocarbon Analyses: ~~5~~ 4 3 2 1 <1 (STD.)
OTHER — Please Specify
*Turnaround Requests less than standard may incur Rush Charges.

#	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	BTEX	Naph	MTBE	EDB/EDC	Diss. Pb	NWTPH-Gx	MATRIX (W, S, O)	# OF CONT.	COMMENTS	NCA WO ID
1	GP01-19	4/1/03						/	S	1		
2	GP02-14							/		1		
3	GP03-13							/		1		
4	GP04-14							/		1		
5	GP05-16							/		1		
6	GP06-11							/		1		
7												
8	GP01	4/1/03 1235	/	/	/	/	/		W	6		
9	GP02	1330	/	/	/	/	/			6		
10	GP03	1250	/	/	/	/	/			6		
11	GP04	1305	/	/	/	/	/			6		
12	GP05	1315	/	/	/	/	/			6		
13	GP06	1325	/	/	/	/	/			6		
14												
15												

RELINQUISHED BY: SCOTT WALLACE — DATE: 4/1/03
PRINT NAME: SCOTT WALLACE — FIRM: KLEINFELDER — TIME: 1600

RECEIVED BY: Jim McK — DATE: 4/1/03
PRINT NAME: Jim McKeown — FIRM: NCA — TIME: 16:11

RELINQUISHED BY: — DATE:
PRINT NAME: — FIRM: — TIME:

RECEIVED BY: — DATE:
PRINT NAME: — FIRM: — TIME:

ADDITIONAL REMARKS:

TEMP: 5.7

COC REV 3/99

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541.383.9310 fax 541.382.7588

8 April, 2003

Scott Wallace
Kleinfelder
20350 Empire Ave, Suite A-1
Bend, OR 97701

RE: LaPine Highway Center

Enclosed are the results of analyses for samples received by the laboratory on 04/01/03 16:11. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tim McKeown for SW

Stephen Wilson
Environmental Services Group Leader

Work Orders included in this report:
C304012

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Kleinfelder	Project: LaPine Highway Center	
20350 Empire Ave, Suite A-1	Project Number: 25353	**Reported:**
Bend, OR 97701	Project Manager: Scott Wallace	04/08/03 12:42

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01	C304012-01	Soil	04/01/03 00:00	04/01/03 16:11
SS02	C304012-02	Soil	04/01/03 00:00	04/01/03 16:11
SS03	C304012-03	Soil	04/01/03 00:00	04/01/03 16:11

North Creek Analytical - Bend

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Stephen Wilson, Environmental Services Group Leader

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Kleinfelder	Project: LaPine Highway Center	
20350 Empire Ave, Suite A-1	Project Number: 25353	**Reported:**
Bend, OR 97701	Project Manager: Scott Wallace	04/08/03 12:42

Gasoline Hydrocarbons per NW TPH-Gx Method
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
SS01 (C304012-01) Soil						Sampled: 04/01/03	Received: 04/01/03		
Gasoline Range Hydrocarbons	ND	4.00	mg/kg dry	1	NW TPH-Gx	04/03/03	04/04/03	3040139	
Surr: a,a,a-TFT	*95.2 %*	*50-150*							
SS02 (C304012-02) Soil						Sampled: 04/01/03	Received: 04/01/03		
Gasoline Range Hydrocarbons	ND	4.00	mg/kg dry	1	NW TPH-Gx	04/03/03	04/04/03	3040139	
Surr: a,a,a-TFT	*97.3 %*	*50-150*							
SS03 (C304012-03) Soil						Sampled: 04/01/03	Received: 04/01/03		
Gasoline Range Hydrocarbons	ND	4.00	mg/kg dry	1	NW TPH-Gx	04/03/03	04/04/03	3040139	
Surr: a,a,a-TFT	*94.1 %*	*50-150*							

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541.383.9310 fax 541.382.7588

Kleinfelder	Project: LaPine Highway Center	
20350 Empire Ave, Suite A-1	Project Number: 25353	**Reported:**
Bend, OR 97701	Project Manager: Scott Wallace	04/08/03 12:42

Percent Dry Weight (Solids) per Standard Methods
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
SS01 (C304012-01) Soil					Sampled: 04/01/03 Received: 04/01/03				
% Solids	**86.3**	1.00	% by Weight	1	NCA SOP	04/04/03	04/07/03	3040181	
SS02 (C304012-02) Soil					Sampled: 04/01/03 Received: 04/01/03				
% Solids	**84.4**	1.00	% by Weight	1	NCA SOP	04/04/03	04/07/03	3040181	
SS03 (C304012-03) Soil					Sampled: 04/01/03 Received: 04/01/03				
% Solids	**87.3**	1.00	% by Weight	1	NCA SOP	04/04/03	04/07/03	3040181	

North Creek Analytical - Bend

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Stephen Wilson, Environmental Services Group Leader

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Kleinfelder	Project: LaPine Highway Center	
20350 Empire Ave, Suite A-1	Project Number: 25353	**Reported:**
Bend, OR 97701	Project Manager: Scott Wallace	04/08/03 12:42

Gasoline Hydrocarbons per NW TPH-Gx Method - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3040139 - EPA 5035										
Blank (3040139-BLK1)				Prepared: 04/03/03 Analyzed: 04/04/03						
Gasoline Range Hydrocarbons	ND	4.00	mg/kg							
Surr: a,a,a-TFT	*2.64*		"	*2.50*		*106*	*50-150*			
LCS (3040139-BS1)				Prepared: 04/03/03 Analyzed: 04/04/03						
Gasoline Range Hydrocarbons	64.3	4.00	mg/kg	62.5		103	70-130			
Surr: a,a,a-TFT	*2.67*		"	*2.50*		*107*	*50-150*			
Duplicate (3040139-DUP1)		**Source: P3D0092-01**		Prepared: 04/03/03 Analyzed: 04/04/03						
Gasoline Range Hydrocarbons	ND	4.00	mg/kg dry		2.89				40	
Surr: a,a,a-TFT	*2.52*		"	*2.65*		*95.1*	*50-150*			
Duplicate (3040139-DUP2)		**Source: P3D0092-02**		Prepared: 04/03/03 Analyzed: 04/04/03						
Gasoline Range Hydrocarbons	ND	4.00	mg/kg dry		ND				40	
Surr: a,a,a-TFT	*1.41*		"	*2.66*		*53.0*	*50-150*			

North Creek Analytical - Bend

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Stephen Wilson, Environmental Services Group Leader

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Kleinfelder	Project: LaPine Highway Center	
20350 Empire Ave, Suite A-1	Project Number: 25353	**Reported:**
Bend, OR 97701	Project Manager: Scott Wallace	04/08/03 12:42

Percent Dry Weight (Solids) per Standard Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3040181 - Dry Weight										
Duplicate (3040181-DUP1)		**Source: P3D0012-02**		Prepared: 04/04/03	Analyzed: 04/07/03					
% Solids	93.5	1.00% by Weight			93.3			0.214	20	
Duplicate (3040181-DUP2)		**Source: P3D0012-03**		Prepared: 04/04/03	Analyzed: 04/07/03					
% Solids	92.6	1.00% by Weight			92.7			0.108	20	
Duplicate (3040181-DUP3)		**Source: P3D0012-05**		Prepared: 04/04/03	Analyzed: 04/07/03					
% Solids	91.8	1.00% by Weight			91.9			0.109	20	

North Creek Analytical - Bend

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Tim McGowan for SW

Stephen Wilson, Environmental Services Group Leader

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Kleinfelder	Project: LaPine Highway Center	
20350 Empire Ave, Suite A-1	Project Number: 25353	**Reported:**
Bend, OR 97701	Project Manager: Scott Wallace	04/08/03 12:42

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.
wet	Sample results reported on a wet weight basis (as received)
RPD	Relative Percent Difference

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CHAIN OF CUSTODY REPORT

Work Order #: C304012

CLIENT: KLEINFELDER

REPORT TO: SCOTT WALLACE

ADDRESS: 20350 EMPIRE AVE, STE. A-1

PHONE: FAX:

INVOICE TO: KLEINFELDER

ATTN: SCOTT WALLACE

P.O. NUMBER:

PROJECT NAME: LAPINE HIGHWAY COR.

PROJECT NUMBER: 25353

SAMPLED BY: SCOTT WALLACE

TURNAROUND REQUEST in Business Days*

Organic & Inorganic Analyses: 10 | 7 | 5 | 4 | 3 | 2 | 1 | <1

STD. Petroleum Hydrocarbon Analyses: X | 4 | 3 | 2 | 1 | <1

STD. OTHER Please Specify

*Turnaround Requests less than standard may incur Rush Charges.

REQUESTED ANALYSES: NWTPH-Gx

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	MATRIX (W, S, O)	# OF CONT.	COMMENTS	NCA WO ID
1.	SS01	4/1/03	S	1		
2.	SS02	4/1/03	↓	1		
3.	SS03	4/1/03		1		
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						
13.						
14.						
15.						

RELINQUISHED BY: SCOTT WALLACE DATE: 4/1/03
PRINT NAME: FIRM: KLEINFELDER TIME: 1600

RECEIVED BY: Jim McK DATE: 4/1/03
PRINT NAME: Jim McKeown FIRM: NCA TIME: 16:11

RELINQUISHED BY: DATE:
PRINT NAME: FIRM: TIME:

RECEIVED BY: DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS:

COC REV 3/00

TEMP: 5.7

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541.383.9310 fax 541.382.7588

12 February, 2003

Scott Wallace
Kleinfelder
20350 Empire Ave, Suite A-1
Bend, OR 97701

RE: LaPine Highway Center

Enclosed are the results of analyses for samples received by the laboratory on 02/04/03 16:53. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Teresa Mireles For Stephen Wilson
Environmental Services Group Leader

Work Orders included in this report:

C302009

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541.383.9310 fax 541.382.7588

Kleinfelder	Project: LaPine Highway Center	
20350 Empire Ave, Suite A-1	Project Number: 25353	**Reported:**
Bend, OR 97701	Project Manager: Scott Wallace	02/12/03 15:26

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW01-020403	C302009-01	Water	02/04/03 15:20	02/04/03 16:53
MW02-020403	C302009-02	Water	02/04/03 16:00	02/04/03 16:53
MW03-020403	C302009-03	Water	02/04/03 14:25	02/04/03 16:53

North Creek Analytical - Bend

Teresa Mireles For Stephen Wilson, Environmental Services Gro

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Kleinfelder	Project: LaPine Highway Center	
20350 Empire Ave, Suite A-1	Project Number: 25353	**Reported:**
Bend, OR 97701	Project Manager: Scott Wallace	02/12/03 15:26

Dissolved Metals per EPA 200 Series Methods
North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW01-020403 (C302009-01) Water					Sampled: 02/04/03 Received: 02/04/03				
Lead	ND	0.00100	mg/l	1	EPA 200.8	02/06/03	02/10/03	3020185	M-04
MW02-020403 (C302009-02) Water					Sampled: 02/04/03 Received: 02/04/03				
Lead	ND	0.00100	mg/l	1	EPA 200.8	02/06/03	02/10/03	3020185	M-04
MW03-020403 (C302009-03) Water					Sampled: 02/04/03 Received: 02/04/03				
Lead	ND	0.00100	mg/l	1	EPA 200.8	02/06/03	02/10/03	3020185	M-04

North Creek Analytical - Bend

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Kleinfelder	Project: LaPine Highway Center	
20350 Empire Ave, Suite A-1	Project Number: 25353	**Reported:**
Bend, OR 97701	Project Manager: Scott Wallace	02/12/03 15:26

Selected Volatile Organic Compounds per EPA Method 8260B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW01-020403 (C302009-01) Water						Sampled: 02/04/03	Received: 02/04/03		
1,2-Dibromoethane	ND	0.500	ug/l	1	EPA 8260B	02/06/03	02/06/03	3020161	
1,2-Dichloroethane	ND	0.500	"	"	"	"	"	"	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	2.00	"	"	"	"	"	"	
Naphthalene	ND	2.00	"	"	"	"	"	"	
Surr: 4-BFB	*101 %*	*84.5-124*							
Surr: 1,2-DCA-d4	*104 %*	*77.9-123*							
Surr: Dibromofluoromethane	*98.5 %*	*83.5-119*							
Surr: Toluene-d8	*92.0 %*	*84.1-116*							
MW02-020403 (C302009-02) Water						Sampled: 02/04/03	Received: 02/04/03		
1,2-Dibromoethane	ND	0.500	ug/l	1	EPA 8260B	02/06/03	02/06/03	3020161	
1,2-Dichloroethane	ND	0.500	"	"	"	"	"	"	
Benzene	**2.22**	0.500	"	"	"	"	"	"	
Toluene	**19.6**	0.500	"	"	"	"	"	"	
Ethylbenzene	**185**	0.500	"	"	"	"	"	"	
Xylenes (total)	**235**	1.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	2.00	"	"	"	"	"	"	
Naphthalene	**44.0**	2.00	"	"	"	"	"	"	
Surr: 4-BFB	*100 %*	*84.5-124*							
Surr: 1,2-DCA-d4	*100 %*	*77.9-123*							
Surr: Dibromofluoromethane	*96.0 %*	*83.5-119*							
Surr: Toluene-d8	*95.5 %*	*84.1-116*							

North Creek Analytical - Bend

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Teresa Mireles For Stephen Wilson, Environmental Services Gro

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Kleinfelder	Project: LaPine Highway Center	
20350 Empire Ave, Suite A-1	Project Number: 25353	**Reported:**
Bend, OR 97701	Project Manager: Scott Wallace	02/12/03 15:26

Selected Volatile Organic Compounds per EPA Method 8260B

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Dilution	Method	Prepared	Analyzed	Batch	Notes
MW03-020403 (C302009-03) Water						Sampled: 02/04/03	Received: 02/04/03		
1,2-Dibromoethane	ND	0.500	ug/l	1	EPA 8260B	02/06/03	02/06/03	3020161	
1,2-Dichloroethane	ND	0.500	"	"	"	"	"	"	
Benzene	ND	0.500	"	"	"	"	"	"	
Toluene	ND	0.500	"	"	"	"	"	"	
Ethylbenzene	ND	0.500	"	"	"	"	"	"	
Xylenes (total)	ND	1.00	"	"	"	"	"	"	
Methyl tert-butyl ether	ND	2.00	"	"	"	"	"	"	
Naphthalene	ND	2.00	"	"	"	"	"	"	
Surr: 4-BFB	*102 %*	*84.5-124*							
Surr: 1,2-DCA-d4	*97.0 %*	*77.9-123*							
Surr: Dibromofluoromethane	*97.0 %*	*83.5-119*							
Surr: Toluene-d8	*100 %*	*84.1-116*							

North Creek Analytical - Bend

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Teresa Mireles For Stephen Wilson, Environmental Services Gro

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Kleinfelder	Project: LaPine Highway Center	
20350 Empire Ave, Suite A-1	Project Number: 25353	**Reported:**
Bend, OR 97701	Project Manager: Scott Wallace	02/12/03 15:26

Dissolved Metals per EPA 200 Series Methods - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3020185 - EPA 200/3005 Diss										
Blank (3020185-BLK1)				Prepared: 02/06/03 Analyzed: 02/10/03						
Lead	ND	0.00100	mg/l							
LCS (3020185-BS1)				Prepared: 02/06/03 Analyzed: 02/10/03						
Lead	0.104	0.00100	mg/l	0.100		104	85-115			
Duplicate (3020185-DUP1)		Source: P3A0685-01		Prepared: 02/06/03 Analyzed: 02/10/03						
Lead	ND	0.00100	mg/l		0.000290			10.9	20	
Matrix Spike (3020185-MS1)		Source: P3A0685-01		Prepared: 02/06/03 Analyzed: 02/10/03						
Lead	0.104	0.00100	mg/l	0.100	0.000290	104	70-130			
Matrix Spike (3020185-MS2)		Source: P3A0685-02		Prepared: 02/06/03 Analyzed: 02/10/03						
Lead	0.100	0.00100	mg/l	0.100	0.000900	99.1	70-130			

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Kleinfelder	Project: LaPine Highway Center	
20350 Empire Ave, Suite A-1	Project Number: 25353	**Reported:**
Bend, OR 97701	Project Manager: Scott Wallace	02/12/03 15:26

Selected Volatile Organic Compounds per EPA Method 8260B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3020161 - EPA 5030B										
Blank (3020161-BLK1)				Prepared & Analyzed: 02/06/03						
1,2-Dibromoethane	ND	0.500	ug/l							
1,2-Dichloroethane	ND	0.500	"							
Benzene	ND	0.500	"							
Toluene	ND	0.500	"							
Ethylbenzene	ND	0.500	"							
Xylenes (total)	ND	1.00	"							
Methyl tert-butyl ether	ND	2.00	"							
Naphthalene	ND	2.00	"							
Surr: 4-BFB	*20.0*		"	*20.0*		*100*	*84.5-124*			
Surr: 1,2-DCA-d4	*20.9*		"	*20.0*		*104*	*77.9-123*			
Surr: Dibromofluoromethane	*20.3*		"	*20.0*		*102*	*83.5-119*			
Surr: Toluene-d8	*21.3*		"	*20.0*		*106*	*84.1-116*			
LCS (3020161-BS1)				Prepared & Analyzed: 02/06/03						
Benzene	19.9	0.500	ug/l	20.0		99.5	80-120			
Toluene	20.2	0.500	"	20.0		101	80-120			
Ethylbenzene	21.6	0.500	"	20.0		108	80-120			
Xylenes (total)	65.0	1.00	"	60.0		108	80-120			
Surr: 4-BFB	*19.6*		"	*20.0*		*98.0*	*84.5-124*			
Surr: 1,2-DCA-d4	*19.0*		"	*20.0*		*95.0*	*77.9-123*			
Surr: Dibromofluoromethane	*19.1*		"	*20.0*		*95.5*	*83.5-119*			
Surr: Toluene-d8	*19.0*		"	*20.0*		*95.0*	*84.1-116*			
Matrix Spike (3020161-MS1)	**Source: C302009-01**			Prepared & Analyzed: 02/06/03						
Benzene	19.9	0.500	ug/l	20.0	ND	99.5	80-124			
Toluene	19.4	0.500	"	20.0	ND	97.0	79.7-131			
Ethylbenzene	21.0	0.500	"	20.0	ND	105	80-124			
Xylenes (total)	62.8	1.00	"	60.0	ND	105	44.6-154			
Surr: 4-BFB	*19.6*		"	*20.0*		*98.0*	*84.5-124*			
Surr: 1,2-DCA-d4	*18.8*		"	*20.0*		*94.0*	*77.9-123*			
Surr: Dibromofluoromethane	*19.1*		"	*20.0*		*95.5*	*83.5-119*			
Surr: Toluene-d8	*19.1*		"	*20.0*		*95.5*	*84.1-116*			

North Creek Analytical - Bend

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Teresa Mireles For Stephen Wilson, Environmental Services Gro

www.ncalabs.com

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Kleinfelder	Project: LaPine Highway Center	
20350 Empire Ave, Suite A-1	Project Number: 25353	**Reported:**
Bend, OR 97701	Project Manager: Scott Wallace	02/12/03 15:26

Selected Volatile Organic Compounds per EPA Method 8260B - Quality Control

North Creek Analytical - Portland

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 3020161 - EPA 5030B										
Matrix Spike Dup (3020161-MSD1)	**Source: C302009-01**			Prepared & Analyzed: 02/06/03						
Benzene	20.9	0.500	ug/l	20.0	ND	104	80-124	4.90	25	
Toluene	20.4	0.500	"	20.0	ND	102	79.7-131	5.03	25	
Ethylbenzene	22.0	0.500	"	20.0	ND	110	80-124	4.65	25	
Xylenes (total)	65.4	1.00	"	60.0	ND	109	44.6-154	4.06	25	
Surr: 4-BFB	*20.8*		"	*20.0*		*104*	*84.5-124*			
Surr: 1,2-DCA-d4	*19.4*		"	*20.0*		*97.0*	*77.9-123*			
Surr: Dibromofluoromethane	*19.8*		"	*20.0*		*99.0*	*83.5-119*			
Surr: Toluene-d8	*19.8*		"	*20.0*		*99.0*	*84.1-116*			

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Kleinfelder	Project: LaPine Highway Center	
20350 Empire Ave, Suite A-1	Project Number: 25353	**Reported:**
Bend, OR 97701	Project Manager: Scott Wallace	02/12/03 15:26

Notes and Definitions

M-04	Sample Filtered through 0.45 micron filter in Laboratory prior to analysis.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. MRLs are adjusted if %Solids are less than 50%.
wet	Sample results reported on a wet weight basis (as received)
RPD	Relative Percent Difference

North Creek Analytical, Inc.
Environmental Laboratory Network
www.ncalabs.com

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20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711 (541) 383-9310 FAX 382-7588

CHAIN OF CUSTODY REPORT

Work Order #: 03 2009

CLIENT: KLEINFELDER

REPORT TO: KLEINFELDER ATTN: SCOTT WALLACE

ADDRESS: 20350 EMPIRE AVE, STE A-1 BEND, OR 97701

PHONE: 541.382.4707 FAX: 541.383.8118

INVOICE TO: KLEINFELDER

P.O. NUMBER:

PROJECT NAME: LAPINE HIGHWAY CENTER

PROJECT NUMBER: 25353

SAMPLED BY: RS Wallace

TURNAROUND REQUEST in Business Days*

Organic & Inorganic Analyses: ~~10~~ 7 5 4 3 2 1 <1 (STD.)

Petroleum Hydrocarbon Analyses: 5 4 3 2 1 <1 (STD.)

OTHER — Please Specify

*Turnaround Requests less than standard may incur Rush Charges.

CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	BETX	Naph.	MTBE	EDB/EDC	Diesel PB	MATRIX (W, S, O)	# OF CONT.	COMMENTS	NCO ID
1. MW01-020403	2/4/03 1520	✓	✓	✓	✓	✓	W	5	8021	
2. MW02-020403	2/4/03 1600	✓	✓	✓	✓	✓	W	5	8021	
3. MW03-020403	2/4/03 1425	✓	✓	✓	✓	✓	W	5	8021	
4.										
5.										
6.										
7.										
8.										
9.										
10.										
11.										
12.										
13.										
14.										
15.										

RELINQUISHED BY: RS Wallace		RECEIVED BY: Teresa Mills	
PRINT NAME: R. SCOTT WALLACE	FIRM: KLEINFELDER	PRINT NAME: Teresa Mills	FIRM: NCA
DATE: 2/4/03 TIME: 1653		DATE: 2-4-03 TIME: 1653	
RELINQUISHED BY:		RECEIVED BY:	
PRINT NAME:	FIRM:	PRINT NAME:	FIRM:
DATE: TIME:		DATE: TIME:	

ADDITIONAL REMARKS:

TEMP:

COC REV 3/99

PAGE OF

APPLICATION FOR AUTHORIZATION TO USE

SITE CHARACTERIZATION SUMMARY REPORT
LAPINE HIGHWAY CENTER
51425 HIGHWAY 97
LAPINE, OREGON

Kleinfelder Project No. 25353
May 27, 2003

Kleinfelder, Inc.
20350 Empire Avenue, Suite A-1
Bend, OR 97701
(541)382-4707
fax (541) 383-8118

To whom it may concern:

Applicant understands and agrees that the Site Characterization Summary Report for the subject site is a copyrighted document, that Kleinfelder, Inc., is the copyright owner and that unauthorized use or copying of the Site Characterization Summary Report is strictly prohibited without the express written permission of Kleinfelder, Inc. Applicant understands that Kleinfelder, Inc., may withhold such permission at its sole discretion, or grant permission upon such terms and conditions, as it deems acceptable.
Applicant agrees to accept the contractual terms and conditions between Kleinfelder, Inc., and Ms. Carol Brower (dba LaPine Highway Center), originally negotiated for preparation of this report. Use of this report without permission releases Kleinfelder, Inc. from any liability that may arise from use of this report.

To be Completed by Applicant

_____
(company name)

_____
(address)

_____
(city, state, zip)

_____ _____
(telephone) *(FAX)*

By: _____

Title: _____

Date: _____

For Kleinfelder, Inc.'s use only

_____ approved for re-use with additional fee of $_____
_____ disapproved, report needs to be updated

By: _____
(Kleinfelder, Inc. project manager)

Date: _____