7. Should underground storage tanks and/or groundwater wells be encountered on the property during site development, they should be decommissioned in accordance with Federal, State, and local requirements. Additionally, if any buried hazardous materials, visibly impacted soil areas, and/or septic tanks are encountered at the site during development activities, they should be removed and properly disposed of.

LIMITATIONS

The work described herein was performed to address the recommendations expressed in Kleinfelder's June 24, 2005 Limited Phase II ESA report concerning the subject site. The findings and recommendations in this report are made based upon the analytical results, field observations, and our best professional judgment. It is possible that unforeseen events could occur that may limit the effectiveness of the assessment. Although risk can never be eliminated, more detailed and extensive sampling and testing would yield better management of site risks. Since such extensive services involve greater expense, we ask our clients to participate in identifying the level of service that will provide them with an acceptable level of risk. Please contact the signatories of this report if you would like to discuss this issue of risk further.

The scope of work on this project was presented in our Contract Modification No. 2 (dated July 7, 2005) and subsequently approved by BCRA as out client. Please be aware our scope of work was limited to those items specifically identified in the proposal. Other activities not specifically included in the presented scope of work (in the Contract Modification, correspondence, or this report) are excluded and should not be considered to be a part of our scope of services.

Land use, site conditions (both on-site and off-site) and other factors will change over time. Since site 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 site visit.

This report may be used by BCRA and their client (The Client) and only for the purposes stated within a reasonable time from its issuance, but in no event later than one year from the date of this report.

Any party other than BCRA and The Client who would like to use this report shall notify Kleinfelder of such intended use (see "Third Party Reliance Letter" template in

Attachment F). Based on the intended use of this report, Kleinfelder may require that additional work be performed and that a revised report be issued. Non-compliance with any of these requirements by BCRA, The Client, or anyone else will release Kleinfelder from any liability resulting from the use of this letter report by any unauthorized party. No warranty, either express, or implied is made.

CLOSING

We trust this report meets your needs at this time and appreciate the opportunity to provide our consulting services to BCRA. Please contact the undersigned at (425) 562-4200 or John Mancini (Kleinfelder's Senior Client Service Manager to BCRA) at (801) 261-3336 if you have questions or require additional information.

Sincerely,

KLEINFELDER, INC.

Dana P. Divine
Staff Hydrogeologist

Ted W. Sykes
Project Manager

Kevin Lakey, PE, LHG
Environmental Services Manager

Cc: John Mancini, Senior Client Service Manager

Attachment A:	Figure 1 – Site Vicinity Map Figure 2 – Soil Borings/Monitoring Well Locations Map
Attachment B:	Table 1 – Soil Sample Analytical Results Table 2 – Water Sample Analytical Results
Attachment C:	Boring Logs/Monitoring Well Installation Details
Attachment D:	Analytical Laboratory Reports and Chain-of-Custody
Attachment E:	Copy of Ecology's September 12, 2005 E-Mail Concerning the Subject Site
Attachment F:	Third Party Reliance Letter Template

KLEINFELDER 2405 140th Avenue NE, Suite A101, Bellevue, WA 98005 (425) 562-4200 (425) 562-4201 fax

N

Not to Scale

KLEINFELDER

PROJECT NO. 56130 September 2005

Vicinity Map
Proposed Retail Site (No.95984)
2119 Mildred Street West
Fircrest, Washington

FIGURE
1

Legend

- *Approximate Limits of PCE Impacted Soil*
- *B-79 Boring Location*
- *MW-66 Monitoring Well Location*

KLEINFELDER

Proposed Retail Site (No.95984)
2119 Mildred Street West
Fircrest, Washington
Project: 56130 *September 2005*

Boring/Monitoring Well Locations Plan

FIGURE 2

ATTACHMENT B

TABLES 1 AND 2

Table 1
Soil Sample Analytical Results
Proposed Retail Site (No. 4265-00)
2119 Mildred Street West
Fircrest, Washington

Soil Sample Number	Diesel/Fuel Oil (mg/kg)	Heavy Oil (mg/kg)	Arsenic (mg/kg)	PCE (mg/kg)
MTCA A	2,000	2,000	20	0.05
B79-2@5'	<20	<50	<5	<0.02
B79-4@10'	<20	<50	<5	<0.02
B80-4@10'	<20	**54**	<5	**0.04**
B80-7@17.5'	<20	<50	<5	0.02
B81-4@10'	<20	<50	<5	<0.02
B81-5@12.5'	**410**	3,700	<5	<0.02
B82-2@5'	<20	<50	<5	<0.02
B82-5@12.5'	<20	<50	<5	<0.02
B83-3@7.5'	<20	<50	<5	<0.02
B83-6@15'	<20	<50	<5	<0.02
B84-3@7.5'	<20	<50	<5	<0.02
B84-7@17.5'	<20	<50	<5	<0.02
Drain	**420**	**1,700**	<5	<0.02
B85-2@5'	<20	<50	<5	**0.04**

Notes:
mg/kg = milligrams per kilogram.
Bold values indicate detection above laboratory analytical method reporting limit.
Shaded values indicate analytical result exceeds MTCA A soil cleanup level.

Table 2
Water Sample Analytical Results
Proposed Retail Site (No. 4265-00)
2119 Mildred Street West
Fircrest, Washington

Water Sample Number	Diesel/Fuel Oil (ug/L)	Heavy Oil (ug/L)	Arsenic (ug/L)	PCE (ug/L)
MTCA A	500	500	5	5
MW-66	<0.20	<0.50	NA	<1.0
MW-68	<0.20	<0.50	NA	<1.0
MW-69	<0.20	<0.50	NA	<1.0
MW-70	<0.20	<0.50	NA	<1.0
MW-78	<0.20	<0.50	**14.6**	<1.0

Notes:
ug/L = micrograms per liter.
Bold values indicate detection above laboratory analytical method reporting limit.
Shaded values indicate analytical result exceeds MTCA A groundwater cleanup level.
NA = Not Analyzed due to insufficient quantity of water in the well.

ATTACHMENT C

BORING LOGS/MONITORING WELL INSTALLATION DETAILS

DEPTH (feet)	WELL/PIEZO CONSTRUCTION	WATER LEVEL	TESTING PROGRAM: LABORATORY: MOISTURE CONTENT(%)	PLASTIC LIMIT(%)	LIQUID LIMIT(%)	% PASSING No. 200 SIEVE	OTHER TESTS	FIELD: PID (ppm)	BLOWS/6 in** (uncorrected)	SAMPLER *	SAMPLE NUMBER	U.S.C.S. NAME	U.S.C.S. SYMBOL	SOIL DESCRIPTION
														Surface conditions: grass
0									8 14 18		1		SM	SILTY SAND (SM): light gray, dry, dense, fine- to medium-grained sand with fine- to coarse-grained gravel.
5									1 7 20		2			as above, except medium dense
									6 7 6		3			SILTY SAND (SM): light gray to olive gray, moist, medium dense, fine- to medium-grained sand, trace fine gravel.
10									2 2 3		4			SILTY SAND (SM): olive gray to greenish-gray, moist, loose, fine- to medium-grained sand, trace fine gravel.
									3 9 8		5			SILTY SAND (SM): olive gray, moist, medium dense, fine- to medium-grained sand, some fine- to coarse-grained gravel.
15									1 1 1		6			SILTY SAND (SM): olive gray, moist to wet, very loose, fine- to medium-grained sand, some fine- to coarse-grained gravel, trace fine organics (rootlets).
									1 1 1		7			SILTY SAND (SM): dark brown to dark gray, moist to wet, very loose, fine- to medium-grained sand, trace fine- to coarse-grained gravel, trace fine organics, shoe contains wood fiber.
20														

DATE DRILLED: 8-17-05
LOGGED BY: D. Divine
REVIEWED BY: T. Sykes

SURFACE ELEVATION (feet):
TOTAL DEPTH (feet): 25.0
DIAMETER OF BORING (in): 8

DRILLING METHOD: HSA
DRILLER: Boart
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: 56130

Proposed Retail Development
Fircrest, WA

BORING LOG
MW-78

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2000 STANDARD IN/OUT 56130.GPJ 2000REV.GDT 8/22/05

DEPTH (feet)	WELL/PIEZO CONSTRUCTION	WATER LEVEL	TESTING PROGRAM: LABORATORY: MOISTURE CONTENT(%)	PLASTIC LIMIT(%)	LIQUID LIMIT(%)	% PASSING No. 200 SIEVE	OTHER TESTS	FIELD: PID (ppm)	BLOWS/6 in** (uncorrected)	SAMPLER *	SAMPLE NUMBER	U.S.C.S. NAME	U.S.C.S. SYMBOL	SOIL DESCRIPTION
20									8 3 7		8			NR
									5 9 8		9			SILTY SAND (SM): gray to brown, wet, medium dense, fine- to medium-grained sand, trace fine gravel. Less silt in this sample than previous samples in this hole.
25														Total Depth = 25 feet

COMPLETION DETAILS:

0-7 feet: 2-inch diameter, flush-threaded Schedule 40 PVC blank riser pipe.

7-22 feet: 2-inch diameter, flush-threaded Schedule 40 PVC well screen with 0.020-inch machine slots.

0-1 feet: concrete flush mount monument
1-6 feet: 3/8-inch bentonite chips, hydrated
6-25 feet: 10x20 Colorado Silica Sand

* SAMPLER TYPE: Cal. (3"OD) Split Spoon; SPT (2" OD) Split Spoon; Core Sample; Shelby Tube; Grab; No Recovery

**HAMMER WEIGHT: 300 lbs (30" Drop); 140 lbs (30" Drop)

KLEINFELDER
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS
SOILS AND MATERIALS TESTING

PROJECT NUMBER: 56130

Proposed Retail Development
Fircrest, WA

BORING LOG
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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: _____

2000 STANDARD IN/OUT 56130.GPJ 2000REV.GDT 8/22/05

DEPTH (feet)	WELL/PIEZO CONSTRUCTION	WATER LEVEL	TESTING PROGRAM: LABORATORY — MOISTURE CONTENT(%)	PLASTIC LIMIT(%)	LIQUID LIMIT(%)	% PASSING No. 200 SIEVE	OTHER TESTS	FIELD — PID (ppm)	BLOWS/6 in** (uncorrected)	SAMPLER *	SAMPLE NUMBER	U.S.C.S. NAME	U.S.C.S. SYMBOL	SOIL DESCRIPTION
														Surface conditions: grass
0													SM	
									11 15 9		1			SILTY SAND (SM): olive gray, moist, medium dense, fine- to medium-grained sand, trace fine- to coarse-grained gravel.
5									4 4 9		2			As above. Old wire insulation and blue-green copper staining in soil (FILL).
									14 37 47		3		SM	SILTY SAND (SM): light gray with yellow-orange oxidation streaks, moist, very dense, fine- to medium-grained sand, trace fine gravel (TILL).
10									50/2"		4			As above
									22 32 30		5		SW	SAND (SW): light gray, moist, very dense, fine- to coarse-grained sand, with silt and fine- to coarse-grained gravel.
													ML	SANDY SILT (ML): light gray, moist, hard, fine sand, laminations.
15									27 50/5"		6		SM	SILTY SAND (SM): light gray, moist, very dense, fine- to medium-grained sand, with fine- to coarse-grained gravel. slow drilling, but not rough
									15 50/6"		7			as above
20														

DATE DRILLED: 8-17-05
LOGGED BY: D. Divine
REVIEWED BY: T. Sykes

SURFACE ELEVATION (feet):
TOTAL DEPTH (feet): 21.5
DIAMETER OF BORING (in): 8

DRILLING METHOD: HSA
DRILLER: Boart
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.

BY: _____ APPROV: _____

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PROJECT NUMBER: 56130

Proposed Retail Development
Fircrest, WA

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DEPTH (feet)	WELL/PIEZO CONSTRUCTION	WATER LEVEL	TESTING PROGRAM: LABORATORY: MOISTURE CONTENT(%)	PLASTIC LIMIT(%)	LIQUID LIMIT(%)	% PASSING No. 200 SIEVE	OTHER TESTS	FIELD: PID (ppm)	BLOWS/6 in** (uncorrected)	SAMPLER *	SAMPLE NUMBER	U.S.C.S. NAME	U.S.C.S. SYMBOL	SOIL DESCRIPTION
20									37		8	SW		SAND (SW): greenish-gray, moist, very dense, fine- to coarse-grained sand, with silt and fine- to coarse-grained gravel.
									50/4"					
21.5														Total Depth = 21.5 feet

* SAMPLER TYPE: Cal. (3"OD) Split Spoon; SPT (2" OD) Split Spoon; Core Sample; Shelby Tube; Grab; No Recovery

**HAMMER WEIGHT: 300 lbs (30" Drop); 140 lbs (30" Drop)

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SOILS AND MATERIALS TESTING

PROJECT NUMBER: 56130

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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: _____

2000 STANDARD IN/OUT 56130.GPJ 2000REV.GDT 8/22/05

DEPTH (feet)	WELL/PIEZO CONSTRUCTION	WATER LEVEL	TESTING PROGRAM: LABORATORY: MOISTURE CONTENT(%)	PLASTIC LIMIT(%)	LIQUID LIMIT(%)	% PASSING No. 200 SIEVE	OTHER TESTS	FIELD: PID (ppm)	BLOWS/6 in** (uncorrected)	SAMPLER *	SAMPLE NUMBER	U.S.C.S. NAME	U.S.C.S. SYMBOL	SOIL DESCRIPTION
														Surface conditions: grass
0									6 7 5		1		SM	SILTY SAND (SM): light brown to gray, dry, medium dense, fine- to medium-grained sand, some fine- to coarse-grained gravel. (FILL)
5									20 9 12		2			SILTY SAND (SM): light brown grading to dark brown, dry to moist, medium dense, fine- to medium-grained sand, some fine- to coarse-grained gravel.
									5 9 26		3			SILTY SAND (SM): light brown, moist, dense, fine- to medium-grained sand, trace fine- to coarse-grained gravel. Two-inches of dark staining on top of gravel piece.
10									50/2"		4		SM	SILTY SAND (SM): light gray, moist, very dense, fine- to coarse-grained sand, trace fine gravel. (TILL)
									20 50/5"		5			SILTY SAND (SM): olive gray to green-gray, moist, very dense, fine- to medium-grained sand, trace fine- to coarse-grained gravel.
15									50/6"		6			As above
									30 50/5"		7		SW	SAND (SW): yellow-orange grading to light gray, moist, fine- to coarse-grained sand, with silt and fine- to coarse-grained gravel.
20														

DATE DRILLED: 8-17-05
LOGGED BY: D. Divine
REVIEWED BY: T. Sykes

SURFACE ELEVATION (feet):
TOTAL DEPTH (feet): 21.5
DIAMETER OF BORING (in): 8

DRILLING METHOD: HSA
DRILLER: Boart Longyear
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: _____

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GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS
SOILS AND MATERIALS TESTING
PROJECT NUMBER: 56130

Proposed Retail Development
Fircrest, WA

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2000 STANDARD IN/OUT 56130.GPJ 2000REV.GDT 8/22/05

DEPTH (feet)	WELL/PIEZO CONSTRUCTION	WATER LEVEL	TESTING PROGRAM: LABORATORY: MOISTURE CONTENT(%)	PLASTIC LIMIT(%)	LIQUID LIMIT(%)	% PASSING No. 200 SIEVE	OTHER TESTS	FIELD: PID (ppm)	BLOWS/6 in** (uncorrected)	SAMPLER *	SAMPLE NUMBER	U.S.C.S. NAME	U.S.C.S. SYMBOL	SOIL DESCRIPTION
20									12 26 27		8	ML		SANDY SILT (ML): light gray, moist, hard, fine sand, trace fine- to coarse-grained gravel, laminations.
21.5														Total Depth = 21.5 feet

* SAMPLER TYPE — Cal. (3"OD) Split Spoon; SPT (2" OD) Split Spoon; Core Sample; Shelby Tube; Grab; No Recovery

**HAMMER WEIGHT — 300 lbs (30" Drop); 140 lbs (30" Drop)

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: _____

2000 STANDARD IN/OUT 56130.GPJ 2000REV.GDT 8/22/05

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GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS
SOILS AND MATERIALS TESTING

PROJECT NUMBER: 56130

Proposed Retail Development
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DEPTH (feet)	WELL/PIEZO CONSTRUCTION	WATER LEVEL	TESTING PROGRAM: LABORATORY: MOISTURE CONTENT(%)	PLASTIC LIMIT(%)	LIQUID LIMIT(%)	% PASSING No. 200 SIEVE	OTHER TESTS	FIELD: PID (ppm)	BLOWS/6 in** (uncorrected)	SAMPLER *	SAMPLE NUMBER	U.S.C.S. NAME	U.S.C.S. SYMBOL	SOIL DESCRIPTION
														Surface conditions: grass
0									50/6"		1	SM		SILTY SAND (SM): light gray, dry, very dense, fine- to medium-grained sand.
5									6 4 4		2			SILTY SAND (SM): olive gray, moist, loose, fine- to medium-grained sand, trace fine- to coarse-grained gravel.
									50/1"		3			NR
10									15 19 10		4			SILTY SAND (SM): olive gray to light brown, moist, medium dense, fine- to medium-grained sand, with fine- to coarse-grained gravel. One-inch dark staining in shoe.
									3 3 15		5			SILTY SAND (SM): dark brown mixed with greenish-gray, moist, medium dense, fine- to medium-grained sand, trace fine- to coarse-grained gravel, trace fine organics (rootlets). Shoe has petroleum odor. (FILL).
15									14 26 10		6			As above. Staining and petroleum odor.
									26 14 9		7			SILTY SAND (SM): brown, moist, medium dense, fine- to medium-grained sand, organic material in bottom 4-inches of sample (loam/wood).
20														

DATE DRILLED: 8-17-05
LOGGED BY: D. Divine
REVIEWED BY: T. Sykes

SURFACE ELEVATION (feet):
TOTAL DEPTH (feet): 21.5
DIAMETER OF BORING (in): 8

DRILLING METHOD: HSA
DRILLER: Boart Longyear
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.

BY: _____ APPROV: _____

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PROJECT NUMBER: 56130

Proposed Retail Development
Firerest, WA

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2000 STANDARD IN/OUT 56130.GPJ 2000REV.GDT 8/22/05

DEPTH (feet)	WELL/PIEZO CONSTRUCTION	WATER LEVEL	TESTING PROGRAM: LABORATORY: MOISTURE CONTENT(%)	PLASTIC LIMIT(%)	LIQUID LIMIT(%)	% PASSING No. 200 SIEVE	OTHER TESTS	FIELD: PID (ppm)	BLOWS/6 in** (uncorrected)	SAMPLER *	SAMPLE NUMBER	U.S.C.S. NAME	U.S.C.S. SYMBOL	SOIL DESCRIPTION
20									3 9 19		8			
21.5													ML	SANDY SILT (ML): light gray, moist, very stiff, fine sand, fine laminations (2mm) that break on planes. Total depth = 21.5 feet

* SAMPLER TYPE: Cal. (3"OD) Split Spoon; SPT (2" OD) Split Spoon; Core Sample; Shelby Tube; Grab; No Recovery

**HAMMER WEIGHT: 300 lbs (30" Drop); 140 lbs (30" Drop)

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: 56130

Proposed Retail Development
Fircrest, WA

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2000 STANDARD IN/OUT 56130.GPJ 2000REV.GDT 8/22/05

DEPTH (feet)	WELL/PIEZO CONSTRUCTION	WATER LEVEL	TESTING PROGRAM: LABORATORY — MOISTURE CONTENT(%)	PLASTIC LIMIT(%)	LIQUID LIMIT(%)	% PASSING No. 200 SIEVE	OTHER TESTS	FIELD — PID (ppm)	BLOWS/6 in** (uncorrected)	SAMPLER *	SAMPLE NUMBER	U.S.C.S. NAME	U.S.C.S. SYMBOL	SOIL DESCRIPTION
														Surface conditions: grass
0													SM	
									10 9 4		1			SILTY SAND (SM): light gray to light brown, moist, medium dense, fine- to coarse-grained sand, some fine- to coarse-grained gravel.
5									5 10 8		2			As above
									16 41 19		3			SILTY SAND (SM): brown to light gray, moist, very dense, fine- to medium-grained sand, with fine- to coarse-grained gravel. The gray portion has stained material that looks and smells like tar.
10									9 6 6		4			NR
									16 40 50/6"		5			SILTY SAND (SM): light gray, moist, very dense, fine- to medium-grained sand, trace fine- to coarse-grained gravel.
15									20 22 25		6			As above, except dense.
									2 17 40		7			SILTY SAND (SM): olive gray, moist to wet, very dense, fine- to medium-grained sand, trace fine- to coarse-grained gravel.
20														

DATE DRILLED: 8-18-05
LOGGED BY: D. Divine
REVIEWED BY: T. Sykes

SURFACE ELEVATION (feet):
TOTAL DEPTH (feet): 21.5
DIAMETER OF BORING (in): 8

DRILLING METHOD: HSA
DRILLER: Boart Longyear
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.

BY: _____ APPROV: _____

KLEINFELDER
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS
SOILS AND MATERIALS TESTING

PROJECT NUMBER: 56130

Proposed Retail Development
Fircrest, WA

BORING LOG
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DEPTH (feet)	WELL/PIEZO CONSTRUCTION	WATER LEVEL	TESTING PROGRAM: LABORATORY: MOISTURE CONTENT(%)	PLASTIC LIMIT(%)	LIQUID LIMIT(%)	% PASSING No. 200 SIEVE	OTHER TESTS	FIELD: PID (ppm)	BLOWS/6 in** (uncorrected)	SAMPLER *	SAMPLE NUMBER	U.S.C.S. NAME	U.S.C.S. SYMBOL	SOIL DESCRIPTION
20									7 22 19		8			SILTY SAND (SM): light gray, moist, dense, 2-inch lens of SAND (SW) followed by 4-inch lens of SILT (ML) with laminations, then more SILTY SAND (SM). Total Depth = 21.5 feet
21.5														

* SAMPLER TYPE: Cal. (3"OD) Split Spoon; SPT (2" OD) Split Spoon; Core Sample; Shelby Tube; Grab; No Recovery

**HAMMER WEIGHT: 300 lbs (30" Drop); 140 lbs (30" Drop)

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: 56130

Proposed Retail Development
Fircrest, WA

BORING LOG
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2000 STANDARD IN/OUT 56130.GPJ 2000REV.GDT 8/22/05

DEPTH (feet)	WELL/PIEZO CONSTRUCTION	WATER LEVEL	TESTING PROGRAM: LABORATORY — MOISTURE CONTENT(%)	PLASTIC LIMIT(%)	LIQUID LIMIT(%)	% PASSING No. 200 SIEVE	OTHER TESTS	FIELD — PID (ppm)	BLOWS/6 in** (uncorrected)	SAMPLER *	SAMPLE NUMBER	U.S.C.S. NAME	U.S.C.S. SYMBOL	SOIL DESCRIPTION
														Surface conditions: grass
0									14 9 6		1		SM	SILTY SAND (SM): light gray, moist, medium dense, fine- to coarse-grained sand, some fine gravel.
5									2 9 6		2			SILTY SAND (SM): olive gray, moist, medium dense, fine- to medium-grained sand, sone fine gravel, trace fine organics (grass).
									15 17 17		3			SILTY SAND (SM): olive gray to light gray, moist, dense, fine- to medium-grained sand, trace fine gravel.
10									8 12 6		4			SILTY SAND (SM): olive gray, moist to wet, medium dense, fine- to medium-grained sand, with fine- to coarse-grained gravel.
									5 4 4		5			As above, except loose
15									4 4 4		6			As above, trace organic material (twigs) and one piece of mangled black plastic. (FILL)
									10 7 9		7			SILTY SAND (sM): olive gray, moist, medium dense, fine- to medium-grained sand, trace fine- to coarse-grained gravel, trace organics (twigs and rootlets). (FILL)
20														

DATE DRILLED: 8-18-05
LOGGED BY: D. Divine
REVIEWED BY: T. Sykes

SURFACE ELEVATION (feet):
TOTAL DEPTH (feet): 21.5
DIAMETER OF BORING (in): 8

DRILLING METHOD: HSA
DRILLER: Boart Longyear
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.

BY: _____ APPROV: _____

KLEINFELDER
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS
SOILS AND MATERIALS TESTING

PROJECT NUMBER: 56130

Proposed Retail Development
Fircrest, WA

BORING LOG
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DEPTH (feet)	WELL/PIEZO CONSTRUCTION	WATER LEVEL	TESTING PROGRAM: LABORATORY: MOISTURE CONTENT(%)	PLASTIC LIMIT(%)	LIQUID LIMIT(%)	% PASSING No. 200 SIEVE	OTHER TESTS	FIELD: PID (ppm)	BLOWS/6 in** (uncorrected)	SAMPLER *	SAMPLE NUMBER	U.S.C.S. NAME	U.S.C.S. SYMBOL	SOIL DESCRIPTION
20									17 30 50/5"	X	8	SM		SILTY SAND (SM): light gray, moist, very dense, fine- to medium-grained sand, trace fine- to coarse-grained gravel. (TILL)
21.5														Total Depth = 21.5 feet

* SAMPLER TYPE — Cal. (3"OD) Split Spoon; SPT (2" OD) Split Spoon; Core Sample; Shelby Tube; Grab; No Recovery

**HAMMER WEIGHT — 300 lbs (30" Drop); 140 lbs (30" Drop)

KLEINFELDER
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS
SOILS AND MATERIALS TESTING

PROJECT NUMBER: 56130

Proposed Retail Development
Fircrest, WA

BORING LOG
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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: _____

2000 STANDARD IN/OUT 56130.GPJ 2000REV.GDT 8/22/05

DEPTH (feet)	WELL/PIEZO CONSTRUCTION	WATER LEVEL	TESTING PROGRAM: LABORATORY: MOISTURE CONTENT(%)	PLASTIC LIMIT(%)	LIQUID LIMIT(%)	% PASSING No. 200 SIEVE	OTHER TESTS	FIELD: PID (ppm)	BLOWS/6 in** (uncorrected)	SAMPLER *	SAMPLE NUMBER	U.S.C.S. NAME	U.S.C.S. SYMBOL	SOIL DESCRIPTION
														Surface conditions: grass
0									7 14 16		1	SM		SILTY SAND (SM): light brown, moist, medium dense, fine- to medium-grained sand, trace fine- to coarse-grained gravel.
5									9 10 9		2			As above
									36 12 17		3			SILTY SAND (SM): olive gray, moist, dense, fine- to medium-grained sand, some fine gravel.
10									3 3 10		4			SILTY SAND (SM): dark brown, moist, loose, fine- to medium-grained sand, with coarse wood pieces.
												ML		SANDY SILT (ML): green-gray, moist, stiff, fine sand, trace fine- to coarse-gravel.
									2 8 14		5	SM		SILTY SAND (SM): dark brown, moist, medium dense, fine- to coarse-grained sand with one large piece of wood above shoe. Possible staining above wood. Trace brick fragements.
15									20 16 26		6			NR
									12 24 28		7	SP		SAND (SP): light gray, moist to dry, very dense, fine- to medium-grained sand. Four-inch SANDY SILT (ML) interbed.
20														

DATE DRILLED: 8-18-05
LOGGED BY: D. Divine
REVIEWED BY: T. Sykes

SURFACE ELEVATION (feet):
TOTAL DEPTH (feet): 21.5
DIAMETER OF BORING (in): 8

DRILLING METHOD: HSA
DRILLER: Boart Longyear
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.

BY: _____ APPROV: _____

KLEINFELDER
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS
SOILS AND MATERIALS TESTING

PROJECT NUMBER: 56130

Proposed Retail Development
Fircrest, WA

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2000 STANDARD IN/OUT 56130.GPJ 2000REV.GDT 8/22/05

DEPTH (feet)	WELL/PIEZO CONSTRUCTION	WATER LEVEL	TESTING PROGRAM: LABORATORY: MOISTURE CONTENT(%)	PLASTIC LIMIT(%)	LIQUID LIMIT(%)	% PASSING No. 200 SIEVE	OTHER TESTS	FIELD: PID (ppm)	BLOWS/6 in** (uncorrected)	SAMPLER *	SAMPLE NUMBER	U.S.C.S. NAME	U.S.C.S. SYMBOL	SOIL DESCRIPTION
20									25 50/4"		8	SM		SILTY SAND (SM): light gray, moist, very dense, fine- to medium-grained sand, trace fine gravel.
21.5														Total Depth = 21.5 feet

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.

APPROVED

* SAMPLER TYPE: Cal. (3"OD) Split Spoon; SPT (2" OD) Split Spoon; Core Sample; Shelby Tube; Grab; No Recovery

**HAMMER WEIGHT: 300 lbs (30" Drop); 140 lbs (30" Drop)

KLEINFELDER
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS
SOILS AND MATERIALS TESTING

PROJECT NUMBER: 56130

Proposed Retail Development
Fircrest, WA

BORING LOG
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Appendix
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2000 STANDARD IN/OUT 56130.GPJ 2000REV.GDT 8/22/05

DEPTH (feet)	WELL/PIEZO CONSTRUCTION	WATER LEVEL	TESTING PROGRAM: LABORATORY: MOISTURE CONTENT(%)	PLASTIC LIMIT(%)	LIQUID LIMIT(%)	% PASSING No. 200 SIEVE	OTHER TESTS	FIELD: PID (ppm)	BLOWS/6 in** (uncorrected)	SAMPLER *	SAMPLE NUMBER	U.S.C.S. NAME	U.S.C.S. SYMBOL	SOIL DESCRIPTION
														Surface conditions: concrete
0									2 3 2		1	SM		SILTY SAND (SM): brown, dry to moist, loose, fine- to medium-grained sand, trace fine gravel.
5									8 17 28		2			SILTY SAND (SM): light brown to yellow-organge, dry to moist, dense, fine- to medium-grained sand, some fine- to coarse-grained gravel.
									37 50/4"		3			SILTY SAND (SM): light gray, moist to dry, very dense, fine- to medium-grained sand, trace fine gravel. (TILL)
10									28 50/5"		4			As above
									50/5"		5			As above
15									50/6"		6			As above
									50/6"		7			As above
20														

DATE DRILLED: 8-18-05
LOGGED BY: D. Divine
REVIEWED BY: T. Sykes

SURFACE ELEVATION (feet):
TOTAL DEPTH (feet): 21.5
DIAMETER OF BORING (in): 8

DRILLING METHOD: HSA
DRILLER: Boart Longyear
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: 56130

Proposed Retail Development
Fircrest, WA

BORING LOG
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Appendix
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DEPTH (feet)	WELL/PIEZO CONSTRUCTION	WATER LEVEL	TESTING PROGRAM: LABORATORY: MOISTURE CONTENT(%)	PLASTIC LIMIT(%)	LIQUID LIMIT(%)	% PASSING No. 200 SIEVE	OTHER TESTS	FIELD: PID (ppm)	BLOWS/6 in** (uncorrected)	SAMPLER *	SAMPLE NUMBER	U.S.C.S.: NAME	U.S.C.S.: SYMBOL	SOIL DESCRIPTION
20									50/4"	⊠	8			As above, except moist to wet.
21.5														Total depth = 21.5 feet

* SAMPLER TYPE: Cal. (3"OD) Split Spoon; SPT (2" OD) Split Spoon; Core Sample; Shelby Tube; Grab; No Recovery

**HAMMER WEIGHT: 300 lbs (30" Drop); 140 lbs (30" Drop)

KLEINFELDER
GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS
SOILS AND MATERIALS TESTING

PROJECT NUMBER: 56130

Proposed Retail Development
Fircrest, WA

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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: _____

2000 STANDARD IN/OUT 56130.GPJ 2000REV.GDT 8/22/05

ATTACHMENT D

ANALYTICAL LABORATORY REPORTS AND CHAIN-OF-CUSTODY

ESN NORTHWEST
Environmental Services Network

September 3, 2005

Ted Sykes
Kleinfelder
2405 140th Avenue NE
Suite A101
Bellevue, WA 98005-1877

Dear Mr. Sykes:

Please find enclosed the analytical data report from the Fircrest Retail Project site in Fircrest, Washington. Soil and waterater samples were analyzed for Diesel and Oil by NWTPH-Dx/Dx Extended, PCE by Method 8260, and As by Methods 7061 and 6020 on August 23 – 25, 2005.

The results of these analyses are summarized in the attached tables. All soil values are reported on a dry weight basis. Applicable detection limits and QA/QC data are included. An invoice for this analytical work is also enclosed.

ESN Northwest appreciates the opportunity to have provided analytical services to Kleinfelder for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Michael A. Korosec
President

1210 Eastside Street SE, Suite 200 ■ Olympia, Washington 98501 ■ 360.459.4670 ■ FAX 360.459.3432
Web site: www.esnnw.com E-Mail: info@esnnw.com

ESN SEATTLE CHEMISTRY LABORATORY
(425) 957-9872, fax (425) 957-9904

ESN Job Number: S50819-1
Client: KLEINFELDER
Client Job Name: FIRCREST RETAIL
Client Job Number: 56130

Analytical Results

NWTPH-Dx, mg/kg		MTH BLK	B79-2@5'	B79-4@10'	B80-4@10'	B80-7@17.5'	B81-4@10'	B81-5@12.5'	B82-2@5'
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting		08/22/05	08/22/05	08/22/05	08/22/05	08/22/05	08/22/05	08/22/05
Date analyzed	Limits	08/23/05	08/23/05	08/23/05	08/23/05	08/23/05	08/23/05	08/23/05	08/23/05
Moisture, %			15%	9%	7%	7%	9%	5%	11%
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd	nd	nd	nd
Diesel/Fuel oil	20	nd	nd	nd	nd	nd	nd	**410**	nd
Heavy oil	50	nd	nd	nd	**54**	nd	nd	**3,700**	nd
Surrogate recoveries:									
Fluorobiphenyl		102%	97%	96%	97%	91%	91%	111%	94%
o-Terphenyl		105%	105%	104%	103%	100%	102%	117%	103%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits
na - not analyzed
C - coelution with sample peaks
M - matrix interference
J - estimated value
Results reported on dry-weight basis
Acceptable Recovery limits: 65% TO 135%
Acceptable RPD limit: 35%

ESN SEATTLE CHEMISTRY LABORATORY
(425) 957-9872, fax (425) 957-9904

ESN Job Number:	S50819-1
Client:	KLEINFELDER
Client Job Name:	FIRCREST RETAIL
Client Job Number:	56130

Analytical Results

NWTPH-Dx, mg/kg		B82-5@12.5'	B83-3@7.5'	B83-6@15'	B84-3@7.5'	B84-7@17.5'	DRAIN	B85-2@5'	DUP B85-2@5'
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	08/22/05	08/22/05	08/22/05	08/22/05	08/22/05	08/22/05	08/22/05	08/22/05
Date analyzed	Limits	08/23/05	08/23/05	08/23/05	08/23/05	08/23/05	08/23/05	08/23/05	08/23/05
Moisture, %		10%	11%	12%	11%	10%	42%	8%	8%
Kerosene/Jet fuel	20	nd	nd	nd	nd	nd	nd	nd	nd
Diesel/Fuel oil	20	nd	nd	nd	nd	nd	**420**	nd	nd
Heavy oil	50	nd	nd	nd	nd	nd	**1,700**	nd	nd
Surrogate recoveries:									
Fluorobiphenyl		93%	92%	95%	96%	94%	131%	97%	91%
o-Terphenyl		101%	101%	114%	104%	103%	133%	102%	100%

Data Qualifiers and Analytical Comments

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Acceptable Recovery limits: 65% TO 135%
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ESN SEATTLE CHEMISTRY LABORATORY
(425) 957-9872, fax (425) 957-9904

ESN Job Number:	S50819-1
Client:	KLEINFELDER
Client Job Name:	FIRCREST RETAIL
Client Job Number:	56130

Analytical Results

NWTPH-Dx, mg/l		MTH BLK	MW-66	MW-68	MW-69	MW-70	MW-78	DUP MW-78
Matrix	Water	Water	Water	Water	Water	Water	Water	Water
Date extracted	Reporting	08/22/05	08/22/05	08/22/05	08/22/05	08/22/05	08/22/05	08/22/05
Date analyzed	Limits	08/22/05	08/22/05	08/22/05	08/22/05	08/22/05	08/22/05	08/22/05
Kerosene/Jet fuel	0.20	nd	nd	nd	nd	nd	nd	nd
Diesel/Fuel oil	0.20	nd	nd	nd	nd	nd	nd	nd
Heavy oil	0.50	nd	nd	nd	nd	nd	nd	nd
Surrogate recoveries:								
Fluorobiphenyl		99%	95%	94%	94%	92%	102%	104%
o-Terphenyl		108%	105%	106%	105%	103%	105%	112%

Data Qualifiers and Analytical Comments

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C - coelution with sample peaks
M - matrix interference
J - estimated value
Acceptable Recovery limits: 65% TO 135%
Acceptable RPD limit: 35%

ESN SEATTLE CHEMISTRY LABORATORY
(425) 957-9872, fax (425) 957-9904

ESN Job Number: S50819-1
Client: KLEINFELDER
Client Job Name: FIRCREST RETAIL
Client Job Number: 56130

8260, mg/kg		MTH BLK	B79-2@5'	B79-4@10'	B80-4@10'	B80-7@17.5'	B81-4@10'	B81-5@12.5'	B82-2@5'
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting		08/19/05	08/19/05	08/19/05	08/19/05	08/19/05	08/19/05	08/19/05
Date analyzed	Limits	08/23/05	08/23/05	08/23/05	08/23/05	08/23/05	08/23/05	08/23/05	08/23/05
Moisture, %			15%	9%	7%	7%	9%	5%	11%
Tetrachloroethene (PCE)	0.02	nd	nd	nd	0.04	0.02	nd	nd	nd
Surrogate recoveries:									
Dibromofluoromethane		106%	103%	104%	101%	104%	105%	98%	99%
Toluene-d8		103%	104%	101%	103%	106%	102%	102%	103%
4-Bromofluorobenzene		103%	107%	104%	105%	104%	103%	105%	106%

Data Qualifiers and Analytical Comments

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ESN SEATTLE CHEMISTRY LABORATORY
(425) 957-9872, fax (425) 957-9904

ESN Job Number: S50819-1
Client: KLEINFELDER
Client Job Name: FIRCREST RETAIL
Client Job Number: 56130

8260, mg/kg		B82-5@12.5'	B83-3@7.5'	B83-6@15'	B84-3@7.5'	B84-7@17.5'	DRAIN	B85-2@5'
Matrix	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Date extracted	Reporting	08/19/05	08/19/05	08/19/05	08/19/05	08/19/05	08/19/05	08/19/05
Date analyzed	Limits	08/24/05	08/24/05	08/24/05	08/24/05	08/24/05	08/24/05	08/24/05
Moisture, %		10%	11%	12%	11%	10%	42%	8%
Tetrachloroethene (PCE)	0.02	nd	nd	nd	nd	nd	nd	**0.04**
Surrogate recoveries:								
Dibromofluoromethane		103%	105%	102%	104%	101%	97%	95%
Toluene-d8		104%	102%	104%	102%	103%	102%	105%
4-Bromofluorobenzene		103%	103%	104%	105%	107%	108%	104%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits
na - not analyzed
C - coelution with sample peaks
M - matrix interference
J - estimated value
Results reported on dry-weight basis
Acceptable Recovery limits: 65% TO 135%
Acceptable RPD limit: 35%

ESN SEATTLE CHEMISTRY LABORATORY
(425) 957-9872, fax (425) 957-9904

ESN Job Number:	S50819-1
Client:	KLEINFELDER
Client Job Name:	FIRCREST RETAIL
Client Job Number:	56130

Analytical Results

8260, µg/l		MTH BLK	MW-66	MW-68	MW-69	MW-70	MW-78
Matrix	Water	Water	Water	Water	Water	Water	Water
	Reporting						
Date analyzed	Limits	08/22/05	08/22/05	08/22/05	08/22/05	08/22/05	08/22/05
Tetrachloroethene (PCE)	1.0	nd	nd	nd	nd	nd	nd
Surrogate recoveries:							
Dibromofluoromethane		102%	106%	105%	107%	106%	107%
Toluene-d8		105%	115%	114%	114%	116%	113%
4-Bromofluorobenzene		104%	104%	106%	106%	107%	104%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits
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M - matrix interference
J - estimated value
Acceptable Recovery limits: 65% TO 135%
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(425) 957-9872, fax (425) 957-9904

ESN Job Number:	S50819-1
Client:	KLEINFELDER
Client Job Name:	FIRCREST RETAIL
Client Job Number:	56130

Analytical Results

8260, mg/kg		MTH BLK	LCS	MS	MSD	RPD
Matrix	Soil	Soil	Soil	Soil	Soil	
	Reporting					
Date analyzed	Limits	08/23/05	08/25/05	08/24/05	08/24/05	
1,1-Dichloroethene	0.05	nd	94%	88%	93%	6%
Benzene	0.02	nd	114%	116%	122%	5%
Trichloroethene (TCE)	0.02	nd	103%	105%	110%	5%
Toluene	0.05	nd	113%	114%	121%	6%
Chlorobenzene	0.05	nd	110%	113%	118%	4%
Surrogate recoveries:						
Dibromofluoromethane		106%	106%	102%	105%	
Toluene-d8		103%	104%	101%	102%	
4-Bromofluorobenzene		103%	105%	103%	104%	

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits
na - not analyzed
C - coelution with sample peaks
M - matrix interference
J - estimated value
Results reported on dry-weight basis
Acceptable Recovery limits: 65% TO 135%
Acceptable RPD limit: 35%

ESN SEATTLE CHEMISTRY LABORATORY
(425) 957-9872, fax (425) 957-9904

ESN Job Number:	S50819-1
Client:	KLEINFELDER
Client Job Name:	FIRCREST RETAIL
Client Job Number:	56130

Analytical Results

8260, µg/l		MTH BLK	LCS	MS	MSD	RPD
Matrix	Water	Water	Water	Water	Water	
	Reporting					
Date analyzed	Limits	08/22/05	08/22/05	08/22/05	08/22/05	
1,1-Dichloroethene	1.0	nd	84%	80%	84%	5%
Benzene	1.0	nd	106%	101%	107%	6%
Trichloroethene (TCE)	1.0	nd	97%	91%	96%	5%
Toluene	1.0	nd	116%	114%	119%	4%
Chlorobenzene	1.0	nd	117%	113%	120%	6%
Surrogate recoveries:						
Dibromofluoromethane		106%	108%	104%	104%	
Toluene-d8		108%	112%	116%	116%	
4-Bromofluorobenzene		105%	105%	105%	106%	

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits
na - not analyzed
C - coelution with sample peaks
M - matrix interference
J - estimated value
Acceptable Recovery limits: 65% TO 135%
Acceptable RPD limit: 35%

ESN NORTHWEST CHEMISTRY LABORATORY

FIRCREST RETAIL PROJECT
Fircrest, Washington
Kleinfelder

Heavy Metals in Soil by EPA-7000 Series

Sample Number	Date Analyzed	Arsenic (As) EPA 7061 (mg/kg)
Method Blank	8/25/05	nd
B79-2@5'	8/25/05	nd
B79-4@10'	8/25/05	nd
B80-4@10'	8/25/05	nd
B80-7@17.5	8/25/05	nd
B81-4@10'	8/25/05	nd
B81-5@12.5	8/25/05	nd
B82-2@5'	8/25/05	nd
B82-5@12.5	8/25/05	nd
B83-3@7.5	8/25/05	nd
B83-6@15'	8/25/05	nd
B84-3@7.5	8/25/05	nd
B84-7@17.5	8/25/05	nd
Drain	8/25/05	nd
Drain Dup.	8/25/05	nd
B85-2@5'	8/25/05	nd
B85-2@5' Dup.	8/25/05	nd
Method Detection Limits		5

"nd" Indicates not detected at listed detection limits.

ANALYSES PERFORMED BY:Matthew Sebonia

ESN NORTHWEST CHEMISTRY LABORATORY

FIRCREST RETAIL PROJECT
Fircrest, Washington
Kleinfelder

QA/QC Data - Total Metals EPA-7000 Series Analyses

Sample Number: B-6-01

	Matrix Spike			Matrix Spike Duplicate			RPD
	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)	(%)
Arsenic	250	220	88	250	214	86	2.76

	Laboratory Control Sample		
	Spiked Conc. (mg/kg)	Measured Conc. (mg/kg)	Spike Recovery (%)
Arsenic	250	245	98

ACCEPTABLE RECOVERY LIMITS FOR MATRIX SPIKES: 65%-135%
ACCEPTABLE RPD IS 35%

ANALYSES PERFORMED BY:Matthew Sebonia

STL Seattle

Sample Identification:

Lab. No.	Client ID	Date/Time Sampled	Matrix
129434-1	MW-78		Liquid

STL Seattle

Client Name	ESN Northwest, Inc.
Client ID:	MW-78
Lab ID:	129434-01
Date Received:	8/19/2005
Date Prepared:	8/23/2005
Date Analyzed:	8/24/2005
Dilution Factor	5

Dissolved Metals by ICP-MS - USEPA Method 6020

Analyte	Result (mg/L)	RL	Flags
Arsenic	0.0146	0.0025	

STL Seattle

Lab ID:	Method Blank - DP1495
Date Received:	-
Date Prepared:	8/23/2005
Date Analyzed:	8/24/2005
Dilution Factor	1

Dissolved Metals by ICP-MS - USEPA Method 6020

Analyte	Result (mg/L)	RL	Flags
Arsenic	ND	0.0005	

STL Seattle

Matrix Spike Report

Client Sample ID:	1-H2O FOUNTAIN BY CAFE
Lab ID:	129447-01
Date Prepared:	8/23/2005
Date Analyzed:	8/24/2005
QC Batch ID:	DP1495

Dissolved Metals by ICP-MS - USEPA Method 6020

Parameter Name	Sample Result (mg/L)	Spike Amount (mg/L)	MS Result (mg/L)	MS % Rec.	Flag
Arsenic	0	4	4.02	100	

STL Seattle

Duplicate Report

Client Sample ID:	1-H2O FOUNTAIN BY CAFE
Lab ID:	129447-01
Date Prepared:	8/23/2005
Date Analyzed:	8/24/2005
QC Batch ID:	DP1495

Dissolved Metals by ICP-MS - USEPA Method 6020

Parameter Name	Sample Result (mg/L)	Duplicate Result (mg/L)	RPD %	Flag
Arsenic	0	0	NC	

SEVERN TRENT STL

STL Seattle
5755 8th Street East
Tacoma, WA 98424

Tel: 253 922 2310
Fax: 253 922 5047
www.stl-inc.com

DATA QUALIFIERS AND ABBREVIATIONS

B1: This analyte was detected in the associated method blank. The analyte concentration was determined not to be significantly higher than the associated method blank (less than ten times the concentration reported in the blank).

B2: This analyte was detected in the associated method blank. The analyte concentration in the sample was determined to be significantly higher than the method blank (greater than ten times the concentration reported in the blank).

C1: Second column confirmation was performed. The relative percent difference value (RPD) between the results on the two columns was evaluated and determined to be < 40%.

C2: Second column confirmation was performed. The RPD between the results on the two columns was evaluated and determined to be > 40%. The higher result was reported unless anomalies were noted.

C3: Second analysis confirmation was performed. The relative percent difference value (RPD) between the results on the two columns was evaluated and determined to be ≤ 30%.

C4: Second analysis confirmation was performed. The RPD between the results on the two columns was evaluated and determined to be > 30%. The presence of this analyte was not verified per WAC 246-290-010. The original analysis was reported unless anomalies were noted.

M: GC/MS confirmation was performed. The result derived from the original analysis was reported.

D: The reported result for this analyte was calculated based on a secondary dilution factor.

E: The concentration of this analyte exceeded the instrument calibration range and should be considered an estimated quantity.

J: The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.

MCL: Maximum Contaminant Level

MDL: Method Detection Limit

MRL: Method Reporting Limit

N: See analytical narrative

ND: Not Detected

PQL: Practical Quantitation Limit

X1: Contaminant does not appear to be "typical" product. Elution pattern suggests it may be _____.

X2: Contaminant does not appear to be "typical" product.

X3: Identification and quantitation of the analyte or surrogate was complicated by matrix interference.

X4: RPD for duplicates was outside advisory QC limits. The sample was re-analyzed with similar results. The sample matrix may be nonhomogeneous.

X4a: RPD for duplicates outside advisory QC limits due to analyte concentration near the method practical quantitation limit/detection limit.

X5: Matrix spike recovery was not determined due to the required dilution.

X6: Recovery and/or RPD values for matrix spike(/matrix spike duplicate) outside advisory QC limits. Sample was re-analyzed with similar results.

X7: Recovery and/or RPD values for matrix spike(/matrix spike duplicate) outside advisory QC limits. Matrix interference may be indicated based on acceptable blank spike recovery and/or RPD.

X7a: Recovery and/or RPD values for this spiked analyte outside advisory QC limits due to high concentration of the analyte in the original sample.

X8: Surrogate recovery was not determined due to the required dilution.

X9: Surrogate recovery outside advisory QC limits due to matrix interference.

ESN NORTHWEST | Environmental Services Network

S50819-1

CHAIN-OF-CUSTODY RECORD

CLIENT: Kleinfelder

ADDRESS: 2405 140th Ave NE Ste A101 Bellev

PHONE: 425 562 4200 FAX: 425 562 4201

CLIENT PROJECT #: 56130 PROJECT MANAGER: T. Sykes

DATE: 8/19/05 PAGE 1 OF 3

PROJECT NAME: Fircrest retail

LOCATION: 2119 Mildred

COLLECTOR: D. Divine DATE OF COLLECTION 8/17

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES: HCID 8021B PCE	VOA 8021B BTEX Only	VOA 8260	SEMI VOL 8270	TPH - HCID	TPH 8015 (gasoline)	TPH 8015 (diesel)	TPH 8015 (d & o)	PAH 8100	PAH 8270	PCBs 8082	Pesticides 8081	EPH	VPH	Methamphetamine	Pb	Hex Chrome	Arsenic	NOTES	Total Number of Containers	Laboratory Note Number
1. B79-2@5'	5'	11:15	S	4oz, VOA	✓						✓										✓			2	
2. B79 4@10'	10'	1120			✓						✓										✓				
3. B79-8@20'	20'	1215																							
4. B80-2@5'	5'	1245																							
5. B80-3@7.5'	7.5'	1250																							
6. B80-4@10'	10'	1300			✓						✓										✓				
7. B80 5@12.5	12.5'	1310																							
8. B80-6@15'	15'	1320																							
9. B80-7@17.5	17.5'	1330			✓						✓										✓				
10. B81-4@10'	10'	1445			✓						✓										✓				
11. B81-5@12.5	12.5'	1500			✓						✓										✓				
12.																									
13.																									
14.																									
15.																									
16.																									
17.																									
18.																									

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
Dana Divine	8/19/05		8/19/05 10:45
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME

SAMPLE DISPOSAL INSTRUCTIONS

☐ ESN DISPOSAL @ $2.00 each ☐ Return ☐ Pickup

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES:

- PCE only, not all VOAs.

Turn Around Time: 24 HR 48 HR 5 DAY

ESN NORTHWEST | Environmental Services Network

530017 | [illegible]

CHAIN-OF-CUSTODY RECORD

CLIENT: Kleinfelder

ADDRESS: 2405 140TH Ave NE Ste A101 Bellevue WA 98005

PHONE: 425 562 4201 FAX: 425 562 4200

CLIENT PROJECT #: 56130 PROJECT MANAGER: T. Sykes

DATE: 8/19/05 PAGE 2 OF 3

PROJECT NAME: Fircrest retail

LOCATION: Fircrest WA 2119 Mildred

COLLECTOR: D DiVine DATE OF COLLECTION 8/18

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES: HCID	VOA 8021B PCE	VOA 8021B BTEX Only	VOA 8260	SEMI VOL 8270	TPH - HCID	TPH 8015 (gasoline)	TPH 8015 (diesel)	TPH 8015 (d & o)	PAH 8100	PAH 8270	PCBs 8082	Pesticides 8081	EPH	VPH	Methamphetamine	Pb	Hex Chrome	Arsenic	NOTES	Total Number of Containers	Laboratory Note Number
1. B82-2@5'	5'	715	S		✓							✓										✓			2	
2. B82-3@7.5	7.5	745																								
3. B82-5@12.5	12.5	750			✓							✓										✓				
4. B83-2@5	5'	845																								
5. B83-3@7.5	7.5	900			✓							✓										✓				
6. B83-5@12.5	12.5	930																								
7. B83-6@15'	15	945			✓							✓										✓				
8. B84-3@7.5	7.5	1015			✓							✓										✓				
9. B84-5@12.5	12.5	1030																								
10. B84-7@17.5	17.5	1050			✓							✓										✓				
11. Drain	0.5	1110			✓							✓										✓				
12. B85-2@5'	5'	1200	↓		✓							✓										✓				
13. B85-4@10'	10'	1215																							↓	
14.																										
15.																										
16.																										
17.																										
18.																										

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
Nana Kiviine	8/19/05	[signature]	8/19/05 10AM
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME

SAMPLE DISPOSAL INSTRUCTIONS

☐ ESN DISPOSAL @ $2.00 each ☐ Return ☐ Pickup

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES:
- PCE only, not all VOAs.

Turn Around Time: 24 HR 48 HR (5 DAY)

ESN NORTHWEST | Environmental Services Network

550811-1

CHAIN-OF-CUSTODY RECORD

CLIENT: Kleinfelder

ADDRESS: 2405 140th Ave. NE Ste A101, Bellevue WA 98005

PHONE: 425 562 4200 FAX: 425 562 4201

CLIENT PROJECT #: 56130 PROJECT MANAGER: T. Sykes

DATE: 8/19/05 PAGE 3 OF 3

PROJECT NAME: Fircrest Retail

LOCATION: 2119 Mildred

COLLECTOR: D. Divine DATE OF COLLECTION 8/18/05

Sample Number	Depth	Time	Sample Type	Container Type	VOA 8021B	VOA 8021B BTEX Only	VOA 8260 PCE	SEMI VOL 8270	TPH - HCID	TPH 8015 (gasoline)	TPH 8015 (diesel)	TPH 8015 (d & o)	PAH 8100	PAH 8270	PCBs 8082	Pesticides 8081	EPH	VPH	Methamphetamine	Pb	Hex Chrome	Diss Arsenic	NOTES	Total Number of Containers	Laboratory Note Number
1. MW-66	~	1330	W				✓				✓													3	
2. MW-68	—	1340	↓				✓				✓													2	
3. MW-69	~	1350	↓				✓				✓													2	
4. MW-70	~	1400	↓				✓				✓												DP	2	*
5. MW-78	—	1430	↓				✓				✓										✓			4	
6.																									
7.																									
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16.																									
17.																									
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RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
Dana Divine	8/19/05		8/19/05 10AM
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME

SAMPLE DISPOSAL INSTRUCTIONS

☐ ESN DISPOSAL @ $2.00 each ☐ Return ☐ Pickup

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES:

- PCE only.
- Filter As sample please

Turn Around Time: 24 HR 48 HR (5 DAY)

ATTACHMENT E

COPY OF ECOLOGY'S SEPTEMBER 12, 2005 E-MAIL CONCERNING THE SUBJECT SITE

Ted Sykes - Detection of Dissolved G.W. Arsenic (Fircrest Site)

From: "San Juan, Charles" <csan461@ECY.WA.GOV>
To: "'tsykes@kleinfelder.com'" <tsykes@kleinfelder.com>
Date: 9/12/2005 9:53:43 AM
Subject: Detection of Dissolved G.W. Arsenic (Fircrest Site)

Ted -

Per our phone conversation about the site you are working on, it's my understanding that dissolved arsenic (9.47-17.9 ug/L) was detected in a shallow perched zone. It's my understanding that temporary wells were used to collect samples and that the wells were developed to the extent practicable.

Arsenic can occur naturally in excess of the MTCA Method A standard of 5 ppb. For example, Welch et al. (1988) found that arsenic in ground water (in the Western U.S.) can occur naturally (15-50 ug/L). In a subsequent publication, Welch et al. (2000) found that ~10% of 30,000 ground water samples (across the U.S.) contained arsenic concentrations > 10 ug/L. The USGS also found similar trends in a study of naturally occurring arsenic in Southeast Michigan (http://mi.water.usgs.gov/splan2/sp07800/dwiarsenic.php).

Thus, it's my opinion that the arsenic you detected may be naturally occurring and is therefore not related to any anthropogenic activities. This site is located within the footprint of the Tacoma Smelter Plume; however, my check of the soil data indicates that lead and arsenic concentrations tend to drop off significantly with the first 0-24 inches. In other words, it doesn't seem that there is any correlation between high concentrations of arsenic in surficial soils and shallow perched ground water 15-20 ft. below land surface.

References

Welch et al. (1988). Arsenic in Ground Water of the Western United States. GROUND WATER, Vol. 26. No. 3, pp. 333-347.
Welch et a. (2000). Arsenic in Ground Water of the Unites States: Occurrence and Geochemistry. GROUND WATER, Vol. 38, No. 4, pp. 589-604.

Charles San Juan
Hydrogeologist, LHG
Toxics Cleanup Program
Washington Department of Ecology
P.O. Box 47600
Olympia, WA 98054-7600
(360)407-7191
Fax: (360)407-7154
email: csan461@ecy.wa.gov

ATTACHMENT F

THIRD PARTY RELIANCE LETTER TEMPLATE

[Date]

[Name of Third-Party Representative]
[Third-Party's Full and Formal Name]
[Third-Party's Address]

Re: Agreement Concerning Release of Report
Report Number [Report Number]

Dear [Name of Third-Party Representative]:

The attached report was prepared pursuant to a specific scope of service and written contract between [Name of Kleinfelder's Client], (Client) and Kleinfelder, Inc., (Kleinfelder) dated [Date of Contract]. Client has given us permission to release the report to you. You may rely on this report as though it were addressed to you at the time of the issuance for a period of six months from the date of issuance, with the express understanding that Kleinfelder shall not be responsible for problems arising from events or changes that may have occurred subsequent to our preparation of said report.

This reliance letter is expressly contingent upon your acceptance of the General Terms and Conditions attached hereto and actual payment of $[Amount]. Your payment shall also indicate your acceptance of the attached General Terms and Conditions which include a provision limiting Kleinfelder's liability, whether such liability arises in breach of contract or warranty, tort (including negligence), strict or statutory liability, or any other cause of action, to the maximum extent permitted by law. This reliance letter shall be void in the event your acceptance and said consideration is not received within seven days of the above date.

Sincerely,

Kleinfelder, Inc.

[Name of Kleinfelder Representative]
[Representative's Title]

Attachments: Report
General Terms and Conditions

[Name of Third-Party Representative]
[Third-Party's Full and Formal Name]
[Third-Party's Address]

I acknowledge and accept the Letter Agreement Concerning Release of Report dated _____ regarding Report No. _____, including the attached General Terms and Conditions, and remit payment of the consideration in the amount of $_____.

_____ _____

[Name and Title] Date

KLEINFELDER, INC. GENERAL CONDITIONS (PROFESSIONAL SERVICES)

1. Services. This Agreement is entered into between Third Party and Kleinfelder, Inc. ("Consultant") wherein Third Party engages Consultant to provide a reliance letter to support professional services ("Services") in connection with the project for Consultant's client (Client) described in the proposal ("Project") to which these General Conditions apply. Third party agrees that services not specifically described in the Scope of Services identified in Consultant's proposal to Client are not included in the Scope of Services described by Consultant. This Agreement, including the original or any revised proposal, these General Conditions, any Consultant Addenda and Fee Schedule, represents the entire Agreement between the parties and supercedes any and all agreements between the parties, either oral or in writing, including any purchase or work order issued by Client or Third Party.

2. Work Product. Services provided under this Agreement, including all reports, information, recommendations, or opinions ("Reports") prepared or issued by Consultant, are for the exclusive use and benefit of Client or Third Party in connection with the Project, are not intended to inform, guide or otherwise influence any other entities or persons with respect to any particular business transactions, and should not be relied upon by any entities or persons other than Client or Third Party for any purpose other than the Project. Third Party will not distribute or convey such Reports to any other persons or entities without Consultant's prior written consent which shall include a release of Consultant from liability and indemnification by such party. Consultant's Reports, boring logs, maps, field data, drawings, test results and other work products are part of Consultant's professional services, do not constitute goods or products and are copyrighted works of Consultant. Third Party understands that Third Party may rely upon the final report for a period not to exceed 180 days from the date the report was issued by Consultant to the Client.

3. Standard of Care. Consultant has performed the Services in a manner consistent with that level of care and skill ordinarily exercised by members of the Consultant's profession practicing in the same locality under similar circumstances at the time the services were performed. This Agreement creates no other representation, warranty or guarantee, express or implied.

4. Limitation of Liability. Consultant's potential liability to Third Party is grossly disproportionate to Consultant's fee. Therefore, unless Third Party and Consultant otherwise agree in writing in consideration for an increase in Consultant's fee, Third Party, including its directors, officers, partners, employees, agents, contractors and their respective assigns, agree to limit Consultant's liability (whether arising from contract, statutory violation or tort) to the greater of $5,000 or the amount of Consultant's fee. This limitation of liability shall apply to all phases of Services performed in connection with this Project, whether subsequent to or prior to the execution of this Agreement. In no event shall Consultant be liable for consequential, incidental or special damages.

5. Indemnification. To the fullest extent permitted by law, Third Party, including its directors, officers, partners, employees, agents, contractors and their respective assigns, waives any claim against and agrees to indemnify, defend, and hold harmless Consultant, its directors, officers, employees and subcontractors from and against all claims, liability, damages, or expenses ("Claims") arising out of, in connection with or relating to any alleged act, failure to act, or other conduct of Consultant, including but not limited to, Claims alleging the negligence or other fault of Consultant, but specifically excepting Claims arising out of Consultant's sole negligence or willful misconduct. Third Party shall indemnify Consultant even if Third Party is partially or wholly without fault for such Claims.

6. Dispute Resolution. The parties shall attempt resolution of any dispute arising under or related to this Agreement by mediation. Either party may demand mediation by serving a written notice on the other party stating the essential nature of the dispute. The mediation shall be conducted in accordance with, but not under the supervision of, the AAA Construction Industry Mediation Rules then in effect within forty-five (45) days from the service of notice. The parties shall share the fees equally. If mediation fails, either party may institute litigation in the state or federal court of the county in which Consultant's office issuing the proposal is located. The prevailing party shall be entitled to attorneys' fees, cost, including costs incurred in the mediation and costs of enforcement of any judgment. The parties expressly waive any statute of limitations for a longer period of time and agree that any action shall be brought within one year from the date of Consultant's final report. The parties expressly waive any and all rights to a trial by jury in any action, proceeding or counterclaim brought by either of the parties against the other with respect to any matter relating to, arising out of or in any way connected with this Agreement.

7. Changed Conditions. If during the course of performance of this Agreement conditions or circumstances were discovered which were not contemplated by Consultant at the commencement of the agreement, Consultant shall notify Third Party of the newly discovered conditions or circumstances, and Third Party and Consultant shall renegotiate, in good faith, the terms and conditions of this Agreement. If amended terms and conditions cannot be agreed upon within thirty (30) days after notice, Consultant may terminate this Agreement.

8. Governing Law. The laws of the State where the Agreement was entered into shall govern interpretation of this Agreement. If any term is deemed unenforceable, the remainder of the Agreement shall stay in full force and effect.

9. Additional Provisions. Neither party may assign its interest in this Agreement without the prior written consent of the other. Any modification to this Agreement will be effective only if it is in writing signed by the party to be bound, except that if Consultant has performed services in reliance on Third Party's verbal approval to proceed, Third Party shall be bound by such verbal approval. One or more waivers of any term, condition or covenant by either party shall not be construed as a waiver of any other term, condition or covenant. This Agreement may be signed in counterpart.

Terracon
2115 South 56th Street, Suite 405
Tacoma, Washington 98409
(253) 573-9939 Fax: (253) 573-9959

June 16, 2008

WinCo Foods
650 N. Armstrong Place
Boise, Idaho 83704

Attn: Mr. Ty Morrison

Re: **Report of Preliminary Geotechnical Evaluation**
Proposed WinCo Food Store
Fircrest, Washington
Terracon Job No. B2085019

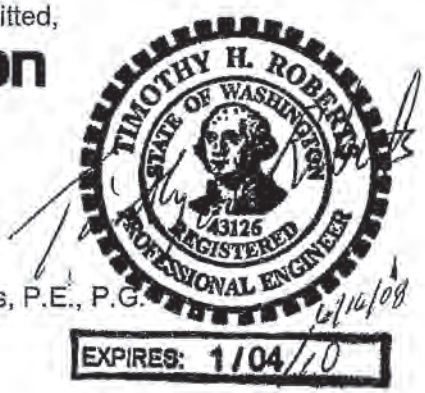
Dear Mr. Morrison:

Terracon is pleased to submit this draft report of our preliminary geotechnical engineering evaluation for the proposed WinCo Food Store located at 2119 Mildred Street West in Fircrest, Washington. Our services have been completed in general accordance with the scope of work in our proposal (B2082036) dated April 28, 2008 as authorized on April 30, 2008.

Our scope of services included field explorations, laboratory testing, engineering analyses, and preparation of this report. The purpose of this preliminary report is to provide planning-level geotechnical information; final design analyses are recommended prior to construction. These final design analyses may require additional field and laboratory testing.

We appreciate the opportunity to provide these services. Please call if you have any questions.

Respectfully Submitted,
Terracon



Timothy H. Roberts, P.E., P.G.
Senior Associate

John E. Zipper, P.E.
Senior Vice President

GEOTECHNICAL ENGINEERING REPORT
PROPOSED WINCO FOOD STORE
FIRCREST, WASHINGTON

Project No. B2085019
June 16, 2008

Prepared For:

WinCo Foods
650 N. Armstrong Place
Boise, Idaho 83704

Prepared By:

Terracon

Tacoma, Washington

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Figure 1: Site and Exploration Plan
Field Exploration Logs
General Notes and Unified Soil Classification System

PRELIMINARY GEOTECHNICAL ENGINEERING REPORT
PROPOSED WINCO FOODS STORE, FIRCREST, WASHINGTON

INTRODUCTION

In accordance with your request and written authorization, Terracon has completed a geotechnical engineering evaluation for the proposed **WINCO FOODS STORE** in Fircrest, Washington. The purpose of the study was to establish general subsurface conditions at the site from which preliminary conclusions regarding foundation support, earthwork and design and construction considerations could be formulated. The scope of our work consisted of field explorations, laboratory testing, geotechnical engineering analysis, and preparation of this report.

This report is an instrument of service and has been prepared in accordance with generally accepted geotechnical engineering practices for the exclusive use of Winco Foods, and their agents, for specific application to this project and the stated purpose. In the event of any changes in the nature, design, or location of the proposed structures, the conclusions and recommendations presented in this report should be reviewed and modified, if necessary, to reflect the changes.

SCOPE

The purpose of the geotechnical engineering evaluation was to characterize the site's subsurface conditions as a basis for providing preliminary geotechnical engineering conclusions regarding site preparation and grading, underground utility installation, pavement design, and design and construction of the proposed building's foundations and floor slabs. Our scope of services included a surface reconnaissance, subsurface explorations, geotechnical laboratory testing, geotechnical engineering analysis, and preparation of this report. However, our scope of services did not include sampling and testing relative to environmental characterization of the site.

The purpose of this preliminary report is to provide planning-level geotechnical information; final design analyses are recommended prior to construction. These final design analyses may require additional field and laboratory testing.

PROJECT DESCRIPTION

We understand that the project includes the development of a new WinCo Food store and two smaller commercial buildings with paved parking/access. We anticipate that the proposed WinCo building will be a raised one-story, structural steel building, consisting of CMU or concrete tilt panels, and concrete

slab-on-grade floors. Although we are unaware of the two smaller structures, we anticipate that conventional spread footing foundations and slab-on-grade floors are planned. Retaining walls are expected along the eastern boundary to accommodate the parking lots.

Currently, the WinCo Food store building is planned for the northwestern portion of the property with paved ingress/egress from Mildred Street West and parking in the southern and eastern portions. The two smaller commercial buildings are currently planned for the southwestern portion of the site.

We anticipate that significant grade changes are not expected at this site. Additional fill behind the anticipated retaining walls will be required to increase parking area in this area of the development.

Per the WinCo Foods Inc. Design Manual, maximum dead interior column loads of 65 kips and continuous perimeter loads of 2.7 kips per lineal foot are planned for the food store structure.

SITE EXPLORATION PROCEDURES

Field Exploration

Nine hollow-stem auger boreholes were completed at the site on May 19, 2008. Soil samples were collected every 2.5 feet for the first 10 feet of drilling and then every 5 feet thereafter. The approximate locations of the explorations are shown on Figure 1 – Site and Exploration Plan. The borings were advanced to depths ranging between 15.5 and 41.5 feet below the existing ground surface. Copies of the boring logs are attached to this report.

Terracon personnel marked the boring locations on the site, and the approximate locations of the borings are shown on Figure 1. Distances from the boring locations to the reference features shown on the attached diagram are approximate and were measured with a tape or rolling measuring wheel. Right angles for the boring location measurements were estimated. The locations of the borings should be considered accurate only to the degree implied by the means and methods used to define them.

The borings were drilled with a truck-mounted drill rig using continuous hollow stem augers to advance the boring. Soil samples were obtained using split-barrel sampling procedures. In the split-barrel sampling procedure, a standard 2-inch O.D. split-barrel sampling spoon is driven into the ground with a 140-pound hammer falling a distance of 30 inches. The number of blows required to advance the sampling spoon the last 12 inches of a normal 18-inch penetration is recorded as the Standard Penetration Test (SPT) resistance value. The SPT values, also referred to as N-values, are indicated on the boring logs at the depths of occurrence. The samples were sealed and sent to the laboratory for testing and classification.

The field geologist prepared a field log of each boring. These logs included visual classifications of the materials encountered during drilling and excavation as well as the field geologist's

interpretation of the subsurface conditions between samples. The boring logs are enclosed with this report and represent an engineer's interpretation of the field logs and include modifications based on laboratory observation and test results of the samples.

SITE CONDITIONS

The property is generally level throughout most of the site except for a moderately steep slope along the eastern boundary. An abandoned one story structure is located along the western portion of the property, with paved access and parking off of Mildred Street. Some cyclone fencing is present around the building and perimeter of the property. Vegetation on the site consists principally of grasses, weeds, scotch broom, and berry vines.

Based on information gathered during a Phase I Environmental Site Assessment (ESA) for the site (under separate cover), fill appears to have been place over significant portions of the site on several occasions between the early 1970s and the late 1990s. We understand the fill was imported from nearby construction and road projects, but reportedly only lower portions of the fill had been compacted when placed. The site is generally at a similar elevation compared to properties to the north, at a lower elevation compared with properties to the west across Mildred Street, and at a higher elevation compared to properties to the south and east.

Review of a previous geotechnical report prepared by Kleinfelder of the site (report dated August 22, 2005) appears to confirm the presence of substantial fill thicknesses over the central and eastern portions of the site. Fill thickness up to 33 feet were documented by Kleinfelder.

Subsurface Conditions

Based on observations of soil samples from the borings, fill thickness appears to range from approximately 0 to 5 feet near borings located in the western portion of the site (borings B-2, B-3, B-8, and B-9), approximately 7.5 to 25 feet near borings located in the central portion of the site (borings B-1, B-4, and B-5), and of an unknown thickness near borings located in the eastern portion of the site (borings B-6 and B-7). Previous investigations of the site by others encountered fill thicknesses of up to 33 feet. This fill consisted principally of sand with variable silt and gravel and ranged from a very loose to medium dense condition. Variable amounts of organics were observed in the fill. We observed no apparent correlations across the site between density and depth in the fill.

Beneath the fill, native soils appear to consist predominantly of silty sand to sand with silt and varying amounts gravel. We interpret these native soils to represent glacial till deposits. These native soils are in an overall dense to very dense condition.

Kleinfelder's 2005 report indicate that they encountered substantial organic material in their borings located in the eastern portion of the site. Additionally, a reported possible void was encountered within the fill in one of their borings near the southern property boundary (center of site).

Water Level Observations

No groundwater was observed at the time of drilling. Soils were generally moist throughout the bore holes. Wetter conditions were identified within the fill in boring B-5, at a depth of approximately 15 to 20 feet. Based on the 1962 *Water Resources of the Tacoma Area, Washington, a* water supply bulletin published by the USGS, groundwater in the area is estimated to be on the order of 50 feet below the original ground surface. However, it should be anticipated that groundwater levels, perched water levels, and soil moisture conditions will vary throughout the year according to seasonal precipitation trends, and other on- and off-site factors. Evaluation of these factors is beyond the scope of this report.

PRELIMINARY CONCLUSIONS AND RECOMMENDATIONS

The purpose of this preliminary report is to provide planning-level geotechnical information; final design analyses are recommended prior to construction. These final design analyses may require additional field and laboratory testing.

The presence of the undocumented fill will impact development of this site. Due to the overall loose condition and thickness, the undocumented fill is not considered suitable for support of the planned buildings. Building loads on this fill will likely cause both excessive total and differential settlement. Settlement of the fill should also be anticipated in pavement (or other non-building) areas.

Because of the condition described above, some form of ground improvement or special treatment will be necessary to construct at this site to reduce potential damaging settlement. While additional geotechnical exploration should be conducted to determine actual design recommendations and costs, we have provided preliminary recommendations that can be used for preliminary planning purposes.

One ground improvement option is to remove the existing undocumented fill and replace it with new structural fill. However, this option would require removal of substantial amounts of soil and is anticipated to be costly. If only fill in the building portion of the site were removed and replaced, replacement costs could be substantially reduced.

A second option consists of improving the existing fill conditions within the building area and could consist of a stone column system or ground improvement system such as Geopiers®. These stone column methods would improve the bearing capacity of site soils and reduce potential settlement (both static and seismic). Other pier (or pile) methods could be considered, but should be evaluated separately.

Additional information about these foundation support options are further discussed in the "Foundations" section of this report. Currently, we are unaware of planned final grades for this site,

but assume that they will be near existing site grades. Therefore, the information presented in the following sections should be considered preliminary until final grades have been established. Additional geotechnical explorations, laboratory testing, and geotechnical engineering analyses may be necessary at this site to further assess subsurface conditions and the proposed development.

General Site Preparation

The following general site preparation and earthwork sections have been prepared under the assumption that existing site grades are near planned finish grades.

All preparation for site grading and construction should include procedures intended to drain ponded water, control surface water runoff, and to collect shallow subsurface seepage zones in excavations. We anticipate draining or dewatering of the site will be necessary to remove/replace the existing undocumented fill. Free water should not be allowed to pond on the subgrade soils. We expect the use of berms and shallow drainage ditches, with sumps and pumps would be needed for surface water control during wet weather and wet site conditions.

Site disturbance beyond the work area should be limited to reduce the potential for erosion and off-site sediment transport. Well-marked clearing limits should be field staked prior to start of construction.

Earthwork

Construction activities that will be required to develop this site will be dependent on the selected building and pavement support methods. As such, the following general earthwork procedures should be considered preliminary and only intended for areas of the site where dense native glacial till will be encountered at final subgrade elevations, which appear to be located along the western portion of the site.

We recommend that all existing fill and any topsoil or loose or other unsuitable materials observed during stripping of the site be removed from planned building and pavement areas. Following stripping, the exposed subgrade should consist of the native soils. We recommend that the building and pavement areas be proofrolled with a heavy (20 ton) vibratory compactor or loaded dump truck. The purpose of the proofrolling is to identify soft or unsuitable areas that should be overexcavated and replaced with structural fill. Proofrolling and compaction should be observed by a representative from our firm. This observer will assess the subgrade conditions prior to placement of any structural fill.

Soft, loose or disturbed subgrade soils should be overexcavated to expose undisturbed native soils and backfilled with compacted structural fill. We recommend that the earthwork portion of this project be completed during extended periods of dry weather, if possible. Excavated site soils may not be suitable as structural fill depending on soil type, the moisture content, and weather

conditions at the time of construction. If soils are stockpiled for future reuse and wet weather is anticipated, the stockpile should be adequately protected to prevent increases in moisture content. If on-site soils become unusable, it will be necessary to import clean, granular soils to complete wet weather site work.

If earthwork is completed during the wet season, it will be necessary to take extra precautionary measures to protect subgrade soils. Wet season earthwork may require additional mitigative measures beyond that which would be expected during the drier summer and early fall months.

The contractor(s) is responsible for designing and constructing stable, temporary excavations as required to maintain stability of both the excavation sides and bottom, and for protecting existing facilities/utilities. Excavations should be sloped or shored in accordance with local, state and federal regulations, including current OSHA (or WISHA) excavation and trench safety standards. Due to the loose to very loose condition of observed fill, shoring (trench boxes or other) will likely be required for deeper excavations as sloughing is expected.

Structural Fill

All fill within building and pavement areas should be placed as structural fill. The structural fill should be placed after removal of any loose, soft or deleterious materials and after the site has been prepared in accordance with the "Site Preparation" and "Earthwork" sections of this report.

Structural fill should be placed in lifts not exceeding 10 inches in thickness and thoroughly compacted to at least 95 percent of the maximum dry density (MDD) as described by the ASTM D-1557 test procedure. We recommend that a representative from our firm be present during placement of the structural fill to monitor fill operations and perform field density tests. In pavement areas where new fill thickness is greater than two feet, the structural fill below two feet can be placed at a compaction level of at least 92 percent of the MDD. These same density requirements apply to utility trench backfill as well.

The suitability of excavated site soils and import soils for compacted structural fill use will depend on the gradation and moisture content of the soil when it is placed. As the amount of fines (that portion passing the U.S. No. 200 sieve) increases, soil becomes increasingly sensitive to small changes in moisture content and adequate compaction becomes more difficult or impossible to achieve. Soils containing more than about 5 percent fines cannot be consistently compacted to a dense, non-yielding condition when the moisture content is more than 2 percent above or below optimum. Optimum moisture content is that moisture which results in the greatest compacted dry density with a specified compactive effort. We recommend that imported structural fill beneath the WinCo building should consist of granular material conforming to the requirements in section 9-03.14(1) Gravel Borrow of the Washington State 2006 Standard Specifications for Road, Bridge, and Municipal Construction.

Non-organic site soils, including portions of the existing fill, are considered suitable for structural fill provided that their moisture content is within roughly 2 percent of the optimum moisture level as determined by the ASTM D-1557 test. With these soils, moisture conditioning is generally only considered feasible or cost-effective during extended periods of dry weather. Even during the summer, delays in grading can occur due to excessively high moisture conditions of the soils or due to precipitation. If wet weather occurs, the upper wetted portion of the site soils may need to be scarified and allowed to dry prior to further earthwork.

Please note that substantial portions of the existing fill contain organics. Organic rich fill soils are not reusable as structural fill and will need to be separated from more suitable fill soils for use as structural fill. Separating suitable and unsuitable existing fills will require special care and additional time by the earthwork contractor.

Drying of the site soils may only be accomplished during favorable dry weather and will involve spreading/turning the soil, allowing the exposed soil to dry, and stockpiling of dried soil. We therefore recommend that grading on this site be scheduled for the driest time of year, if possible. We also recommend that the contractor anticipate significant, but unavoidable commitment of effort to adjust the moisture content of site soils for reuse in compacted fills. If it is not possible to complete the earthwork during dry weather, the owner and general contractor should anticipate that a significant portion of the site soils will not be available for reuse as fill for utility backfill or grading. When moisture conditioning of the soils is required, we recommend that the soils be blended to provide uniform moisture contents throughout the affected soils.

Placement and compaction of structural fill should be observed by a representative from our firm. A representative number of in-place density tests should be performed as the fill is being placed to determine if the recommended level of compaction is being achieved.

Foundations

The existing undocumented fill is not suitable for direct support of foundations. As stated above, some type of ground improvement for foundation support will be necessary at this site. Other alternatives or variations of those presented below could be used, but should be evaluated as development plans are prepared. The feasibility of foundation support alternatives and associated construction costs will vary depending on final design site grades.

Existing Fill Replacement with Structural Fill

The building could be supported on a zone of structural fill following the removal of all existing undocumented fill. New structural fill should be placed in accordance with the recommendations presented in the "Structural Fill" section of this report.

For foundations supported on a structural fill pad, the depth of embedment for all conventional exterior footings following structural fill placement should be at least 18 inches below lowest

adjacent surface grade. Interior footings should be at least 12 inches below finish floor grade. We recommend a minimum footing width of 24 inches for continuous wall footings and 36 inches for isolated column footings. For footings supported on a zone of structural fill placed on native soils, we estimate that an allowable bearing pressure in the range of 3,000 pounds per square foot (psf) may be feasible.

Please note that substantial differences in fill thickness will be present between the western portion of the site (0 to 5 feet) and the eastern portion (up to 25 feet per borings B-4 and B-5). Fill thickness could be larger in other areas. Therefore, even though new structural fill compacted to 95 percent of the ASTM D 1557 test method will provide suitable bearing for the structure, some additional settlement should be anticipated in the thicker fill zones under building loads. This phenomenon could be remediated by letting the new fill sit for a period of time or by adding a pre-load surcharge to the new fill to mimic building loads and initiate settlement.

Geopiers®

Geopiers are a proprietary soil improvement system consisting of rammed (compacted) aggregate columns used to improve the strength and support characteristics of loose or soft soil zones. These stone columns can also reduce expected total and differential settlements of structures. On a preliminary basis, we anticipate that these piers would extend on the order of 15 to 30 feet deep. We are available to assist in contacting the local Geopier representative regarding design and construction costs for this method.

The advantage to the Geopier (or other soil improvement method) is to increase overall bearing capacity (allowable footing loads) and reduce expected settlements. Depending on the depth and spacing of these columns, allowable bearing pressures on the order of 4,000 psf could be attained, with total and differential settlements (over a 30 foot span) of less than 1-inch and ½-inch, respectively. Other stone column systems (e.g. vibropiers) could also be considered. If a stone column system is determined to be preferable for this site, we can also initiate contacts with other stone column contractors.

Seismic Design Considerations

Based on subsurface conditions encountered in the explorations and our familiarity with area soils, the native soils are interpreted to correspond to Site Class C per the 2006 *International Building Code* (IBC). Site Class C applies to an average soil profile within the top 100 feet consisting predominantly of a very dense soil characterized by Standard Penetration Test blow counts greater than 50, a shear wave velocity of 1,200 to 2,500 feet per second, and undrained shear strength greater than 2,000 psf.

We recommend that spectral response accelerations per Figures 1613.5(1) and 1613.5(2), as presented in the 2006 IBC, be used in design. We are available to provide site-specific spectral response accelerations, if required.

Soil liquefaction is a condition where loose granular soils located below the groundwater surface lose strength during ground shaking associated with an earthquake. Due to the dense to very dense condition of native site soils, the risk of liquefaction is considered low at this site. However, if existing fills were left in place in their current loose condition, some additional settlement of these fills could occur during a seismic event. Because the condition of the fill and thickness vary considerably over the site, it is extremely difficult to estimate the magnitude of potential settlement with the subsurface information collected for this study. However, differential settlements on the order of several inches are considered possible in areas with significant fill thickness that is in a loose condition.

On-grade Floor Slabs

Support for on-grade concrete floors should be treated the same as foundations. The existing fill is not considered suitable for support of floor slabs without the risk of significant differential settlement. Floor slabs should be supported on a zone of new compacted structural fill that extends to competent native soils, or on existing fill that has been improved via Geopiers or other suitable method.

The use of a vapor retarder should be considered beneath concrete slabs that will be covered with wood, tile, carpet or other moisture sensitive or impervious coverings, or when the slab will support equipment sensitive to moisture. When conditions warrant the use of a vapor retarder, the slab designer and slab contractor should refer to ACI 302 for procedures and cautions regarding the use and placement of a vapor retarder.

The standard WinCo criteria of a 5-inch thick unreinforced concrete slab should be reviewed by a structural engineer considering the settlement sensitive fill. Depending on the selected method of foundation and floor slab support and type of remediation for the existing fill, some reinforcement may be necessary to reduce the potential for slab distress related to settlement of subgrade soils.

Pavement Subgrades

The western portion of the site with the existing building appears likely to have native glacial till deposits within shallow depths of the surface. However, the majority of the proposed parking area is underlain by thick sections of undocumented fill. Fill thickness in the eastern portion of the site is anticipated to be equivalent to the height of the east-facing slope. The condition of the existing fill was variable, but substantial areas appear to be in a loose condition at the boring locations. Additionally, we are unaware of monitoring or compaction testing of the fill at the time of placement. Therefore, we consider the existing fill to be susceptible to settlement under pavement loads. However, if the owner were willing to accept the potential risk of detrimental settlement of the new pavements (and possible additional maintenance costs), the existing fill (or portions of the fill) could be left in place.

As a minimum, we recommend that at least 2 feet of existing fill is removed from pavement areas. The exposed subgrade should then be proofrolled as described in the "**Earthwork**" section of this report. New structural fill should then be placed as described in the "**Structural Fill**" section of this report to raise parking areas to subgrade elevations.

Overall, subgrade preparation for new pavements should conform to "Subgrade Preparation", as referenced in Specification 2-06 of WSDOT 2006 Standard Specifications for Road, Bridge, and Municipal Construction. Areas that are soft should be repaired as appropriate. Repair should consist of the overexcavation of the unsuitable soil to undisturbed soil and replacement with "Gravel Base", as referenced in Section 9-03.10 of WSDOT 2006 Standard Specifications for Road, Bridge, and Municipal Construction. Alternative fill soils should only be used if approved by the engineer. We recommend that the exposed subgrade be observed by a representative from our firm to assess the adequacy of subgrade conditions, and to identify areas needing remedial work.

Subgrades below pavement sections should be graded to promote drainage under the pavement section and not allow for ponding of water beneath the section. If drainage is not provided and ponding occurs, the subgrade soils could become saturated, loose strength, and result in premature distress to the road/parking areas. In addition, the asphalt surface should be graded or crowned to promote drainage and reduce the potential for ponding of water on the pavement surface.

Support of pavements on or above existing fill soils is discussed in this report. However, even with the recommended construction testing services, there is an inherent risk for the owner that compressible fill or unsuitable material within or buried by the fill will not be discovered. This risk of unforeseen conditions cannot be eliminated without completely removing the existing fill, but can be reduced by performing additional testing and evaluation.

Asphalt surfacing should consist of a HMA asphalt with 1/2-inch aggregate conforming to Specifications 9-03.8(6) "Proportions of Materials" of the WSDOT 2006 Standard Specifications and/or to applicable Fircrest codes. Imported base material under concrete asphalt pavement should conform to Specification 9-03.9(3) of the WSDOT 2006 Standard Specifications. Base materials should be moisture conditioned and compacted to a minimum of 95 percent of the maximum dry density per ASTM D-1557, or equivalent density per other approved test method.

On a preliminary basis, we anticipate that the pavement section for the passenger vehicle parking area will consist of a minimum of 3-inches of asphalt; over at least 6-inches of base course material, over firm native soils or structural fill/gravel borrow. Heavy-duty pavement sections will consist of at least 4-inches of asphalt; over 6-inches of compacted base course; over firm subgrade soils (compacted to at least 95 percent of the ASTM D-1557 test method). A revised pavement section may be required once additional information about the expected number of ESALs is known. This pavement section may also require modifications based on subgrade conditions and

final grades. All pavement sections should be designed to conform to applicable Fircrest codes and design traffic loadings.

Retaining Walls

To accommodate the planned parking area a retaining wall along the east boundary of the property is expected at this time. This portion of the site includes the steeper east-facing slope. As mentioned previously, it appears that this slope is comprised mostly of existing fill materials. We were unable to access the lower portion of the slope to perform any subsurface evaluations for this preliminary evaluation, but anticipate that native soils are within 5 to 10 feet of the existing surface along the eastern property boundary based on information in the Kleinfelder report. This should be confirmed prior to design of any retaining wall system, as it may significantly affect the design itself and construction costs.

There are a variety of retaining structures that could be considered for this site to raise grades in the eastern portion of the site for parking lot expansion. Conventional reinforced concrete walls, MSE walls with block facing, and gravity walls (such as gabions or Hilfiker®), among others could be considered. We are available to provide additional wall recommendations and designs once more information regarding final site layout, grades, and potential wall heights are known.

Drainage Considerations

We recommend that footing drains be installed around the perimeter of the proposed building. These drains should consist of a minimum 4-inch diameter perforated pipe embedded in at least an 18-inch wide envelope of clean, free-draining granular material containing less than 5 percent fines (material passing the U.S. No. 200 sieve). Footing drains should be directed toward appropriate storm water drainage facilities and not onto adjacent slopes. Roof drains should not be connected to the footing drains. Soils backfilled against foundations should be sloped to provide positive drainage away from structures.

Erosion

Based on soils observed at the site, we expect them to have moderate erosion potential. We recommend that earthwork activities be completed during the drier seasons of the year, if possible, to mitigate erosion issues.

Erosion and sedimentation Best Management Practices (BMPs) are recommended during construction to reduce the potential impacts to sloped areas and adjacent properties. Erosion control measures should be designed to prevent sediment generation and transport. Methods that may help accomplish this include establishing highly visible clearing limits, constructing water bars, sediment traps, or utilizing other methods to control surface water runoff, and constructing silt fences to control sedimentation. If construction is accomplished during the winter months, we further recommend that temporary erosion protection be provided consisting of covering exposed soil areas with plastic sheeting, jute mating, straw, or other approved protective covering. We recommend that the amount of soil-exposed areas be limited during grading activities, particularly during the wetter seasons, to reduce the potential for off-site transport of sediment-laden runoff. All grading limitations and erosion control measures should conform to current Pierce County requirements. The means and methods used to accomplish adequate erosion control are the responsibility of the contractor.

GENERAL COMMENTS

This report summarizes our preliminary exploration to provide general geotechnical guidelines for planning and development of the site. Specific geotechnical explorations should be performed for retaining walls to determine site specific design parameters.

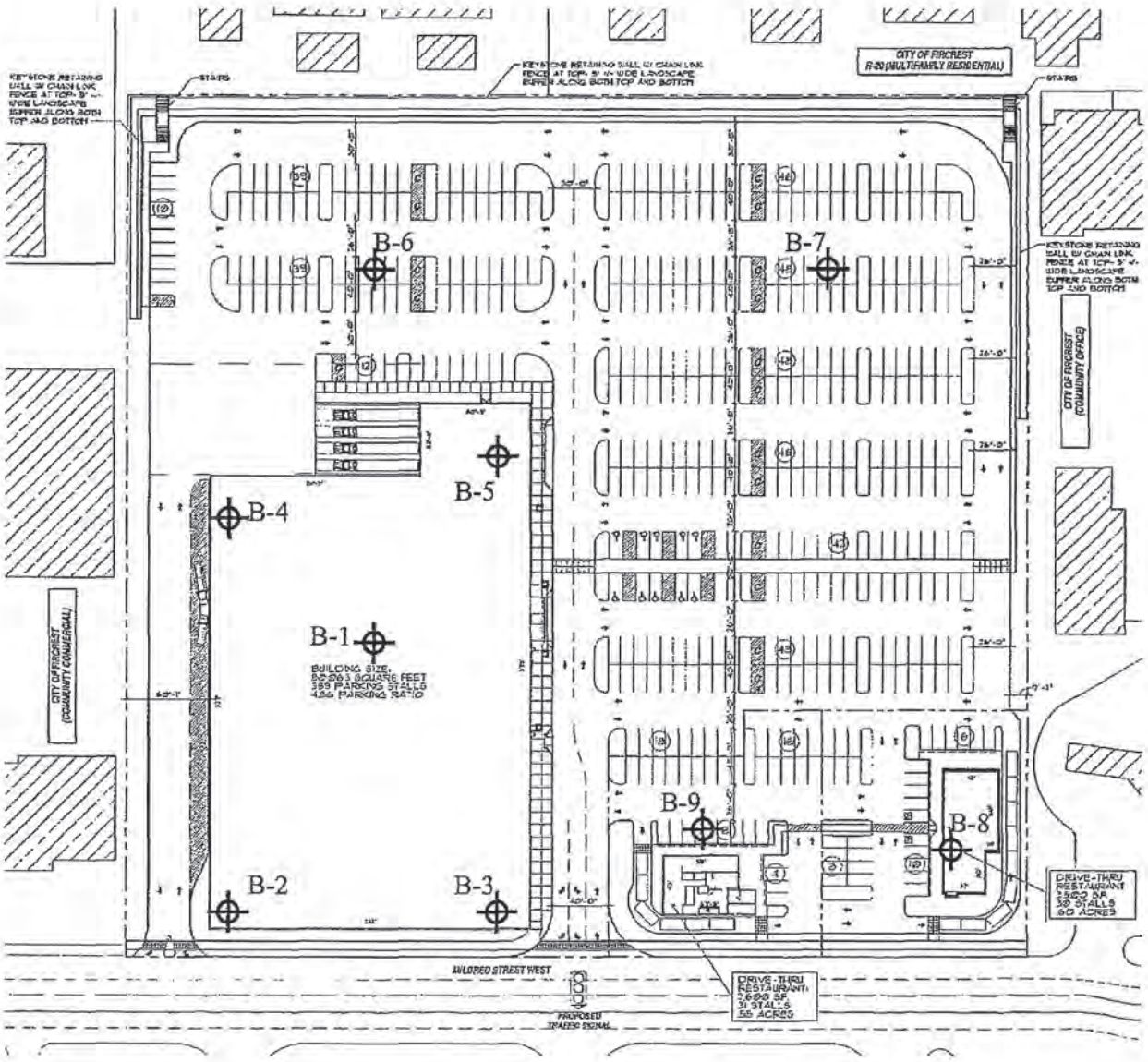
Terracon should be retained to review the final design plans and specifications so comments can be made regarding interpretation and implementation of our geotechnical recommendations in the design and specifications. Terracon should also be retained to provide observation and testing services during grading, excavation (including removal of undocumented fill soils), foundation construction and other earth-related construction phases of the project.

The analysis and recommendations presented in this report are based upon the data obtained from the borings performed at the indicated locations and from other information discussed in this report. This report does not reflect variations that may occur between our explorations, across the site, or due to the modifying effects of weather. The nature and extent of such variations may not become evident until during or after construction. If variations appear, we should be immediately notified so that further evaluation and supplemental recommendations can be provided.

The scope of geotechnical engineering services for this project does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, and bacteria) assessment of the

site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

This report has been prepared for the exclusive use of WinCo Foods, Inc. for specific application to the project discussed and has been prepared in accordance with generally accepted geotechnical engineering practices. No warranties, either expressed or implied, are intended or made. Site safety, excavation support, and dewatering requirements are the responsibility of others. In the event that changes in the nature, design, or location of the project as outlined in this report are planned, the conclusions and recommendations contained in this report shall not be considered valid unless Terracon reviews the changes and either verifies or modifies the conclusions of this report in writing.



Legend

B-1 Approximate boring location and boring number

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

SITE AND EXPLORATION PLAN
PROPOSED FIRCREST WINCO
2119 MILDRED STREET WEST
FIRCREST, WASHINGTON

Project Mngr: THR	Terracon	Project No.	B2085019
Designed By:	2115 South 56th Street #405 Tacoma, Washington	Scale:	Not to Scale
Checked By:		Date:	06/30/2008
Approved By:		Drawn By:	AJD
File Name:		Figure No.	1

LOG OF BORING NO. B-1

CLIENT: WinCo Foods, Inc.

SITE: 2119 Mildred Street West, Fircrest, Washington

PROJECT: WinCo Fircrest

GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES RECOVERY, in.	SAMPLES SPT - N BLOWS / ft.	TESTS WATER CONTENT, %	TESTS DRY UNIT WT pcf	TESTS UNCONFINED STRENGTH, psf
	0.5 **SANDY GRAVEL** Gray, Medium Dense, Dry (Fill)									
	SILTY SAND Brown, Very Loose, Moist (Probable Fill)			S1	SS	3	2			
	Medium Dense, Organics	5		S2	SS	6	17			
	7.5 **SILTY SAND, WITH GRAVEL** Gray, Very Dense, Moist (Possible Glacial Till)			S3	SS	9	50/6			
	10 **GRAVELLY SILTY SAND** Gray, Very Dense, Moist (Glacial Till)	10		S4	SS	12	50/5			
	15 **SILTY SAND, WITH GRAVEL** Gray, Very Dense, Moist (Glacial Till)	15		S5	SS	18	50/4			
	20.5 Bottom of Boring	20		S6	SS	6	50/4			

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

*CME 140H SPT hammer

WATER LEVEL OBSERVATIONS, ft		
WL	▽	▼
WL	▽	▼
WL		

Terracon

BORING STARTED	5-19-08		
BORING COMPLETED	5-19-08		
RIG	Track Rig	DRILLER	Boretec
LOGGED	AJD	JOB #	B2085019

BOREHOLE 99 WINCO FIRCREST BORING LOGS.GPJ TERRACON.GDT 5/27/08

LOG OF BORING NO. B-2

CLIENT: WinCo Foods, Inc.

SITE: 2119 Mildred Street West, Fircrest, Washington

PROJECT: WinCo Fircrest

GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES RECOVERY, in.	SAMPLES SPT - N BLOWS / ft.	TESTS WATER CONTENT, %	TESTS DRY UNIT WT pcf	TESTS UNCONFINED STRENGTH, psf
	0.2 **Approximately 2 Inches of Asphalt**									
	1 **GRAVEL, WITH SAND** Gray, Medium Dense, Dry (Fill)									
	SILTY SAND, WITH GRAVEL Orangish Brown, Loose, Moist (Fill)			S1	SS	6	9			
	5	5								
	SILTY SAND, WITH GRAVEL Gray, Dense, Moist (Glacial Till)			S2	SS	3	40			
	7.5									
	8 **SAND, WITH GRAVEL** Brown, Very Dense, Moist			S3	SS	12	51			
	8.5									
	9 **GRAVELLY SILTY SAND** Gray, Very Dense, Moist to Wet (Glacial Till)	10		S4	SS	6	50/5			
	SAND, WITH GRAVEL Brown, Very Dense, Moist									
	GRAVELLY SILTY SAND Gray, Very Dense, Moist (Glacial Till)									
	15	15		S5	SS	3	50/3			
	SILTY SAND, WITH GRAVEL Light Gray, Very Dense, Dry, Cobbles (Glacial Till)									
	Gray, Moist	20		S6	SS	15	67			
	21.5									
	Bottom of Boring									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

*CME 140H SPT hammer

WATER LEVEL OBSERVATIONS, ft		
WL	▽	▼
WL	▽	▼
WL		

Terracon

BORING STARTED	5-19-08		
BORING COMPLETED	5-19-08		
RIG	Track Rig	DRILLER	Boretec
LOGGED	AJD	JOB #	B2085019

BOREHOLE 99 WINCO FIRCREST BORING LOGS.GPJ TERRACON.GDT 5/27/08

LOG OF BORING NO. B-3

CLIENT: WinCo Foods, Inc.

SITE: 2119 Mildred Street West, Fircrest, Washington

PROJECT: WinCo Fircrest

GRAPHIC LOG	DESCRIPTION	DEPTH, ft	USCS SYMBOL	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES RECOVERY, in.	SAMPLES SPT - N BLOWS / ft.	TESTS WATER CONTENT, %	TESTS DRY UNIT WT pcf	TESTS UNCONFINED STRENGTH, psf
	0.2 Approximately 2 Inches of Asphalt									
	0.5 GRAVEL, WITH SAND Gray, Medium Dense, Dry (Fill)									
	SILTY GRAVELLY SAND Gray, Very Dense, Moist (Glacial Till)			S1	SS	12	71			
	5	5								
	GRAVELLY SAND, WITH SILT Gray, Very Dense, Moist, Cobbles (Glacial Till)			S2	SS	3	50/3			
				S3	SS	NR	50/4			
	10	10								
	GRAVELLY SILTY SAND Gray, Very Dense, Moist (Glacial Till)			S4	SS	18	96/11			
	15	15		S5	SS	9	50/6			
	SILTY GRAVELLY SAND Gray, Very Dense, Moist (Glacial Till)									
	20	20								
	20.5 SILTY SAND, WITH GRAVEL Gray, Very Dense, Moist (Glacial Till)			S6	SS	6	50/5			
	Bottom of Boring									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

*CME 140H SPT hammer

WATER LEVEL OBSERVATIONS, ft		
WL	▽	▼
WL	▽	▼
WL		

Terracon

BORING STARTED			5-19-08
BORING COMPLETED			5-19-08
RIG	Track Rig	DRILLER	Boretec
LOGGED	AJD	JOB #	B2085019

BOREHOLE 99 WINCO FIRCREST BORING LOGS.GPJ TERRACON.GDT 5/27/08

LOG OF BORING NO. B-4

CLIENT: WinCo Foods, Inc.

SITE: 2119 Mildred Street West, Fircrest, Washington

PROJECT: WinCo Fircrest

GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES RECOVERY, in.	SAMPLES SPT - N BLOWS / ft.	TESTS WATER CONTENT, %	TESTS DRY UNIT WT pcf	TESTS UNCONFINED STRENGTH, psf
	0.3 **Approximately 3 Inches of Topsoil**									
	SILTY SAND, TRACE GRAVEL Brownish Gray, Medium Dense, Moist (Fill)			S1	SS	12	16			
	5 **GRAVELLY SAND, WITH SILT** Dark Gray, Medium Dense, Moist (Fill)	5		S2	SS	3	16			
	7.5 **SILT, WITH SAND** Black, Loose, Moist, Organics (Fill)			S3	SS	9	4			
	10 **SILTY SAND, WITH GRAVEL** Gray, Loose, Wet (Fill)	10		S4	SS	6	4			
	15 **SILTY SAND, TRACE CLAY AND GRAVEL** Dark Brown, Medium Dense, Moist (Fill)	15		S5	SS	3	17			
	20 **SILTY SAND, TRACE GRAVEL** Dark Brown, Medium Dense, Moist, Trace Organics (Probable Fill)	20		S6	SS	9	16			
	25	25								

Continued Next Page

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

*CME 140H SPT hammer

WATER LEVEL OBSERVATIONS, ft		
WL	▽	▼
WL	▽	▼
WL		

Terracon

BORING STARTED	5-19-08		
BORING COMPLETED	5-19-08		
RIG	Track Rig	DRILLER	Boretec
LOGGED	AJD	JOB #	B2085019

BOREHOLE 89 WINCO FIRCREST BORING LOGS.GPJ TERRACON.GDT 5/27/08

LOG OF BORING NO. B-4

CLIENT: WinCo Foods, Inc.

SITE: 2119 Mildred Street West, Fircrest, Washington

PROJECT: WinCo Fircrest

GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES RECOVERY, in.	SAMPLES SPT - N BLOWS / ft.	TESTS WATER CONTENT, %	TESTS DRY UNIT WT pcf	TESTS UNCONFINED STRENGTH, psf
	GRAVELLY SILTY SAND Gray, Very Dense, Moist (Glacial Till)			S7	SS	9	50/4			
	30	30								
	SILTY SAND, WITH GRAVEL Gray, Very Dense, Moist (Glacial Till)			S8	SS	12	50/6			
	35.5	35		S9	SS	NR	50/4			
	Bottom of Boring									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

*CME 140H SPT hammer

WATER LEVEL OBSERVATIONS, ft		
WL	▽	▼
WL	▽	▼
WL		

Terracon

BORING STARTED			5-19-08
BORING COMPLETED			5-19-08
RIG	Track Rig	DRILLER	Boretec
LOGGED	AJD	JOB #	B2085019

BOREHOLE 99 WINCO FIRCREST BORING LOGS.GPJ TERRACON.GDT 5/27/08

LOG OF BORING NO. B-5

CLIENT: WinCo Foods, Inc.

SITE: 2119 Mildred Street West, Fircrest, Washington

PROJECT: WinCo Fircrest

GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES RECOVERY, in.	SAMPLES SPT - N BLOWS / ft.	TESTS WATER CONTENT, %	TESTS DRY UNIT WT pcf	TESTS UNCONFINED STRENGTH, psf
	0.3 **Approximately 3 Inches of Topsoil**									
	SILTY SAND, WITH GRAVEL Gray, Medium Dense, Moist (Fill)			S1	SS	6	10			
	Grayish Brown, Wet	5		S2	SS	3	11			
	7.5 **SANDY SILT, WITH GRAVEL** Dark Brown, Medium Dense, Wet to Saturated, Organics (Fill)			S3	SS	12	11			
	10 **SILTY SAND, TRACE GRAVEL** Dark Brown, Loose, Wet, Organics (Fill)	10		S4	SS	12	7			
	15 **SAND, WITH SILT, TRACE GRAVEL** Gray, Loose, Wet to Saturated, Asphalt (Fill)	15		S5	SS	9	7			
	20 **SILTY SAND, TRACE GRAVEL** Dark Brown, Loose, Wet, Organics (Fill)	20		S6	SS	12	8			
	25	25								

Continued Next Page

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

*CME 140H SPT hammer

WATER LEVEL OBSERVATIONS, ft		
WL	▽	▼
WL	▽	▼
WL		

Terracon

BORING STARTED	5-19-08		
BORING COMPLETED	5-19-08		
RIG	Track Rig	DRILLER	Boretec
LOGGED	AJD	JOB #	B2085019

BOREHOLE 99 WINCO FIRCREST BORING LOGS.GPJ TERRACON.GDT 5/27/08

LOG OF BORING NO. B-5

CLIENT: WinCo Foods, Inc.

SITE: 2119 Mildred Street West, Fircrest, Washington

PROJECT: WinCo Fircrest

GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES RECOVERY, in.	SAMPLES SPT - N BLOWS / ft.	TESTS WATER CONTENT, %	TESTS DRY UNIT WT pcf	TESTS UNCONFINED STRENGTH, psf
	GRAVELLY SILTY SAND Gray, Very Dense, Moist (Glacial Till)			S7	SS	9	50/5			
	30	30								
	SILTY GRAVELLY SAND Gray, Very Dense, Moist (Glacial Till)			S8	SS	3	50/6			
	35	35								
	SILTY SAND, TRACE GRAVEL Gray, Very Dense, Moist (Glacial Till)			S9	SS	9	73			
	Brownish Gray, Wet	40		S10	SS	18	73/11			
	41.5 Bottom of Boring									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

*CME 140H SPT hammer

WATER LEVEL OBSERVATIONS, ft		
WL	▽	▼
WL	▽	▼
WL		

Terracon

BORING STARTED	5-19-08		
BORING COMPLETED	5-19-08		
RIG	Track Rig	DRILLER	Boretec
LOGGED	AJD	JOB #	B2085019

BOREHOLE 99 WINCO FIRCREST BORING LOGS.GPJ TERRACON.GDT 5/27/08

LOG OF BORING NO. B-6

CLIENT: WinCo Foods, Inc.

SITE: 2119 Mildred Street West, Fircrest, Washington

PROJECT: WinCo Fircrest

GRAPHIC LOG	DESCRIPTION	DEPTH, ft	USCS SYMBOL	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES RECOVERY, in.	SAMPLES SPT - N BLOWS / ft.	TESTS WATER CONTENT, %	TESTS DRY UNIT WT pcf	TESTS UNCONFINED STRENGTH, psf
	0.3 **Approximately 3 Inches of Topsoil**									
	SILTY SAND, WITH GRAVEL Brown, Medium Dense, Moist (Fill)			S1	SS	6	12			
		5		S2	SS	6	8			
	Asphalt Debris			S3	SS	6	6			
		10		S4	SS	6	6			
	15									
	SILTY SAND, TRACE GRAVEL Brown, Loose, Moist, Organics (Fill)	15		S5	SS	3	4			
	16.5 Bottom of Boring									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

*CME 140H SPT hammer

WATER LEVEL OBSERVATIONS, ft		
WL	▽	▼
WL	▽	▼
WL		

Terracon

BORING STARTED	5-19-08		
BORING COMPLETED	5-19-08		
RIG	Track Rig	DRILLER	Boretec
LOGGED	AJD	JOB #	B2085019

BOREHOLE 99 WINCO FIRCREST BORING LOGS.GPJ TERRACON.GDT 5/27/08

LOG OF BORING NO. B-7

CLIENT: WinCo Foods, Inc.

SITE: 2119 Mildred Street West, Fircrest, Washington

PROJECT: WinCo Fircrest

GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES RECOVERY, in.	SAMPLES SPT - N BLOWS / ft.	TESTS WATER CONTENT, %	TESTS DRY UNIT WT pcf	TESTS UNCONFINED STRENGTH, psf
	0.5 **Appoximately 6 Inches of Topsoil**									
	SILTY SAND Brown, Loose, Moist, Organics (Fill)			S1	SS	3	5			
	5	5								
	SILTY SAND, TRACE GRAVEL Dark Brown, Loose to Medium Dense, Moist (Fill)			S2	SS	3	16			
				S3	SS	3	5			
	10	10		S4	SS	3	7			
	SAND, WITH SILT Gray, Loose, Moist (Fill)									
	Trace Gravel	15		S5	SS	3	9			
	16.5 Bottom of Boring									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

*CME 140H SPT hammer

WATER LEVEL OBSERVATIONS, ft		
WL	▽	▼
WL	▽	▼
WL		

Terracon

BORING STARTED	5-19-08		
BORING COMPLETED	5-19-08		
RIG	Track Rig	DRILLER	Boretec
LOGGED	AJD	JOB #	B2085019

BOREHOLE 99 WINCO FIRCREST BORING LOGS.GPJ TERRACON.GDT 5/27/08

LOG OF BORING NO. B-8

CLIENT: WinCo Foods, Inc.

SITE: 2119 Mildred Street West, Fircrest, Washington

PROJECT: WinCo Fircrest

GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES NUMBER	SAMPLES TYPE	SAMPLES RECOVERY, in.	SAMPLES SPT - N BLOWS / ft.	TESTS WATER CONTENT, %	TESTS DRY UNIT WT pcf	TESTS UNCONFINED STRENGTH, psf
	0.5 **Approximately 6 Inches of Topsoil**									
	SAND, WITH SILT AND GRAVEL Brown, Moist, Medium Dense			S1	SS	6	11			
	5 **SILTY SAND, TRACE GRAVEL** Gray, Dense, Moist (Possible Glacial Till)	5		S2	SS	9	36			
	7.5 **GRAVELLY SILTY SAND** Gray, Very Dense, Moist (Glacial Till)			S3	SS	9	50/4			
		10		S4	SS	6	50/6			
	15.5 Bottom of Boring	15		S5	SS	3	50/5			

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

*CME 140H SPT hammer

WATER LEVEL OBSERVATIONS, ft		
WL	▽	▼
WL	▽	▼
WL		

Terracon

BORING STARTED	5-19-08		
BORING COMPLETED	5-19-08		
RIG	Track Rig	DRILLER	Boretec
LOGGED	AJD	JOB #	B2085019

BOREHOLE 99 WINCO FIRCREST BORING LOGS.GPJ TERRACON.GDT 5/27/09

LOG OF BORING NO. B-9

CLIENT: **WinCo Foods, Inc.**

SITE: **2119 Mildred Street West, Fircrest, Washington**

PROJECT: **WinCo Fircrest**

GRAPHIC LOG	DESCRIPTION	DEPTH, ft.	USCS SYMBOL	SAMPLES: NUMBER	SAMPLES: TYPE	SAMPLES: RECOVERY, in.	SAMPLES: SPT - N BLOWS / ft.	TESTS: WATER CONTENT, %	TESTS: DRY UNIT WT pcf	TESTS: UNCONFINED STRENGTH, psf
	0.6 **GRAVEL, WITH SAND** Gray, Medium Dense, Dry (Fill)									
	SAND, WITH SILT AND GRAVEL Brown, Dense, Moist			S1	SS	3	40			
	5	5		S2	SS	9	78			
	GRAVELLY SILTY SAND Gray, Very Dense, Moist (Glacial Till)									
	Approximately 3 Inch Lense of Sand			S3	SS	12	66			
		10		S4	SS	15	73			
		15		S5	SS	18	44			
	16.5 Bottom of Boring									

The stratification lines represent the approximate boundary lines between soil and rock types: in-situ, the transition may be gradual.

*CME 140H SPT hammer

WATER LEVEL OBSERVATIONS, ft		
WL	▽	▼
WL	▽	▼
WL		

Terracon

BORING STARTED	5-19-08		
BORING COMPLETED	5-19-08		
RIG	Track Rig	DRILLER	Boretec
LOGGED	AJD	JOB #	B2085019

BOREHOLE 99 WINCO FIRCREST BORING LOGS.GPJ TERRACON.GDT 5/27/08

GENERAL NOTES

DRILLING & SAMPLING SYMBOLS:

SS:	Split Spoon - 1-3/8" I.D., 2" O.D., unless otherwise noted	HS:	Hollow Stem Auger
ST:	Thin-Walled Tube - 2" O.D., unless otherwise noted	PA:	Power Auger
RS:	Ring Sampler - 2.42" I.D., 3" O.D., unless otherwise noted	HA:	Hand Auger
DB:	Diamond Bit Coring - 4", N, B	RB:	Rock Bit
BS:	Bulk Sample or Auger Sample	WB:	Wash Boring or Mud Rotary

The number of blows required to advance a standard 2-inch O.D. split-spoon sampler (SS) the last 12 inches of the total 18-inch penetration with a 140-pound hammer falling 30 inches is considered the "Standard Penetration" or "N-value".

WATER LEVEL MEASUREMENT SYMBOLS:

WL:	Water Level	WS:	While Sampling	N/E:	Not Encountered
WCI:	Wet Cave in	WD:	While Drilling		
DCI:	Dry Cave in	BCR:	Before Casing Removal		
AB:	After Boring	ACR:	After Casing Removal		

Water levels indicated on the boring logs are the levels measured in the borings at the times indicated. Groundwater levels at other times and other locations across the site could vary. In pervious soils, the indicated levels may reflect the location of groundwater. In low permeability soils, the accurate determination of groundwater levels may not be possible with only short-term observations.

DESCRIPTIVE SOIL CLASSIFICATION: Soil classification is based on the Unified Classification System. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; their principal descriptors are: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are principally described as clays if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.

CONSISTENCY OF FINE-GRAINED SOILS

Unconfined Compressive Strength, Qu, psf	Standard Penetration or N-value (SS) Blows/Ft.	Consistency
< 500	0 - 1	Very Soft
500 – 1,000	2 - 4	Soft
1,000 – 2,000	4 - 8	Medium Stiff
2,000 – 4,000	8 - 15	Stiff
4,000 – 8,000	15 - 30	Very Stiff
8,000+	> 30	Hard

RELATIVE DENSITY OF COARSE-GRAINED SOILS

Standard Penetration or N-value (SS) Blows/Ft.	Relative Density
0 – 3	Very Loose
4 – 9	Loose
10 – 29	Medium Dense
30 – 49	Dense
> 50	Very Dense

RELATIVE PROPORTIONS OF SAND AND GRAVEL

Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	< 15
With	15 – 29
Modifier	> 30

RELATIVE PROPORTIONS OF FINES

Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	< 5
With	5 – 12
Modifiers	> 12

GRAIN SIZE TERMINOLOGY

Major Component of Sample	Particle Size
Boulders	Over 12 in. (300mm)
Cobbles	12 in. to 3 in. (300mm to 75 mm)
Gravel	3 in. to #4 sieve (75mm to 4.75 mm)
Sand	#4 to #200 sieve (4.75mm to 0.075mm)
Silt or Clay	Passing #200 Sieve (0.075mm)

PLASTICITY DESCRIPTION

Term	Plasticity Index
Non-plastic	0
Low	1-10
Medium	11-30
High	> 30

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UNIFIED SOIL CLASSIFICATION SYSTEM

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests[A]					Soil Classification	
					Group Symbol	Group Name[B]
Coarse Grained Soils	Gravels	Clean Gravels	$Cu \geq 4$ and $1 \leq Cc \leq 3^E$		GW	Well-graded gravel[F]
More than 50% retained	More than 50% of coarse fraction retained on No. 4 sieve	Less than 5% fines[C]	$Cu < 4$ and/or $1 > Cc > 3^E$		GP	Poorly graded gravel[F]
on No. 200 sieve		Gravels with Fines	Fines classify as ML or MH		GM	Silty gravel[F,G,H]
		More than 12% fines[C]	Fines classify as CL or CH		GC	Clayey gravel[F,G,H]
	Sands	Clean Sands	$Cu \geq 6$ and $1 \leq Cc \leq 3^E$		SW	Well-graded sand[I]
	50% or more of coarse fraction passes No. 4 sieve	Less than 5% fines[D]	$Cu < 6$ and/or $1 > Cc > 3^E$		SP	Poorly graded sand[I]
		Sands with Fines	Fines classify as ML or MH		SM	Silty sand[G,H,I]
		More than 12% fines[D]	Fines Classify as CL or CH		SC	Clayey sand[G,H,I]
Fine-Grained Soils	Silts and Clays	Inorganic	PI > 7 and plots on or above "A" line[J]		CL	Lean clay[K,L,M]
50% or more passes the No. 200 sieve	Liquid limit less than 50		PI < 4 or plots below "A" line[J]		ML	Silt[K,L,M]
		organic	Liquid limit - oven dried / Liquid limit - not dried	< 0.75	OL	Organic clay[K,L,M,N] / Organic silt[K,L,M,O]
	Silts and Clays	Inorganic	PI plots on or above "A" line		CH	Fat clay[K,L,M]
	Liquid limit 50 or more		PI plots below "A" line		MH	Elastic Silt[K,L,M]
		organic	Liquid limit - oven dried / Liquid limit - not dried	< 0.75	OH	Organic clay[K,L,M,P] / Organic silt[K,L,M,O]
Highly organic soils	Primarily organic matter, dark in color, and organic odor				PT	Peat

[A] Based on the material passing the 3-in. (75-mm) sieve

[B] If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

[C] Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

[D] Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay

[E] $Cu = D_{60}/D_{10}$ $\quad Cc = \dfrac{(D_{30})^2}{D_{10} \times D_{60}}$

[F] If soil contains ≥ 15% sand, add "with sand" to group name.

[G] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

[H] If fines are organic, add "with organic fines" to group name.

[I] If soil contains ≥ 15% gravel, add "with gravel" to group name.

[J] If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

[K] If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

[L] If soil contains ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.

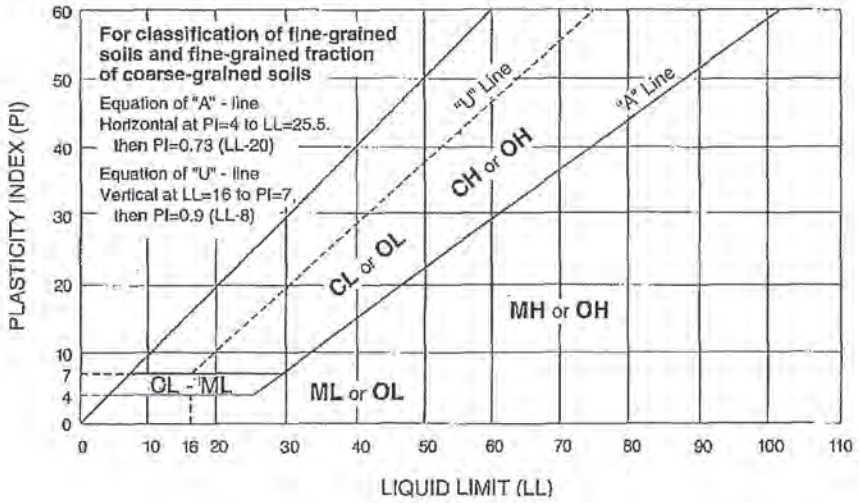
[M] If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.

[N] PI ≥ 4 and plots on or above "A" line.

[O] PI < 4 or plots below "A" line.

[P] PI plots on or above "A" line.

[Q] PI plots below "A" line.



Terracon

Form 111—6/98

PHASE I ENVIRONMENTAL SITE ASSESSMENT

PROPOSED FIRCREST WINCO
2119 MILDRED STREET WEST
FIRCREST, PIERCE COUNTY, WASHINGTON

Project Number: B2087704
Report Date: June 30, 2008

Prepared for:

WINCO FOODS, INC.
Boise, Idaho

Prepared by:

Terracon
Tacoma, Washington

Terracon
2115 South 56th Street, Suite 405
Tacoma, Washington 98409
(253) 573-9939 Fax: (253) 573-9959

June 30, 2008

Mr. Ty Morrison
WinCo Foods, Inc.
650 North Armstrong Place
Boise, Idaho 83704

Re: Phase I Environmental Site Assessment
Proposed Fircrest WinCo
2119 Mildred Street West
Fircrest, Pierce County, Washington
Project No. B2087704

Dear Mr. Morrison:

Terracon Consultants, Inc. (Terracon) is pleased to submit the enclosed Phase I Environmental Site Assessment (ESA) report for the above-referenced site. This assessment was performed in accordance with our proposal dated April 28, 2008.

We appreciate the opportunity to perform these services for you. Please contact us if you have questions regarding this information or if we can provide any other services.

Sincerely,
Terracon Consultants, Inc.

Laura Arnesen
for
Alex J. DeOme
Staff Geologist

Jon M. Einarsen, Ph.D. P.G.
Senior Geologist

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APPENDICES

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APPENDIX B Description of Terms and Acronyms
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COMMON ACRONYMS [1]

ACM ..... Asbestos containing material
AST ..... Aboveground storage tank
ASTM ..... American Society for Testing and Materials
AUL ..... Activity and use limitation
BGS..... Below ground surface
BTEX..... Benzene, toluene, ethylbenzene, and xylenes
CERCLA..... Comprehensive Environmental Response, Compensation, and Liability Act
CFR..... Code of Federal Regulations
DOT..... United States Department of Transportation
EPA..... United States Environmental Protection Agency
HREC..... Historical recognized environmental condition
LUST..... Leaking underground storage tank
MCL..... Maximum contaminant level
MSDS..... Material safety data sheet
NGVD..... National Geodetic Vertical Datum
NOV ..... Notice of violation
NPL ..... National Priority List
NRCS..... USDA Natural Resource Conservation Service
OSHA..... Occupational Safety and Health Administration
PCB..... Poly-chlorinated biphenyl
RCRA..... Resource Conservation and Recovery Act
REC..... Recognized environmental condition
SPCC ..... Spill Prevention, Control and Countermeasure
SWPPP ..... Stormwater pollution prevention plan
TEPH..... Total extractable petroleum hydrocarbons
TPH..... Total petroleum hydrocarbons
TVPH..... Total volatile petroleum hydrocarbons
TRI ..... Toxic release inventory
TSCA..... Toxic Substances Control Act
USGS..... United States Geological Survey
UST..... Underground storage tank
VCP..... Voluntary cleanup program
VOC ..... Volatile organic compound

Units of measure

sq ft or ft^2..... square feet
mg/kg ..... milligrams per kilogram
mg/l ..... milligrams per liter
ug/l ..... micrograms per liter
ppb ..... parts per billion
ppm……parts per million

[1] An additional list of acronyms and definitions is included in Appendix B.

PHASE I ENVIRONMENTAL SITE ASSESSMENT
PROPOSED FIRCREST WINCO
2119 MILDRED STREET WEST
FIRCREST, PIERCE COUNTY, WASHINGTON

Project No. B2087704
Report Date: June 30, 2008

EXECUTIVE SUMMARY

This Phase I ESA was performed in accordance with our proposal dated April 28, 2008, and was conducted consistent with the procedures included in ASTM E 1527-05, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. The ESA was conducted under the supervision or responsible charge of Jon M. Einarsen, environmental professional. Alex J. DeOme performed the site reconnaissance on May 8, 2008.

A cursory summary of findings is provided below. It should be recognized that details were not included or fully developed in this section, and the report must be read in its entirety for a comprehensive understanding of the items contained herein.

- The site (Pierce County Tax Parcel 0220112005) is located at 2119 Mildred Street West in Fircrest, Pierce County, Washington. The site was formerly utilized by Metal Marine Pilot for the design, manufacture, repair, and design of auto pilot devices for boats. The site is a 9.49 acre tract of land that has been improved with an approximately 25,000 square foot main building, an approximately 600 square foot painting building, and an approximately 80 square foot paint storage shed. Concrete building pads for two approximately 700 square foot former buildings are present as well. All buildings and building pads are located in the northwestern portion of the site. An asphalt-paved parking lot is present west of the main building and an asphalt drive is located north and east of the main building. The remainder of the site consists of undeveloped land.
- Three buildings, consisting of the main building, the painting building, and the paint storage building as well as two concrete pads, which appear to be foundations for the former materials building and cardboard building, were observed during the site reconnaissance. Office space, bathrooms, a break room, and a sales room were also located in the main building. The painting building was used to paint and dry parts during production of the auto pilot devices. The paint storage building was used to store paint and other flammable liquids. The former materials building was used to clean parts and equipment used in the Metal Marine Pilot operations. The former cardboard building was used to store cardboard.

- During the site reconnaissance, the site buildings appeared to be unoccupied and used as storage for Metal Marine Pilot and the Freeman family (the current site owners). Evidence of two USTs was observed east of the painting building and the paint storage shed, which according to Mr. Freeman, were used to store discharge from floor drains within the painting building and materials building, discharge from a wash basin that was located in the materials building, and discharge from a catch basin that was located in the drum storage area. Based on the contents of the discharge, which commonly contained paints, solvents, and degreasers, these USTs, drains, and the catch basin appear to represent RECs.
- Based on review of the historical information, the site appears to have been undeveloped prior to purchase of the site by Mr. and Mrs. Robert Freeman in approximately 1953. Metal Marine Pilot began operations onsite in the late 1950's when the main building was constructed. The painting building, paint storage building, cardboard building, and materials building were all constructed during the 1960s and 1970s. The materials building and cardboard building were demolished in the early 2000s. Metal Marine Pilot ceased operations on-site in approximately 2000 and the site has been used for storage since that time.

  Based on information obtained during historical research the following RECs were identified:

  - An asbestos containing transit pipe, formerly used to transport water through the site to the property that adjoins the site to the north, is buried in the eastern portion of the site;
  - A wash sink, formerly located in the materials building, was used to clean parts and machinery with solvents and degreasers. Prior to 1990, the waste from the sink was discharged to the undeveloped portion of the site east of the paint storage shed;
  - Fluorescent light bulbs were routinely disposed of in the undeveloped portion of the site east of the former loading dock;
  - Lime-lined pits, located east of the former loading dock, were used from the late 1960s to the mid 1970s to dispose of acids used in the circuit board etching process. The precise locations of the pits are unknown;
  - A drum storage area was located between the materials building and the paint storage building. The drums, which contained solvents, degreasers, and petroleum products, were stored on a concrete pad; however, an unimproved area of equal or lower elevation was located east of the storage area and runoff from the drum storage area may have impacted the unprotected soils;
  - A pipe containing paraffin oil ruptured on the north adjoining property and the subsequent release migrated onto the subject site. Contaminated soil on the subject site was removed, but Mr. Freeman believes contamination remains on the adjoining property;

- Fill material was imported to the site during several occasions between the early 1970s and the late 1990s. The fill material was not tested for contamination prior to placement onsite and reportedly contains various amounts of construction debris;
- Prior to the instillation of two sealed recovery USTs located east of the painting building and paint storage building, floor drains located in the painting building and materials building discharged to the undeveloped area east of the buildings;
- Prior to development of the painting building, spray painting operations occurred on a concrete paved area west of the loading dock. Lacquer wash used during the spray painting process was routinely disposed of in the undeveloped area east of the loading dock;
- The main building bathrooms are serviced by three septic tanks.

- The site is located in a mixed use area in Fircrest, Washington. The site is bound by commercial development to the north and south, multiple family residential developments to the east, and Mildred Street West followed by commercial development, including a Jiffy Lube automobile servicing facility, to the west.

- The site was identified by the database report as listed on the State of Washington UST, VCP, CSCSL NFA lists as well as the federal RCRA list. The site was granted a No Further Action (NFA) letter on March 6, 2001, which appears to be related to the removal of PCE contaminated soil from the loading dock area.

  The Pace Industries facility was reported as listed on the Washington State UST, VCP, and CSCSL NFA lists as well as the federal RCRA list. Based on residual concentrations of petroleum hydrocarbons and PCBs in soils beneath concrete foundations and footings that exceeded MTCA Method A and B cleanup levels and the potential presence of heavy metals in soils beneath a concrete patio, institutional control soil restrictions, property use restrictions, and maintenance requirements were placed on the property in 1998. The facility was issued an NFA in 2007; however, cleanup of the above listed contamination appears to have not been completed and thus this facility appears to represents a REC.

  The database report also reported the Leland M. McArthur facility as listed on the Washington State UST list. This facility appears to have operated during the 1970s as a fueling station which adjoined the site to the south along Mildred Street West. The USTs have been removed from the property; however, based on the years of operation and the proximity of the facility to the subject site, this facility appears to represent a REC.

- Two UST decommissioning reports, two remedial excavation reports, five surface and subsurface investigation reports, one Phase I ESA report, one Washington State

Department of Ecology letter, one geotechnical report, and one fill and grading permit were provided for review. Based on information obtained from these reports it appears that oil-range total petroleum hydrocarbons (TPH), perchloroethylene (PCE), and various metal contamination remains in on-site soils which, in some areas, have been identified above applicable MTCA Method A and/or Method B cleanup levels. PCE contamination appears to be confined to an area east of the paint storage shed, which was estimated by others to include 2,000 to 3,000 yards of impacted soil. Oil-range TPH and metal contamination appears to have been sporadically identified throughout the northeastern portion of the site. These reports have indicated that the contaminated areas appear to be discontinuous and no quantitative estimates of contamination have been made.

The Phase I ESA report previously completed by others included an asbestos survey and lead-based paint analysis. The report identified 11 areas where paint contained detectable concentrations of lead, one of which was above 5,000 mg/kg, which is the maximum concentration to be considered non-lead based paint as defined by the EPA. Four types of vinyl flooring, caulking, and HVAC sealant were reported to contain asbestos.

Recommendations

Based on the scope of services, limitations, and findings of this assessment, Terracon recommends that additional investigation should be completed to further assess if the identified RECs have impacted the site and to confirm the findings of previous investigations completed by others.

PHASE I ENVIRONMENTAL SITE ASSESSMENT
PROPOSED FIRCREST WINCO
2119 MILDRED STREET WEST
FIRCREST, PIERCE COUNTY, WASHINGTON

Project No. B2087704
Report Date: June 30, 2008

1.0 INTRODUCTION

1.1 Site Description

Site Description

Site Name	Proposed Fircrest WinCo
Site Location/Address	2119 Mildred Street West, Fircrest, Pierce County, Washington Pierce County Tax Parcel #0220112005
Land Area	Approximately 9.49 acres
Site Improvements	The site is improved with an approximately 25,000 square foot main building, an approximately 600 square foot painting building, and an approximately 80 square foot paint storage shed. Concrete building pads of two approximately 700 square foot former buildings are present as well. All buildings and building pads are located in the northwestern portion of the site. An asphalt-paved parking lot is present west of the main building and an asphalt drive is located north and east of the main building. The remainder of the site consists of undeveloped land.

The approximate site location is depicted on Figure 1 of Appendix A, which was reproduced from a portion of the USGS 7.5-minute series topographic map. A diagram of the site and adjoining properties is included as Figure 2 of Appendix A. A detailed map of the developed portion of the site in included as Figure 3 in Appendix A. A diagram of areas of soil and groundwater contamination identified by previous reports completed by others is included as Figure 4 in Appendix A. Acronyms and terms used in this report are described in Appendix B.

1.2 Scope of Services

This Phase I ESA was performed in accordance with our proposal dated April 28, 2008, and was conducted consistent with the procedures included in ASTM E 1527-05, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. The purpose of this ESA was to assist the client in developing information to identify RECs in connection with the site as reflected by the scope of this report. This purpose was undertaken through user-provided information, a regulatory database review, historical and physical records review, interviews, including local government inquiries, as applicable, and a visual noninvasive reconnaissance of the site and adjoining properties.

Limitations, ASTM deviations, and significant gaps (if identified) are evident from reviewing the applicable scope of services and the report text.

1.3 Standard of Care

This ESA was performed in accordance with generally accepted practices of this profession, undertaken in similar studies at the same time and in the same geographical area. We have endeavored to meet this standard of care, but may be limited by conditions encountered during performance, a client-driven scope of work, or inability to review information not received by the report date. When appropriate, these limitations are discussed in the text of the report, and an evaluation of their significance with respect to our findings has been conducted.

Phase I ESAs, such as the one performed at this site, are of limited scope, are noninvasive and cannot eliminate the potential that hazardous, toxic, or petroleum substances are present or have been released at the site beyond what is identified by the limited scope of this ESA. In conducting the limited scope of services described herein, certain sources of information and public records were not reviewed. It should be recognized that environmental concerns may be documented in public records that were not reviewed. No ESA can wholly eliminate uncertainty regarding the potential for RECs in connection with a property. Performance of this practice is intended to reduce, but not eliminate, uncertainty regarding the potential for RECs. No warranties, express or implied, are intended or made. The limitations herein must be considered when the user of this report formulates opinions as to risks associated with the site or otherwise uses the report for any other purpose. These risks may be further evaluated - but not eliminated - through additional research or assessment. We will, upon request, advise you of additional research or assessment options that may be available and associated costs.

1.4 Additional Scope Limitations, ASTM Deviations and Significant Data Gaps

Based upon the agreed-on scope of services, this ESA did not include subsurface or other invasive assessments, business environmental risk evaluations, or other services not particularly identified and discussed herein. Reasonable attempts were made to obtain information within the scope and time constraints set forth by the client; however, in some instances, information requested is not, or was not, received by the issuance date of the report. Consideration of such information is beyond the scope of this assessment. Information obtained for this ESA was received from several sources that we believe to be reliable; nonetheless, the authenticity or reliability of these sources cannot and is not warranted hereunder. This ESA was further limited by the following:

- *Credentials of the company (Statement of Qualifications) have not been included in this report but are available upon request.*
- *Pertinent documents are referred to in the text of this report, and a separate reference section has not been included.*
- *Lights within the main building were not operational during the site reconnaissance and thus visibility within the building was impaired.*
- *Historic information was not provided back to 1940. Uses of the site were described only as far back as 1946 because site historical information was only readily available back to this date. In our opinion this gap in historical information does not represent a significant data gap, because our aerial photo review indicated that the site was undeveloped land in 1946 and based on information provided by Mr. Freeman which indicates the site was undeveloped prior to purchase of the site by his parents in approximately 1953.*

An evaluation of the significance of these limitations and missing information with respect to our findings has been conducted, and where appropriate, significant data gaps are identified and discussed in the text of the report. However, it should be recognized that an evaluation of significant data gaps is based on the information available at the time of report issuance, and an evaluation of information received after the report issuance date may result in an alteration of our conclusions, recommendations, or opinions. We have no obligation to provide information obtained or discovered by us after the issuance date of the report, or to perform any additional services, regardless of whether the information would affect any conclusions, recommendations, or opinions in the report. This disclaimer specifically applies to any information that has not been provided by the client.

This report represents our service to you as of the report date and constitutes our final document; its text may not be altered after final issuance. Findings in this report are based upon the site's current utilization, information derived from the most recent reconnaissance and from other activities described herein; such information is subject to change. Certain indicators of the presence of hazardous substances or petroleum products may have been latent, inaccessible, unobservable, or not present during the most recent reconnaissance and may subsequently become observable (such as after site renovation or development). Further, these services are not to be construed as legal interpretation or advice.

1.5 Reliance

This ESA report is prepared for the exclusive use and reliance of WinCo Foods, Inc. Use or reliance by any other party is prohibited without the written authorization of WinCo Foods, Inc. and Terracon Consultants, Inc. (Terracon).

Reliance on the ESA by the client and all authorized parties will be subject to the terms, conditions and limitations stated in the proposal, ESA report, and Terracon's Agreement for Services. The limitation of liability defined in the Agreement for Services is the aggregate limit of Terracon's liability to the client and all relying parties.

Continued viability of this report is subject to ASTM E 1527-05 Sections 4.6 and 4.8. If the ESA will be used by a different user (third party) than the user for whom the ESA was originally prepared, the third party must also satisfy the user's responsibilities in Section 6 of ASTM E 1527-05.

1.6 Client Provided Information

Prior to the site visit, Ty Morrison, client's representative, provided the following information.

1.6.1 Specialized Knowledge or Experience

Mr. Morrison was not aware of specialized knowledge or experience that is material to RECs in connection with the site.

1.6.2 Actual Knowledge of Environmental Liens or AULs

Mr. Morrison did not have actual knowledge of environmental liens or AULs encumbering the site or in connection with the site.

1.6.3 Reason for Significantly Lower Purchase Price

Mr. Morrison was not aware of a significantly lower purchase price because of the presence of hazardous substances or petroleum products.

1.6.4 Commonly Known or Reasonably Ascertainable Information

Mr. Morrison was aware of commonly known or reasonably ascertainable information about the site that is material to RECs in connection with the site based on previous environmental reports that were provided by the site owner. Discussion of these reports is provided in Section 3.11.

1.6.5 Obvious Indicators of Contamination at the Site

Mr. Morrison was aware of obvious indicators that point to the presence or likely presence of contamination at the site based on previous environmental reports that were provided by the site owner. Discussion of these reports is provided in Section 3.11.

2.0 PHYSICAL SETTING

Physical Setting

PHYSICAL SETTING INFORMATION FOR SITE AND SURROUNDING AREA		SOURCE
Topography (Refer to Appendix A for an excerpt of the Topographic Map)		
Site Elevation	Approximately 320 feet (NGVD)	USGS Topographic Map, Steilacoom, Washington Quadrangle, 1959. Map revised 1994
Surface Runoff/ Topographic Gradient	Sloping towards the east	
Closest Surface Water	An unnamed pond, approximately 1,300 feet to the south of the site.	
Soil Characteristics		
Soil Type	Alderwood gravelly sandy loam 0 to 15 percent slopes	Pierce County, Washington USDA, Natural Resources Conservation Service Soil Survey issued 1979
Description	This nearly level to rolling soil is moderately well drained. It formed in glacial till and is one of the most extensive soils on the broad uplands in the central part of the county. Included with this soil in mapping in some areas are Everett soils and poorly drained Bellingham and Norma soils and very poorly drained Dupont soils; steeper sloped areas include small areas of better drained Indianola loamy sand on side slopes and poorer drained Norma sandy loam or Dupont muck in troughs. In a typical profile, a thin mat of undecomposed needles and wood fragments overlies a 1 1/2-inch, very dark grayish brown gravelly sandy loam surface layer. The subsoil and the upper part of the substratum, to a depth of 38 inches, are dark yellowish brown, brown, and dark grayish brown gravelly sandy loam. The lower part of the substratum, to a depth of more than 60 inches is weakly cemented, compact glacial till. Reaction is medium acid. A perched water table develops for short periods during the winter and spring rainy seasons. Permeability is very slow in the weakly cemented, compact part of the substratum. Commonly root growth is inhibited and roots are matted directly above this layer. The available water capacity is low. Surface runoff is very slow to medium, and the erosion hazard is slight to moderate.	

Geology/Hydrogeology		
Formation	Vashon glacial till	Geologic Map of the South Half of the Tacoma Quadrangle, Washington: Washington State Department of Natural Resources, 1987
Description	Gray, unsorted, unstratified, highly compacted mixture of clay, silt, sand, gravel, and boulders deposited directly by glacial ice; locally contains outwash sand and gravel both within and overlying till.	
Estimated Depth to First Occurrence of Ground water	Approximately 16 to 20 feet	Limited Phase II Environmental Site Assessment dated June 24, 2005; Kleinfelder
Primary Aquifer	Vashon advance outwash, which appears to be at depths greater than 50 feet below the ground surface (bgs).	Water Resources of the Tacoma Area, Washington, dated 1962
**Hydrogeologic Gradient:*	Generalized flow direction of groundwater in the western portion of the Tacoma Upland is to the west. Based on the groundwater contour map included in the reference report, groundwater in the site vicinity appears to flow to the south-southeast; however, contours on the map do not extend to the site vicinity.	

* The groundwater flow direction and the depth to shallow, unconfined groundwater, if present, would likely vary depending upon seasonal variations in rainfall and other hydrogeological features. Without the benefit of on-site groundwater monitoring wells surveyed to a datum, groundwater depth and flow direction beneath the site cannot be directly ascertained.

3.0 HISTORICAL USE INFORMATION

Terracon reviewed the following historical sources for indications of RECs. A summary of the historical review is included in Section 3.12. Copies of selected historical documents are included in Appendix C.

3.1 Historical Topographic Maps

Readily available historical USGS topographic maps were reviewed to identify RECs in connection with the site. Reviewed historical topographic maps are summarized below.

- Steilacoom, Washington, published 1959 from 1947 aerials, revised 1994 from 1990 aerials (1:24,000)

Historical Topographic Maps

Direction	Description
Site	The northwestern portion of the site is in a developed portion of Fircrest and no details are shown and the remainder of the site is undeveloped (1990)
North	A developed portion of Fircrest and no details are shown (1990)
East	A developed portion of Fircrest and no details are shown (1990)
South	A small structure adjoins the site to the south followed by Regents Blvd and the Fircrest Golf Course beyond (1990)
West	Mildred Street West followed by the existing commercial development (1990)

3.2 Historical Aerial Photographs

Selected historical aerial photographs from Aero-Metric were reviewed at approximately 10 to 15 year intervals, if readily available, to obtain information concerning the history of development on and near the site. Evaluation of these aerials may be limited by a photo's quality and scale. Selected photographs are summarized below.

- 1946, Photo ID #C46-154, Approximately 1"=1,000'
- 1971, Photo ID #PT-71 6-6, Approximately 1"=1,500'
- 1979, Photo ID #PTM-79 20-6, 1"=1,500'
- 1985, Photo ID #SKP-85 8-17, Approximately 1"=1,500'
- 1996, Photo ID #SPS-96 17-7, 1"=2,000'
- 2000, Photo ID #PT-00 12-6, 1'=2,000'
- 2003, Photo ID #PT-03 12-6, 1"=1,680'

Historical Aerial Photographs

Direction	Description
Site	Undeveloped land vegetated with shrubs and grasses (1946); The existing main building and the materials building are present in the northwest portion of the site and an apparent swamp area is present in the northeast portion of the site (1971); The painting building, paint storage building, cardboard building, and a small structure between the paint storage and cardboard buildings are present, the eastern portion of the site has been filled and graded, including the apparent swamp area, and a large truck-sized structure is present south of the southeast corner of the main building (1979); The truck-sized structure and the structure between the paint and cardboard buildings are no longer present (1985); An approximately 200 foot by 100 foot area along the central portion of the northern site boundary has been graded (1996); The eastern portion of the site has been additionally filled and graded and a drainage ditch appears to be present (2000); The materials building and cardboard building are no longer present (2003)

Direction	Description
North	Undeveloped land vegetated with shrubs and grasses (1946); A commercial and/or industrial building adjoins the northwest part of the site, followed by commercial and/or industrial development beyond (1971-1979); The adjoining building has expanded east and now includes the existing Danger Zone structure (1985); The adjoining structure has expanded further north (1996-2000); The office building that adjoins the site to the northeast is present (2003)
East	Undeveloped land vegetated with shrubs and grasses (1946); The Fircrest Apartments are present followed by commercial and residential development beyond (1971); The land to the northeast has been graded, the Fircrest Townhomes are present, and the Sterling Savings Bank building is present (1979-2003)
South	Undeveloped land vegetated with shrubs and grasses to the southeast and graded land to the southwest followed by Regents Blvd. and a golf course beyond (1946); The Airport Café building is present (1971); A potential fueling station adjoins the site near the southwest corner of the site (1979-1985); The Airport Café building and potential fueling station have been replaced by the existing Columbia Bank building (1996); The Fircrest Regents Commercial Complex is present adjoining to the south (2000-2003)
West	Mildred St. followed by the Tacoma Airport (1946); Two commercial buildings are present across Mildred St. and the airport has been expanded (1971); The commercial buildings and airport buildings across Mildred St. are no longer present and the airport appears to be abandoned (1979); The existing commercial structures are present across Mildred St. (1985-2003)

The potential fueling station identified in the 1979 and 1985 photographs appears to be related to the Leland M. McArthur facility identified in the database report (Section 4.1).

3.3 Historical City Directories

The Cole and Polk city directories used in this study were made available through the Tacoma Public Library (selected years reviewed: 1960, 1968, 1970, 1975, 1980, 1985, 1990, 1995, 1999/2000, 2005) and were reviewed at approximate five year intervals. Since these references are copyright protected, reproductions are not provided in this report. City directories for the site were not available prior to 1960. The current street address for the site was identified as 2119 Mildred Street West.

Historical City Directories

Direction	Description
Site	**2119 Mildred St W:** Metal Marine Pilot Inc marine equipment (1999/2000-1968); Freemn Wd Auto Plt (1995-1980); Metmar Fax (1995-1990); Wood Freeman Pilot (1995-1980); Not Listed (1960)
North	**2101 Mildred St W:** Indochine Café (2005); Pace Indstrs Pgt (2005-1999/2000); Puget Corporation (1995-1980); A La Mode (1980); Ed and Marty's Fuel Oil (1975); Puget Die Casting Co frdys (1975-1968); Not Listed (1960) **6512 20th St Ct W:** Office Building (2005); Not Listed (1999/2000-1960)

Direction	Description
East	**1345 Regents Blvd:** Fircrest Apartments (2005-1980); Not Listed; however, the apartment complex appears to have been present in 1975 and 1970 and listed at 1301 Regents Blvd and 1300 Regents Blvd, respectively (1980-1960) **1375 Regents Blvd:** Not Listed (2005); Sterling Saving Bank (1999/2000-1995); Western Cmnty Bank (1990-1975); Not Listed (1970-1960)
South	**1401 Regents Blvd:** Office Building (2005-1999/2000); Not Listed (1995-1960) **1501 Regents Blvd:** Office Building (2005-1999/2000); Not Listed (1995-1960) **2401 Mildred St W:** Columbia Bank (2005-1995); Summer Sands (1990-1985); Summer of 52 (1980-1975); Airport Café (1970-1960)
West	**2102 Mildred St W:** Wendys International Inc (2005-1985); Not Listed (1980-1960) **2110 Mildred St W:** Dairy Queen (2005-1985); Mildred Street Dry (1999/2000, 1990); Not Listed (1980-1960) **2120 Mildred St W:** Laird Construction bldg components (1970); Weyerhaeuser Hanger (1968); Not Listed (1960) **2122 Mildred St W:** Jf2Racing Com (2005); Ale House Pub and Eatery (2005-1995); Calzones Itln Café (1990); Gusto Grannys Pzza (1985); Not Listed (1980-1960) **2208 Mildred St W:** AMC Narrows Plaza 8 (2005-1985); Not Listed (1980-1960) **2212 Mildred St W:** Keg Steakhouse & Bar (2005-1985); Not Listed (1980-1960) **2218 Mildred St W:** Jiffy Lube (2005); Q Lube (1999/2000-1995); Minit-Lube (1990); Not Listed (1985-1960)

The Pace Industries and Puget Corporation facilities appear to represent an aluminum foundry that previously operating on the north adjoining property. This facility is discussed further in Sections 3.10, 3.11, and 4.1.

The Jiffy Lube/Q Lube/Minit-Lube facility, identified as operating on a property west of the site across Mildred Street West, was also identified by the database report and is discussed further in Section 4.1.

Ed and Marty's Fuel Oil was identified as operating on a property north of the site during the mid-1970s. According to Mr. Freeman, the owner of Metal Marine Pilot, Ed and Marty's Fuel Oil was a heating oil supply company. Mr. Freeman believed that heating oil was stored at the facility in USTs.

3.4 Historical Fire Insurance Maps

Historical fire insurance maps produced by the Sanborn Map Company were requested from Environmental Data Resources Inc. (EDR) to evaluate past uses and relevant characteristics of the site and surrounding properties. Based upon inquiries to the above-listed Sanborn provider, Sanborn Maps were not available for the site.

3.5 Property Tax File Information

Based on a review of information obtained from Pierce County assessor's records, the current site owner is the Robert and Ethel Freeman Family LLC.

3.6 Title Search

A title report, completed by First American Title Insurance Company, was provided for review by the client. The report identified Robert & Ethel Freeman Family LLC I as the current site owner. The report indicated that one easement for underground utilities was granted to the City of Fircrest in 1996 and three easements for poles and elevated power lines were granted to the City of Tacoma in 1959, 1966, and 1972.

3.7 Environmental Liens

The title report, competed by First American Title Insurance Company, did not indicate the presence of environmental liens associated with the site.

3.8 Building Department Records

Terracon reviewed building department records at the City of Fircrest City Hall for information indicating RECs on the site. According to department records, a significant amount of fill was imported to the site between the early 1970s and late 1990s. The department records also discussed four on-site USTs used to store kerosene and waste fluids. See Sections 3.10 and 3.11 for further discussion of the fill material and USTs.

3.9 Zoning/Land Use Records

According to the City of Fircrest, the site is currently zoned as Community Commercial.

3.10 Historical Interviews

The following individuals were interviewed regarding historical use of the site.

Interviewees

Interviewer	Interviewee/Phone #	Title	Date/Time
Alex J. DeOme	Michael Freeman	Member of the Freeman Family (site owners) and owner of Metal Marine Pilot	May 8, 2008/11:00AM May 27, 2008/1:30PM

Terracon interviewed Mr. Michael Freeman in person during the site reconnaissance. According to Mr. Freeman, his parents, Mr. Robert Freeman and Mrs. Ethel Freeman, purchased the property in the early 1950s as an undeveloped tract of land. The Freeman family developed the site in the mid to late 1950's. The site was used to manufacture, test, and repair autopilot devices for boats under the company name of Metal Marine Pilot from approximately 1959 until 2000. Mr. Freeman disclosed the following details pertaining to potential environmental concerns related to on and off-site activities:

- An asbestos-containing transit pipe was used to transport water from a water line located south of the site to the Pace Industries building that adjoined the site to the north (see Figure 2 for the approximate location of the pipe). According to Mr. Freeman, the waterline has been abandoned, but sections of the pipe are still in place and are currently buried beneath approximately 20 feet of fill;
- Two underground concrete sealed recovery vaults are located east of the painting building and paint storage shed (Figure 3). The USTs were installed in approximately 1990 to hold runoff collected in floor drains located in the painting building and materials building. A wash sink located in the materials building also discharged to the USTs. An evaporating tank was also installed in approximately 1990 south of the materials building. Fluid from the holding tanks was periodically pumped into the evaporator for disposal. Sludge that remained in the evaporator was removed and placed outside in open pans for further evaporation. The remaining solids were reportedly added to concrete mix, which was used in several areas on-site as approximately indicated on Figure 3;
- Operations on-site included the use and storage of detergents, kerosene, paints, thinners, varnishes, stains, acids, glues, alcohols, aluminum coatings, hydraulic oil, and cleaning solvents including trichloroethylene, perchloroethylene, and methyl ethyl ketone;
- The materials building, contained a wash sink that discharged onto the ground surface east of the building. The wash sink was used to clean parts and equipment with solvents and degreasers. Perchloroethylene (PCE) was reportedly used in the wash sink from approximately 1960 to 1979. According to Mr. Freeman, soil contamination from these activities has been documented and the impacted soil has been removed from the site. Discharge of the waste water from the sink to the undeveloped portion of the site ceased in 1990 when the discharge was rerouted to the two sealed recovery USTs. See Section 3.11 for further details;
- A vapor degreaser was located within the materials shed, which used perchloroethylene to clean parts prior to painting. The vapor degreaser generally contained 1 to 3 gallons of perchloroethylene;

- According to Mr. Freeman, between the early 1960s and 1972, used florescent light bulbs were disposed of in the area east of the developed portion of the site. Mr. Freeman said there was no specific disposal area for the light bulbs and that they were generally tossed into the undeveloped portion of the site;
- The site is serviced by one septic tank located south of the main building and two septic tanks located east of the main building. According to Mr. Freeman, the septic system was used to dispose of waste water from the main building bathrooms;
- A shed located between the main building and the painting building was used to store deep cycle batteries. The batteries were stored in fiberglass boxes within the shed. The shed resided on a gravel area and the shed floor was never improved with concrete or asphalt;
- An area located east of the materials building was used to store drums of solvents, degreasers, and petroleum products. The drums were stored on a concrete pad. The area between the drum storage and the paint storage building was formerly unimproved ground, but was paved with concrete in approximately 1990. At this time a drain was installed in the newly paved area to dispose of runoff from the drum storage area. This runoff was routed to the southern sealed recovery UST.
- Prior to development of the painting building, painting activities were completed in the concrete paved area south of the painting building. During these activities, lacquer wash used in the painting process was routinely disposed of on the ground surface in the undeveloped area east of the former loading dock. According to Mr. Freeman, soil contamination from these activities has been documented and the impacted soil has been removed from the site. See Section 3.11 for further details.
- A hot water heater was buried outside the west-central portion of the main building. The heater was used to store waste kerosene from part cleaning activities that occurred in the compass room. When the tank became full the waste kerosene was pumped out of the tank and into 55-gallon drums, which were transported to the drum storage area near the materials building. The kerosene was then reused in the wash sink.
- Three to five lime lined pits were located in the undeveloped area east of the buildings. The approximately 2 foot by 4 foot pits were used from the late 1960s to the mid-1970s to dispose of acids used during the silkscreen process of circuit boards. The pits are currently under approximately 20 feet of fill soil and the exact location of the pits is unknown.
- A work station was located in the northwest corner of the assembly room that was used to wash soldered connections. Perchloroethylene was used in the cleaning process until approximately 1979, when company began to use Citri-Safe as a

replacement. Cleaning operations were completed in bowls placed on top of a work bench. Waste cleaning materials were placed in drums which were removed from the site for disposal.

- Fill soils were imported to the site at various times between the early 1970s and late 1990s. Originally the soils were imported to fill a seasonal pond that was located in the northeast corner of the site. With the addition of subsequent fill events, fill materials totaled up to approximately 50 feet thick in the former pond location. Fill soils were dispersed throughout the undeveloped, eastern portion of the site. The fill material was imported from various locations near the site, including the former airport, and reportedly contains various amounts of construction debris. No analytical analysis of the material was completed prior to being imported to the site.
- Pace Industries (Pace) operated a foundry on the property that adjoins the site to the north. A pipe rupture caused a spill of paraffin oil onto unimproved ground in the southern portion of the Pace property and the north-central portion of the subject site. The Freeman family reportedly initiated remediation activities to remove the impacted soil on the site. According to Mr. Freeman, cleanup of the spill on the Pace property was not completed for quite some time. Mr. Freeman was not convinced that the cleanup process on the Pace property was completed correctly and believed that contamination still remained. Mr. Freeman also indicated that the floor within the Pace facility was heavily cracked and that the company commonly disposed of waste material outside the southeastern corner of the building. See Section 3.11 and 4.1 for further details on the Pace facility.

3.11 Prior Report Review

The following previous environmental reports, permits and registrations, or geotechnical reports for the site were provided by the client to Terracon for review:

- Don Golden Company, Inc. *UST Decommissioning Report* dated May 7, 1994

This report describes the decommissioning of one 1,000 gallon UST used to store diesel and one 1,000 gallon UST used to store solvent. The approximate former location of these USTs is indicated on Figure 3. According to the report, both USTs were installed in 1982. The diesel UST was listed as a stainless steel tank and the solvent UST was listed as a single-walled steel tank. Both USTs were removed from the site during the decommissioning process. Groundwater was not encountered in the UST cavity and signs of impaired soil were not observed. Nine confirmation samples were obtained from the UST cavity and analyzed for gasoline, diesel, and oil range Total Petroleum Hydrocarbons (TPH) and BTEX (benzene, toluene, ethylbenzene, and total xylenes).

Concentrations of the above listed compounds were reported to be not detectable above laboratory reporting limits.

- Creative Environmental Technologies, Inc (CETI) *Site Characterization and Contaminated Soil Remediation Report: Pace Industries Oil Release April 26, 1999* dated May 5, 1999

This report provided details of remedial activities related to a paraffin oil release from the adjoining Pace Industries facility. The release occurred when the paraffin oil waste system backed up and the resulting pressure blew off a cleanout cap located near the property boundary between the Pace property and the subject site. The total amount of fluid released from the system is unknown. Standing fluid on both properties was pumped into 55-gallon drums upon discovery of the release. The fluid had migrated along a stormwater trench that flowed towards the northeast corner of the site and then to the south along the eastern site boundary. The fluid, which was reportedly contained within the stormwater trench, appeared to migrate approximately 200 feet along the eastern site boundary. Subsequent soil remediation supervised by CETI removed approximately 8 cubic yards of soil from the subject site; however, no remedial work was completed on the Pace property at that time. Confirmation samples indicated that all site soil containing concentrations of heavy oil-range TPH above MTCA Method A cleanup levels had been removed. One confirmation sample located south of the initial release area was reported to contain heavy oil-range TPH at a concentration of 1,100 mg/kg. A second confirmation sample along the northern site boundary was reported to contain heavy oil-range TPH at a concentration of 5,800 mg/kg; however, further excavation was not completed in this area because the contaminated soil appeared to be confined to the Pace property.

- CETI *Phase II Site Assessment: 2119 Mildred Street, Fircrest, Washington* dated March 28, 2000

This investigation was completed on the subject site based on information obtained during the CETI Level I Environmental Site Assessment completed May 7, 1999. The investigation included analysis of 15 soil samples collected from 24 borings. The samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (semi-VOCs), and/or metals including antimony, arsenic, beryllium, cadmium, chromium, copper, lead mercury, nickel, selenium, silver, thallium, and zinc. Antimony, arsenic, copper, lead, mercury, nickel, and zinc were identified in some soil samples (Figure 4 and Table 1); however, concentrations were below MTCA Method A cleanup levels (if available). Total chromium was identified at concentrations ranging from 16 mg/kg to 62 mg/kg, which is below the MTCA Method A cleanup level of 2,000

mg/kg for trivalent chromium; however, some of the samples were above the MTCA Method A cleanup level for hexavalent chromium (19 mg/kg). The samples collected near the former loading dock where reported to contain concentrations of PCE ranging from 0.64 mg/kg to 2.22 mg/kg, which is above the current MTCA Method A cleanup level of 0.05 mg/kg. Based on these findings CETI recommended all PCE contaminated soil be removed from the site.

- CETI *Addendum to the Phase II Site Assessment* dated November 2000

This investigation consisted of the collection of three surface soil samples and a sample collected from a soil boring, all along the northern site boundary near the Pace Industries facility. Two of the surface samples were collected in areas exhibiting an oily appearance, one of which was analyzed for pH and diesel and oil-range TPH. The other surface sample was collected in an area that contained black sooty material and was analyzed for arsenic, cadmium, chromium, lead, mercury, and zinc. The soil boring sample was analyzed for the above listed metals as well as antimony, beryllium, copper, nickel, selenium, silver, and thallium. Detectable concentrations of zinc, nickel, lead, copper, chromium, arsenic, and antimony were identified at concentrations below MTCA Method A and/or Method B cleanup levels (Figure 4 and Table 1). Oil-range TPH was identified at a concentration of 35,000 mg/kg in one of the surface soil samples, which is well above the MTCA Method A cleanup level of 2,000 mg/kg. CETI concluded that the oil-range TPH was related to a spill of paraffin oil that occurred on the Pace Industries property in 1999.

- CETI *PCE Contaminated Soil Remediation Report* dated January 2000 (believed to be an error and actually January 2001)

CETI was retained to cleanup PCE contaminated soil located near the former loading dock (Figure 4), as identified in CETI's March 28, 2000 Phase II Investigation. An approximately 25 foot by 40 foot area was excavated to a depth ranging between 6 feet to 11 feet bgs. The top 4 feet of material was stockpiled separately based on depth to contamination results from borings previously advanced in the area. One of the 6 characterization samples of the stockpile indicated a detectable concentration of PCE; however, the concentration of 0.34 mg/kg was below the MTCA Method A cleanup level used at that time (0.5 mg/kg). Note that the current cleanup level for PCE is 0.05 mg/kg. This material was eventually used as backfill in the excavation. All other soils were stockpiled on September 12, 2000 and were removed on November 28, 2000. All stockpiled soils were placed on a plastic-lined bermed area and covered with plastic sheeting. Nine confirmation samples were collected from the excavation cavity. With the exception of one sample, which was reported to contain a concentration of PCE at

0.39 mg/kg, analytical results of all confirmation samples reported PCE concentrations as not detectable above laboratory reporting limits.

- Washington State Department of Ecology (Ecology) letter regarding the Metal Marine Pilot, Inc. aka Freeman Property (subject site) addressed to Creative Environmental Technologies, Inc. dated March 6, 2001

This letter was in response to a review of the January 2000 PCE Contaminated Soil Remediation Report, the March 28, 2000 Phase II Site Assessment, and the May 7, 1999 Level I Environmental Site Assessment. The letter indicated that Ecology was issuing a No Further Action (NFA) designation for the remediated PCE soil contamination as indicated in the January 2000 report.

- Practical Environmental Solutions, Inc. *Application for Fill and Grading Permit: Drainage and Erosion/Sediment Control Plan;* dated May 3, 2001

Only portions of this report were made available to Terracon, so a full review of this report was not completed. This report details plans to grade approximately 25,000 yards of fill material that was imported to the site in 1998. The report explains that fill material was previously imported and graded in the early 1970s and possibly in the early 1980s. A portion of the fill imported in 1998 was graded prior to completion of this report because of an emergency request submitted by the City of Fircrest in order to eradicate a colony of rats residing on-site. According to the report, temporary stormwater trenches and two stormwater ponds were installed in 1996 and new catch basins were installed in 1999. The plan detailed in the report included grading fill material and installing a stormwater runoff system that included trenches and stormwater ponds that would discharge to the existing City of Fircrest stormwater system.

- Sound Environmental Strategies, Corp. (SES) *Testing of Surface Soils near Eastern Swale of the Property at 2119 Mildred Street, Fircrest, Washington* dated October 8, 2001

SES investigated red staining that had been observed in a swale in the eastern portion of the site. Seven samples were collected from stained areas and analyzed for metals. Analytical results indicated detectable levels of arsenic, barium, cadmium, chromium, lead, beryllium, copper, nickel, and zinc, of which arsenic at 160 mg/kg and 29 mg/kg and cadmium at 30 mg/kg were reported at concentrations above MTCA Method A cleanup levels. During one sampling event, an area of seepage with a visible sheen was observed emanating from the side of the swale. The sample collected from this area was additionally analyzed for TPH; however, analytical results reported the TPH was not

detectable above laboratory reporting limits. SES concluded that the detectable metal concentrations were not associated with the sheen and red staining, which in their opinion was naturally occurring and did not represent soil contamination. SES also concluded that the detectable levels of arsenic and cadmium may be the product of proper application of weed killers and fungicides and they did not constitute a threat to human health and the environment.

- SES *Underground Storage Tank Decommissioning and Soil Remediation Project: 2119 Mildred Street West, Fircrest, Washington* dated May 24, 2002

This report describes the decommissioning of two steel double-walled water heaters which were buried underground and used to store kerosene. Both USTs were located outside the western portion of the main building near the HVAC intake (Figure 3). The USTs, located approximately 6 feet to 8 feet bgs, reportedly were installed in the late 1960s to early 1970s and were used to store kerosene used for parts cleaning. The report indicated that the USTs showed no signs of corrosion or leakage and field staff reported no sign of soil impairment. However, soil samples indicated the presence of diesel range TPH above MTCA Method A cleanup levels. Subsequent remedial excavation removed 6.7 tons of soil from the area. Confirmation soil samples collected after the soil cleanup did not indicated the presence of TPH above laboratory minimum reporting limits.

- Kleinfelder *Final Geotechnical Report: Proposed Retail Development (#4265-00) 2119 Mildred Street, Fircrest, Washington;* dated August 22, 2005

This report was completed for design considerations regarding a retail building and an underground parking garage. The report acknowledged that the site has historically undergone fill and grading activities which they reported to have been completed between 1972 and 2000. According to the report, the fill material was imported from nearby commercial construction projects and roadway projects. Sections of fill material up to approximately 37 feet thick were encountered in some of the 56 borings completed for this report. Field staff reported the presence of wood debris, roots, concrete, asphaltic concrete, plastic, and garbage within fill material encountered during drilling operations. Perched groundwater was observed at varying depths within sandy sections of the fill and native glacial till material.

- Kleinfelder *Phase I Environmental Site Assessment: Proposed Retail Site (#4265-00) 2119 Mildred Street, Fircrest, Washington;* dated May 25, 2005

This report was completed as part of a predevelopment investigation for a proposed retail development. At the time of the report, the site was developed with the existing main building, two detached structures, paved parking area, and the stormwater system consisting of a ditch and two ponds. The site was used as a storage facility containing Metal Marine Pilot equipment and personal property of the Freeman family.

The Phase I included an Asbestos Survey of the main building and two smaller detached structures. The following materials were identified to be asbestos containing materials (over 1% asbestos): vinyl tile in the offices, display room, engineering room, and photocopy room; vinyl sheet flooring in the lunch room and southwest end of the women's bathroom; vinyl sheet flooring in the northeast end of the men's and women's bathrooms and locker rooms; caulking around windows located in the southwestern portion of the main building; sealant around HVAC ducting located north of the compass room on the exterior of the building; and sheetrock joint compound throughout the main building.

The Phase I also included lead sampling which consisted of collection of 12 paint chip samples. Of the 12 samples, 11 were identified to contain concentrations of lead above laboratory reporting limits. Concentrations of lead ranged from 55 mg/kg to 5,100 mg/kg. One sample was identified above 5,000 mg/kg (5,100 mg/kg), which was from light gray paint located on the metal walls of the paint storage shed.

Kleinfelder indicated the previous on-site investigations and remedial work did not sufficiently address impacts to site soil and groundwater. Kleinfelder recommended that addition investigation be completed to address potential contamination due to the Pace facility paraffin oil spill, on-site hazardous material and waste storage, floor staining within the main building, use of the two sealed recovery USTs, onsite disposal of acids in lime-lined pits, onsite disposal of fluorescent light bulbs, and the onsite discharge of waste water mixed with oil and solvents. Kleinfelder also recommended the removal of all hazardous material and hazardous material storage containers, the septic tanks, the transite pipe, if exposed, and the asbestos containing material, as identified by Kleinfelder.

- Kleinfelder *Phase II Environmental Site Assessment: Proposed Retail Site Report (#4265-00) 2119 Mildred Street, Fircrest, Washington;* dated May 25, 2005

This investigation was performed based off the findings of Kleinfelder's 2005 Phase I ESA (discussed above). The investigation consisted of 5 borings that were advanced inside the main building to depths between 1.5 feet and 6 feet bgs and 15 borings that were advanced in the north half of the site to depths between 6 and 24 feet bgs.

Twenty-nine soil samples and three perched water samples were collected from the 20 borings and submitted for analysis. Five of the exterior borings were completed as monitoring wells and groundwater samples from four of the wells (one well was dry) were collected and submitted for analysis.

Analytical results indicated the following: eight soil samples contained detectable concentrations of heavy oil, three of which were the above MTCA Method A cleanup level; three soil samples contained detectable levels of perchloroethylene (PCE), two of which were above the MTCA Method A cleanup level; one soil sample contained a detectable concentration of isopropyltoluene; 11 soil samples contained detectable concentrations of lead; seven soil samples contained detectable concentrations of chromium; one soil sample contained a detectable concentration of arsenic; one groundwater sample contained a detectable concentration of acetone; four groundwater sampled contained detectable concentrations of arsenic, two of which were above the MTCA Method A cleanup level; six groundwater samples contained detectable concentrations of barium; two groundwater samples contained detectable concentrations of chromium; and two groundwater samples contained detectable concentrations of selenium (Figure 4, Table 1, and Table 2). Based on these findings further investigation was recommended.

- Kleinfelder *Supplemental Phase II Environmental Site Assessment: Proposed Retail Site Report (#4265-00) 2119 Mildred Street, Fircrest, Washington;* dated September 16, 2005

This investigation was based off the findings of Kleinfelder's 2005 Phase II report (discussed above). The investigation included collection of 14 soil samples from seven borings located in the central portion of the site. An eighth boring, which was completed with a monitoring well, was also advanced in the eastern portion of the site. Five groundwater samples were collected for this investigation, one from the new monitoring well and four from the previously sampled monitoring wells. A soil sample was also collected from the bottom of a drain located in the former material shed. All soil samples and the groundwater sample collected from the new monitoring well were analyzed for PCE, diesel and heavy oil range TPH, and arsenic. The groundwater samples from the old monitoring wells were analyzed for PCE and diesel and heavy oil range TPH.

Analytical results indicated the following: three soil samples contained detectable concentrations of heavy oil-range TPH, one of which was above the MTCA Method A cleanup level; two soil samples contained detectable concentrations of diesel-range TPH; three soil samples contained detectable concentrations of PCE; and one

groundwater sample contained a detectable concentration of arsenic (Figure 4, Table 1, and Table 2).

Kleinfelder discussed the arsenic levels identified during their two Phase II investigations with Charles San Juan, who was a hydrogeologist with Ecology's Toxic Cleanup Program. Mr. San Juan believed the depth of the contamination eliminated the Tacoma Smelter plume as a source of the arsenic and explained that the arsenic may be naturally occurring. He believed that Ecology would likely not require addition investigation in regards to arsenic on-site.

Based on information gathered during their Phase I ESA, Phase II investigation, and Supplemental Phase II investigation, Kleinfelder concluded that 2,000 to 3,000 yards of PCE contaminated soil remains on-site. Heavy oil contamination remained on site as well; however, impacted soil observed in exploratory borings appeared to be limited to 6 inches thick. Also, there appeared to be no correlations between borings as to the depth of contaminated soil, thus Kleinfelder concluded that heavy oil contaminated soil was discontinuous and sporadically located throughout the site. Kleinfelder recommended that the site be enrolled in Ecology's VCP program and all PCE, heavy oil, and paraffin oil contaminated soil be removed prior to development. Also, Kleinfelder recommended that the sealed recovery USTs and the lime-lined pit be removed.

Prior Report Summary

Two UST decommissioning reports, two remedial excavation reports, five surface and subsurface investigation reports, one Phase I ESA report, one Ecology letter, one geotechnical report, and one fill and grading permit were provided for review. Based on information obtained from these reports it appears that oil-range TPH, PCE, and various metals remain on-site which, in some areas, has been identified above applicable MTCA Method A and/or Method B cleanup levels. PCE contamination appears to be confined to an area east of the paint storage shed, which was estimated by Kleinfelder to include 2,000 to 3,000 yards of soil. Oil-range TPH and metal contamination appears to have been sporadically identified throughout the northeastern portion of the site. These reports have indicated that the contaminated areas appear to be discontinuous and no quantitative estimates of contamination have been made.

The Kleinfelder Phase I ESA report included an asbestos survey and lead-based paint analysis. The report identified 11 areas where paint contained detectable concentrations of lead, one of which was above 5,000 mg/kg, which is the maximum concentration to be considered non-lead based paint as defined by the EPA. Four types of vinyl flooring, caulking, and HVAC sealant were reported to contain asbestos.

3.12 Historical Use Information Summary

Based on review of the historical information, the site appears to have been undeveloped prior to purchase of the site by Mr. and Mrs. Robert Freeman in approximately 1953. Metal Marine Pilot, which designed, manufactured, and repaired auto pilot devices for boats, began operations onsite in the late 1950's when the main building was constructed. The painting building, paint storage building, cardboard building, and materials building were all constructed during the 1960s and 1970s. The materials building and cardboard building were demolished in the early 2000s. Metal Marine Pilot ceased operations on-site in approximately 2000 and the site has been used as storage since that time.

Based on information obtained during historical research the following RECs were identified:

- An asbestos containing transit pipe, formerly used to transport water through the site to the property that adjoins the site to the north, is buried in the eastern portion of the site;
- A wash sink, located in the materials building, was used to clean parts and machinery with solvents and degreasers. Prior to 1990, the waste from the sink was discharged to the undeveloped portion of the site east of the paint storage shed;
- Fluorescent light bulbs were routinely disposed of in the undeveloped portion of the site east of the former loading dock;
- Lime-lined pits, located east of the former loading dock, were used from the late 1960s to the mid 1970s to dispose of acids used in the circuit board etching process;
- A drum storage area was located between the materials building and the paint storage building. The drums, which contained solvents, degreasers, and petroleum products, were stored on a concrete pad; however, an unimproved area of equal or lower elevation was located east of the storage area and runoff from the drum storage area may have impacted the unprotected soils;
- A pipe containing paraffin oil ruptured on the north adjoining property in 1999 and the subsequent release migrated onto the subject site. Contaminated soil on the subject site was removed, but Mr. Freeman believes contamination remains on the adjoining property;
- Fill material was imported to the site during several occasions between the early 1970s and the late 1990s. The fill material was not tested for contamination prior to placement onsite and reportedly contains various amounts of construction debris;
- Prior to the installation of two sealed recovery USTs located east of the painting building and paint storage building, floor drains located in the painting building and materials building discharged to the ground surface on the undeveloped area east of the buildings;

- Prior to development of the painting building, spray painting operations occurred on a concrete paved area west of the loading dock. Lacquer wash used during the spray painting process was routinely disposed of on the ground surface in the undeveloped area east of the loading dock;
- The main building bathrooms are serviced by three septic tanks.

4.0 RECORDS REVIEW

Regulatory database information was provided by EDR, a contract information services company. Information in this section is subject to the accuracy of the data provided by the information services company and the date at which the information is updated, and the scope herein did not include confirmation of facilities listed as "unmappable" by regulatory databases.

In some of the following subsections, the words up-gradient, cross-gradient and down-gradient refer to the topographic gradient in relation to the site. As stated previously, the groundwater flow direction and the depth to shallow groundwater, if present, would likely vary depending upon seasonal variations in rainfall and the depth to the soil/bedrock interface. Without the benefit of on-site groundwater monitoring wells surveyed to a datum, groundwater depth and flow direction beneath the site cannot be directly ascertained.

4.1 Federal and State/Tribal Databases

Listed below are the facility listings identified on federal and state/tribal databases within the ASTM-required search distances from the approximate site boundaries. Database definition, descriptions, and the database search report are included in Appendix D.

Federal and State Databases

Database	Description	Radius (miles)	Listings
Federal			
NPL	The NPL is the EPA's database of uncontrolled or abandoned hazardous waste facilities that have been listed for priority remedial actions under the Superfund Program.	1.0	0
NPL (Delisted)	The NPL (Delisted) refers to facilities that have been removed from the NPL.	0.5	0
CERCLIS	The CERCLIS database is a compilation of facilities which the EPA has investigated or is currently investigating for a release or threatened release of hazardous substances pursuant to the CERCLA of 1980.	0.5	0
CERCLIS / NFRAP	CERCLIS/NFRAP refers to facilities that have been removed and archived from EPA's inventory of CERCLA sites.	0.5	0
RCRA CORRACTS/ TSD	The EPA maintains a database of RCRA facilities associated with treatment, storage, and disposal (TSD) of hazardous waste that are undergoing "corrective action." A "corrective action" order is issued when there has been a release of hazardous waste or constituents into the environment from a RCRA facility.	1.0	0
RCRA Non-CORRACTS/ TSD	The RCRA Non-CORRACTS/TSD Database is a compilation by the EPA of facilities which report storage, transportation, treatment, or disposal of hazardous waste. Unlike the RCRA CORRACTS/TSD database, the RCRA Non-CORRACTS/TSD database does not include RCRA facilities where corrective action is required.	0.5	0
RCRA Generators	The RCRA Generators database, maintained by the EPA, lists facilities that generate hazardous waste as part of their normal business practices. Generators are listed as either large (LQG), small (SQG), or conditionally exempt (CESQG). LQG produce at least 1000 kg/month of non-acutely hazardous waste or 1 kg/month of acutely hazardous waste. SQG produce 100-1000 kg/month of non-acutely hazardous waste. CESQG are those that generate less than 100 kg/month of non-acutely hazardous waste.	Site and adjoining properties	2
IC / EC	A listing of sites with institutional and/or engineering controls in place. IC include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are	Site	0

Database	Description	Radius (miles)	Listings
	generally required as part of the institutional controls. EC include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.		
ERNS	The Emergency Response Notification System (ERNS) is a listing compiled by the EPA on reported releases of petroleum and hazardous substances to the air, soil and/or water.	Site	0
State			
HSL	The Washington Department of Ecology (Ecology) maintains a listing of state equivalent NPL sites which have been assessed and ranked using the Washington Ranking Method (WARM.)	1.0	0
CSCSL	Ecology maintains a municipal listing of state equivalent CERCLIS sites where contamination of soil and/or ground water is confirmed at levels greater than the applicable cleanup criteria or standards.	0.5	4
CSCSL-NFA	Ecology maintains a database of state equivalent national priority list (NPL) facilities in the State of Washington that have obtained a No Further Action determination (CSCSL NFA)	0.5	3
SWF/LF	State and/or Tribal database of solid waste facilities located within Washington. The database information may include the facility name, class, operation type, area, estimated operational life, and owner.	0.5	1
LUST	State and/or Tribal database of leaking underground storage tanks in the state of Washington.	0.5	5
UST	State and/or Tribal database of registered storage tanks in the State of Washington which may include the owner and location of the tanks.	Site and adjoining properties	4
ICR	Ecology provides a computer generated database of sites that have submitted remedial action reports, known as Independent Cleanup Reports (ICR). These actions have been conducted without department oversight or approval and are not under an order or decree. The database is no longer updated by Ecology.	0.5	5
IC	Sites that have institutional controls.	Site	0
VCP	State and/or Tribal facilities included as Voluntary Cleanup Program sites.	0.5	3
Brownfield	Ecology maintains a database of registered brownfields within the State of Washington.	0.5	0

In addition to the above ASTM-required listings, Terracon reviewed other federal, state, local and proprietary databases provided by the database firm. A list of the additional reviewed databases is included in the regulatory database report included in Appendix D.

The following table summarizes the site-specific information provided by the database and/or gathered by this office for identified facilities. Facilities are listed in order of proximity

to the subject site. Additional discussion for selected facilities may follow the summary table.

Listed Facilities

Facility Name and Location	Estimated Distance/Direction/Gradient	Database Listings
Metal Marine Pilot Inc 2119 Mildred St. W.	Site	UST, VCP, CSCSL NFA, RCRA-NLR
Pace Industries Puget Div Inc/Puget Corp Of Washington 2011 & 2101 Mildred St. W.	Adjoining / north / up-gradient	VCP, CSCSL NFA, RCRA-NLR, UST
Leland M McArthur 2305 Mildred St. W.	Adjoining / south / down-gradient	UST
Jiffy Lube Store 2076/Q Lube 2218 Mildred St. W.	Approximately 50 feet / west / cross-gradient	LUST, UST, ICR
Tacoma Drapery Towne Cleaner 1921 Mildred St. W.	Approximately 600 feet / north / up-gradient	CSCSL
Towne Cleaners 1923 Mildred St. W.	Approximately 600 feet / north / up-gradient	LUST
Tosco 1107730143/ BP #11077 6622 S. 19th St.	Approximately 680 feet / north-northwest / up-gradient	LUST, ICR
Fircrest Village Cleaners 1105 Regents Blvd. #A	Approximately 1150 feet / east-southeast / down-gradient	CSCSL
Exxon #7 7017 1033 Regents Blvd.	Approximately 1430 feet / east-southeast / down-gradient	ICR, CSCSL NFA
Westmark Construction 7010 W 27th St	Approximately 1710 feet / southwest / down-gradient	LUST, ICR
University Place Refuse Svc 2815 Rochester St. W.	Approximately 2090 feet / southwest / down-gradient	LF, LUST, ICR
Arco 4335 2623 Bridgeport Way W.	Approximately 2800 feet / west-southwest / down-gradient	CSCSL, VCP
Hidden Hills Apartments 3313 72nd Ave. Ct. W.	Approximately 3930 feet / south-southwest / down-gradient	CSCSL

Metal Marine Pilot Inc

The site, listed under the name Metal Marine Pilot, Inc, is listed in the State of Washington UST, VCP, and CSCSL NFA lists as well as the federal RCRA list. According to the EDR report, two 111 to 1,100 gallon single-walled USTs, installed in 1974, have been removed from the site, one 111 to 1,100 gallon double-walled UST, installed in 1964, has been closed in place, and one 111 to 1,100 gallon steel single-walled UST, installed in 1964, is listed as having exempt status. The site was issued a NFA on March 6, 2001. No information was reported regarding the VCP listing. The site is listed as a non-generator under the RCRA listing, but was previously listed as a conditionally exempt small quantity generator. No RCRA violations have been reported. See Sections 3.10 and 3.11 for further details.

Pace Industries Puget Div Inc/Puget Corp of Washington

The Pace Industries Puget Division property adjoins the site to the north and is in an assumed up-gradient position relative to the site. The facility is listed in the Washington State UST, VCP, and CSCSL NFA lists as well as the federal RCRA list. According to the EDR report, one 111 to 1,100 gallon steel UST, installed in 1964, has been closed in place at the facility. According to Kleinfelder's 2005 Phase I ESA, approximately 30 yards of impacted soil was removed from under sumps in the southern portion of the Pace property in 1990. The EDR report indicated that, based on residual concentrations of petroleum hydrocarbons and PCBs in soils beneath concrete foundations and footings that exceeded MTCA Method A and B cleanup levels and the potential presence of heavy metals in soils beneath a concrete patio, institutional control soil restrictions, property use restrictions, and maintenance requirements were placed on the property in 1998. The property use and soil restrictions were rescinded in 2003. The facility was issued a CSCSL NFA designation in October 4, 2007. No information was reported regarding the VCP listing. The facility is reportedly no longer regulated as a RCRA facility; however, as late as June 4, 2001 the facility was listed as a large quantity generator. No RCRA violations have been reported. See Sections 3.10 for further details.

Leland M McArthur

The Leland M McArthur facility is listed in the Washington State UST list. Based on information obtained during the aerial photograph review and assumptions made regarding the facility address, the facility appears to have formerly adjoined the site to the south. The facility appears to have been a fueling station during the 1970s. According to the EDR report, three USTs, installed in 1964, have been removed from the facility. Based on the age of the USTs and the proximity of the facility to the subject site, this facility appears to represent a REC.

Jiffy Lube Store 2076/Q Lube

The Jiffy Lube/Q Lube facility, located approximately 50 feet west of the site and in an assumed cross-gradient location relative to the site, is listed in the State of Washington UST, LUST, and ICR lists. According to the EDR report, one 111 to 1,100 gallon single-walled UST and two 1,101 to 2,000 gallon single-walled USTs were installed in 1982. A release from the UST system impacting soil was reported on April 4, 1995. An ICR Final Cleanup Report was submitted on May 4, 1995 and cleanup was deemed to be complete. All three USTs have reportedly been removed from the facility. Based on the reported depth to groundwater in the area, lack of a reported impact to groundwater at the facility, and the reported completion of cleanup at the facility, this does not appear to represent a REC.

Tacoma Drapery Towne Cleaner

Tacoma Drapery Towne Cleaner and Towne Cleaner were both listed as located approximately 600 feet north of the site. Based on the similarities of the names and the physical addresses of the facilities, it is assumed that these two listing names refer to the same facility. This facility, which is located in an assumed up-gradient position relative to the site, is listed in the Washington State CSCSL and LUST lists. According to the EDR report, soil at the facility was impacted by a release of a petroleum product on April 5, 1993, Soil contamination was reported as cleaned up on November 17, 2006; however, the facility was registered as a CSCSL facility on December 11, 2006 and according to the CSCSL listing is awaiting cleanup. Based on the reported depth to groundwater in the area, lack of a reported impact to groundwater at the facility, and distance of the facility from the subject site, this does not appear to represent a REC.

Tosco 1107730143/BP #11077

The Tosco/BP facility, located approximately 680 feet north-northwest of the site and in an assumed up-gradient position relative to the site, is listed in the Washington State LUST and ICR lists. Soils at the facility were reported on February 12, 1990 to be impacted by a release of petroleum products from a UST. Cleanup reportedly began on October 24, 1995; however, the facility was listed as awaiting cleanup on December 13, 2007. Interim ICR cleanup reports were submitted on May 13, 1993, August 9, 1993, and April 2, 1997. According to EDR, a final ICR cleanup report has not been submitted. Based on the reported depth to groundwater in the area, lack of a reported impact to groundwater at the facility, and distance of the facility from the subject site, this does not appear to represent a REC.

The remaining facility listings do not appear to represent RECs to the site at this time based upon regulatory status, apparent topographic gradient, and relative distance from the site.

Unmapped facilities are those that do not contain sufficient address or location information to evaluate the facility listing locations relative to the site. The report listed 5 facilities in the unmapped section. Determining the location of unmapped facilities is beyond the scope of this assessment; however, none of these facilities were identified as the site. These facilities are listed in the database report in Appendix D.

4.2 Local Agency Inquiries

4.2.1 Planning/Building Department

The City of Fircrest Planning/Building Department was contacted in person regarding environmental records or information indicating environmental concerns for the site. The department file on the site was provided for review. See Section 3.8 for a summary of the department records.

The Pierce County Planning and Land Services Department was contacted regarding environmental records or information indicating environmental concerns for the site. A representative of the department instructed us to visit the Pierce County Planning and Land Services website for the desired information. Five records associated with the site were identified on the Planning and Land Services website. The records included a permit to remove a 1,000 gallon diesel UST and a 1,000 gallon solvent UST, a permit to use/handle combustible liquids, a permit to conduct spray finishing operations, a canceled permit to install a new gas water heater, and a fire inspection record. The UST decommissioning record appears to be associated with the decommissioning reported discussed in Section 3.11. Storage and use of chemicals, including combustible liquids, is discussed further in Sections 3.10 and 3.11.

4.2.2 Fire Department

The City of Tacoma Fire Department was contacted by telephone regarding environmental records or information indicating environmental concerns for the site. According to a department representative, the department does not have records on file pertaining to hazardous conditions or HAZMAT calls related to the site. The representative also said that the Tacoma Fire Department does not regulate USTs within the City of Fircrest and referred us to the City of Fircrest for information in USTs.

4.2.3 Health Department

The Tacoma/Pierce County Health Department website was reviewed regarding environmental records for information indicative of environmental concerns for the site. According to department records, a permit for an onsite septic system was granted in 1966. The permit record appears to indicate that the system included two 500 gallon septic tanks and a 100 yard drain field that serviced five toilets, two urinals, and two sinks.

4.3 Records Review Summary

The site was identified by the database report as a listed in the State of Washington UST, VCP, CSCSL NFA lists as well as the federal RCRA list. The site was granted a NFA on March 6, 2001, which appears to be related to the removal of PCE contaminated soil from the loading dock area.

The Pace Industries facility was reported as listed in the Washington State UST, VCP, and CSCSL NFA lists as well as the federal RCRA list. Based on residual concentrations of petroleum hydrocarbons and PCBs in soils beneath concrete foundations and footings that exceeded MTCA Method A and B cleanup levels and the potential presence of heavy metals in soils beneath a concrete patio, institutional control soil restrictions, property use restrictions, and maintenance requirements were placed on the property in 1998. The facility was issues an NFA in 2007; however, cleanup of the above listed contamination appears to have not been completed and thus this facility appears to represents a REC.

The database report also reported the Leland M. McArthur facility as listed in the Washington State UST list. This facility appears to have operated during the 1970s a fueling station which adjoined the site to the south along Mildred Street West. The USTs have been removed from the property; however, based on the years of operation and the proximity of the facility to the subject site, this facility appears to represent a REC.

5.0 SITE RECONNAISSANCE

5.1 General Site Information

Information contained in this section is based on a visual reconnaissance conducted while walking through the site and the accessible interior areas of structures, if any, located on the site. Figure 2 and Figure 3 in Appendix A are diagrams of the site. Photo documentation of the site at the time of the visual reconnaissance is provided in Appendix E. Credentials of the individuals planning and conducting the site visit are included in Appendix F.

General Site Information

Site Reconnaissance	
Field Personnel	Alex J. DeOme
Reconnaissance Date	May 8, 2008
Weather Conditions	Cloudy, approximately 50^0F
Site Contact/Title	Michael Freeman/Member of the Freeman Family (site owners) and owner of Metal Marine Pilot
Site Description	
Site Name	Proposed Fircrest WinCo
Site Location/Address	2119 Mildred Street West, Fircrest, Pierce County, Washington
Land Area	Approximately 9.49 acres
Site Improvements	The site is improved with an approximately 25,000 square foot main building, an approximately 600 square foot painting building, and an approximately 80 square foot paint storage shed. Concrete building pads of two approximately 700 square foot former buildings are present as well. All buildings and building pads are located in the northwestern portion of the site. An asphalt-paved parking lot is present west of the main building and an asphalt drive is located north and east of the main building. The remainder of the site consists of undeveloped land.
Zoning	Community Commercial
Site Topographic Relief	Except for the eastern quarter of the site which slopes steeply to the east, the site slopes gently to the east-southeast

Building Description

Building Identification	*Building Use*	*Approx. Construction Date*	*Number of Stories*	*Approx. Size (ft²)*
Main Building	Formerly used for manufacture/design/repair of autopilot devices for boats as well as office and sales space	1959	1	25,000
Painting Building	Painting and drying of parts	Mid-1970s	1	600
Paint Storage Building	Storage of paint	Mid-1970s	1	80
Materials Building (Historical)	Used to clean parts and equipment	1959	1	700
Cardboard Building (Historical)	Storage of cardboard boxes	Mid-1970s	1	700

Site Utilities	
Electricity	Puget Sound Energy
Drinking Water	City of Fircrest
Wastewater	City of Fircrest
Natural Gas	None Provided

5.2 General Description of Site, Occupants, and Operations

The site is currently unoccupied and is used as storage for Metal Marine Pilot and the Freeman family.

5.3 Site Observations

The following table summarizes site observations and interviews. Affirmative responses (designated by an "X") are discussed in more detail following the table.

Site Characteristics

Category	Item or Feature	Observed
Site Operations, Processes, and Equipment	Emergency generators	
	Elevators	
	Air compressors	
	Hydraulic lifts	
	Dry cleaning	
	Photo processing	
	Laboratory hoods and/or incinerators	
	Waste treatment systems and/or water treatment systems	
	Heating and/or cooling systems	
	Other processes or equipment	
Aboveground Chemical or Waste Storage	Aboveground storage tanks	
	Drums, barrels and/or containers ≥ 5 gallons	X
	MSDS	
Underground Chemical or Waste Storage, Drainage or Collection Systems	Underground storage tanks or ancillary UST equipment	X
	Sumps, cisterns, catch basins and/or dry wells	X
	Grease traps	
	Septic tanks and/or leach fields	X
	Oil/water separators	
	Pipeline markers	

Category	Item or Feature	Observed
	Interior floor drains	X
Electrical Transformers/ PCBs	Pad or pole mounted transformers and/or capacitors	X
	Other equipment	
Releases or Potential Releases	Stressed vegetation	
	Stained soil	
	Stained pavement or similar surface	
	Leachate and/or waste seeps	
	Trash, debris and/or other waste materials	X
	Dumping or disposal areas	
	Construction/demolition debris and/or dumped fill dirt	X
	Surface water discoloration, odor, sheen, and/or free floating product	
	Strong, pungent or noxious odors	
	Exterior pipe discharges and/or other effluent discharges	
Other Notable Site Features	Surface water bodies	
	Quarries or pits	
	Wells	

Aboveground Chemical or Waste Storage

Drums, barrels and/or containers > 5 gallons

One unlabeled empty 55-gallon drum was observed south of the painting building during the site reconnaissance. Surficial staining was not observed on the sides of the drum or the surrounding area. A release from the drum was not observed during the site reconnaissance.

Underground Chemical or Waste Storage, Drainage or Collection Systems

Underground storage tanks or ancillary UST equipment

According to Mr. Freeman, two sealed recovery USTs are located east of the painting building and paint storage shed. The USTs were installed in approximately 1990 to hold runoff collected in floor drains located in the painting building and materials building. A wash sink located in the materials building also discharged to the USTs. An evaporating tank was also installed in approximately 1990 south of the materials building. Fluid from the sealed recovery USTs was periodically pumped into the evaporator for disposal. Sludge that remained in the evaporator was removed and placed outside in open pans for further evaporation. The remaining solids were reportedly added to concrete mix, which was used in several areas on-site. According to Mr. Freeman, the USTs currently contain stormwater. Based on the reported materials discharged to the USTs, these USTs appear to represent RECs. Historically present USTs are discussed in Section 3.

Sumps, cisterns, catch basins and/or dry wells

Evidence of seven catch basins were observed onsite during the site reconnaissance. According to Mr. Freeman, the catch basins discharge to the City of Fircrest stormwater system. Surficial staining or odors were not observed on or adjacent to any of the catch basins. The catch basins do not appear to represent RECs.

Another catch basin was observed in the former drum storage area. According to Mr. Freeman, this catch basin discharges to the southern sealed recovery UST, located east of the paint storage building. Surficial staining or odors were not observed on or adjacent to the catch basin; however, based on the contents of drums formerly stored in the vicinity of the catch basin, this catch basin appears to represent a REC.

Septic tanks and/or leach fields

The subject site is equipped with three septic tanks, one located south of the main building and the other two located east of the main building (Figure 3). According to Mr. Freeman, the septic tanks were used exclusively for discharge from the restrooms located in the main building and no hazardous material was discharged to the septic system. Stressed vegetation or noxious odors was not observed in the vicinity of the on-site septic tanks and drain fields. However, based on the substantial historic use of potentially hazardous materials at the site, the septic tanks and leach fields appear to represent a REC.

Interior floor drains

Five interior floor drains were observed in the painting building and two drains were observed on the building pad of the former materials building. According to Mr. Freeman, the floor drains discharge to the two concrete sealed recovery USTs located east of the painting building and paint storage shed. Evidence of staining or other releases to the floor drains were not observed during the site reconnaissance. Potentially hazardous materials did not appear to be stored in the vicinity of the floor drains; however, based on information provided by Mr. Freeman, it appears paints, solvents, and degreasers were discharged through the floor drains. According to a previous report completed by others, a soil sample collected from the bottom of one drain located in the materials building was reported to contain diesel-range TPH at a concentration of 420 mg/kg and heavy oil-range TPH at a concentration of 1,700 mg/kg. Based on information provided by Mr. Freeman and the previous report, these floor drains appear to represent a RECs.

Electrical Transformers/ PCBs

Pad or pole mounted transformers and/or capacitors

During Terracon's site visit, four pole-mounted transformers, owned and serviced by Puget Sound Energy, were observed; however, no information with regard to PCB content of the transformer fluids was observed. Transformers contain mineral oil which may contain minor amounts of PCB and could be considered "PCB contaminated" (PCB content of 50-500 ppm).

Puget Sound Energy maintains responsibility for the transformers, and if the transformers were "PCB contaminated," the utility company is not required to replace the transformer fluids until a release is identified. However, no evidence of current or prior release was observed in the vicinity of the electrical equipment during the site reconnaissance.

Releases or Potential Releases

Trash, debris and/or other waste materials

Trash and debris was observed throughout the subject site during the site reconnaissance. Based on visual observation (only of surface materials) the material appeared to be primarily household waste. The debris materials did not appear to be hazardous in nature and leakage, spills, or other releases from these materials were not observed during the visual reconnaissance. Based on visual observations, the trash and debris does not appear to represent a REC.

Construction/demolition debris and/or dumped fill dirt

According to Mr. Freeman, the eastern half of the site has undergone several fill and grading events. See Sections 3.10 and 3.11 for further discussion.

5.4 Interviews Conducted During Visual Reconnaissance

The following individuals were interviewed regarding the presence or absence of the features listed in the table above.

Interviewees

Interviewer	Interviewee/Phone #	Title	Date/Time
Alex J. DeOme	Michael Freeman	Member of Freeman Family (site owners) and owner of Metal Marine Pilot	May 8, 2008/11:00 May 27, 2008/1:30PM

Information obtained from the above-listed interviewee is discussed in Sections 3.10 and 5.3.

5.5 Site Reconnaissance Summary

During the site reconnaissance, the site buildings appeared to be unoccupied and used as storage for Metal Marine Pilot and the Freeman family. Evidence of two sealed recovery USTs was observed east of the painting building and the paint storage shed, which according to Mr. Freeman, were used to store discharge from floor drains within the painting building and materials building, discharge from a wash basin that was located in the materials building, and discharge from a catch basin that was located in the drum storage area. Based on the contents of the discharge, which commonly contained paints, solvents, and degreasers, these USTs, drains, and the catch basin appear to represent RECs. On-site septic tanks and leach fields are additionally identified as RECs.

6.0 ADJOINING PROPERTY RECONNAISSANCE

Visual observations of adjoining properties (from site boundaries) are summarized below.

Adjoining Properties

Direction	Description
North	Two commercial buildings and one office building
East	Fircrest Family Townhouses and Fircrest Apartment Homes to the east and Sterling Savings Bank to the southeast
South	Fircrest Regents office/commercial complex and Columbia Bank
West	Mildred Street West followed by five restaurants, a Jiffy Lube, and a Movie Theater

The site is located in a mixed-use portion of Fircrest. The site is bound by commercial development to the north and south, multi-family residential development to the east, and Mildred Street West followed by commercial development to the west, including a Jiffy Lube automobile servicing facility, which does not appear to represent a REC and is discussed further in Section 4.1.

7.0 ADDITIONAL SERVICES

Per the agreed scope of services specified in the proposal, additional services (e.g., asbestos sampling, lead-based paint sampling, wetlands evaluation, lead in drinking water testing, radon testing, etc.) were not conducted.

8.0 FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

8.1 Findings and Conclusions

This Phase I ESA was performed in accordance with our proposal dated May 2, 2008, and was conducted consistent with the procedures included in ASTM E 1527-05, *Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process*. The ESA was conducted under the supervision or responsible charge of Jon M. Einarsen, environmental professional. Alex J. DeOme performed the site reconnaissance on May 8, 2008.

A cursory summary of findings is provided below. It should be recognized that details were not included or fully developed in this section, and the report must be read in its entirety for a comprehensive understanding of the items contained herein.

- The site (Pierce County Tax Parcel 0220112005) is located at 2119 Mildred Street West in Fircrest, Pierce County, Washington. The site was formerly utilized by Metal Marine Pilot for the design, manufacture, repair, and design of auto pilot devices for boats. The site is a 9.49 acre tract of land that has been improved with an approximately 25,000 square foot main building, an approximately 600 square foot painting building, and an approximately 80 square foot paint storage shed. Concrete building pads for two approximately 700 square foot former buildings are present as well. All buildings and building pads are located in the northwestern portion of the site. An asphalt-paved parking lot is present west of the main building and an asphalt drive is located north and east of the main building. The remainder of the site consists of undeveloped land.
- Three buildings, consisting of the main building, the painting building, and the paint storage building as well as two concrete pads, which appear to be foundations for the former materials building and cardboard building, were observed during the site reconnaissance. Office space, bathrooms, a break room, and a sales room were also located in the main building. The painting building was used to paint and dry parts during production of the auto pilot devices. The paint storage building was

used to store paint and other flammable liquids. The former materials building was used to clean parts and equipment used in the Metal Marine Pilot operations. The former cardboard building was used to store cardboard.

- During the site reconnaissance, the site buildings appeared to be unoccupied and used as storage for Metal Marine Pilot and the Freeman family (the current site owners). Evidence of two USTs was observed east of the painting building and the paint storage shed, which according to Mr. Freeman, were used to store discharge from floor drains within the painting building and materials building, discharge from a wash basin that was located in the materials building, and discharge from a catch basin that was located in the drum storage area. Based on the contents of the discharge, which commonly contained paints, solvents, and degreasers, these USTs, drains, and the catch basin appear to represent RECs.
- Based on review of the historical information, the site appears to have been undeveloped prior to purchase of the site by Mr. and Mrs. Robert Freeman in approximately 1953. Metal Marine Pilot began operations onsite in the late 1950's when the main building was constructed. The painting building, paint storage building, cardboard building, and materials building were all constructed during the 1960s and 1970s. The materials building and cardboard building were demolished in the early 2000s. Metal Marine Pilot ceased operations on-site in approximately 2000 and the site has been used for storage since that time.

  Based on information obtained during historical research the following RECs were identified:

  - An asbestos containing transit pipe, formerly used to transport water through the site to the property that adjoins the site to the north, is buried in the eastern portion of the site;
  - A wash sink, formerly located in the materials building, was used to clean parts and machinery with solvents and degreasers. Prior to 1990, the waste from the sink was discharged to the undeveloped portion of the site east of the paint storage shed;
  - Fluorescent light bulbs were routinely disposed of in the undeveloped portion of the site east of the former loading dock;
  - Lime-lined pits, located east of the former loading dock, were used from the late 1960s to the mid 1970s to dispose of acids used in the circuit board etching process. The precise locations of the pits are unknown;
  - A drum storage area was located between the materials building and the paint storage building. The drums, which contained solvents, degreasers, and petroleum products, were stored on a concrete pad; however, an unimproved

area of equal or lower elevation was located east of the storage area and runoff from the drum storage area may have impacted the unprotected soils;

- o A pipe containing paraffin oil ruptured on the north adjoining property and the subsequent release migrated onto the subject site. Contaminated soil on the subject site was removed, but Mr. Freeman believes contamination remains on the adjoining property;
- o Fill material was imported to the site during several occasions between the early 1970s and the late 1990s. The fill material was not tested for contamination prior to placement onsite and reportedly contains various amounts of construction debris;
- o Prior to the instillation of two sealed recovery USTs located east of the painting building and paint storage building, floor drains located in the painting building and materials building discharged to the undeveloped area east of the buildings;
- o Prior to development of the painting building, spray painting operations occurred on a concrete paved area west of the loading dock. Lacquer wash used during the spray painting process was routinely disposed of in the undeveloped area east of the loading dock;
- o The main building bathrooms are serviced by three septic tanks.

- The site is located in a mixed use area in Fircrest, Washington. The site is bound by commercial development to the north and south, multiple family residential developments to the east, and Mildred Street West followed by commercial development, including a Jiffy Lube automobile servicing facility, to the west.

- The site was identified by the database report as listed on the State of Washington UST, VCP, CSCSL NFA lists as well as the federal RCRA list. The site was granted a No Further Action (NFA) letter on March 6, 2001, which appears to be related to the removal of PCE contaminated soil from the loading dock area.

  The Pace Industries facility was reported as listed on the Washington State UST, VCP, and CSCSL NFA lists as well as the federal RCRA list. Based on residual concentrations of petroleum hydrocarbons and PCBs in soils beneath concrete foundations and footings that exceeded MTCA Method A and B cleanup levels and the potential presence of heavy metals in soils beneath a concrete patio, institutional control soil restrictions, property use restrictions, and maintenance requirements were placed on the property in 1998. The facility was issued an NFA in 2007; however, cleanup of the above listed contamination appears to have not been completed and thus this facility appears to represents a REC.

The database report also reported the Leland M. McArthur facility as listed on the Washington State UST list. This facility appears to have operated during the 1970s as a fueling station which adjoined the site to the south along Mildred Street West. The USTs have been removed from the property; however, based on the years of operation and the proximity of the facility to the subject site, this facility appears to represent a REC.

- Two UST decommissioning reports, two remedial excavation reports, five surface and subsurface investigation reports, one Phase I ESA report, one Washington State Department of Ecology letter, one geotechnical report, and one fill and grading permit were provided for review. Based on information obtained from these reports it appears that oil-range total petroleum hydrocarbons (TPH), perchloroethylene (PCE), and various metal contamination remains in on-site soils which, in some areas, have been identified above applicable MTCA Method A and/or Method B cleanup levels. PCE contamination appears to be confined to an area east of the paint storage shed, which was estimated by others to include 2,000 to 3,000 yards of impacted soil. Oil-range TPH and metal contamination appears to have been sporadically identified throughout the northeastern portion of the site. These reports have indicated that the contaminated areas appear to be discontinuous and no quantitative estimates of contamination have been made.

  The Phase I ESA report previously completed by others included an asbestos survey and lead-based paint analysis. The report identified 11 areas where paint contained detectable concentrations of lead, one of which was above 5,000 mg/kg, which is the maximum concentration to be considered non-lead based paint as defined by the EPA. Four types of vinyl flooring, caulking, and HVAC sealant were reported to contain asbestos.

8.2 Recommendations

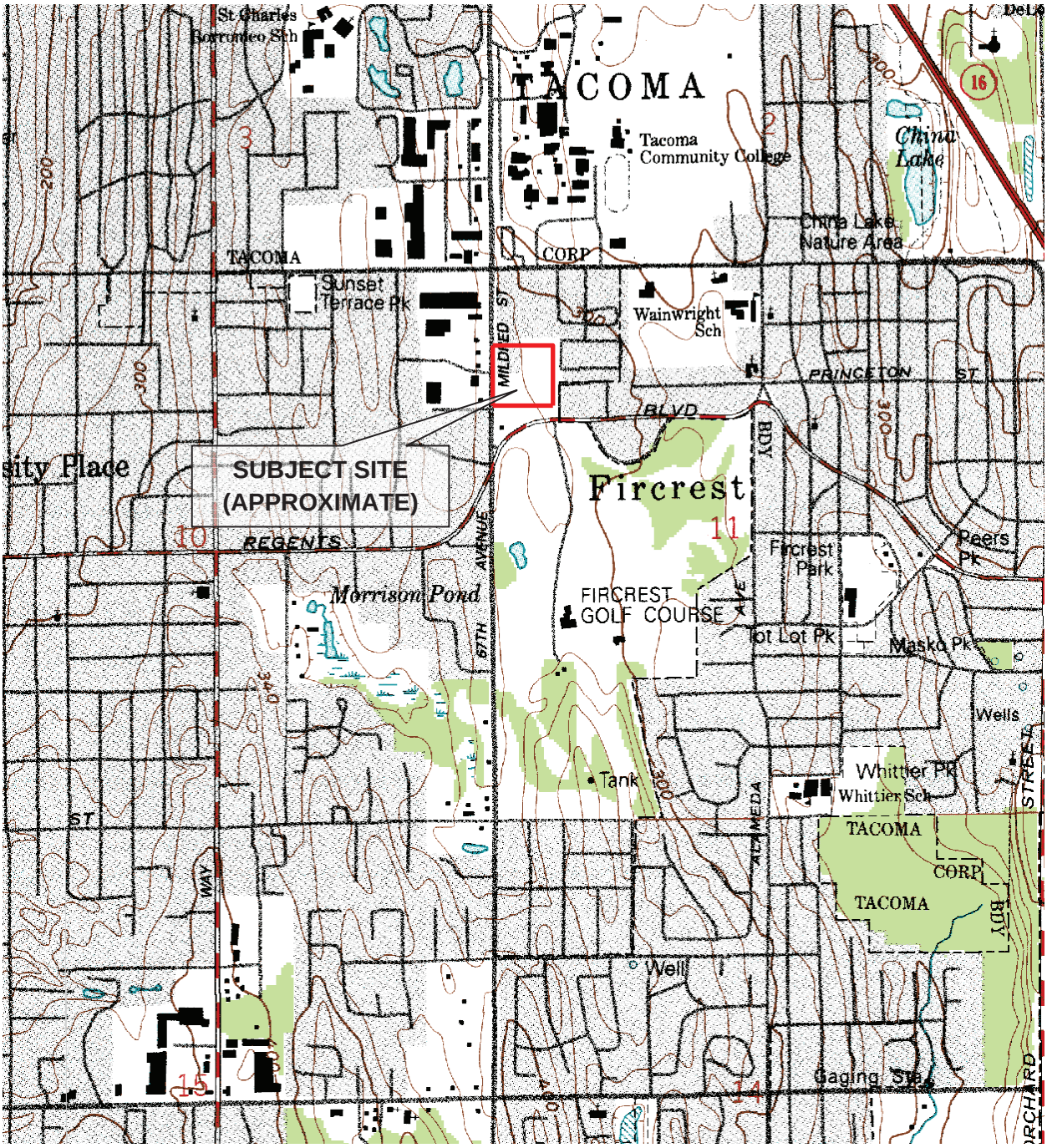
Based on the scope of services, limitations, and findings of this assessment, Terracon recommends that additional investigation should be completed to further assess if the identified RECs have impacted the site and to confirm the findings of previous investigations completed by others.

9.0 DECLARATION

I, Jon M. Einarsen, declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in Section 312.10 of 40 CFR 312; and I have the specific qualifications based on education, training, and experience to assess a site of the nature, history, and setting of the subject site. I have developed and performed the All Appropriate Inquiries in conformance with the standards and practice set forth in 40 CFR Part 312.

APPENDIX A

Figure 1 - Topographic Map, Figure 2 - Site and Vicinity Map, Figure 3 - Site Map, Figure 4 - Previous Investigations Map, Table 1 - Previous Soil Analytical Results, Table 2 - Previous Groundwater Analytical Results



Reference: U.S. Geological Survey, Steilacoom Quadrangle (1959, revised 1994).

N

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES.

SITE LOCATION AND TOPOGRAPHIC MAP
Fircrest WinCo
Fircrest, Pierce County, Washington

Project Mngr: JME	Terracon 2115 South 56th Street, Suite 405 Tacoma, Washington 98409 (253) 573-9939 Fax: (253) 573-9959	**Project No.** B2087704
Designed By: AJD		**Scale:**
Checked By:		**Date:** May 2008
Approved By:		**Drawn By:** AJD
File Name:		**Figure No.** 1

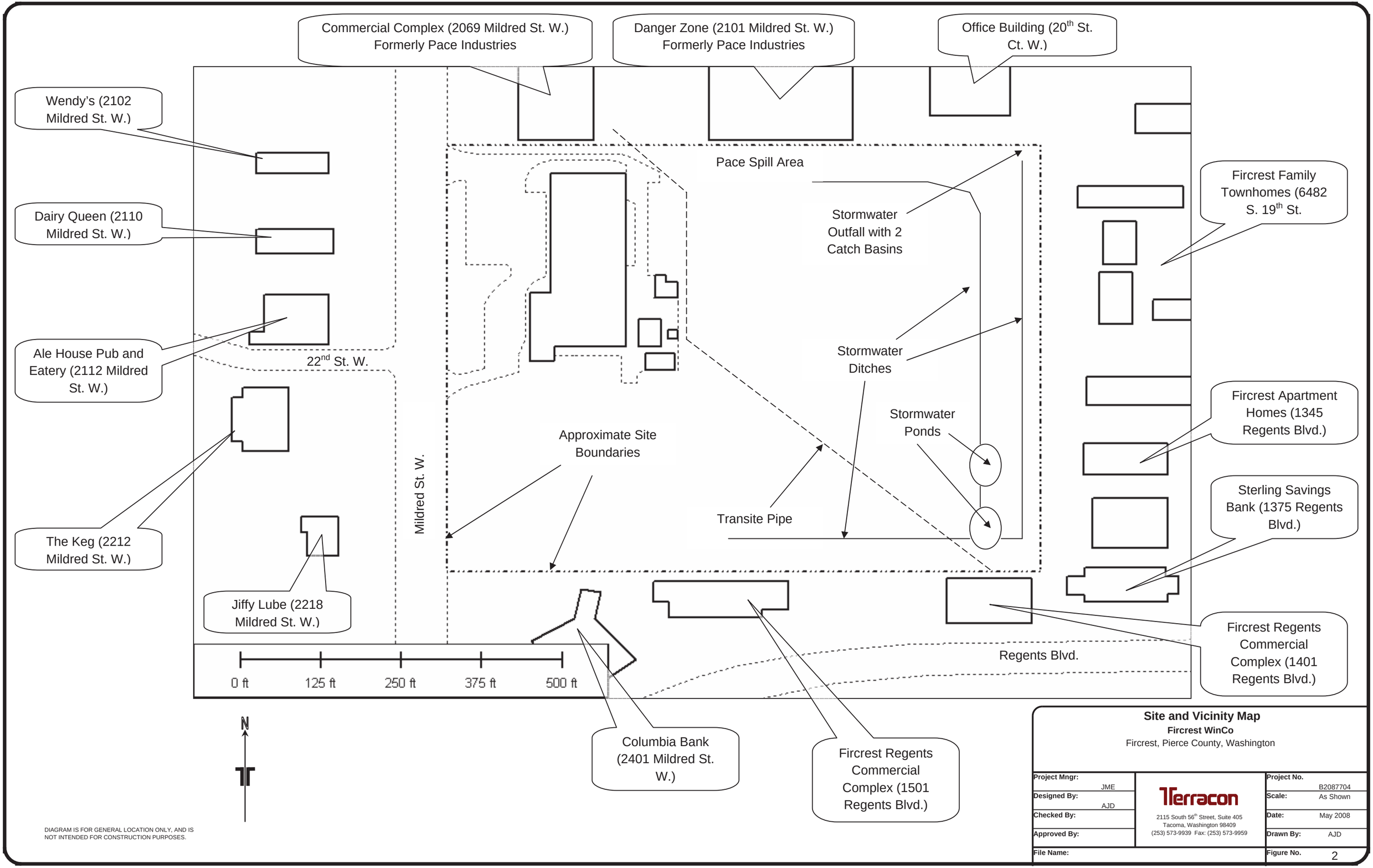


DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES.

Site and Vicinity Map

Fircrest WinCo

Fircrest, Pierce County, Washington

Project Mngr: JME	Terracon	**Project No.**	B2087704
Designed By: AJD	2115 South 56th Street, Suite 405 Tacoma, Washington 98409 (253) 573-9939 Fax: (253) 573-9959	**Scale:**	As Shown
Checked By:		**Date:**	May 2008
Approved By:		**Drawn By:**	AJD
File Name:		**Figure No.**	2

Legend

- Catch Basin
- UST
- Pole-Mounted Transformer
- Floor Drain
- Septic Tank

Awning
Paint Storage Building
Loading Dock
Painting Building
Former Drum Storage Area
Former Diesel and Solvent USTs
Former Materials Building
Awning
Paved Drive
Evaporator Solids in Concrete
Former Cardboard Storage Building
Drain Field
Battery Storage Shed
Rollup Door
Door
Rollup Door
Rollup Door
Door
Evaporator Solids in Concrete
Door
Door
Oil Use
Oil Use
Awning
Door
Solder Cleaning Work Station
Drain Field
Door
Former Solvent USTs
Solvent Sink
Door
Door
Parking Lot

N

0 ft 50 ft 100 ft 150 ft 200 ft 250 ft

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES.

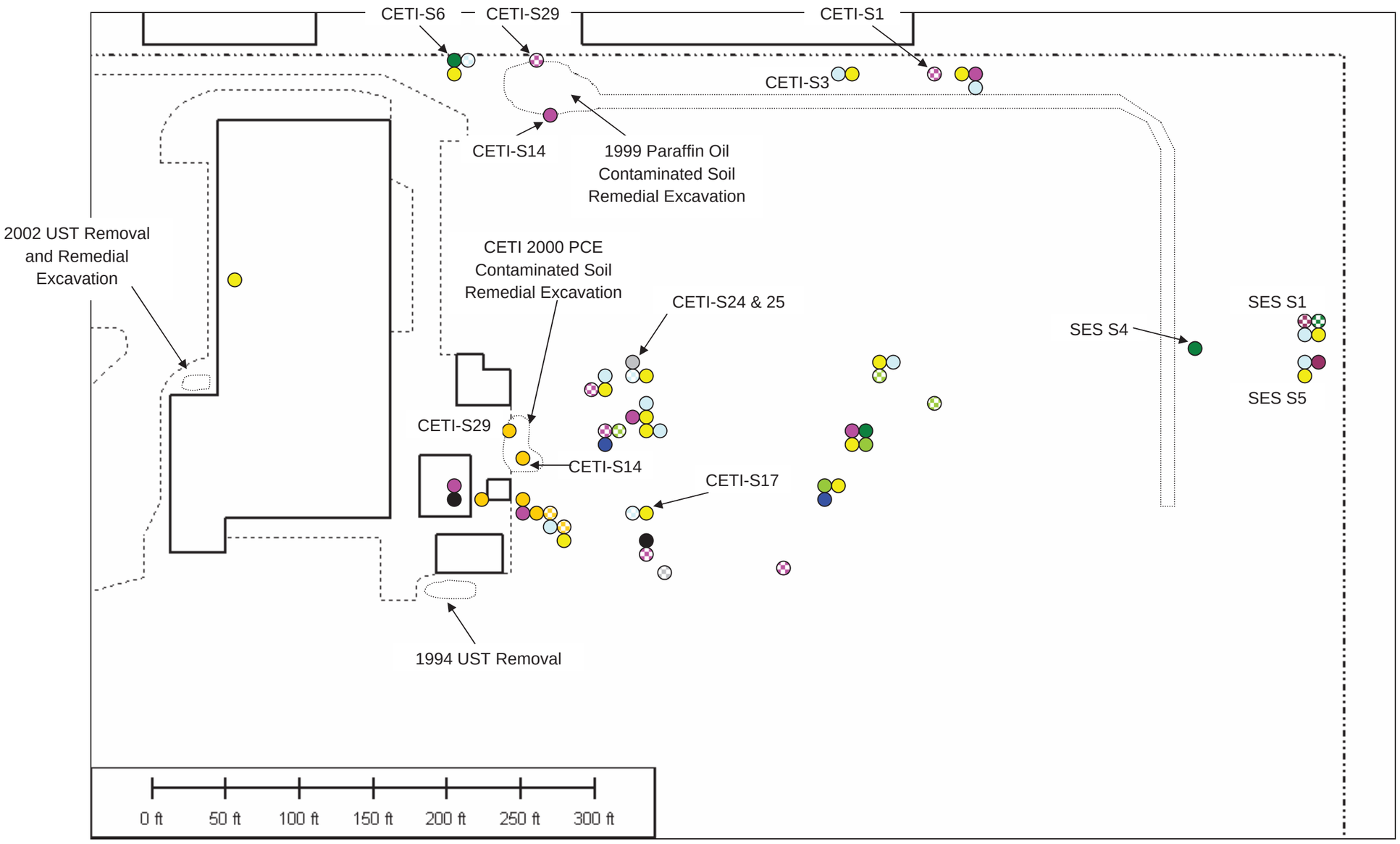
Site Map

Fircrest WinCo

Fircrest, Pierce County, Washington

Project Mngr: JME	Terracon	**Project No.**	B2087704
Designed By:	2115 South 56th Street, Suite 405 Tacoma, Washington 98409 (253) 573-9939 Fax: (253) 573-9959	**Scale:**	As Shown
Checked By:		**Date:**	May 2008
Approved By:		**Drawn By:**	AJD
File Name:		**Figure No.**	3

Former Pace Industries Facility



Legend-Elevated Levels in Soils and Groundwater

- Heavy Oil
- Diesel
- PCE
- Arsenic (Groundwater)
- Lead
- Chromium
- Arsenic
- Chromium (Groundwater)
- Cadmium
- Mercury
- Pattern Indicates Concentrations Above MTCA Method A Cleanup Levels

*For Identification of Non-Labeled Samples Refer to Kleinfelder's 2005 Phase II and Supplemental Phase II Reports

LOCATIONS OF SAMPLES, COMPOUND CONCENTRATIONS, AND EXCAVATION LOCATIONS ARE BASED OFF PRIOR REPORTS COMPLETED BY OTHERS. THIS DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES.

N

Previous Investigations Map

Fircrest WinCo

Fircrest, Pierce County, Washington

Project Mngr: JME	Terracon	**Project No.** B2087704
Designed By:	2115 South 56th Street, Suite 405 Tacoma, Washington 98409 (253) 573-9939 Fax: (253) 573-9959	**Scale:** As Shown
Checked By:		**Date:** May 2008
Approved By:		**Drawn By:** AJD
File Name:		**Figure No.** 4

Table 1: Summarized Analytical Results (Soil) from Previous Reports

Sample No.	Sample Depth	Total Petroleum Hydrocarbons (mg/kg)			Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Total Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Zinc (mg/kg)	VOC	PCE (mg/kg)	Isopropyl-toluene (mg/kg)
		Gasoline-Range	Diesel-Range	Motor Oil-Range																	
CETI S14-42899	?	-	<25	1,100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CETI-S29-42899	?	-	<25	**5,800**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SES S1-82900	0-2 in.	-	-	-	-	**160**	260	-	**30**	6.7	-	18	<0.05	-	<8	<0.7	-	-	-	<0.25	-
SES S5-91500	0-1 in.	-	-	-	<5	<5	-	0.1	1.3	18	12	12	<0.05	17	<8	<0.7	<0.2	29	-	-	-
SES S4-91500	0-4 in.	-	-	-	-	**29**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CETI SP4-SW-4	4 ft.	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.34**	-
CETI CS3-NWSW-6	6 ft	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**0.39**	-
CETI S1-21500	?	-	-	**35,000**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CETI S3-21500	?	-	-	-	-	<5	-	-	<0.3	**20**	-	16	<0.05	-	-	-	-	1,500	-	-	-
CETI S6-2100	2-4 ft.	-	-	-	13	12	-	<0.1	<0.3	16	130	39	<0.05	15	<8	<0.7	<0.1	250	ND	-	-
CETI S17-13100	4-6 ft.	-	-	-	21	<5	-	<0.1	<0.3	**38**	16	8	<0.05	36	<8	<0.7	<0.1	65	ND	-	-
CETI S24-13100	9-10 ft.	-	-	-	18	<5	-	<0.1	<0.3	**62**	29	28	0.07	22	<8	<0.7	<0.1	34	ND	-	-
CETI S25-13100	11-12 ft.	-	-	-	21	<5	-	<0.1	<0.3	**21**	7.5	5	<0.05	17	<8	<0.7	<0.1	28	-	-	-
K B58-4	10 ft.	<5.0	<20	850	-	<5	<20	-	<1	<5	-	<5	<0.5	-	<50	<20	-	-	-	<0.02	<0.05
K B58-5	12.5 ft.	<5.0	<20	740	-	<5	<20	-	<1	8.4	-	14	<0.5	-	<50	<20	-	-	-	<0.02	<0.05
K B59-2	5 ft.	<5.0	<20	**6,500**	-	<5	<20	-	<1	7.9	-	15	<0.5	-	<50	<20	-	-	-	<0.02	<0.05
K B60-2	5 ft.	<5.0	<20	<50	-	<5	<20	-	<1	<5	-	<5	<0.5	-	<50	<20	-	-	-	0.02	<0.05
K B61-2	5 ft.	<5.0	<20	<50	-	<5	<20	-	<1	6.7	-	<5	<0.5	-	<50	<20	-	-	-	**0.2**	<0.05
K B62-2	5 ft.	<5.0	<20	<50	-	<5	<20	-	<1	<5	-	8	<0.5	-	<50	<20	-	-	-	**0.1**	<0.05
K B63-6	15 ft.	<5.0	<20	**6,200**	-	<5	<20	-	<1	<5	-	<5	<0.5	-	<50	<20	-	-	-	<0.02	0.06
K B64-4	8.5 ft.	<5.0	<20	1,400	-	<5	<20	-	<1	5.3	-	12	<0.5	-	<50	<20	-	-	-	<0.02	<0.05
K B64-6	15 ft.	<5.0	<20	170	-	<5	<20	-	<1	5.9	-	15	<0.5	-	<50	<20	-	-	-	<0.02	<0.05
K B65-7	15 ft.	<5.0	<20	<50	-	<5	<20	-	<1	6.5	-	12	<0.5	-	<50	<20	-	-	-	<0.02	<0.05
K B67-6	15 ft.	<5.0	<20	**6,600**	-	<5	<20	-	<1	<5	-	<5	<0.5	-	<50	<20	-	-	-	<0.02	<0.05
K B68-2	5 ft.	<5.0	<20	<50	-	<5	<20	-	<1	<5	-	13	<0.5	-	<50	<20	-	-	-	<0.02	<0.05
K B69-4	11.5 ft.	<5.0	<20	940	-	<5	<20	-	<1	<5	-	26	<0.5	-	<50	<20	-	-	-	<0.02	<0.05
K B69-9	22.5 ft.	<5.0	<20	<50	-	15	<20	-	<1	<5	-	60	<0.5	-	<50	<20	-	-	-	<0.02	<0.05
K B70-2	5 ft.	<5.0	<20	<50	-	<5	<20	-	<1	5.5	-	<5	<0.5	-	<50	<20	-	-	-	<0.02	<0.05
K B70-9	22.5 ft.	<5.0	<20	<50	-	<5	<20	-	<1	<5	-	8	<0.5	-	<50	<20	-	-	-	<0.02	<0.05
K B75-1	1 ft.	<5.0	<20	<50	-	<5	<20	-	<1	<5	-	8.7	<0.5	-	<50	<20	-	-	-	<0.02	<0.05
K B80-4	10 ft.	-	<20	54	-	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04	-
K B80-7	17.5 ft.	-	<20	<50	-	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02	-
K B81-5	12.5 ft.	-	410	**3,700**	-	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.02	-
K Drain	-	-	420	1,700	-	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.02	-
K B85-2	5 ft.	-	<20	<50	-	<5	-	-	-	-	-	-	-	-	-	-	-	-	-	0.04	-
MTCA Method A Cleanup Levels (MTCA Method B Cleanup Levels)		30[1]	2,000	2,000	Not Established (32)	20	Not Established (16,000)	Not Established (160)	2	19[2]	Not Established (3,000)	250	2	Not Established	Not Established (400)	Not Established (400)	Not Established	Not Established (24,000)	Varies	0.05	Not Established

ND, Not detected above laboratory Practical Quantitation Limits (PQLs)
--, Not analyzed for compound and/or suite of compounds
[1] Gasoline range cleanup level is 100 mg/kg when benzene is not present
[2] Cleanup level for chromium (III) is 2,000 mg/kg, cleanup level for hexavalent chromium is listed above
mg/kg, milli-grams per kilogram
Bolded concentrations indicate those compounds exceeding cleanup levels