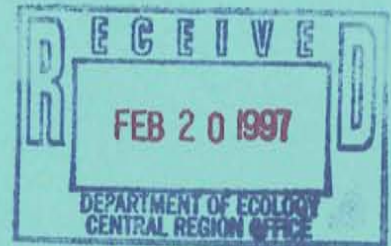


# **INDEPENDENT REMEDIAL ACTION REPORT**



**EAGLE HARDWARE AND GARDEN, INC.  
STORE NO. 453**

**WENATCHEE, WASHINGTON**

**FEBRUARY, 1997**

**Prepared By:  
J-U-B ENGINEERS, Inc.  
2810 W. Clearwater Avenue, Suite 210  
Kennewick, WA 99336  
(509) 783-2144**

# **INDEPENDENT REMEDIAL ACTION REPORT**

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**EXPIRES 5/22/97**

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## TABLE OF CONTENTS

### Page No.

Section 1.0 - Project Background and Site Description .....	3
Section 1.0.1 - Location .....	3
Section 1.0.2 - Topography and Geology .....	3
Figure 1 - Location Map .....	5
Figure 2 - Previous Site Conditions and Phase II EA Soil Sampling .....	7
Figure 3 - Final Site Development .....	9
Section 1.1 - Release Information and Site Characterization .....	10
Section 1.2 - Previous Investigations .....	11
Section 1.3 - Selection of Clean-up Standards .....	11
<b>Table 1 - Phase I/II E.A. Soil Sample Results</b> .....	12
Section 1.4 - Remedial Actions Taken .....	13
Section 1.5 - Institutional Controls .....	15
Section 1.6 - Sampling and Analysis .....	16
<b>Table 2 - Confirmation Soil Sampling</b> .....	16
Figure 4 - Confirmation Soil Sampling .....	17
Section 2.0 - Conclusions .....	18
REFERENCES .....	19
APPENDIX .....	20
APPENDIX A - SITE DEVELOPMENT MAP	
APPENDIX B - SITE DEVELOPMENT GEOTECHNICAL INVESTIGATION	
APPENDIX C - GASOLINE UST REMOVAL REPORT	
APPENDIX D - LEAD AND ASBESTOS PAINT SURVEY FOR PREVIOUS STRUCTURES	
APPENDIX E - RESTRICTIVE COVENANT	
APPENDIX F - SAMPLE RESULTS AND CHAIN OF CUSTODY	
APPENDIX G - PHOTO LOG	
APPENDIX H - PERTINENT FIELD REPORTS	



This report was prepared in accordance with the State of Washington Department of Ecology's 1994 "Draft Guidance on Preparing Independent Action Reports under the Model Toxics Control Act, Chapter 70.105D RCW". The documentation should be sufficient to demonstrate protection for human health and the environment and warrant a "No Further Action" (NFA) determination by WDOE.

## **Section 1.0 - Project Background and Site Description**

This section of the Independent Remedial Action Program (IRAP) report describes the Eagle Hardware and Garden, Inc. (Eagle) site in Wenatchee, Washington. This section also provides background information to document the previous site conditions which necessitated the preparation of this IRAP report.

### ***Section 1.0.1 - Location***

Eagle is a commercial operation selling hardware, building materials, and home landscape supplies located at 1200 Walla Walla Avenue, Wenatchee, Washington 98801. The subject property consists of 9.8 acres and is located in Chelan County, as shown on **Figure 1**. Eagle's On-Site Operations Manager is Mr. Wes Simpson who can be reached at (509) 663-4530. Eagle's Corporate contact is Mr. Peter Gallina, Store Development Coordinator. Mr. Gallina can be contacted by writing 981 Powell Avenue Southwest, Renton, WA 98055 or by calling (206) 227-5740.

### ***Section 1.0.2 - Topography and Geology***

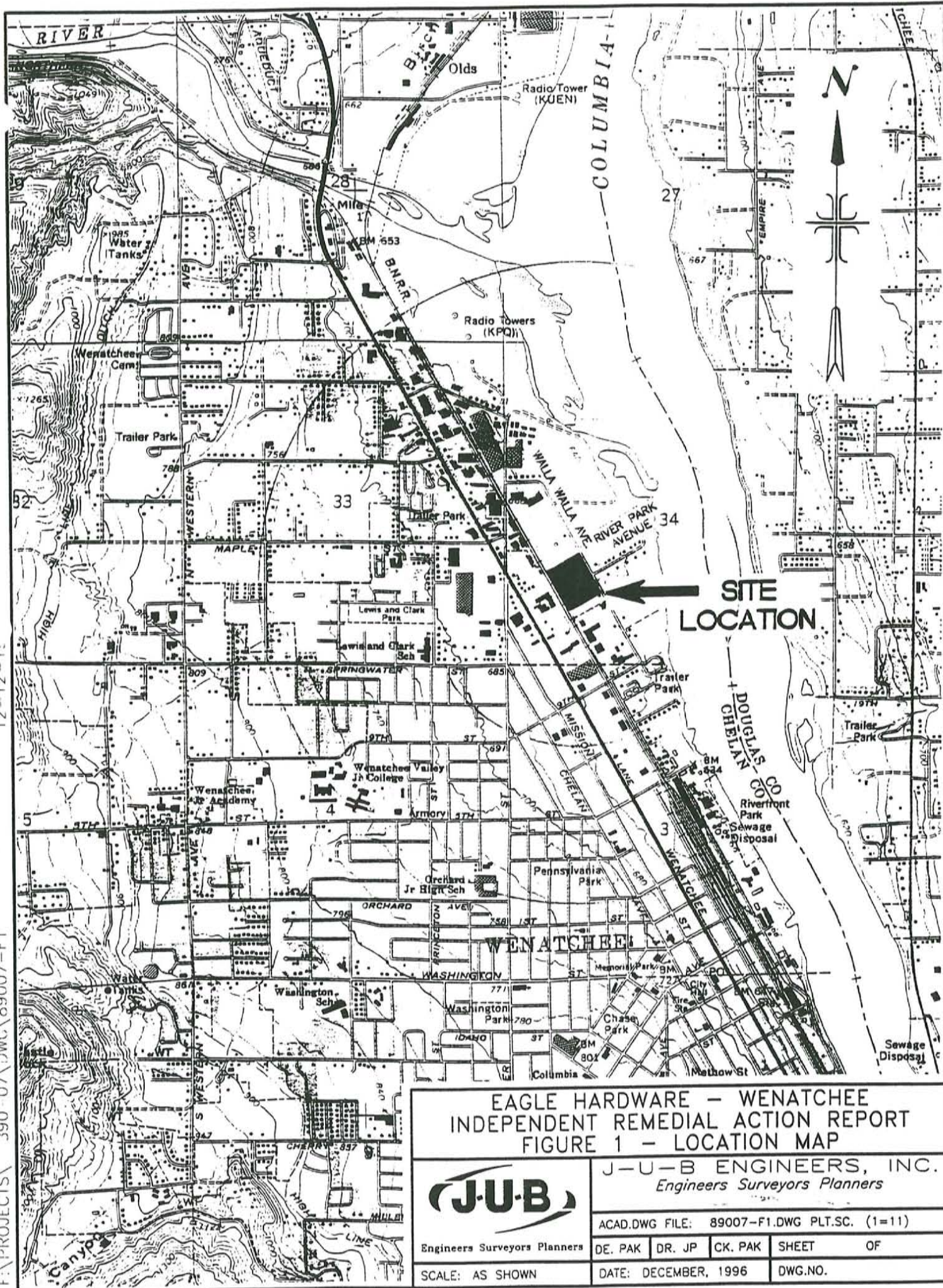
The subject property is located in Northeastern Wenatchee, approximately 0.25 mile West of the Columbia River. The River has a normal pool elevation of 606 feet above



mean sea level, at River Mile 467 (USGS datum). At a floor elevation of approximately 658 feet, the subject site is above the 500 year flood elevation. The area is noted for its deep, well drained, medium textured and moderately textured sandy loam and loam soils of the Burch Series (U.S. Soil Conservation Service, 1980). The Burch Soils formed on terraces in valley fill and are of sand stone origin with some mixture of wind blown loess. Depth to the basalt bedrock in the area can vary dramatically but is generally greater than 30 feet. In some areas, it is believed that the basalt bedrock may have been completely scoured out, leaving only the poorly sorted outwash materials to over 1,000 feet deep. The areas soils are among the most important fruit producing soils in North Central Washington and have been extensively used for apple, pear and soft fruit orchards. Permeability is moderate and runoff is very slow in these soils. Consequently, the erosion potential is slight and the soils are generally not conducive to lateral migration of pollutants onto adjacent properties.

Groundwater level at the site is generally at or near the elevation of the Columbia River in the Columbia River Aquifer. At a normal summer pool elevation of 606, (U.S.G.S. Datum), the depth to groundwater is approximately 50 feet with a general gradient from West to East, toward the river, due to recharge from the higher elevations. No water well records were available nor was surface evidence apparent for private wells within one mile of the subject property. Some private wells may have been installed before records were required by the State and before the City began serving the area with domestic water in the 1950's. A single geotechnical test well record for the area reported groundwater at 34 feet deep (elevation of approximately 620 feet) in wet, brown, silty sand approximately 0.75 mile to the Northwest. No bedrock or contamination was reported for that test well.







Meteorologic conditions in the semi-arid Wenatchee area include generally westerly to northwesterly prevailing winds. Extreme wind velocities can reach 60 mph every two years. Precipitation occurs mostly in the late fall through early spring and averages 9.1 inches annually. The total snow fall averages about 30 inches and remains on the ground for an average of forty-five days annually. Annual Class A pan evaporation averages about 50 inches, which points out the need for extensive irrigation of the cultivated land in the region. Temperature inversions are not common in the area but they generally occur for a few nights in the winter during outbreaks of cold arctic air from Canada.

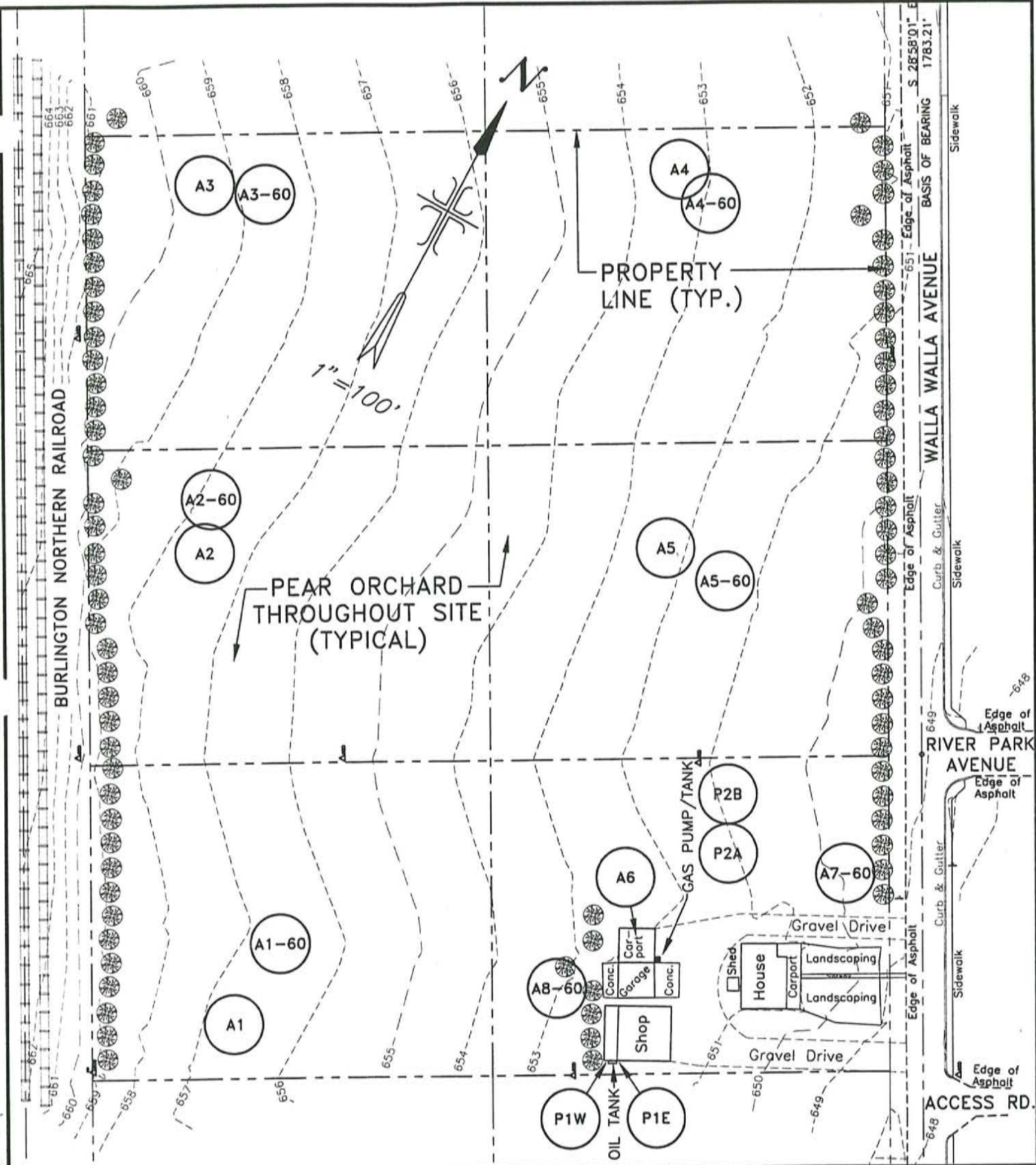
**Figure 2** shows the previous site conditions prior to construction of the Wenatchee Eagle store in 1996. The area was relatively flat, sloping approximately 10 feet from the Northwest to the Southeast. All but the extreme Southeast corner of the subject property had been cultivated extensively as a pear orchard since the late 1800's, according to the previous owner. Lead arsenate was historically applied to other pear orchards in the vicinity as a pesticide against the codling moth and pearisilla. The pesticide DDT was also commonly used in orchards prior to 1970. Both of these chemicals tend to accumulate in the top twelve inches of the soil column, although they migrate deeper, with excessive irrigation or deep cultivate practices.

For the January, 1996 Phase I/II Environmental Assessment (EA), J-U-B ENGINEERS, Inc. sampled the soil in several locations throughout the orchard. Soil was sampled at 6", 12-18", 36" and 60" deep with samples locations shown on **Figure 2**. The resulting detectable sample concentrations for total lead, total arsenic and chlorinated pesticides are listed in **Table 1**. Samples as deep as 12-18" showed lead, arsenic and DDT above the Washington Department of Ecology (WDOE) Method A Soil Regulatory Limit (WAC, Chapter 173-340). Soil samples at 36" deep resulted in all lead and four of seven arsenic soil contamination levels at less than the Method A Soil Regulatory Limit.



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**LEGEND**

(A) SOIL SAMPLE LOCATION AND IDENTIFICATION

**EAGLE HARDWARE – WENATCHEE  
INDEPENDENT REMEDIAL ACTION REPORT  
FIGURE 2 – PREVIOUS SITE CONDITIONS  
AND PHASE II E.A. SOIL SAMPLING**



Engineers Surveyors Planners

**J-U-B ENGINEERS, INC.**  
*Engineers Surveyors Planners*

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DE. PAK	DR. JP	CK. PAK	SHEET	OF
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SCALE: AS SHOWN

DATE: DECEMBER, 1996

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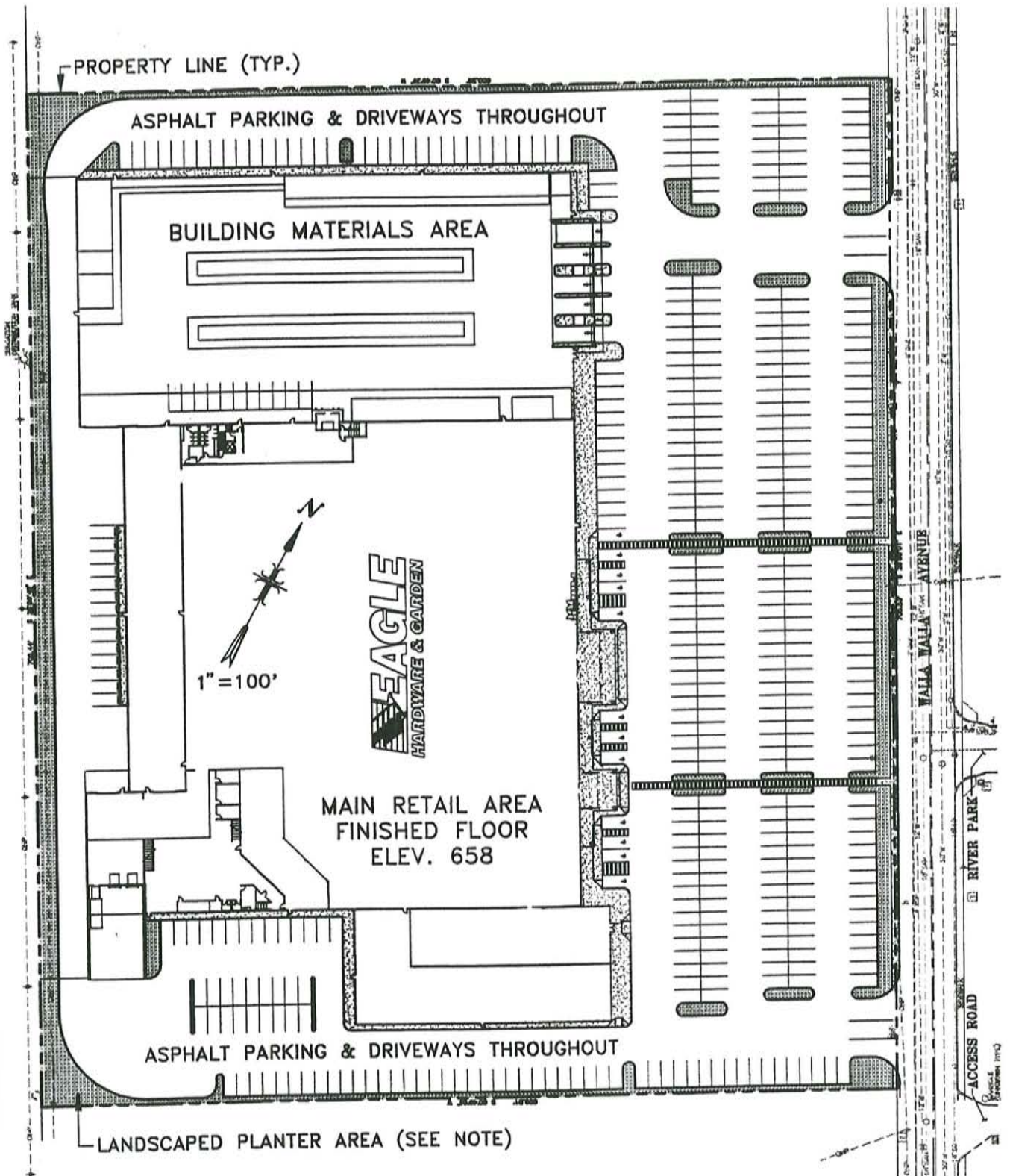
The three samples which exceeded Method A arsenic levels were located in the central and southeastern quadrant of the site. Samples taken at 60" deep were all below Method A limits for arsenic lead and chlorinated pesticides. Consequently, the boundaries of contamination at the subject site were determined to be limited by the property lines and to a depth of approximately 36" along the North side and in the Southwest quadrant. The central orchard and Southeast quadrant were assumed to be contaminated with arsenic to a depth of 48".

All surface features from the existing property were removed prior to the 1996 construction of the Eagle store. **Figure 3** shows the completed site development of the Eagle site in Wenatchee. The site is now mostly covered with building and asphalt or concrete pavement. Stormwater is piped directly from driveway and parking lot surfaces to the City of Wenatchee's storm drain system. A detailed Site Development Map is included as **Appendix A** for further reference. With the exception of underground utilities such as water, sewer and storm drainage service from the City of Wenatchee, no underground piping or structures remain on the finished site.

Soil boring logs contained in the Site Development Geotechnical Investigation are also included as **Appendix B** to characterize soils at the Eagle site.

Surrounding sites do not contain any sensitive areas such as wetlands or potential endangered species habitat. The Eagle site development included the preparation and approval of an Environmental Checklist through the State Environmental Policy Act (SEPA) process (Chapter 4321 C, RCW). Surrounding land uses include primarily commercial establishments to the West, South and East. Orchard property is mixed with residential and commercial establishments to the North and Northeast.





**NOTE:**

PLANTERS FILLED WITH CLEAN SOIL TO DEPTH OF 3' BELOW ORIGINAL GROUND SURFACE (TYP.) EXCEPT IN SE. QUADRANT WHERE FILLED TO DEPTH OF 4'. CLEAN SOIL MINED FROM SITE AT 3' OR GREATER BELOW ORIGINAL GROUND SURFACE. IF DEPTH COULD NOT BE ACHIEVED DUE TO SITE GRADING, GEOTEXTILE FABRIC PLACED UNDER CLEAN PLANTER FILL AS BARRIER.

**EAGLE HARDWARE - WENATCHEE  
INDEPENDENT REMEDIAL ACTION REPORT  
FIGURE 3 - FINAL SITE DEVELOPMENT**

**JUB**

Engineers Surveyors Planners

**J-U-B ENGINEERS, INC.**  
Engineers Surveyors Planners

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SCALE: AS SHOWN

DATE: DECEMBER, 1996

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## Section 1.1 - Release Information and Site Characterization

As stated in the previous Section, the contaminants of concern for this site have resulted from the agronomic application of pesticides for the cultivation of a pear orchard, dating back to the 1800's. In the Phase I/II EA, arsenic, lead, DDT, DDT daughter products, Dieldrin, and Endosulfan were detected at the site above the Method A Soil Regulatory Limits. Dieldrin and Endosulfan are not listed under Method A, but were detected in several locations and therefore, were reported. The contaminants were relatively uniform areally throughout the site and rapidly decreased in concentration with depth. **Table 1** gives the soil test results obtained for these components at the 6", 12-18", 36", and 60" depths. Sampling locations were shown previously on **Figure 2**.

The primary concern in converting this site from an agricultural use to a commercial use is the potential for direct human ingestion of these soils. Since the subject site was to be fully developed with buildings and paved parking and access areas, it was determined that it would be most appropriate to retain all contaminants on site underneath these impervious surface caps rather than remove all soils contaminated above the Method A Regulatory Limits.

Two potential petroleum releases were also investigated at the subject site. The first was associated with an unregulated underground storage tank (UST) located near the original shop building in the Southeast corner of the site. That UST was removed with confirmatory samples in April, 1996, as documented in **Appendix C**. An above-ground heating oil tank was also removed from the site by the previous owner. The associated surface spill was small in volume and not remediated. These issues are discussed in more detail in Section 1.4.

## Section 1.2 - Previous Investigations

On February 16, 1996, J-U-B ENGINEERS, Inc. transmitted a copy of the January, 1996 Phase I/II EA to Mr. Mark Peterschmidt of the Central Region WDOE office. The EA described site conditions prior to development of the Eagle Hardware and Garden Store. It also provided documentation of the soil sampling conducted to determine appropriate actions relative to contaminants found on the site. This report and its recommendations were subsequently discussed by telephone with representatives of J-U-B and Eagle Hardware, as documented in the follow-up letter dated February 28, 1996 to Mr. Mark Peterschmidt. Additional investigative reports of interest are attached and include the gasoline UST removal report, included as **Appendix C** and the Lead and Asbestos Paint Survey included for the previous structures on the site included as **Appendix D**.

## Section 1.3 - Selection of Clean-up Standards

Due to historical agronomic application of pesticides and experiences documented at similar sites in the Wenatchee area, soil tests were conducted for total lead, total arsenic and chlorinated pesticides at 6", 12-18" and 60" below ground surface (bgs) prior to development of the Eagle store. Additionally, lead and arsenic concentrations were analyzed at the same locations at a depth of 36" below ground surface. **Method A clean-up levels** are the most conservative for any single contaminant of concern and **were used as a benchmark to measure contamination levels in the orchard soils**. Soils exceeding (Method A) concentrations were proposed for use as on-site fill underneath impervious surfaces such as buildings and roadways. **Soil tests confirmed the presence of lead, arsenic and DDT with the majority of the contamination occurring within the top eighteen inches** throughout the subject site. The levels of contamination, as previously listed in **Table 1**, did not trigger any additional regulatory requirements



**Table 1 - Phase I/II E.A. Soil Sample Results**

<b>Soil Test Results at 6" Deep (mg/kg)</b>						<b>Endosulfan Endosulfan</b>		
<b>Sample I.D.</b>	<b>Arsenic</b>	<b>4,4-DDD</b>	<b>4,4-DDE</b>	<b>4,4-DDT</b>	<b>Dieldrin</b>	<b>II</b>	<b>Sulfate</b>	<b>Lead</b>
A1A	52.9	N/D	2.367	2.371	0.204	N/D	0.711	458
A2A	118	N/D	3.221	3	0.502	N/D	0.215	977
A3A	70.4	N/D	1.8	2.531	0.189	N/D	0.363	425
A4A	75.6	N/D	3.405	4.078	0.344	N/D	N/D	550
A5A	121	N/D	3.282	4.426	N/D	N/D	0.501	949
A6A	133	0.233	2.599	6.675	0.706	0.186	N/D	724
MEAN	95.150	0.233	2.779	3.847	0.389	0.186	0.448	680.500
STD.DEV.	32.872	N/A	0.633	1.613	0.218	N/A	0.211	242.369
<b>Soil Test Results at 12"-18" Deep (mg/kg)</b>								
A1B	48.1	N/D	1.308	1.123	N/D	N/D	0.26	274
A2B	63.3	N/D	0.703	0.76	N/D	N/D	N/D	87.7
A3B	59.5	N/D	0.377	0.487	N/D	N/D	N/D	108
A4B	58.3	N/D	0.788	0.817	N/D	N/D	N/D	247
A5B	119	N/D	0.741	0.866	N/D	N/D	N/D	481
A6B	52.6	N/D	0.672	1.91	0.151	N/D	N/D	215
MEAN	66.800	N/A	0.765	0.994	N/A	N/A	N/A	235.450
STD.DEV.	26.130	N/A	0.303	0.493	N/A	N/A	N/A	141.708
<b>Soil Test Results at 36" Deep (mg/kg)</b>								
A1-36	11.3	N/A	N/A	N/A	N/A	N/A	N/A	9.9
A2-36	35	N/A	N/A	N/A	N/A	N/A	N/A	9.5
A3-36	17	N/A	N/A	N/A	N/A	N/A	N/A	10
A4-36	14	N/A	N/A	N/A	N/A	N/A	N/A	11
A5-36	40.3	N/A	N/A	N/A	N/A	N/A	N/A	10
A7-36	62.9	N/A	N/A	N/A	N/A	N/A	N/A	9.9
A8-36	15.8	N/A	N/A	N/A	N/A	N/A	N/A	9.1
MEAN	28.043	N/A	N/A	N/A	N/A	N/A	N/A	9.914
STD.DEV.	18.987	N/A	N/A	N/A	N/A	N/A	N/A	0.581
<b>Soil Test Results at 60" Deep (mg/kg)</b>								
A1-60	9.3	N/D	N/D	N/D	N/D	N/D	N/D	0.3
A2-60	9	N/D	N/D	N/D	N/D	N/D	N/D	15.6
A3-60	9.1	N/D	N/D	N/D	N/D	N/D	N/D	15.2
A4-60	9.3	N/D	N/D	N/D	N/D	N/D	N/D	13.3
A5-60	9.1	N/D	N/D	N/D	N/D	N/D	N/D	28.8
A7-60	13.9	N/D	N/D	N/D	N/D	N/D	N/D	9.5
A8-60	9.5	N/D	N/D	N/D	N/D	N/D	N/D	9.5
MEAN	9.886	N/A	N/A	N/A	N/A	N/A	N/A	13.171
STD.DEV.	1.778	N/A	N/A	N/A	N/A	N/A	N/A	8.631
<b>WDOE Soil Regulatory Limit per WAC Chapter 173-340 (mg/kg)</b>								
Method A	20	N/A	N/A	1	N/A	N/A	N/A	250
Method B	1.43	4.17	2.94	2.94	0.0625	N/A	N/A	250
Method C	57	167	118	118	2.5	N/A	N/A	250
Industrial	188	547	386	386	8.2	N/A	N/A	1000
<b>Soil Test Results for Gasoline and Diesel (mg/kg)</b>								
<b>Sample ID</b>	<b>Depth</b>	<b>WTPH-G</b>	<b>WTPH-D</b>					
P1W	6"	N/A	31.3					
P1E	6"	N/A	2330					
P2A	6"	N/D	N/A	N/D = Non-detectable by laboratory				
P2B	18"	N/D	N/A	N/A = Not applicable or not available				



beyond WDOE the Model Toxics Control Act (MTCA). Points for compliance with the Method A clean-up levels were any location that was not covered by an impervious surface and, therefore, has potential for human exposure to excessive levels of lead, arsenic and DDT.

## **Section 1.4 - Remedial Actions Taken**

The single contaminated media at the Eagle site in Wenatchee was soil, generally the uppermost 24-36 inches. Constituents of concern included lead, arsenic and DDT derivatives from the historic agronomic applications of pesticides to a pear orchard. To assure protection to human health and the environment, protective capping of the contaminated soil was the chosen remedial action for the subject site. In areas where soil was to remain exposed due to landscape plantings, the native soils were excavated to a depth of at least 36" and used as backfill under impervious surfaces elsewhere on the site. Fruit trees, roots, grasses and other organic debris were burned at the subject site prior to development of the Eagle Store. The residues from the on-site burning were spread throughout the site, incorporating them into the native soils

Since the soil sampling indicated that the contaminants of concern were limited to the upper 36" of the soil column, groundwater investigations were not performed at the subject site. The groundwater is estimated at approximately 50 feet bgs, which provides adequate separation between the contaminated soils and the groundwater. Additionally, the constituents of concern are not generally mobile within the soil column. Stormwater infiltration has been limited to the clean soil in the planter areas which occupy about 6.5% of the site, or 0.65 acres. The majority of the stormwater is piped directly to the City's stormwater conveyance system.

The Southeast Quadrant of the site appeared to be contaminated to a slightly deeper level than the rest of the site (to approximately 48"). Consequently, native soils in this

area were removed to a depth of 48" below original ground surface. Due to the regrading of the Eagle site, the interior planters between the East side of the new building and the property line could not be excavated to a depth of four feet below original ground surface. In those areas, the planters were excavated to a depth of three feet below finish grade and a layer of geotextile fabric was placed at the bottom of the excavation to indicate a separation between clean fill material and potentially contaminated native soils.

Clean soil was mined from on-site by stripping the native soil to a depth of at least 36" before mining soils for the planter areas. Soils were mined at convenient locations around the site, primarily on the North half and western perimeters.

Contaminated soil excavated from the planter areas was utilized as fill material elsewhere on the site and placed under an impermeable surface. Although some structural fill materials were imported onto the Eagle site for building foundations, slabs, and rods, no native soil was removed from the site.

In addition to the agronomic pesticide contamination, Eagle's Wenatchee site contained an unregulated above-ground storage tank (AST) for heating oil and an unregulated unleaded gasoline UST. The location of each tank was noted on **Figure 2**. The UST removal was observed by representatives of Earth Consultants, Inc. (ECI) of Bellevue, Washington. ECI took confirmatory soil samples from the bottom of the UST excavation and did not find contamination above the WDOE limit for gasoline total petroleum hydrocarbons (TPH), diesel range TPH, or motor oil range TPH. ECI's full report is included here as **Appendix C**.

The previous owner removed the fuel oil AST prior to Eagle's purchase of the site. The stained soil at the East end of the AST reported in the 1996 EA was not excavated or separated during construction of the Eagle store. However, no petroleum



contamination was noted in the field reports when the planters were excavated to a depth of four feet and four feet wide along the southern property line. Since the contamination source was removed and the general area of the tank was either excavated or covered with asphalt paving, the relatively minor quantity of heating oil contamination should not pose any risk to human health or the environment.

Asbestos-containing materials (ACM) was identified in the residence and shop buildings demolished for the Eagle store construction. Lead-based paint (LBP) was also identified on the residence. The ACM and LBP was identified in the February, 1996 Shannon and Wilson report included here as **Appendix D**. **Appendix D** also contains the April 3, 1996 letter verifying proper ACM and LBP removal and disposal by The Lambert Group. No other contamination was identified for the Wenatchee Eagle site.

## **Section 1.5 - Institutional Controls**

Since contamination of the soils exceeded the Method A clean-up levels, institutional controls were required at this site. All soils which exceeded the Method A clean-up levels were placed underneath impermeable surfaces, such as slab-on-grade buildings and asphalt or concrete parking lots. These institutional controls will prevent the exposure of humans or animals to the contaminants of concern and eliminate potential migration of those soils to other locations on the site or off the site.

In addition, the Owner will execute a Restrictive Covenant and record it with Chelan County upon WDOE approval. The proposed Restrictive Covenant is contained in **Appendix E** and will assure that future property owners are notified of the contamination left on-site as well as the institutional controls required to protect human health and the environment at this site.



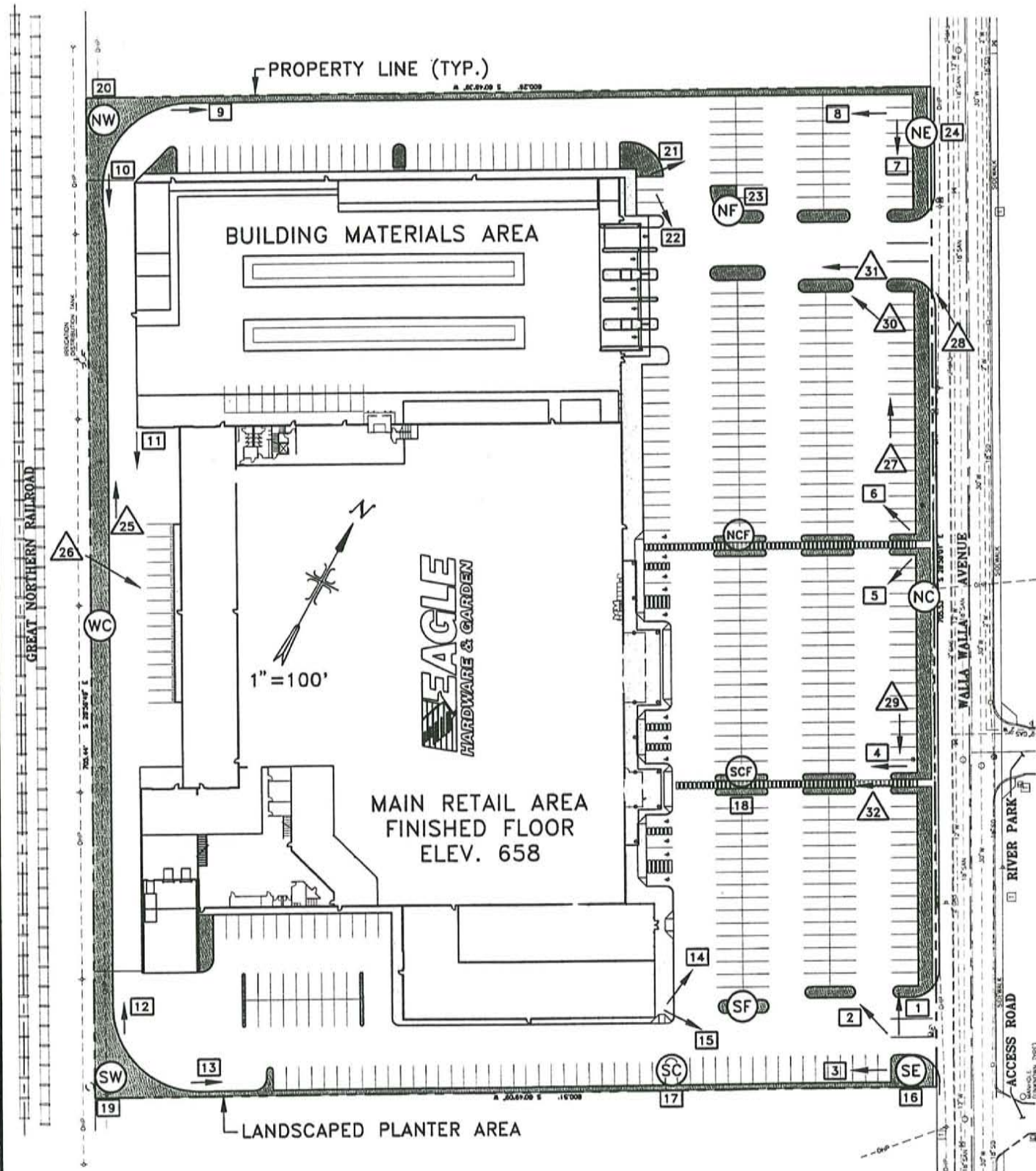
## Section 1.6 - Sampling and Analysis

In addition to the sampling performed for the Phase I/II EA, J-U-B conducted confirmation sampling within the planter areas at the Wenatchee Eagle site following the construction of the Eagle store. **Figure 4** shows the location and designation of each of these sample areas while **Table 2** provides the results of the sampling effort. Total lead and total arsenic were used as indicator contaminants to verify that clean native soil was utilized in each of the planter areas.

**Table 2 - Confirmation Soil Sampling**

Planter Soil Tests at 6" - 12" Deep (mg/kg)		
Sample I.D.	Arsenic	Lead
SE	<4.0	43.9
SF	<4.0	31.7
SCF	<4.0	12.3
SW	<4.0	<4.0
WC	<4.0	<4.0
NW	<4.0	13.2
NF	<4.0	16.7
NE	<4.0	4.4
NCF	<4.0	22.9
NC	<4.0	49.4
SC	<4.0	21.0

Soil samples were obtained within the top 12" in representative planter locations dispersed throughout the site. Using a standard digging shovel, each sample was placed in a clean, 4 ounce jar with a teflon lid. Samples were then placed on ice and transferred under Chain of Custody to SVL Analytical Laboratory for analysis. Full sample results and Chain of Custody are included as **Appendix F**. Soil samples confirm that the planter soils are within the Method A soil regulatory limits.



## LEGEND

- (SW) SOIL SAMPLE ID & LOCATION
- 12 POST-CONSTRUCTION  
PHOTO NO. & DIRECTION  
(SEE APPENDIX)
- 24 CONSTRUCTION  
PHOTO NO. & DIRECTION  
(SEE APPENDIX)

# EAGLE HARDWARE - WENATCHEE INDEPENDENT REMEDIAL ACTION REPORT FIGURE 4 - CONFIRMATION SOIL SAMPLING

**J-U-B**

Engineers Surveyors Planners

J-U-B ENGINEERS, INC.  
Engineers Surveyors Planners

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SCALE: AS SHOWN

DATE: DECEMBER, 1996

DWG.NO.



In addition, photographs of the final site development were taken and are contained in the Photo Log attached at **Appendix G**. The site photographs confirm the conditions of the pavements and buildings on the subject site, following development of the Eagle Store. **Appendix H** contains pertinent field reports documenting the plant excavation and soil mining.

## **Section 2.0 - Conclusions**

Based on the information presented in this report, the Wenatchee Eagle site should be eligible and hereby requests a "No Further Action" letter from the WDOE.

## REFERENCES

J-U-B ENGINEERS, Inc.; Phase I/II Environmental Assessment for Eagle Hardware and Garden, Inc., Wenatchee, Washington, January, 1996.

J-U-B ENGINEERS, Inc.; Letter to Mr. Mark Peterschmidt, February 28, 1996.

Washington State Department of Ecology, The Model Toxics Control Act Cleanup regulation, Chapter 173-340 WAC, Publication No. 94-06, Amended December, 1993.

Washington State Department of Ecology, Toxics Clean-up Program, Guidance on Sampling and Data Analysis Methods, Publication No. 94-49, January, 1995.

Washington State Department of Ecology, Toxics Clean-up Program, Guidance on Preparing Independent Remedial Action Reports under the Model Toxics Control Act, Chapter 70.105D RCW, Draft, March 1, 1994, Publication No. 94-18.

J-U-B ENGINEERS, Inc. files, Coeur d'Alene, Idaho.

Personal Interview:

Mr. Mark Peterschmidt, WDOE, February 22, 1996.



## APPENDIX

- A. Site Development Map
- B. Site Development Geotechnical Investigation
- C. Gasoline UST Removal Report
- D. Lead and Asbestos Paint Survey for Previous Structures
- E. Restrictive Covenant
- F. Sample Results and Chain of Custody
- G. Photo Log
- H. Pertinent Field Reports

***APPENDIX A - SITE DEVELOPMENT MAP***



IN THE PROJECT SPECIFICATIONS.

- ) ALL SPOT ELEVATIONS ARE TO TOP OF ASPHALT UNLESS OTHERWISE NOTED.
- ) PARKING SPACES ARE 9'x19' UNLESS OTHERWISE NOTED.
- ) REMOVE 2" TO 4" AS REQUIRED OF SURFACE VEGETATION AND TOPSOIL TO REMOVE ALL ORGANIC MATERIAL.
- ) ANY SOFT OR OTHERWISE UNSUITABLE SOIL ZONES MUST BE REMOVED TO A DEPTH OF 2 FEET AND REPLACED WITH GRANULAR FILL.
- ) REFERENCE LANDSCAPE PLAN L1 FOR GRADING AND TOPSOIL REQUIREMENTS IN ALL PLANTER AREAS.
- ) EXIST GROUND CONTOUR INTERVAL = 1 FOOT. BASIS OF ELEVATIONS IS THE EAST CAP BOLT OF A FIRE HYDRANT ON THE WEST SIDE OF WALLA WALLA AVENUE APPROXIMATELY 100' SOUTH OF THE CENTER LINE OF RIVER PARK. ELEVATION = 651.40 PER CITY OF WENATCHEE PUBLIC WORKS DEPARTMENT. ADD 600 FEET TO PROPOSED SPOT ELEVATIONS TO MATCH CITY DATUM.
- ) ALL SITE UTILITIES TO BUILDING SHALL STOP 5' FROM BUILDING FACE. ALL UTILITIES SHALL BE CAPPED AND MARKED AT THE SURFACE WITH THE DEPTH NOTED. VERIFY MECHANICAL PLANS FOR LOCATION AT BUILDING.
- ) THE CONTRACTOR SHALL MAKE A WATERTIGHT CONNECTION BETWEEN THE STORM DRAIN SYSTEM AND ALL THE ROOF DRAIN DOWNSPOUTS.

### ENVIRONMENTAL NOTES:

SOILS ON THIS SITE HAVE BEEN CONTAMINATED WITH LEAD, ARSENIC AND DDT TO A DEPTH OF APPROXIMATELY THREE FEET THROUGH THE NORMAL HISTORICAL USE OF PESTICIDES. CONTRACTORS SHALL ADVISE THEIR EMPLOYEE'S THROUGH THEIR HEALTH AND SAFETY PLAN TO AVOID CONTACT WITH THE SOIL. NO SOIL SHALL BE EXPORTED FROM THE SITE AND ALL VEHICLES LEAVING THE CONSTRUCTION AREA SHALL EXIT THROUGH A STABILIZED CONSTRUCTION EXIT TO AVOID TRACKING OF SEDIMENTS TO PUBLIC ROADWAYS. SEE EROSION CONTROL PLAN SHEET C6.

ALL ORCHARD TREES AND SITE ORGANIC MATERIAL SHALL BE COMPLETELY BURNED ON THE SITE IN ACCORDANCE WITH CITY OF WENATCHEE ORDINANCES. THE RESIDUAL ASH SHALL BE UNIFORMLY DISTRIBUTED OVER THE ASPHALT SUBBASE PRIOR TO THE IMPORTATION OF SUBGRADE MATERIAL.

NON-BURNABLE ORGANIC SOIL MIXTURES SHALL BE TEMPORARILY STOCKPILED BEFORE BURYING IN THE DESIGNATED LOCATION ON THE SITE.

ALL PLANTER AREAS SHALL BE EXCAVATED TO A MINIMUM DEPTH OF THREE FEET EXCEPT IN S.E. QUADRANT OF SITE OVEREXCAVATE FOUR FEET BELOW EXISTING GROUND SURFACE TO REMOVE POTENTIALLY CONTAMINATED SOIL. THE OVEREXCAVATED SOIL SHALL BE UTILIZED AS BACKFILL ON SITE AND PLACED UNDER THE ASPHALT CAP. CLEAN SUBBASE SOIL SHALL BE IMPORTED TO THE PLANTER AREA FROM THE OTHER AREAS ON SITE AND COMPACTED ACCORDING TO THE GEOTECHNICAL ENGINEERING RECOMMENDATIONS.

WENATCHEE, WA

**EAGLE**  
**HARDWARE & GARDEN**

STORE NUMBER

453

SITE  
GRADING AND  
DRAINAGE  
PLAN

JOB NO: 12890-06

DWG. NO. 3890C604

DRAWN BY:SCN

DESIGNED BY:DSM

CHECKED: VJL

DATE: 03-18-96

C5

OF 10

***APPENDIX B - SITE DEVELOPMENT GEOTECHNICAL INVESTIGATION***





SEATTLE  
HANFORD  
FAIRBANKS  
ANCHORAGE  
SAINT LOUIS  
BOSTON

December 19, 1995

J-U-B Engineers, Inc.  
2810 West Clearwater Avenue, Suite 201  
Kennewick, Washington 99336

Attn: Mr. Vince Loftus, P.E.

**RE: GEOTECHNICAL ENGINEERING SERVICES FOR THE EAGLE HARDWARE  
AND GARDEN STORE; WENATCHEE, WASHINGTON**

This report presents the results of a geotechnical study for the proposed Eagle Hardware and Garden store to be located in Wenatchee, Washington. It summarizes the field exploration program, engineering analyses, and recommendations for the design and construction of the proposed development.

The scope of work included observing excavation of four exploratory test pits, conducting engineering analyses for foundation design, and preparing this report.

### **SITE AND PROJECT DESCRIPTION**

The 10-acre site is located at 1200 Walla Walla Avenue in Wenatchee, Washington. The site is currently an orchard. The southeast corner of the site is occupied by a residential structure, shop building, and several minor outbuildings (Figure 1). The site is bordered on the west by a railroad right-of-way belonging to the Burlington Northern/Santa Fe Railroad, with two tracks trending parallel to the west side of the site.

Proposed construction includes the 110,000-square-foot main store structure, associated loading dock features, and asphalt-paved parking and delivery pavements. The main store building will be constructed using concrete tilt-up exterior panels and a steel-framed interior. Based on our experience with previous structures such as this, we assume that wall loads will vary from about 3 to 5 kips per linear foot, with column loads varying from about 50 to 150 kips.

**SHANNON & WILSON, INC.**

J-U-B Engineers, Inc.  
Attn: Mr. Vince Loftus, P.E.  
December 19, 1995  
Page 2

Elevations on the property vary from about elevation 660 at the west side of the site down to elevation 650 near the east edge of the site. At the time of this report, tentative finish floor elevation had been set at elevation 656. This finish floor elevation and the planned driveway across the west side of the site will require either a retaining wall or sloped, rock-faced surface to accommodate the grade change from the proposed driveway elevation up to the existing site elevations.

Paved parking will be made available for about 800 vehicles. Based on information provided by J-U-B Engineers, Inc., typical traffic loads can be expected to be about 5,800 trips per day in the main traffic area. We also estimate that (based on discussions with Kennewick, Washington, Eagle Hardware management) truck passages at the proposed store will be 8 to 10 per day.

### **SUBSURFACE EXPLORATIONS**

On December 6, 1995, four backhoe test pits were excavated at selected locations in the proposed construction area to observe subsurface conditions. Because acquisition of the property had not been finalized at the time of our exploration, impacts to the operating orchard had to be minimized; therefore, the number and location of test pits was determined by access between tree rows. The test pits were excavated by Goodfellow Brothers of East Wenatchee, Washington, under subcontract to Shannon & Wilson, Inc.

The test pit logs indicate approximate stratigraphic boundaries of the soil strata. The material encountered in the test pits, as indicated on the logs, should be considered schematic. The logs represent soil conditions observed in the test pit excavations but actual soil conditions may vary between test pits. The approximate test pit locations are shown on Figure 1, and the test pit logs are presented on Figures 2 through 5.

The test pits were loosely backfilled at the time of exploration and should be re-excavated and filled with compacted fill during construction.

H-1282-01



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J-U-B Engineers, Inc.  
Attn: Mr. Vince Loftus, P.E.  
December 19, 1995  
Page 3

**SUBSURFACE CONDITIONS**

The subsurface conditions observed in the test pits consisted of alternating layers of sand, silt, and sandy lean clay, extending from the surface to depths of 9 to 11 feet. Test pit TP-3 was terminated at a depth of 10 feet in very dense cobbles. Tree roots were encountered as deep as 8 feet but no groundwater was encountered at the site.

At the time of our exploration, the subsurface soils were moist to very wet to a depth of up to 6 feet, with most of the moisture evident in the silt and clay soils. The property owner indicated that the moisture source was probably due to recent rainfall in the area.

**ENGINEERING RECOMMENDATIONS**

This section presents our geotechnical engineering recommendations for the site grading, foundation design, slab-on-grade construction, pavement design, and retaining wall/grade change design for the proposed development.

**Site Grading**

All of the topsoil with organics, including grass, should be stripped from the proposed construction area. The stripped soil may be stockpiled and used in areas not requiring structural fill, provided all organic material is absent from the soil. In addition, all of the trees and most of the root system should be removed from the site to a depth of at least 5 feet below proposed excavation grade or finish grade, whichever is deeper. Our past experience indicates that a large excavator fitted with a thumb may be used to pull the trees and root system from the ground. We also recommend that an industrial strength herbicide (not a simple soil sterilant) be applied to the remaining root system to prevent the root system from growing back.

H-1282-01

## SHANNON &amp; WILSON, INC.

J-U-B Engineers, Inc.  
Attn: Mr. Vince Loftus, P.E.  
December 19, 1995  
Page 4

The proposed grading for the building will include excavating within the western half of the building footprint and filling on the eastern half of the footprint to accommodate the proposed finish floor elevation of 656 feet. Where the site is to be filled for the building, we recommend that the upper foot of stripped subgrade be compacted to 95 percent of the maximum dry density as determined by ASTM D 1557. Likewise, when excavation on the west side of the building is completed, we recommend that the upper foot of that finished surface be compacted to 95 percent of the maximum dry density as determined by ASTM D 1557. In addition, all fill placed in the eastern half of the building should be placed in lifts less than 9 inches loose thickness and should be compacted to 95 percent of the maximum dry density as determined by ASTM D 1557. All fill material should be moisture-conditioned to near its optimum moisture content prior to compaction of fill.

Depending on the time of year that construction is started, the site soils could be very wet and may require aeration or some other form of drying to reduce the in-place moisture content to near optimum. At the existing in-place moisture content, the soils could be very difficult to handle, and could be expected to rut badly under rubber-tired traffic loads. Construction under these conditions could require the use of only imported fill and only tracked vehicles for fill placement. If wet weather conditions are expected during construction, we recommend that the contractor consider placing a geotechnical fabric as a separation barrier between native soil and imported fill. The fabric should have a minimum weight of 8 ounces per square yard, should be a non-woven fabric, and should be installed in accordance with the manufacturer's recommendations. If imported fill is required during wet weather, we recommend a clean sand/gravel material with 100 percent passing the 3-inch screen and less than 5 percent (based on the 3/4-inch minus material) passing the number 200 screen. The fill should be compacted in loose lifts less than 9 inches thick to a dry density of at least 95 percent of the maximum laboratory dry density as determined by ASTM D 1557.

We anticipate that excavation and filling at the site would result in shrinkage of the soil volume ranging from about 15 to 25 percent, depending on the type of soil (sand versus clay).

H-1282-01



## SHANNON &amp; WILSON, INC.

J-U-B Engineers, Inc.  
Attn: Mr. Vince Loftus, P.E.  
December 19, 1995  
Page 5

**Foundation Design**

Based on our observations and engineering analyses, it is our opinion that footings for walls and columns should be supported in structural fill in accordance with the sketch shown on Figure 6. In addition, our analysis indicates that the top foot of the excavated subgrade should be compacted to 95 percent of the maximum dry density as determined by ASTM D 1557. Our experience and analysis indicates that the native soils encountered at the site are suitable for structural fill, as long as weather conditions allow the soil to be moisture-conditioned to near optimum moisture content (by either addition of moisture or by drying). *It is critical* that the native soils be moisture-conditioned to near optimum moisture content, especially for the silt and clay soils. If the silt and clay soils have moisture contents more than about 2 percentage points over optimum, the soils may become difficult to compact, may be expected to rut, and may not achieve the specified density, no matter how much compactive effort is exerted. If wet weather conditions are encountered, then the recommendations for geotechnical fabric and imported fill (discussed above) should be used in all footing areas.

When structural fill is placed beneath the footings in accordance with the sketch shown in Figure 6, our analysis indicates that the allowable bearing pressure would be 3,000 pounds per square foot (psf). Our analysis also indicates that footings placed on compacted structural fill and designed for an allowable bearing pressure of 3,000 psf would undergo total settlements less than 1/2 inch. Differential settlement over a 20-foot span is expected to be less than 1/4 inch. The majority of the settlement should occur simultaneously with the load application. The bottom of exterior footings should be at least 36 inches below the lowest exterior grade as protection from frost effects. All continuous footings should be at least 18 inches wide, and all isolated column footings should be at least 24 inches wide.

**Slab-On-Grade Construction**

The compacted natural soil surface or structural fill should provide suitable support for slab-on-grade construction, provided the following recommendations are followed. After the topsoil containing organics has been removed, the exposed slab subgrade should be moisture-conditioned and compacted to a depth of at least 12 inches. The subgrade should be compacted to a dry density of at

H-1282-01

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J-U-B Engineers, Inc.  
 Attn: Mr. Vince Loftus, P.E.  
 December 19, 1995  
 Page 6

compacted to a depth of at least 12 inches. The subgrade should be compacted to a dry density of at least 95 percent of the maximum laboratory dry density as determined by ASTM D 1557.

### Pavement Design

Based on the traffic data provided by J-U-B and Eagle personnel, we analyzed two pavement sections: a light-duty section for passenger vehicles only, and a heavy-duty section for passenger vehicles and trucks. The heavy-duty section was further divided into both asphalt and concrete pavements (where asphalt may be used outside) but the concrete may be used inside (in the drive-through area) and at truck bays. Traffic loads used in the design included 5,800 passenger vehicle trips (provided by J-U-B) and 8 to 10 truck delivery truck trips (provided by Eagle Personnel). We also assumed that the concrete pavement would have a minimum compressive strength of 3,500 pounds per square inch (psi) at 28 days, and that the pavement would be unreinforced. With higher concrete strength or some type of reinforcement, the required thickness of concrete pavement could be reduced.

Based on the above traffic assumptions, we recommend the following pavement sections.

TABLE 1.  
 PAVEMENT SURFACING RECOMMENDATIONS

Pavement Component	Light-Duty Pavement, Asphalt	Heavy-Duty Pavement, Asphalt	Heavy-Duty Pavement, Concrete
	Thickness, Inches		
WSDOT Class B Asphalt Concrete	2	3.5	8
5/8" Crushed Surfacing	4	6	6
Compacted Natural Subgrade	12	12	12

H-1282-01



SHANNON &amp; WILSON, INC.

J-U-B Engineers, Inc.  
Attn: Mr. Vince Loftus, P.E.  
December 19, 1995  
Page 7

All of the granular base and subgrade should be compacted to 95 percent of the maximum dry density as determined by ASTM D 1557. The asphaltic concrete pavement should be compacted to a minimum of 91 percent of the maximum theoretical Rice's density.

### **Retaining Walls and Slopes**

Retaining walls would be used in the truck dock areas, and could be used as a grade change structure along the property line at the west side of the site. As an alternative to a retaining wall along the west side of the site, a sloped, rock-covered slope could be installed.

We analyzed both walls and slopes assuming a backfill/natural soil friction angle of 32 degrees for a sand-silt-clay mixture composed of the on-site materials. This friction angle is lower than would normally be expected for a backfill composed entirely of granular soils, but in our opinion, it is applicable for the potential mixture of on-site soils. We also assumed that an in-place unit weight of the wall backfill would be 120 pounds per cubic foot (pcf). Because both the truck docks and the proposed retaining wall at the back of the site would be relatively short and rigid, they would tend to be acted on by at-rest earth pressures. For truck docks, we recommend that an at-rest earth pressure of 55 psf per foot of depth be used in design. Retaining wall footings could be designed using the same 3,000 psf vertical bearing pressure as the main building wall footings, as long as the footing subgrade preparation guidelines shown in Figure 6 are followed. In addition, we recommend that a friction coefficient of 0.3 be used to calculate sliding resistance on the base of the retaining wall footing and a passive pressure of 200 psf per foot depth be used to design for the passive pressure resistance on the front of the retaining wall footing.

The retaining wall at the back of the site receives additional earth pressures from an upward-sloping backfill. Because of these pressures and because the railroad tracks are so close, surcharge pressures from railroad loads must also be added to the above earth pressure criteria. Our analysis indicates that the upward-sloping backfill (which includes the railroad embankment) would contribute an additional 15 psf per foot of depth, and that railroad loads (from passing trains) would also contribute an additional 15 psf per foot of depth, for total earth pressures of 85 psf per foot of depth. Wall construction on the west side of the site will have to accommodate runoff from the railroad

H-1282-01

## SHANNON &amp; WILSON, INC.

J-U-B Engineers, Inc.  
Attn: Mr. Vince Loftus, P.E.  
December 19, 1995  
Page 8

embankment, most likely from snowmelt. We recommend that a wall drainage system be installed behind the wall, in accordance with the sketch shown in Figure 7. If the retaining wall concept is selected, we recommend that the construction include daily observation of the adjacent railroad tracks to observe any movement of the tracks toward the wall excavation. Even if construction does not extend into the railroad right-of-way, we recommend that the railroad company be informed of the planned construction, and that a preconstruction survey of the railroad tracks be coordinated and performed with the railroad's consent to establish the preconstruction location of the rails.

As an alternative to a retaining wall, we were asked to evaluate the use of a rock-covered slope using 1Horizontal:1Vertical (1H:1V) or 1-1/2H:1V slopes, or a landscaped 2H:1V slope. Our analysis included slope stability analysis using the computer program PCSTABL5 from Purdue University. Our analysis indicated that the proposed 1H:1V slope would be unstable and would fail under the soil and railroad surcharge loads at the proposed west property line location. Our analysis also indicated that the slope, with the crest at the west property line, could be 1-1/2H:1V, or flatter, and that the slope should be covered by a minimum of 2.0 feet of cobbles or boulders, in accordance with the sketch shown in Figure 8. The 1-1/2H:1V slope with rock cover will have a factor of safety against failure of 1.8. Without the rock cover, which forms a buttress for the slope, the factor of safety for the slope is less than 1, indicating slope failure. Our analysis of the landscaped 2H:1V slope indicated that without any rock cover, the slope will have a factor of safety against slope failure of 1.4.

We anticipate that runoff from snowmelt on the railroad right-of-way could impact the 2H:1V slope. In heavy snow years, spring runoff could be significant. Therefore, landscaping and slope protection should be designed accordingly. Our analysis also indicated that the top of either slope configuration should be no further west than the property line. Slope crests any farther west than the west property line would have to be designed in accordance with railroad design criteria, and specific permission would have to be obtained from the railroad prior to entering its property for construction.

For grade changes on the north and south sides of the site, where backfill slopes are relatively level and no railroad surcharge loads are present, a conventional retaining wall may be designed using the 55 psf per foot of depth earth pressure discussed above, with the footing preparation the same as that

H-1282-01



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Attn: Mr. Vince Loftus, P.E.  
December 19, 1995  
Page 9

discussed above and shown on Figure 6. As an alternative, a 1-1/2H:1V slope may be used for a grade change feature.

**Excavations**

All excavations should be made in accordance with the safety requirements of the Washington State Department of Labor and Industries (DLI) Part N Excavation, Trenching, and Shoring Standards (Chapter 296-155 Washington Administrative Code [WAC] ).

**LIMITATIONS**

The analyses, conclusions, and recommendations contained in this report are based on site conditions as they presently exist. They further assume that the exploratory test pits are representative of the subsurface conditions under all portions of the proposed structure; i.e., the subsurface conditions are not significantly different from those disclosed by the field explorations.

If subsurface conditions different from those encountered in the field explorations are observed or appear to be present beneath the excavations, during construction, we should be advised at once so that we can review these conditions and reconsider our recommendations where necessary.

If there is a substantial lapse of time between the submission of this report and the start of work at the site, or if conditions have changed because of natural processes or construction at the site, we recommend that we review this report to determine the applicability of the conclusions and recommendations concerning the changed conditions or time lapse.

This report was prepared for the exclusive use of J-U-B Engineers, Inc., and its design team in the design and construction of the proposed Eagle Hardware and Garden in Wenatchee, Washington. It should be made available to prospective contractors for information on factual data only and not as a warranty of subsurface conditions included in this report, such as those interpreted from the test pit logs and discussions of subsurface conditions included in this report.

H-1282-01

**SHANNON & WILSON, INC.**

J-U-B Engineers, Inc.  
Attn: Mr. Vince Loftus, P.E.  
December 19, 1995  
Page 10

Shannon & Wilson, Inc., has included the "Important Information About Your Geotechnical Report" to assist you and others in understanding the use and limitations of our report. This enclosure is considered an integral part of our report and should be read as part of the basis for using this report.

Sincerely,

**SHANNON & WILSON, INC.**



EXPIRES: 3/16/ 97

Brian J. Williams, P.G., P.E.  
Senior Engineer



EXPIRES: 2/28/ 97

Dee J. Burrie, P.E.  
Branch Manager

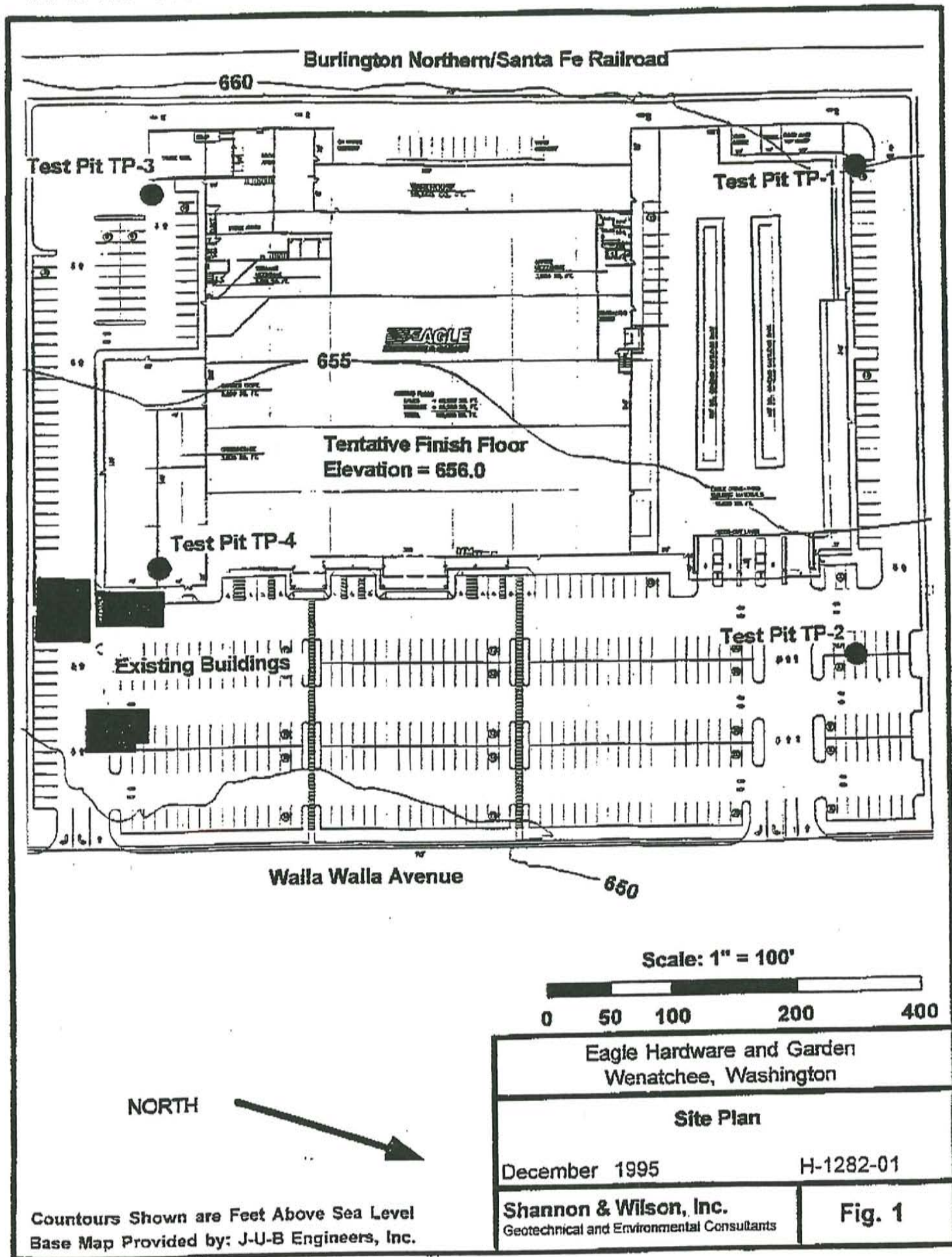
BJW:DJB:EAS/cvm

Enclosures: Figure 1 - Site Plan  
Figure 2 - Log of Test Pit TP-1  
Figure 3 - Log of Test Pit TP-2  
Figure 4 - Log of Test Pit TP-3  
Figure 5 - Log of Test Pit TP-4  
Figure 6- Footing Subgrade Preparation  
Figure 7 - Wall Backfill Drainage Design  
Figure 8 - West Property Line Slope Construction Guidelines  
Important Information About Your Geotechnical Report

12-19-95/h1282-01.gtr/H-1282-01/cvm

H-1282-01





LOG OF TEST PIT TP-1

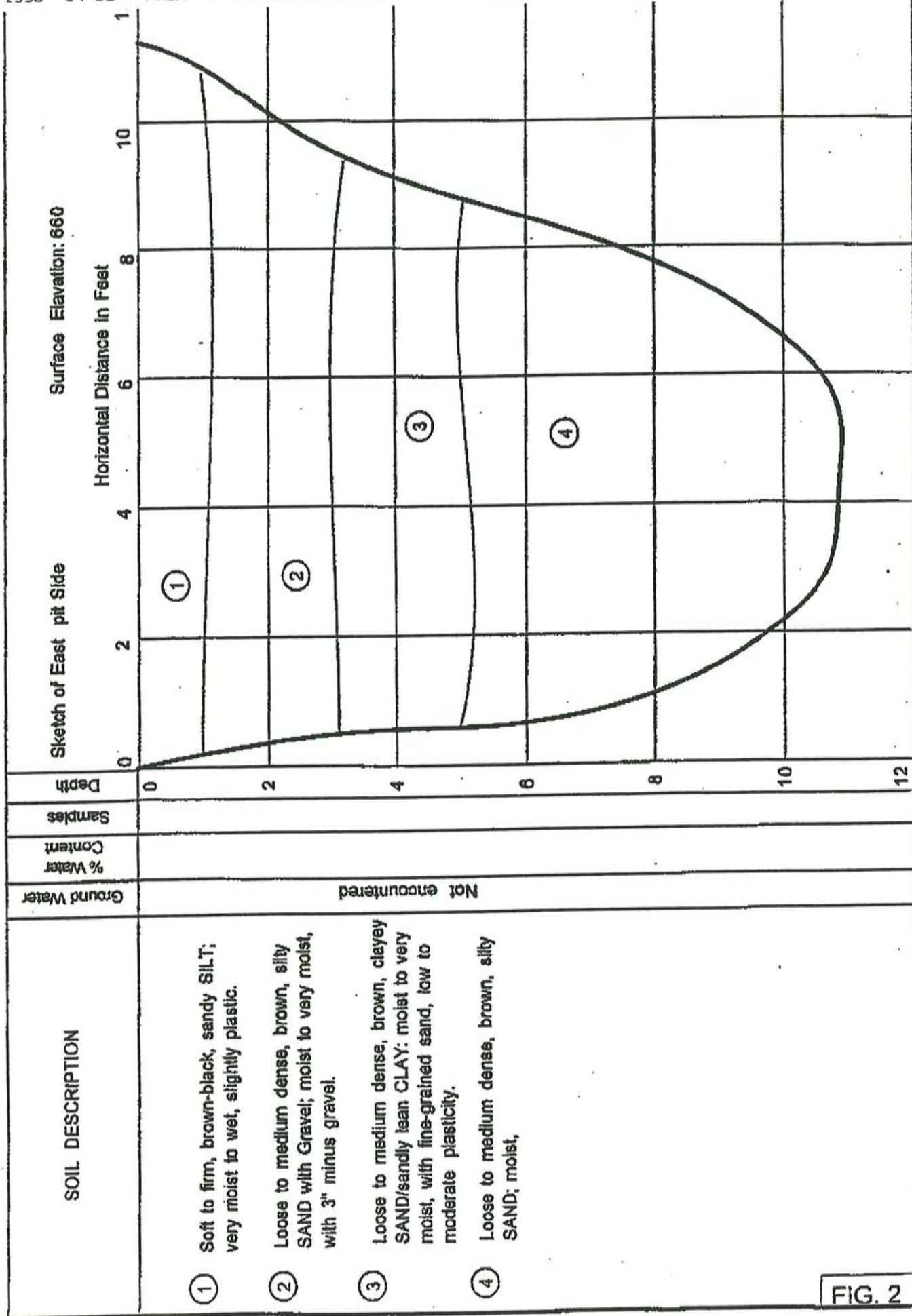


FIG. 2



JOB NO: H-1282-01

DATE: 12-8-95

LOCATION: 50°S. and 150°W. of  
Northeast Prop. Corner

PROJECT: Eagle Hardware; Wenatchee, Washington

LOG OF TEST PIT TP-2

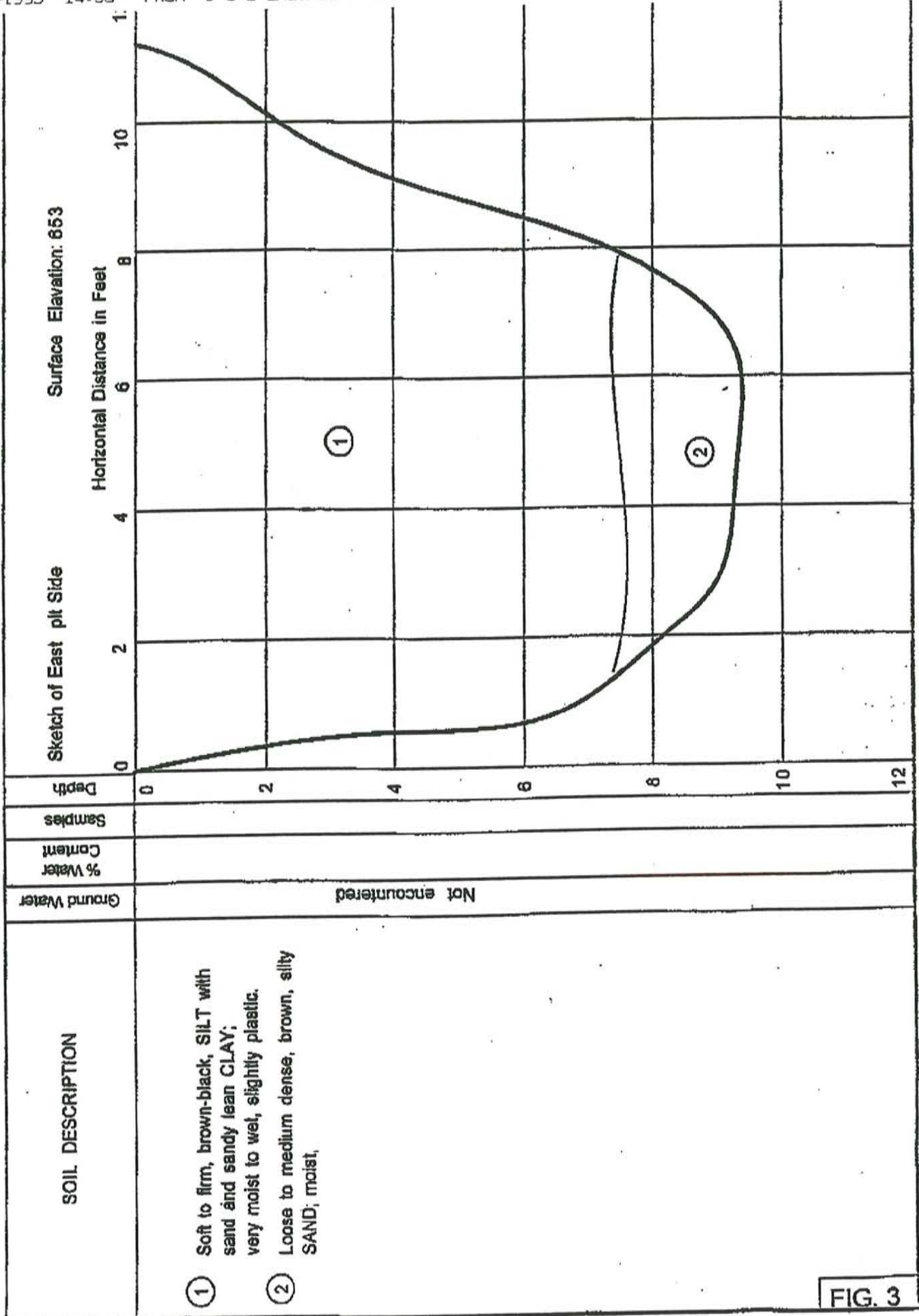


FIG. 3

JOB NO: H-1282-01

DATE: 12-6-95

LOCATION: 90°N. and 75°E. of  
Southwest Prop. Corner

PROJECT: Eagle Hardware; Wenatchee, Washington

LOG OF TEST PIT TP-3

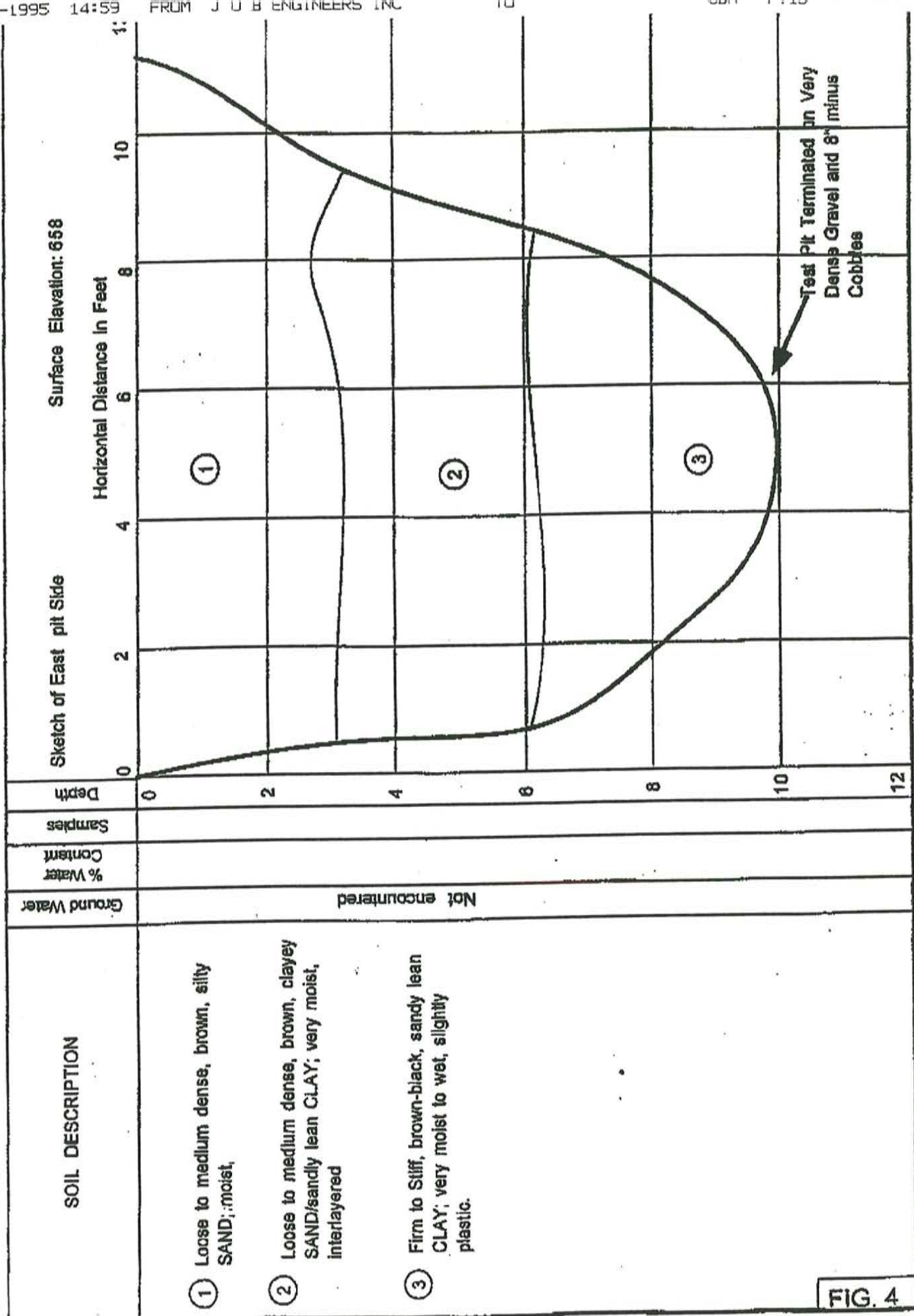


FIG. 4



LOG OF TEST PIT TP-4

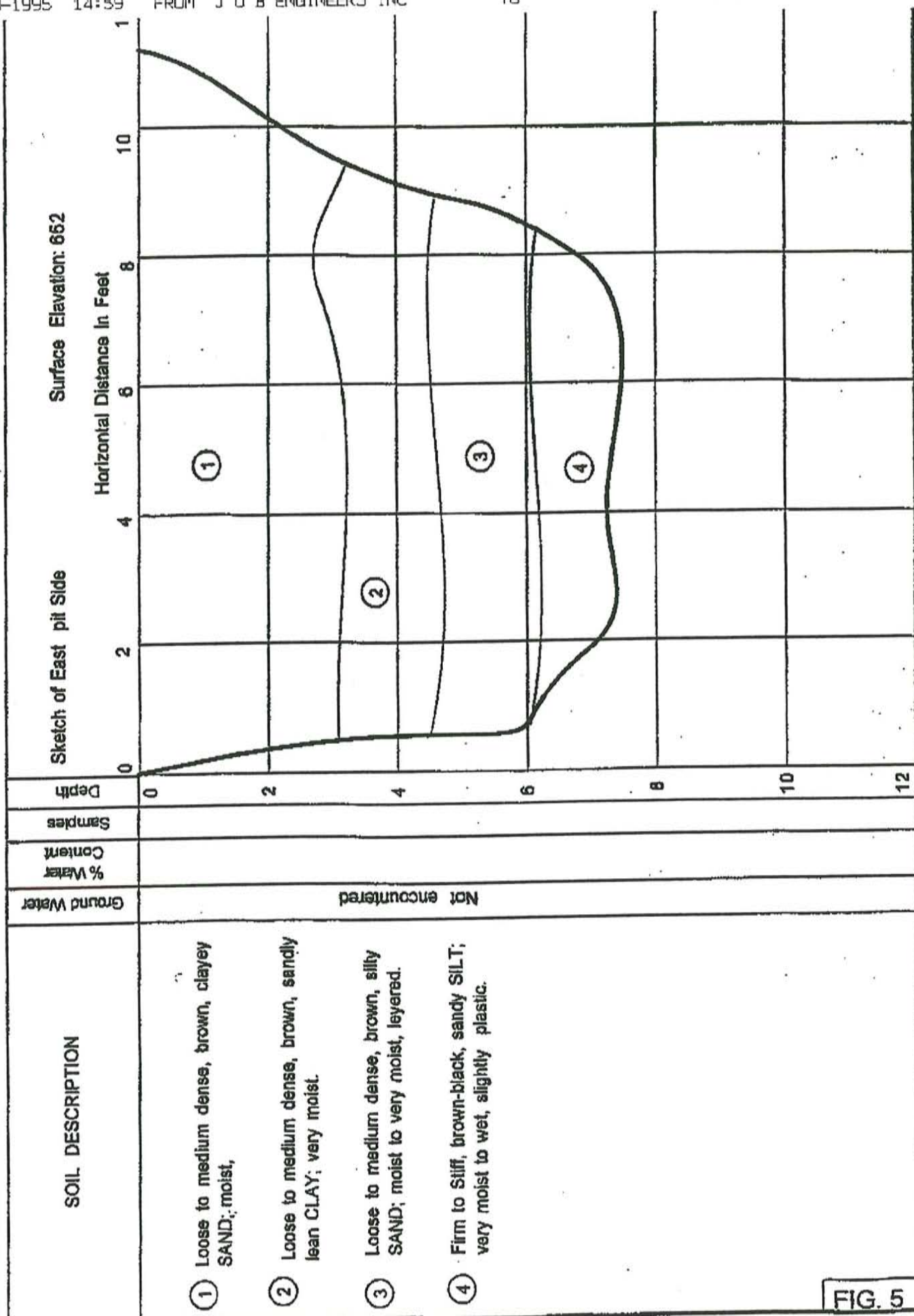
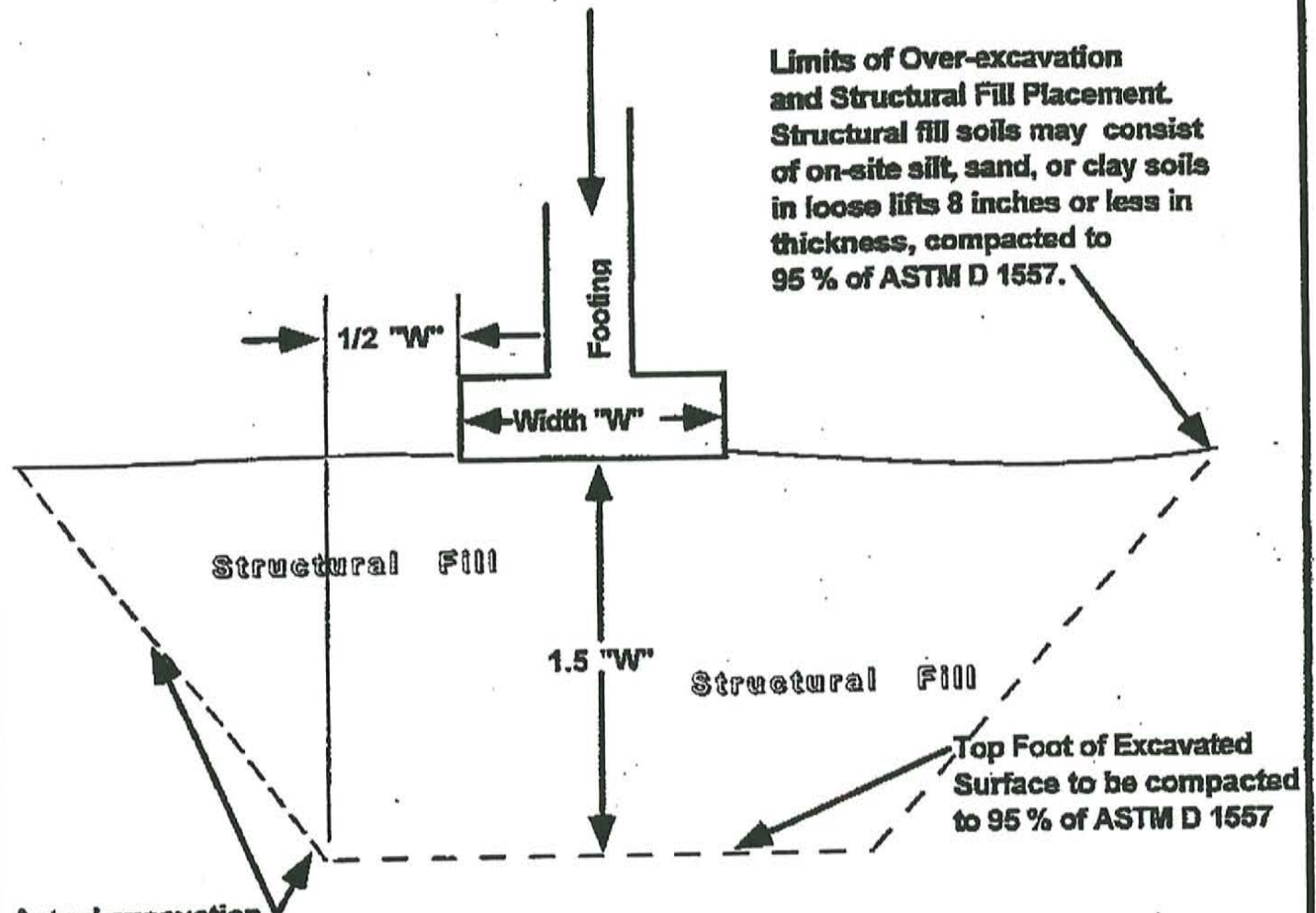


FIG. 5

**Allowable Bearing Pressure = 3000 psf**



**Actual excavation slopes to be responsibility of earthwork contractor per WAC 296**

Note: During wet weather construction, the native soils may become unsuitable for use as fill (see report discussion). For

**Scale as Shown**

**Eagle Hardware and Garden  
Wenatchee, Washington**

**Footing Subgrade Preparation**

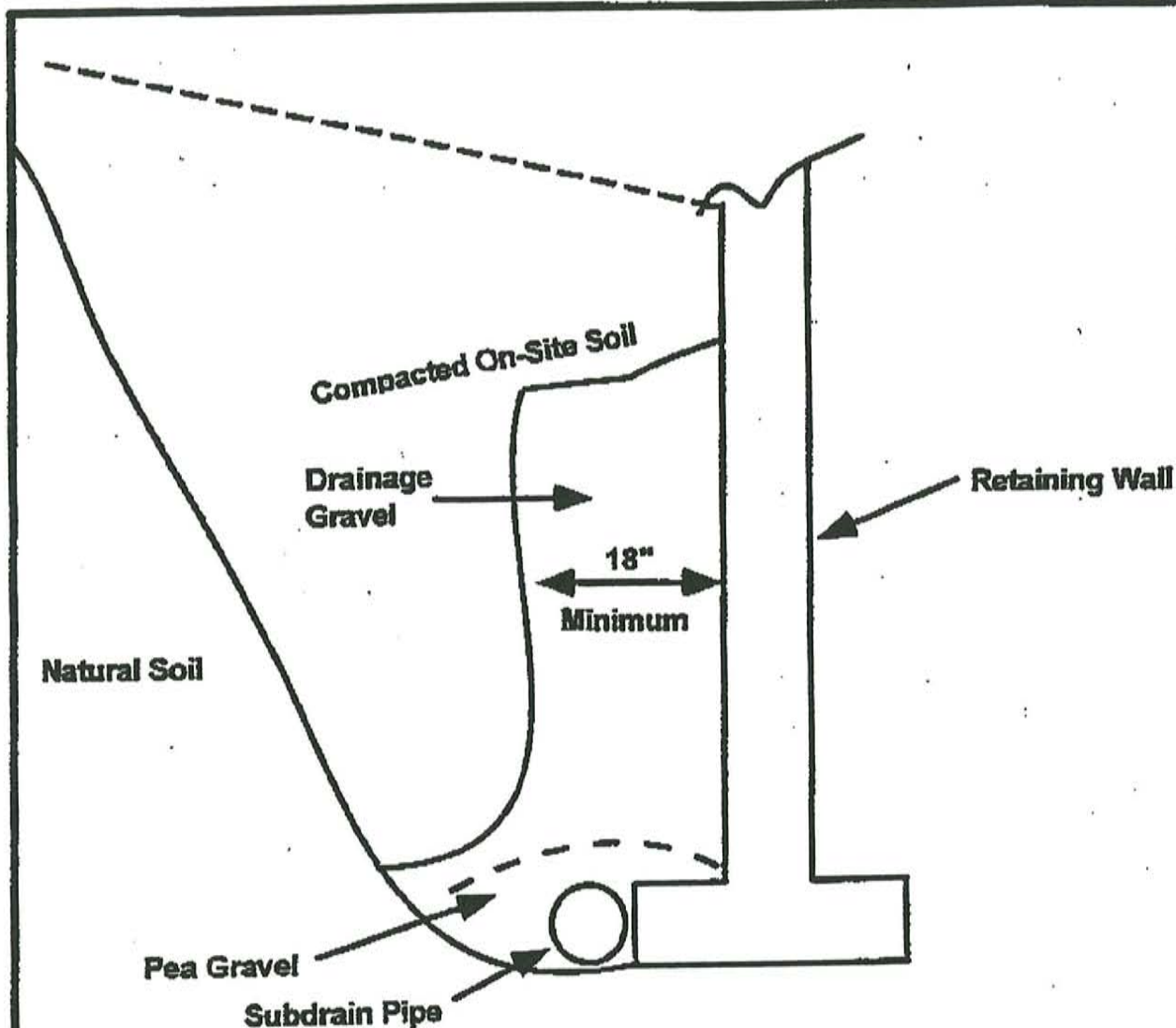
**December 1995**

**H-1282-01**

**Shannon & Wilson, Inc.**  
Geotechnical and Environmental Consultants

**Fig. 6**





**Notes:**

1. Backfill behind wall should be compacted with hand-operated equipment to 90 % of the maximum dry density determined by ASTM D 1557.
2. Drainage Gravel to be 5/8" - minus commercially-produced base course or top course gravel. Pea Gravel to be commercially-produced product.
3. Subdrain pipe to be 4" minimum diameter, slotted pipe, sloped to drain 6" per 100', or steeper. Maximum slot width to be 1/8". Subdrain pipe to outlet at least 15' away from (downslope) of wall face.

**Scale as Shown**

**Eagle Hardware and Garden  
Wenatchee, Washington**

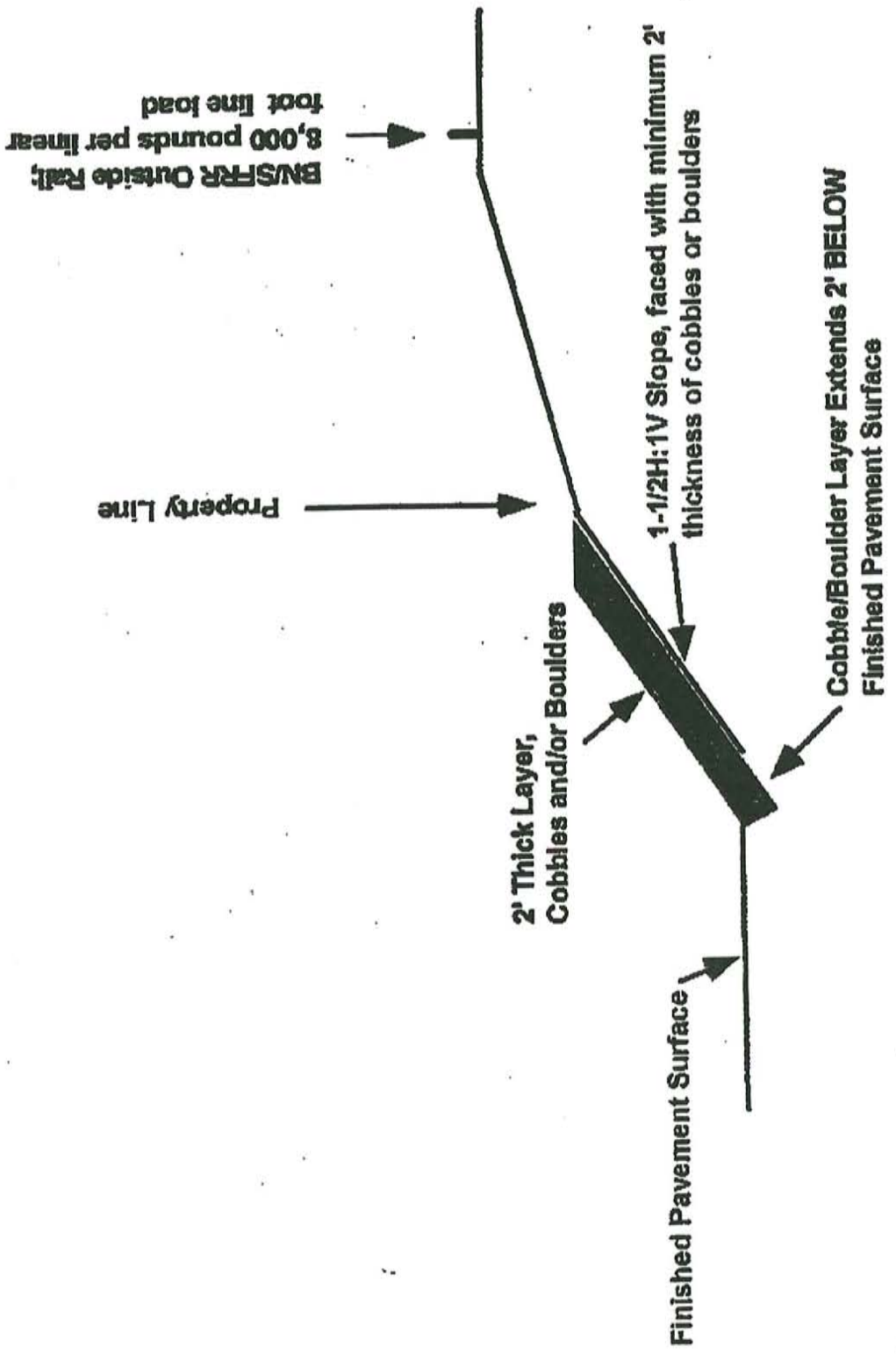
**Wall Backfill Drainage Design;  
West Property Line Wall**

**December 1995**

**H-1282-01**

**Shannon & Wilson, Inc.**  
Geotechnical and Environmental Consultants

**Fig. 7**



Scale: 1" = 10'



Eagle Hardware and Garden Wenatchee, Washington	
West Property Line Slope Construction Guidelines December 1995 H-1282-01	
Shannon & Wilson, Inc. Geotechnical and Environmental Consultants	Fig. 8





Dated: December 19, 1995

To: J-U-B Engineers, Inc.

Mr. Vince Loftus, P.E.

## Important Information About Your Geotechnical/Environmental Report

### CONSULTING SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND FOR SPECIFIC CLIENTS.

Consultants prepare reports to meet the specific needs of specific individuals. A report prepared for a civil engineer may not be adequate for a construction contractor or even another civil engineer. Unless indicated otherwise, your consultant prepared your report expressly for you and expressly for the purposes you indicated. No one other than you should apply this report for its intended purpose without first conferring with the consultant. No party should apply this report for any purpose other than that originally contemplated without first conferring with the consultant.

### THE CONSULTANT'S REPORT IS BASED ON PROJECT-SPECIFIC FACTORS.

A geotechnical/environmental report is based on a subsurface exploration plan designed to consider a unique set of project-specific factors. Depending on the project, these may include: the general nature of the structure and property involved; its size and configuration; its historical use and practice; the location of the structure on the site and its orientation; other improvements such as access roads, parking lots, and underground utilities; and the additional risk created by scope-of-service limitations imposed by the client. To help avoid costly problems, ask the consultant to evaluate how any factors that change subsequent to the date of the report may affect the recommendations. Unless your consultant indicates otherwise, your report should not be used: (1) when the nature of the proposed project is changed (for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one, or chemicals are discovered on or near the site); (2) when the size, elevation, or configuration of the proposed project is altered; (3) when the location or orientation of the proposed project is modified; (4) when there is a change of ownership; or (5) for application to an adjacent site. Consultants cannot accept responsibility for problems that may occur if they are not consulted after factors which were considered in the development of the report have changed.

### SUBSURFACE CONDITIONS CAN CHANGE.

Subsurface conditions may be affected as a result of natural processes or human activity. Because a geotechnical/environmental report is based on conditions that existed at the time of subsurface exploration, construction decisions should not be based on a report whose adequacy may have been affected by time. Ask the consultant to advise if additional tests are desirable before construction starts; for example, groundwater conditions commonly vary seasonally.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes, or groundwater fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical/environmental report. The consultant should be kept apprised of any such events, and should be consulted to determine if additional tests are necessary.

### MOST RECOMMENDATIONS ARE PROFESSIONAL JUDGMENTS.

Site exploration and testing identifies actual surface and subsurface conditions only at those points where samples are taken. The data were extrapolated by your consultant, who then applied judgment to render an opinion about overall subsurface conditions. The actual interface between materials may be far more gradual or abrupt than your report indicates. Actual conditions in areas not sampled may differ from those predicted in your report. While nothing can be done to prevent such situations, you and your consultant can work together to help reduce their impacts. Retaining your consultant to observe subsurface construction operations can be particularly beneficial in this respect.



## **A REPORT'S CONCLUSIONS ARE PRELIMINARY.**

The conclusions contained in your consultant's report are preliminary because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site. Actual subsurface conditions can be discerned only during earthwork; therefore, you should retain your consultant to observe actual conditions and to provide conclusions. Only the consultant who prepared the report is fully familiar with the background information needed to determine whether or not the report's recommendations based on those conclusions are valid and whether or not the contractor is abiding by applicable recommendations. The consultant who developed your report cannot assume responsibility or liability for the adequacy of the report's recommendations if another party is retained to observe construction.

## **THE CONSULTANT'S REPORT IS SUBJECT TO MISINTERPRETATION.**

Costly problems can occur when other design professionals develop their plans based on misinterpretation of a geotechnical/environmental report. To help avoid these problems, the consultant should be retained to work with other project design professionals to explain relevant geotechnical, geological, hydrogeological, and environmental findings, and to review the adequacy of their plans and specifications relative to these issues.

## **BORING LOGS AND/OR MONITORING WELL DATA SHOULD NOT BE SEPARATED FROM THE REPORT.**

Final boring logs developed by the consultant are based upon interpretation of field logs (assembled by site personnel), field test results, and laboratory and/or office evaluation of field samples and data. Only final boring logs and data are customarily included in geotechnical/environmental reports. These final logs should not, under any circumstances, be redrawn for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process.

To reduce the likelihood of boring log or monitoring well misinterpretation, contractors should be given ready access to the complete geotechnical engineering/environmental report prepared or authorized for their use. If access is provided only to the report prepared for you, you should advise contractors of the report's limitations, assuming that a contractor was not one of the specific persons for whom the report was prepared, and that developing construction cost estimates was not one of the specific purposes for which it was prepared. While a contractor may gain important knowledge from a report prepared for another party, the contractor should discuss the report with your consultant and perform the additional or alternative work believed necessary to obtain the data specifically appropriate for construction cost estimating purposes. Some clients hold the mistaken impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems and the adversarial attitudes that aggravate them to a disproportionate scale.

## **READ RESPONSIBILITY CLAUSES CLOSELY.**

Because geotechnical/environmental engineering is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, consultants have developed a number of clauses for use in their contracts, reports and other documents. These responsibility clauses are not exculpatory clauses designed to transfer the consultant's liabilities to other parties; rather, they are definitive clauses that identify where the consultant's responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your report, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to your questions.

The preceding paragraphs are based on information provided by the  
ASFE/Association of Engineering Firms Practicing in the Geosciences, Silver Spring, Maryland



***APPENDIX C - GASOLINE UST REMOVAL REPORT***

# Letter of Transmittal



Earth Consultants Inc.

Geotechnical Engineers, Geologists & Environmental Scientists

1805 - 136th Place N.E., Suite 201

Bellevue, Washington 98005

Phone: (206) 643-3780 / Fax: (206) 746-0860

TO: Eagle Hardware and Garden, Inc.  
c/o Sconzo/Hallstrom Architects  
919 124th Avenue Northeast  
Bellevue, WA. 98005

DATE: April 10, 1996

JOB NO.: E-7118-1

PROJECT: Eagle Hardware Store No. 453

ATTENTION: Mr. John Hallstrom

WE ARE SENDING YOU: ☒ Attached ☐ Under Separate Cover Via \_\_\_\_\_

THE FOLLOWING:

☐ Field Reports ☒ Reports ☐ Preliminary Drafts ☐ Test Results  
☐ Per Your Request ☐ \_\_\_\_\_

Copies	Date	Description
2	4-10-96	Underground Storage Tank (UST) Closure

THESE ARE TRANSMITTED FOR YOUR:

☒ Information ☒ Files ☐ Approval ☐ Review and Comments ☐ Signature ☐ Distribution  
☐ \_\_\_\_\_ ☐ \_\_\_\_\_

REMARKS:

Thank You!

CC:1 J-U-B Engineers, Inc.

ATTN. \_\_\_\_\_

2

ATTN. \_\_\_\_\_

3

ATTN. \_\_\_\_\_

4

ATTN. \_\_\_\_\_

5

ATTN. \_\_\_\_\_

BY Joe Nessel

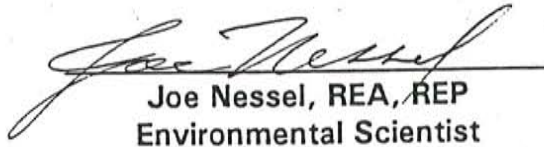


UNDERGROUND STORAGE TANK CLOSURE  
EAGLE HARDWARE STORE NO. 453  
WALLA WALLA AVENUE  
AND RIVER PARK STREET  
WENATCHEE, WASHINGTON


E-7118-1

April 10, 1996

PREPARED FOR  
EAGLE HARDWARE AND GARDEN, INC.  
C/O SCONZO/HALLSTROM ARCHITECTS



Joe Nessel, REA, REP  
Environmental Scientist



Robert S. Levinson, P.E.  
Principal

Earth Consultants, Inc.  
1805 - 136th Place Northeast, Suite 201  
Bellevue, Washington 98005  
(206) 643-3780



**Earth Consultants Inc.**

Geotechnical Engineers, Geologists & Environmental Scientists

April 10, 1996

E-7118-1

Eagle Hardware and Garden, Inc.  
c/o Sconzo/Hallstrom Architects  
919 - 124th Avenue Northeast  
Suite 101  
Bellevue, Washington 98005

Attn: Mr. John Hallstrom

Subject: **Underground Storage Tank (UST) Closure**  
**Eagle Hardware Store No. 453**  
**Walla Walla Avenue and River Park Street**  
**Wenatchee, Washington**

Dear Mr. Hallstrom:

The Environmental Services Division of Earth Consultants, Inc. (ECI) observed the removal of a gasoline underground storage tank at the subject site on March 19, 1996. This tank had previously been utilized for the fueling of equipment on a pear orchard located at the subject site. This report presents the observations by the ECI representative, sampling activity, and documentation for this project.

We appreciate the opportunity to have provided environmental consulting services to you. If you have any questions, or if we may be of further service, please contact us.

Respectfully submitted,

**EARTH CONSULTANTS, INC.**

Joe Nessel, REA, REP  
Environmental Scientist

Robert S. Levinson, P.E.  
Principal

JN/RSL/kml



## TABLE OF CONTENTS

E-7118-1

	<u>PAGE</u>
1.0 INTRODUCTION .....	1
1.1 Scope of Work .....	1
1.2 Site History .....	1
2.0 UST REMOVAL AND SOIL SAMPLING .....	2
3.0 RESULTS .....	3
4.0 CONCLUSIONS .....	4
5.0 STANDARD LIMITATIONS .....	5
6.0 REFERENCES .....	6

### APPENDICES

Appendix A	Laboratory Analytical Results
Appendix B	Photographs
Appendix C	Soil Sampling and Field Screening Methodology

### ILLUSTRATIONS

Plate 1	Vicinity Map
Plate 2	Site Plan
Plate 3	Sample Location Plan

## **1.0 INTRODUCTION**

Earth Consultants, Inc. (ECI) observed the closure of a gasoline underground storage tank (UST) for Eagle Hardware and Garden, Inc. and Sconzo/Hallstrom Architects on March 19, 1996. This report presents the data and documentation for ECI's observations of the UST removal and our site assessment.

During this project, a single gasoline UST formerly used to supply fuel to farm equipment/vehicles, was removed from the area of former structures which supported a pear orchard operated by the Brown Family. The approximate site location is shown on the Vicinity Map, Plate 1, and the Site Plan, Plate 2.

### **1.1 Scope of Work**

ECI's services were retained to observe and document the removal of the gasoline UST. The scope of work included the following tasks:

- Provide a Site Safety Plan for the removal of the UST
- Provide observations and documentation for the UST removal
- Collect subsurface soil samples from the UST excavation for chemical analytical testing.
- Prepare a written report documenting field work, laboratory analyses, and conclusions.

### **1.2 Site History**

According to the referenced Phase I/II Environmental Assessment by J-U-B Engineers, Inc. (J-U-B), the subject site was the residential and shop area located at the southeast corner of a 9.8-acre pear orchard property. In 1985, the property owner installed an approximately 300 metal gallon UST to store unleaded gasoline, and a fuel pump, at the northeast corner of the garage (Plate 2). On December 20, 1995, J-U-B collected soil samples to depths of eighteen inches below the ground surface (bgs) at the area above the tank. Results of analyses for gasoline total petroleum hydrocarbons (TPHs) on the soils samples indicated that there were no detectable concentrations of gasoline TPHs.

According to the J-U-B report, a second UST, utilized for the storage of used oil, had been previously located east adjacent to the gasoline UST. The property owner reported that he had removed and disposed of the waste oil underground storage tank in about 1991. The owner reported no noticeable leakage or spillage from the used oil tank at the time of removal.



## 2.0 UST REMOVAL AND SOIL SAMPLING

On March 19, 1996, Appleland Pump and Equipment (Appleland) of Wenatchee, Washington, inerted the gasoline UST with carbon dioxide. Continental Dirt Contractors of Kent, Washington then utilized a trackhoe to remove soil from over and around the UST to approximately two feet bgs. The approximately ten cubic yards of overburden soil was pulled into piles at the south and east ends of the UST.

The five foot long tank was positioned with its long-axis oriented east and west. The tank was removed without further excavation, utilizing its lifting eye to lift the tank from its hole. The three foot diameter metal tank appeared to be in good condition with no evidence of leakage. The tank was calculated to be approximately 250 gallons in size. The former UST was removed from the site by Appleland.

Groundwater was not encountered during this tank excavation and removal. There was no evidence of staining on the subsurface soils around or beneath the excavated tank. No odors of gasoline were noted and no organic vapors were detected by a photoionization detector (PID) used on site to monitor for volatile organic compounds (VOCs) during the UST removal process.

An ECI representative was on-site to observe the UST removal, monitor for the presence of VOCs, and collect subsurface and stockpile soil samples for laboratory analysis. Four subsurface soil samples were collected from the limits of the tank removal excavation and submitted for laboratory analysis of gasoline-range Total Petroleum Hydrocarbons (TPHs) by Ecology Method WTPH-G. Three soil samples were collected from the stockpiled soil and submitted for laboratory analysis by WTPH-G. These seven soil samples were also analyzed for the gasoline related volatile organic compounds benzene, toluene, ethylbenzene, and xylene (BTEX).

Based upon the information about the former presence of an oil UST adjacent to the east end of the gasoline UST, one subsurface soil sample also was analyzed to confirm that heavier oil range TPHs were not present or, if present, were in compliance with Ecology cleanup levels. This soil sample, EW-3, collected from the east wall of the excavation at three feet bgs, was analyzed for the presence of diesel and oil TPHs by Ecology Method WTPH-D Extended.

### 3.0 RESULTS

Analytical testing indicated that gasoline range TPHs were not detected at 5 mg/kg, and that BTEX compounds were not detected above their detection limits of 0.1, 0.1, 0.1, 0.3 mg/kg respectively. Analysis of sample EW-3 for oil range TPHs detected approximately 31 mg/kg of diesel range TPH and 92 mg/kg of oil range TPH. The analytical laboratory reports are included in appendix A. The results were well below the Washington State MTCA Method A Cleanup Levels (WAC 173-340) for both gasoline range TPHs (100 mg/kg) and oil range TPHs (200 mg/kg).



#### 4.0 CONCLUSIONS

A single approximately 250-gallon gasoline fuel tank was excavated and removed from the subject site on March 19, 1996. The tank was in good condition with no evidence of leakage. There was no evidence of soil stains on either the walls or base of the excavation. No gasoline or petroleum odors were detected during the tank excavation. A review of soil sample analytical results for both gasoline and oil total petroleum hydrocarbons indicates that they were below MTCA Method A Cleanup Standards. Based on our observations and analytical results, ECI concludes that no gasoline was released from the UST on the subject property. The excavation has been backfilled. The laboratory analytical reports are located in Appendix A. Photographs of the UST removal are located in Appendix B, and Soil Sampling and Field Screening Methodology is located in Appendix C.

## **5.0 STANDARD LIMITATIONS**

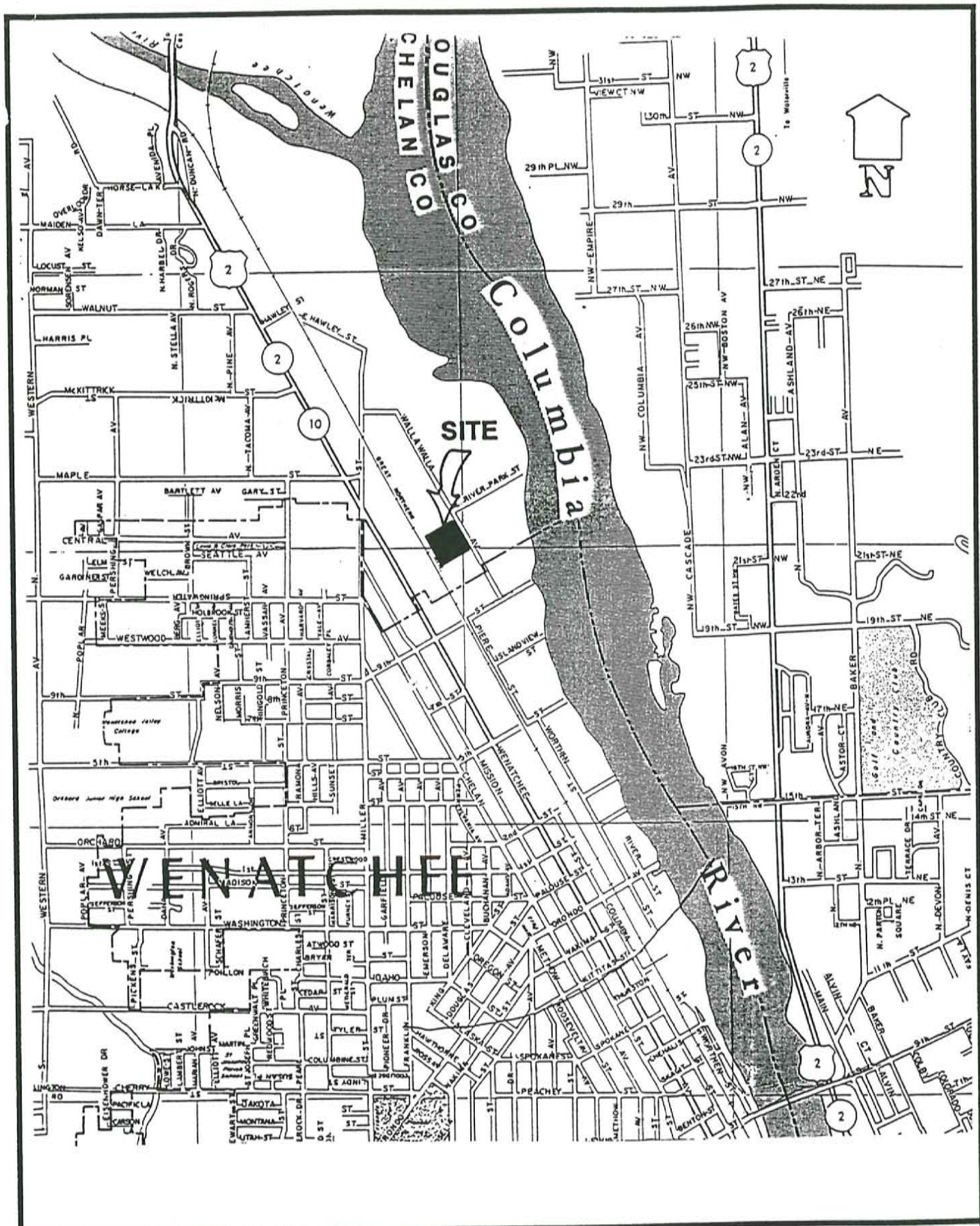
ECI has prepared this report in a professional manner, using the skill and care normally exercised for similar projects under similar conditions by competent environmental consultants currently practicing in this area. ECI believes the conclusions stated herein to be factual, but no guarantee is made or implied.

This report is for the exclusive use of Eagle Hardware and Garden, Inc., Sconzo/Hallstrom Architects and their representatives. After completion of this present work, any future consultations of other professional services to others (third parties) related to this project requires written authorization from Sconzo/Hallstrom Architects or Eagle Hardware. Any such ECI service to third parties is new work requiring formal agreement with the third party and will be performed in accordance with the formal agreement.



## 6.0 REFERENCES

1. Phase I/II Environmental Assessment for Eagle Hardware and Garden Inc., Wenatchee, Washington, January 1996; J-U-B Engineers, Inc., 2810 W. Clearwater Avenue, Suite 201, Kennewick, Washington 99336.
2. Site Safety Plan for Proposed Eagle Hardware Site, Former Brown Residence, Walla Walla Avenue and East River Park Road, Wenatchee, Washington; Earth Consultants, Inc., 136th Place Northeast, Suite 201, Bellevue, Washington; E-7118, March 6, 1996
3. Washington Administrative Code, Chapter 173-360; Underground Storage Tank Regulations, 10/29/91
4. Washington Administrative Code, Chapter 173-340; Model Toxics Control Act, Cleanup Regulation; Publication No. 94-06; December 1993
5. Washington State Department of Ecology, "Guidance for Site Checks and Site Assessments for Underground Storage Tanks"; Department of Ecology Underground Storage Program (90-52); February 1991, (Revised 1992).



**Earth Consultants Inc.**  
Geotechnical Engineers, Geologists & Environmental Scientists

**Vicinity Map**  
**Proposed Eagle Hardware #453**  
**Wenatchee, Washington**

Proj. No. 7118-1

Drwn.

GLS

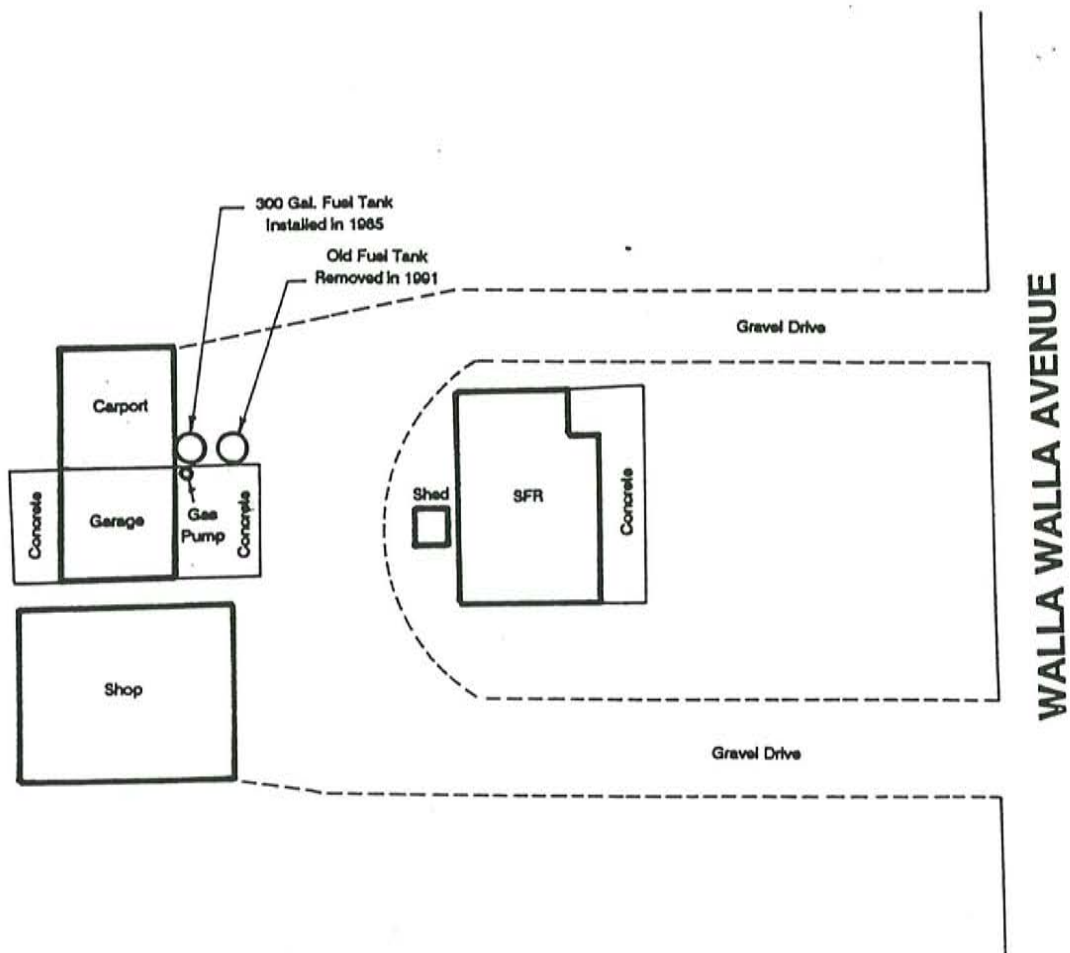
Date Apr.'96

Checked JN




Date 4/3/96

Plate 1





### LEGEND

-  Existing Building
-  Edge of Gravel
-  Driveway



Not-To-Scale



**Earth Consultants Inc.**  
Geotechnical Engineers, Geologists & Environmental Scientists

Site Plan  
Proposed Eagle Hardware #453  
Wenatchee, Washington

Proj. No. 7118-1

Drwn.

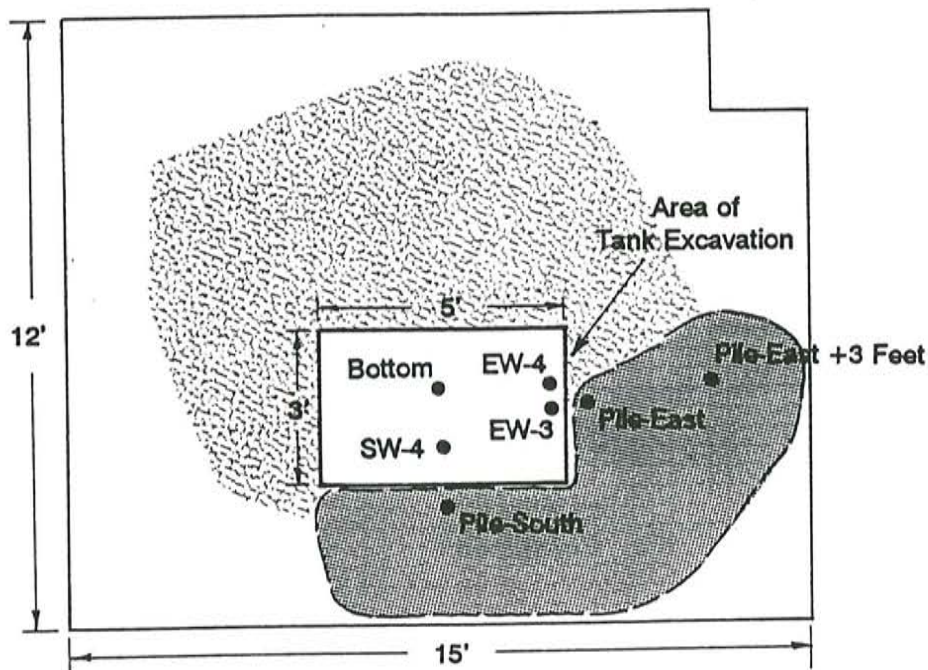
GLS

Date Apr.'96



Checked JN

Date 4/3/96

Plate 2



### LEGEND

- Sample Location
-  Area of Excavation To 2 Feet Below Ground Surface
-  Area of Stockpiled Excavated Soil



Not-To-Scale



**Earth Consultants Inc.**  
Geotechnical Engineers, Geologists & Environmental Scientists

Sample Location Plan  
Proposed Eagle Hardware #453  
Wenatchee, Washington

Proj. No. 7118-1

Drwn. GLS

Date Apr.'96

Checked JN

Date 4/3/96

Plate 3



A  
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A



CCI  
ANALYTICAL  
LABORATORIES, INC.

---

CERTIFICATE OF ANALYSIS

---

CLIENT: EARTH CONSULTANTS, INC.  
1805 136TH PLACE N.E.  
SUITE 201  
BELLEVUE, WA 98005

DATE: 3/20/96  
CCIL JOB #: 603043  
CCIL SAMPLE #: 1  
DATE RECEIVED: 3/19/96  
WDOE ACCREDITATION #: C142

CLIENT CONTACT: JOE NESSEL

CLIENT PROJECT ID: EAGLE-WENATCHEE 7118  
CLIENT SAMPLE ID: SW-4 3/19/96 9:35

---

DATA RESULTS

---

ANALYTE	METHOD	RESULTS*	UNITS**	ACTION LEVEL***	ANALYSIS DATE	ANALYSIS BY
TPH-GASOLINE	WTPH-G	ND(<5)	MG/KG	100MG/KG	3/19/96	KLP
BENZENE	EPA-8020	ND(<0.1)	MG/KG	.5MG/KG	3/19/96	KLP
TOLUENE	EPA-8020	ND(<0.1)	MG/KG	40MG/KG	3/19/96	KLP
ETHYLBENZENE	EPA-8020	ND(<0.1)	MG/KG	20MG/KG	3/19/96	KLP
XYLENES	EPA-8020	ND(<0.3)	MG/KG	20MG/KG	3/19/96	KLP

\* "ND" INDICATES ANALYTE NOT DETECTED AT LEVEL ABOVE REPORTING LIMIT. REPORTING LIMIT IS GIVEN IN PARENTHESES

\*\* UNITS FOR ALL NON LIQUID SAMPLES ARE REPORTED ON A DRY WEIGHT BASIS

\*\*\* ACTIONS LEVELS ARE PROVIDED ONLY WHEN PARAMETER DATA IS USED FOR A GENERALLY  
CONSISTENT APPLICATION. WHEN PROVIDED, THEY SHOULD BE USED AS GUIDELINES ONLY.  
THE APPROPRIATE REGULATORY DOCUMENT SHOULD BE CONSULTED BEFORE MAKING ANY  
DECISIONS BASED ON ANALYTICAL DATA

APPROVED BY: CRH





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### CERTIFICATE OF ANALYSIS

CLIENT: EARTH CONSULTANTS, INC.  
1805 136TH PLACE N.E.  
SUITE 201  
BELLEVUE, WA 98005

DATE: 3/20/96  
CCIL JOB #: 603043  
CCIL SAMPLE #: 2  
DATE RECEIVED: 3/19/96  
WDOE ACCREDITATION #: C142

CLIENT CONTACT: JOE NESSEL

CLIENT PROJECT ID: EAGLE-WENATCHEE 7118  
CLIENT SAMPLE ID: EW-3 3/19/96 9:45

### DATA RESULTS

ANALYTE	METHOD	RESULTS*	UNITS**	ACTION LEVEL***	ANALYSIS DATE	ANALYSIS BY
TPH-GASOLINE	WTPH-G	ND(<5)	MG/KG	100MG/KG	3/19/96	KLP
BENZENE	EPA-8020	ND(<0.1)	MG/KG	.5MG/KG	3/19/96	KLP
TOLUENE	EPA-8020	ND(<0.1)	MG/KG	40MG/KG	3/19/96	KLP
ETHYLBENZENE	EPA-8020	ND(<0.1)	MG/KG	20MG/KG	3/19/96	KLP
XYLENES	EPA-8020	ND(<0.3)	MG/KG	20MG/KG	3/19/96	KLP
TPH-DIESEL RANGE	WTPH-D EXT	31	MG/KG	200MG/KG	3/20/96	ERM
TPH-OIL RANGE	WTPH-D EXT	92	MG/KG	200MG/KG	3/20/96	ERM

NOTE: DIESEL RESULT IS MAINLY DUE TO FRONT OF OIL RANGE PRODUCT ELUTING IN DIESEL RANGE

\* "ND" INDICATES ANALYTE NOT DETECTED AT LEVEL ABOVE REPORTING LIMIT. REPORTING LIMIT IS GIVEN IN PARENTHESES

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DECISIONS BASED ON ANALYTICAL DATA

APPROVED BY: CRF



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LABORATORIES, INC.

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CLIENT: EARTH CONSULTANTS, INC.  
1805 136TH PLACE N.E.  
SUITE 201  
BELLEVUE, WA 98005

DATE: 3/20/96  
CCIL JOB #: 603043  
CCIL SAMPLE #: 3  
DATE RECEIVED: 3/19/96  
WDOE ACCREDITATION #: C142

CLIENT CONTACT: JOE NESSEL

CLIENT PROJECT ID: EAGLE-WENATCHEE 7118  
CLIENT SAMPLE ID: EW-4 3/19/96 9:50

## DATA RESULTS

ANALYTE	METHOD	RESULTS*	UNITS**	ACTION LEVEL***	ANALYSIS DATE	ANALYSIS BY
TPH-GASOLINE	WTPH-G	ND(<5)	MG/KG	100MG/KG	3/20/96	KLP
BENZENE	EPA-8020	ND(<0.1)	MG/KG	.5MG/KG	3/20/96	KLP
TOLUENE	EPA-8020	ND(<0.1)	MG/KG	40MG/KG	3/20/96	KLP
ETHYLBENZENE	EPA-8020	ND(<0.1)	MG/KG	20MG/KG	3/20/96	KLP
XYLENES	EPA-8020	ND(<0.3)	MG/KG	20MG/KG	3/20/96	KLP

\* "ND" INDICATES ANALYTE NOT DETECTED AT LEVEL ABOVE REPORTING LIMIT. REPORTING LIMIT IS GIVEN IN PARENTHESES

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DECISIONS BASED ON ANALYTICAL DATA

APPROVED BY: CRK





CCI  
ANALYTICAL  
LABORATORIES, INC.

### CERTIFICATE OF ANALYSIS

CLIENT: EARTH CONSULTANTS, INC.  
1805 136TH PLACE N.E.  
SUITE 201  
BELLEVUE, WA 98005

DATE: 3/20/96  
CCIL JOB #: 603043  
CCIL SAMPLE #: 4  
DATE RECEIVED: 3/19/96  
WDOE ACCREDITATION #: C142

CLIENT CONTACT: JOE NESSEL

CLIENT PROJECT ID: EAGLE-WENATCHEE 7118  
CLIENT SAMPLE ID: BOTTOM 3/19/96 9:55

### DATA RESULTS

ANALYTE	METHOD	RESULTS*	UNITS**	ACTION LEVEL***	ANALYSIS DATE	ANALYSIS BY
TPH-GASOLINE	WTPH-G	ND(<5)	MG/KG	100MG/KG	3/20/96	KLP
BENZENE	EPA-8020	ND(<0.1)	MG/KG	.5MG/KG	3/20/96	KLP
TOLUENE	EPA-8020	ND(<0.1)	MG/KG	40MG/KG	3/20/96	KLP
ETHYLBENZENE	EPA-8020	ND(<0.1)	MG/KG	20MG/KG	3/20/96	KLP
XYLENES	EPA-8020	ND(<0.3)	MG/KG	20MG/KG	3/20/96	KLP

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DECISIONS BASED ON ANALYTICAL DATA

APPROVED BY:



CCI  
ANALYTICAL  
LABORATORIES, INC.

---

CERTIFICATE OF ANALYSIS

---

CLIENT: EARTH CONSULTANTS, INC.  
1805 136TH PLACE N.E.  
SUITE 201  
BELLEVUE, WA 98005

DATE: 3/20/96  
CCIL JOB #: 603043  
CCIL SAMPLE #: 5  
DATE RECEIVED: 3/19/96  
WDOE ACCREDITATION #: C142

CLIENT CONTACT: JOE NESSEL

CLIENT PROJECT ID: EAGLE-WENATCHEE 7118  
CLIENT SAMPLE ID: PILE SOUTH 3/19/96 9:57

---

DATA RESULTS

---

ANALYTE	METHOD	RESULTS*	UNITS**	ACTION LEVEL***	ANALYSIS DATE	ANALYSIS BY
TPH-GASOLINE	WTPH-G	ND(<5)	MG/KG	100MG/KG	3/20/96	KLP
BENZENE	EPA-8020	ND(<0.1)	MG/KG	.5MG/KG	3/20/96	KLP
TOLUENE	EPA-8020	ND(<0.1)	MG/KG	40MG/KG	3/20/96	KLP
ETHYLBENZENE	EPA-8020	ND(<0.1)	MG/KG	20MG/KG	3/20/96	KLP
XYLENES	EPA-8020	ND(<0.3)	MG/KG	20MG/KG	3/20/96	KLP

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THE APPROPRIATE REGULATORY DOCUMENT SHOULD BE CONSULTED BEFORE MAKING ANY  
DECISIONS BASED ON ANALYTICAL DATA

APPROVED BY:





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ANALYTICAL  
LABORATORIES, INC.

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CLIENT: EARTH CONSULTANTS, INC.  
1805 136TH PLACE N.E.  
SUITE 201  
BELLEVUE, WA 98005

DATE: 3/20/96  
CCIL JOB #: 603043  
CCIL SAMPLE #: 6  
DATE RECEIVED: 3/19/96  
WDOE ACCREDITATION #: C142

CLIENT CONTACT: JOE NESSEL

CLIENT PROJECT ID: EAGLE-WENATCHEE 7118  
CLIENT SAMPLE ID: PILE EAST 3/19/96 10:00

### DATA RESULTS

ANALYTE	METHOD	RESULTS*	UNITS**	ACTION LEVEL***	ANALYSIS DATE	ANALYSIS BY
TPH-GASOLINE	WTPH-G	ND(<5)	MG/KG	100MG/KG	3/20/96	KLP
BENZENE	EPA-8020	ND(<0.1)	MG/KG	.5MG/KG	3/20/96	KLP
TOLUENE	EPA-8020	ND(<0.1)	MG/KG	40MG/KG	3/20/96	KLP
ETHYLBENZENE	EPA-8020	ND(<0.1)	MG/KG	20MG/KG	3/20/96	KLP
XYLENES	EPA-8020	ND(<0.3)	MG/KG	20MG/KG	3/20/96	KLP

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THE APPROPRIATE REGULATORY DOCUMENT SHOULD BE CONSULTED BEFORE MAKING ANY  
DECISIONS BASED ON ANALYTICAL DATA

APPROVED BY: CPH



CCI  
ANALYTICAL  
LABORATORIES, INC.

### CERTIFICATE OF ANALYSIS

CLIENT: EARTH CONSULTANTS, INC.  
1805 136TH PLACE N.E.  
SUITE 201  
BELLEVUE, WA 98005

DATE: 3/20/96  
CCIL JOB #: 603043  
CCIL SAMPLE #: 7  
DATE RECEIVED: 3/19/96  
WDOE ACCREDITATION #: C142

CLIENT CONTACT: JOE NESSEL

CLIENT PROJECT ID: EAGLE-WENATCHEE 7118  
CLIENT SAMPLE ID: PILE EAST + 3 FT 3/19/96 10:02

### DATA RESULTS

ANALYTE	METHOD	RESULTS*	UNITS**	ACTION LEVEL***	ANALYSIS DATE	ANALYSIS BY
TPH-GASOLINE	WTPH-G	ND(<5)	MG/KG	100MG/KG	3/20/96	KLP
BENZENE	EPA-8020	ND(<0.1)	MG/KG	.5MG/KG	3/20/96	KLP
TOLUENE	EPA-8020	ND(<0.1)	MG/KG	40MG/KG	3/20/96	KLP
ETHYLBENZENE	EPA-8020	ND(<0.1)	MG/KG	20MG/KG	3/20/96	KLP
XYLENES	EPA-8020	ND(<0.3)	MG/KG	20MG/KG	3/20/96	KLP

\* "ND" INDICATES ANALYTE NOT DETECTED AT LEVEL ABOVE REPORTING LIMIT. REPORTING LIMIT IS GIVEN IN PARENTHESES

\*\* UNITS FOR ALL NON LIQUID SAMPLES ARE REPORTED ON A DRY WEIGHT BASIS

\*\*\* ACTIONS LEVELS ARE PROVIDED ONLY WHEN PARAMETER DATA IS USED FOR A GENERALLY  
CONSISTENT APPLICATION. WHEN PROVIDED, THEY SHOULD BE USED AS GUIDELINES ONLY.  
THE APPROPRIATE REGULATORY DOCUMENT SHOULD BE CONSULTED BEFORE MAKING ANY  
DECISIONS BASED ON ANALYTICAL DATA.

APPROVED BY: ced





CCI  
ANALYTICAL  
LABORATORIES, INC.

# CERTIFICATE OF ANALYSIS

CLIENT: EARTH CONSULTANTS, INC.  
1805 136TH PLACE N.E.  
SUITE 201  
BELLEVUE, WA 98005

DATE: 3/20/96  
CCIL JOB #: 603043

DATE RECEIVED: 3/19/96  
WDOE ACCREDITATION #: C142

CLIENT CONTACT: JOE NESSEL

CLIENT PROJECT ID: EAGLE-WENATCHEE 7118

## QUALITY CONTROL RESULTS

### SURROGATE RECOVERY

CCIL SAMPLE ID	ANALYTE	SUR ID	% RECV
603043-01	WTPH-G	TFT	98
603043-01	EPA-8020	TFT	94
603043-02	WTPH-G	TFT	95
603043-02	EPA-8020	TFT	90
603043-02	WTPH-D EXT	C25	121
603043-03	WTPH-G	TFT	103
603043-03	EPA-8020	TFT	95
603043-04	WTPH-G	TFT	99
603043-04	EPA-8020	TFT	94
603043-05	WTPH-G	TFT	101
603043-05	EPA-8020	TFT	95
603043-06	WTPH-G	TFT	98
603043-06	EPA-8020	TFT	92
603043-07	WTPH-G	TFT	100
603043-07	EPA-8020	TFT	94

### BLANK AND DUPLICATE RESULTS

METHOD	BLK RESULT	ASSOC SMPLS	DUP RESULT	ORIG RESULT	%RDP	ASSOC SMPLS
WTPH-G	ND(<5)	303043-1 TO 2	22	28	****	SAME
EPA-8020(BENZ)	ND(<0.1)	303043-1 TO 2	ND(<0.1)	ND(<0.1)	****	SAME
EPA-8020(TOL)	ND(<0.1)	303043-1 TO 2	0.1	0.1	****	SAME
EPA-8020(ETHYLBENZ)	ND(<0.1)	303043-1 TO 2	ND(<0.1)	ND(<0.1)	****	SAME
EPA-8020(XYLENE)	ND(<0.3)	303043-1 TO 2	0.4	0.4	****	SAME
WTPH-G	ND(<5)	303043-3 TO 7	ND(<5)	ND(<5)	****	SAME
EPA-8020(BENZ)	ND(<0.1)	303043-3 TO 7	ND(<0.1)	ND(<0.1)	****	SAME
EPA-8020(TOL)	ND(<0.1)	303043-3 TO 7	ND(<0.1)	ND(<0.1)	****	SAME
EPA-8020(ETHYLBENZ)	ND(<0.1)	303043-3 TO 7	ND(<0.1)	ND(<0.1)	****	SAME
EPA-8020(XYLENE)	ND(<0.3)	303043-3 TO 7	ND(<0.3)	ND(<0.3)	****	SAME
WTPH D EXT(DSL RANGE)	ND(<25)	603043-02	36	31	****	SAME
WTPH D EXT(OIL RANGE)	ND(<50)	603043-02	130	92	****	SAME



CCI  
ANALYTICAL  
LABORATORIES, INC.

---

CERTIFICATE OF ANALYSIS

---

CLIENT: EARTH CONSULTANTS, INC.  
1805 136TH PLACE N.E.  
SUITE 201  
BELLEVUE, WA 98005

DATE: 3/20/96  
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CLIENT CONTACT: JOE NESSEL

CLIENT PROJECT ID: EAGLE-WENATCHEE 7118

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QUALITY CONTROL RESULTS

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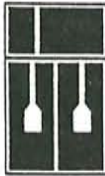
SPIKE RECOVERY

METHOD	ASSOC SMPLS	SPIKE ID	MS % RECOV.	MSD % RECOV	%RPD
EPA-8020(BENZ)	603043-1 TO 2	BENZENE	62	N/A	N/A
EPA-8020(TOL)	603043-1 TO 2	TOLUENE	61	N/A	N/A
EPA-8020(ETHYLBENZ)	603043-1 TO 2	ETHYLBENZENE	60	N/A	N/A
EPA-8020(XYLENE)	603043-1 TO 2	XYLENE	60	N/A	N/A
EPA-8020(BENZ)	603043-3 TO 7	BENZENE	110	N/A	N/A
EPA-8020(TOL)	603043-3 TO 7	TOLUENE	115	N/A	N/A
EPA-8020(ETHYLBENZ)	603043-3 TO 7	ETHYLBENZENE	113	N/A	N/A
EPA-8020(XYLENE)	603043-3 TO 7	XYLENE	114	N/A	N/A

\*\*\*\* RPD NOT REPORTED FOR RESULTS < X5 THE REPORTING LIMIT

APPROVED BY: 





CCI Analytical Laboratories, Inc.  
3229 Pine  
Everett, WA 98201  
Phone (206) 258-4548  
(206) 292-9059 Seattle  
(206) 259-6289 FAX

# Chain of Custody / Laboratory Analysis Request

Date 3/19/96 Page 1 of 1

PROJECT Eagle-Wenatchee # 7118  
PROJECT MANAGER Nessee PH# 643-3780  
REPORT/INVOICE MAILING ADDRESS Earth Consultants  
1805-1367th PINE #201  
Bellevue, WA 98005  
SAMPLER'S NAME KMC PH# \_\_\_\_\_

SAMPLE I.D.	DATE	TIME	TYPE	LAB #
1. SW-4	3/19	9:35	Soil	
2. E W-3	3/19	9:45	Soil	
3. E W-4	3/19	9:50	Soil	
4. Bottom	3/19	9:55	Soil	
5. Pile South	3/19	9:57	Soil	
6. Pile East	3/19	10:00	Soil	
7. Pile East +3ft	3/19	10:02	Soil	
8.				
9.				
10.				

ANALYSIS REQUESTED		OTHER (Specify)		NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
WTPH-D <input checked="" type="checkbox"/> 8045 MODIFIED <input checked="" type="checkbox"/> Extended	WTPH-418.1	WTPH-HCID	EPA 8020 <input type="checkbox"/> 602 <input type="checkbox"/>		
<input checked="" type="checkbox"/> BTX		EPA 8010 <input type="checkbox"/> 601 <input type="checkbox"/>	EPA 8240 <input type="checkbox"/> 8260 <input type="checkbox"/>		
		EPA 8270 <input type="checkbox"/> 625 <input type="checkbox"/>	EPA 8080 <input type="checkbox"/> 608 <input type="checkbox"/> PCB only <input type="checkbox"/> Pest only <input type="checkbox"/>		
		Metals Priority Pollutant <input type="checkbox"/> RCRA <input type="checkbox"/> TAL <input type="checkbox"/>	Metals Other (Specify)		
		TCLP Metals <input type="checkbox"/> VOA <input type="checkbox"/> Semi-Vol <input type="checkbox"/> Pest <input type="checkbox"/> Herb <input type="checkbox"/>			

SPECIAL INSTRUCTIONS 24 hour turnaround

POSSIBLE SAMPLE HAZARDS \_\_\_\_\_

SIGNATURES (Name, Company, Date, and Time):

1. Relinquished By: See above 3/19/96 1530  
Received By: John C. Clark 3/19/96 15:31  
2. Relinquished By: \_\_\_\_\_  
Received By: \_\_\_\_\_

3. Relinquished By: \_\_\_\_\_  
Received By: \_\_\_\_\_  
4. Relinquished By: \_\_\_\_\_  
Received By: \_\_\_\_\_

A  
P  
P  
E  
N  
D  
I  
X  
  
B



Photo 1 Gasoline UST excavation.



Photo 2 Former UST removed.

Photos Dated 3/19/96



A  
P  
P  
E  
N  
D  
I  
X  
C

## APPENDIX C

### Soil Sampling and Field Screening Methodology

After the removal of the UST, soil samples were collected, from the bottom and sidewalls of the excavation, with a clean hand shovel or with the excavator bucket. The hand shovel was cleaned in a solution of Liquinox and water, then rinsed with distilled water between each sample collection to prevent cross-contamination between samples. Samples were taken from the center of the excavation bucket. Clean disposal gloves were used during the collection and handling of each soil sample. Soil samples from the stockpiled soil were collected after removing about one foot of soil to expose a fresh surface. All soil samples were immediately packed in laboratory grade glass jars, sealed, labelled and packed in a cooler with ice for delivery under chain-of-custody to CCI Analytical Laboratories, Inc., in Everett, Washington for analyses.

Field screening using a Photovac Microtip photoionization detector (PID) was performed on soil samples collected during the excavation procedures. The instrument was used to measure volatile organic compound vapors, which provides an indication of the presence of hydrocarbons.

Samples collected for field screening were placed in a clean plastic bag, sealed, and gently shaken to release organic vapors into the bag's headspace. The PID probe was inserted into the plastic bag, withdrawing vapors from the bag's headspace, and the reading was recorded.

Headspace vapor field screening results are site-specific and vary according to contaminant type, atmospheric conditions, and soil moisture content.

***APPENDIX D - LEAD AND ASBESTOS PAINT SURVEY FOR PREVIOUS  
STRUCTURES***



January 16, 1997

Mr. Paul Klatt  
J-U-B Engineers  
1250 Ironwood Drive, Suite 220  
Coeur d' Alene, Idaho 83814

Re: Disposition of Floor Tile in Shop Building  
Eagle Hardware Store - Wenatchee, WA

Dear Mr. Klatt:

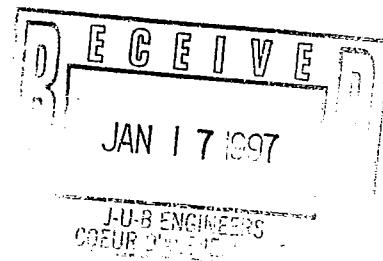
This letter responds to your question about the disposition of the floor tile in the shop building at 1200 Walla Walla Avenue. About one month prior to the asbestos and lead abatement project that occurred at the Eagle Hardware site during the last week of March 1996, the shop building on the property which contained 250 sq. ft. of twelve inch floor tile was dismantled and removed for reuse by the previous owner of the property. The concrete slab to which the floor tile was adhered was removed by the General Contractor. Therefore the floor tile was not part of the asbestos abatement project which we oversaw.

This situation does not create any liability for the current property owner because the floor tile is categorized by the Environmental Protection agency as a Category I Non Friable asbestos-containing material. There is no requirement to remove the floor tile prior to demolition if the floor tile does not become friable during the demolition of the slab. We were not on-site during the demolition and consequently did not observe whether the floor tile became friable. I can state that the practice of leaving floor tile in a building being demolished is not unusual in that jurisdiction. Therefore little liability will accrue to the property owner.

Sincerely,



Jeff Lambert, P.E.  
Principal Environmental Engineer



**Lambert Group, Inc**  

---

**Environmental Scientists & Engineers**

April 3, 1996

Mr. John Hallstrom  
Scanzo & Hallstrom Architects  
919 124th Avenue, N.E.  
Bellevue, WA 98005

Re: Asbestos/Lead-Based Paint Removal Verification

Dear Mr. Hallstrom:

This letter serves as a verification that all asbestos/lead-based paint containing materials have been removed from a house on the Eagle Hardware store property located at 1200 Walla Walla Avenue, Wenatchee, WA.

The asbestos removal was started on March 21, 1996 and was completed on March 23, 1996. All asbestos materials were disposed of at Graham landfill in Spokane, WA.

All previously identified lead-base painted components of the house were removed from April 1 through April 3, 1996. The components were packaged on pallets, and labeled with appropriate warning labels. The packaged materials are being stored on-site in an area specified by Lanny Bohn, Site Superintendent. The materials have a fence around them. A hazardous waste transporter will stop by the site within the next two weeks to pick up the materials.

The intent of this letter is to notify you that the demo contractor may now demolish the house and transport the materials as clean construction debris to a regular landfill. We will be providing you with a full report to include disposal documentation in the near future.

It has been our pleasure to have been of service to you. If you have any questions, please contact me or Jeff Lambert at (509) 536-9676 or Fax (509) 536-6504.

Sincerely,

*Eugene A. Hulings*  
Eugene A. Hulings  
Industrial Hygienist

1817 East Springfield  
Spokane, WA 99202



Telephone (509) 536-9676  
Fax (509) 536-6504

TOTAL P.02

TOTAL P.02

***Asbestos and Lead-Based Paint  
Survey  
Proposed Eagle Hardware Site  
Wenatchee, Washington***

***February 1996***

***J-U-B Engineers, Inc.  
2810 West Clearwater Avenue, Suite 201  
Kennewick, Washington 99336***



**SHANNON & WILSON, INC.**  
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

400 N. 34th St. • Suite 100  
P.O. Box 300303  
Seattle, Washington 98103  
206 • 632 • 8020



February 8, 1996

J-U-B Engineers, Inc.  
2810 West Clearwater Avenue, Suite 201  
Kennewick, Washington 99336

Attn: Mr. Vince Loftus, P.E.

**RE: ASBESTOS AND LEAD-BASED PAINT SURVEY, PROPOSED EAGLE  
HARDWARE SITE, WENATCHEE, WASHINGTON**

This letter presents the results of an asbestos-containing material (ACM) and lead-based paint (LBP) survey at the property located at 1200 Walla Walla Avenue in Wenatchee, Washington (Figure 1). This work was done in accordance with our proposal dated January 3, 1996, signed by Mr. Vince Loftus of J-U-B Engineers, Inc., on January 11, 1996. This report summarizes the project approach and findings. The purpose of the ACM survey was to identify potential ACM in the house, shop, and garage/carport located at the site (Figure 2). The purpose of the LBP survey was to identify potential areas of painted building materials that contained LBP. This survey was requested by Mr. Loftus in anticipation of property transfer and building demolition.

### SCOPE OF WORK

Our scope of work consisted of the following tasks:

- ▶ Visual reconnaissance of the house, shop, and garage/carport to identify apparently homogeneous areas of potential ACM and LBP.
- ▶ Collection of representative samples of the potential ACM and LBP from the house, shop, and garage/carport.

J-U-B Engineers, Inc.  
Attn: Mr. Vince Loftus  
February 8, 1996  
Page 2

SHANNON & WILSON, INC.

- ▶ Submission of samples to a certified laboratory for asbestos analysis using the phase light microscopy (PLM) method and lead analysis using flame atomic absorption spectroscopy (AA).
- ▶ Preparation of quantity estimates of the confirmed ACM.
- ▶ Preparation of this letter report.

### **SITE DESCRIPTION**

The 10-acre site, located at 1200 Walla Walla Avenue in Wenatchee, Washington, is currently an orchard. The southeast corner of the site is occupied by a residential structure, shop building, garage, and several minor outbuildings. The site is bordered on the west by a railroad right-of-way belonging to the Burlington Northern/Santa Fe Railroad, with two tracks trending parallel to the west side of the site. To the north and south, the site is bordered by residential properties and to the east, the site is bordered by Walla Walla Avenue.

### **ASBESTOS**

#### **Sampling Protocols**

Homogeneous areas in the buildings were identified during an initial walk-through on January 11, 1996. A homogeneous area (HGA) contains materials that are uniform by color, construction/application date, texture, and general appearance. Representative bulk material samples were obtained by Shannon & Wilson personnel on January 11, 1996, from the homogeneous areas suspected of containing ACM. The sample locations for the house are shown in Figure 3. Two samples were collected from the office floor in the shop, and no samples were collected from the garage/carport. The survey and sampling were conducted by an Asbestos Hazard Emergency Response Act (AHERA)-certified inspector. A total of 24 samples were collected using appropriate sampling tools, placed in labeled containers, and delivered by Federal Express to Environmental Management Consultants Laboratories (EMC) in Phoenix, Arizona, for analysis of asbestos content by PLM. Chain-

H-1282-02

of-custody was maintained for each sample from the time of collection until delivery to EMC. All sample locations were patched (when practical) after sampling, and photographs were taken at each sample location.

### **Laboratory Analytical Methods**

The bulk ACM samples were analyzed by EMC using PLM (method EPA 600/Mr-82-020). PLM is the U.S. Environmental Protection Agency (EPA)-recommended method for assessing the percentage of asbestos in building materials. PLM quantifies asbestos concentrations at between 100 percent and 1 percent detection levels. Levels below 1 percent can be stated only as "trace."

For samples containing more than 1 separable layer of materials, this report includes findings for each layer (labeled A for layer one and B for layer two, etc.).

For those samples with asbestos concentrations between 1 and 10 percent based on visual estimation, the EPA recommends a procedure known as point counting (National Emissions Standards for Hazardous Air Pollutants [NESHAPs], 40 CFR Part 61). Point counting is a statistically more accurate means of quantification for samples with low concentrations of asbestos. If required, concentration estimates of asbestos in these samples using point counting can be conducted.

### **Results of Asbestos Investigation**

Seventeen HGAs suspected of containing ACM were identified during the site visit. Each HGA was given a distinct number, as shown in parentheses, and rated for friability:

- ▶ (3-1) wallboard - low friability
- ▶ (4-1) plaster - low friability
- ▶ (9-1) sprayed-on surfacing material (popcorn ceiling) high friability
- ▶ (20-1) air cell pipe lagging - high friability
- ▶ (40-1, 40-2) vinyl floor tile - low friability
- ▶ (41-1, 41-2) mastic associated with vinyl floor tile - not friable
- ▶ (42-1, 42-2, 42-3, 42-4) linoleum - low friability
- ▶ (47-1) cement asbestos board - not friable



- ▶ (57-1) roofing material - low friability
- ▶ (58-1) sealant on chimney - not friable
- ▶ (60-1) tar patch - not friable
- ▶ (63-1) window putty - low friability

The EPA considers material as ACM if it contains greater than 1 percent asbestos fibers. The results from 11 of the 24 samples collected indicated that asbestos was present at levels greater than 1 percent (Table 1).

Three of the samples had results that were reported as "trace." One of the "trace" results was present as layer B in a positive sample. Another "trace" result (sample No. H12820201) was from a 10-square-foot section of linoleum located on the second floor of the house. It would be easiest to treat this small quantity of material as ACM and dispose of it with the other ACMs rather than having it reanalyzed by point counting. The third "trace" result (sample No. H12820213 - Layer C) was from the surfacing material on the ceiling in rooms 2-6 and 2-8 of the house. It is recommended that this sample be reanalyzed by point counting before this material is removed, or the material could be disposed of with the other ACMs.

Nine of the seventeen HGAs had positive samples associated with them, and two HGAs had "trace" samples associated with them. Estimated quantities and locations for HGAs with ACM are shown in Table 2. The laboratory reports prepared by EMC, dated January 22, 1996, are contained in Appendix A, Bulk Material Report.

## **LEAD-BASED PAINT**

### **Sampling Protocols**

Homogeneous areas on the inside and outside of the buildings were identified during the initial walk-through. The homogeneous areas contained painted materials that were uniform by color. Each of these homogeneous areas contained various layers of paint and substrate material. A representative paint chip sample of each homogenous area was collected,

ensuring that all layers of paint were sampled at each location. Each sample was placed in labeled containers, and the samples were delivered by Federal Express to Environmental Management Consultants Laboratories (EMC) in Phoenix, Arizona, for lead analysis using AA. Chain-of-custody was maintained for each sample from the time of collection until delivery to EMC.

### **Laboratory Analytical Methods**

The LBP chip samples were analyzed by EMC using flame AA spectroscopy (method EPA SW-846-7420). Flame AA is an EPA-recommended method for assessing the percentage of lead in paint.

### **Results of Lead Investigation**

Six HGAs suspected of containing LBP were identified during the site visit. Each HGA was identified and sampled:

- ▶ White paint on chimney
- ▶ Green paint on old wall behind current wooden wall finish
- ▶ Green and white paint on interior door
- ▶ Blue paint on boxed eaves
- ▶ Blue paint on exterior trim
- ▶ Green paint on exterior of garage

The EPA considers paint to be lead based if lead is present in the sample at greater than 0.5 percent by weight. The results from 4 of the 6 samples collected indicated that lead was present at levels greater than 0.5 percent by weight (Table 3). Table 3 identifies material, location, and results of LBP analyses. The laboratory reports dated January 24, 1996, were prepared by EMC and are contained in Appendix B, Results of Lead Analysis.

## CONCLUSIONS AND RECOMMENDATIONS

Based on our observations and the results of sample analyses, we present the following conclusions:

### Asbestos

- ▶ Asbestos was found in 9 HGAs in the house and shop at levels greater than 1 percent. Asbestos was found in 2 HGAs in the house at "trace" levels. These "trace" HGAs should be disposed of as ACMs or reanalyzed using point counting. See Table 1 and Table 2 for description, percent asbestos, location, and estimated quantity of ACMs.
- ▶ No ACMs were found in the garage/carport.
- ▶ Asbestos may be present in the wall cavities or behind existing woodwork. To determine locations and quantities of asbestos in inaccessible areas, invasive sampling may be appropriate prior to demolition.

### Lead

- ▶ Lead was found throughout the house. Lead was found to exceed the 0.5 percent by weight criteria for LBP in 4 of the 6 HGAs sampled. Lead levels ranged from 0.006 percent on the garage to 23.08 percent on the exterior boxed eaves of the house.

The results of laboratory analyses for both LBP and ACM should be provided to contractors involved in demolition of the structures at the site so that worker health and safety issues can be addressed and appropriate disposal of ACM can be arranged. Based on conversations with the Washington State Department of Ecology (Ecology), we understand that it is recommended that surfaces with LBP be sampled for Toxicity Characteristic Leaching Procedure (TCLP) method 6010. This would involve collecting a core sample from each waste stream, consisting of a paint sample adhered to the underlying material. This core sample is then analyzed by the TCLP method to approximate the quantity of lead that may leach from the paint after disposal. If the TCLP results from the material are determined to be above the 5.0 milligrams per liter (mg/L) limit, then the material is



considered a hazardous waste and must be disposed of in a landfill approved for receipt of hazardous waste.

### **LIMITATIONS**

In preparing this report, Shannon & Wilson has conducted interviews with Ecology concerning regulations, conducted an on-site visual survey of the subject property, and collected and analyzed building material samples. We have examined and relied on documents referenced in the report and on oral statements made by certain individuals. Shannon & Wilson has not conducted an independent examination of the facts contained in referenced materials and statements. We have assumed that these documents are genuine, and that the information provided in these documents and statements is true and accurate.

Asbestos and lead-based paint surveys are noncomprehensive by nature and subject to many limitations. Our assessment has considered risks pertaining to asbestos and lead-based paint. This survey was not designed to identify all potential concerns or to eliminate all risks associated with demolition. No warranty, express or implied, is made. Site visits included a thorough visual walk-through of the building for the purpose of viewing and sampling potential ACM and LBP. Shannon & Wilson is not responsible for materials that require destructive means to access, materials that are hidden from sight, those materials hidden in walls, or materials that cannot be found with reasonable diligence.

Shannon & Wilson has prepared this report in a professional manner, using that level of skill and care normally exercised for similar projects under similar conditions by reputable and competent environmental consultants currently practicing in this area. Shannon & Wilson shall not be responsible for conditions or consequences arising from relevant facts that were concealed, withheld, or not fully disclosed at the time the report was prepared. Shannon & Wilson also notes that the facts and conditions referenced in this report may change over time, and that the conclusions and recommendations set forth here are applicable only to the facts and conditions as described at the time of this report. Conclusions and recommendations were made within the operative constraints of the scope,

J-U-B Engineers, Inc.  
Attn: Mr. Vince Loftus  
February 8, 1996  
Page 8

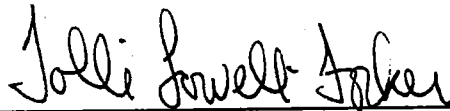
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budget, and schedule for this project. Shannon & Wilson believes that the conclusions stated here are factual, but no guarantee is made or implied.

This report is for the exclusive use of J-U-B Engineers, Inc., and its representatives. Shannon & Wilson has prepared Appendix C, "Important Information About Your Environmental Report," to assist you and others in understanding the use and limitations of our reports.

Sincerely,

SHANNON & WILSON, INC.



Tolly Lowell-Forker  
AHERA Certified Building Inspector  
Certification No. 950208-10



Dale E. Topham, P.E., R.P.G.  
Senior Engineer

TF:DET:JFZ/eet

Enclosures: Table 1 - Asbestos Results  
Table 2 - HGA Estimated Quantities  
Table 3 - Lead Paint Results  
Figure 1 - Vicinity Map  
Figure 2 - Site Plan  
Figure 3 - Sampling Locations  
Appendix A - Bulk Material Report  
Appendix B - Results of Lead Analysis  
Appendix C - Important Information About Your Environmental Report

H1282-02.LTR/H1282-lkd/lkd

H-1282-02

**TABLE 1**  
**ASBESTOS RESULTS**

Proposed Eagle Hardware Site, Wenatchee, WA							Analyzed at EMC, Phoenix, AZ.		
Sampled 1-11-96							Results		
Sample Number	Layer	Building	Material	HGA	Area	Asbestos	Reported Materials		
H12820201	A	House	Linoleum	42-1	3-1	Trace	Chrysotile		
H12820202	A	House	Sealant	58-1	1-1	3%	Chrysotile		
H12820203	A	House	Air Cell Pipe Lagging	20-1	1-2	90%	Chrysotile		
H12820204	A	House	Air Cell Pipe Lagging	20-1	1-2	90%	Chrysotile		
H12820204	B	House	Air Cell Cloth Wrap	20-1	1-2	Trace	Chrysotile		
H12820205	A	House	Vinyl Floor Tile	40-1	1-3	2%	Chrysotile		
H12820206	A	House	Mastic	41-1	1-3	ND	-		
H12820207	A	House	Plaster	4-1	1-1	ND	-		
H12820208	A	House	Plaster	4-1	2-1	ND	-		
H12820209	A	House	Linoleum	42-2	2-1	ND	-		
H12820210	A	House	Linoleum - uc	42-3	2-4	20%	Chrysotile		
H12820211	A	House	Linoleum	42-4	2-7	15%	Chrysotile		
H12820212*	A	House	Linoleum	42-4	2-7	15%	Chrysotile		
H12820213	A	House	Surfacing Material	9-1	2-6	ND	-		
H12820213	B	House	Surfacing Material	9-1	2-6	ND	-		
H12820213	C	House	Surfacing Material	9-1	2-6	Trace	Chrysotile		
H12820214	A	House	Surfacing Material	9-1	2-8	ND	-		
H12820214	B	House	Surfacing Material	9-1	2-8	ND	-		
H12820215	A	House	Cement Asbestos Board	47-1	2-2	10%	Chrysotile		
H12820216	A	House	Wall Board	3-1	2-3	ND	-		
H12820216	B	House	Wall Board	3-1	2-3	ND	-		
H12820217	A	House	Wall Board	3-1	2-3	ND	-		
H12820217	B	House	Wall Board	3-1	2-3	ND	-		
H12820217	C	House	Wall Board	3-1	2-3	ND	-		
H12820218	A	House	Window Putty	63-1	Exterior	2%	Chrysotile		
H12820219	A	House	Roofing Material	57-1	Roof	ND	-		
H12820219	B	House	Roofing Material	57-1	Roof	ND	-		
H12820220	A	House	Tar Patch	60-1	Roof	15%	Chrysotile		
H12820221	A	House	Tar Patch	60-1	Roof	15%	Chrysotile		
H12820222	A	House	Roofing Material	57-1	Roof	ND	-		
H12820223	A	Shop	Vinyl Floor Tile	40-2	Office	3%	Chrysotile		
H12820224	A	Shop	Mastic	41-2	Office	ND	-		

## Notes:

ND = Not Detected

uc = under carpet

\* Sample H12820212 is a duplicate sample of H12820211.

HGA = Homogenous Area



**TABLE 2**  
**HGA ESTIMATED QUANTITIES**

Asbestos Containing materials by HGA		
HGA	LOCATION	QUANTITY
9-1	Rooms 2-6 and 2-8, on ceiling. Analysis show as "trace." Should be resampled using point counting or be considered to contain asbestos.	420 square feet
20-1	Room 1-2. Four-inch Lagging. Six runs in crawlspace.	70 linear feet
40-1	Room 1-3. Vinyl floor tile.	105 square feet
40-2	Office in shop. Vinyl floor tile.	250 square feet
42-1	Room 3-1. Linoleum. Analysis show as "trace." Should be resampled using point counting or be considered to contain asbestos.	10 square feet
42-3	Room 2-4. Linoleum. (Under carpet.)	200 square feet
42-4	Room 2-7. Linoleum.	80 square feet
47-1	Room 2-2 in house, and in shop. Cement Asbestos Board.	30 square feet
58-1	Room 1-1. Sealant on chimney.	5 square feet
60-1	Tar patch sealant on roof.	50 linear feet
63-1	Exterior windows with putty.	125 linear feet

Notes:

HGA = Homogenous Area

**TABLE 3  
LEAD PAINT RESULTS**

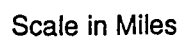
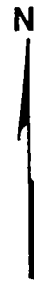
SHANNON & WILSON, INC.

Proposed Eagle Hardware Site, Wenatchee, WA					Analyzed at EMC, Phoenix, AZ.		
Sampled 1-11-96	Location		Results				
Sample Number	Building	Material	Area	% Pb by weight	PPM		
H128202PB01	House	White/Cream paint on basement chimney.	Basement, room 1-1	1.347%	13,470		
H128202PB02	House	Green paint on old walls behind new wood finish.	First floor, room 2-1	0.207%	2,070		
H128202PB03	House	Green and white paint on old door.	First floor, room 2-2	9.730%	97,300		
H128202PB04	House	Blue paint on exterior boxed eaves.	Exterior, northwest corner	23.080%	230,800		
H128202PB05	House	Blue paint on exterior trim.	Exterior, second story north	18.600%	186,000		
H128202PB06	Garage	Green paint.	Northeast post	0.006%	60		

Notes:

Pb = Lead

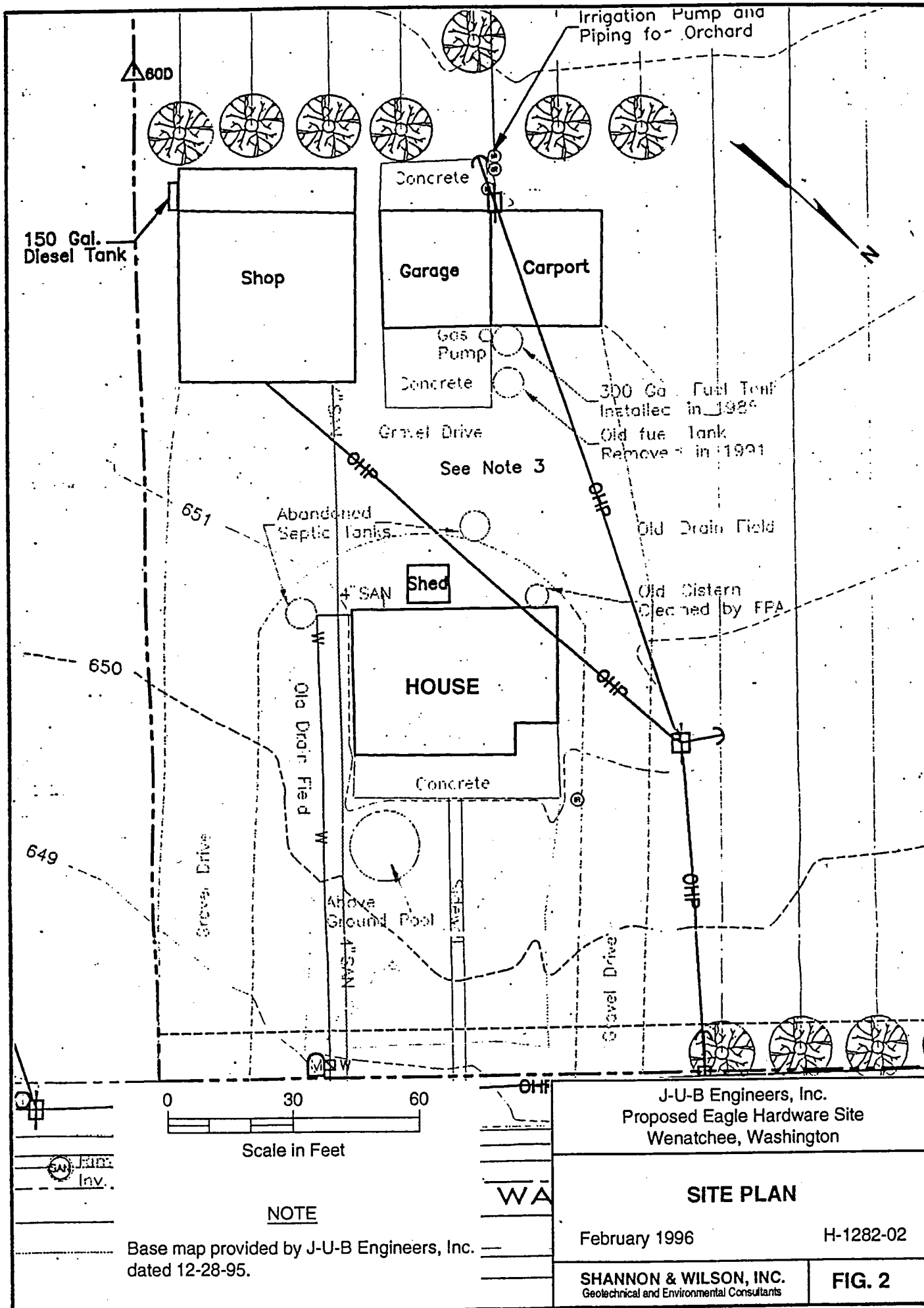
PPM = Parts per million



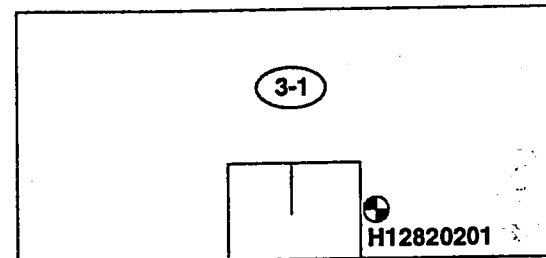
Map adapted from USGS  
topographic map of Wenatchee,  
WA quadrangle, dated 1966.

FIG. 1

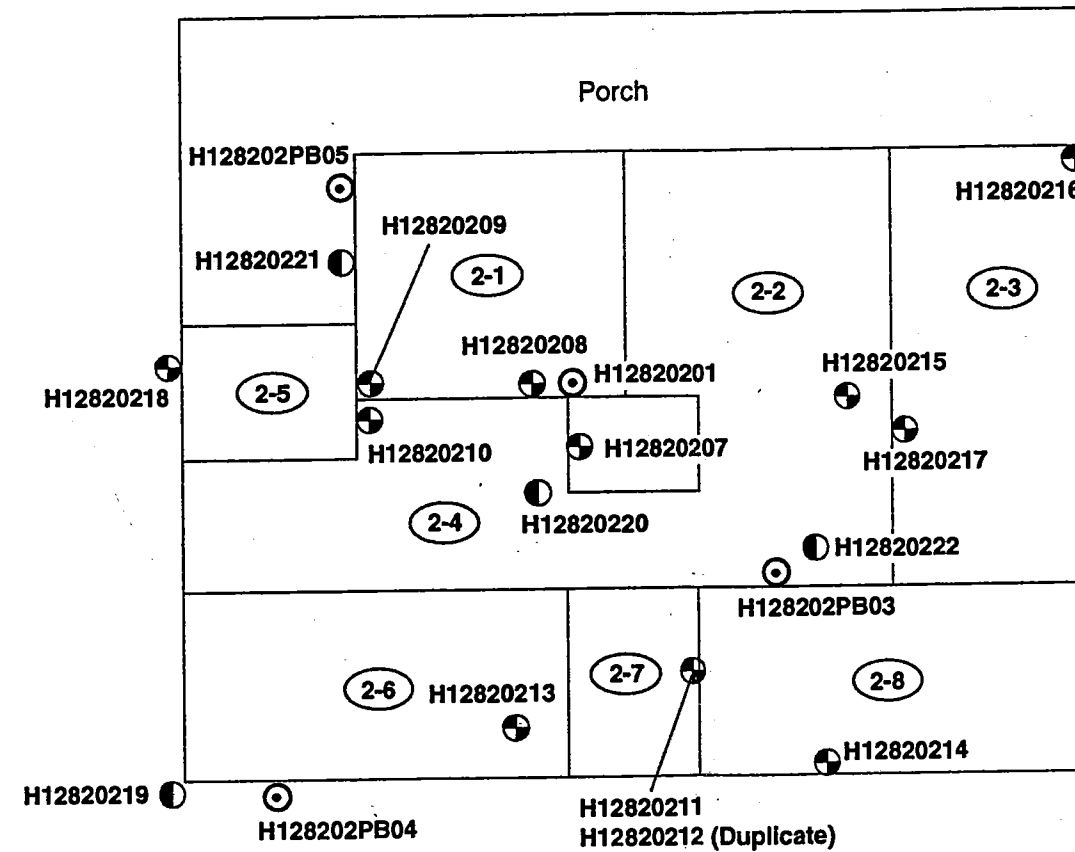




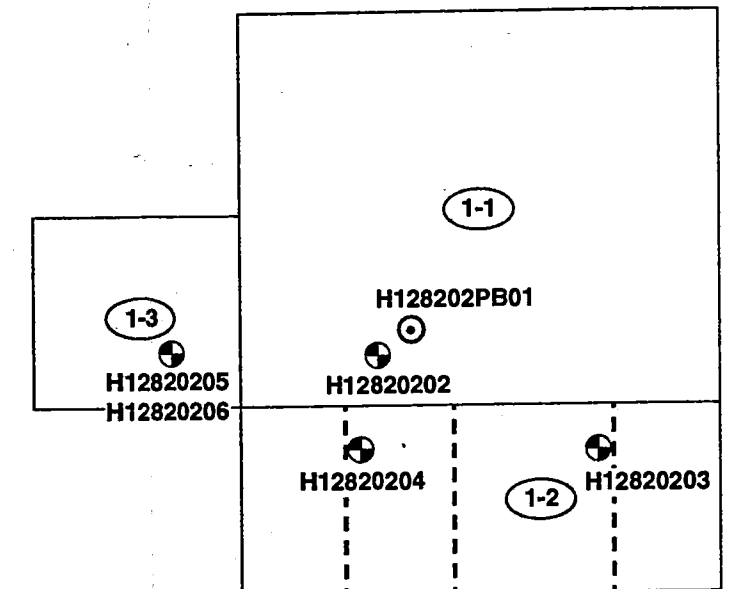
## SECOND FLOOR



## FIRST FLOOR

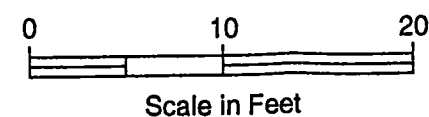


## BASEMENT



### LEGEND

- (1-1) Room Designation
- H12820201 ● Asbestos Sample Designation and Approximate Location
- H128202PB01 ⊕ Lead Paint Sample Designation and Approximate Location
- H12820219 ● Asbestos Sample Designation and Approximate Location (Roof)



J-U-B Engineers, Inc.  
Proposed Eagle Hardware Site  
Wenatchee, Washington

### SAMPLING LOCATIONS

February 1996

H-1282-02

SHANNON & WILSON, INC.  
Geotechnical and Environmental Consultants

FIG. 3

SHANNON & WILSON, INC.

**APPENDIX A**  
**BULK MATERIAL REPORT**

H-1282-02



## BULK MATERIAL REPORT

## REPORT Laboratory Analysis: BULK MATERIAL

Client: SHANNON &amp; WILSON, INC.

Reported to: TOLLI LOWELL-FORKER

Sampled from: EAGLE-W.

Shipped via: FEDERAL EXPRESS

LAB: 26295

Methodology: EPA 600/M4-82-020

P/O#:

Proj: H-1282-02

By: Client

Received: 1/15/96

Reported: 1/22/96

SAMPLE	IDENTIFICATION	PARAMETER	TEST RESULTS
01	H12820201 linoleum off white	Asbestos	Trace detected. This sample contains approx. trace Chrysotile, 99% Quartz , CaCO , Binder
02	H12820202 sealant gray	Asbestos	Positive. This sample contains approx. 3% Chrysotile, 97% Quartz , CaCO , Binder
03	H12820203 air cell lt. gray	Asbestos	Positive. This sample contains approx. 90% Chrysotile, 10% Quartz , Binder
04A	H12820204 air cell, 1st layer lt. gray	Asbestos	Positive. This sample contains approx. 90% Chrysotile, 3% Cellulose, 7% Quartz , CaCO , Binder

THE REPORT APPLIES TO THE STANDARDS OR PROCEDURES IDENTIFIED AND TO THE SAMPLE(S) TESTED. THE TEST RESULTS ARE NOT NECESSARILY INDICATIVE OR REPRESENTATIVE OF THE QUALITIES OF THE LOT FROM WHICH THE SAMPLE WAS TAKEN OR OF APPARENTLY IDENTICAL OR SIMILAR PRODUCTS, NOR DO THEY REPRESENT AN ONGOING QUALITY ASSURANCE PROGRAM UNLESS SO NOTED. THESE REPORTS ARE FOR THE EXCLUSIVE USE OF THE ADDRESSED CLIENT AND ARE RENDERED UPON THE CONDITION THAT THEY WILL NOT BE REPRODUCED WHOLLY OR IN PART FOR ADVERTISING OR OTHER PURPOSES OVER OUR SIGNATURE OR IN CONNECTION WITH OUR NAME WITHOUT SPECIAL WRITTEN PERMISSION. SAMPLES NOT DESTROYED IN TESTING ARE RETAINED A MAXIMUM OF THIRTY DAYS.

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Analyst: Luis A. Bohorquez



By: Kurt Kettler

NVLAP Accreditation #1926, CA ELAP #1913, NY ELAP #11445, TX DOH #30-0094

4455 EAST CAMELBACK ROAD, SUITE D-155 PHOENIX, ARIZONA 85018 (602) 840-8012 FAX: (602) 990-8468

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P/O#:

Proj: H-1282-02

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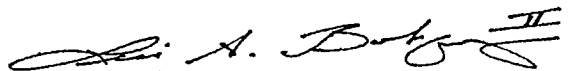
Received: 1/15/96

Reported: 1/22/96

SAMPLE	IDENTIFICATION	PARAMETER	TEST RESULTS
04B	H12820204 air cell, wrap, 2nd layer off white	Asbestos	Trace detected. This sample contains approx. trace Chrysotile, 95% Cellulose, 4% Quartz, CaCO , Binder
05	H12820205 tile tan	Asbestos	Positive. This sample contains approx. 2% Chrysotile, 98% Quartz, CaCO, Binder
06	H12820206 mastic lt. brown	Asbestos	None detected. This sample contains approx. 100% Quartz, CaCO, Mica, Binder
07	H12820207  lt. tan	Asbestos	None detected. This sample contains approx. 2% Cellulose, 98% Quartz, CaCO, Binder

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By: Kurt Kettler

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Shipped via: FEDERAL EXPRESS

LAB: 26295

Methodology: EPA 600/M4-82-020

P/O#:

Proj: H-1282-02

By: Client

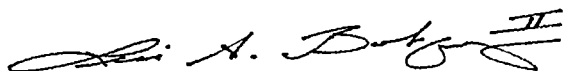
Received: 1/15/96

Reported: 1/22/96

SAMPLE	IDENTIFICATION	PARAMETER	TEST RESULTS
08	H12820208  white	Asbestos	None detected. This sample contains approx. 100% Quartz , CaCO , Binder
09	H12820209  lt. gray	Asbestos	None detected. This sample contains approx. 100% Quartz , CaCO , Binder
10	H12820210  lt. tan	Asbestos	Positive. This sample contains approx. 20% Chrysotile, 80% Quartz , CaCO , Binder
11	H12820212  brown	Asbestos	Positive. This sample contains approx. 15% Chrysotile, 5% Cellulose, 80% Quartz , CaCO , Binder

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Reported to: TOLLI LOWELL-FORKER

Sampled from: EAGLE-W.

Shipped via: FEDERAL EXPRESS

LAB: 26295

Methodology: EPA 600/M4-82-020

P/O#:

Proj: H-1282-02

By: Client

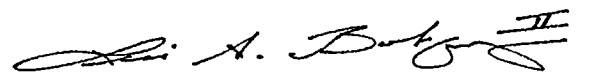
Received: 1/15/96

Reported: 1/22/96

SAMPLE	IDENTIFICATION	PARAMETER	TEST RESULTS
12A	H12820213 1st layer white	Asbestos	None detected. This sample contains approx. 2% Cellulose, 2% Wollastonite, 96% Quartz, CaCO , Mica, Binder
12B	H12820213 2nd layer white	Asbestos	None detected. This sample contains approx. 2% Cellulose, 2% Wollastonite, 96% Quartz, CaCO , Mica, Binder
12C	H12820213 3rd layer cream	Asbestos	Trace detected. This sample contains approx. trace Chrysotile, 2% Antigorite, 97% Quartz, CaCO , Binder
13A	H12820214 1st layer off white	Asbestos	None detected. This sample contains approx. 15% Cellulose, 85% Quartz, CaCO, CaSO

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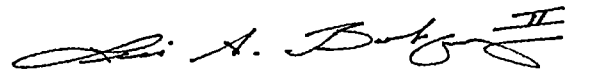
4455 EAST CAMELBACK ROAD, SUITE D-155 PHOENIX, ARIZONA 85018 (602) 840-8012 FAX: (602) 990-8468

**REPORT Laboratory Analysis: BULK MATERIAL****Client:** SHANNON & WILSON, INC.**Reported to:** TOLLI LOWELL-FORKER**Sampled from:** EAGLE-W.**Shipped via:** FEDERAL EXPRESS**LAB:** 26295**Methodology:** EPA 600/M4-82-020**P/O#:****Proj:** H-1282-02**By:** Client**Received:** 1/15/96**Reported:** 1/22/96

SAMPLE	IDENTIFICATION	PARAMETER	TEST RESULTS
13B	H12820214 2nd layer white	Asbestos	None detected. This sample contains approx. 2% Wollastonite, 98% Quartz, CaCO <sub>3</sub> , Mica, Binder
14	H12820215  lt. gray	Asbestos	Positive. This sample contains approx. 10% Chrysotile, 90% Quartz, CaCO <sub>3</sub> , Binder
15A	H12820216 1st layer off white	Asbestos	None detected. This sample contains approx. 10% Cellulose, 90% Quartz, CaCO <sub>3</sub> , CaSO <sub>4</sub>
15B	H12820216 2nd layer white	Asbestos	None detected. This sample contains approx. 100% Perlite, Quartz, CaCO <sub>3</sub> , Binder

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LAB: 26295

Methodology: EPA 600/M4-82-020

P/O#:

Proj: H-1282-02

By: Client


Received: 1/15/96

Reported: 1/22/96

SAMPLE	IDENTIFICATION	PARAMETER	TEST RESULTS
16A	H12820217 1st layer cream	Asbestos	None detected. This sample contains approx. 10% Cellulose, 90% Quartz , CaCO , CaSO
16B	H12820217 2nd layer white	Asbestos	None detected. This sample contains approx. 100% Perlite , Quartz , CaCO , Binder
16C	H12820217 3rd layer white	Asbestos	None detected. This sample contains approx. 100% Perlite , Quartz , CaCO , Binder
17	H12820218  white	Asbestos	Positive. This sample contains approx. 2% Chrysotile, 98% Quartz , CaCO , Binder

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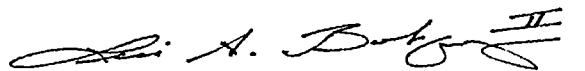
Received: 1/15/96

Reported: 1/22/96

SAMPLE	IDENTIFICATION	PARAMETER	TEST RESULTS
18A	H12820219 roofing-1st layer black	Asbestos	None detected. This sample contains approx. trace Cellulose, trace Synthetics, 98% Quartz , CaCO , Binder
18B	H12820219 roofing-2nd layer black	Asbestos	None detected. This sample contains approx. 40% Cellulose, 60% Quartz , CaCO , Binder
19	H12820220  black	Asbestos	Positive. This sample contains approx. 15% Chrysotile, 85% Quartz , CaCO , Binder
20	H12820211  brown	Asbestos	Positive. This sample contains approx. 15% Chrysotile, 5% Cellulose, 80% Quartz , CaCO , Binder

THE REPORT APPLIES TO THE STANDARDS OR PROCEDURES IDENTIFIED AND TO THE SAMPLE(S) TESTED. THE TEST RESULTS ARE NOT NECESSARILY INDICATIVE OR REPRESENTATIVE OF THE QUALITIES OF THE LOT FROM WHICH THE SAMPLE WAS TAKEN OR OF APPARENTLY IDENTICAL OR SIMILAR PRODUCTS, NOR DO THEY REPRESENT AN ONGOING QUALITY ASSURANCE PROGRAM UNLESS SO NOTED. THESE REPORTS ARE FOR THE EXCLUSIVE USE OF THE ADDRESSED CLIENT AND ARE RENDERED UPON THE CONDITION THAT THEY WILL NOT BE REPRODUCED WHOLLY OR IN PART FOR ADVERTISING OR OTHER PURPOSES OVER OUR SIGNATURE OR IN CONNECTION WITH OUR NAME WITHOUT SPECIAL WRITTEN PERMISSION. SAMPLES NOT DESTROYED IN TESTING ARE RETAINED A MAXIMUM OF THIRTY DAYS.

ACCREDITED BY THE NATIONAL INSTITUTE OF STANDARDS TECHNOLOGY, VOLUNTARY LABORATORY ACCREDITATION PROGRAM FOR SELECTED TEST METHOD FOR ASBESTOS. THE ACCREDITATION OR ANY REPORTS GENERATED BY THIS LABORATORY IN NO WAY CONSTITUTES OR IMPLIES PRODUCT CERTIFICATION, APPROVAL, OR ENDORSEMENT BY THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY. ALL ANALYSES ARE DERIVED FROM CALIBRATED VISUAL ESTIMATE UNLESS OTHERWISE NOTED. POLARIZED-LIGHT IS NOT CONSISTENTLY RELIABLE IN DETECTING ASBESTOS IN FLOOR COVERINGS AND SIMILAR NON-FRIABLE ORGANICALLY BOUND MATERIALS. QUANTITATIVE TRANSMISSION ELECTRON MICROSCOPY IS CURRENTLY THE ONLY METHOD THAT CAN BE USED TO DETERMINE IF THIS MATERIAL CAN BE CONSIDERED OR TREATED AS NON-ASBESTOS-CONTAINING.



Analyst: Luis A. Bohorquez



By: Kurt Kettler

NVLAP Accreditation #1926, CA ELAP #1913, NY ELAP #11445, TX DOH #30-0094

4455 EAST CAMELBACK ROAD, SUITE D-155 PHOENIX, ARIZONA 85018 (602) 840-8012 FAX: (602) 990-8468

## BULK MATERIAL REPORT

## REPORT Laboratory Analysis: BULK MATERIAL

Client: SHANNON &amp; WILSON, INC.

Reported to: TOLLI LOWELL-FORKER

Sampled from: EAGLE-W.

Shipped via: FEDERAL EXPRESS

LAB: 26295

Methodology: EPA 600/M4-82-020

P/O#:

Proj: H-1282-02

By: Client

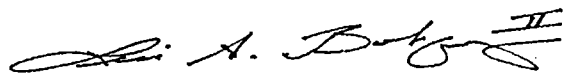
Received: 1/15/96

Reported: 1/22/96

SAMPLE	IDENTIFICATION	PARAMETER	TEST RESULTS
21	H12850221  black	Asbestos	Positive. This sample contains approx. 15% Chrysotile, 85% Quartz, CaCO, Binder
22	H12820222  black	Asbestos	None detected. This sample contains approx. 40% Cellulose, 5% Synthetics, 55% Quartz, CaCO, Binder
23	H12820223  white, black, spotted	Asbestos	Positive. This sample contains approx. 3% Chrysotile, 97% Quartz, CaCO, Binder
24	H12820224  gold	Asbestos	None detected. This sample contains approx. 100% Quartz, CaCO, Mica, Binder

THE REPORT APPLIES TO THE STANDARDS OR PROCEDURES IDENTIFIED AND TO THE SAMPLE(S) TESTED. THE TEST RESULTS ARE NOT NECESSARILY INDICATIVE OR REPRESENTATIVE OF THE QUALITIES OF THE LOT FROM WHICH THE SAMPLE WAS TAKEN OR OF APPARENTLY IDENTICAL OR SIMILAR PRODUCTS, NOR DO THEY REPRESENT AN ONGOING QUALITY ASSURANCE PROGRAM UNLESS SO NOTED. THESE REPORTS ARE FOR THE EXCLUSIVE USE OF THE ADDRESSED CLIENT AND ARE RENDERED UPON THE CONDITION THAT THEY WILL NOT BE REPRODUCED WHOLLY OR IN PART FOR ADVERTISING OR OTHER PURPOSES OVER OUR SIGNATURE OR IN CONNECTION WITH OUR NAME WITHOUT SPECIAL WRITTEN PERMISSION. SAMPLES NOT DESTROYED IN TESTING ARE RETAINED A MAXIMUM OF THIRTY DAYS.

ACCREDITED BY THE NATIONAL INSTITUTE OF STANDARDS TECHNOLOGY, VOLUNTARY LABORATORY ACCREDITATION PROGRAM FOR SELECTED TEST METHOD FOR ASBESTOS. THE ACCREDITATION OR ANY REPORTS GENERATED BY THIS LABORATORY IN NO WAY CONSTITUTES OR IMPLIES PRODUCT CERTIFICATION, APPROVAL, OR ENDORSEMENT BY THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY. ALL ANALYSES ARE DERIVED FROM CALIBRATED VISUAL ESTIMATE UNLESS OTHERWISE NOTED. POLARIZED-LIGHT IS NOT CONSISTENTLY RELIABLE IN DETECTING ASBESTOS IN FLOOR COVERINGS AND SIMILAR NON-FRIABLE ORGANICALLY BOUND MATERIALS. QUANTITATIVE TRANSMISSION ELECTRON MICROSCOPY IS CURRENTLY THE ONLY METHOD THAT CAN BE USED TO DETERMINE IF THIS MATERIAL CAN BE CONSIDERED OR TREATED AS NON-ASBESTOS-CONTAINING.



Analyst: Luis A. Bohorquez



By: Kurt Kettler

NVLAP Accreditation #1926, CA ELAP #1913, NY ELAP #11445, TX DOH #30-0094

4455 EAST CAMELBACK ROAD, SUITE D-155 PHOENIX, ARIZONA 85018 (602) 840-8012 FAX: (602) 990-8468

LAB #: 26295  
TAT: 3-5 Days  
Rec'd: JAN 15 PM  
EMC Use Only

**EMC Laboratories**  
**4455 East Camelback Road, Suite D-155**  
**Phoenix, Arizona 85018**  
**(800) 362-3373 Phone (602) 990-8468 Fax**

Shannon & Wilson

**BILL TO:** (If different Location)

Tollp-

**Phone / Fax**

Price Quoted: \$ TAXED / Sample  
\$ \_\_\_\_\_ / Layers

**(Failure to complete any items may cause a delay in processing or analyzing your samples)**

1. **TURNAROUND TIME:** [4hrs] [8hrs] [1-Day] [2-Day] [3-Day] [5-Day] [6-10 Day]  
NOTE: Prior confirmation of turnaround time is required for 24-hour analysis or analysis of more than 50 samples.
2. **TYPE OF ANALYSIS:** [Bulk-PLM] [Air-PCM] [Lead] [Point Count] [TEM-Air] [TEM-Bulk]
3. **DISPOSAL INSTRUCTIONS:** [Dispose of samples at EMC] / [Return samples to me at my expense]  
(If you do not indicate preference, EMC will dispose of samples 60 days from analysis.)

4. Project Name: Eagle - W.

**P.O. Number:**

Project Number: H128 2-02

[illegible]

**SPECIAL INSTRUCTIONS:**

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_/\_\_\_\_/\_\_\_\_

Relinquished by: Olivera Federico Date: 1/15/96

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_

Received by: Diana Federico Date: 1/15/96

Received by: LAB Date: 1.22.96

Received by: \_\_\_\_\_ Date: \_\_\_\_\_



2621

**SHANNON & WILSON, INC.**  
 Geotechnical and Environmental Consultants  
 400 N. 34th Street, Suite 100 11500 Olive Blvd., Suite 276  
 Seattle, WA 98103 St. Louis, MO 63141  
 (206) 632-8020 (314) 872-8170  
 2055 Hill Road 6430 Fairbanks Street, Suite 3  
 Fairbanks, AK 99707 Anchorage, AK 99518  
 (907) 479-0600 (907) 561-2120

# CHAIN OF CUSTODY RECORD

Analysis Parameters/Sample Container Description  
 (Include preservative if used)

Sample Identity	Lab No.	Time	Date Sampled	Bulk PLM		Remarks/Matrix
				Comp	Total Number of Containers	
H12820201			1/11/96	X	1	
H12820202						
H12820203						
H12820204						
H12820205						Analyze tile only
H12820206						Analyze Mastic only
H12820207						
H12820208						
H12820209						
H12820210						

**Project Information**

Project Number: H-128202  
 Project Name: Eagle-W.  
 Contact: Tolly Lowell-Forker  
 Ongoing Project? Yes ☐ No ☒  
 Sampler: Tolly Lowell-Forker

**Sample Receipt**

Total Number of Containers: 30  
 COC Seals/Intact? Y/N/NA  
 Received Good Cond./Cold  
 Delivery Method: Fed X  
 (attach shipping bill, if any)

**Instructions**

Requested Turn Around Time: 3-5 DAY

Special Instructions:  
 Send results + bill to  
 Tolly Lowell-Forker!

Distribution: White - w/shipment - returned to Shannon & Wilson w/ Laboratory report  
 Yellow - w/shipment - for consignee files  
 Pink - Shannon & Wilson - Job File

Relinquished By: 1	Relinquished By: 2	Relinquished By: 3
Signature: Tolly Lowell-Forker Printed Name: Tolly Lowell-Forker Company: S+W	Signature: Diana Federico Printed Name: Diana Federico Company: EMC	Signature: _____ Printed Name: _____ Company: _____
Received By: 1 Signature: Diana Federico Printed Name: Diana Federico Company: EMC	Received By: 2 Signature: _____ Printed Name: _____ Company: _____	Received By: 3 Signature: _____ Printed Name: _____ Company: _____

26295

**SHANNON & WILSON, INC.**  
Geotechnical and Environmental Consultants  
400 N. 34th Street, Suite 100  
Seattle, WA 98103  
(206) 632-8020  
2055 Hill Road  
Fairbanks, AK 99707  
(907) 479-0600  
11500 Olive Blvd., Suite 276  
St. Louis, MO 63141  
(314) 872-8170  
5430 Fairbanks Street, Suite 3  
Anchorage, AK 99518  
(907) 561-2120

# CHAIN OF CUSTODY RECORD

Analysis Parameters/Sample Container Description  
(include preservative if used)

Comp.	Grab	Bulk/Run
-------	------	----------

Sample Identity	Lab No.	Date Sampled	Time	Remarks/Matrix
H12820212		1/11/96		
13				
14				
15				
16				
17				
18				
19				
20				
11				

Project Information	Sample Receipt	Relinquished By: 1.	Relinquished By: 2.	Relinquished By: 3.
Project Number: H-1282-02	Total Number of Containers: 30	Signature: [Signature] Printed Name: [Name] Date: 1/11/96	Signature: [Signature] Printed Name: [Name] Date: 1/11/96	Signature: [Signature] Printed Name: [Name] Date: 1/11/96
Project Name: Eagle Creek	COC Seals/Intact? Y/N/NA	Company: [Company]	Company: [Company]	Company: [Company]
Contact: Telli L-F	Received Good Cond./Cold	Company: [Company]	Company: [Company]	Company: [Company]
Ongoing Project? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Delivery Method: Fed X	Company: [Company]	Company: [Company]	Company: [Company]
Sampler: Telli	(attach shipping Bill, if any)	Company: [Company]	Company: [Company]	Company: [Company]
Instructions				
Requested Turn Around Time: 3-5 DAY				
Special Instructions: Send to the right person				
Distribution: White - w/shipment - returned to Shannon & Wilson w/ Laboratory report Yellow - w/shipment - for consignee files Pink - Shannon & Wilson - Job File				



400 N. 34th Street, Suite 100 St. Louis, MO 63141  
Seattle, WA 98103  
(206) 632-8020 (314) 872-8170

2055 Hill Road  
Fairbanks, AK 99707  
(907) 479-0600

5430 Fairbanks Street, Suite 3  
Anchorage, AK 99518  
(907) 561-2120

[illegible]

Page 3 of 3  
Laboratory CMC  
Attn: SDM/36

Sample Identity		Lab No.	Time	Date Sampled	Comp.	Bulk PLM	Bulk P6	Flame A.A.	Total Number of Containers	Remarks/Matrix
H12820221				1/11/96	X	X			1	
22						X				
23						X				
24						X				
H128202PB01										
H128202PB02						X				
H128202PB03						X				
04						X				
05						X				
06						X				

Project Information		Sample Receipt	
Project Number:	H-1282-02	Total Number of Containers	30
Project Name:	Eagle Weather	COC Seals/Intact?	Y/N/A
Contact:	Toll	Received Good Cond./Cold	
Ongoing Project?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Delivery Method:	Fedex
Sampler:	Toll	(attach shipping bill, if any)	

Instructions	
Requested Turn Around Time:	3-5 day
Special Instructions:	

Relinquished By: 1.		Relinquished By: 2.		Relinquished By: 3.	
Signature:	[Signature]	Signature:	[Signature]	Signature:	[Signature]
Printed Name:	Toll	Printed Name:	Diana Federico	Printed Name:	Diana Federico
Date:	1/27/96	Date:	1/27/96	Date:	1/27/96
Company:	Toll	Company:	Fedex	Company:	Fedex

Received By: 1.		Received By: 2.		Received By: 3.	
Signature:	[Signature]	Signature:	[Signature]	Signature:	[Signature]
Printed Name:	Toll	Printed Name:	Diana Federico	Printed Name:	Diana Federico
Date:		Date:	1/27/96	Date:	1-23-96
Company:	Fedex	Company:	Fedex	Company:	Fedex

Distribution: While - w/shipment - returned to Shannon & Wilson w/ Laboratory report  
Valley - shipment - for concision files



# ENVIRONMENTAL MANAGEMENT CONSULTANTS

Lab # 26295

Pg 1 of 32

LABORATORY ANALYSIS OF BULK ASBESTOS

Method Interim EPA 600/M4-82-020

Client SHANNON & WILSON, INC.

Purchase Order # \_\_\_\_\_

Reported To TOLLI LOWELL-FORKER

Date Received 01/15/96

Sampled From EAGLE-W.

Sampled By Client

Shipped Via FEDERAL EXPR

Client Sample ID# H12820201

Lab Sample ID# 26295-01

Sample Description linoleum

Colors off white

Materials linoleum

FIBROUS MATERIAL 0%

NONFIBROUS 100%

HOMOGENEOUS N

Textures smooth

Location Description \_\_\_\_\_

ESTIMATED FIBROUS CONSTITUENTS \_\_\_\_\_

## PLM ANALYSIS

### Chrysotile TR%

- ☒ Wavy Fibers
- ☒ Sign of Elongation (+)
- ☒ Parallel Extinction
- ☒ Perpendicular Extinction
- ☒ Birefringence Low
- ☒ w blue e yellow
- ☒ D.St. - || Mag. - Blue
- ☒ Becke Line Used
- n || 1.556 n L 1.548
- ☒ Pleochroic @ 40X

### Anthophyllite 0%

- ☐ Straight Fibers
- ☐ Sign of Elongation (+)
- ☐ Parallel Extinction
- ☐ Birefringence Medium
- ☐ w Blue e yellow
- ☐ D.St. - || Gold - Blue
- ☐ Becke Line Used
- n || \_\_\_\_\_ n L \_\_\_\_\_
- ☒ Pleochroic @ 40X

### Cellulose 0%

- ☐ Flat Twisted Fibers
- ☐ Anisotropic
- ☒ Synthetics 0%
- ☐ Even Edges
- ☐ High Birefringence

### Other Fibers \_\_\_\_\_

Other nonfibers \_\_\_\_\_

Comments \_\_\_\_\_

### Amosite 0%

- ☐ Straight Fibers
- ☐ Sign of Elongation (+)
- ☐ Parallel Extinction
- ☐ Perpendicular Extinction
- ☐ Birefringence Medium
- ☐ w blue e yellow
- ☐ D.St. - || Gold - Blue
- ☐ Becke Line Used
- n || \_\_\_\_\_ n L \_\_\_\_\_
- ☐ Pleochroic @ 40X

### Actinolite 0%

- ☐ Straight Fibers
- ☐ Sign of Elongation (+)
- ☐ Parallel Extinction
- ☐ Birefringence Low
- ☐ w Blue e Yellow
- ☐ D.St. - || Gold - Blue
- ☐ Becke Line Used
- n || \_\_\_\_\_ n L \_\_\_\_\_
- ☐ Pleochroic @ 40X

### Mineral Wool 0%

- ☐ Irregular Shapes
- ☐ Isotropic
- ☒ Glass Fibers 0%
- ☐ Straight Fibers
- ☐ Isotropic

### Crocidolite 0%

- ☐ Straight Fibers
- ☐ Sign of Elongation (-)
- ☐ Parallel Extinction
- ☐ Perpendicular Extinction
- ☐ Birefringence Medium
- ☐ w tan e Blue
- ☐ D.St. - || Yellow Yellow
- ☐ Becke Line Used
- n || \_\_\_\_\_ n L \_\_\_\_\_
- ☐ Pleochroic @ 40X

### Tremolite 0%

- ☐ Straight Fibers
- ☐ Sign of Elongation (+)
- ☐ Parallel Extinction
- ☐ Oblique Extinction 0 Angle
- ☐ Birefringence Low
- ☐ w Blue e Yellow
- ☐ D.St. - || Gold - Blue
- ☐ Becke Line Used
- n || \_\_\_\_\_ n L \_\_\_\_\_
- ☒ Pleochroic @ 40X

### Perlite \_\_\_\_\_

Quartz X

Wollastonite 0%

CaCO X

CaSO \_\_\_\_\_

Mica \_\_\_\_\_

Binder X

Analyst Luis A. Bohorquez

NVLAP #1926

4455 EAST CAMELBACK ROAD, SUITE D-155 PHOENIX, ARIZONA 85018 (602) 840-8012 FAX: (602) 990-8468

# ENVIRONMENTAL MANAGEMENT CONSULTANTS

Lab # 26295

Pg 2 of 32

## LABORATORY ANALYSIS OF BULK ASBESTOS

Method Interim EPA 600/M4-82-020

Client SHANNON & WILSON, INC.

Purchase Order # \_\_\_\_\_

Reported To TOLLI LOWELL-FORKER

Date Received 01/15/96

Sampled From EAGLE-W.

Sampled By Client

Shipped Via FEDERAL EXPR

Client Sample ID# H12820202

Lab Sample ID# 26295-02

Sample Description sealant

Colors gray

Materials sealant

FIBROUS MATERIAL 10%

NONFIBROUS 90%

HOMOGENEOUS Y

Textures hard, fine grained

Location Description \_\_\_\_\_

ESTIMATED FIBROUS CONSTITUENTS 10% chrysotile

### PLM ANALYSIS

#### Chrysotile 3%

☒ Wavy Fibers  
☒ Sign of Elongation (+)  
☒ Parallel Extinction  
☒ Perpendicular Extinction  
☒ Birefringence Low  
☒ w blue e yellow  
☒ D.St. - || Mag. - Blue  
☒ Becke Line Used  
 n || 1.556 n 1.548  
☒ Pleochroic @ 40X

#### Anthophyllite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Birefringence Medium  
☐ w Blue e yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
 n || \_\_\_\_\_ n Blue  
☒ Pleochroic @ 40X

#### Cellulose 0%

☐ Flat Twisted Fibers  
☐ Anisotropic  
**Synthetics 0%**  
☐ Even Edges  
☐ High Birefringence

#### Other Fibers

Other nonfibers \_\_\_\_\_

Comments other sample layers present; not analyzed per client paperwork

#### Amosite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Perpendicular Extinction  
☐ Birefringence Medium  
☐ w blue e yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
 n || \_\_\_\_\_ n Blue  
☐ Pleochroic @ 40X

#### Actinolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Birefringence Low  
☐ w Blue e Yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
 n || \_\_\_\_\_ n Blue  
☐ Pleochroic @ 40X

#### Mineral Wool 0%

☐ Irregular Shapes  
☐ Isotropic  
**Glass Fibers 0%**  
☐ Straight Fibers  
☐ Isotropic

#### Crocidolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (-)  
☐ Parallel Extinction  
☐ Perpendicular Extinction  
☐ Birefringence Medium  
☐ w tan e Blue  
☐ D.St. - || Yellow Yellow  
☐ Becke Line Used  
 n || \_\_\_\_\_ n Yellow  
☐ Pleochroic @ 40X

#### Tremolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Oblique Extinction 0 Angle  
☐ Birefringence Low  
☐ w Blue e Yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
 n || \_\_\_\_\_ n Blue  
☒ Pleochroic @ 40X

#### Perlite

Quartz X

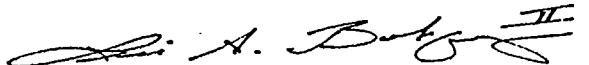
Wollastonite 0%

CaCO X

CaSO \_\_\_\_\_

Mica \_\_\_\_\_

Binder X



Analyst Luis A. Bohorquez

NVLAP #1926

4455 EAST CAMELBACK ROAD, SUITE D-155 PHOENIX, ARIZONA 85018 (602) 840-8012 FAX: (602) 990-8468

# ENVIRONMENTAL MANAGEMENT CONSULTANTS

Lab # 26295

Pg 3 of 32

LABORATORY ANALYSIS OF BULK ASBESTOS

Method Interim EPA 600/M4-82-020

Client SHANNON & WILSON, INC.

Purchase Order # \_\_\_\_\_

Reported To TOLLI LOWELL-FORKER

Date Received 01/15/96

Sampled From EAGLE-W.

Sampled By Client

Shipped Via FEDERAL EXPR

Client Sample ID# H12820203

Lab Sample ID# 26295-03

Sample Description air cell

Colors lt. gray

Materials air cell

FIBROUS MATERIAL 85%

NONFIBROUS 15%

HOMOGENEOUS N

Textures fibrous

Location Description \_\_\_\_\_

ESTIMATED FIBROUS CONSTITUENTS 85% chrysotile

## PLM ANALYSIS

### Chrysotile 90%

☒ Wavy Fibers  
☒ Sign of Elongation (+)  
☒ Parallel Extinction  
☒ Perpendicular Extinction  
☒ Birefringence Low  
☒ w blue e yellow  
☒ D.St. - || Mag. - Blue  
☒ Becke Line Used  
 n || 1.556 n 1.548  
☒ Pleochroic @ 40X

### Anthophyllite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Birefringence Medium  
☐ w Blue e yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
 n || \_\_\_\_\_ n Blue  
☒ Pleochroic @ 40X

### Cellulose 0%

☐ Flat Twisted Fibers  
☐ Anisotropic  
☒ Synthetics 0%  
☐ Even Edges  
☐ High Birefringence

### Other Fibers

Other nonfibers \_\_\_\_\_

Comments \_\_\_\_\_

### Amosite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Perpendicular Extinction  
☐ Birefringence Medium  
☐ w blue e yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
 n || \_\_\_\_\_ n Blue  
☐ Pleochroic @ 40X

### Actinolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Birefringence Low  
☐ w Blue e Yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
 n || \_\_\_\_\_ n Blue  
☐ Pleochroic @ 40X

### Mineral Wool 0%

☐ Irregular Shapes  
☐ Isotropic  
☒ Glass Fibers 0%  
☐ Straight Fibers  
☐ Isotropic

### Crocidolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (-)  
☐ Parallel Extinction  
☐ Perpendicular Extinction  
☐ Birefringence Medium  
☐ w tan e Blue  
☐ D.St. - || Yellow Yellow  
☐ Becke Line Used  
 n || \_\_\_\_\_ n Yellow  
☐ Pleochroic @ 40X

### Tremolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Oblique Extinction 0 Angle  
☐ Birefringence Low  
☐ w Blue e Yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
 n || \_\_\_\_\_ n Blue  
☒ Pleochroic @ 40X

### Perlite

☒ Quartz X

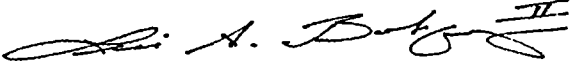
### Wollastonite 0%

☐ CaCO

☐ CaSO

☐ Mica

☒ Binder X



Analyst Luis A. Bohorquez

NVLAP #1926

4455 EAST CAMELBACK ROAD, SUITE D-155 PHOENIX, ARIZONA 85018 (602) 840-8012 FAX: (602) 990-8468



# ENVIRONMENTAL MANAGEMENT CONSULTANTS

Lab # 26295

Pg 4 of 32

## LABORATORY ANALYSIS OF BULK ASBESTOS

Method Interim EPA 600/M4-82-020

Client SHANNON & WILSON, INC.

Purchase Order #

Reported To TOLLI LOWELL-FORKER

Date Received 01/15/96

Sampled From EAGLE-W.

Sampled By Client

Shipped Via FEDERAL EXPR

Client Sample ID# H12820204

Lab Sample ID# 26295-04

Sample Description air cell, 1st layer

Colors lt. gray

Materials air cell, 1st layer

FIBROUS MATERIAL 87%

NONFIBROUS 13%

HOMOGENEOUS N

Textures fibrous

Location Description

ESTIMATED FIBROUS CONSTITUENTS 85% chrysotile, 2% cellulose

### PLM ANALYSIS

#### Chrysotile 90%

X Wavy Fibers  
X Sign of Elongation (+)  
X Parallel Extinction  
X Perpendicular Extinction  
X Birefringence Low  
X w blue e yellow  
X D.St. - || Mag. - || Blue  
X Becke Line Used  
n || 1.556 n || 1.548  
N Pleochroic @ 40X

#### Anthophyllite 0%

\_\_\_ Straight Fibers  
\_\_\_ Sign of Elongation (+)  
\_\_\_ Parallel Extinction  
\_\_\_ Birefringence Medium  
\_\_\_ w Blue e yellow  
\_\_\_ D.St. - || Gold - || Blue  
\_\_\_ Becke Line Used  
n || n ||  
N Pleochroic @ 40X

#### Cellulose 3%

X Flat Twisted Fibers  
X Anisotropic

#### Synthetics 0%

\_\_\_ Even Edges  
\_\_\_ High Birefringence

#### Other Fibers

Other nonfibers

Comments

#### Amosite 0%

\_\_\_ Straight Fibers  
\_\_\_ Sign of Elongation (+)  
\_\_\_ Parallel Extinction  
\_\_\_ Perpendicular Extinction  
\_\_\_ Birefringence Medium  
\_\_\_ w blue e yellow  
\_\_\_ D.St. - || Gold - || Blue  
\_\_\_ Becke Line Used  
n || n ||  
\_\_\_ Pleochroic @ 40X

#### Actinolite 0%

\_\_\_ Straight Fibers  
\_\_\_ Sign of Elongation (+)  
\_\_\_ Parallel Extinction  
\_\_\_ Birefringence Low  
\_\_\_ w Blue e Yellow  
\_\_\_ D.St. - || Gold - || Blue  
\_\_\_ Becke Line Used  
n || n ||  
\_\_\_ Pleochroic @ 40X

#### Mineral Wool 0%

\_\_\_ Irregular Shapes  
\_\_\_ Isotropic  
\_\_\_ Glass Fibers 0%  
\_\_\_ Straight Fibers  
\_\_\_ Isotropic

#### Crocidolite 0%

\_\_\_ Straight Fibers  
\_\_\_ Sign of Elongation (-)  
\_\_\_ Parallel Extinction  
\_\_\_ Perpendicular Extinction  
\_\_\_ Birefringence Medium  
\_\_\_ w tan e Blue  
\_\_\_ D.St. - || Yellow - || Yellow  
\_\_\_ Becke Line Used  
n || n ||  
\_\_\_ Pleochroic @ 40X

#### Tremolite 0%

\_\_\_ Straight Fibers  
\_\_\_ Sign of Elongation (+)  
\_\_\_ Parallel Extinction  
\_\_\_ Oblique Extinction 0 Angle  
\_\_\_ Birefringence Low  
\_\_\_ w Blue e Yellow  
\_\_\_ D.St. - || Gold - || Blue  
\_\_\_ Becke Line Used  
n || n ||  
N Pleochroic @ 40X

#### Perlite

Quartz X

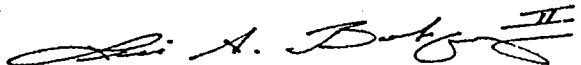
#### Wollastonite 0%

CaCO X

CaSO

Mica

Binder X



Analyst Luis A. Bohorquez

NVLAP #1926

4455 EAST CAMELBACK ROAD, SUITE D-155 PHOENIX, ARIZONA 85018 (602) 840-8012 FAX: (602) 990-8468

# ENVIRONMENTAL MANAGEMENT CONSULTANTS

Lab # 26295

Pg 5 of 32

## LABORATORY ANALYSIS OF BULK ASBESTOS

Method Interim EPA 600/M4-82-020

Client SHANNON & WILSON, INC.

Purchase Order # \_\_\_\_\_

Reported To TOLLI LOWELL-FORKER

Date Received 01/15/96

Sampled From EAGLE-W.

Sampled By Client

Shipped Via FEDERAL EXPR

Client Sample ID# H12820204

Lab Sample ID# 26295-04

Sample Description air cell, wrap, 2nd layer

Colors off white

Materials air cell, wrap, 2nd layer

FIBROUS MATERIAL 95%

NONFIBROUS 5%

HOMOGENEOUS Y

Textures fibrous

Location Description \_\_\_\_\_

ESTIMATED FIBROUS CONSTITUENTS 95% cellulose

### PLM ANALYSIS

#### Chrysotile TR%

☒ Wavy Fibers  
☒ Sign of Elongation (+)  
☒ Parallel Extinction  
☒ Perpendicular Extinction  
☒ Birefringence Low  
☒ w blue e yellow  
☒ D.St. - || Mag. - L Blue  
☒ Becke Line Used  
 n || 1.556 n L 1.548  
☐ Pleochroic @ 40X

#### Anthophyllite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Birefringence Medium  
☐ w Blue e yellow  
☐ D.St. - || Gold - L Blue  
☐ Becke Line Used  
 n || \_\_\_\_\_ n L \_\_\_\_\_  
☐ Pleochroic @ 40X

#### Cellulose 95%

☒ Flat Twisted Fibers  
☒ Anisotropic  
Synthetics 0%  
☐ Even Edges  
☐ High Birefringence

#### Other Fibers

Other nonfibers \_\_\_\_\_

Comments \_\_\_\_\_

#### Amosite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Perpendicular Extinction  
☐ Birefringence Medium  
☐ w blue e yellow  
☐ D.St. - || Gold - L Blue  
☐ Becke Line Used  
 n || \_\_\_\_\_ n L \_\_\_\_\_  
☐ Pleochroic @ 40X

#### Actinolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Birefringence Low  
☐ w Blue e Yellow  
☐ D.St. - || Gold - L Blue  
☐ Becke Line Used  
 n || \_\_\_\_\_ n L \_\_\_\_\_  
☐ Pleochroic @ 40X

#### Mineral Wool 0%

☐ Irregular Shapes  
☐ Isotropic  
Glass Fibers 0%  
☐ Straight Fibers  
☐ Isotropic

#### Crocidolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (-)  
☐ Parallel Extinction  
☐ Perpendicular Extinction  
☐ Birefringence Medium  
☐ w tan e Blue  
☐ D.St. - || Yellow L Yellow  
☐ Becke Line Used  
 n || \_\_\_\_\_ n L \_\_\_\_\_  
☐ Pleochroic @ 40X

#### Tremolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Oblique Extinction 0 Angle  
☐ Birefringence Low  
☐ w Blue e Yellow  
☐ D.St. - || Gold - L Blue  
☐ Becke Line Used  
 n || \_\_\_\_\_ n L \_\_\_\_\_  
☐ Pleochroic @ 40X

#### Perlite

Quartz X

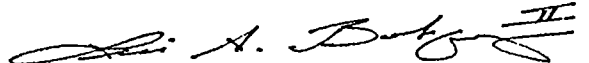
Wollastonite 0%

CaCO X

CaSO \_\_\_\_\_

Mica \_\_\_\_\_

Binder X



Analyst Luis A. Bohorquez

NVLAP #1926

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# ENVIRONMENTAL MANAGEMENT CONSULTANTS

Lab # 26295

Pg 6 of 32

## LABORATORY ANALYSIS OF BULK ASBESTOS

Method Interim EPA 600/M4-82-020

Client SHANNON & WILSON, INC.

Purchase Order # \_\_\_\_\_

Reported To TOLLI LOWELL-FORKER

Date Received 01/15/96

Sampled From EAGLE-W.

Sampled By Client

Shipped Via FEDERAL EXPR

Client Sample ID# H12820205

Lab Sample ID# 26295-05

Sample Description tile

Colors tan

Materials tile

FIBROUS MATERIAL 1%

NONFIBROUS 99%

HOMOGENEOUS N

Textures smooth

Location Description \_\_\_\_\_

ESTIMATED FIBROUS CONSTITUENTS 1% cellulose

### PLM ANALYSIS

#### Chrysotile 2%

☒ Wavy Fibers  
☒ Sign of Elongation (+)  
☒ Parallel Extinction  
☒ Perpendicular Extinction  
☒ Birefringence Low  
☒ w blue e yellow  
☒ D.St. - || Mag. - Blue  
☒ Becke Line Used  
 n || 1.556 n 1.548  
☒ Pleochroic @ 40X

#### Anthophyllite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Birefringence Medium  
☐ w Blue e yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
 n || \_\_\_\_\_ n 1.548  
☒ Pleochroic @ 40X

#### Cellulose 0%

☐ Flat Twisted Fibers  
☐ Anisotropic  
☒ Synthetics 0%  
☐ Even Edges  
☐ High Birefringence

#### Other Fibers \_\_\_\_\_

Other nonfibers \_\_\_\_\_

Comments other sample layers present; not analyzed per client paperwork

#### Amosite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Perpendicular Extinction  
☐ Birefringence Medium  
☐ w blue e yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
 n || \_\_\_\_\_ n 1.548  
☐ Pleochroic @ 40X

#### Actinolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Birefringence Low  
☐ w Blue e Yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
 n || \_\_\_\_\_ n 1.548  
☐ Pleochroic @ 40X

#### Mineral Wool 0%

☐ Irregular Shapes  
☐ Isotropic  
☒ Glass Fibers 0%  
☐ Straight Fibers  
☐ Isotropic

#### Crocidolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (-)  
☐ Parallel Extinction  
☐ Perpendicular Extinction  
☐ Birefringence Medium  
☐ w tan e Blue  
☐ D.St. - || Yellow Yellow  
☐ Becke Line Used  
 n || \_\_\_\_\_ n 1.548  
☐ Pleochroic @ 40X

#### Tremolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Oblique Extinction 0 Angle  
☐ Birefringence Low  
☐ w Blue e Yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
 n || \_\_\_\_\_ n 1.548  
☒ Pleochroic @ 40X

#### Perlite \_\_\_\_\_

☒ Quartz X

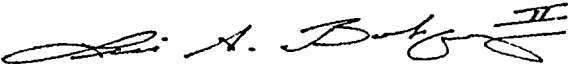
#### Wollastonite 0%

☒ CaCO X

☐ CaSO \_\_\_\_\_

☐ Mica \_\_\_\_\_

☒ Binder X



Analyst Luis A. Bohorquez

NVLAP #1926

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# ENVIRONMENTAL MANAGEMENT CONSULTANTS

Lab # 26295

Pg 7 of 32

## LABORATORY ANALYSIS OF BULK ASBESTOS

Method Interim EPA 600/M4-82-020

Client SHANNON & WILSON, INC.

Purchase Order # \_\_\_\_\_

Reported To TOLLI LOWELL-FORKER

Date Received 01/15/96

Sampled From EAGLE-W.

Sampled By Client

Shipped Via FEDERAL EXPR

Client Sample ID# H12820206

Lab Sample ID# 26295-06

Sample Description mastic

Colors lt. brown

Materials mastic

FIBROUS MATERIAL 1%

NONFIBROUS 99%

HOMOGENEOUS Y

Textures resinous

Location Description \_\_\_\_\_

ESTIMATED FIBROUS CONSTITUENTS 1% cellulose

### PLM ANALYSIS

#### Chrysotile 0%

\_\_\_\_ Wavy Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w blue e yellow  
 \_\_\_\_ D.St. - || Mag. - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n || \_\_\_\_\_ n ⊥ \_\_\_\_\_  
 N Pleochroic @ 40X

#### Anthophyllite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w Blue e yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n || \_\_\_\_\_ n ⊥ \_\_\_\_\_  
 N Pleochroic @ 40X

#### Cellulose 0%

\_\_\_\_ Flat Twisted Fibers  
 \_\_\_\_ Anisotropic  
 \_\_\_\_ Synthetics 0%  
 \_\_\_\_ Even Edges  
 \_\_\_\_ High Birefringence

#### Other Fibers

Other nonfibers \_\_\_\_\_

Comments other sample layers present; not analyzed per client paperwork

#### Amosite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w blue e yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n || \_\_\_\_\_ n ⊥ \_\_\_\_\_  
 \_\_\_\_ Pleochroic @ 40X

#### Actinolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w Blue e Yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n || \_\_\_\_\_ n ⊥ \_\_\_\_\_  
 \_\_\_\_ Pleochroic @ 40X

#### Mineral Wool 0%

\_\_\_\_ Irregular Shapes  
 \_\_\_\_ Isotropic  
 \_\_\_\_ Glass Fibers 0%  
 \_\_\_\_ Straight Fibers  
 \_\_\_\_ Isotropic

#### Crocidolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (-)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w tan e Blue  
 \_\_\_\_ D.St. - || Yellow Yellow  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n || \_\_\_\_\_ n ⊥ \_\_\_\_\_  
 \_\_\_\_ Pleochroic @ 40X

#### Tremolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Oblique Extinction 0 Angle  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w Blue e Yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n || \_\_\_\_\_ n ⊥ \_\_\_\_\_  
 N Pleochroic @ 40X

#### Perlite

X

#### Wollastonite 0%

X

X

X

X

Analyst Luis A. Bohorquez

NVLAP #1926

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# ENVIRONMENTAL MANAGEMENT CONSULTANTS

Lab # 26295

Pg 8 of 32

## LABORATORY ANALYSIS OF BULK ASBESTOS

Method Interim EPA 600/M4-82-020

Client SHANNON & WILSON, INC.

Purchase Order # \_\_\_\_\_

Reported To TOLLI LOWELL-FORKER

Date Received 01/15/96

Sampled From EAGLE-W.

Sampled By Client

Shipped Via FEDERAL EXPR

Client Sample ID# H12820207

Lab Sample ID# 26295-07

Sample Description \_\_\_\_\_

Colors lt. tan

Materials \_\_\_\_\_

FIBROUS MATERIAL 4%

NONFIBROUS 96%

HOMOGENEOUS N

Textures granular, powdery, fibrous

Location Description \_\_\_\_\_

ESTIMATED FIBROUS CONSTITUENTS 3% synthetic, 1% cellulose

### PLM ANALYSIS

#### Chrysotile 0%

\_\_\_\_ Wavy Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w blue e yellow  
 \_\_\_\_ D.St. - || Mag. - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||      n       
 N Pleochroic @ 40X

#### Anthophyllite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w Blue e yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||      n       
 N Pleochroic @ 40X

#### Cellulose 2%

X Flat Twisted Fibers  
 X Anisotropic

#### Synthetics 0%

\_\_\_\_ Even Edges  
 \_\_\_\_ High Birefringence

#### Other Fibers \_\_\_\_\_

Other nonfibers \_\_\_\_\_

Comments \_\_\_\_\_

#### Amosite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w blue e yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||      n       
 \_\_\_\_ Pleochroic @ 40X

#### Actinolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w Blue e Yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||      n       
 \_\_\_\_ Pleochroic @ 40X

#### Mineral Wool 0%

\_\_\_\_ Irregular Shapes  
 \_\_\_\_ Isotropic

#### Glass Fibers 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Isotropic

#### Crocidolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (-)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w tan e Blue  
 \_\_\_\_ D.St. - || Yellow Yellow  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||      n       
 \_\_\_\_ Pleochroic @ 40X

#### Tremolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Oblique Extinction 0 Angle  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w Blue e Yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||      n       
 N Pleochroic @ 40X

#### Perlite \_\_\_\_\_

Quartz X

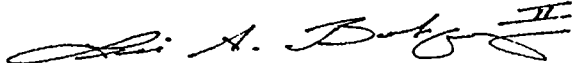
#### Wollastonite 0%

CaCO X

CaSO \_\_\_\_\_

Mica \_\_\_\_\_

Binder X



Analyst Luis A. Bohorquez

NVLAP #1926

4455 EAST CAMELBACK ROAD, SUITE D-155 PHOENIX, ARIZONA 85018 (602) 840-8012 FAX: (602) 990-8468

# ENVIRONMENTAL MANAGEMENT CONSULTANTS

Lab # 26295

Pg 9 of 32

## LABORATORY ANALYSIS OF BULK ASBESTOS

Method Interim EPA 600/M4-82-020

Client SHANNON & WILSON, INC.

Purchase Order # \_\_\_\_\_

Reported To TOLLI LOWELL-FORKER

Date Received 01/15/96

Sampled From EAGLE-W.

Sampled By Client

Shipped Via FEDERAL EXPR

Client Sample ID# H12820208

Lab Sample ID# 26295-08

Sample Description \_\_\_\_\_

Colors white

Materials \_\_\_\_\_

FIBROUS MATERIAL 1%

NONFIBROUS 99%

HOMOGENEOUS Y

Textures fine grained

Location Description \_\_\_\_\_

ESTIMATED FIBROUS CONSTITUENTS 1% cellulose

### PLM ANALYSIS

#### Chrysotile 0%

\_\_\_\_ Wavy Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w blue e yellow  
 \_\_\_\_ D.St. - || Mag. - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n || \_\_\_\_\_ n ⊥ \_\_\_\_\_  
 N Pleochroic @ 40X

#### Anthophyllite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w Blue e yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n || \_\_\_\_\_ n ⊥ \_\_\_\_\_  
 N Pleochroic @ 40X

#### Cellulose 0%

\_\_\_\_ Flat Twisted Fibers  
 \_\_\_\_ Anisotropic

#### Synthetics 0%

\_\_\_\_ Even Edges  
 \_\_\_\_ High Birefringence

#### Other Fibers \_\_\_\_\_

Other nonfibers \_\_\_\_\_

Comments \_\_\_\_\_

#### Amosite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w blue e yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n || \_\_\_\_\_ n ⊥ \_\_\_\_\_  
 \_\_\_\_ Pleochroic @ 40X

#### Actinolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w Blue e Yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n || \_\_\_\_\_ n ⊥ \_\_\_\_\_  
 \_\_\_\_ Pleochroic @ 40X

#### Mineral Wool 0%

\_\_\_\_ Irregular Shapes  
 \_\_\_\_ Isotropic

#### Glass Fibers 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Isotropic

#### Crocidolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (-)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w tan e Blue  
 \_\_\_\_ D.St. - || Yellow Yellow  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n || \_\_\_\_\_ n ⊥ \_\_\_\_\_  
 \_\_\_\_ Pleochroic @ 40X

#### Tremolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Oblique Extinction 0 Angle  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w Blue e Yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n || \_\_\_\_\_ n ⊥ \_\_\_\_\_  
 N Pleochroic @ 40X

#### Perlite \_\_\_\_\_

#### Quartz X

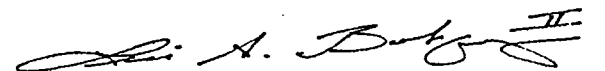
#### Wollastonite 0%

#### CaCO X

#### CaSO \_\_\_\_\_

#### Mica \_\_\_\_\_

#### Binder X



Analyst Luis A. Bohorquez

NVLAP #1926

4455 EAST CAMELBACK ROAD, SUITE D-155 PHOENIX, ARIZONA 85018 (602) 840-8012 FAX: (602) 990-8468

# ENVIRONMENTAL MANAGEMENT CONSULTANTS

Lab # 26295

Pg 10 of 32

## LABORATORY ANALYSIS OF BULK ASBESTOS

Method Interim EPA 600/M4-82-020

Client SHANNON & WILSON, INC.

Purchase Order # \_\_\_\_\_

Reported To TOLLI LOWELL-FORKER

Date Received 01/15/96

Sampled From EAGLE-W.

Sampled By Client

Shipped Via FEDERAL EXPR

Client Sample ID# H12820209

Lab Sample ID# 26295-09

Sample Description \_\_\_\_\_

Colors lt. gray

Materials \_\_\_\_\_

FIBROUS MATERIAL 1%

NONFIBROUS 99%

HOMOGENEOUS N

Textures smooth

Location Description \_\_\_\_\_

ESTIMATED FIBROUS CONSTITUENTS 1% cellulose

### PLM ANALYSIS

#### Chrysotile 0%

\_\_\_\_ Wavy Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w blue e yellow  
 \_\_\_\_ D.St. - || Mag. - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||      n       
 \_\_\_\_ N Pleochroic @ 40X

#### Anthophyllite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w Blue e yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||      n       
 \_\_\_\_ N Pleochroic @ 40X

#### Cellulose 0%

\_\_\_\_ Flat Twisted Fibers  
 \_\_\_\_ Anisotropic  
 \_\_\_\_ Synthetics 0%  
 \_\_\_\_ Even Edges  
 \_\_\_\_ High Birefringence

#### Other Fibers

Other nonfibers \_\_\_\_\_

Comments \_\_\_\_\_

#### Amosite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w blue e yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||      n       
 \_\_\_\_ Pleochroic @ 40X

#### Actinolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w Blue e Yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||      n       
 \_\_\_\_ Pleochroic @ 40X

#### Mineral Wool 0%

\_\_\_\_ Irregular Shapes  
 \_\_\_\_ Isotropic  
 \_\_\_\_ Glass Fibers 0%  
 \_\_\_\_ Straight Fibers  
 \_\_\_\_ Isotropic

#### Crocidolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (-)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w tan e Blue  
 \_\_\_\_ D.St. - || Yellow Yellow  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||      n       
 \_\_\_\_ Pleochroic @ 40X

#### Tremolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Oblique Extinction 0 Angle  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w Blue e Yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||      n       
 \_\_\_\_ N Pleochroic @ 40X

#### Perlite

Quartz X

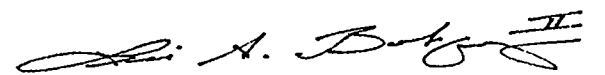
Wollastonite 0%

CaCO X

CaSO \_\_\_\_\_

Mica \_\_\_\_\_

Binder X



Analyst Luis A. Bohorquez

NVLAP #1926

4455 EAST CAMELBACK ROAD, SUITE D-155 PHOENIX, ARIZONA 85018 (602) 840-8012 FAX: (602) 990-8468

# ENVIRONMENTAL MANAGEMENT CONSULTANTS

Lab # 26295

Pg 11 of 32

LABORATORY ANALYSIS OF BULK ASBESTOS

Method Interim EPA 600/M4-82-020

Client SHANNON & WILSON, INC.

Purchase Order #

Reported To TOLLI LOWELL-FORKER

Date Received 01/15/96

Sampled From EAGLE-W.

Sampled By Client

Shipped Via FEDERAL EXPR

Client Sample ID# H12820210

Lab Sample ID# 26295-10

Sample Description

Colors lt. tan

Materials

FIBROUS MATERIAL 21%

NONFIBROUS 79%

HOMOGENEOUS N

Textures rubbery, fibrous

Location Description

ESTIMATED FIBROUS CONSTITUENTS 20% chrysotile, 1% cellulose

## PLM ANALYSIS

### Chrysotile 20%

- ☒ Wavy Fibers
- ☒ Sign of Elongation (+)
- ☒ Parallel Extinction
- ☒ Perpendicular Extinction
- ☒ Birefringence Low
- ☒ w blue e yellow
- ☒ D.St. - || Mag. - || Blue
- ☒ Becke Line Used
- n || 1.556 n ⊥ 1.548
- N Pleochroic @ 40X

### Anthophyllite 0%

- ☐ Straight Fibers
- ☐ Sign of Elongation (+)
- ☐ Parallel Extinction
- ☐ Birefringence Medium
- ☐ w Blue e yellow
- ☐ D.St. - || Gold - || Blue
- ☐ Becke Line Used
- n || n ⊥
- N Pleochroic @ 40X

### Cellulose 0%

- ☐ Flat Twisted Fibers
- ☐ Anisotropic
- ☐ Synthetics 0%
- ☐ Even Edges
- ☐ High Birefringence

### Other Fibers

Other nonfibers

Comments

### Amosite 0%

- ☐ Straight Fibers
- ☐ Sign of Elongation (+)
- ☐ Parallel Extinction
- ☐ Perpendicular Extinction
- ☐ Birefringence Medium
- ☐ w blue e yellow
- ☐ D.St. - || Gold - || Blue
- ☐ Becke Line Used
- n || n ⊥
- ☐ Pleochroic @ 40X

### Actinolite 0%

- ☐ Straight Fibers
- ☐ Sign of Elongation (+)
- ☐ Parallel Extinction
- ☐ Birefringence Low
- ☐ w Blue e Yellow
- ☐ D.St. - || Gold - || Blue
- ☐ Becke Line Used
- n || n ⊥
- ☐ Pleochroic @ 40X

### Mineral Wool 0%

- ☐ Irregular Shapes
- ☐ Isotropic
- ☐ Glass Fibers 0%
- ☐ Straight Fibers
- ☐ Isotropic

### Crocidolite 0%

- ☐ Straight Fibers
- ☐ Sign of Elongation (-)
- ☐ Parallel Extinction
- ☐ Perpendicular Extinction
- ☐ Birefringence Medium
- ☐ w tan e Blue
- ☐ D.St. - || Yellow - || Yellow
- ☐ Becke Line Used
- n || n ⊥
- ☐ Pleochroic @ 40X

### Tremolite 0%

- ☐ Straight Fibers
- ☐ Sign of Elongation (+)
- ☐ Parallel Extinction
- ☐ Oblique Extinction 0 Angle
- ☐ Birefringence Low
- ☐ w Blue e Yellow
- ☐ D.St. - || Gold - || Blue
- ☐ Becke Line Used
- n || n ⊥
- N Pleochroic @ 40X

### Perlite

Quartz X

Wollastonite 0%

CaCO X

CaSO

Mica

Binder X

*Luis A. Bohorquez*

Analyst Luis A. Bohorquez

NVLAP #1926

4455 EAST CAMELBACK ROAD, SUITE D-155 PHOENIX, ARIZONA 85018 (602) 840-8012 FAX: (602) 990-8468



# ENVIRONMENTAL MANAGEMENT CONSULTANTS

Lab # 26295

Pg 12 of 32

## LABORATORY ANALYSIS OF BULK ASBESTOS

Method Interim EPA 600/M4-82-020

Client SHANNON & WILSON, INC.

Purchase Order # \_\_\_\_\_

Reported To TOLLI LOWELL-FORKER

Date Received 01/15/96

Sampled From EAGLE-W.

Sampled By Client

Shipped Via FEDERAL EXPR

Client Sample ID# H12820212

Lab Sample ID# 26295-11

Sample Description \_\_\_\_\_

Colors brown

Materials \_\_\_\_\_

FIBROUS MATERIAL 25%

NONFIBROUS 75%

HOMOGENEOUS N

Textures rubbery, fibrous

Location Description \_\_\_\_\_

ESTIMATED FIBROUS CONSTITUENTS 15% chrysotile, 10% cellulose

### PLM ANALYSIS

#### Chrysotile 15%

☒ Wavy Fibers  
☒ Sign of Elongation (+)  
☒ Parallel Extinction  
☒ Perpendicular Extinction  
☒ Birefringence Low  
☒ w blue e yellow  
☒ D.St. - || Mag. - Blue  
☒ Becke Line Used  
n || 1.556 n ⊥ 1.548  
☒ Pleochroic @ 40X

#### Anthophyllite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Birefringence Medium  
☐ w Blue e yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
n || n ⊥  
☒ Pleochroic @ 40X

#### Cellulose 5%

☒ Flat Twisted Fibers  
☒ Anisotropic  
Synthetics 0%  
☐ Even Edges  
☐ High Birefringence

#### Other Fibers

Other nonfibers \_\_\_\_\_

Comments \_\_\_\_\_

#### Amosite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Perpendicular Extinction  
☐ Birefringence Medium  
☐ w blue e yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
n || n ⊥  
☐ Pleochroic @ 40X

#### Actinolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Birefringence Low  
☐ w Blue e Yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
n || n ⊥  
☐ Pleochroic @ 40X

#### Mineral Wool 0%

☐ Irregular Shapes  
☐ Isotropic  
Glass Fibers 0%  
☐ Straight Fibers  
☐ Isotropic

#### Crocidolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (-)  
☐ Parallel Extinction  
☐ Perpendicular Extinction  
☐ Birefringence Medium  
☐ w tan e Blue  
☐ D.St. - || Yellow Yellow  
☐ Becke Line Used  
n || n ⊥  
☐ Pleochroic @ 40X

#### Tremolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Oblique Extinction 0 Angle  
☐ Birefringence Low  
☐ w Blue e Yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
n || n ⊥  
☒ Pleochroic @ 40X

#### Perlite

Quartz X

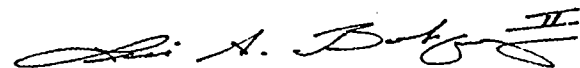
Wollastonite 0%

CaCO X

CaSO

Mica

Binder X



Analyst Luis A. Bohorquez

NVLAP #1926

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# ENVIRONMENTAL MANAGEMENT CONSULTANTS

Lab # 26295

Pg 13 of 32

## LABORATORY ANALYSIS OF BULK ASBESTOS

Method Interim EPA 600/M4-82-020

Client SHANNON & WILSON, INC.

Purchase Order # \_\_\_\_\_

Reported To TOLLI LOWELL-FORKER

Date Received 01/15/96

Sampled From EAGLE-W.

Sampled By Client

Shipped Via FEDERAL EXPR

Client Sample ID# H12820213

Lab Sample ID# 26295-12

Sample Description 1st layer

Colors white

Materials 1st layer

FIBROUS MATERIAL 1%

NONFIBROUS 99%

HOMOGENEOUS N

Textures powdery, spongy

Location Description \_\_\_\_\_

ESTIMATED FIBROUS CONSTITUENTS 1% cellulose

### PLM ANALYSIS

#### Chrysotile 0%

☐ Wavy Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Perpendicular Extinction  
☐ Birefringence Low  
☐ w blue e yellow  
☐ D.St. - || Mag. - Blue  
☐ Becke Line Used  
☐ n ||      n       
☒ N Pleochroic @ 40X

#### Anthophyllite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Birefringence Medium  
☐ w Blue e yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
☐ n ||      n       
☒ N Pleochroic @ 40X

#### Cellulose 2%

☒ Flat Twisted Fibers  
☒ Anisotropic

#### Synthetics 0%

☐ Even Edges  
☐ High Birefringence

#### Other Fibers \_\_\_\_\_

Other nonfibers \_\_\_\_\_

Comments \_\_\_\_\_

#### Amosite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Perpendicular Extinction  
☐ Birefringence Medium  
☐ w blue e yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
☐ n ||      n       
☐ Pleochroic @ 40X

#### Actinolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Birefringence Low  
☐ w Blue e Yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
☐ n ||      n       
☐ Pleochroic @ 40X

#### Mineral Wool 0%

☐ Irregular Shapes  
☐ Isotropic

#### Glass Fibers 0%

☐ Straight Fibers  
☐ Isotropic

#### Crocidolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (-)  
☐ Parallel Extinction  
☐ Perpendicular Extinction  
☐ Birefringence Medium  
☐ w tan e Blue  
☐ D.St. - || Yellow Yellow  
☐ Becke Line Used  
☐ n ||      n       
☐ Pleochroic @ 40X

#### Tremolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Oblique Extinction 0 Angle  
☐ Birefringence Low  
☐ w Blue e Yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
☐ n ||      n       
☒ N Pleochroic @ 40X

#### Perlite \_\_\_\_\_

Quartz X

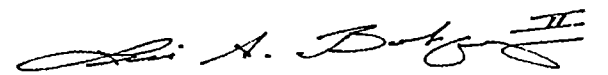
Wollastonite 2%

CaCO X

CaSO \_\_\_\_\_

Mica X

Binder X



Analyst Luis A. Bohorquez

NVLAP #1926

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# ENVIRONMENTAL MANAGEMENT CONSULTANTS

Lab # 26295

Pg 14 of 32

LABORATORY ANALYSIS OF BULK ASBESTOS

Method Interim EPA 600/M4-82-020

Client SHANNON & WILSON, INC.

Purchase Order # \_\_\_\_\_

Reported To TOLLI LOWELL-FORKER

Date Received 01/15/96

Sampled From EAGLE-W.

Sampled By Client

Shipped Via FEDERAL EXPR

Client Sample ID# H12820213

Lab Sample ID# 26295-12

Sample Description 2nd layer

Colors white

Materials 2nd layer

FIBROUS MATERIAL 1%

NONFIBROUS 99%

HOMOGENEOUS Y

Textures fine grained

Location Description \_\_\_\_\_

ESTIMATED FIBROUS CONSTITUENTS 1% cellulose

## PLM ANALYSIS

### Chrysotile 0%

\_\_\_\_ Wavy Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w blue e yellow  
 \_\_\_\_ D.St. - || Mag. - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||      n       
 \_\_\_\_ N Pleochroic @ 40X

### Anthophyllite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w Blue e yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||      n       
 \_\_\_\_ N Pleochroic @ 40X

### Cellulose 2%

X Flat Twisted Fibers  
X Anisotropic

### Synthetics 0%

\_\_\_\_ Even Edges  
 \_\_\_\_ High Birefringence

### Other Fibers \_\_\_\_\_

Other nonfibers \_\_\_\_\_

Comments \_\_\_\_\_

### Amosite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w blue e yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||      n       
 \_\_\_\_ Pleochroic @ 40X

### Actinolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w Blue e Yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||      n       
 \_\_\_\_ Pleochroic @ 40X

### Mineral Wool 0%

\_\_\_\_ Irregular Shapes  
 \_\_\_\_ Isotropic

### Glass Fibers 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Isotropic

### Crocidolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (-)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w tan e Blue  
 \_\_\_\_ D.St. - || Yellow Yellow  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||      n       
 \_\_\_\_ Pleochroic @ 40X

### Tremolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Oblique Extinction 0 Angle  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w Blue e Yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||      n       
 \_\_\_\_ N Pleochroic @ 40X

### Perlite \_\_\_\_\_

X Quartz

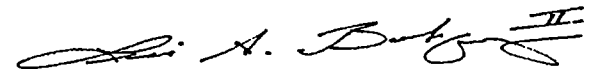
2% Wollastonite

X CaCO<sub>3</sub>

     CaSO<sub>4</sub>

X Mica

X Binder



Analyst Luis A. Bohorquez

NVLAP #1926

4455 EAST CAMELBACK ROAD, SUITE D-155 PHOENIX, ARIZONA 85018 (602) 840-8012 FAX: (602) 990-8468

# ENVIRONMENTAL MANAGEMENT CONSULTANTS

Lab # 26295

Pg 15 of 32

## LABORATORY ANALYSIS OF BULK ASBESTOS

Method Interim EPA 600/M4-82-020

Client SHANNON & WILSON, INC.

Purchase Order # \_\_\_\_\_

Reported To TOLLI LOWELL-FORKER

Date Received 01/15/96

Sampled From EAGLE-W.

Sampled By Client

Shipped Via FEDERAL EXPR

Client Sample ID# H12820213

Lab Sample ID# 26295-12

Sample Description 3rd layer

Colors cream

Materials 3rd layer

FIBROUS MATERIAL 1%

NONFIBROUS 99%

HOMOGENEOUS Y

Textures fine grained

Location Description \_\_\_\_\_

ESTIMATED FIBROUS CONSTITUENTS 1% cellulose

### PLM ANALYSIS

#### Chrysotile TR%

☒ Wavy Fibers  
☒ Sign of Elongation (+)  
☒ Parallel Extinction  
☒ Perpendicular Extinction  
☒ Birefringence Low  
☒ w blue e yellow  
☒ D.St. - || Mag. - Blue  
☒ Becke Line Used  
 n || 1.556 n 1.548  
☒ Pleochroic @ 40X

#### Anthophyllite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Birefringence Medium  
☐ w Blue e yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
 n || \_\_\_\_\_ n 1 \_\_\_\_\_  
☒ Pleochroic @ 40X

#### Cellulose 0%

☐ Flat Twisted Fibers  
☐ Anisotropic

#### Synthetics 0%

☐ Even Edges  
☐ High Birefringence

Other Fibers 2% Antigorite

Other nonfibers \_\_\_\_\_

Comments \_\_\_\_\_

#### Amosite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Perpendicular Extinction  
☐ Birefringence Medium  
☐ w blue e yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
 n || \_\_\_\_\_ n 1 \_\_\_\_\_  
☐ Pleochroic @ 40X

#### Actinolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Birefringence Low  
☐ w Blue e Yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
 n || \_\_\_\_\_ n 1 \_\_\_\_\_  
☐ Pleochroic @ 40X

#### Mineral Wool 0%

☐ Irregular Shapes  
☐ Isotropic

#### Glass Fibers 0%

☐ Straight Fibers  
☐ Isotropic

#### Crocidolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (-)  
☐ Parallel Extinction  
☐ Perpendicular Extinction  
☐ Birefringence Medium  
☐ w tan e Blue  
☐ D.St. - || Yellow Yellow  
☐ Becke Line Used  
 n || \_\_\_\_\_ n 1 \_\_\_\_\_  
☐ Pleochroic @ 40X

#### Tremolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Oblique Extinction 0 Angle  
☐ Birefringence Low  
☐ w Blue e Yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
 n || \_\_\_\_\_ n 1 \_\_\_\_\_  
☒ Pleochroic @ 40X

#### Perlite \_\_\_\_\_

Quartz X

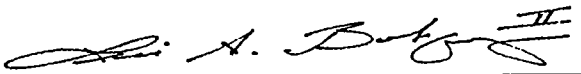
Wollastonite 0%

CaCO X

CaSO \_\_\_\_\_

Mica \_\_\_\_\_

Binder X



Analyst Luis A. Bohorquez

NVLAP #1926

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# ENVIRONMENTAL MANAGEMENT CONSULTANTS

Lab # 26295

Pg 16 of 32

## LABORATORY ANALYSIS OF BULK ASBESTOS

Method Interim EPA 600/M4-82-020

Client SHANNON & WILSON, INC.

Purchase Order # \_\_\_\_\_

Reported To TOLLI LOWELL-FORKER

Date Received 01/15/96

Sampled From EAGLE-W.

Sampled By Client

Shipped Via FEDERAL EXPR

Client Sample ID# H12820214

Lab Sample ID# 26295-13

Sample Description 1st layer

Colors off white

Materials 1st layer

FIBROUS MATERIAL 10%

NONFIBROUS 90%

HOMOGENEOUS N

Textures powdery, spongy

Location Description \_\_\_\_\_

ESTIMATED FIBROUS CONSTITUENTS 10% cellulose

### PLM ANALYSIS

#### Chrysotile 0%

☐ Wavy Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Perpendicular Extinction  
☐ Birefringence Low  
☐ w blue e yellow  
☐ D.St. - || Mag. - Blue  
☐ Becke Line Used  
☐ n ||      n       
☐ N Pleochroic @ 40X

#### Anthophyllite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Birefringence Medium  
☐ w Blue e yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
☐ n ||      n       
☐ N Pleochroic @ 40X

#### Cellulose 15%

☒ Flat Twisted Fibers  
☒ Anisotropic

#### Synthetics 0%

☐ Even Edges  
☐ High Birefringence

#### Other Fibers \_\_\_\_\_

Other nonfibers \_\_\_\_\_

Comments \_\_\_\_\_

#### Amosite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Perpendicular Extinction  
☐ Birefringence Medium  
☐ w blue e yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
☐ n ||      n       
☐ Pleochroic @ 40X

#### Actinolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Birefringence Low  
☐ w Blue e Yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
☐ n ||      n       
☐ Pleochroic @ 40X

#### Mineral Wool 0%

☐ Irregular Shapes  
☐ Isotropic

#### Glass Fibers 0%

☐ Straight Fibers  
☐ Isotropic

#### Crocidolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (-)  
☐ Parallel Extinction  
☐ Perpendicular Extinction  
☐ Birefringence Medium  
☐ w tan e Blue  
☐ D.St. - || Yellow Yellow  
☐ Becke Line Used  
☐ n ||      n       
☐ Pleochroic @ 40X

#### Tremolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Oblique Extinction 0 Angle  
☐ Birefringence Low  
☐ w Blue e Yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
☐ n ||      n       
☐ N Pleochroic @ 40X

#### Perlite \_\_\_\_\_

Quartz X

Wollastonite 0%

CaCO X

CaSO X

Mica \_\_\_\_\_

Binder \_\_\_\_\_

Analyst Luis A. Bohorquez

NVLAP #1926

4455 EAST CAMELBACK ROAD, SUITE D-155 PHOENIX, ARIZONA 85018 (602) 840-8012 FAX: (602) 990-8468

# ENVIRONMENTAL MANAGEMENT CONSULTANTS

Lab # 26295

Pg 17 of 32

## LABORATORY ANALYSIS OF BULK ASBESTOS

Method Interim EPA 600/M4-82-020

Client SHANNON & WILSON, INC.

Purchase Order # \_\_\_\_\_

Reported To TOLLI LOWELL-FORKER

Date Received 01/15/96

Sampled From EAGLE-W.

Sampled By Client

Shipped Via FEDERAL EXPR

Client Sample ID# H12820214

Lab Sample ID# 26295-13

Sample Description 2nd layer

Colors white

Materials 2nd layer

FIBROUS MATERIAL 1%

NONFIBROUS 99%

HOMOGENEOUS N

Textures chalky

Location Description \_\_\_\_\_

ESTIMATED FIBROUS CONSTITUENTS 1% cellulose

### PLM ANALYSIS

#### Chrysotile 0%

\_\_\_\_ Wavy Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w blue e yellow  
 \_\_\_\_ D.St. - || Mag. - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||        n         
 \_\_\_\_ N Pleochroic @ 40X

#### Anthophyllite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w Blue e yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||        n         
 \_\_\_\_ N Pleochroic @ 40X

#### Cellulose 0%

\_\_\_\_ Flat Twisted Fibers  
 \_\_\_\_ Anisotropic  
**Synthetics 0%**  
 \_\_\_\_ Even Edges  
 \_\_\_\_ High Birefringence

#### Other Fibers

Other nonfibers \_\_\_\_\_

Comments \_\_\_\_\_

#### Amosite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w blue e yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||        n         
 \_\_\_\_ Pleochroic @ 40X

#### Actinolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w Blue e Yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||        n         
 \_\_\_\_ Pleochroic @ 40X

#### Mineral Wool 0%

\_\_\_\_ Irregular Shapes  
 \_\_\_\_ Isotropic  
**Glass Fibers 0%**  
 \_\_\_\_ Straight Fibers  
 \_\_\_\_ Isotropic

#### Crocidolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (-)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w tan e Blue  
 \_\_\_\_ D.St. - || Yellow Yellow  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||        n         
 \_\_\_\_ Pleochroic @ 40X

#### Tremolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Oblique Extinction 0 Angle  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w Blue e Yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||        n         
 \_\_\_\_ N Pleochroic @ 40X

#### Perlite

**Quartz X**

**Wollastonite 2%**

**CaCO X**

**CaSO**

**Mica X**

**Binder X**

Analyst Luis A. Bohorquez

NVLAP #1926

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# ENVIRONMENTAL MANAGEMENT CONSULTANTS

Lab # 26295

Pg 18 of 32

## LABORATORY ANALYSIS OF BULK ASBESTOS

Method Interim EPA 600/M4-82-020

Client SHANNON & WILSON, INC.

Purchase Order # \_\_\_\_\_

Reported To TOLLI LOWELL-FORKER

Date Received 01/15/96

Sampled From EAGLE-W.

Sampled By Client

Shipped Via FEDERAL EXPR

Client Sample ID# H12820215

Lab Sample ID# 26295-14

Sample Description \_\_\_\_\_

Colors lt. gray

Materials \_\_\_\_\_

FIBROUS MATERIAL 17%

NONFIBROUS 83%

HOMOGENEOUS N

Textures cementitious, fibrous

Location Description \_\_\_\_\_

ESTIMATED FIBROUS CONSTITUENTS 15% chrysotile, 2% cellulose

### PLM ANALYSIS

#### Chrysotile 10%

- ☒ Wavy Fibers
- ☒ Sign of Elongation (+)
- ☒ Parallel Extinction
- ☒ Perpendicular Extinction
- ☒ Birefringence Low
- ☒ w blue e yellow
- ☒ D.St. - || Mag. - Blue
- ☒ Becke Line Used
- n || 1.556 n 1.548
- ☒ Pleochroic @ 40X

#### Anthophyllite 0%

- ☐ Straight Fibers
- ☐ Sign of Elongation (+)
- ☐ Parallel Extinction
- ☐ Birefringence Medium
- ☐ w Blue e yellow
- ☐ D.St. - || Gold - Blue
- ☐ Becke Line Used
- n || \_\_\_\_\_ n \_\_\_\_\_
- ☒ Pleochroic @ 40X

#### Cellulose 0%

- ☐ Flat Twisted Fibers
- ☐ Anisotropic
- ☒ Synthetics 0%
- ☐ Even Edges
- ☐ High Birefringence

#### Other Fibers

Other nonfibers \_\_\_\_\_

Comments \_\_\_\_\_

#### Amosite 0%

- ☐ Straight Fibers
- ☐ Sign of Elongation (+)
- ☐ Parallel Extinction
- ☐ Perpendicular Extinction
- ☐ Birefringence Medium
- ☐ w blue e yellow
- ☐ D.St. - || Gold - Blue
- ☐ Becke Line Used
- n || \_\_\_\_\_ n \_\_\_\_\_
- ☐ Pleochroic @ 40X

#### Actinolite 0%

- ☐ Straight Fibers
- ☐ Sign of Elongation (+)
- ☐ Parallel Extinction
- ☐ Birefringence Low
- ☐ w Blue e Yellow
- ☐ D.St. - || Gold - Blue
- ☐ Becke Line Used
- n || \_\_\_\_\_ n \_\_\_\_\_
- ☐ Pleochroic @ 40X

#### Mineral Wool 0%

- ☐ Irregular Shapes
- ☐ Isotropic
- ☒ Glass Fibers 0%
- ☐ Straight Fibers
- ☐ Isotropic

#### Crocidolite 0%

- ☐ Straight Fibers
- ☐ Sign of Elongation (-)
- ☐ Parallel Extinction
- ☐ Perpendicular Extinction
- ☐ Birefringence Medium
- ☐ w tan e Blue
- ☐ D.St. - || Yellow Yellow
- ☐ Becke Line Used
- n || \_\_\_\_\_ n \_\_\_\_\_
- ☐ Pleochroic @ 40X

#### Tremolite 0%

- ☐ Straight Fibers
- ☐ Sign of Elongation (+)
- ☐ Parallel Extinction
- ☐ Oblique Extinction 0 Angle
- ☐ Birefringence Low
- ☐ w Blue e Yellow
- ☐ D.St. - || Gold - Blue
- ☐ Becke Line Used
- n || \_\_\_\_\_ n \_\_\_\_\_
- ☒ Pleochroic @ 40X

#### Perlite

Quartz ☒

Wollastonite 0%

CaCO ☒

CaSO \_\_\_\_\_

Mica \_\_\_\_\_

Binder ☒

Analyst Luis A. Bohorquez

NVLAP #1926

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# ENVIRONMENTAL MANAGEMENT CONSULTANTS

Lab # 26295

Pg 19 of 32

## LABORATORY ANALYSIS OF BULK ASBESTOS

Method Interim EPA 600/M4-82-020

Client SHANNON & WILSON, INC.

Purchase Order # \_\_\_\_\_

Reported To TOLLI LOWELL-FORKER

Date Received 01/15/96

Sampled From EAGLE-W.

Sampled By Client

Shipped Via FEDERAL EXPR

Client Sample ID# H12820216

Lab Sample ID# 26295-15

Sample Description 1st layer

Colors off white

Materials 1st layer

FIBROUS MATERIAL 10%

NONFIBROUS 90%

HOMOGENEOUS N

Textures chalky

Location Description \_\_\_\_\_

ESTIMATED FIBROUS CONSTITUENTS 10% cellulose

### PLM ANALYSIS

#### Chrysotile 0%

\_\_\_\_ Wavy Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w blue e yellow  
 \_\_\_\_ D.St. - || Mag. - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||        n         
 \_\_\_\_ N Pleochroic @ 40X

#### Anthophyllite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w Blue e yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||        n         
 \_\_\_\_ N Pleochroic @ 40X

#### Cellulose 10%

X Flat Twisted Fibers  
X Anisotropic

#### Synthetics 0%

\_\_\_\_ Even Edges  
 \_\_\_\_ High Birefringence

#### Other Fibers \_\_\_\_\_

Other nonfibers \_\_\_\_\_

Comments \_\_\_\_\_

#### Amosite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w blue e yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||        n         
 \_\_\_\_ Pleochroic @ 40X

#### Actinolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w Blue e Yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||        n         
 \_\_\_\_ Pleochroic @ 40X

#### Mineral Wool 0%

\_\_\_\_ Irregular Shapes  
 \_\_\_\_ Isotropic  
\_\_\_\_ Glass Fibers 0%  
 \_\_\_\_ Straight Fibers  
 \_\_\_\_ Isotropic

#### Crocidolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (-)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w tan e Blue  
 \_\_\_\_ D.St. - || Yellow Yellow  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||        n         
 \_\_\_\_ Pleochroic @ 40X

#### Tremolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Oblique Extinction 0 Angle  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w Blue e Yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||        n         
 \_\_\_\_ N Pleochroic @ 40X

#### Perlite \_\_\_\_\_

Quartz X

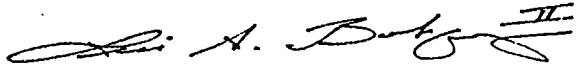
#### Wollastonite 0%

CaCO X

CaSO X

Mica \_\_\_\_\_

Binder \_\_\_\_\_



Analyst Luis A. Bohorquez

NVLAP #1926

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# ENVIRONMENTAL MANAGEMENT CONSULTANTS

Lab # 26295

Pg 20 of 32

## LABORATORY ANALYSIS OF BULK ASBESTOS

Method Interim EPA 600/M4-82-020

Client SHANNON & WILSON, INC.

Purchase Order # \_\_\_\_\_

Reported To TOLLI LOWELL-FORKER

Date Received 01/15/96

Sampled From EAGLE-W.

Sampled By Client

Shipped Via FEDERAL EXPR

Client Sample ID# H12820216

Lab Sample ID# 26295-15

Sample Description 2nd layer

Colors white

Materials 2nd layer

FIBROUS MATERIAL 0%

NONFIBROUS 100%

HOMOGENEOUS Y

Textures fine grained

Location Description \_\_\_\_\_

### ESTIMATED FIBROUS CONSTITUENTS

#### PLM ANALYSIS

##### Chrysotile 0%

\_\_\_\_ Wavy Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w blue e yellow  
 \_\_\_\_ D.St. - || Mag. - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||      n       
 N Pleochroic @ 40X

##### Anthophyllite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w Blue e yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||      n       
 N Pleochroic @ 40X

##### Cellulose 0%

\_\_\_\_ Flat Twisted Fibers  
 \_\_\_\_ Anisotropic  
**Synthetics 0%**  
 \_\_\_\_ Even Edges  
 \_\_\_\_ High Birefringence

##### Other Fibers

Other nonfibers \_\_\_\_\_

Comments \_\_\_\_\_

##### Amosite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w blue e yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||      n       
 \_\_\_\_ Pleochroic @ 40X

##### Actinolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w Blue e Yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||      n       
 \_\_\_\_ Pleochroic @ 40X

##### Mineral Wool 0%

\_\_\_\_ Irregular Shapes  
 \_\_\_\_ Isotropic  
**Glass Fibers 0%**  
 \_\_\_\_ Straight Fibers  
 \_\_\_\_ Isotropic

##### Crocidolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (-)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w tan e Blue  
 \_\_\_\_ D.St. - || Yellow Yellow  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||      n       
 \_\_\_\_ Pleochroic @ 40X

##### Tremolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Oblique Extinction 0 Angle  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w Blue e Yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||      n       
 N Pleochroic @ 40X

##### Perlite X

##### Quartz X

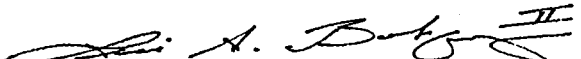
##### Wollastonite 0%

##### CaCO X

##### CaSO

##### Mica

##### Binder X



Analyst Luis A. Bohorquez

NVLAP #1926

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# ENVIRONMENTAL MANAGEMENT CONSULTANTS

Lab # 26295

Pg 21 of 32

## LABORATORY ANALYSIS OF BULK ASBESTOS

Method Interim EPA 600/M4-82-020

Client SHANNON & WILSON, INC.

Purchase Order # \_\_\_\_\_

Reported To TOLLI LOWELL-FORKER

Date Received 01/15/96

Sampled From EAGLE-W.

Sampled By Client

Shipped Via FEDERAL EXPR

Client Sample ID# H12820217

Lab Sample ID# 26295-16

Sample Description 1st layer

Colors cream

Materials 1st layer

FIBROUS MATERIAL 10%

NONFIBROUS 90%

HOMOGENEOUS N

Textures chalky

Location Description \_\_\_\_\_

ESTIMATED FIBROUS CONSTITUENTS 10% cellulose

### PLM ANALYSIS

#### Chrysotile 0%

\_\_\_\_ Wavy Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w blue e yellow  
 \_\_\_\_ D.St. - || Mag. - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||        n         
 \_\_\_\_ N Pleochroic @ 40X

#### Anthophyllite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w Blue e yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||        n         
 \_\_\_\_ N Pleochroic @ 40X

#### Cellulose 10%

☒ Flat Twisted Fibers  
☒ Anisotropic

#### Synthetics 0%

\_\_\_\_ Even Edges  
 \_\_\_\_ High Birefringence

#### Other Fibers \_\_\_\_\_

Other nonfibers \_\_\_\_\_

Comments \_\_\_\_\_

#### Amosite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w blue e yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||        n         
 \_\_\_\_ Pleochroic @ 40X

#### Actinolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w Blue e Yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||        n         
 \_\_\_\_ Pleochroic @ 40X

#### Mineral Wool 0%

\_\_\_\_ Irregular Shapes  
 \_\_\_\_ Isotropic

#### Glass Fibers 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Isotropic

#### Crocidolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (-)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w tan e Blue  
 \_\_\_\_ D.St. - || Yellow Yellow  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||        n         
 \_\_\_\_ Pleochroic @ 40X

#### Tremolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Oblique Extinction 0 Angle  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w Blue e Yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||        n         
 \_\_\_\_ N Pleochroic @ 40X

#### Perlite \_\_\_\_\_

X Quartz

#### Wollastonite 0%

X CaCO<sub>3</sub>

X CaSO<sub>4</sub>

\_\_\_\_ Mica

\_\_\_\_ Binder

Analyst Luis A. Bohorquez

NVLAP #1926

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# ENVIRONMENTAL MANAGEMENT CONSULTANTS

Lab # 26295

Pg 22 of 32

LABORATORY ANALYSIS OF BULK ASBESTOS

Method Interim EPA 600/M4-82-020

Client SHANNON & WILSON, INC.

Purchase Order # \_\_\_\_\_

Reported To TOLLI LOWELL-FORKER

Date Received 01/15/96

Sampled From EAGLE-W.

Sampled By Client

Shipped Via FEDERAL EXPR

Client Sample ID# H12820217

Lab Sample ID# 26295-16

Sample Description 2nd layer

Colors white

Materials 2nd layer

FIBROUS MATERIAL 1%

NONFIBROUS 99%

HOMOGENEOUS Y

Textures fine grained

Location Description \_\_\_\_\_

ESTIMATED FIBROUS CONSTITUENTS 1% cellulose

## PLM ANALYSIS

### Chrysotile 0%

\_\_\_\_ Wavy Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w blue e yellow  
 \_\_\_\_ D.St. - || Mag. -    Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||    n     
 \_\_\_\_ N Pleochroic @ 40X

### Anthophyllite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w Blue e yellow  
 \_\_\_\_ D.St. - || Gold -    Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||    n     
 \_\_\_\_ N Pleochroic @ 40X

### Cellulose 0%

\_\_\_\_ Flat Twisted Fibers  
 \_\_\_\_ Anisotropic  
 \_\_\_\_ Synthetics 0%  
 \_\_\_\_ Even Edges  
 \_\_\_\_ High Birefringence

### Other Fibers

Other nonfibers \_\_\_\_\_

Comments \_\_\_\_\_

### Amosite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w blue e yellow  
 \_\_\_\_ D.St. - || Gold -    Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||    n     
 \_\_\_\_ Pleochroic @ 40X

### Actinolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w Blue e Yellow  
 \_\_\_\_ D.St. - || Gold -    Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||    n     
 \_\_\_\_ Pleochroic @ 40X

### Mineral Wool 0%

\_\_\_\_ Irregular Shapes  
 \_\_\_\_ Isotropic  
 \_\_\_\_ Glass Fibers 0%  
 \_\_\_\_ Straight Fibers  
 \_\_\_\_ Isotropic

### Crocidolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (-)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w tan e Blue  
 \_\_\_\_ D.St. - || Yellow    Yellow  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||    n     
 \_\_\_\_ Pleochroic @ 40X

### Tremolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Oblique Extinction    0 Angle  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w Blue e Yellow  
 \_\_\_\_ D.St. - || Gold -    Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||    n     
 \_\_\_\_ N Pleochroic @ 40X

### Perlite X

### Quartz X

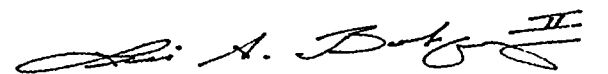
### Wollastonite 0%

### CaCO X

### CaSO

### Mica

### Binder X



Analyst Luis A. Bohorquez

NVLAP #1926

4455 EAST CAMELBACK ROAD, SUITE D-155 PHOENIX, ARIZONA 85018 (602) 840-8012 FAX: (602) 990-8468

# ENVIRONMENTAL MANAGEMENT CONSULTANTS

Lab # 26295

Pg 23 of 32

LABORATORY ANALYSIS OF BULK ASBESTOS

Method Interim EPA 600/M4-82-020

Client SHANNON & WILSON, INC.

Purchase Order # \_\_\_\_\_

Reported To TOLLI LOWELL-FORKER

Date Received 01/15/96

Sampled From EAGLE-W.

Sampled By Client

Shipped Via FEDERAL EXPR

Client Sample ID# H12820217

Lab Sample ID# 26295-16

Sample Description 3rd layer

Colors white

Materials 3rd layer

FIBROUS MATERIAL 1%

NONFIBROUS 99%

HOMOGENEOUS Y

Textures fine grained

Location Description \_\_\_\_\_

ESTIMATED FIBROUS CONSTITUENTS 1% cellulose

## PLM ANALYSIS

### Chrysotile 0%

☐ Wavy Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Perpendicular Extinction  
☐ Birefringence Low  
☐ w blue e yellow  
☐ D.St. - || Mag. - Blue  
☐ Becke Line Used  
☐ n ||      n       
☐ N Pleochroic @ 40X

### Anthophyllite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Birefringence Medium  
☐ w Blue e yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
☐ n ||      n       
☐ N Pleochroic @ 40X

### Cellulose 0%

☐ Flat Twisted Fibers  
☐ Anisotropic

### Synthetics 0%

☐ Even Edges  
☐ High Birefringence

### Other Fibers

Other nonfibers \_\_\_\_\_

Comments \_\_\_\_\_

### Amosite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Perpendicular Extinction  
☐ Birefringence Medium  
☐ w blue e yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
☐ n ||      n       
☐ Pleochroic @ 40X

### Actinolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Birefringence Low  
☐ w Blue e Yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
☐ n ||      n       
☐ Pleochroic @ 40X

### Mineral Wool 0%

☐ Irregular Shapes  
☐ Isotropic

### Glass Fibers 0%

☐ Straight Fibers  
☐ Isotropic

### Crocidolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (-)  
☐ Parallel Extinction  
☐ Perpendicular Extinction  
☐ Birefringence Medium  
☐ w tan e Blue  
☐ D.St. - || Yellow Yellow  
☐ Becke Line Used  
☐ n ||      n       
☐ Pleochroic @ 40X

### Tremolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Oblique Extinction 0 Angle  
☐ Birefringence Low  
☐ w Blue e Yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
☐ n ||      n       
☐ N Pleochroic @ 40X

### Perlite X

### Quartz X

### Wollastonite 0%

### CaCO X

### CaSO

### Mica

### Binder X



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NVLAP #1926

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# ENVIRONMENTAL MANAGEMENT CONSULTANTS

Lab # 26295

Pg 24 of 32

## LABORATORY ANALYSIS OF BULK ASBESTOS

Method Interim EPA 600/M4-82-020

Client SHANNON & WILSON, INC.

Purchase Order # \_\_\_\_\_

Reported To TOLLI LOWELL-FORKER

Date Received 01/15/96

Sampled From EAGLE-W.

Sampled By Client

Shipped Via FEDERAL EXPR

Client Sample ID# H12820218

Lab Sample ID# 26295-17

Sample Description \_\_\_\_\_

Colors white

Materials \_\_\_\_\_

FIBROUS MATERIAL 0%

NONFIBROUS 100%

HOMOGENEOUS Y

Textures fine grained

Location Description \_\_\_\_\_

### ESTIMATED FIBROUS CONSTITUENTS

### PLM ANALYSIS

#### Chrysotile 2%

- ☒ Wavy Fibers
- ☒ Sign of Elongation (+)
- ☒ Parallel Extinction
- ☒ Perpendicular Extinction
- ☒ Birefringence Low
- ☒ w blue e yellow
- ☒ D.St. - || Mag. - Blue
- ☒ Becke Line Used
- n || 1.556 n ⊥ 1.548
- ☒ Pleochroic @ 40X

#### Anthophyllite 0%

- ☐ Straight Fibers
- ☐ Sign of Elongation (+)
- ☐ Parallel Extinction
- ☐ Birefringence Medium
- ☐ w Blue e yellow
- ☐ D.St. - || Gold - Blue
- ☐ Becke Line Used
- n || \_\_\_\_\_ n ⊥ \_\_\_\_\_
- ☒ Pleochroic @ 40X

#### Cellulose 0%

- ☐ Flat Twisted Fibers
- ☐ Anisotropic
- ☒ Synthetics 0%
- ☐ Even Edges
- ☐ High Birefringence

#### Other Fibers

Other nonfibers \_\_\_\_\_

Comments \_\_\_\_\_

#### Amosite 0%

- ☐ Straight Fibers
- ☐ Sign of Elongation (+)
- ☐ Parallel Extinction
- ☐ Perpendicular Extinction
- ☐ Birefringence Medium
- ☐ w blue e yellow
- ☐ D.St. - || Gold - Blue
- ☐ Becke Line Used
- n || \_\_\_\_\_ n ⊥ \_\_\_\_\_
- ☐ Pleochroic @ 40X

#### Actinolite 0%

- ☐ Straight Fibers
- ☐ Sign of Elongation (+)
- ☐ Parallel Extinction
- ☐ Birefringence Low
- ☐ w Blue e Yellow
- ☐ D.St. - || Gold - Blue
- ☐ Becke Line Used
- n || \_\_\_\_\_ n ⊥ \_\_\_\_\_
- ☐ Pleochroic @ 40X

#### Mineral Wool 0%

- ☐ Irregular Shapes
- ☐ Isotropic
- ☒ Glass Fibers 0%
- ☐ Straight Fibers
- ☐ Isotropic

#### Crocidolite 0%

- ☐ Straight Fibers
- ☐ Sign of Elongation (-)
- ☐ Parallel Extinction
- ☐ Perpendicular Extinction
- ☐ Birefringence Medium
- ☐ w tan e Blue
- ☐ D.St. - || Yellow Yellow
- ☐ Becke Line Used
- n || \_\_\_\_\_ n ⊥ \_\_\_\_\_
- ☐ Pleochroic @ 40X

#### Tremolite 0%

- ☐ Straight Fibers
- ☐ Sign of Elongation (+)
- ☐ Parallel Extinction
- ☐ Oblique Extinction 0 Angle
- ☐ Birefringence Low
- ☐ w Blue e Yellow
- ☐ D.St. - || Gold - Blue
- ☐ Becke Line Used
- n || \_\_\_\_\_ n ⊥ \_\_\_\_\_
- ☒ Pleochroic @ 40X

#### Perlite

Quartz X


Wollastonite 0%

CaCO X

CaSO \_\_\_\_\_

Mica \_\_\_\_\_

Binder X



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# ENVIRONMENTAL MANAGEMENT CONSULTANTS

Lab # 26295

Pg 25 of 32

## LABORATORY ANALYSIS OF BULK ASBESTOS

Method Interim EPA 600/M4-82-020

Client SHANNON & WILSON, INC.

Purchase Order # \_\_\_\_\_

Reported To TOLLI LOWELL-FORKER

Date Received 01/15/96

Sampled From EAGLE-W.

Sampled By Client

Shipped Via FEDERAL EXPR

Client Sample ID# H12820219

Lab Sample ID# 26295-18

Sample Description roofing-1st layer

Colors black

Materials roofing-1st layer

FIBROUS MATERIAL 2%

NONFIBROUS 98%

HOMOGENEOUS N

Textures granular, resinous

Location Description \_\_\_\_\_

ESTIMATED FIBROUS CONSTITUENTS 1% cellulose, 1% synthetic

### PLM ANALYSIS

#### Chrysotile 0%

\_\_\_\_ Wavy Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w blue e yellow  
 \_\_\_\_ D.St. - || Mag. - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||      n       
 \_\_\_\_ N Pleochroic @ 40X

#### Anthophyllite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w Blue e yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||      n       
 \_\_\_\_ N Pleochroic @ 40X

#### Cellulose TR%

X Flat Twisted Fibers  
X Anisotropic

#### Synthetics TR%

X Even Edges  
X High Birefringence

#### Other Fibers \_\_\_\_\_

Other nonfibers \_\_\_\_\_

Comments \_\_\_\_\_

#### Amosite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w blue e yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||      n       
 \_\_\_\_ Pleochroic @ 40X

#### Actinolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w Blue e Yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||      n       
 \_\_\_\_ Pleochroic @ 40X

#### Mineral Wool 0%

\_\_\_\_ Irregular Shapes  
 \_\_\_\_ Isotropic

#### Glass Fibers 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Isotropic

#### Crocidolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (-)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w tan e Blue  
 \_\_\_\_ D.St. - || Yellow Yellow  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||      n       
 \_\_\_\_ Pleochroic @ 40X

#### Tremolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Oblique Extinction 0 Angle  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w Blue e Yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n ||      n       
 \_\_\_\_ N Pleochroic @ 40X

#### Perlite \_\_\_\_\_

X Quartz

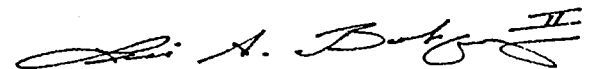
0% Wollastonite

X CaCO<sub>3</sub>

CaSO<sub>4</sub> \_\_\_\_\_

Mica \_\_\_\_\_

X Binder



Analyst Luis A. Bohorquez

NVLAP #1926

4455 EAST CAMELBACK ROAD, SUITE D-155 PHOENIX, ARIZONA 85018 (602) 840-8012 FAX: (602) 990-8468

# ENVIRONMENTAL MANAGEMENT CONSULTANTS

Lab # 26295

Pg 26 of 32

## LABORATORY ANALYSIS OF BULK ASBESTOS

Method Interim EPA 600/M4-82-020

Client SHANNON & WILSON, INC.

Purchase Order # \_\_\_\_\_

Reported To TOLLI LOWELL-FORKER

Date Received 01/15/96

Sampled From EAGLE-W.

Sampled By Client

Shipped Via FEDERAL EXPR

Client Sample ID# H12820219

Lab Sample ID# 26295-18

Sample Description roofing-2nd layer

Colors black

Materials roofing-2nd layer

FIBROUS MATERIAL 40%

NONFIBROUS 60%

HOMOGENEOUS N

Textures resinous, fibrous

Location Description \_\_\_\_\_

ESTIMATED FIBROUS CONSTITUENTS 40% cellulose

### PLM ANALYSIS

#### Chrysotile 0%

☐ Wavy Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Perpendicular Extinction  
☐ Birefringence Low  
☐ w blue e yellow  
☐ D.St. - || Mag. - L Blue  
☐ Becke Line Used  
☐ n ||        n L         
☒ N Pleochroic @ 40X

#### Anthophyllite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Birefringence Medium  
☐ w Blue e yellow  
☐ D.St. - || Gold - L Blue  
☐ Becke Line Used  
☐ n ||        n L         
☒ N Pleochroic @ 40X

#### Cellulose 40%

☒ Flat Twisted Fibers  
☒ Anisotropic  
**Synthetics 0%**  
☐ Even Edges  
☐ High Birefringence

#### Other Fibers \_\_\_\_\_

Other nonfibers \_\_\_\_\_

Comments \_\_\_\_\_

#### Amosite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Perpendicular Extinction  
☐ Birefringence Medium  
☐ w blue e yellow  
☐ D.St. - || Gold - L Blue  
☐ Becke Line Used  
☐ n ||        n L         
☐ Pleochroic @ 40X

#### Actinolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Birefringence Low  
☐ w Blue e Yellow  
☐ D.St. - || Gold - L Blue  
☐ Becke Line Used  
☐ n ||        n L         
☐ Pleochroic @ 40X

#### Mineral Wool 0%

☐ Irregular Shapes  
☐ Isotropic  
**Glass Fibers 0%**  
☐ Straight Fibers  
☐ Isotropic

#### Crocidolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (-)  
☐ Parallel Extinction  
☐ Perpendicular Extinction  
☐ Birefringence Medium  
☐ w tan e Blue  
☐ D.St. - || Yellow L Yellow  
☐ Becke Line Used  
☐ n ||        n L         
☐ Pleochroic @ 40X

#### Tremolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Oblique Extinction 0 Angle  
☐ Birefringence Low  
☐ w Blue e Yellow  
☐ D.St. - || Gold - L Blue  
☐ Becke Line Used  
☐ n ||        n L         
☒ N Pleochroic @ 40X

#### Perlite \_\_\_\_\_

**Quartz X**

**Wollastonite 0%**

**CaCO X**

**CaSO \_\_\_\_\_**

**Mica \_\_\_\_\_**

**Binder X**

Analyst Luis A. Bohorquez

NVLAP #1926

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# ENVIRONMENTAL MANAGEMENT CONSULTANTS

Lab # 26295

Pg 27 of 32

## LABORATORY ANALYSIS OF BULK ASBESTOS

Method Interim EPA 600/M4-82-020

Client SHANNON & WILSON, INC.

Purchase Order #

Reported To TOLLI LOWELL-FORKER

Date Received 01/15/96

Sampled From EAGLE-W.

Sampled By Client

Shipped Via FEDERAL EXPR

Client Sample ID# H12820220

Lab Sample ID# 26295-19

Sample Description

Colors black

Materials

FIBROUS MATERIAL 16%

NONFIBROUS 84%

HOMOGENEOUS N

Textures granular, resinous

Location Description

ESTIMATED FIBROUS CONSTITUENTS 15% chrysotile, 1% cellulose

### PLM ANALYSIS

#### Chrysotile 15%

- ☒ Wavy Fibers
- ☒ Sign of Elongation (+)
- ☒ Parallel Extinction
- ☒ Perpendicular Extinction
- ☒ Birefringence Low
- ☒ w blue e yellow
- ☒ D.St. - || Mag. - || Blue
- ☒ Becke Line Used
- n || 1.556 n || 1.548
- ☒ Pleochroic @ 40X

#### Anthophyllite 0%

- ☐ Straight Fibers
- ☐ Sign of Elongation (+)
- ☐ Parallel Extinction
- ☐ Birefringence Medium
- ☐ w Blue e yellow
- ☐ D.St. - || Gold - || Blue
- ☐ Becke Line Used
- n || n ||
- ☒ Pleochroic @ 40X

#### Cellulose 0%

- ☐ Flat Twisted Fibers
- ☐ Anisotropic
- ☒ Synthetics 0%
- ☐ Even Edges
- ☐ High Birefringence

#### Other Fibers

Other nonfibers

Comments

#### Amosite 0%

- ☐ Straight Fibers
- ☐ Sign of Elongation (+)
- ☐ Parallel Extinction
- ☐ Perpendicular Extinction
- ☐ Birefringence Medium
- ☐ w blue e yellow
- ☐ D.St. - || Gold - || Blue
- ☐ Becke Line Used
- n || n ||
- ☐ Pleochroic @ 40X

#### Actinolite 0%

- ☐ Straight Fibers
- ☐ Sign of Elongation (+)
- ☐ Parallel Extinction
- ☐ Birefringence Low
- ☐ w Blue e Yellow
- ☐ D.St. - || Gold - || Blue
- ☐ Becke Line Used
- n || n ||
- ☐ Pleochroic @ 40X

#### Mineral Wool 0%

- ☐ Irregular Shapes
- ☐ Isotropic
- ☒ Glass Fibers 0%
- ☐ Straight Fibers
- ☐ Isotropic

#### Crocidolite 0%

- ☐ Straight Fibers
- ☐ Sign of Elongation (-)
- ☐ Parallel Extinction
- ☐ Perpendicular Extinction
- ☐ Birefringence Medium
- ☐ w tan e Blue
- ☐ D.St. - || Yellow || Yellow
- ☐ Becke Line Used
- n || n ||
- ☐ Pleochroic @ 40X

#### Tremolite 0%

- ☐ Straight Fibers
- ☐ Sign of Elongation (+)
- ☐ Parallel Extinction
- ☐ Oblique Extinction 0 Angle
- ☐ Birefringence Low
- ☐ w Blue e Yellow
- ☐ D.St. - || Gold - || Blue
- ☐ Becke Line Used
- n || n ||
- ☒ Pleochroic @ 40X

#### Perlite

Quartz X

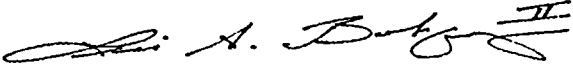
Wollastonite 0%

CaCO X

CaSO

Mica

Binder X



Analyst Luis A. Bohorquez

NVLAP #1926

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# ENVIRONMENTAL MANAGEMENT CONSULTANTS

Lab # 26295

Pg 28 of 32

LABORATORY ANALYSIS OF BULK ASBESTOS

Method Interim EPA 600/M4-82-020

Client SHANNON & WILSON, INC.

Purchase Order # \_\_\_\_\_

Reported To TOLLI LOWELL-FORKER

Date Received 01/15/96

Sampled From EAGLE-W.

Sampled By Client

Shipped Via FEDERAL EXPR

Client Sample ID# H12820211

Lab Sample ID# 26295-20

Sample Description \_\_\_\_\_

Colors brown

Materials \_\_\_\_\_

FIBROUS MATERIAL 25%

NONFIBROUS 75%

HOMOGENEOUS N

Textures rubbery, fibrous

Location Description \_\_\_\_\_

ESTIMATED FIBROUS CONSTITUENTS 15% chrysotile, 10% cellulose

## PLM ANALYSIS

### Chrysotile 15%

☒ Wavy Fibers  
☒ Sign of Elongation (+)  
☒ Parallel Extinction  
☒ Perpendicular Extinction  
☒ Birefringence Low  
☒ w blue e yellow  
☒ D.St. - || Mag. - Blue  
☒ Becke Line Used  
n || 1.556 n ⊥ 1.548  
☒ Pleochroic @ 40X

### Anthophyllite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Birefringence Medium  
☐ w Blue e yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
n || n ⊥  
☒ Pleochroic @ 40X

### Cellulose 5%

☒ Flat Twisted Fibers  
☒ Anisotropic  
Synthetics 0%  
☐ Even Edges  
☐ High Birefringence

### Other Fibers

Other nonfibers \_\_\_\_\_

Comments \_\_\_\_\_

### Amosite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Perpendicular Extinction  
☐ Birefringence Medium  
☐ w blue e yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
n || n ⊥  
☐ Pleochroic @ 40X

### Actinolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Birefringence Low  
☐ w Blue e Yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
n || n ⊥  
☐ Pleochroic @ 40X

### Mineral Wool 0%

☐ Irregular Shapes  
☐ Isotropic  
Glass Fibers 0%  
☐ Straight Fibers  
☐ Isotropic

### Crocidolite 0%

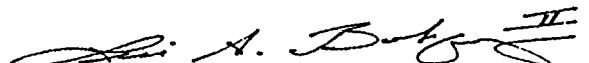
☐ Straight Fibers  
☐ Sign of Elongation (-)  
☐ Parallel Extinction  
☐ Perpendicular Extinction  
☐ Birefringence Medium  
☐ w tan e Blue  
☐ D.St. - || Yellow Yellow  
☐ Becke Line Used  
n || n ⊥  
☐ Pleochroic @ 40X

### Tremolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Oblique Extinction 0 Angle  
☐ Birefringence Low  
☐ w Blue e Yellow  
☐ D.St. - || Gold - Blue  
☐ Becke Line Used  
n || n ⊥  
☒ Pleochroic @ 40X

### Perlite

Quartz X  
Wollastonite 0%  
CaCO X  
CaSO  
Mica  
Binder X



Analyst Luis A. Bohorquez

NVLAP #1926

4455 EAST CAMELBACK ROAD, SUITE D-155 PHOENIX, ARIZONA 85018 (602) 840-8012 FAX: (602) 990-8468

# ENVIRONMENTAL MANAGEMENT CONSULTANTS

Lab # 26295

Pg 29 of 32

## LABORATORY ANALYSIS OF BULK ASBESTOS

Method Interim EPA 600/M4-82-020

Client SHANNON & WILSON, INC.

Purchase Order # \_\_\_\_\_

Reported To TOLLI LOWELL-FORKER

Date Received 01/15/96

Sampled From EAGLE-W.

Sampled By Client

Shipped Via FEDERAL EXPR

Client Sample ID# H12850221

Lab Sample ID# 26295-21

Sample Description \_\_\_\_\_

Colors black

Materials \_\_\_\_\_

FIBROUS MATERIAL 16%

NONFIBROUS 84%

HOMOGENEOUS Y

Textures resinous

Location Description \_\_\_\_\_

ESTIMATED FIBROUS CONSTITUENTS 15% chrysotile, 1% cellulose

### PLM ANALYSIS

#### Chrysotile 15%

☒ Wavy Fibers  
☒ Sign of Elongation (+)  
☒ Parallel Extinction  
☒ Perpendicular Extinction  
☒ Birefringence Low  
☒ w blue e yellow  
☒ D.St. - || Mag. - 1 Blue  
☒ Becke Line Used  
 n || 1.556 n 1 1.548  
☐ Pleochroic @ 40X

#### Anthophyllite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Birefringence Medium  
☐ w Blue e yellow  
☐ D.St. - || Gold - 1 Blue  
☐ Becke Line Used  
 n || \_\_\_\_\_ n 1 \_\_\_\_\_  
☐ Pleochroic @ 40X

#### Cellulose 0%

☐ Flat Twisted Fibers  
☐ Anisotropic  
☒ Synthetics 0%  
☐ Even Edges  
☐ High Birefringence

#### Other Fibers

Other nonfibers \_\_\_\_\_

Comments \_\_\_\_\_

#### Amosite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Perpendicular Extinction  
☐ Birefringence Medium  
☐ w blue e yellow  
☐ D.St. - || Gold - 1 Blue  
☐ Becke Line Used  
 n || \_\_\_\_\_ n 1 \_\_\_\_\_  
☐ Pleochroic @ 40X

#### Actinolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Birefringence Low  
☐ w Blue e Yellow  
☐ D.St. - || Gold - 1 Blue  
☐ Becke Line Used  
 n || \_\_\_\_\_ n 1 \_\_\_\_\_  
☐ Pleochroic @ 40X

#### Mineral Wool 0%

☐ Irregular Shapes  
☐ Isotropic  
☒ Glass Fibers 0%  
☐ Straight Fibers  
☐ Isotropic

#### Crocidolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (-)  
☐ Parallel Extinction  
☐ Perpendicular Extinction  
☐ Birefringence Medium  
☐ w tan e Blue  
☐ D.St. - || Yellow 1 Yellow  
☐ Becke Line Used  
 n || \_\_\_\_\_ n 1 \_\_\_\_\_  
☐ Pleochroic @ 40X

#### Tremolite 0%

☐ Straight Fibers  
☐ Sign of Elongation (+)  
☐ Parallel Extinction  
☐ Oblique Extinction 0 Angle  
☐ Birefringence Low  
☐ w Blue e Yellow  
☐ D.St. - || Gold - 1 Blue  
☐ Becke Line Used  
 n || \_\_\_\_\_ n 1 \_\_\_\_\_  
☐ Pleochroic @ 40X

#### Perlite

Quartz X

Wollastonite 0%

CaCO X

CaSO \_\_\_\_\_

Mica \_\_\_\_\_

Binder X

Analyst Luis A. Bohorquez

NVLAP #1926

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# ENVIRONMENTAL MANAGEMENT CONSULTANTS

Lab # 26295

Pg 30 of 32

## LABORATORY ANALYSIS OF BULK ASBESTOS

Method Interim EPA 600/M4-82-020

Client SHANNON & WILSON, INC.

Purchase Order # \_\_\_\_\_

Reported To TOLLI LOWELL-FORKER

Date Received 01/15/96

Sampled From EAGLE-W.

Sampled By Client

Shipped Via FEDERAL EXPR

Client Sample ID# H12820222

Lab Sample ID# 26295-22

Sample Description \_\_\_\_\_

Colors black

Materials \_\_\_\_\_

FIBROUS MATERIAL 41%

NONFIBROUS 59%

HOMOGENEOUS N

Textures granular, flaky, resinous, fibrous

Location Description \_\_\_\_\_

ESTIMATED FIBROUS CONSTITUENTS 40% cellulose, 1% synthetic

### PLM ANALYSIS

#### Chrysotile 0%

\_\_\_\_ Wavy Fibers  
\_\_\_\_ Sign of Elongation (+)  
\_\_\_\_ Parallel Extinction  
\_\_\_\_ Perpendicular Extinction  
\_\_\_\_ Birefringence Low  
\_\_\_\_ w blue e yellow  
\_\_\_\_ D.St. - || Mag. - Blue  
\_\_\_\_ Becke Line Used  
\_\_\_\_ n || Blue n Blue  
\_\_\_\_ N Pleochroic @ 40X

#### Amosite 0%

\_\_\_\_ Straight Fibers  
\_\_\_\_ Sign of Elongation (+)  
\_\_\_\_ Parallel Extinction  
\_\_\_\_ Perpendicular Extinction  
\_\_\_\_ Birefringence Medium  
\_\_\_\_ w blue e yellow  
\_\_\_\_ D.St. - || Gold - Blue  
\_\_\_\_ Becke Line Used  
\_\_\_\_ n || Blue n Blue  
\_\_\_\_ Pleochroic @ 40X

#### Crocidolite 0%

\_\_\_\_ Straight Fibers  
\_\_\_\_ Sign of Elongation (-)  
\_\_\_\_ Parallel Extinction  
\_\_\_\_ Perpendicular Extinction  
\_\_\_\_ Birefringence Medium  
\_\_\_\_ w tan e Blue  
\_\_\_\_ D.St. - || Yellow Yellow  
\_\_\_\_ Becke Line Used  
\_\_\_\_ n || Blue n Blue  
\_\_\_\_ Pleochroic @ 40X

#### Anthophyllite 0%

\_\_\_\_ Straight Fibers  
\_\_\_\_ Sign of Elongation (+)  
\_\_\_\_ Parallel Extinction  
\_\_\_\_ Birefringence Medium  
\_\_\_\_ w Blue e yellow  
\_\_\_\_ D.St. - || Gold - Blue  
\_\_\_\_ Becke Line Used  
\_\_\_\_ n || Blue n Blue  
\_\_\_\_ N Pleochroic @ 40X

#### Actinolite 0%

\_\_\_\_ Straight Fibers  
\_\_\_\_ Sign of Elongation (+)  
\_\_\_\_ Parallel Extinction  
\_\_\_\_ Birefringence Low  
\_\_\_\_ w Blue e Yellow  
\_\_\_\_ D.St. - || Gold - Blue  
\_\_\_\_ Becke Line Used  
\_\_\_\_ n || Blue n Blue  
\_\_\_\_ Pleochroic @ 40X

#### Tremolite 0%

\_\_\_\_ Straight Fibers  
\_\_\_\_ Sign of Elongation (+)  
\_\_\_\_ Parallel Extinction  
\_\_\_\_ Oblique Extinction 0 Angle  
\_\_\_\_ Birefringence Low  
\_\_\_\_ w Blue e Yellow  
\_\_\_\_ D.St. - || Gold - Blue  
\_\_\_\_ Becke Line Used  
\_\_\_\_ n || Blue n Blue  
\_\_\_\_ N Pleochroic @ 40X

#### Cellulose 40%

X Flat Twisted Fibers  
X Anisotropic

#### Synthetics 5%

X Even Edges  
X High Birefringence

#### Mineral Wool 0%

\_\_\_\_ Irregular Shapes  
\_\_\_\_ Isotropic

#### Glass Fibers 0%

\_\_\_\_ Straight Fibers  
\_\_\_\_ Isotropic

#### Perlite

X Quartz

#### Wollastonite 0%

X CaCO<sub>3</sub>

CaSO<sub>4</sub>

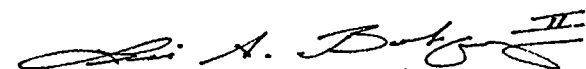
Mica

Binder X

#### Other Fibers

Other nonfibers \_\_\_\_\_

Comments \_\_\_\_\_



Analyst Luis A. Bohorquez

NVLAP #1926

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# ENVIRONMENTAL MANAGEMENT CONSULTANTS

Lab # 26295

Pg 31 of 32

## LABORATORY ANALYSIS OF BULK ASBESTOS

Method Interim EPA 600/M4-82-020

Client SHANNON & WILSON, INC.

Purchase Order # \_\_\_\_\_

Reported To TOLLI LOWELL-FORKER

Date Received 01/15/96

Sampled From EAGLE-W.

Sampled By Client

Shipped Via FEDERAL EXPR

Client Sample ID# H12820223

Lab Sample ID# 26295-23

Sample Description \_\_\_\_\_

Colors white, black, spotted

Materials \_\_\_\_\_

FIBROUS MATERIAL 0%

NONFIBROUS

100%

HOMOGENEOUS

N

Textures smooth

Location Description \_\_\_\_\_

### ESTIMATED FIBROUS CONSTITUENTS

### PLM ANALYSIS

#### Chrysotile 3%

- ☒ Wavy Fibers
- ☒ Sign of Elongation (+)
- ☒ Parallel Extinction
- ☒ Perpendicular Extinction
- ☒ Birefringence Low
- ☒ w blue e yellow
- ☒ D.St. - || Mag. - Blue
- ☒ Becke Line Used
- n || 1.556 n 1.548
- ☒ Pleochroic @ 40X

#### Anthophyllite 0%

- ☐ Straight Fibers
- ☐ Sign of Elongation (+)
- ☐ Parallel Extinction
- ☐ Birefringence Medium
- ☐ w Blue e yellow
- ☐ D.St. - || Gold - Blue
- ☐ Becke Line Used
- n || \_\_\_\_\_ n 1.548
- ☒ Pleochroic @ 40X

#### Cellulose 0%

- ☐ Flat Twisted Fibers
- ☐ Anisotropic
- ☒ Synthetics 0%
- ☐ Even Edges
- ☐ High Birefringence

#### Other Fibers

Other nonfibers \_\_\_\_\_

Comments insufficient mastic/adhesive for analysis

#### Amosite 0%

- ☐ Straight Fibers
- ☐ Sign of Elongation (+)
- ☐ Parallel Extinction
- ☐ Perpendicular Extinction
- ☐ Birefringence Medium
- ☐ w blue e yellow
- ☐ D.St. - || Gold - Blue
- ☐ Becke Line Used
- n || \_\_\_\_\_ n 1.548
- ☐ Pleochroic @ 40X

#### Actinolite 0%

- ☐ Straight Fibers
- ☐ Sign of Elongation (+)
- ☐ Parallel Extinction
- ☐ Birefringence Low
- ☐ w Blue e Yellow
- ☐ D.St. - || Gold - Blue
- ☐ Becke Line Used
- n || \_\_\_\_\_ n 1.548
- ☐ Pleochroic @ 40X

#### Mineral Wool 0%

- ☐ Irregular Shapes
- ☐ Isotropic
- ☒ Glass Fibers 0%
- ☐ Straight Fibers
- ☐ Isotropic

#### Crocidolite 0%

- ☐ Straight Fibers
- ☐ Sign of Elongation (-)
- ☐ Parallel Extinction
- ☐ Perpendicular Extinction
- ☐ Birefringence Medium
- ☐ w tan e Blue
- ☐ D.St. - || Yellow Yellow
- ☐ Becke Line Used
- n || \_\_\_\_\_ n 1.548
- ☐ Pleochroic @ 40X

#### Tremolite 0%

- ☐ Straight Fibers
- ☐ Sign of Elongation (+)
- ☐ Parallel Extinction
- ☐ Oblique Extinction 0 Angle
- ☐ Birefringence Low
- ☐ w Blue e Yellow
- ☐ D.St. - || Gold - Blue
- ☐ Becke Line Used
- n || \_\_\_\_\_ n 1.548
- ☒ Pleochroic @ 40X

#### Perlite

Quartz ☒

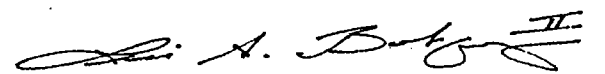
Wollastonite 0%

CaCO ☒

CaSO \_\_\_\_\_

Mica \_\_\_\_\_

Binder ☒



Analyst Luis A. Bohorquez

NVLAP #1926

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# ENVIRONMENTAL MANAGEMENT CONSULTANTS

Lab # 26295

Pg 32 of 32

## LABORATORY ANALYSIS OF BULK ASBESTOS

Method Interim EPA 600/M4-82-020

Client SHANNON & WILSON, INC.

Purchase Order # \_\_\_\_\_

Reported To TOLLI LOWELL-FORKER

Date Received 01/15/96

Sampled From EAGLE-W.

Sampled By Client

Shipped Via FEDERAL EXPR

Client Sample ID# H12820224

Lab Sample ID# 26295-24

Sample Description \_\_\_\_\_

Colors gold

Materials \_\_\_\_\_

FIBROUS MATERIAL 1%

NONFIBROUS

99%

HOMOGENEOUS

Y

Textures resinous

Location Description \_\_\_\_\_

ESTIMATED FIBROUS CONSTITUENTS 1% cellulose

### PLM ANALYSIS

#### Chrysotile 0%

\_\_\_\_ Wavy Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w blue e yellow  
 \_\_\_\_ D.St. - || Mag. - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n || \_\_\_\_\_ n ⊥ \_\_\_\_\_  
 N Pleochroic @ 40X

#### Anthophyllite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w Blue e yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n || \_\_\_\_\_ n ⊥ \_\_\_\_\_  
 N Pleochroic @ 40X

#### Cellulose 0%

\_\_\_\_ Flat Twisted Fibers  
 \_\_\_\_ Anisotropic  
Synthetics 0%  
 \_\_\_\_ Even Edges  
 \_\_\_\_ High Birefringence

#### Other Fibers

Other nonfibers \_\_\_\_\_

Comments \_\_\_\_\_

#### Amosite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w blue e yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n || \_\_\_\_\_ n ⊥ \_\_\_\_\_  
 Pleochroic @ 40X

#### Actinolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w Blue e Yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n || \_\_\_\_\_ n ⊥ \_\_\_\_\_  
 Pleochroic @ 40X

#### Mineral Wool 0%

\_\_\_\_ Irregular Shapes  
 \_\_\_\_ Isotropic  
Glass Fibers 0%  
 \_\_\_\_ Straight Fibers  
 \_\_\_\_ Isotropic

#### Crocidolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (-)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Perpendicular Extinction  
 \_\_\_\_ Birefringence Medium  
 \_\_\_\_ w tan e Blue  
 \_\_\_\_ D.St. - || Yellow Yellow  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n || \_\_\_\_\_ n ⊥ \_\_\_\_\_  
 Pleochroic @ 40X

#### Tremolite 0%

\_\_\_\_ Straight Fibers  
 \_\_\_\_ Sign of Elongation (+)  
 \_\_\_\_ Parallel Extinction  
 \_\_\_\_ Oblique Extinction 0 Angle  
 \_\_\_\_ Birefringence Low  
 \_\_\_\_ w Blue e Yellow  
 \_\_\_\_ D.St. - || Gold - Blue  
 \_\_\_\_ Becke Line Used  
 \_\_\_\_ n || \_\_\_\_\_ n ⊥ \_\_\_\_\_  
 N Pleochroic @ 40X

#### Perlite

Quartz X

Wollastonite 0%

CaCO X

CaSO \_\_\_\_\_

Mica X

Binder X



Analyst Luis A. Bohorquez

NVLAP #1926

4455 EAST CAMELBACK ROAD, SUITE D-155 PHOENIX, ARIZONA 85018 (602) 840-8012 FAX: (602) 990-8468

**APPENDIX B**  
**RESULTS OF LEAD ANALYSIS**



4455 EAST CAMELBACK RD., SUITE D-155 / PHOENIX, ARIZONA 85018 / 602-840-8012 / FAX 602-990-8468

**RESULT OF LEAD ANALYSIS  
BY FLAME ATOMIC ABSORPTION  
PAINT CHIP SAMPLES  
(EPA METHOD SW-846)**

Page 1

EMC LAB #: 3808	DATE REC'D: 01/15/96
CLIENT: Shannon & Wilson, Inc.	REPORT DATE: 01/24/96
CLIENT ADDRESS: 400 N. 34th St, STE 100 Seattle, WA 98103	P.O. NO.:
PROJECT NAME: Eagle-Wenatchee	PROJ. #: H-1282-02

EMC SAMPLE #	SAMPLE DATE /96	CLIENT SAMPLE # H128202PB-	DESCRIPTION	DETECTION LIMIT	% Pb BY WEIGHT
1	1/11	01	B-1	0.005	1.347
2	1/11	02	1-1	0.001	0.207
3	1/11	03	1-8	0.016	9.730
4	1/11	04	Paint Chips	0.065	23.080
5	1/11	05	Trim	0.085	18.600
6	1/11	06	Shop 2	0.001	0.006

= Dilution Factor Changed  
= Excessive Substrate May Bias Sample Results  
DL = Below Detectable Limits

This report applies to the standards or procedures identified and to the samples tested only. The test results are not necessarily indicative or representative of the qualities of the lot from which the sample was taken or of apparently identical or similar products, nor do they represent an ongoing quality assurance program unless so noted.

Where it is noted that a sample with excessive substrate was submitted for laboratory analysis, such analysis may be biased. The lead content of such sample may, in actuality, be greater than reported. EMC makes no warranty, express or implied, as to the accuracy of the analysis of samples noted to have been submitted with excessive substrate. Resampling is recommended in such situations to verify original laboratory results.

These reports are for the exclusive use of the addressed client and are rendered upon the condition that they will not be reproduced wholly or in part for advertising or other purposes over our signature or in connection with our name without special written permission. Samples not destroyed in testing are retained a maximum of thirty (30) days.

ANALYST:

George Rasmussen





4455 EAST CAMELBACK RD., SUITE D-155 / PHOENIX, ARIZONA 85018 / 602-840-8012 / FAX 602-990-8468

**RESULT OF LEAD ANALYSIS  
BY FLAME ATOMIC ABSORPTION  
PAINT CHIP SAMPLES  
(EPA METHOD SW-846)**

Page 1

EMC LAB #: 3808	DATE REC'D: 1/15/96
CLIENT: Shannon & Wilson	REPORT DATE: 01/24/96
CLIENT ADDRESS: 400 N. 34th St, STE 100 Seattle, WA 98103	P.O. NO.:
PROJECT NAME: Eagle-Wenatchee	PROJ. #: H-1282-02

EMC SAMPLE #	SAMPLE DATE /96	CLIENT SAMPLE #	DESCRIPTION	DETECTION LIMIT IN PPM	PPM
1	1/11	01	B-1	50.0	13470.0
2	1/11	02	1-1	10.0	2070.0
3	1/11	03	1-8	160.0	97300.0
4	1/11	04	Paint Chips	650.0	230800.0
5	1/11	05	Trim	850.0	186000.0
6	1/11	06	Shop 2	10.0	60.0

- = Dilution Factor Changed
- = Excessive Substrate May Bias Sample Results
- L = Below Detectable Limits

This report applies to the standards or procedures identified and to the samples tested only. The test results are not necessarily indicative or representative of the qualities of the lot from which the sample was taken or of apparently identical or similar products, nor do they represent an ongoing quality assurance program unless so noted.

Where it is noted that a sample with excessive substrate was submitted for laboratory analysis, such analysis may be biased. The lead content of such sample may, in actuality, be greater than reported. EMC makes no warranty, express or implied, as to the accuracy of the analysis of samples noted to have been submitted with excessive substrate. Resampling is recommended in such situations to verify original laboratory results.

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ANALYST:

George Rasmussen





**APPENDIX C**  
**IMPORTANT INFORMATION ABOUT YOUR**  
**ENVIRONMENTAL REPORT**



Dated: February 8, 1996

To: J-U-B Engineers, Inc.

Attn: Mr. Vince Loftus

## **Important Information About Your Geotechnical/Environmental Report**

### **CONSULTING SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES AND FOR SPECIFIC CLIENTS.**

Consultants prepare reports to meet the specific needs of specific individuals. A report prepared for a civil engineer may not be adequate for a construction contractor or even another civil engineer. Unless indicated otherwise, your consultant prepared your report expressly for you and expressly for the purposes you indicated. No one other than you should apply this report for its intended purpose without first conferring with the consultant. No party should apply this report for any purpose other than that originally contemplated without first conferring with the consultant.

### **THE CONSULTANT'S REPORT IS BASED ON PROJECT-SPECIFIC FACTORS.**

A geotechnical/environmental report is based on a subsurface exploration plan designed to consider a unique set of project-specific factors. Depending on the project, these may include: the general nature of the structure and property involved; its size and configuration; its historical use and practice; the location of the structure on the site and its orientation; other improvements such as access roads, parking lots, and underground utilities; and the additional risk created by scope-of-service limitations imposed by the client. To help avoid costly problems, ask the consultant to evaluate how any factors that change subsequent to the date of the report may affect the recommendations. Unless your consultant indicates otherwise, your report should not be used: (1) when the nature of the proposed project is changed (for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one, or chemicals are discovered on or near the site); (2) when the size, elevation, or configuration of the proposed project is altered; (3) when the location or orientation of the proposed project is modified; (4) when there is a change of ownership; or (5) for application to an adjacent site. Consultants cannot accept responsibility for problems that may occur if they are not consulted after factors which were considered in the development of the report have changed.

### **SUBSURFACE CONDITIONS CAN CHANGE.**

Subsurface conditions may be affected as a result of natural processes or human activity. Because a geotechnical/environmental report is based on conditions that existed at the time of subsurface exploration, construction decisions should not be based on a report whose adequacy may have been affected by time. Ask the consultant to advise if additional tests are desirable before construction starts; for example, groundwater conditions commonly vary seasonally.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes, or groundwater fluctuations may also affect subsurface conditions and, thus, the continuing adequacy of a geotechnical/environmental report. The consultant should be kept apprised of any such events, and should be consulted to determine if additional tests are necessary.

### **MOST RECOMMENDATIONS ARE PROFESSIONAL JUDGMENTS.**

Site exploration and testing identifies actual surface and subsurface conditions only at those points where samples are taken. The data were extrapolated by your consultant, who then applied judgment to render an opinion about overall subsurface conditions. The actual interface between materials may be far more gradual or abrupt than your report indicates. Actual conditions in areas not sampled may differ from those predicted in your report. While nothing can be done to prevent such situations, you and your consultant can work together to help reduce their impacts. Retaining your consultant to observe subsurface construction operations can be particularly beneficial in this respect.

## **A REPORT'S CONCLUSIONS ARE PRELIMINARY.**

The conclusions contained in your consultant's report are preliminary because they must be based on the assumption that conditions revealed through selective exploratory sampling are indicative of actual conditions throughout a site. Actual subsurface conditions can be discerned only during earthwork; therefore, you should retain your consultant to observe actual conditions and to provide conclusions. Only the consultant who prepared the report is fully familiar with the background information needed to determine whether or not the report's recommendations based on those conclusions are valid and whether or not the contractor is abiding by applicable recommendations. The consultant who developed your report cannot assume responsibility or liability for the adequacy of the report's recommendations if another party is retained to observe construction.

## **THE CONSULTANT'S REPORT IS SUBJECT TO MISINTERPRETATION.**

Costly problems can occur when other design professionals develop their plans based on misinterpretation of a geotechnical/environmental report. To help avoid these problems, the consultant should be retained to work with other project design professionals to explain relevant geotechnical, geological, hydrogeological, and environmental findings, and to review the adequacy of their plans and specifications relative to these issues.

## **BORING LOGS AND/OR MONITORING WELL DATA SHOULD NOT BE SEPARATED FROM THE REPORT.**

Final boring logs developed by the consultant are based upon interpretation of field logs (assembled by site personnel), field test results, and laboratory and/or office evaluation of field samples and data. Only final boring logs and data are customarily included in geotechnical/environmental reports. These final logs should not, under any circumstances, be redrawn for inclusion in architectural or other design drawings, because drafters may commit errors or omissions in the transfer process.

To reduce the likelihood of boring log or monitoring well misinterpretation, contractors should be given ready access to the complete geotechnical engineering/environmental report prepared or authorized for their use. If access is provided only to the report prepared for you, you should advise contractors of the report's limitations, assuming that a contractor was not one of the specific persons for whom the report was prepared, and that developing construction cost estimates was not one of the specific purposes for which it was prepared. While a contractor may gain important knowledge from a report prepared for another party, the contractor should discuss the report with your consultant and perform the additional or alternative work believed necessary to obtain the data specifically appropriate for construction cost estimating purposes. Some clients hold the mistaken impression that simply disclaiming responsibility for the accuracy of subsurface information always insulates them from attendant liability. Providing the best available information to contractors helps prevent costly construction problems and the adversarial attitudes that aggravate them to a disproportionate scale.

## **READ RESPONSIBILITY CLAUSES CLOSELY.**

Because geotechnical/environmental engineering is based extensively on judgment and opinion, it is far less exact than other design disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, consultants have developed a number of clauses for use in their contracts, reports and other documents. These responsibility clauses are not exculpatory clauses designed to transfer the consultant's liabilities to other parties; rather, they are definitive clauses that identify where the consultant's responsibilities begin and end. Their use helps all parties involved recognize their individual responsibilities and take appropriate action. Some of these definitive clauses are likely to appear in your report, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to your questions.

The preceding paragraphs are based on information provided by the  
ASFE/Association of Engineering Firms Practicing in the Geosciences, Silver Spring, Maryland

***APPENDIX E - RESTRICTIVE COVENANT***



**RETURN ADDRESS**

Name Paul A. Klat, P.E., I-L-B ENGINEERS, INC.  
Address 1250 Ironwood Drive, Suite 220  
City, State, Zip Coeur d'Alene, ID 83814

Document Title(s) (or transactions contained therein):

1. Restrictive Covenant
- 2.
- 3.
- 4.

Reference Number(s) of Documents assigned or released: N/A  
(on page \_\_\_\_\_ of document(s))

Grantor(s) (Last name first, then first name and initial(s))

1. EAGLE HARDWARE & GARDEN, INC.
- 2.
- 3.
- 4.
5. ☐ Additional names on page \_\_\_\_\_ of document.

Grantee(s) (Last name first, then first name and initial(s)) N/A

- 1.
- 2.
- 3.
- 4.
5. ☐ Additional names on page \_\_\_\_\_ of document.

Legal Description (abbreviated: i.e., lot, block, plat or section, township, range)

Lots 1, 2 and 3, Block 9, Second Suburban Home Addition; and Lots 1, 2 and 3, Block 1,  
and Lots 3 and 4, Block 2, Smith Park.

☒ Additional legal is on page 1 of document.

Assessor's Property Tax Parcel/Account Number 232034857005

☐ Additional legal is on page \_\_\_\_\_ of document.

The Auditor/Recorder will rely on the information provided on the form. The staff will not read the document to verify the accuracy or completeness of the indexing information provided herein.

**WASHINGTON STATE COUNTY AUDITOR/RECORDER'S  
INDEXING FORM (Cover Sheet)**

## RESTRICTIVE COVENANT

Notice is hereby given that the property which is the subject of this Restrictive Covenant and is legally described as:

Lots 1, 2 and 3, Block 9, Second Suburban Home Addition to Wenatchee, Chelan County, Washington, according to the plat thereof recorded in Volume 1 of Plats, Page 23,

AND

Lots 1, 2 and 3, Block 1, and Lots 3 and 4, Block 2, Smith Park of Wenatchee, Chelan County, Washington, according to the plat thereof recorded in Volume 1 of Plats, Pages 39 and 40

("Property"), was the subject of remedial action under Chapter 70.105D RCW. The work done in the remedial action ("Cleanup Action") is described in the report dated\_\_\_\_, 1997 under the Independent Remedial Action Program and in the exhibits included in the report. The report is kept in the central files at the Washington State Department of Ecology, Central Regional Office.

This Restrictive Covenant is required by WAC 173-340-440 because some of the subsurface soil remaining on the Property contains concentrations of lead, arsenic and DDT based pesticides contamination which exceed Model Toxics Control Act method A cleanup levels established under WAC 173-340-740. Accordingly, certain engineering controls have been put in place on the Property to deal with such soil and are described in Exhibit A attached hereto.

The undersigned Eagle Hardware & Garden, Inc. is the fee owner ("Owner") of the Property and makes the following declaration as to limitations, restrictions, and uses to which the Property may be put. The Owner intends that these declarations will constitute covenants to run with the land, as provided by law, and will be binding on all parties and all persons claiming under them, including current and future owners who acquire any portion of or interest in the Property.

Potential purchasers and lessors of the Property are put on notice that:

1. The State of Washington Department of Ecology has authority under RCW 70.105D.030 to enforce this Restrictive Covenant.
2. Any activity on the site that may result in the exposure of hazardous substances to human health and the environment is prohibited.
3. The Owner of the Property must give written notice to the Department of Ecology, or to a successor agency, of the Owner's conveyance of any interest in the Property.
4. The Owner must require compliance with this Restrictive Covenant whenever interest in the Property is conveyed by title or an easement or lease is granted. The Owner of the Property must furnish a copy of the No-Further-Action Letter to any transferee of such real property interest.

- 5 The Owner of the Property must notify and obtain approval from the Department of Ecology, or from a successor agency, prior to any use of the property that is inconsistent with the terms of this Restrictive Covenant. The Department of Ecology or its successor agency may approve an amendment to the Restrictive Covenant following public notice and comment on the Owner's request.
- 6 The Owner must allow designated representatives of the Department of Ecology, or successor agency, to enter the Property at reasonable times given reasonable notice for the purpose of evaluating compliance with the No-Further-Action Letter or reviewing the effectiveness of the Cleanup Action.
7. The Owner may request the Department of Ecology to remove the Restrictive Covenant or certain restrictions contained within the Restrictive Covenant whenever the residual hazardous substances remaining at the Property are reduced in concentration such that the method A cleanup levels, established under WAC 173-340-740 are met without a conditional point of compliance. The Department of Ecology will remove the Restrictive Covenant or other restrictions if the department, after public notice and opportunity for comment, agrees with the Owner's request.

Executed this \_\_\_\_\_ day of \_\_\_\_\_, 1997.

EAGLE HARDWARE & GARDEN, INC.

By: \_\_\_\_\_

\_\_\_\_\_  
Printed Name

\_\_\_\_\_  
Title

Approved:

State of Washington  
Department of Ecology  
Christine O. Gregoire  
Attorney General

By: \_\_\_\_\_  
Assistant Attorney General

STATE OF WASHINGTON  
COUNTY OF KING

} ss.

I certify that I know or have satisfactory evidence that \_\_\_\_\_ is the person who appeared before me, and said person acknowledged that said person signed this instrument, on oath stated that said person was authorized to execute the instrument and acknowledged it as the \_\_\_\_\_ of Eagle Hardware & Garden, Inc., to be the free and voluntary act of such corporation for the uses and purposes mentioned in the instrument.

Dated this \_\_\_\_\_ day of \_\_\_\_\_, 1997.

\_\_\_\_\_  
Signature of Notary

\_\_\_\_\_  
(Legibly Print or Stamp Name of Notary)

Notary public in and for the state of  
Washington, residing at \_\_\_\_\_  
My appointment expires \_\_\_\_\_



Soil contamination exists at the Eagle Hardware and Garden, Inc. property in Wenatchee, Washington. Constituents of concern in the soil are total lead, total arsenic and DDT derivatives above the Model Toxics Control Act "Method A" clean-up levels, WAC 173-340-740. Contamination resulted from the agronomic application of pesticides to a pear orchard. Contamination was generally limited to the top 24-36 inches and dispersed throughout the site by the agricultural activities prior to the construction of the Eagle store in 1996. The constituents of concern are not readily mobile within the soil column.

To assure protection to human health and the environment, protective capping of the contaminated soil with building slabs or paving was the chosen remedial action for the subject site. In areas where soil is to remain exposed due to landscape plantings, the native soils were excavated to a depth of at least 36 inches and used as backfill under impervious surfaces elsewhere on the site. Fruit trees, roots, grasses and other organic debris were burned at the subject site prior to development of the Eagle Store. The residues from the on-site burning were spread throughout the site, incorporating them into the native soils.

The southeast quadrant of the site had contamination at a slightly deeper level (to approximately 48 inches). Consequently, native soils in the southeast quadrant of the site were removed to a depth of 48 inches below original ground surface. Due to the regrading of the Eagle site, the interior planters between the east side of the Eagle store and the property line could not be excavated to a depth of four feet below original ground surface. In those areas, the planters were excavated to a depth of three feet below finish grade and layer of geotextile fabric was placed at the bottom of the excavation to indicate a separation between clean fill material and potentially contaminated native soils.

Clean soil was mined from on-site by stripping the native soil to a depth of at least 36 inches before mining soils for the planter areas. Soils were mined at convenient locations around the site, primarily on the north half and western perimeters. Contaminated soil excavated from the planter areas was utilized as fill material elsewhere on the site and placed under impermeable concrete and asphalt surfaces.

Stormwater infiltration has been limited to the clean soil in the planter areas which constitute about 6.5% of the property, or 0.65 acres. The majority of the stormwater is piped directly to the City of Wenatchee's stormwater conveyance system.

The attached Figure 1 shows the final site development for the Eagle Hardware and Garden store in Wenatchee.

PROPERTY LINE (TYP.)

ASPHALT PARKING & DRIVEWAYS THROUGHOUT

BUILDING MATERIALS AREA



**EAGLE**  
HARDWARE & GARDEN

MAIN RETAIL AREA  
FINISHED FLOOR  
ELEV. 658

WILMA WALKER AVENUE

SCALE: AS SHOWN	DATE: 1997	DRAWN BY: JWB
DESIGNED BY: JWB	CHECKED BY: JWB	DATE: 1997
PROJECT: 1 - 1117 1/2 E. 10th Ave. RESTRICTED CONSTRUCTION EAGLE HARDWARE - MAIN FLOOR		

**APPENDIX F - SAMPLE RESULTS AND CHAIN OF CUSTODY**

**SVL ANALYTICAL, INC.**

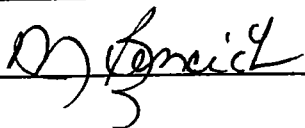
One Government Gulch ■ P.O. Box 929 ■ Kellogg, Idaho 83827-0929 ■ Phone: (208)784-1258 ■ Fax: (208)783-0891

**REPORT OF ANALYTICAL RESULTS**CLIENT : J-U-B Engineers, Inc.  
Sample Receipt : 12/12/96SVL JOB No. : 63200  
Date of Report : 12/27/96

Page 1 of 1

SVL ID	CLIENT SAMPLE ID	Test Method	As 200.7	Pb 200.7	% Sol. 999
S131928	SE	12/11/96	<4.0mg/kg	43.9mg/kg	84.4%
S131929	SF	12/11/96	<4.0mg/kg	31.7mg/kg	85.3%
S131930	SCF	12/11/96	<4.0mg/kg	12.3mg/kg	83.8%
S131931	SW	12/11/96	<4.0mg/kg	<4.0mg/kg	86.4%
S131932	WC	12/11/96	<4.0mg/kg	<4.0mg/kg	85.6%
S131933	NW	12/11/96	<4.0mg/kg	13.2mg/kg	81.1%
S131934	NF	12/11/96	<4.0mg/kg	16.7mg/kg	83.1%
S131935	NE	12/11/96	<4.0mg/kg	4.4mg/kg	83.6%
S131936	NCF	12/11/96	<4.0mg/kg	22.9mg/kg	86.1%
S131937	NC	12/11/96	<4.0mg/kg	49.4mg/kg	83.3%
S131938	SC	12/11/96	<4.0mg/kg	21.0mg/kg	83.5%
Soil Samples: As Received Basis					

Reviewed By: \_\_\_\_\_



Date: 12/27/96

## Part I Prep Blank and Laboratory Control Sample

Client :J-U-B Engineers, Inc.

SVL JOB No. :63200

Analyte	Method	Matrix	Units	Prep Blank	True—LCS—Found		LCS %R	Analysis Date
Arsenic	200.7	SOIL	mg/kg	<4.0	164	181	110.4	12/26/96
Lead	200.7	SOIL	mg/kg	<4.0	96.1	95.9	99.8	12/26/96
% Solids	999	SOIL	%		N/A		N/A	12/25/96

## LEGEND:

LCS = Laboratory Control Sample

LCS %R = LCS Percent Recovery

N/A = Not Applicable



Part II Duplicate and Spike Analysis

Client :J-U-B Engineers, Inc.

SVL JOB No. :63200

Test Method Matrix	QC SAMPLE ID		Duplicate		Matrix Spike			Test Date
	Units	Result	Result	RPD%	Result	SPK ADD	%R	
As 200.7 SOIL	1 mg/kg	<4.0	5.30	200.0	110	100	110.0	12/26/96
, 200.7 SOIL	1 mg/kg	43.9	55.0	22.4	143	100	99.1	12/26/96
Sol. 999 SOIL	1 %	84.4	82.2	2.6	N/A	N/A	N/A	12/19/96

LEGEND:

$PD\% = (|SAM - DUP| / ((SAM + DUP) / 2)) * 100$       Duplicate may be MSD for organics.      UDL = Both SAM & DUP not detected.  
 SPIKE ADD column, A = Post Digest Spike; %R = Percent Recovery N/A = Not Analyzed; R > 4S = Result more than 4X the Spike Added  
 QC Sample 1: SVL SAM No.: 131928 Client Sample ID: SE



**NOTES:**

### Table 1. -- Matrix Type

- 1) Specify QC samples if desired.
- 2) Ensure proper container packaging.
- 3) Ship samples promptly following collection

FOR SVL USE ONLY

SVL JOB #

U3200

Phone Number: 667.1574

Lab Name: **SVL Analytical, Inc.** (208) 784-1258 FAX (208) 783-0891

Address: **One Government Gulch, Kellogg, ID 83837-0929**

## Analyses Required

Sample ID	Collection		Miscellaneous				Preservative(s)					Comments	
	Date	Time	Collected by: (Init.)	Matrix Type From Table 1	No. of Containers	Sample Filtered ? Y/N	Unpreserved (Ice Only)	HNO3	HCL	H2SO4	NaOH		Other (Specify)
1. SE	12/11/96	12:02	JF	3	1								CALL FOR ANALYSES
2. SF	"	12:36											
3. SCF	"	12:31											
4. SW	"	12:50											
5. WIC	"	12:58											
6. NW	"	1:13											
7. NF	"	1:29											
8. NE	"	1:40											
9. NCF	"	1:54											
10. NC	"	9:06											
Relinquished by: JIM F. KARD			Date: 12/12/96	Time: 7:55		Received by: J. Melkman		Date: 12-12-96	Time: 7:58				
Relinquished by:			Date:	Time:		Received by: J. Melkman		Date: 12-12-96	Time: 8:45				

## Delivery Method

**White: LAB COPY**

**Yellow: CUSTOMER COPY**

SVL-COC 5/93



# CHAIN OF CUSTODY RECORD

Client: 44B  
Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Phone Number: 666-1574

NOTES:

- 1) Specify QC samples if desired.
- 2) Ensure proper container packaging.
- 3) Ship samples promptly following collection.

Table 1. -- Matrix Type

- 1 = Surface Water, 2 = Ground Water
- 3 = Soil/Sediment, 4 = Rinsate, 5 = Oil
- 6 = Waste, 7 = Other (Specify)

FOR SVL USE ONLY  
SVL JOB # \_\_\_\_\_

Sample ID	Collection		Miscellaneous			Preservative(s)					Comments		
	Date	Time	Collected by: (Init.)	Matrix Type From Table 1	No. of Containers	Sample Filtered ? Y/N	Unpreserved (Ice Only)	HNO3	HCL	H2SO4		Other (Specify)	
1. SC	12/13/96	12:10	J	3	1								CALL FOR ANALYSES
2.													
3.													
4.													
5.													
6.													
7.													
8.													
9.													
10.													
Relinquished by: <u>J. F. WARD</u>			Date: <u>12/29/96</u>	Time: <u>7:55</u>	Received by: <u>[Signature]</u>			Date: <u>12-12-96</u>	Time: <u>7:56</u>				
Relinquished by:			Date:	Time:	Received by:			Date:	Time:				

Delivery Method \_\_\_\_\_

White: LAB COPY Yellow: CUSTOMER COPY

***APPENDIX G - PHOTO LOG***

EAGLE HARDWARE AND GARDEN - WENATCHEE, WASHINGTON  
INDEPENDENT REMEDIAL ACTION REPORT



Photo #1

Southeast corner of site looking north.



Photo #2

Southeast corner of site looking northwest.



EAGLE HARDWARE AND GARDEN - WENATCHEE, WASHINGTON  
INDEPENDENT REMEDIAL ACTION REPORT



Photo #3

Southeast corner of site looking west.



Photo #4 East property line looking west at south southern building entrance.

EAGLE HARDWARE AND GARDEN - WENATCHEE, WASHINGTON  
INDEPENDENT REMEDIAL ACTION REPORT



Photo #5

East property line center looking southwest.



Photo #6

East property line center looking northwest.



EAGLE HARDWARE AND GARDEN - WENATCHEE, WASHINGTON  
INDEPENDENT REMEDIAL ACTION REPORT



Photo #7

Northeast property corner looking south.



Photo #8

Northeast property corner looking west.

EAGLE HARDWARE AND GARDEN - WENATCHEE, WASHINGTON  
INDEPENDENT REMEDIAL ACTION REPORT



Photo #9

Northwest property corner looking east.



Photo #10

Northwest property corner looking south.



EAGLE HARDWARE AND GARDEN - WENATCHEE, WASHINGTON  
INDEPENDENT REMEDIAL ACTION REPORT



Photo #11

Central west Perimeter Drive looking south.



Photo #12

Southwest corner looking north.



EAGLE HARDWARE AND GARDEN - WENATCHEE, WASHINGTON  
INDEPENDENT REMEDIAL ACTION REPORT



Photo #13

Southwest corner looking east.



Photo #14

Southeast corner of building looking northeast.

EAGLE HARDWARE AND GARDEN - WENATCHEE, WASHINGTON  
INDEPENDENT REMEDIAL ACTION REPORT



Photo #15

Southeast corner of building looking southeast.

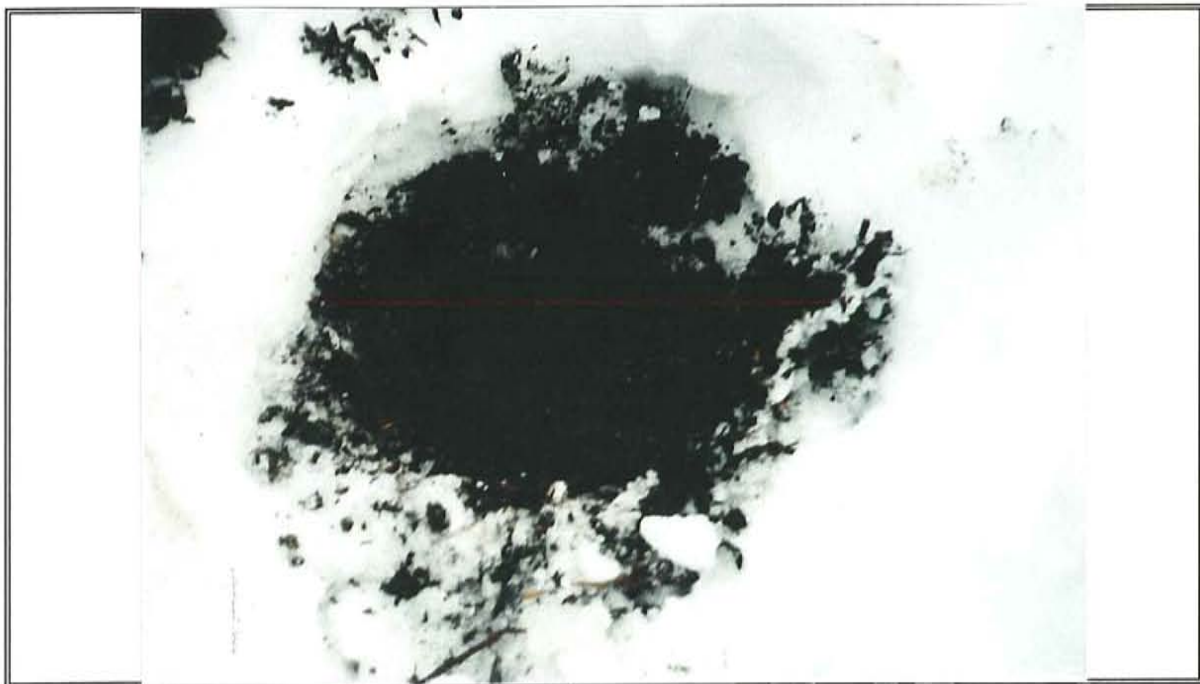


Photo #16

Southeast soil sample close-up.



EAGLE HARDWARE AND GARDEN - WENATCHEE, WASHINGTON  
INDEPENDENT REMEDIAL ACTION REPORT



Photo #17

South central soil sample close-up.



Photo #18

South central front soil sample close-up.

EAGLE HARDWARE AND GARDEN - WENATCHEE, WASHINGTON  
INDEPENDENT REMEDIAL ACTION REPORT



Photo #19

Southwest soil sample close-up.



Photo #20

Northwest soil sample close-up.



EAGLE HARDWARE AND GARDEN - WENATCHEE, WASHINGTON  
INDEPENDENT REMEDIAL ACTION REPORT



Photo #21

North corner of building looking northeast.



Photo #22

Northeast corner of building looking southeast.



EAGLE HARDWARE AND GARDEN - WENATCHEE, WASHINGTON  
INDEPENDENT REMEDIAL ACTION REPORT

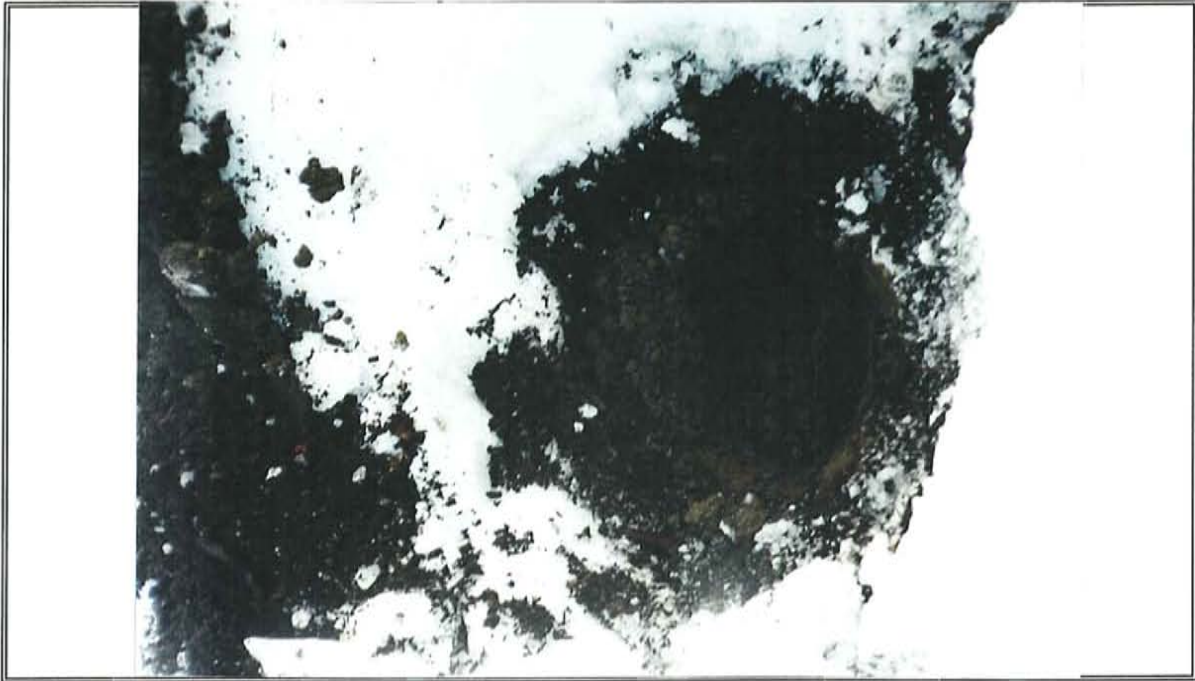


Photo #23

North front soil sample close-up.



Photo #24

Northeast corner soil sample close-up.



EAGLE HARDWARE AND GARDEN - WENATCHEE, WASHINGTON  
INDEPENDENT REMEDIAL ACTION REPORT



Photo #25 West property line central looking north during construction of planter areas.



Photo #26 West property line central looking southeast during construction.



EAGLE HARDWARE AND GARDEN - WENATCHEE, WASHINGTON  
INDEPENDENT REMEDIAL ACTION REPORT



Photo #27 East property line looking north at planter construction.



Photo #28 East property line looking northwest at planter construction.



EAGLE HARDWARE AND GARDEN - WENATCHEE, WASHINGTON  
INDEPENDENT REMEDIAL ACTION REPORT



Photo #31 North parking lot entrance looking west at planter construction.



Photo #32 East property line looking west at building entrance planter construction.

***APPENDIX H - PERTINENT FIELD REPORTS***





**Earth Consultants Inc.**  
Geotechnical Engineers, Geologists & Environmental Scientists

1805 136th Place N.E.  
Suite 201  
Bellevue, WA 98005  
Bellevue (206) 643-3780  
FAX (206) 746-0860

Seattle (206) 464-1584

222 E. 26th Street  
Suite 103  
Tacoma, WA 98421  
Tacoma (206) 272-6608  
FAX (206) 383-3560

## DAILY FIELD REPORT

Field Rep. KME	Job No. 7118-1	Page of 1	Report No. 1
Time On Site 1330	Time Off Site 1430	Date 3/5/96	Day of Week MON
Travel Time 15 min	Miles 5	Weather RAIN	
Veh. Hrs. On Site —	Hrs. Charged	Visitors RSL	

Project EAGLE #453	Job Location Winathee - Wallawalla Ave	Client / Owner Scorzo Halstrom / EAGLE
Gen. Contractor	Gen. Contractor's Super. LANNY BOHN	Received Unchecked By
Grading Contractor CDC	Grading Foreman PETE	Checked By Date

At the request of the client ECI was on site to observe site and soil conditions.

Continental Dirt Contractors (CDC) was removing the trees from site. The Contractor estimates this will take a few more days.

Placement of the strippings was also discussed. ECI ~~recommended~~ recommended that parking areas that receive more than 2 feet of fill do not need to be stripped. The strippings for the building should be placed in parking areas outside of heavy traffic areas.

Two test were excavated to explore subsurface conditions. A sample was taken from each test pit for Proctor analysis.

*KME*

COPY TO:

CONTINUED ON NEXT PAGE ☐



Earth Consultants Inc.  
Geotechnical Engineers, Geologists & Environmental Scientists

1805 136th Place N.E.  
Suite 201  
Bellevue, WA 98005  
Bellevue (206) 643-3780  
FAX (206) 746-0860

Seattle (206) 464-1584

222 E. 26th Street  
Suite 103  
Tacoma, WA 98421  
Tacoma (206) 272-6608  
FAX (206) 383-3560

# DAILY FIELD REPORT

Field Rep. <b>KME</b>	Job No. <b>7118-1</b>	Page of <b>1 1</b>	Report No. <b>2</b>
Time On Site <b>1430</b>	Time Off Site <b>1530</b>	Date <b>3/7/96</b>	Day of Week <b>THURS</b>
Travel Time <b>30</b>	Miles <b>1.5</b>	Weather <b>RAIN</b>	
Veh. Hrs. On Site <b>—</b>	Hrs. Charged <b>1.5</b>	Visitors	

Project <b>EAGLE-453</b>	Job Location <b>Walla Walla St, Wenatchee</b>	Client / Owner <b>Scorzo Halstrom / EAGLE</b>
Gen. Contractor	Gen. Contractor's Super. <b>LANNY</b>	Received Unchecked By
Grading Contractor <b>CDC</b>	Grading Foreman <b>PETE</b>	Checked By Date

At the request of the client ECT was on site to observe clearing of the site.

CDC continues to remove the trees from the site and burn them on site. This should be completed by tomorrow.

I met with John Harper from CDC to discuss fill options. We visited a pit near Rock Island. The material consisted of sandy fine to coarse gravel with cobbles and boulders. This material would be screened to 8 inch minus if used. This material should be suitable for footing and building pad fill.

John also requested confirmation of the depth of the imported fill in cell areas of the building. Twelve (12) inches is recommended for protection of the Silty Subgrade. Does the 12 inches include the 4 inches of capillary break?

*K. Melli*

COPY TO:

CONTINUED ON NEXT PAGE ☐



Earth Consultants Inc.  
Geotechnical Engineers, Geologists & Environmental Scientists

1805 136th Place N.E.  
Suite 201  
Bellevue, WA 98005  
Bellevue (206) 643-3780  
FAX (206) 746-0660

Seattle (206) 464-1584

222 E. 26th Street  
Suite 103  
Tacoma, WA 98421  
Tacoma (206) 272-6608  
FAX (206) 383-3560

# DAILY FIELD REPORT

Field Rep. KME	Job No. 7118-1	Page of 22	Report No. 5
Time On Site 0700	Time Off Site 1730	Date 3/13/96	Day of Week WED
Travel Time 30min	Miles 6	Weather Sunny 60°	
Veh. Hrs. On Site —	Hrs. Charged 11	Visitors	

Project EAGLE #453	Job Location Walla Walla Ave, Wenatchee	Client / Owner Scowzo Halstrom / EAGLE
Gen. Contractor EAGLE	Gen. Contractor's Super. LANNY	Received Unchecked By
Grading Contractor CDC	Grading Foreman DETE	Checked By Date

INTERIOR FOOTINGS, C-2.5, C-3.5, B.6-2.5, B.6-3 B-2.5, B.3-2.5 were overexcavated 2 feet with the 400c Trackhoe with a smooth bucket and interior footings C-3 and C-4 were overexcavated 3 feet as recommended. The <sup>native</sup> subgrade around these footings is approximately 2 feet below finished subgrade. The subgrade was stripped using a D3C cat and compacted with the grid roller in static mode to a firm condition before fill was placed.

EXTERIOR FOOTINGS, Line 9 from G to D, Line 1 from C.9 to F.4, Line C.9 from 1 to 2, Line 2 from C.9 to B.3, were overexcavated two feet as recommended.

CDC continued to cut and aerate the native subgrade in the cut areas of the building pad. Most of the MAIN STORE AREA has been cut to the recommended one foot below bottom of slab section. CDC is starting to cut the subgrade and footings on the east end of the lumber yard. The material excavated from the building is being placed in the parking lot east of the building. This area is also being aerated to dry the native material.

R. T. MELL

COPY TO: LANNY

CONTINUED ON NEXT PAGE ☐



Earth Consultants Inc.  
Geotechnical Engineers, Geologists & Environmental Scientists

1805 136th Place N.E.  
Suite 201  
Bellevue, WA 98005  
Bellevue (206) 643-3780  
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Seattle (206) 464-1584

222 E. 26th Street  
Suite 103  
Tacoma, WA 98421  
Tacoma (206) 272-6608  
FAX (206) 383-3560

## DAILY FIELD REPORT

Field Rep. KME	Job No. 7118-1	Page of 1	Report No. 10A
Time On Site 0700	Time Off Site	Date 3/19/06	Day of Week TUES
Travel Time	Miles —	Weather Sunny	
Veh. Hrs. On Site —	Hrs. Charged —	Visitors	

Project EAGLE 453	Job Location Winatchee	Client / Owner Sronzo Halstrom / EAGLE
Gen. Contractor EAGLE	Gen. Contractor's Super. LANNY	Received Unchecked By
Grading Contractor CDC	Grading Foreman PETE	Checked By Date

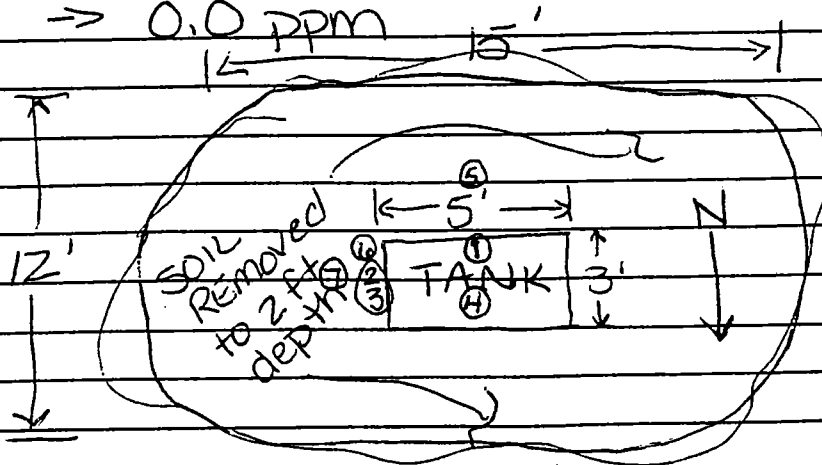
835 → TANK FILLED WITH CO<sub>2</sub> by Appleland Pump and Equipment of Winatchee, WA. (W62-0832).

840 → Start removal of Tank, Top 2 feet removed and separated with Komatsu 400c trackhoe.

855 → TANK PICKED OUT OF hole, no material removed below 2 feet. Tank removed from the site by Appleland Pump and Equipment. Tank dimensions 3ft diameter and five feet long.

No evidence of leaking, No staining on soil, No odor

PID → 0.0 ppm



① sample locations

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Tacoma (206) 272-6608

## DAILY FIELD REPORT

Field Rep. KME	Job No. 7118-1	Page of 1 2	Report No. 14
Time On Site 0700	Time Off Site 1730	Date 3/25/96	Day of Week MON
Travel Time 30min	Miles 6	Weather SUNNY	Partly sunny - PM
Veh. Hrs. On Site —	Hrs. Charged 10.5	Visitors	

Project EAGLE 453	Job Location Walla Walla Ave, Wapato, WA	Client / Owner Sanzo Halstrom
Gen. Contractor EAGLE	Gen. Contractor's Super. LANNY	Received Unchecked By
Grading Contractor CDC	Grading Foreman PETE	Checked By Date

Test Number	Test Location	Elevation	Reference Compaction Curve	Maximum Dry Density lbs./cu. ft.	Fill Moisture %	Test Dry Density lbs./cu. ft.	% of Maximum Dry Density
125	LUMBER E56-12	SG	C	138	2.4	129.5	94
126	YARD E04-12				2.6	130.5	94
127	INTERIOR D53-12				2.2	127.6	92
128	FOOTINGS D02-12				2.4	129.5	94
129	C51-12				2.9	127.7	92
130	B99-12				2.9	129.4	94
131	B60-12				2.2	130.7	95
132	B20-12				3.2	126.9	92
133	F69-13				2.4	126.1	91
134	F15-13				2.0	130.6	95
135	E62-13				2.5	125.6	91
136	E08-13				2.3	133.2	96
137	D54-13				2.5	129.4	94
138	D-13				3.3	124.9	90
139	C46-13	↓	↓	↓	2.8	128.4	93

### SUPPLEMENTARY REPORT

At the request of Eagle, ECT was on site to monitor site activities.

CDC continued to excavate interior footings in the lumber yard. The footings were excavated with a 205 trackhoe and compacted with a backhoe vibratory plate. In place density tests on the footing subgrades indicates compaction greater than 90 percent of the maximum dry density per ASTM D1557.

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Field Rep. KME	Job No. 7118-1	Page of 22	Report No. 14
Time On Site 0700	Time Off Site 1730	Date 3/25/96	Day of Week mon
Travel Time 30 min	Miles 6	Weather Sunny → PM Sunny	
Veh. Hrs. On Site —	Hrs. Charged 10.5	Visitors	

Project <b>EAGLE 452</b>	Job Location <b>Walla Walla Ave., Wenatchee</b>	Client / Owner <b>Scenzo Halstrom</b>	
Gen. Contractor <b>EAGLE</b>	Gen. Contractor's Super. <b>LANNY</b>	Received Unchecked By	
Grading Contractor <b>CDC</b>	Grading Foreman <b>PETE</b>	Checked By	Date

[illegible]

CDC started the overexcavation of the landscape area to remove contaminated soil. The slope on the west property line was excavated from the irrigation tank to the north property line, to a depth of 3 feet below existing ground. The 5 foot wide planter along the north property line was excavated 3 feet deep from the west property line, to about 100 feet from the east property line. The 6 inch irrigation line was placed next to the property line in the excavations.

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## DAILY FIELD REPORT

Field Rep. KME	Job No. 7118-1	Page of 1 1	Report No. 15
Time On Site 0700	Time Off Site 1800	Date 3/26/96	Day of Week TUES
Travel Time 30mn	Miles 6	Weather cloudy	
Veh. Hrs. On Site —	Hrs. Charged 11	Visitors	

Project EAGLE 453	Job Location Walla Walla Ave, Wenatchee	Client / Owner Sconzo Halstrom
Gen. Contractor EAGLE	Gen. Contractors Super. LANNY	Received Unchecked By
Grading Contractor CDC	Grading Foreman PETE	Checked By Date

At the request of Eagle, ECT was on site to monitor site activities.

CDC continued the 3 foot excavation in the landscape areas for the installation of the 6 inch irrigation line. The 5 foot wide planter on the north property line was completed to the east property line. The landscape area behind the side walk on the east side of the site was excavated from the north property line to the <sup>north</sup> access road and from the south side of the access road to 110 feet south of the road. The 6 inch irrigation line was installed 11 feet west of the eastern property line as shown on the plans ~~set~~ from the north property line to the access road. The tie-in to the existing lines will be completed tomorrow.

CDC is fine grading the slab subgrade from line 6 to 8. The subgrade in this area was prepared and tested previously. Geotextile fabric was placed under <sup>at least</sup> 12 inches of <sup>structural fill</sup> material from D line to the west edge of the building. East of D line more than 2 feet of fill was placed. The slab is fine graded with 2 inches of 3/8 inch minus crushed. Deflections on the prepared subgrade are less than 1/2 inch under loaded truck traffic from line 6 to 8.

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# DAILY FIELD REPORT

Field Rep. KME	Job No. 7118-1	Page of 22	Report No. 16
Time On Site 700/1400	Time Off Site 1200/1700	Date 3/27/94	Day of Week WED
Travel Time 1	Miles 12	Weather cloudy, windy	
Veh. Hrs. On Site —	Hrs. Charged 9	Visitors	

Project EAGLE 453	Job Location Walla Walla Ave, Wenatchee	Client / Owner Sanzo Halstrom
Gen. Contractor EAGLE	Gen. Contractor's Super. LANNY	Received Unchecked By
Grading Contractor CDC	Grading Foreman PETE	Checked By Date

not been compacted. (sanitary sewer near line 2, sanitary sewer near line 9 and the water line near 9.

CDC started mining non-contaminated soil from the ~~access~~ access road on the north side of the building. The top three feet are removed, the lower "clean" soil was placed in a scraper and used to fill the irrigation line planter and then the top 3 feet were placed in the hole. The irrigation line has been completed including the tie in to the tank and the existing lines. The 'clean' material was placed in the planting area south of the northern access road.

The large FB footing at B.7-8.4 was compacted with a backhoe vibratory plate. The footing was excavated Monday. In place density testing indicates compaction greater than 90 percent of the maximum dry density per ASTM D-1557.

CDC plans to continue excavating the planters on the east side of the site and mining non-contaminated soil from below 3 feet on the north side of the building.

CDC continued to grade the building slab subgrade

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### DAILY FIELD REPORT

Field Rep. KME	Job No. 7118-1	Page of 11	Report No. 17
Time On Site 1300	Time Off Site 1800	Date 3/28/96	Day of Week THUR
Travel Time 30min	Miles 6	Weather Sunny / wind-pm	
Veh. Hrs. On Site —	Hrs. Charged 5.5	Visitors	

Project EAGLE 453	Job Location Walla Walla Ave, Wintchel	Client / Owner Scenzo Halstrom
Gen. Contractor EAGLE	Gen. Contractor's Super. LANNY	Received Unchecked By
Grading Contractor CDC	Grading Foreman PETIE	Checked By Date

At the request of EAGLE, ECF was on site to monitor site activities.

CDC continued to overexcavate the planter areas on the east property line. The planter was excavated three feet deep and 11 feet wide. The excavation is complete to approximately 350 feet south of the northeast corner. The excavation was stopped because of the EAGLE Trailer and was continued south of the trailer. The overexcavation resumed 60 feet south. This area is in the southeast quadrant and was excavated four feet deep as specified. The overexcavations were filled with non-contaminated soil mined from below 3 feet on the north side of the building.

A pumping area in the building between A.4 and B at 5 line was overexcavated. The overexcavation was 15 x 20 feet and 2.5 feet deep. The excavation was filled with imported pit run.

CDC has completed fine grading the slab subgrade between 4 and 6 from A.4 to F. Deflections under heavy construction were observed to be under 1/2 inch.

Equipment - 2 scrapers, 2 trackhoe, loader, 1 D8 cat, 2 small cats, 2 rollers, 2 graders, 1 backhoe, + 1 watertruck.

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### DAILY FIELD REPORT

Field Rep. KME	Job No. 7118-1	Page of 1	Report No. 18
Time On Site 0800	Time Off Site 1700	Date 3/29/96	Day of Week FRI
Travel Time 30min	Miles 6	Weather mostly sunny	
Veh. Hrs. On Site —	Hrs. Charged 9	Visitors	

Project EAGLE 453	Job Location Walla Walla Ave. Wenatchee	Client / Owner Sconzo Halstrom
Gen. Contractor EAGLE	Gen. Contractor's Super. LANNY	Received Unchecked By
Grading Contractor CDC	Grading Foreman PETE	Checked By Date

At the request of Eagle, ECI was on site to monitor site activities.

CDC overexcavated the remaining exterior footings on the west side of the lumber yard. Exterior footing from A-9 to A-14 and A-14 to A-45-14 were overexcavated two feet as recommended. The excavated material is below 3 feet from original grade and was placed in the landscape area from the water tank to the northwest corner of the site. The footings will be filled as the exterior footings on H line are excavated and the extra imported pit run is removed.

The exterior footings from B line to F line on line 14 were excavated to ~~per sub~~ footing subgrade with the 400 trackhoe. The sand and gravel removed will be placed on the west end of the lumberyard for slab and footing fill.

CDC started laying out native material along the east side of the building and on the east ~~back~~ side of the parking lot in front of the building. Moisture contents in the fill range from 20 to 24 percent. We recommended aerating the fill until the moisture contents are 10 to 12 percent. The fill was turned with a disc several times.

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### DAILY FIELD REPORT

Field Rep. KME	Job No. 7118-1	Page of 1	Report No. 20
Time On Site 0700	Time Off Site 1100	Date 4/1/96	Day of Week MON
Travel Time 30min	Miles 6	Weather RAIN	
Veh. Hrs. On Site —	Hrs. Charged 4	Visitors	

Project EAGLE 453	Job Location Walla Walla Ave, Wenatchee	Client/Owner Scanzo Halstrom
Gen. Contractor EAGLE	Gen. Contractor's Super. LANNY	Received Unchecked By
Grading Contractor CDC	Grading Foreman PETE	Checked By Date

At the request of EAGLE, ECT was on site to monitor site activities.

CDC completed grading the slab subgrade in the main building from 8 to 9 line. The only remaining area not graded is the south side of the mezzanine and the loading dock area. Imported sand and gravel was placed for all slab areas. Geotextile fabric underlies at least 12 inches of fill on the west side of the slab from D line to the west edge from line 9 to 4 and from C line to the west edge from line 4 to 2. The remaining areas have at least two feet of fill over the native subgrade.

CDC continued to overexcavate landscape areas and fill them with non-contaminated fill mined from below 3 feet. The landscape area on the east side of the site was excavated four feet deep to the north side of the main access road. The landscape area on the west side of the site was overexcavated 3 feet from the telephone pole south of the irrigation tank extending 50 feet south. This area was filled with non-contaminated fill mined from below 3 feet in the parking area west of the building.

The plumbing contractor is excavating for the roof drains in the lumber yard.

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Field Rep. KME	Job No. 7118-1	Page of 11	Report No. 21
Time On Site 0800	Time Off Site 1700	Date 4/2/96	Day of Week TUE
Travel Time 30min	Miles 6	Weather windy partly sunny	
Veh. Hrs. On Site —	Hrs. Charged 9	Visitors	

[illegible]

At the request of Eagle, ECT was on site to monitor site activities.

The continuous exterior footings along a line, from B to F.5 were excavated today and compacted with a vibratory plate. In plate density tests indicate compaction greater than 90 percent of the maximum dry density.

The overexcavation and replacement on the landscape area on the west side is complete to the south pole

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## DAILY FIELD REPORT

Field Rep. KME	Job No. 7118-1	Page of 22	Report No. 22
Time On Site 0800	Time Off Site 1800	Date 4/3/96	Day of Week WED
Travel Time 30min	Miles 6	Weather sunny	
Veh. Hrs. On Site —	Hrs. Charged 10	Visitors	

Project EAGLE 453	Job Location Willapa Ave, Winatchee	Client/Owner Scenzo Halstrom
Gen. Contractor EAGLE	Gen. Contractor's Super. LANNY	Received Unchecked By
Grading Contractor CDC	Grading Foreman PETE	Checked By Date

the maximum dry density.  
CDC continued to aerate the material placed in the east parking lot. The fill was ripped up yesterday with the D8 cat and was disced this afternoon.

The excavation of contaminated material from the landscape areas around the perimeter of the site continued today. The west side of the site is complete and the south side is complete to the east end of the building. The areas on the west side and the majority on the south side were overexcavated three feet below existing grade and replaced with non-contaminated soil mined from below 3 feet. The part of the south side that is in the southeast quadrant was overexcavated four feet.

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## DAILY FIELD REPORT

Field Rep. KME	Job No. 7118-1	Page of 11	Report No. 22A
Time On Site 0830	Time Off Site 1630	Date 4/4/96	Day of Week THUR
Travel Time 30min	Miles 6	Weather SUNNY	
Veh. Hrs. On Site —	Hrs. Charged 8	Visitors	

Project EAGLE #453	Job Location Liberty Ave, Wenatchee	Client / Owner Sconzo Halstrom
Gen. Contractor EAGLE	Gen. Contractor's Super. LANNY	Received Unchecked By
Grading Contractor CDC	Grading Foreman PETE	Checked By Date

At the request of Eagle, ECT was on site to monitor site activities.

CDC rented a tractor and plow this morning to aid in drying the native soil deeper. The native subgrade on the north, west and south sides of the building was turned over. The plow penetrated about two feet and turns the wet soil from the bottom to the surface. We anticipate a week or longer to dry these soils for compaction. The fill placed in the east parking lot as well as the mined areas were also turned over with the new plow and the disc. Aeration will continue tomorrow. The last parking lot from the southeast quadrant line to the 4" sanitary sewer line was mined for non-contaminated soil. The top three feet was placed back in the excavation, aerated and compacted to a firm and unyielding condition before additional fill was placed.

The exterior footing excavation was completed along line Z and the garden area was graded for rat slabs to pour panels on.

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### DAILY FIELD REPORT

Field Rep.	Job No.	Page of	Report No.
KME	7118-1	22	23
Time On Site	Time Off Site	Date	Day of Week
0800	1700	4/5/96	FRI
Travel Time	Miles	Weather	
30 min	6	Partly Sunny	
Veh. Hrs. On Site	Hrs. Charged	Visitors	
—	9		

Project	Job Location	Client / Owner
EAGLE 453	Walla Walla Ave	Sconzo Halstrom
Gen. Contractor	Gen. Contractor's Super.	Received Unchecked By
EAGLE	LANNY	
Grading Contractor	Grading Foreman	Checked By
CDC	PETE	Date

in the full. This area will be left open until Monday. The cut areas around the building were also airtight and are drying.

The existing house was demolished and is being hauled off-site. This area should be ready for full Monday.

CDC will tie-in the ~~sew~~ north sanitary sewer to the main line tomorrow.

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# **DAILY FIELD REPORT**

Field Rep. <b>KME</b>	Job No. <b>7118-1</b>	Page of <b>1</b>	Report No. <b>32</b>
Time On Site <b>9:30</b>	Time Off Site <b>1:00</b>	Date <b>4/23/96</b>	Day of Week <b>TUES</b>
Travel Time <b>30min</b>	Miles <b>6</b>	Weather <b>Sunny</b>	
Veh. Hrs. On Site <b>—</b>	Hrs. Charged <b>2</b>	Visitors <b>—</b>	

Project <b>EAGLE 453</b>	Job Location <b>Libella Walla Ave, Wenatchee</b>	Client / Owner <b>Sconzo Halstrom</b>
Gen. Contractor <b>EAGLE</b>	Gen. Contractor's Super. <b>LANNY</b>	Received Unchecked By
Grading Contractor <b>CDC</b>	Grading Foreman <b>PETE</b>	Checked By Date

At the request of Eagle, ECI was on site to attend the weekly site meeting.

CDC is continuing to install the storm around the building and place imported fill for the crane road. We understand that LANNY with Eagle has Hammond, Collier & Wade-Livingstone testing the utility backfill. We have not tested any of the backfill in the storm trenches.

We will not be attending meetings or visiting the site unless directed by Eagle or Sconzo Halstrom from now on.

*R. T. Melly*

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(800) 562-7707

122 South Emerson  
Chelan, WA 98816  
(509) 682-2462

20-1/2 Copple Road  
Omak, WA 98841  
(509) 826-5861

## DAILY INSPECTION REPORT

DATE: 5/9/96  
CLIENT: Eagle Hardware  
PROJECT NO.: 96318  
PROJECT: Store 453  
CONTRACTOR: G.G. Richardson

WEATHER	CLEAR				
TEMP.	10-32	33-60	51-70		
WIND		MOD.			
HUMIDITY		MOD.			

EQUIPMENT AT SITE: Mixers, Pump Truck, Laser Screed

6:00 AM Arrived on site.

6:40 Tested concrete from pump; made three cylinders.

Slump 4-1/4"; Air 3.2%; Mix Temp 57°; Air Temp 39°; sample taken 60' west of first slab.

7:30 Left site.

9:30 Back on site. I spoke to Pete from Continental Dirt concerning contaminated soil. The planter on southeast corner was dug to 3'. Fabric was put down and uncontaminated soil was put in to subgrade. The other planters were dug to 4' and no fabric was used. Uncontaminated soil was then placed in them to subgrade.

10:15 Left site.

12:30 Arrived on site.

1:07 Sampled concrete truck #205. Three cylinders were cast.

Slump 6-1/2"; Air 2%; Mix Temp 65°; Air Temp 79°.

1:45 Sampled truck #206; three cylinders were cast.

Slump 1-1/2"; Air 2.1%; Mix Temp 68°; Air Temp 70°.

2:45 Left job site.

TECHNICIAN: M. Bracher

PROJECT MGR: \_\_\_\_\_

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20-1/2 Copple Road  
Omak, WA 98841  
(509) 826-5861

## DAILY INSPECTION REPORT

DATE: 5/16/96  
CLIENT: Eagle Hardware  
PROJECT NO.: 96318  
PROJECT: Store #453  
CONTRACTOR: Eagle/G.G. Richardson

WEATHER	CLEAR				
TEMP.			51-70		
WIND		MOD.			
HUMIDITY		MOD.			

EQUIPMENT AT SITE: \_\_\_\_\_

Pete with Continental Construction has requested a depth inspection for planters.

Arrived on site at 9:40 a.m. Pete and I checked the depth of four planters on the front of Eagle store.

They have removed 36" (+) of native material in these areas. Felt liner is being placed.

Pictures have been taken and placed in office file for future purposes.

Left site at 9:15.

TECHNICIAN: B. Hastings

PROJECT MGR: \_\_\_\_\_ PAGE 1 OF 1

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## DAILY INSPECTION REPORT

DATE: 5/17/96  
CLIENT: Eagle Hardware  
PROJECT NO.: 96318  
PROJECT: Store #453  
CONTRACTOR: Continental

WEATHER			OVERCAST		
TEMP.			51-70		
WIND		MOD.			
HUMIDITY			HUMID		

EQUIPMENT AT SITE:

Arrived on site to check depth on the last large planter (front of building - lumber yard).

Contractor has removed 3+ feet of native soils and placed liner over bottom of pit.

Informed Pete that I checked it.

Left site.

TECHNICIAN: B. Hastings

PROJECT MGR: \_\_\_\_\_

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(509) 826-5861

## DAILY INSPECTION REPORT

DATE: 5/21/96  
CLIENT: Eagle Hardware  
PROJECT NO.: 96318  
PROJECT: Store 453  
CONTRACTOR: G.G. Richardson

WEATHER			OVERCAST		
TEMP.		33-50			
WIND		MOD.			
HUMIDITY		MOD.			

EQUIPMENT AT SITE:

I arrived on site at 10:00 and spoke to Pete from Continental Dirt who asked me to record the depth of the two planters in grid lines 1 and 2 C+D. Depths of both planters measured 3'-6" to 3'-2". The bottom of the planters were covered by fabric.

TECHNICIAN: Michael Bracher

PROJECT MGR:

PAGE 1 OF 1