Lenora Bldg SIT 3.6

Phase I/II Environmental Site Assessment
Lots 11 and 12 of Block 24 of Sarah A. Bell's Second Addition
Ninth Avenue and Lenora Street
Seattle, Washington

September 24, 2002

For
Cornish College

GeoEngineers

Consulting Engineers and Geoscientists

September 24, 2002

Cornish College
710 East Roy Street
Seattle, Washington 98102

Attention: Vicki Clayton

GeoEngineers is pleased to submit three copies of our report entitled "Phase I/II Environmental Site Assessment, Lots 11 and 12 of Block 24 of Sarah A. Bell's Second Addition, Ninth Avenue and Lenora Street, Seattle, Washington." Our services were completed in general accordance with our proposal dated June 6, 2002 (Appendix A). Our services were authorized on July 16, 2002 by Vicki Clayton of Cornish College.

We appreciate the opportunity to assist Cornish College on this project. Please contact us if you have questions regarding this report.

Yours very truly,

GeoEngineers, Inc.

for KSA

Kurt S. Anderson, P.G.
Principal

TMK:BPP:KSA:ja:nh:ab
Seat\00\finals\802200400ESA.doc

GeoEngineers, Inc.
Plaza 600 Building
600 Stewart St., Suite 1420
Seattle, WA 98101
Telephone (206) 728-2674
Fax (206) 728-2732
www.geoengineers.com

CONTENTS

CONTENTS (Continued)

EXECUTIVE SUMMARY

GeoEngineers has performed a Phase I/II ESA of Lots 11 and 12 of Block 24 of Sarah A. Bell's second addition located at the west corner of the intersection of Ninth Avenue and Lenora Street in Seattle, Washington. Based on the results of the Phase I portion of our study, recognized environmental conditions (RECs – see footnote definition on page 1) identified at the site include the known and potentially unidentified basement underground storage tanks (USTs), the former boiler system associated with the building flue, the basement catch basin, and former site uses including wood yard, vehicle service, printing and metal shop facilities. Off-site RECs include the Lot 10 chimney/furnace structure attached to the north corner of the site building, the catch basin in the adjacent alley, and current and former adjacent site uses and facilities.

Based on the results of the Phase II portion of our study, petroleum-related soil contamination was detected at concentrations that exceed Model Toxic Control Act (MTCA) Method A cleanup levels in the south portion of the site vicinity, including beneath the site, the adjacent alley and Lenora Street, and east of the site along Ninth Avenue. One known site UST containing petroleum products, the former boiler flue, and two catch basins (in the alley and site basement) are located in this area. Based on our field observations and soil chemical analytical results, it appears that the UST has leaked.

Semi-volatile organic compounds, including one carcinogenic polynuclear aromatic hydrocarbon, also were detected at concentrations that exceed MTCA Method A or B cleanup levels in soil adjacent to the UST. Additionally, petroleum- and metals-related groundwater contamination was detected at concentrations that exceed MTCA Method A cleanup levels in this area. Lead-related soil contamination was detected at a concentration which exceeds the MTCA Method A cleanup level in the general vicinity of the metal shop formerly located in the northwest portion of the basement. Potential sources of the lead contamination may include past site operations and/or fill soil placed on the site prior to building construction.

PHASE I/II ENVIRONMENTAL SITE ASSESSMENT
LOTS 11 AND 12 OF BLOCK 24 OF SARAH A. BELL'S SECOND ADDITION
NINTH AVENUE AND LENORA STREET
SEATTLE, WASHINGTON
FOR
CORNISH COLLEGE

1.0 INTRODUCTION

This report summarizes the results of our Phase I/II Environmental Site Assessment (ESA) of Lots 11 and 12 of Block 24 of Sarah A. Bell's Second Addition located west of the intersection of Ninth Avenue and Lenora Street, in Seattle, Washington (referred to herein as the "site"). The site currently is occupied by a single building comprised of several commercial/retail businesses. The site is shown relative to surrounding physical features in Figure 1. The general site layout and adjacent property use is shown in Figure 2.

Our study was completed at the request of Vicki Clayton of Cornish College. We understand that Cornish College is considering purchase of the site. We further understand that the results of this Phase I/II ESA will be used as part of Cornish College's evaluation of potential environmental liabilities associated with site ownership.

1.1 PURPOSE AND SCOPE OF SERVICES

1.1.1 Phase I ESA

The purpose of this Phase I ESA was to identify recognized environmental conditions[1] (RECs – see footnote definition below) in connection with the site. GeoEngineers' scope of services was completed in general accordance with American Society for Testing and Materials (ASTM) Standard E1527-00 for Phase I ESAs. GeoEngineers' qualifications for performing Phase I ESAs are contained in our Phase I ESA proposal included in Appendix A. GeoEngineers completed the following scope of services:

1. Attempted to locate and review readily available geotechnical and environmental reports and other relevant documents pertaining to environmental conditions at the subject site. Two previous reports pertaining to the site were provided by Cornish College for our review.
2. Reviewed the results of a federal, state and local environmental database search provided by an outside environmental data service for listings of known or suspected environmental problems at the site or nearby properties within the search distances specified by ASTM.
3. Reviewed regulatory agency files regarding listed sites of potential environmental concern relative to the subject site.

---

[1] Recognized Environmental Conditions are defined in ASTM E-1527-00 as "the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater or surface water of the property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include *de minimis* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies."

4. Identified key site managers with specific knowledge of present site use (but limited knowledge of past site use) and interviewed them during the visual site reconnaissance.
5. Interviewed representatives of the local fire department and the Washington State Department of Ecology (Ecology) regarding the history of the subject site and surrounding properties relative to the likely presence of hazardous substances.
6. Reviewed historical aerial photographs, fire insurance maps, city directories, tax assessor records, City sewer and water records, City permit department records and available City building plans to identify past development history on and adjacent to the site relative to the possible use, generation, storage, release or disposal of hazardous substances. Attempted to identify uses of the site from the present to the time that records show no apparent development of the site.
7. Reviewed current USGS topographic maps to identify the physiographic setting of the site.
8. Identified the source of potable water for the site and current heating and sewage disposal system used at the site.
9. Provided a statement on the local geologic, soil and groundwater conditions based on our general experience and sources such as geologic maps and soil surveys.
10. Conducted a visual reconnaissance of the site and adjacent properties to identify visible evidence of RECs.
11. Subcontracted an asbestos and lead-based paint contractor to perform an asbestos and lead-based paint survey on the site building.

1.1.2 Phase II ESA

The purpose of our Phase II ESA was to evaluate soil and groundwater conditions in areas of potential environmental concern identified by the Phase I ESA. GeoEngineers completed the following scope of services:

1. Coordinated and subcontracted a utility check on the site using the One-Call service and a private utility locating service. Coordinated and subcontracted a concrete coring service, a subsurface drilling service, and a chemical analytical service to initiate subsurface exploration at the site.
2. Prepared a site safety plan for use by GeoEngineers field representatives.
3. Obtained a "street use" permit to drill in the alley, streets and sidewalk adjacent to the site.
4. Monitored the drilling of nine direct-push soil borings to depths between approximately 12 and 33 feet below ground surface (bgs), and one hand auger boring to a depth of 4 feet bgs.
5. Obtained soil samples at approximately 2-foot-depth intervals from the borings for field screening of petroleum hydrocarbons and volatile organic compounds. Submitted one or two soil samples from each boring for chemical analyses as summarized in Tables 1 and 2.
6. Obtained discrete groundwater samples from three of the borings (B-1 through B-3) for chemical analysis as summarized in Tables 3 and 4. Obtained a product sample from a

known site UST for analysis by gas chromatography fingerprinting. Analyses were performed on a 24- to 72-hour turnaround time.

7. Attempted to identify historical information/documents pertaining to the history of the alley catch basin located adjacent to the site.
8. Evaluated the field and laboratory data relative to Model Toxics Control Act (MTCA) Method A or B cleanup levels for screening purposes and point of comparison.
9. Provided a written report summarizing the results of our Phase I/II ESA research (this document).

1.2 SPECIAL CONSIDERATIONS

Our scope of services did not include an environmental compliance audit, an evaluation for the presence of toxic mold, termite damage, polychlorinated biphenyls (PCBs) in light ballasts, radon, lead in drinking water or urea-formaldehyde foam insulation in the on-site structure. GeoEngineers subcontracted Pacific Rim Environmental to perform a lead-based paint and asbestos survey on the site structure. The results of the survey are summarized in Section 7.0, and are included in Appendix G of this report.

2.0 SITE DESCRIPTION

2.1 INVOLVED PARTIES

The site currently is owned by Murphy Varey, P.S. Cornish College is considering purchasing the site for use as part of a larger college campus. All of the current site tenants have the same mailing address of 2101 Ninth Avenue. The following is a list of current site tenants, known suite numbers, and types of operation:

Basement

- Spore – Doorbell Designers
- Parking Garage (open space)
- Resolute/Manifesto – Storage Area

First Floor

- Schevping West – Fine Furniture Showroom
- Resolute/Manifesto – Lighting Production
- Metal shop
- Offices
- Loading area

Second Floor

- JLR Design (Suite 201) – Architectural Services
- AKA Design (Suite 202) – Graphic Design
- NCMX (Suites 204 and 208) -- Recruiting
- Hair Salon (Suite 206) – Hair Care
- Shaun Hubbard Design (Suite 209) – Graphic Designers
- Murphy Varey (Suite 211) – Architectural Services

- 1 Minute Learning (Suite 213-vacated 2002) – Dot Com (.com) Services
- PWA Construction Engineering (Suite 215-vacated 2002) – Engineering Consulting Services

2.2 LOCATION, LEGAL DESCRIPTION AND SETTING

General site information, property use(s) and environmental setting of the site area are summarized in Table I below. Refer to Figure 1 for a vicinity map and Figure 2 for the general layout of the site in relation to adjacent properties.

Table I. Site Information

Topographic Map	U.S. Geological Survey, 7.5 minute Seattle South, Washington topographic quadrangle map dated 1949 (photo-revised 1968 and 1983). (See Figure 1).
Quarter/Quarter, Section, Township and Range	Northeast quarter of the northeast quarter of Section 31, Township 25 North, Range 4 East, Willamette Meridian
Site Address	2101 Ninth Avenue, Seattle, King County, Washington
Site General Location	West corner of the intersection of Ninth Avenue and Lenora Street
Site Legal Description or Parcel Number(s)	Parcel Number = 0660000545 (Lots 11 and 12)
Site Approximate Area	The land consists of 14,400 square feet (0.3 acres). The site building consists of 42,800 square feet.
Site Existing Use	Commercial Services/Warehouse/Production
Geologic Setting	Puget Sound Highland, glacial deposits
Nearest Surface Water Bodies	Lake Union 3,200 feet to north and Elliott Bay 3,200 feet to west
Approximate Surface Elevation	75 feet above mean sea level
Soil and Geologic Conditions	Fill overlying native silt, clay and sand glacial deposits
Depth to Groundwater	Perched water was encountered within approximately 7 to 22 feet below ground surface, based on our subsurface explorations.
Inferred Direction of Shallow Groundwater Flow	Toward the west/northwest, based on surface topography.

Our knowledge of the general physiographic setting, geology and groundwater occurrence in the site vicinity is based on our review of the map listed above, our subsurface explorations at the site, other studies in the site vicinity and our general experience in the area.

2.3 SITE RECONNAISSANCE

2.3.1 Summary of Observations

A representative of GeoEngineers performed a visual reconnaissance of the site on July 25, 2002. The GeoEngineers representative was accompanied by Katie Grabow of Murphy Varey, P.S.. David Murphy (identified as a "key site manager" with limited knowledge of the site history), was interviewed during the site reconnaissance.

The site was accessed from Ninth Avenue. We entered and observed representative spaces within the site building. Our visual reconnaissance focussed on the areas where hazardous substance use, storage and/or disposal was likely, based on our experience.

Table II below summarizes conditions observed during our site reconnaissance. Section 2.3.2 contains additional details regarding conditions of potential environmental significance observed during our site reconnaissance and a summary list of known or suspect environmental conditions identified by this portion of our study. The approximate locations of the observed features discussed in this section are shown in Figure 2. Photographs of the site were taken to document observations made during our reconnaissance and are available in the project file at GeoEngineers.

Table II. Summary of Site Reconnaissance Observations

Feature	Observed	Not Observed	Comment, Location and/or Description
Structures (existing)	X		One 2-story wood-frame/stucco-surfaced building with partial basement and basement mezzanine is located on the site. A flue is located in the southwest portion of the building, and may be associated with a former boiler system (now removed).
Structures (evidence of former)		X	
Heating/Cooling System	X		Electric furnace (heating), electric AC (cooling).
Floor Drains, Sumps or Drywells	X		Floor drains are located in each of the four restrooms observed in the building. The restroom floor drains reportedly are connected to the sanitary sewer.
Aboveground Storage Tanks (ASTs)		X	
Underground Storage Tanks (s) or Evidence of USTs	X		1) One UST was identified inside the south corner of the basement, beneath an area of bermed soil. The base of the UST appears to be at basement ground level, and the top of the UST is approximately 6-inches below the bermed soil surface. The 4-foot deep UST contains approximately 3 feet of product (lube oil and gasoline). 2) Two 2-inch pipes and one 4-inch pipe were observed on the southwest exterior wall near the south corner of the site building. These pipes may be vent and fill pipes associated with the known UST and/or other unidentified USTs.
Drums or Other Containers	X		Three 55-gallon drums of new elevator hydraulic fluid were observed in the south corner of the basement. No ground surface staining, evidence of leaks or odors were associated with the drums.

Feature	Observed	Not Observed	Comment, Location and/or Description
Chemicals or Hazardous Materials (other than de minimis quantities of cleaning products)		X	1) Several one-gallon gasoline containers, one-gallon cans of paint, one-gallon containers of paint thinner and approximately ten 20-lb bags of mortar were observed in the south corner of the basement. No ground surface staining, evidence of leaks or odors were associated with the containers. 2) Approximately 15 one- and five-gallon containers of paint and de minimis quantities of glue, paint thinner, bonding cement, and miscellaneous spray cans were observed in the janitorial room on the mezzanine floor. Evidence of leaks, spills or odors was not observed in the vicinity of the containers. No ground surface staining, evidence of leaks or odors were associated with the containers. 3) De minimis quantities of cleaning supplies are located in the kitchen area of the salon on the second floor.
Evidence of Leaks, Spills or Releases Surrounding ASTs, USTs, and/or Chemical Storage Areas		X	
Stained Floors, Walls or Drains (other than apparent water stains or minor oil stains on pavement from parked vehicles)	X		1) Motor oil stains were observed on the concrete floor of the basement beneath two vehicles stored in the Resolute/Manifesto storage space (south portion of the building). The floor stains were small (one foot by one foot area) and were not located near any drains or concrete floor seams at the time of our site visit. 2) A large electric air compressor was observed in the southwest portion of the basement. Oil stains were observed on the compressor and surrounding ground surface. No floor drains or concrete seams are located in the immediate vicinity of the compressor.
Pipes of Unknown Origin or Use	X		1) One 2-inch metal pipe was observed protruding from the alley adjacent to the south edge of the basement garage door. This pipe appeared similar to the two suspected vent pipes located further south along the alley wall. 2) One approximate 2-inch iron pipe was observed on the building exterior north of the main entrance door off of Ninth Avenue. 3) One 1 to 1 ½-inch metal pipe was observed protruding out of the northeast wall in the storage room on the mezzanine floor. 4) One 1 to 1 ½-inch metal pipe was observed protruding from the northeast wall in the basement.
On-site Septic System		X	
Sanitary Sewer Connection		X	City of Seattle
Source of Potable Water		X	City of Seattle

Feature	Observed	Not Observed	Comment, Location and/or Description
Solid Waste Refuse Dumpsters	X		Garbage dumpsters were not observed in the building. The site property boundary is comprised by the building outline. Dumpsters were observed in the alley adjacent to the site and may be associated with the site. Garbage observed typically consisted of paper, cardboard, food containers, glass, aluminum cans, etc.
Hydraulic Hoists		X	
Oil/Water Separators		X	
Discolored or Stained Soil or Vegetation Potentially from Hazardous Substances		X	
Hazardous Waste Disposal Areas		X	
Uncontained Debris, Refuse or Unidentified Waste Materials		X	
Standing Water or Other Liquids		X	
Catch Basins and Storm Water Drainage	X		One catch basin was observed in the southwest portion of the basement within a concrete bermed area. No ground surface staining was associated with the catch basin at the time of our site visit. We did not identify where the catch basin drains to.
Pits/Ponds/Lagoons		X	
Waste or Wastewater Discharges		X	
Unusual Odors		X	
Stressed Vegetation		X	
Fill Material		X	
Water Wells (agricultural, domestic, monitoring)		X	
Pad-Mounted Transformers		X	
Pole-Mounted Transformers		X	
Vault-Mounted Transformers	X		A vault-mounted transformer is located adjacent to the site within the Lenora Street sidewalk near the alley. Evidence of transformer leaks or spill was not observed.
Other	X		Stains from a past hydraulic oil leak were observed on top of the building elevator. However, hydraulic oil was not observed on the sealed concrete floor below the elevator.

2.3.2 Findings

RECs identified during the site reconnaissance are listed below:

- The UST identified in the south corner of the basement is a REC. USTs are common sources of subsurface contamination by petroleum hydrocarbons. Based on the location of suspect pipes observed at the site, other USTs also may be present at the site.
- The flue identified in the southwest portion of the building may be associated with a former boiler system, and is considered a REC.
- Based on past site uses, it is possible that hazardous substances could have been disposed of in the basement catch basin. If the catch basin has leaked, or is not connected to the sanitary sewer, it may have impacted site soil and/or groundwater.

2.4 ADJACENT PROPERTY AND VICINITY OBSERVATIONS

2.4.1 Summary of Observations

We viewed properties located adjacent to and surrounding the site on July 25, 2002 from accessible public rights-of-way and the site. We did not enter adjacent properties or buildings. The site generally is situated in an area that is developed with commercial, retail, and light industrial facilities. Section 2.4.2 contains additional details regarding conditions of potential environmental significance observed during our site reconnaissance and a list of known or suspect environmental conditions identified by this portion of our study. Table III below outlines adjacent land uses and pertinent observations with respect to conditions that could pose a REC on the subject site. Figure 2 shows adjacent property uses and locations in relation to the site.

Table III. Adjoining Streets and Adjacent Properties Observations

Direction	Adjoining Street	Position Relative to Site[2]	Adjacent Property and Use	Comments
Northwest	None	Down/cross-gradient	Enterprise (car rental) and Collision Repair Center	A chimney and small concrete structure containing a furnace are located on this property, but are attached to the north corner of the subject site structure. The chimney and furnace structures may be associated with an oil burner and UST. Car washing activities were observed on this property at the time of our site visit. Harsh detergents, solvents and petroleum hydrocarbons may be/have been used at this facility.
Southwest	Alley	Down-gradient	Enterprise (car rental)	1) Rental car businesses often maintain their vehicles on their property and/or have facilities for washing vehicles. Harsh detergents, solvents and petroleum hydrocarbons may be/have been used at this facility. 2) A catch basin was observed in the alley between the subject site building and the Enterprise facility

[2] The inferred shallow groundwater flow direction in the site vicinity is to toward the west/northwest as described in Section 2.2.

Direction	Adjoining Street	Position Relative to Site[2]	Adjacent Property and Use	Comments
Northeast	Ninth Avenue	Up/cross-gradient	Fenced parking lot	Minor oil staining was observed on the gravel/asphalt ground surface on this property.
Southeast	Lenora Street	Up/cross-gradient	Washington Talking Book Braille Library, Durham Sunroofs and Upholstery, and Cosmopolitan Motors	Based on the age of the structures, it is possible that heating oil USTs may exist on the properties. Additionally, glues, plastic, metals, solvents and other chemicals may be associated with upholstery and sunroof installation or repairs. Cosmopolitan Motors may be associated with petroleum hydro-carbons and solvents relative to vehicle maintenance and repair.
North	None	Cross/down-gradient	Quinton Instrument Co.	Two groundwater monitoring wells were observed in the sidewalk along the east side of Ninth Avenue. There is potential for subsurface soil and/or groundwater contamination from this property.

2.4.2 Findings

RECs identified by this portion of the study are listed below:

- The chimney and furnace attached to the north corner of the site structure may be associated with an unidentified UST, and are considered a REC. According to Cornish College, the adjacent site owner (Lot 10) acknowledged that the chimney and furnace were theirs; he did not comment on USTs.
- Based on past and present site vicinity uses, it is possible that hazardous substances may have been disposed of in the alley catch basin. If the catch basin has leaked, or is not connected to the sanitary sewer, it may have impacted site soil and/or groundwater.
- Adjacent properties may be a potential source of soil and/or groundwater contamination by petroleum hydrocarbons, solvents, and/or other contaminants based on past and current heating facilities (boilers/tanks) and property uses.

2.5 PREVIOUS REPORTS

Our research identified two prior environmental/geotechnical reports that pertained to the site.

- ESA report dated 1996 performed by Welch Enterprises, Inc.
- "Ninth and Lenora Building – Seismic Coefficient Evaluation, Project No. 984019NA," dated March 19, 1998, for Murphy Varey by Woodward-Clyde.

A summary of the reports is as follows:

1996 Welch report (on file with Cornish College)

- Asbestos concentration was detected at more than 1 percent in cement board and vinyl sheeting in the site structure.
- Lead was detected at high levels in exterior windows.
- Based on the observation of vent pipes on the wall near the south corner of the building, Welch suspected that two USTs may be located in south corner of the building. Based on state database information, Welch concluded that one 1,000-gallon heating oil UST had been removed from the site, and was associated with a Thrifty Park facility. However, based on our review of state database information, it appears that the Thrifty Park site was not located on the subject site, but was located across Ninth Avenue, on property northeast of the subject site.
- PCBs were identified in fluorescent light ballasts.
- Chemicals used at the site consisted of "automotive" products (Ihler Automotive), print shop chemicals on the first floor, as well as general maintenance and cleaning products and disinfectant agents.
- Investigation of subsurface soil and groundwater was recommended relative to the potential for USTs on the site. Additionally, recommendations were given for removal of asbestos containing materials.

1998 Woodward-Clyde report (included in Appendix B)

- One of the three borings conducted in the vicinity of the site is located in the basement of the subject site in the location of the existing elevator shaft. The boring log for this exploration did not indicate evidence of possible impacted soil by hazardous substances beneath the building, based on our review of the associated boring log table and report. Chemical testing was not conducted as part of this study.

3.0 ENVIRONMENTAL RECORDS REVIEW

3.1 DATABASE SEARCH

GeoEngineers reviewed the results of a search of pertinent environmental regulatory lists and databases for current or previous facilities listed at addresses located within ASTM-specified distances from the subject site. The information reviewed was provided by a subcontracted regulatory list search service, Environmental Data Resources (EDR). The EDR report is presented in Appendix C. The report includes details regarding the listed facilities identified and maps showing the approximate locations of the listed facilities relative to the site.

GeoEngineers reviewed the search results for listings pertaining to the subject site. GeoEngineers also reviewed EDR's listing of database entries that could not be mapped by EDR because of insufficient addresses (orphans). Off-site facilities found within the specified distances from the site were evaluated for potential impact to the site.

The site is listed. Ihler Automotive, a former site tenant, is listed as a Resource Conservation and Reclamation Act (RCRA) small quantity generator of hazardous substances. Table IV below summarizes the listed facilities that in our opinion could pose a REC to the subject site. We

included the properties listed in Table IV because they are adjacent to the site or generally are at an inferred up-gradient location in relation to the site. Other listed facilities identified in Appendix C either are located a significant distance from the site or are located in an inferred down- or cross-gradient position relative to the site, and therefore, in our opinion are unlikely to pose a potential environmental concern to the site.

Table IV. Summary of Regulatory Database Search Listings of Potential Environmental Concern

Location	Listed Business	Listed Address	Regulatory Database	Description
Site	Ihler Automotive	2101 Ninth Avenue	RCRA-small quantity generator list	Used oil was recycled at the site. No violations were found, according to the EDR report.
Adjacent south, cross-/up-gradient	CD Stimson Co.	821 Lenora Street	RCRA-small quantity generator list	No violations were noted for this facility. This site is further discussed in Section 3.3.
Likely adjacent northeast, upgradient, however the exact location is not known.	Thrifty Park	9th & Lenora	Registered UST list	One approximately 1,000-gallon heating oil UST was removed from the property. No additional data was available from the EDR report.
North of northeast adjacent property	Quinton Instrument Co. SEA	2121 Terry Avenue	RCRA-small quantity generator, Registered UST and LUST lists	American Home Products Corp. reportedly owns the business. Used oil is recycled. Two approximately 1,000-gallon USTs (heating oil and leaded gasoline) have been removed, according to the EDR report. One or more of the USTs have leaked contaminants into the soil. A cleanup has started. This property is inferred to be up/cross-gradient from the subject site.
Adjacent southwest, cross-/down-gradient. The exact location is not known.	Westlake Chevrolet	2030 Eighth Avenue	RCRA-small quantity generator list	Used oil is recycled. No violations were found at this facility.
One block southeast-cross-/upgradient	Anges French Cleaners, Inc.	2000 Ninth Avenue	RCRA-small quantity generator list	Used oil reportedly is recycled, although we are unsure why used oil would be generated from a dry-cleaning facility. No violations were found at this facility. We would expect generation of spent solvents and detergents from this property.

3.2 REVIEW OF REGULATORY FILES

We requested to review Ecology's files for the following properties/businesses, based on the above table:

- Ihler Automotive
- CD Stimson Co.
- Thrifty Park
- Anges French Cleaners, Inc.
- Quinton Instruments Co.

Very little information was provided by Ecology for each of the properties. Available file information on the properties was sent to GeoEngineers via facsimile on August 2, 2002. A summary of available pertinent file review information follows.

Ecology made a visit to the Ihler Automotive business (former site tenant) in 1996 for the purpose of assisting delinquent reporters for dangerous waste activities. According to the Ecology documents, Ihler Automotive generated waste oil, antifreeze, ethylene glycol, benzene, mineral spirits, water, oil and parts washer solvent. Approximately 110 pounds of waste material reportedly was generated for bi-monthly recycling/disposal. Ecology assisted Ihler Automotive in completing appropriate dangerous waste activities reports for the years 1994 and 1995. It is not known, from the Ecology file, if disposal of dangerous wastes had occurred at the subject site. No follow-up visits were conducted by Ecology at the time of this report.

The available information, regarding Anges French Cleaners, Inc., was related to a RCRA-small quantity generator listing of "dry-cleaning plants." This property is not listed on any other state, federal or local regulatory databases known for release or suspected release of hazardous substances.

No information was provided by Ecology for the other properties listed above.

3.3 REVIEW OF OTHER REPORTS

GeoEngineers completed environmental site characterization and geotechnical engineering studies during 1992 and 1993 at the adjacent Braille Library/Seattle Police Department site (a.k.a. the C.D. Stimson site) located southeast of the subject site. The results of our previous environmental studies are summarized in our report entitled "Phase II ESA, Ninth Avenue and Lenora Street Site", dated December 7, 1993. This report is on file at GeoEngineers. The results of our previous studies indicate that a waste oil UST and a heating oil UST were removed from the central and eastern portions of the police station site in 1990. Petroleum hydrocarbons or volatile organic compounds (VOCs) either were not detected or were detected (diesel and heavy oil) at concentrations less than MTCA Method A cleanup levels in soil samples obtained from borings installed at the Stimson site. Petroleum hydrocarbons (diesel) and VOCs were detected at concentrations that exceed MTCA Method A cleanup levels in groundwater samples obtained from some of the monitoring wells installed at the Stimson site. The results of our previous studies indicate that an off-site source (east of the Stimson site) was responsible for the petroleum hydrocarbon and VOC contamination at the Stimson site. Petroleum hydrocarbons and VOCs were not detected in the Stimson site monitoring well located nearest to, and upgradient from, the subject site (MW-5, located on the east side of Lenora Street, adjacent to the Braille Library) in 1993. Police station construction activities, including soil excavation, were completed at the Stimson site between 1997 and 1999.

3.4 FINDINGS

RECs identified during this portion of the study are listed below:

- The Ihler Automotive facility formerly located on the site could have impacted site soil and/or groundwater if hazardous substances were leaked, spilled or disposed at the site.
- Petroleum-impacted groundwater detected on the adjacent, upgradient Stimson site may constitute a REC to the subject site. Although petroleum hydrocarbons were not detected in MW- 5 (located between the Braille Library and the subject site), contaminated groundwater could follow other preferential pathways to the subject site from an upgradient source of contamination.
- Although the location of the Thrifty Park facility is not known, it may pose a REC to the site if hazardous substances were spilled or leaked from the UST.
- Drycleaning facilities are common sources of soil and/or groundwater contamination by solvents, based on our experience. The Anges French Cleaners facility may pose a REC to the subject site.
- The Quinton Instruments site leaking USTs may be a REC to the site. Details of the USTs or contamination was not available at Ecology.

4.0 SITE HISTORY

4.1 HISTORICAL RESOURCES

Our understanding of the history of the site is based on a review of the information from the historical resources listed in Table V and interviews with the individuals listed. Copies of selected historical information, maps and other documents are included in Appendix D.

Table V. Historical Resources Reviewed

Description	Provider or Interviewee	Dates of Coverage or Dates of Site Knowledge	Date Reviewed or Contacted	Comment (See Section 4.2 for findings)
Historical Aerial Photo-graphs[3]	Walker & Associates in Tukwila, Washington	1936, 1941, 1946, 1956, 1960, 1969, 1974, 1980, 1985, 1992, 1995 and 1999	07/25/02	None.
Historical Fire Insurance Maps	EDR search of Sanborn maps	1893, 1905, 1949, 1950 and 1969	07/22/02	None.
Historical Tax Assessors Records	Puget Sound Regional Archives	1908 to 1973	07/19/02	None.

[3] The scale of the photographs reviewed allowed for an interpretation of general site development/configuration, such as identifying most structures, roadways and clearings. However, the scale of the photographs did not allow for identification of specific site features, such as fuel pumps, wells or chemical storage areas on the site, if any.

Description	Provider or Interviewee	Dates of Coverage or Dates of Site Knowledge	Date Reviewed or Contacted	Comment (See Section 4.2 for findings)
Historical City Directories	EDR search at public libraries and GeoEngineers search of reverse directories at the Puget Sound Regional Archives	1938 to 1996	07/29/02	None.
Building Plans	City of Seattle, Department of Construction and Land Use (DCLU)	1920s to 1990s	07/31/02	None.
Sewer, Water and other Utility Maps	City of Seattle Public Utility District (PUD)	1909 to present	07/25/02	None.
"A Narrative History" document	Seattle Engineering Department	1875 to 1975	07/31/02	This document identifies historic debris dump sites in the City of Seattle. The closest dump area listed relative to the site is located on Terry Avenue near the south end of Lake Union (north and down-gradient of the site).
Interview	David Murphy, Murphy Varey, P.S. (site owner)	1997 to present	07/25/02	None.
Interview	Lee Dorigan, King County Health Department	Recent	07/23/02	Ecology has the same information that the health department would have, according to Ms. Dorigan.
Interview	Agnus Ducay, Seattle Fire Department, Fire Marshalls Office	Recent	07/23/02	Ms. Ducay indicated that there is no UST registration or hazardous material storage on file with the fire department for the subject site.
Interview	Fred White, City of Seattle Street Use Permit department	Recent	07/23/02	None.
Maps	Lee Stevens, City of Seattle Department of Construction Land Use	Recent	07/23/02	Provided orthographic map of the site and surrounding properties showing underground utilities and lot numbers, former addresses, streets, etc.
Maps	Rex Stratton, City of Seattle Transportation Department	Circa 1945	07/31/02	Providedmaps of the site and adjacent properties showing underground utilities.
Interview	Dinah Kinney, City of Seattle, Engineering Department	Unknown	07/31/02	Interview regarding alley catch basin/sand trap.

4.2 HISTORICAL SITE OWNERSHIP AND USE SUMMARY

Available historical resources indicate that owners of the site consisted of a lumber company (likely Providence Lumber Co.) from at least 1905 to 1924 when G. L. Seibert acquired the site, according to City engineering records. By 1926 to at least 1935 the Victor Improvement Company owned the site. Westlake Chevrolet Company leased the site from approximately 1943-1977). Peter Frank & Associate Printers occupied the site in 1983 through 1994, according to city directories. Gary Pidig (deceased) owned the site from approximately 1988 to 1997. David Murphy of Murphy Varey, P.S., acquired the site in approximately 1997 and is the current owner. Site owners were not identified for the period between 1924 and 1926, 1935 and 1943, and 1977 to 1983. We did not research site ownership prior to 1905.

The results of our Sanborn map and tax assessment record review indicate that the site was undeveloped from at least 1893 until approximately 1905 when a "wood yard" was located on the site. Wood was stacked 10 feet high over the entire site and onto property located northwest of the site, according to the 1905 Sanborn map. It is not known if the wood was chemically treated.

Tax assessment records indicate that the current site structure was constructed in 1924 as a garage, contained a "sump" (possibly the basement catch basin), and was originally heated by an oil burner. According to site building plans dated 1924, a "wash rack" was present in the basement at the general location of the existing catch basin. The tax records indicate that a "mill constr laminated ramp" was installed between the first and second floors of the site building, apparently for vehicle access.

The available historical resources indicate that the site was used by Westlake Chevrolet as a vehicle service facility between the 1940s and the 1970s. Westlake Chevrolet reportedly also utilized adjacent properties, including Lots 1, 2, 3 and 10, for vehicle sales and service. The site reportedly was used as a printing facility during the 1980s and 1990s, and included a camera area, darkroom, and bindery area based on the site building plan dated 1981. Shuttle Express, Ihler Automotive and possibly Lithographics (typesetters) also occupied the site structure in 1994, based on city directories. A metal shop is shown in the west corner of the basement in 1998 site building plans.

Mr. Murphy indicated some asbestos and apparent PCB light ballasts were abated in the structure, (late 1990s) and some lead-based paint may exist on some interior structural beams. Mr. Murphy indicated that a small amount of hydraulic oil had leaked onto the roof of the elevator in the late 1990s and was subsequently cleaned up. Mr. Murphy indicated that the basement catch basin is vacuumed out annually. Mr. Murphy believes that the basement catch basin is connected to the catch basin located in the alley. Mr. Murphy indicated that a maintenance shop (name unknown, but likely Ihler Automotive) which operated out of the basement for a short time used the basement catch basin to collect vehicle wash water. Mr. Murphy indicated that to the best of his knowledge, the maintenance shop recycled its wastes and did not dispose of wastes on or adjacent to the site.

4.3 ADJACENT PROPERTIES

Adjacent properties generally were developed since at least1905, and generally consisted of retail commercial and industrial facilities, based on the available historical resources. Several vehicle sales and/or service facilities have been located in the site vicinity since the 1920s to the present, including on properties to the northwest, north, northeast, southeast, south and southwest of the subject site. Several furniture companies were located on the opposite corner east of the site between the 1903s and 1990s.

A proposed "new shop" for Westlake Chevrolet is shown on building plans dated 1946 for the northeast half of off-site Lot 10. The building plans include an oil burning furnace, oil storage tank, and exhaust chimney. This area currently is an undeveloped courtyard located behind the Enterprise/Collision Repair building courtyard, adjacent to the northwest subject site boundary. Based on our review of the available historical resources, we did not find evidence that the proposed "new shop" building was ever constructed. However, a furnace structure and chimney are currently located on Lot 10 and are connected to the northwest wall of the subject site building, as indicated in Section 2.3. We did not find evidence that the furnace and chimney structures were associated with the subject site building.

Building plans dated 1946 for the adjacent (Enterprise) property located across the alley include the alley catch basin. The catch basin is identified on the plans as "12x12 new sand trap", and instructions on the plans say "connect existing D.S. to new sand trap". Based on our interview with Ms. Kinney of the City of Seattle, the catch basin also could be a dry well, based on its age.

4.4 ENVIRONMENTAL LIENS OR PROPERTY USE RESTRICTIONS

During the course of our research, we did not find that environmental liens had been filed against the site.

4.5 FINDINGS

RECs identified during this portion of the study are listed below:

Site

- Previous site uses, including the wood yard, vehicle service facilities, printing facility, and metal shop, likely included the use, generation and/or storage of hazardous substances, including petroleum products, wood preservatives, solvents, inks, glues and/or metals. These hazardous substances could have contaminated the site soil and/or groundwater if they were leaked, spilled, or disposed of at the site.
- The former oil-fired heating system at the site could have contaminated site soil and/or groundwater if the former system, including any unidentified USTs, leaked or spilled oil.

Adjacent Properties

- Adjacent properties historically have been used by facilities that likely used, generated, stored, and/or disposed of hazardous substances, including petroleum products, solvents,

and/or metals. These hazardous substances could have contaminated the site soil and/or groundwater if they were leaked, spilled, or disposed of improperly.

- The chimney and furnace structure located on the adjacent property to the northwest (Lot 10) may be associated with an unidentified UST and is considered a REC to the site.

5.0 SUBSURFACE EXPLORATION AND TESTING

5.1 GENERAL

Based on the results of our Phase I ESA research, soil borings were completed to evaluate current soil and groundwater conditions beneath and adjacent to the site in the general vicinity of the identified RECs. The soil borings were located in the site basement, and adjacent to the site structure along Ninth Avenue, Lenora Street, and the alley.

A GeoEngineers' scientist monitored the drilling of nine direct-push soil borings (B-1 through B-9) and one hand auger boring (HA-1) between August 12 and 13, 2002 to depths ranging between approximately 4 and 33 feet bgs. Approximate boring locations are shown in Figure 2. Field procedures, field screening methods and boring logs are included in Appendix E. Chemical analytical results are presented in Tables 1 through 4. Laboratory reports and our Quality Assurance/Quality Control (QA/QC) review are included in Appendix F.

5.2 SUBSURFACE CONDITIONS

5.2.1 Soil

Soil encountered in the borings generally consisted of sand and silt with varying amounts of gravel. Perched groundwater was encountered during drilling in three of the borings (B-1, B-2 and B-3) at depths ranging between approximately 7 and 22 feet bgs.

GeoEngineers' obtained soil samples at approximately 2-foot intervals in the explorations for field screening of petroleum hydrocarbons and volatile organic compounds. Based on our field screening results, evidence of potential contamination was observed in soil samples obtained from borings B-1, B-2, B-3, B-5 and HA-1 at depths ranging between approximately 2 and 30 feet bgs.

Selected soil samples obtained from the borings were submitted for chemical analysis. In general, soil samples were selected based on field screening results, or at depths adjacent to suspected sources of contamination.

BETX and/or petroleum hydrocarbons were detected at concentrations that exceed MTCA Method A cleanup levels in soil samples from borings B-1 at 18 feet bgs, B-2 at 24 feet bgs and HA-1 at 2 and 4 feet bgs. BETX, MTBE and/or petroleum hydrocarbons either were not detected or were detected at concentrations less than MTCA Method A cleanup levels in the other soil samples analyzed. Hydrocarbons detected in soil samples from HA-1, B-2, B-3 and B-5 were identified by the laboratory as lube oil. The laboratory also identified mineral spirits (B-2-24), diesel (B-5-10), and late diesel/motor oil (B-1-18 and B-4-10.5).

Lead was detected at a concentration that exceed the MTCA Method A cleanup level in the soil sample from B-7 at 4 feet bgs. Lead and other metals either were not detected or were

detected at concentrations less than MTCA Method A cleanup levels in the other soil samples analyzed.

Two SVOCs (naphthalenes and benzo(a)anthracene) were detected at concentrations that exceed the MTCA Method A or B cleanup levels in the soil sample from in HA-1 at 4 feet bgs. Benzo(a)anthracene is a carcinogenic polycyclic aromatic hydrocarbon (cPAH). SVOCs and HVOCs either were not detected or were detected at concentrations less than MTCA cleanup levels in the other soil samples analyzed.

5.2.2 Groundwater

Groundwater samples were obtained from temporary monitoring points installed in three of the borings (B-1 through B-3) and submitted for chemical analysis. Groundwater did not enter into the temporary monitoring points installed in the other borings.

Petroleum hydrocarbons were detected at concentrations that exceed the MTCA Method A cleanup level in the groundwater samples obtained from B-2 and B-3. The laboratory identified lube oil (B-2 and B-3), mineral spirits (B-2) and diesel (B-3) in groundwater samples. Arsenic, chromium and lead were detected at concentrations that exceed MTCA Method A cleanup levels in B-2 and B-3. Mercury also was detected at a concentration that exceeds the MTCA Method A cleanup level in the groundwater sample obtained from B-3.

5.2.3 UST Product

A product sample (Product-1) was obtained from the UST located in the south corner of the basement on August 13, 2002, and was submitted for product identification analysis. The sample was obtained using a new disposable polyethylene bailer and chord. The product in the UST consisted of approximately 0.5 feet of lighter density hydrocarbons over approximately 2.5 feet of higher density, tar-like material. The product sample we obtained generally consisted of the overlying lighter density material. The laboratory report indicates that the product sample consisted of lube oil and gasoline.

6.0 ASBESTOS AND LEAD-BASED PAINT SURVEY

GeoEngineers subcontracted Pacific Rim Environmental (PRE) to conduct an asbestos and lead-based paint survey on the site structure interior and exterior. PRE reviewed a previous asbestos report for the site prepared in 1996 by Welch Enterprises prior to their site visit. PRE verified during their sampling event on August 12, 2002 that asbestos containing materials identified by the Welch report have since been abated. However, additional testing for asbestos and lead-based paint was also conducted on the site structure on August 12, 2002. Asbestos (1% to 7% chrysotile) was detected in surfacing and other miscellaneous materials throughout the site structure (interior and exterior), and lead was detected in some exterior paints. Please refer to the PRE asbestos and lead-based paint report for details (Appendix G).

7.0 CONCLUSIONS AND RECOMMENDATIONS

GeoEngineers has performed a Phase I/II ESA of Lots 11 and 12 of Block 24 of Sarah A. Bell's second addition located at the west corner of the intersection of Ninth Avenue and Lenora Street in Seattle, Washington. The Phase I portion of this ESA was conducted in general accordance with the scope and limitations of ASTM E 1527-00.

Based on the results of the Phase I portion of our study, RECs identified at the site include the known and potentially unidentified basement USTs, the former boiler system associated with the flue, the basement catch basin, and former site uses including wood yard, vehicle service, printing and metal shop facilities. Off-site RECs include the attached Lot 10 chimney/furnace structure, the adjacent alley catch basin, and current and former adjacent site uses and facilities.

Based on the results of the Phase II portion of our study, petroleum-related soil contamination was detected at concentrations that exceed MTCA Method A cleanup levels in the south portion of the site vicinity, including beneath the site, the adjacent alley and Lenora Street, and east of the site along Ninth Avenue. One known site UST containing petroleum products, the former boiler flue, and two catch basins (in the alley and site basement) are located in the south portion of the site area. Based on our field observations and soil chemical analytical results, it appears that the UST has leaked.

SVOCs, including one cPAH, also were detected at concentrations that exceed MTCA Method A or B cleanup levels in soil adjacent to the UST. Additionally, petroleum- and metals-related groundwater contamination was detected at concentrations that exceed MTCA Method A cleanup levels in this area. Lead-related soil contamination was detected at a concentration which exceeds the MTCA Method A cleanup level in the general vicinity of the metal shop formerly located in the northwest portion of the basement. Potential sources of the lead contamination may include past site operations and/or fill soil placed on the site prior to building construction.

The extent of the soil and groundwater contamination identified during this study has not been evaluated, and would require additional research, subsurface exploration, sampling and/or testing. Based on our observations and research, additional USTs may be located at the site. We recommend that the UST identified during this study be emptied and removed in accordance with Washington state regulations.

MTCA stipulates that owners and operators comply with the hazardous substance release reporting/response requirements outlined in WAC 173-340-300 and WAC 173-340-450. Reporting requirements include 24-hour notification to Ecology following UST release confirmation, and 90 day notification to Ecology following non-UST release confirmation. Additionally, we recommend notifying the City of Seattle that contaminated soil/groundwater has been identified within the right-of-ways adjacent to the site, including Lenora Street, Ninth Avenue the adjacent alley.

If subsurface construction, maintenance, or remedial excavation activities are planned for the site vicinity, we recommend that a handling and disposal plan for contaminated soil and groundwater be prepared to guide the contractor in the identification, removal, handling and proper disposal of contaminated media.

8.0 LIMITATIONS

This Phase I/II ESA has been prepared for use by Cornish College. GeoEngineers has performed this study of Lots 11 and 12 of Block 24 of Sarah A. Bell's second addition located at the west corner of the intersection of Ninth Avenue and Lenora Street in Seattle, Washington in general accordance with ASTM E-1527-00, Standard Practice for Phase I ESAs and the scope and limitations of our proposals dated June 6, 2002.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with the generally accepted environmental science practices for Phase I/II ESAs in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

Please refer to Appendix H titled "Report Limitations and Guidelines for Use" for additional information pertaining to use of this report.

The electronic version of this document (email, text, table, and/or figure), if any, and any attachments are only a copy of a master document. The master hard copy is stored by GeoEngineers, Inc. and will serve as the official document of record.

We appreciate the opportunity to be of service to Cornish College. Please call if you require more information or have questions regarding this report.

Respectfully submitted,

GeoEngineers, Inc.

Brian Peterka
Project Manager, P.G.

Kurt S. Anderson, P.G.
Principal

TMK:BPP:KSA:ja:nh:ab
Seat\00\finals\802200400ESA.doc

TABLE 1
SUMMARY OF SOIL CHEMICAL ANALYTICAL DATA[1]
PETROLEUM HYDROCARBONS

CORNISH COLLEGE
LOTS 11 AND 12 OF BLOCK 24 OF SARAH A. BELL'S SECOND ADDITION
9th AVENUE AND LENORA STREET
SEATTLE, WASHINGTON

Sample Number[2]	Sample Depth (feet)	Field Screening Results[3]		BETX[4] (mg/kg)				MTBE[4] (mg/kg)	Gasoline-range Hydrocarbons[5] (mg/kg)	Total Petroleum Hydrocarbons[6] (mg/kg)	
		Sheen	Headspace Vapors	B	E	T	X			Diesel	Heavy Oil
B-1-18.0	18.0	MS	<100	**0.23**	<0.05	<0.05	<0.2	<0.1	<3	120	310
B-1-24.0	24.0	SS	<100	<0.03	<0.05	<0.05	<0.2	<0.1	<3	<25	<50
B-2-24.0	24.0	HS	400	<0.6[7]	**11**	<1	<3	<2[7]	**2,400**	<500	**18,000**
B-2-32.5	32.5	SS	<100	<0.03	<0.05	<0.05	<0.2	<0.1	<3	<25	99
B-3-8.0	8.0	HS	200	<0.03	<0.05	<0.05	<0.2	<0.1	<12	93	850
B-3-14.0	14.0	HS	100	<0.03	<0.05	<0.05	<0.2	<0.1	<3	<25	82
B-4-10.5	10.5	SS	<100	<0.03	<0.05	<0.05	<0.2	<0.1	<3	95	140
B-4-14.0	14.0	SS	<100	<0.03	<0.05	<0.05	<0.2	<0.1	<3	<25	<50
B-5-10.0	10.0	HS	200	--	--	--	--	--	--	130[8]	230
B-6-10.0	10.0	SS	<100	<0.03	<0.05	<0.05	<0.2	<0.1	<3	<25	<50
B-7-4.0	9.0	SS	<100	<0.03	<0.05	<0.05	<0.2	<0.1	<3	<25	<50
B-8-8.0	8.0	NS	<100	<0.03	<0.05	<0.05	<0.2	<0.1	<3	<25	<50
B-9-8.0	8.0	SS	<100	<0.03	<0.05	<0.05	<0.2	<0.1	<3	<25	<50
HA-1-2.0	2.0	HS	<100	--	--	--	--	--	--	<1,300	**28,000**
HA-1-4.0	4.0	HS	<100	--	--	--	--	--	--	<630	**19,000**
MTCA Method A Cleanup Level				0.03	6	7	9	0.1	30	2,000	2,000

nd @ deeper samples

Notes:

[1]Soil samples were collected on August 12 and 13, 2002. Analyses conducted by CCI Laboratory of Everett, Washington.

[2]Approximate exploration locations are shown in Figure 2.

[3]See Appendix D for a description of field screening methods. NS=no sheen, SS=slight sheen, MS=moderate sheen, HS=heavy sheen.

[4]Analyzed by EPA Method 8021B.

[5]Analyzed by Ecology Method NWTPH-G.

[6]Analyzed by Ecology Method NWTPH-D extended.

[7]Detection limit is greater than the MTCA Method A cleanup level. According to the lab, the elevated detection limit is due to unavoidable matrix interference.

[8]The lab report indicates that this result is biased high due to overlap from the heavy oil range.

mg/kg = milligrams per kilogram "--" = not analyzed MTCA = Model Toxics Control Act NE = not established NA = not applicable

Bold/shaded values exceed MTCA cleanup levels.

TABLE 2
SUMMARY OF SOIL CHEMICAL ANALYTICAL DATA[1]
HVOCs, SVOCs AND METALS
CORNISH COLLEGE
LOTS 11 AND 12 OF BLOCK 24 OF SARAH A. BELL'S SECOND ADDITION
9th AVENUE AND LENORA STREET
SEATTLE, WASHINGTON

Sample Number[2]	Sample Depth (feet)	Field Screening Results[3]		HVOCs[4] (mg/kg)	SVOCs[5] (mg/kg)							Metals[6] (mg/kg)			
		Sheen	Headspace Vapors		Naphthalenes[9]	Phenanthrene	Di-N-Butylphthalate	Fluoranthene	Pyrene	Butylbenzylphthalate	Benzo(A)-Anthracene	Arsenic	Total Chromium	Lead	Mercury
B-3-8.0	8.0	HS	200	ND[7]	--	--	--	--	--	--	--	6.0	51[9,10]	<7.1	0.030
B-3-14.0	14.0	HS	100	ND	--	--	--	--	--	--	--	9.1	41	<7.7	0.04
B-4-10.5	10.5	SS	<100	ND[7]	--	--	--	--	--	--	--	<3.3	15	<6.6	0.06
B-4-14.0	14.0	SS	<100	ND[7]	--	--	--	--	--	--	--	<4.0	56[9,10]	<7.9	0.06
B-5-10.0	10.0	HS	200	--	<0.300	<0.100	<0.130	<0.100	<0.100	<0.100	<0.100	--	--	--	--
B-6-10.0	10.0	SS	<100	ND[7]	--	--	--	--	--	--	--	<7.6	60[9,10]	<15	0.10
B-7-4.0	9.0	SS	<100	ND[7]	--	--	--	--	--	--	--	<2.8	23	**890**	0.08
B-8-8.0	8.0	NS	<100	ND[7]	<0.300	<0.100	<0.130	<0.100	<0.100	<0.100	<0.100	--	--	--	--
HA-1-4.0	4.0	HS	<100	--	**8.900[8]**	0.84	5.00[11]	0.950	0.750	13.0[11]	**0.770**	--	--	--	--
MTCA Method A Cleanup Level				NA	5	NE	NE	NE	NE	NE	NE	20	NE[10]	250	2
MTCA Method B Cleanup Level				NA	NE	NE	NE	3,200	2,400	16,000	0.137	NA	NE[10]	NA	NA

Notes:

[1]Soil samples were collected on August 12 and 13, 2002. Analyses conducted by CCI Laboratory of Everett, Washington.

[2]Approximate exploration locations are shown in Figure 2.

[3]See Appendix D for a description of field screening methods. NS=no sheen, SS=slight sheen, MS=moderate sheen, HS=heavy sheen.

[4]Analyzed by EPA Method 8260.

[5]Analyzed by EPA Method 8270. Only detected analytes are listed.

[6]Analyzed by EPA Method 6000/7000 Series. Only detected analytes are listed.

[7]Methylene Chloride was detected during analysis of this sample. The detection concentrations is considered to be due to lab contamination, according to the lab.

[8]Sum of naphthalene, 2-methylnaphthalene and 1-methylnaphthalene

[9]A MTCA Method A or B cleanup level for total chromium (total for chromium III and VI) has not been established. Chromium III is a naturally occuring metal present in King County soils at an average concentration of 48 mg/kg, based on Ecology's publication "Natural Background Soil Metals Concentrations in Washington State" dated October 1994. Chromium VI is produced during industrial processes.

[10]The detected concentration of total chromium is less than the MTCA Method A cleanup levels for chromium III (2,000 mg/kg) but greater than the MTCA Method A cleanup levles for chromium VI (19 mg/kg).

[11]The lab report indicates that the detected concentration of this analyte is likely due to lab contamination.

mg/kg = milligrams per kilogram "--" = not analyzed MTCA = Model Toxics Control Act NE = not established NA = not applicable ND = not detected

Bold/shaded values exceed MTCA cleanup levels.

TABLE 3
SUMMARY OF GROUNDWATER CHEMICAL ANALYTICAL DATA[1]
PETROLEUM HYDROCARBONS

CORNISH COLLEGE
LOTS 11 AND 12 OF BLOCK 24 OF SARAH A. BELL'S SECOND ADDITION
9th AVENUE AND LENORA STREET
SEATTLE, WASHINGTON

Sample Number[2]	Total Petroleum Hydrocarbon Identification[3]			BETX[4] (ug/l)				MTBE[4] (ug/l)	Gasoline-Range Hydrocarbons[5] (ug/l)	Total Petroleum Hydrocarbons[6] (ug/l)	
	Gasoline	Diesel	Heavy Oil	B	E	T	X			Diesel	Heavy Oil
B-2	Detected	ND	Detected	<10[8]	39	<10	170	<30[8]	**28,000**	**<25,000[8]**	**540,000**
B-3	ND	Detected	Detected	--	--	--	--	--	--	**73,000**	**470,000**
Product-1	Detected[7]	ND	Detected[7]	--	--	--	--	--	--	--	--
MTCA Method A Cleanup Level				5	700	1,000	1,000	20	800	500	500

Notes:

[1]Groundwater samples were collected on August 12 and 13, 2002. Analyses conducted by CCI Laboratory of Everett, Washington.

[2]Approximate exploration locations are shown in Figure 2.

[3]Analyzed by Ecology Method NWTPH-HCID

[4]Analyzed by EPA Method 8021.

[5]Analyzed by Ecology Method NWTPH-G.

[6]Analyzed by Ecology Method NWTPH-D extended.

[7]Analyzed by gas chromotography fingerprinting.

[8]Detection limit exceeds cleanup level. According to the lab, the elevated detection limit is due to unavoidable matrix interference.

[9]The lab indicated that this product sample consisted mainly of lube oil with lesser amounts of gasoline.

mg/l = milligrams per liter

ug/l = micrograms per liter

"--" =not analyzed

ND =not detected

MTCA = Model Toxics Control Act

Bold/shaded values exceed MTCA cleanup levels

TABLE 4
SUMMARY OF GROUNDWATER CHEMICAL ANALYTICAL DATA[1]
HVOCs, SVOCs AND METALS

CORNISH COLLEGE
LOTS 11 AND 12 OF BLOCK 24 OF SARAH A. BELL'S SECOND ADDITION
9th AVENUE AND LENORA STREET
SEATTLE, WASHINGTON

Sample Number[2]	HVOCs[3] (mg/l)	SVOCs[4] (mg/l)	Metals[4] (mg/l)			
			Arsenic	Total Chromium	Lead	Mercury
B-1	ND	--	--	--	--	--
B-2	ND	--	**0.010**	**0.07**	**0.069**	<0.0002
B-3	ND	--	**0.10**	**3.2**	**8.1**	**0.0037**
MTCA Method A Cleanup Level	NA	NA	0.005	0.050	0.015	0.002

Notes:

[1]Groundwater samples were collected on August 12 and 13, 2002. Analyses conducted by CCI Laboratory of Everett, Washington.

[2]Approximate exploration locations are shown in Figure 2.

[3]Analyzed by EPA Method 8260.

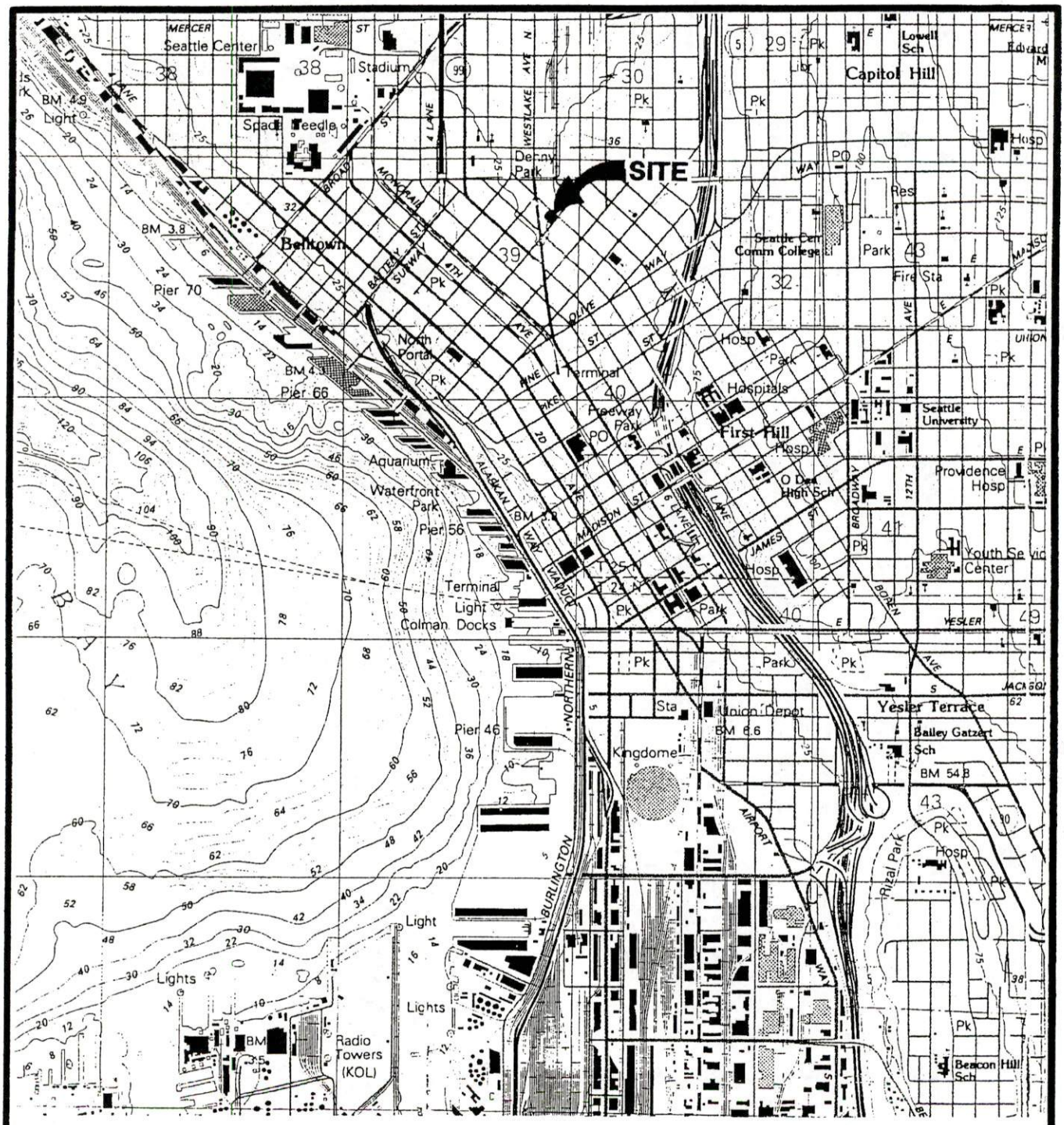
[4]Analyzed by EPA Method 6000/7000 Series. Only detected analytes are listed.

mg/l = milligrams per liter "--" =not analyzed ND =not detected NA =not applicable

MTCA = Model Toxics Control Act

Bold/shaded values exceed MTCA cleanup levels.

Seat\00\finals\802200400Tables\Table4.xls



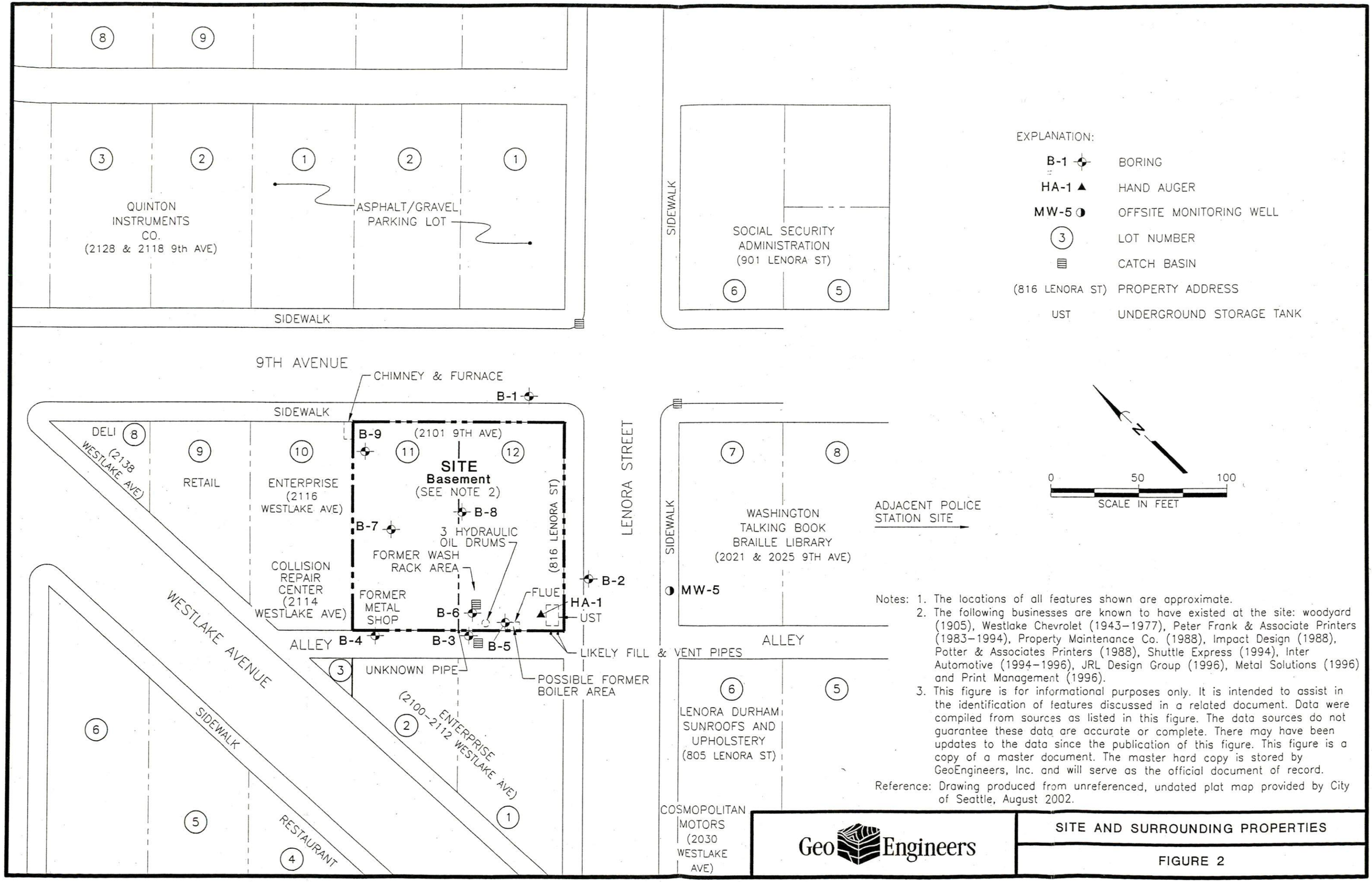
Reference: USGS 7.5x15' topographic–bathymetric quadrangle map "Seattle South, Wash." 1983.

REDM 8022-004-00 TMK:SYF 08/12/02

Geo Engineers

VICINITY MAP

FIGURE 1



EXPLANATION:

B-1 ⊕	BORING
HA-1 ▲	HAND AUGER
MW-5 ◑	OFFSITE MONITORING WELL
(3)	LOT NUMBER
▤	CATCH BASIN
(816 LENORA ST)	PROPERTY ADDRESS
UST	UNDERGROUND STORAGE TANK

Notes:
1. The locations of all features shown are approximate.
2. The following businesses are known to have existed at the site: woodyard (1905), Westlake Chevrolet (1943–1977), Peter Frank & Associate Printers (1983–1994), Property Maintenance Co. (1988), Impact Design (1988), Potter & Associates Printers (1988), Shuttle Express (1994), Inter Automotive (1994–1996), JRL Design Group (1996), Metal Solutions (1996) and Print Management (1996).
3. This figure is for informational purposes only. It is intended to assist in the identification of features discussed in a related document. Data were compiled from sources as listed in this figure. The data sources do not guarantee these data are accurate or complete. There may have been updates to the data since the publication of this figure. This figure is a copy of a master document. The master hard copy is stored by GeoEngineers, Inc. and will serve as the official document of record.

Reference: Drawing produced from unreferenced, undated plat map provided by City of Seattle, August 2002.

GeoEngineers

SITE AND SURROUNDING PROPERTIES

FIGURE 2

REDM\P:\8022004\00\CAD\T2\8022004001T2A.DWG 09/20/02 TMK:HLA

APPENDIX B

OUTSIDE REPORTS

Woodward-Clyde

Engineering & sciences applied to the earth & its environment

March 19, 1998

Post-it® Fax Note 7671	Date 8/19	# of pages ▶ 20
To TINA KING	From JIM C	
Co./Dept Geoengineers	Co CPL	
Phone #	Phone # 206 343 0460	
Fax # 425 861 6050	Fax #	

Mr. Dave Murphy
Murphy Varey
2101 Ninth Ave., Suite 207
Seattle, WA 98121

Subject: Ninth and Lenora Building - Seismic Coefficient Evaluation
Project No. 984019NA

Dear Dave:

We have completed our investigations of soil materials underlying and adjacent to the building at 1201 Ninth Avenue, Seattle, Washington (9th and Lenora Building) for NEHRP seismic coefficient classification (FEMA-178, as required by the client). Based on the information gathered, we believe the soil conditions are characteristic of a seismic coefficient of S2 as described in the NEHRP Handbook for the Seismic Evaluation of Existing Buildings (FEMA-178 1992). This conclusion was reached following performance of the subsurface investigation described below and examination of existing boring and well information available in the site vicinity. The locations of the borings and wells used in this study are shown in Figure 1.

As stated in our proposal dated February 19, 1998, the primary objectives of the work were:

- Monitor drilling operations
- Analyze field observations
- Perform laboratory analyses
- Review existing information
- Recommend NEHRP classification

To achieve these objectives, we have monitored drilling operations, tested soil samples from auger cuttings, evaluated lab data, researched related soil data from adjacent investigations and evaluated NEHRP classification for the anticipated subsurface soil profile at the site.

NEHRP guidelines for classification of soil profiles are presented in Attachment A. The guidelines suggest that, "deep cohesionless or stiff clay conditions including sites where the

Woodward-Clyde Consultants
1500 Century Square • 1501 Fourth Avenue • Seattle, Washington 98101-1662
206-343-7933 • Fax 206-343-0513

Woodward-Clyde

soil depth exceeds 200 feet and the soil types overlying rock are stable deposits of sands, gravels, or stiff clays" can be classified as Soil Profile Type S2 and soft- to medium-stiff clays and sands characterized by 30 feet or more of soft- to medium-stiff clays with or without intervening layers of sand or other cohesionless soils can be classified as Type S3.

We have observed auger cuttings associated with installation of a new elevator shaft beneath the basement level of the building. The top of the drilled shaft was at the basement slab level which is about 20 feet below the Lenora Avenue street level.

The materials observed during drilling of the shaft generally consist of gray and tan, moist to very moist silty sands. These materials were observed to be wet at a depth of about 33 feet where a water table was encountered. At a depth of about 50 feet, the material grades to a greenish gray, clayey sand with gravel. Drilling for the shaft stopped at a depth of about 55 feet. No significant clay or silt layers were noted over the depth of the boring. Samples were intermittently taken of the auger cuttings. Table 1 summarizes the soils classifications and moisture contents of the materials encountered. Table 2 presents results of the laboratory sieve analyses and moisture content testing performed on selected samples to assist in soil classification.

Boring and well log information was researched from our data base which was compiled as part of a seismic hazard mapping project for the Seattle Metropolitan area. This project is being funded by the U.S. Geological Survey National Earthquake Hazards Reduction Program (Award No. 1434-HQ-97-GR-03024). We were able to identify boring number 79031 (Figure 2) located at the Daon Pacific Building at 720 Olive Way (about 1500 feet south of the site) and groundwater well 25/4-30R1 (Figure 3) located near the intersection of Thomas Street and Fairview Avenue (about 1500 feet north, northeast of the site) to assist in verifying general geologic and subsurface profiles.

Boring 79031 was drilled to a depth of 93 feet and Groundwater Well 25/4-30R1 was drilled to a depth of 555 feet. Blow counts recorded in Boring 79031 and material types were generally indicative of materials meeting an S2 classification. Clayey layers present were described as very stiff to hard and are not of the extent described in the NEHRP code to signify an S3 classification. Neither borings encountered bedrock indicating that the bedrock is at significant depth below ground level.

Additional pertinent information was gathered through the City of Seattle. A geotechnical investigation was performed by GeoEngineers during the development of the new West Precinct Building located between 8th and 9th Avenue and Virginia and Lenora Streets which is adjacent to the site. Information pertinent to this investigation was provided in a report

Woodward-Clyde

titled "Geotechnical Engineering Services, Proposed Police Department Precinct Building" dated April18,1996.

The most significant of the information reviewed by Woodward-Clyde from this report was that for monitoring well MW-5. This monitoring well is located about 60 feet south from the south corner of the 9th and Lenora Building. It is covered with an inscribed plate set flush with the sidewalk along Lenora Street adjacent to the Washington Library for the Blind. MW-5 was drilled to a depth of about 60 feet. Blow count information recorded indicated that the materials are dense and firm over the extent of the boring. These descriptions are characteristic of an S2 seismic classification. The materials reported in this boring were also consistent with the materials observed during auguring of the elevator shaft in the 9th and Lenora Building.

Some additional information was obtained from the Department of Ecology for shallow wells installed at 7th and Lenora (depth 31.5 feet) and at the Quinton Building located between Ninth and Terry Streets, south of Denny Way. Some stiff to very stiff clay and silt was reported at the 7th and Lenora site. Density information was not available for the Quinton Building well installation (3 wells) which were each less than 30 feet in depth. This information is included in Attachment B.

The various information gathered from the sources described above was consistent with an S2 seismic coefficient classification in accordance with NEHRP guidelines and is the basis for our recommendations.

Limitations

The assessment of the site subsurface conditions, for purposes of the NEHRP seismic coefficient recommendation, is based on the subsurface conditions encountered from the elevator shaft drilled for this project and review of previous investigations by others at and around the site. We have implicitly assumed during the course of our investigation and preparation of this report that the soils encountered and reported by others are representative of soil conditions in the site vicinity. Borings and wells relied upon were widely spaced and actual subsurface conditions between holes may vary.

This report has been prepared to aid in the general assessment of the seismic coefficient for materials beneath the site. The evaluations provided are for this specific use, and not for use in developing geotechnical parameters and recommendations for other design issues. A qualified geotechnical engineer should conduct specific geotechnical investigations for other soil and foundation design-related issues.

Woodward-Clyde

It has been a pleasure to be of service to you on this project. If you have any questions regarding this report, please call us.

Sincerely,

Daniel J. Hawk
Project Manager

Phyllis Brunner, P.E.
Vice President

DH:wp

cc: Jerry Middaugh - Structural Systems Engineering

Woodward-Clyde

Table 1
NINTH AND LENORA BUILDING
Elevator Shaft Soil Samples
(Estimated soil profile data from spot check sampling on 36 inch diameter auger boring)

Sample No.	Date	Depth	Moisture Content (from lab tests)	Percentage Passing #200 (from lab tests)	Soil Description
SP1	2/17/98	0-5 ft	24%	28%	Moist, dark gray, silty, medium to fine sand (SM)
SP-2	2/18/98	15-20 ft	10%	12%	Moist, brown, silty fine sand (SM)
SP-3	2/18/98	20-25 ft	NA*	NA	Moist, gray, silty fine sand (SM)
SP-4	2/18/98	25-30 ft	NA	NA	Moist, gray, medium to fine sand (SM), trace silt
SP5	2/19/98	36-38 ft	25%	6%	Wet, gray, medium to fine sand (SP-SM), trace silt and gravel
SP-6	2/19/98	38-40 ft	NA	NA	Wet, gray, medium to fine sand (SM), trace silt and gravel
SP-7	2/24/98	53-55 ft	NA	NA	Wet, greenish gray, clayey sand with gravel (SC-GC)

* NA - Not Available

Notes:
1) Samples obtained from spot check and monitoring of 36-inch diameter auger boring for elevator shaft.
2) Soil classifications are based on visual observations of the samples.
3) Driller reported probable groundwater at 33 feet below basement slab level.

Woodward-Clyde

Table 2
NINTH AND LENORA BUILDING
LABORATORY TEST RESULTS

Sample Number	DEPTH (ft)	Moisture Content (%)	Percent Passing #200 Sieve
SP-1	0–5	24	28
SP-2	15-20	10	12
SP-5	36–38	25	6

Note:
1 ASTM D-2216
2 ASTM D-1140

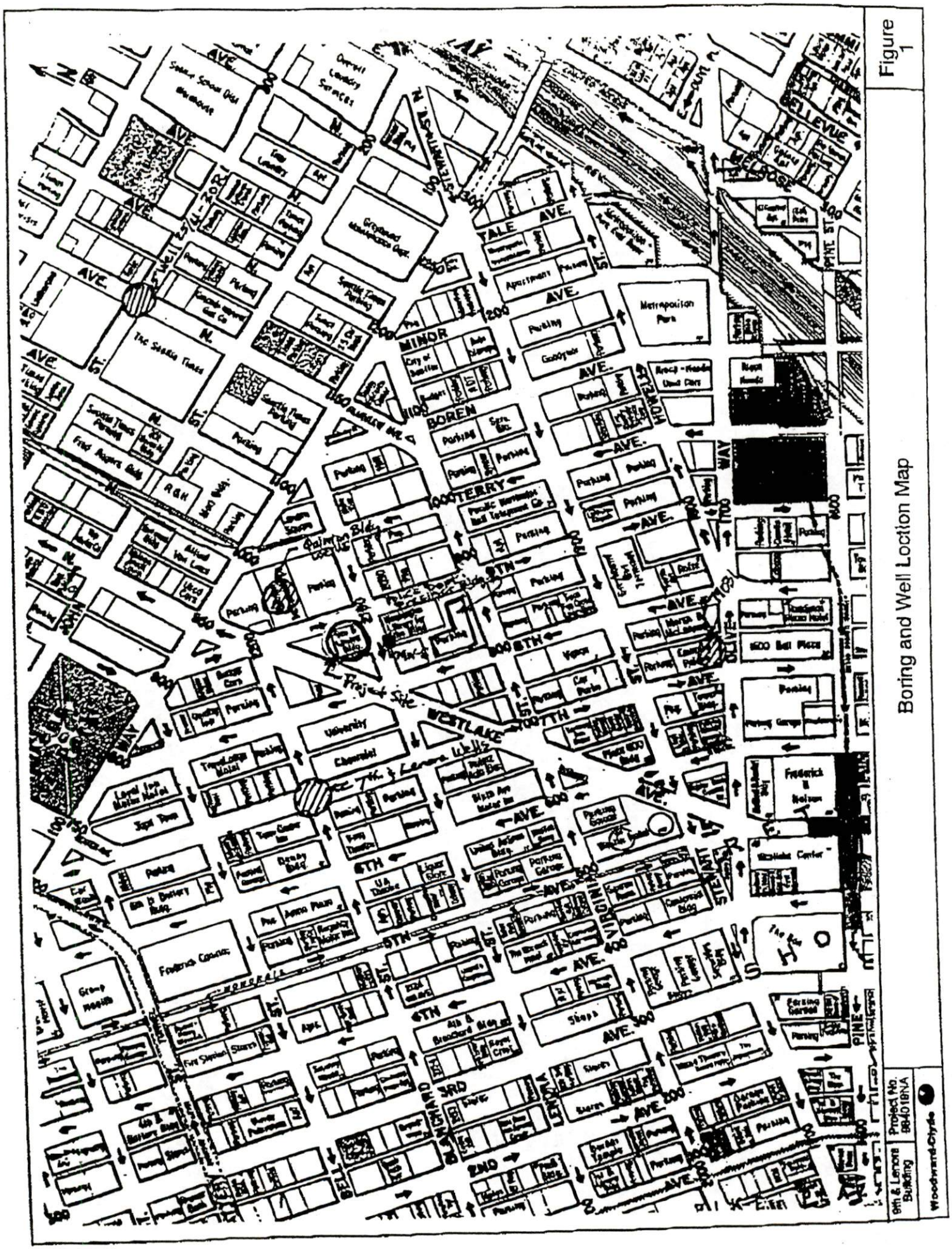
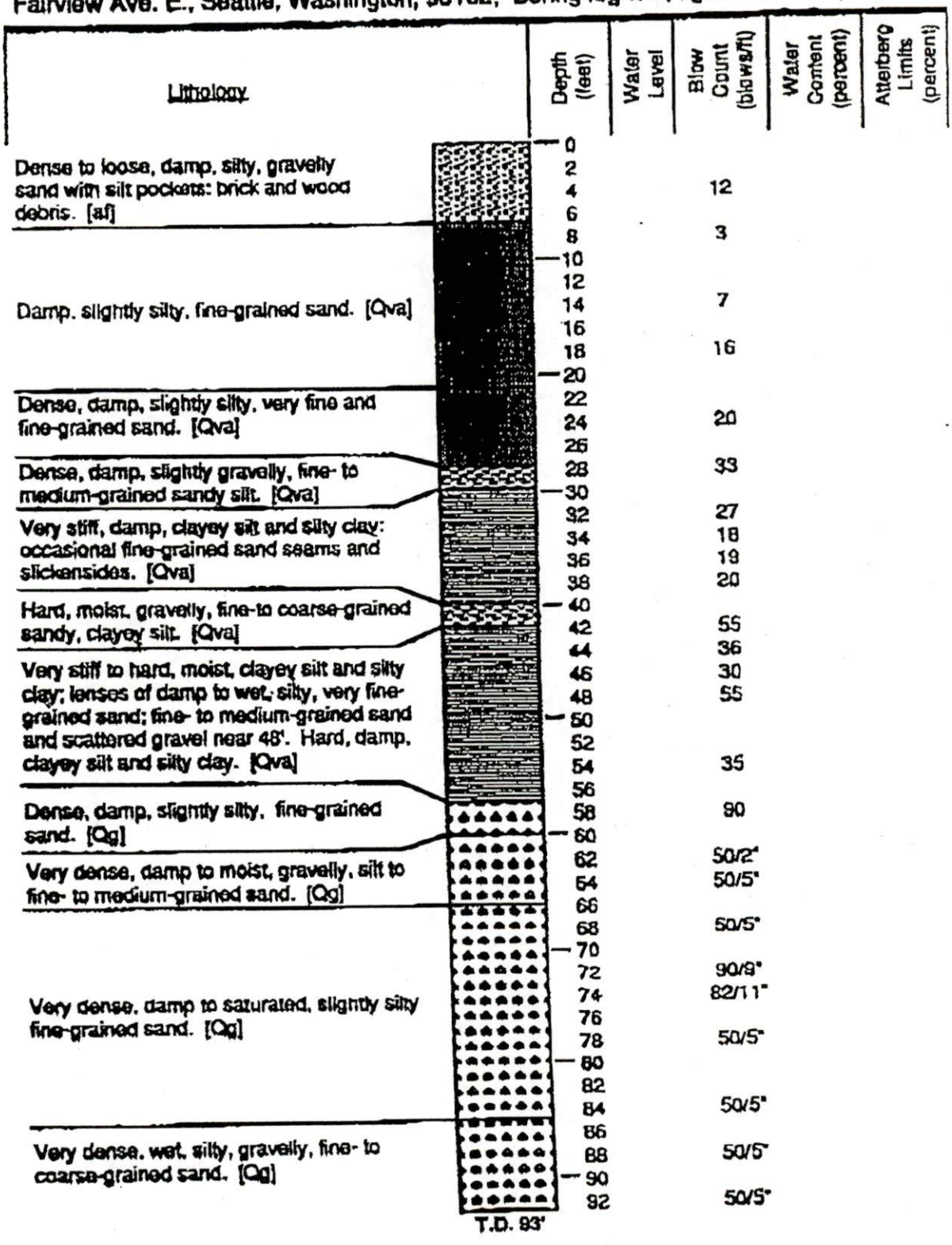


Figure 1
Boring and Well Loction Map
9th & Lenora Building
Project No. 98H018NA
Woodward-Clyde
Project Site
MADISON
MARION
SPRING
SENECA
UNIVERSITY
UNION
PINE ST.
OLIVE WAY
STEWART ST.
VIRGINIA ST.
BLANCHARD
LENORA
BELL
WESTLAKE
HOWELL
MINOR
BOREN
TERRY
9TH
8TH
7TH
6TH
5TH
4TH
3RD
2ND
1ST
AVE.
The Seattle Times
Frederick & Nelson
Metropolitan Park
Federal Courts
Group Health
Pacific Northwest Bell Telephone Co.
Seattle Tennis Club
Seattle Times Parking
Parking
Apartment
Bellevue

NUMBER: 79031
SITE: Daon Pacific Building, 720 Olive Way
GROUND ELEVATION: 115'
INVESTIGATOR: Hart, Crowser and Associates Inc., Design Service Building, 1910 Fairview Ave. E., Seattle, Washington, 98102; Boring log B-6, figure A-7 of report.



9th & Lenora Building	Project No. 984019NA
Woodward-Clyde	

Boring No. 79031

Figure 2

Well 25/4-30R1

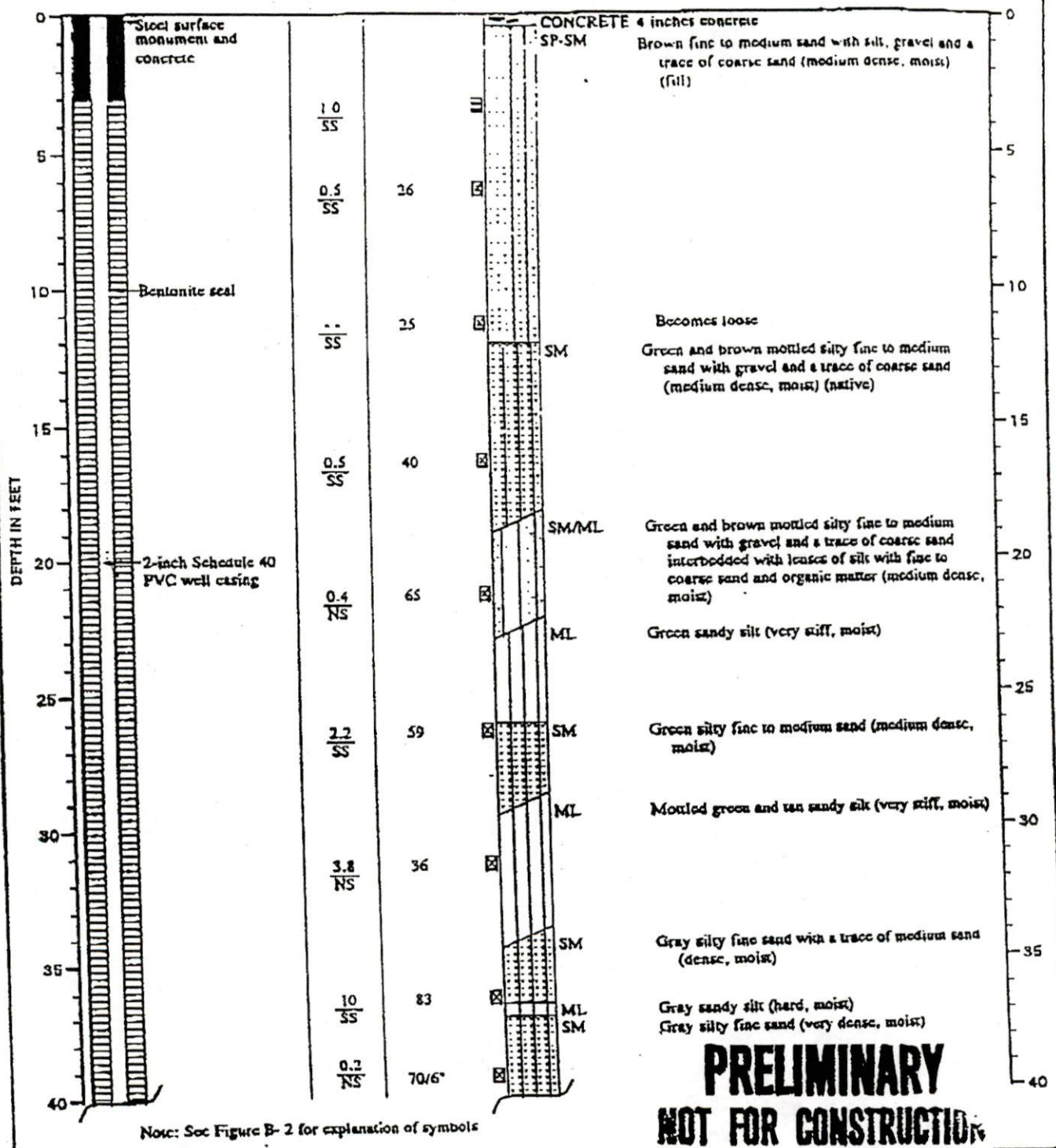
Troy Laundry. About 200 ft N. and 100 ft W. of intersection of Thomas St. and Fairview Ave. N. Altitude about 90 ft. Drilled by N. C. Janssen Drilling Co.

Sand and gravel	27	27
Gravel and blue clay	63	90
Gravel and sand	60	150
Clay, sandy	25	175
Gravel, medium	10	185
Gravel	30	215
Clay, brown	35	250
Gravel, cemented	41	291
Gravel	17	308
Gravel and clay	15	323
Gravel, cemented	5	328
Sand and gravel	24	352
Sand	5	357
Gravel and clay	13	370
Sand	3	373
Clay and sand	23	396
Gravel	29	425
Gravel and sand	10	435
Gravel	18	453
Sand	22	475
Clay	12	487
Sand	10	497
Clay	13	510
Sand and gravel	11	521
Gravel, cemented	14	535
Clay	20	555

Casing: 8-inch; perforated from 297 to 308 ft, and from 357 to 521 ft.

9th & Lenora Building	Project No. 984019NA	Groundwater Well 25/4-30R1	Figure 3
Woodward-Clyde			

MONITORING WELL MW-5



Note: See Figure B- 2 for explanation of symbols

PRELIMINARY
NOT FOR CONSTRUCTION

Geo Engineers

LOG OF MONITORING WELL

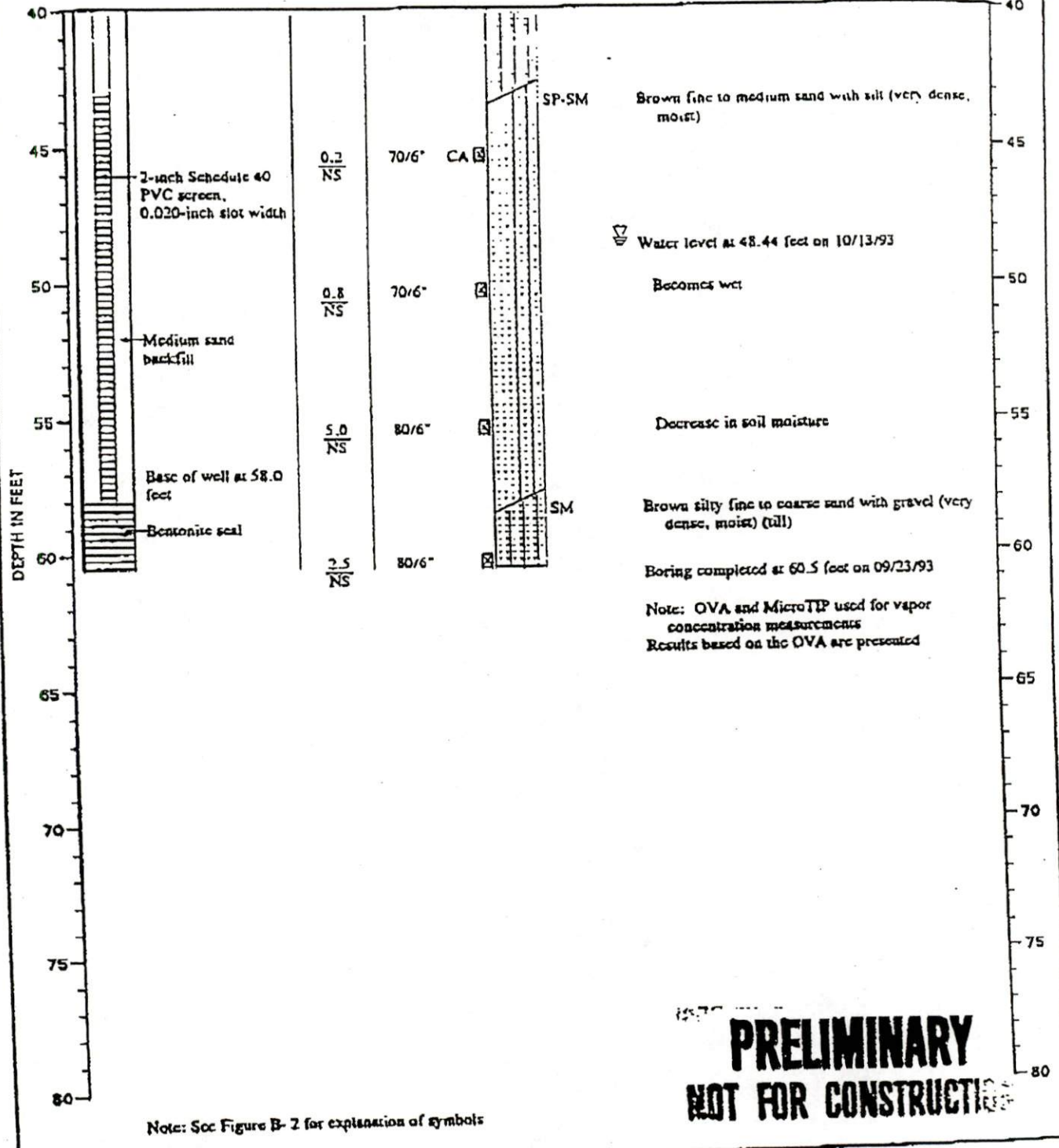
FIGURE B-6

9th & Lenora Building	Project No. 984019NA
Woodward-Clyde	

Monitoring Well MW-5

Figure 4

MONITORING WELL MW-5
(Continued)



PRELIMINARY
NOT FOR CONSTRUCTION

Note: See Figure B-2 for explanation of symbols

Geo Engineers

LOG OF MONITORING WELL

FIGURE B-6

9th & Lenora Building | Project No. 984019NA | Woodward-Clyde

Monitoring Well MW-5

Figure 4 (cont.)

Attachment A
NEHRP Guidelines For Soil Profile Type Classification
(FEMA-178)

FEDERAL EMERGENCY MANAGEMENT AGENCY

FEMA-178 / June 1992
Supersedes 1989 Preliminary Edition

NEHRP Handbook for the Seismic Evaluation of Existing Buildings

EARTHQUAKE HAZARDS REDUCTION SERIES 47

Issued by FEMA in furtherance of the Decade for Natural Disaster Reduction.

TABLE 2.1
Soil Profile Types* and Site Coefficients

Soil Profile Type	Profile with	Site Coefficient, S
S_1	Rock of any characteristic, either shale-like or crystalline in nature. Such material may be characterized by a shear wave velocity greater than 2,500 feet per second or by other appropriate means of classification. OR Stiff soil conditions where the soil depth is less than 200 feet and the soil types overlying rock are stable deposits of sands, gravels, or stiff clays.	1.0
S_2	Deep cohesionless or stiff clay conditions including sites where the soil depth exceeds 200 feet and the soil types overlying rock are stable deposits of sands, gravels, or stiff clays.	1.2
S_3	Soft- to medium-stiff clays and sands characterized by 30 feet or more of soft- to medium-stiff clays with or without intervening layers of sand or other cohesionless soils.	1.5
S_4	More than 70 feet of soft clays or silts characterized by a shear wave velocity less than 400 feet per second.	2.0

* These soil types are defined in the 1988 *NEHRP Recommended Provisions*.

Building evaluation involves several substantial difficulties. One is the matter of uncovering the structure. In many buildings the structure is concealed by architectural finishes, and the engineer will have to get into attics, crawl spaces, and plenums. Lack of plans and calculations also may be a problem, and this is particularly frustrating with respect to concrete work. Assessing material quality and allowable stresses also is difficult, and some destructive testing may be necessary. Destructive and nondestructive testing of reinforced concrete and masonry elements may be necessary to determine capacity and quality. If reinforcing plans are available, a limited amount of exposure of critical reinforcement may be made to verify conformance to the plans. If the plans are not available, the quantity of reinforcement should be determined by nondestructive methods. The results of the nondestructive testing should be verified by a limited amount of reinforcement exposure.

When the nature of a structural element or system is not clear, more field work may be needed. The Engineer of Record should be consulted if possible. The evaluating engineer may find it helpful to do some research on historical building systems, to consult old handbooks, and perhaps to consult with older engineers who have knowledge of early structural work in the community or region. A good knowledge of former construction practices and construction requirements may be gained through study of the building code requirements applicable at the building location at the time it was constructed. The evaluation, however, should be based on facts, not assumptions, to the greatest extent possible.

2.2 SELECTION AND REVIEW OF EVALUATION STATEMENTS

Having seen the building and assembled all available plans and other data, the engineer should determine the building type and address the evaluation statements as follows:

1. Look for and define in words and by three-dimensional sketch the lateral-force-resisting system; make use of whatever components are available and effective to constitute a system.

2. Choose either the general set of evaluation statements or one or more of the sets for the 15 common building types (see Sec. 2.2.1 and 2.2.2 below). Judgment should be used in selecting the appropriate

Attachment B
Resource Protection Well Report
[Department of Ecology]

75/95/51 JAN 4 1991

RESOURCE PROTECTION WELL REPORT

DEPT. OF ECOLOGY

START CARD NO. [redacted]

PROJECT NAME: METRO
WELL IDENTIFICATION NO.: B-2
DRILLING METHOD: HSA
DRILLER: Harold Pradzinski
FIRM: Associated Drilling
SIGNATURE: Harold Pradzinski
CONSULTING FIRM: Hong West
REPRESENTATIVE: Rod Fabuliar

COUNTY: King
LOCATION: NE¼ NE¼ Sec 31 Twn 25N R 4E
STREET ADDRESS OF WELL: 9TH AVE @ LENORA ST SEATTLE
WATER LEVEL ELEVATION: —
GROUND SURFACE ELEVATION: BB (METRO ~~City Survey Datum~~)
INSTALLED: YES
DEVELOPED: NO

WELL DATA

ASPHALT
Concrete
Bentonite Grout
Blank
Sand
3/4" PVC
Screen

FORMATION DESCRIPTION

0 — CONCRETE — 1.0
Med dense sand w/interbedded clayey silt: M. brown FILL — 6.0
Stiff to very stiff, laminated silt & clay: damp; gray to tan;
23
VOID
24
CLAY
WOOD DEBRIS
26
Very stiff, laminated clay & silt: damp; blue gray
31.5
BOTTOM @ 31.5 FT

5 10 15 20 25 30 35

SCALE: 1" = 5'

PAGE 1 OF 1

25/4E/31A

RECEIVED
FEB 23 1994
DEPT. OF ECOLOGY

HOLT DRILLING, INC.

Resource Protection Well Report

Project Name QUINTON BLVD
Well Identification # H-C-6
Drilling Method 4" HSA
Driller MIKE CYRIER
License # 2081

Date 1-24-94
County KING NE ¼ NE ¼
Section 31 T. 25N R. 4
Start Card ~~WELL~~ 16709
Consulting Firm HART CROWSER

Stick up ~~B~~ on Monument Casing

Soil Log	Depth of Components In Feet	
~~V~~ 4 DRY SANDY SILT	2'	CONCRETE
~~I~~ CLAYEY SILT	5'	Holeplug
~~Y~~ SANDY SILT W/ SEAMS OF	8'	C.S.S.
~~Y~~ SILTY CLAY W/ SANDY CLAY	12'	8'
	18'	

Type of Surface Seal CONCRETE
Amount 2'
ID of Riser Pipe 2"
Type of Riser Pipe 2" PVC SCH 40
Amount 9'
Type of Connection ASTM F-480
Type of Backfill around Riser Holeplug
Amount 3'
Diameter of Borehole 8"
Screen Size or Type .020 PVC
Type of Filter Material 10-20 C.S.S.
Amount 13'

Remarks:

Signature

RECEIVED
FEB 23 1994
DEPT. OF ECOLOGY

HOLT DRILLING, INC.

Resource Protection Well Report

Project Name QUINTON BLDG
Well Identification # MC-5
Drilling Method 4" HSA
Driller MIKE CYRIER
License # 2081

Date 1-24-94 25/4E/31A
County KING NE¼ NE¼
Section 31 T. 25N R. 4
Start Card 16715
Consulting Firm HART CROWSER

Stick up ? on Monument Casing

Soil Log / Depth of Components In Feet

0'
CONCRETE
2'
HOLEPLUG
7'
C.S.S.
10'
20'

~ 6' ...y GRY ...DY FILL
6' – 11' ...Y CLAYEY ...DY SILT
11' – 15' ...EY SANDY ...TEY SILT ...SM SA LENSES
15' ...Y SILTY ...NDY CLAY

Type of Surface Seal CONCRETE
Amount 2'
ID of Riser Pipe 2"
Type of Riser Pipe 2" PVC SCH 40
Amount 10'
Type of Connection ASTM F-480
Type of Backfill around Riser HOLEPLUG
Amount 5'
Diameter of Borehole 8"
Screen Size or Type .020 PVC
Type of Filter Material 10-20 C.S.S.
Amount 13'

Remarks:

Signature [signature]

HOLT DRILLING, INC.

Resource Protection Well Report

RECEIVED
FEB 23 1994
DEPT. OF ECOLOGY

Project Name RENTON BLDG
Well Identification # HC-4
Drilling Method 4" HSA
Driller Mike Cyrier
License # 2081

Date 1-24-94
County King, NE ¼ NE ¼
Section 31 T. 25N R. 4
Start Card 116715
Consulting Firm Hart Crowser

Stick up 0 on Monument Casing

Soil Log

Depth of Components in Feet

0' — CONCRETE — 2'
Hole plug — 11'
12' — C.S.S. — 15'
25'

Soil Log: 1' muddy fill; 11' gy Clayey muddy SILT; gy Sandy, gy SILT with SA LENSES; 20' dk gy Silty clay

Type of Surface Seal CONCRETE
Amount 2'

ID of Riser Pipe 2"
Type of Riser Pipe 2" PVC SCH 40
Amount 15'
Type of Connection ASTM F-480

Type of Backfill around Riser Hole plug
Amount 10'

Diameter of Borehole 8"

Screen Size or Type .020 PVC

Type of Filter Material 10-20 C.S.S.
Amount 13'

Remarks:

Signature [signature]

25/4E/31A

HOLT DRILLING, INC.

Resource Protection Well Report

Project Name 9th & Lenora

Well Identification # HC-1

Drilling Method 4" HSA

Driller Mike Cypher

License # 2081

RECEIVED
JAN 12 1994
DEPT. OF ECOLOGY

Date 12-29-93

County King NE¼ NE¼

Section 31 T. 25N R. 4E

Start Card 16721

Consulting Firm Holt Drilling

Stick up 0 on Monument Casing

Soil Log

Depth of Components In Feet

2" Asphalt
8" Concrete
12" Stone & Sand
Clayey Sandy fill

2'

Holeplug

5'

C.S.S.

7'

22'

Holeplug

30'

Type of Surface Seal Concrete
Amount 2'

ID of Riser Pipe 2"
Type of Riser Pipe 2" PVC SCH 40
Amount 7'
Type of Connection ASTM F480

Type of Backfill around Riser Holeplug
Amount 3'

Diameter of Borehole 8"

Screen Size or Type .020 PVC

Type of Filter Material 10-20 CSS
Amount 17'

Remarks:

Signature

APPENDIX D

SELECTED HISTORICAL RESEARCH DOCUMENTS

1946

Cornish - 9th & Geneva
8022-0400
DPP 7-31-82 DCLU

This cnst adjacent Enterprise S/D at 2116 Westlake

SECTION

WALL A

Future fin. FL. EL. 93.00

Future finish floor slab

Vertical control joint

Remove all soil and construction debris from this area. Grade level and use material to fill in areas where noted. Provide temporary drainage to prevent ponding.

FIN. FL. EL. 94.67

This grade elevation allows for future 4" conc. floor

Top of curb ramp EL. 94.15

Top of curb EL. 94.00

Line of property

See typical wall section

12"x12" "new sand trap"

New 8" min. concrete wall. See typical wall section

Connect existing D.S. to new sand trap

FIN. FL. EL. 89.00

connect existing D.S. to new sand trap"

Provide new wood construction to match existing

Existing Building

BASEMENT FLOOR PLAN

SCALE: 1/8" = 1'-0"

WALL A

SCALE: 1" = 1'-0"

Dowel 24" long @ 8" c/c

5'-0" on vertical bolt to face of wall and bolt 6'-0" below top of wall

2" x 12" nailer

Future finish floor slab

2'-0" clear

Batter 6" min.

Horiz. Bars: #5 @ 12" max.

Bars 'A'

2'-0" clear

Bars 'B'

TYPICAL WALL SECTION

SCALE: 1" = 1'-0"

TYPICAL WALL TABLE

H	D	BARS 'A'	BARS 'B'
9'-0"	11'-6"	#5 @ 12" max.	#5 @ 12" max.
10'-6"	13'-5"	#5 @ 12" max.	#5 @ 12" max.
12'-0"	15'-4"	#5 @ 12" max.	#5 @ 12" max.
13'-6"	17'-3"	#5 @ 12" max.	#5 @ 12" max.
15'-0"	19'-2"	#5 @ 12" max.	#5 @ 12" max.

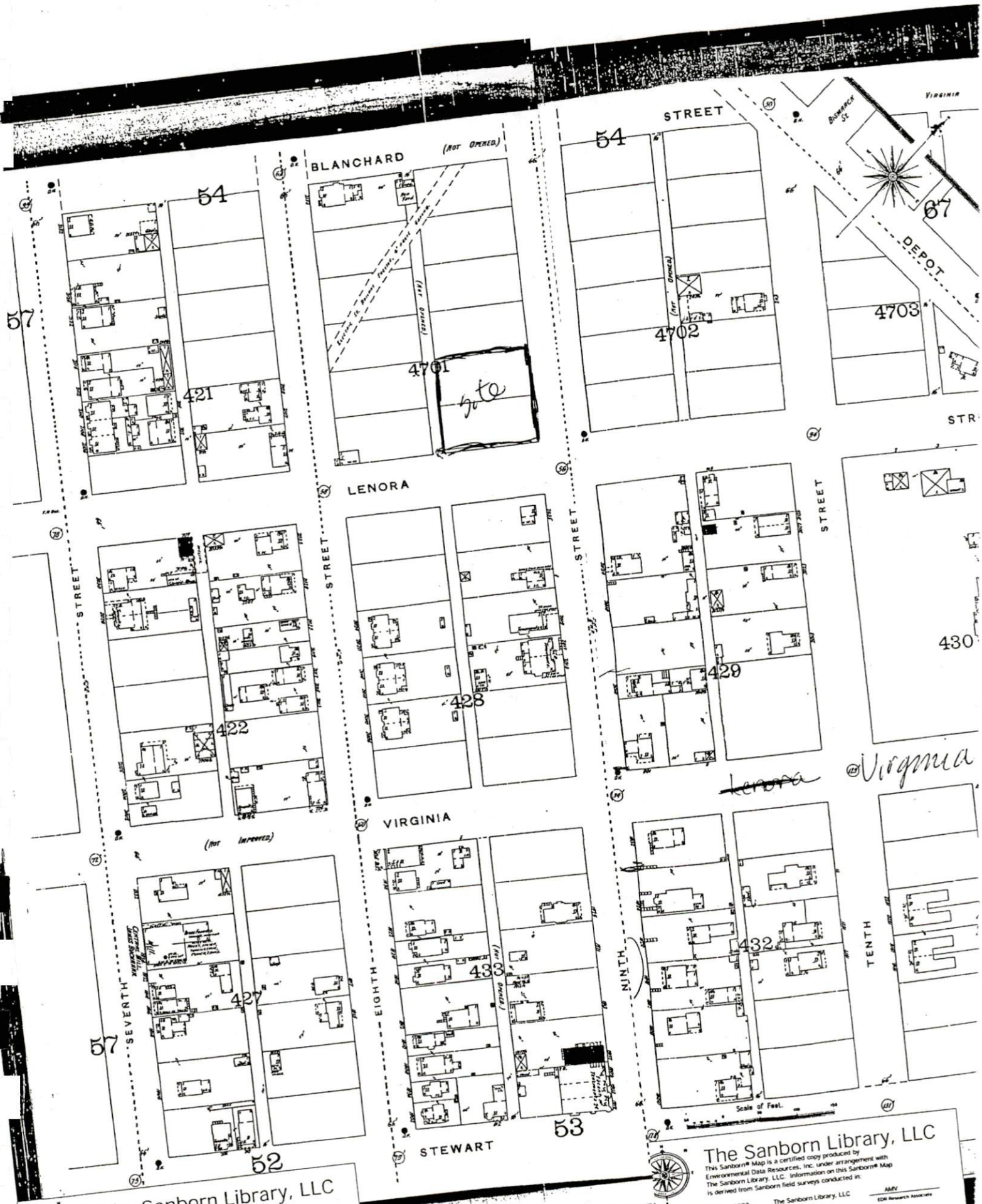
NOTES: Max. soil bearing - 2 Tons / sq. ft.
Equivalent fluid pressure = 28 #/cu. ft.
Concrete: 1:2½:3 mix.
f'c 28 day = 2500 psi per test of concrete
f'c = 3000 #/in²
Reinforcing: Intermediate grade.
fy = 40,000 #/in²

B73414

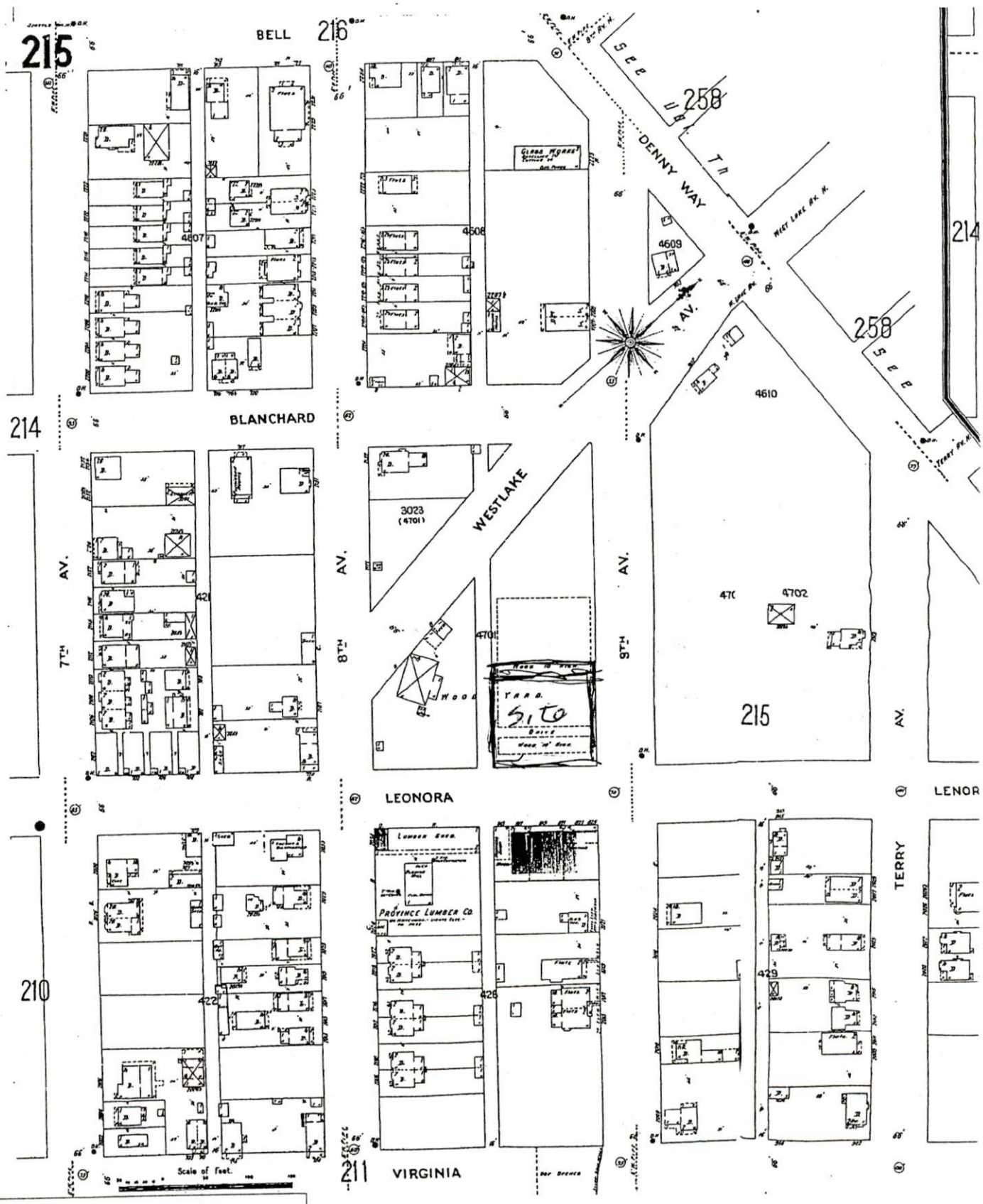
WEST PARK
CHEVROLET CO.
REPAIR SHOP
USED CAR SALES SPACE
THOMAS GRAY HIGER & THOMAS

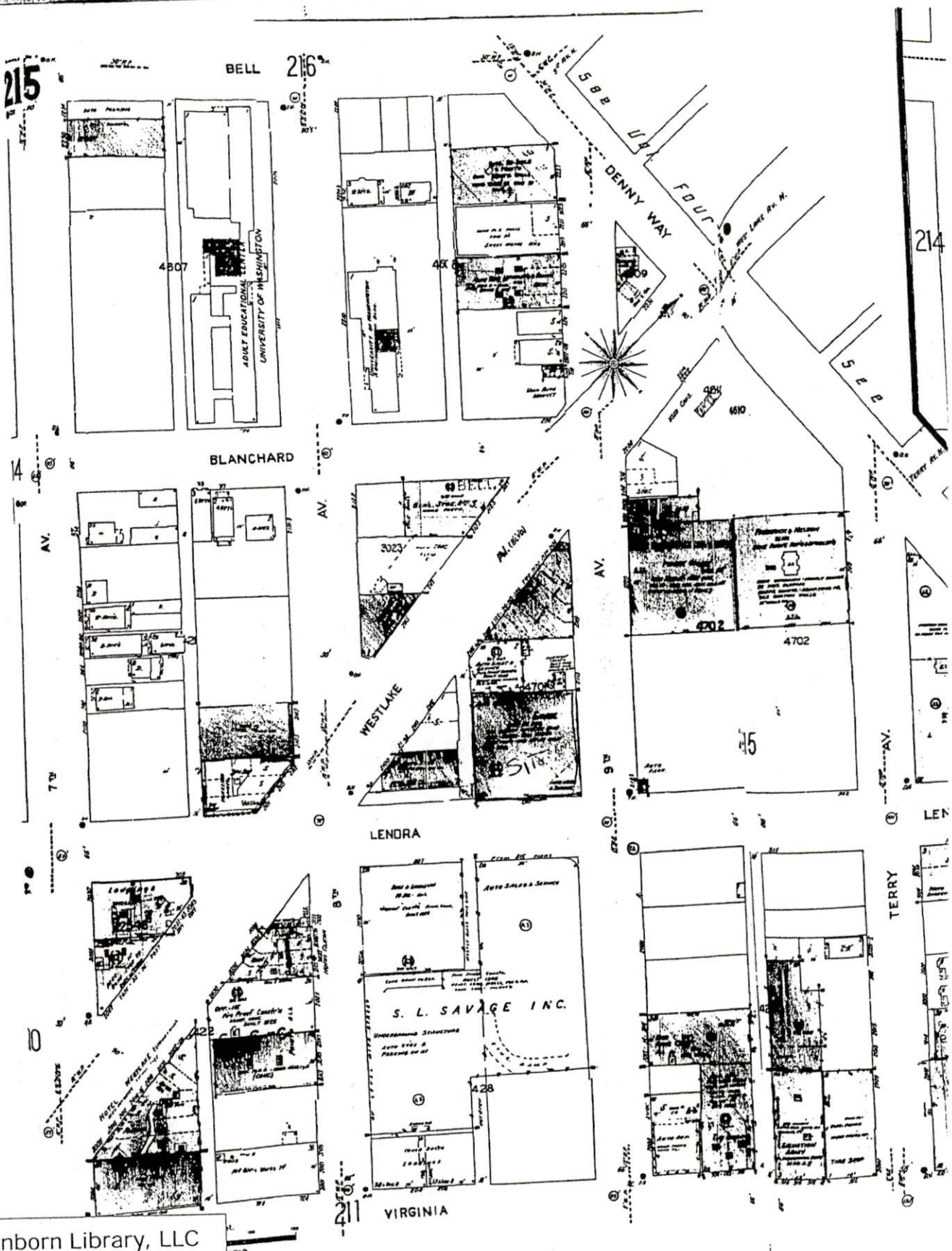
Revised 1-2-46

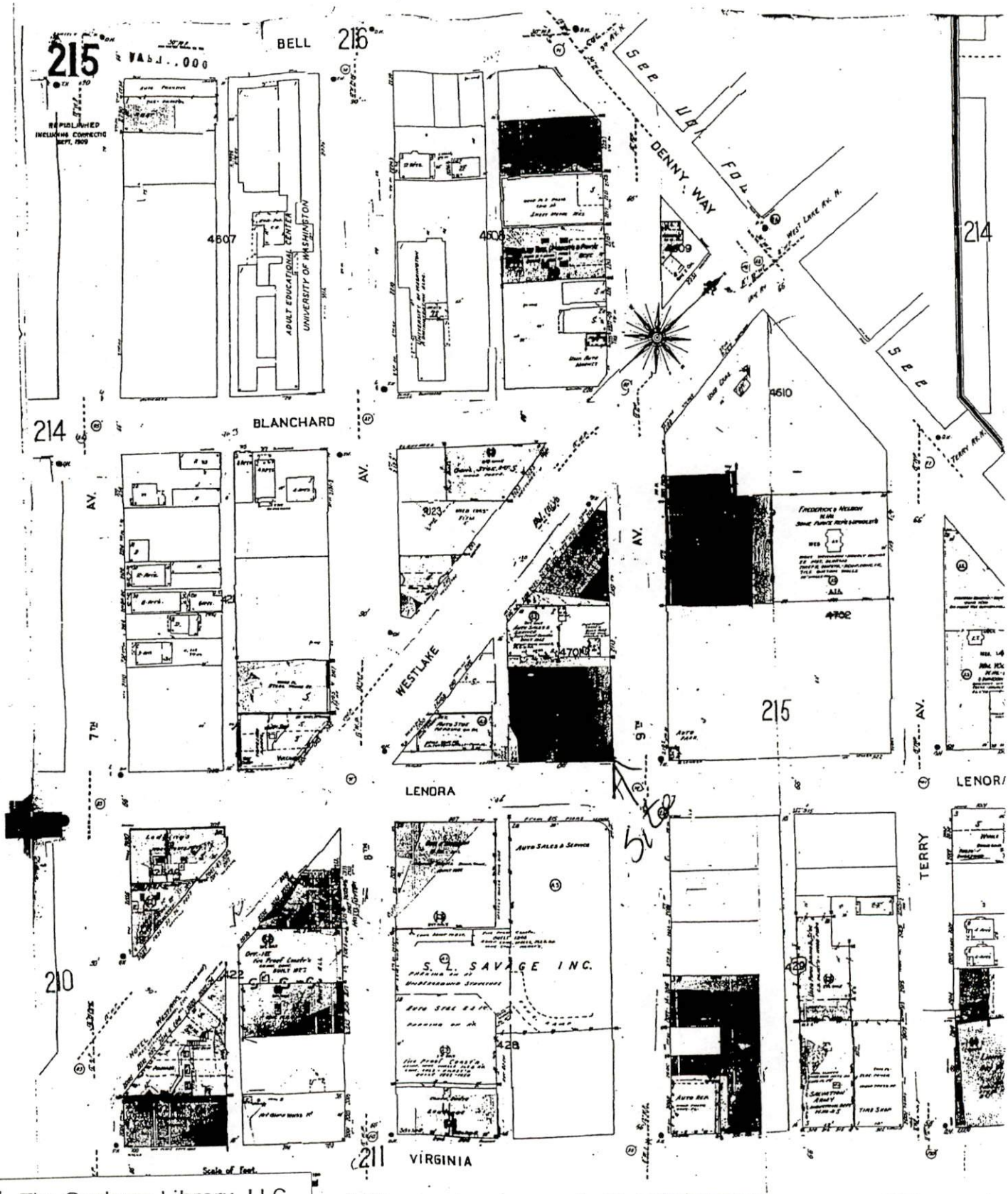
24x

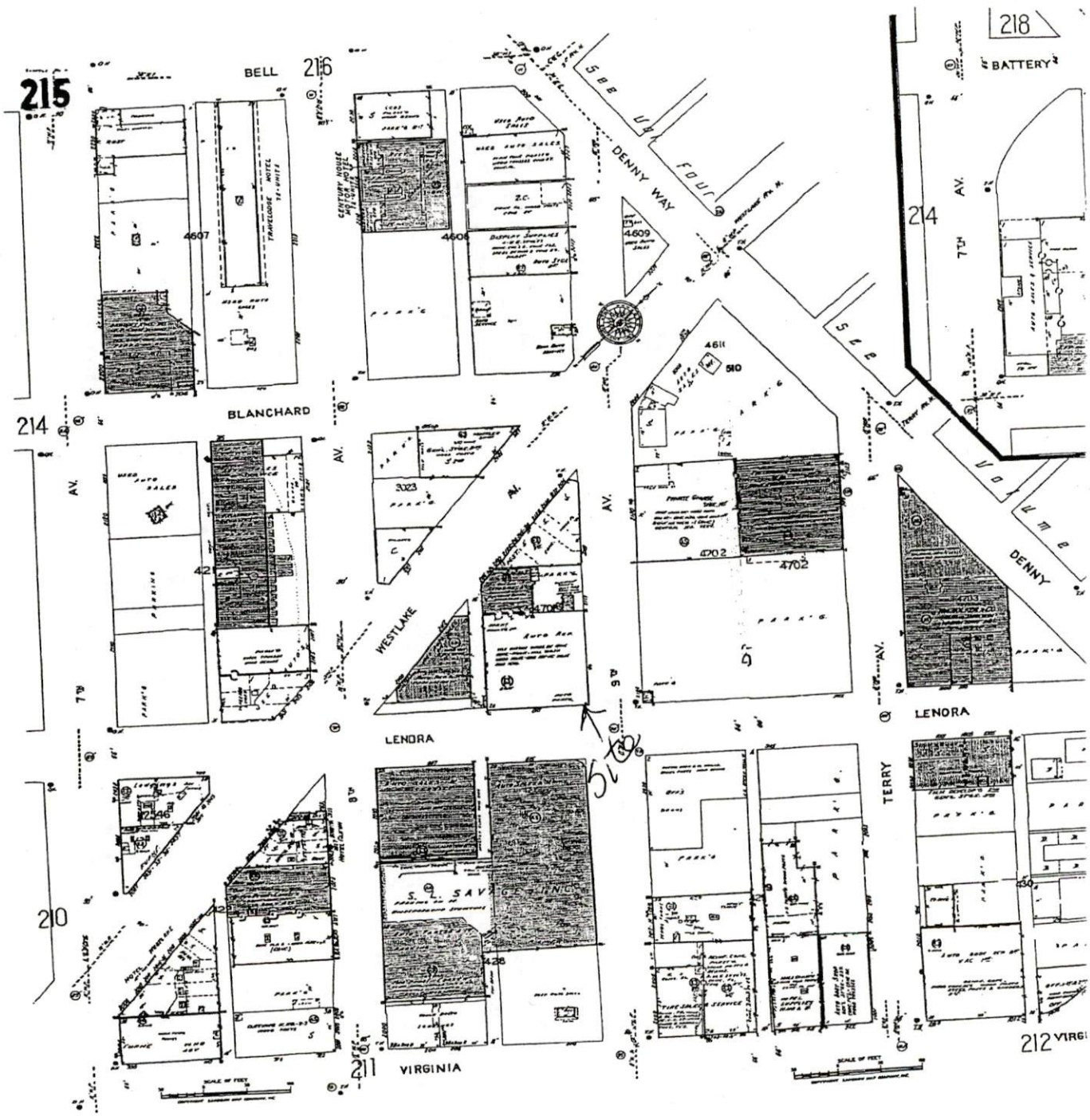


The Sanborn Library, LLC
This Sanborn® Map is a certified copy produced by Environmental Data Resources, Inc. under arrangement with The Sanborn Library, LLC. Information on this Sanborn® Map is derived from Sanborn field surveys conducted in: 1893
Copyright © 1893 The Sanborn Library, LLC
AMV EDR Research Associate









DISTRICT 10 CODE NO. 7 PERMIT NO.

2 ADDITION HEIR'S OF S. A. BELL 2nd NAME 70 1/2 2153 110
SECTION NE 31 TWP. 25 N. RANGE 4 EWM: BLOCK 24 TRACT OR LOT NO 11-12
DESCRIPTION

3 ADDRESS — PROPERTY 9th Avenue & Lenora Street, CONT. PURCHASER
4 FEE OWNER Victor Imp Co 2-9-76
5 ARCHITECT CONTRACTOR

ORIG. COST $

6 BUILDING Garage 2 Stories

BASEMENT Full
Concrete 18'6"
Concrete Floor

FOUNDATION
Concrete

ROOF
Tar & Gravel
Lam. Truss

INTERIOR
Plastered Display Span 46'. Wood Room - Balance unfinished.
1 Ramp
FLOORS Fir. Tile 34884 Sq. Ft. in Show Room
PLUMBING 12 Fixtures
4 Toilets, 3 Basins, 3 Sinks
1 Urinal, 1 Drinking Fountain
1 Sump. Good
TILE WORK See Floors

WIRING

HEATING Steam
Oil Burner

ELEVATORS

ENTRANCE

CEILINGS — STORY HEIGHT
Bsmt. 18'6". 1st Flr. 16'.
2nd Flr. 12'6".

STORE FRONTS
Plate Glass
Wood Sash
Stucco Bulk Head

EXTERIOR
Stucco on Reinfcd. Concrete & Tile
Brick Trim

EXTRA FEATURES 72 Sprinklers in Basement only

CONSTRUCTION Reinforced Concrete, Mill P. & B. Good

REFRIGERATION

7 CONDITION: EXTERIOR Good INTERIOR Good FOUND. Good
8 MAIN SUPPORT COLUMN x FOOTING SPAN FT.
9 FIRST FLOOR JOIST INCH CENTER BRIDGED
10 BUILDING Finished
11 GROSS INCOME $ 38 EXPENSE $ NET INCOME $
12 DEPRECIATION: COND. 20 % OBSLSE. % ECON. SUIT. % TOTAL
YEAR BUILT 1924 REMODELED
EFFECTIVE AGE 12 YEARS FUTURE LIFE 48 YEARS
DIMENSIONS x 120 x 120 SQUARE FT. AREA CUBIC FT.
x x

F 2153

14,400
91-56600
IMPROVEMENT VALUE
MAIN BUILDING $
OTHER BUILDINGS $28,300, BC 65
TOTAL $ 58000
ASSESSED VALUE 50% $ ~~55000~~
DATE 10-29-37 S-47

LAND INFORMATION
1. SIZE x 30,000 Ft
Sloping On Grade 51
2. STREET — ROAD Graded. Paved.
Alley Yes planked
3. SIDEWALK Concrete. Sewer.
City Water.
4. LANDSCAPING None
5. TREND LAND VALUE $
Static
6. USE Business
7. DISTRICT Medium - Old

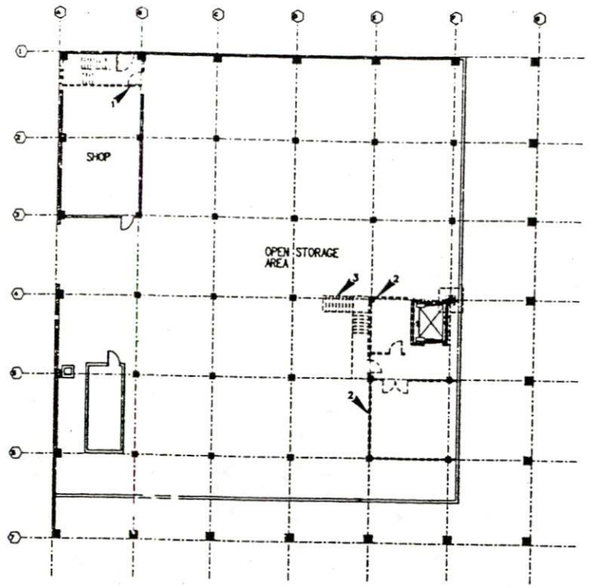
C O	OWNER OR CONTRACT PURCHASER	DATE	FILE NO.	PRICE	MTGE.	STAMP
Lse	Hostetler Chev. Co	9-19-47	376834	31 mos @ 600 with use rental after 1-31-48		

ZONED C GIYML

FLOOR PLAN

REMARKS 576 Sq.Ft. Mezz. Floor, Show Room 16 x 36
240 Sq.Ft. Mezz. Floor, Show Room 12 x 20
15'2" x 10'6" Mechanical Door
4 4 x 15 Folding Doors in Basement
4 3 x 10 Folding Doors on 9th Avenue.
Also with H 24 - Heirs of Sarah A Bell 1st Add
Put in Mill const. laminated ramps from 2nd floor to roof.
Roof now used for parking Roofed & Glass
G.A. sold 4/24/47

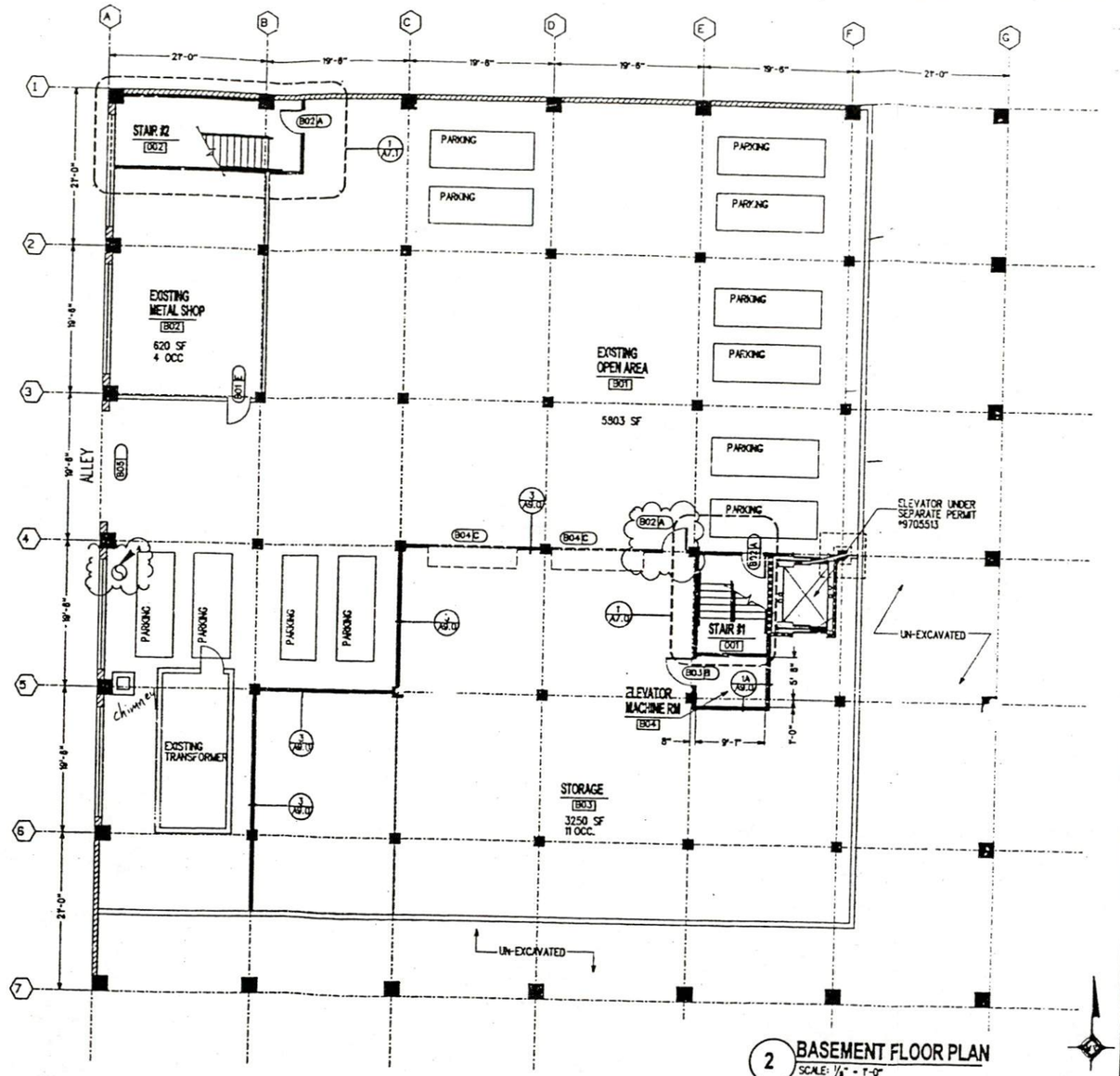
COMMERCIAL, FACTORY, LOFT, GARAGE — KING COUNTY ASSESSOR, SEATTLE, WASHINGTON



1 EXISTING/ DEMO PLAN
SCALE: 1/8" = 1'-0"

NOTE:
DEMOLITION UNDER
SEPARATE PERMIT #9706889

NOTE:
1. FLOOR IS FULLY SPRINKLED, MODIFY SPRINKLER SYSTEM TO ACCOMMODATE NEW CONFIGURATION. SPRINKLER CONTRACTOR TO OBTAIN PERMITS FOR MODIFICATIONS PROPOSED.
2. ELEVATOR IS PRESSURIZED.



2 BASEMENT FLOOR PLAN
SCALE: 1/8" = 1'-0"

GENERAL NOTES

1. ATTACHED FLOOR PLANS HAVE BEEN GENERATED BASED UPON EXISTING INFORMATION AVAILABLE. THE GENERAL CONTRACTOR SHALL REVIEW THE SCOPE OF WORK & NOTIFY THE ARCHITECT OF DISCREPENCIES BETWEEN THE DRAWINGS AND FIELD CONDITIONS.
2. ALL CHANGES IN PROJECT SCOPE DUE TO CONTRACTOR GENERATED - ALTERNATIVES OR EXISTING FIELD CONDITIONS SHALL BE TRANSMITTED TO THE ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION.
3. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION OF OWNER FURNISHED ITEMS LISTED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION OF THE ITEMS & CONTACT THE OWNER IN THE EVENT OF CONFLICTS PRIOR TO INSTALLATION.
4. PROVIDE ONE TYPE 5E-2A-10BC FIRE EXTINGUISHER PER 3000SF AND NOT MORE THAN 75' OF TRAVEL DISTANCE.
5. PROVIDE EXIT ILLUMINATION PER UBC SECTION 1013
6. MODIFY THE FIRE PROTECTION SYSTEM TO ACCOMMODATE THE CONFIGURATION INDICATED ON THE PLANS. COMPLY WITH ALL GOVERNING ORDAINANCES. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS.
7. INSTALL ALL COMPONENTS OF FIRE RATED ASSEMBLIES PER RATING CRITERIA.
8. ALL DIMENSIONS ARE FROM FACE TO FINISH.
9. PATCH AND REPAIR ALL REMOVED ELECTRICAL DEVICES.

ELECTRICAL SYMBOLS

- TELEPHONE
- VIDEO CONNECTION
- CONVENIENCE OUTLET @ 15"
- FOUR-PLEX OUTLET
- WALL MOUNTED SWITCH OUTLET
- SPEAKER
- SPRINKLER
- FLOOR OUTLET

PARTITION LEGEND

- EXISTING TO REMAIN
- NEW LOW WALL PARTITION
- NEW NON-RATED PARTITION
- NEW INSULATED PARTITION
- NEW 1-HR RATED PARTITION
- EXIST. 1-HR RATED PARTITION

KEY NOTES

1. REMOVE EXISTING STAIRWAY AND PARTITIONS.
2. REMOVE EXISTING PARTITIONS.
3. REMOVE EXISTING STAIRCASE.
4. NEW 14400 CFM EXHAUST FAN.

FEB 26 1997

1998

RECEIVED
JAN 29 1998
Dept. of Construction & Land Use

THE LENORA BUILDING

2101 NINTH AVENUE
SEATTLE, WASHINGTON

DRAWN BY DJM GA
CHECKED BY DJM
DATE 1.5.98

REVISIONS
1 CITY COMMENT 1.27.98

SHEET TITLE
BASEMENT FLOOR PLAN

SHEET NUMBER
A-2.0

APPENDIX E

FIELD PROCEDURES

APPENDIX E

FIELD PROCEDURES

DRILLING PROGRAM

General

Subsurface conditions at the site were explored by completing nine soil borings using direct-push drilling equipment and one hand auger boring using hand auger equipment. A scientist from our staff selected the exploration locations, examined and classified the soils encountered, and prepared a detailed log of each exploration. Soils encountered were visually classified in general accordance with ASTM D-2488-90, which is described in Figure E-1. Soil symbol descriptions are presented in Figure E-2. The boring logs are presented in Figures E-3 through E-12.

Drilling and Soil Sampling

Subsurface conditions at the site were explored during this phase of study by drilling nine soil borings (B-1 through B-9) and one hand auger boring (HA-1) between August 12 and 13, 2002. The borings were drilled to depths ranging between approximately 4 and 33 feet below ground surface (bgs) using a direct-push drill rig owned and operated by Environmental Services Network of Lacey, Washington, or hand auger equipment owned and operated by GeoEngineers. The sampling equipment was decontaminated before each sampling attempt with a Liqui-Nox wash and water rinse. Continuous soil cores were obtained from the direct-push borings using a 1.5-inch-diameter sampler driven with a pneumatic hammer.

Groundwater samples were obtained using temporary well screen, a peristaltic pump and new polyethylene tubing. The soil and groundwater samples were placed directly into laboratory-prepared containers. Samples were placed in an iced cooler and chain-of-custody procedures were observed during transport of the samples to the testing laboratory. Soil samples that were submitted for chemical analysis are denoted in our boring logs with "CA."

Field Screening of Soil Samples

A scientist from our staff field screened soil samples obtained from the borings. Field screening results are used as a general guideline to delineate areas of possible petroleum-related contamination and are presented on the boring logs. In addition, screening results are used to aid in the selection of soil samples for chemical analysis. The screening methods used include (1) visual screening, (2) water sheen screening, and (3) headspace vapor screening.

Visual screening consists of inspecting the soil for stains indicative of petroleum-related contamination. Visual screening is generally more effective when contamination is related to heavy petroleum hydrocarbons such as motor oil, or when hydrocarbon concentrations are high. Water sheen screening and headspace vapor screening are more sensitive methods that have been effective in detecting contamination at concentrations less than regulatory cleanup levels. However, field screening results are site-specific. The effectiveness of field screening varies with temperature, moisture content, organic content, soil type and age of contaminant. The presence

or absence of a sheen or headspace vapors does not necessarily indicate the presence or absence of petroleum hydrocarbons.

Water sheen screening involves placing soil in water and observing the water surface for signs of sheen. Sheen classifications are as follows:

No Sheen (NS)	No visible sheen on water surface.
Slight Sheen (SS)	Light, colorless, dull sheen; spread is irregular, not rapid; sheen dissipates rapidly. Natural organic matter in the soil may produce a slight sheen.
Moderate Sheen (MS)	Light to heavy sheen; may have some color/iridescence; spread is irregular to flowing, may be rapid; few remaining areas of no sheen on water surface.
Heavy Sheen (HS)	Heavy sheen with color/iridescence; spread is rapid; entire water surface may be covered with sheen.

Headspace vapor screening may identify volatile organic compounds and involves placing a soil sample in a plastic sample bag. Air is captured in the bag and the bag is shaken to expose the soil to the air trapped in the bag. The probe of a Bacharach TLV Sniffer is inserted in the bag, and the TLV measures the concentration of combustible vapor present within the sample bag headspace. The TLV Sniffer is designed to quantify combustible vapor concentrations in the 100 to 10,000 parts per million (ppm) range.

SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			GROUP SYMBOL	GROUP NAME
COARSE GRAINED SOILS More Than 50% Retained on No. 200 Sieve	GRAVEL More Than 50% of Coarse Fraction Retained on No. 4 Sieve	CLEAN GRAVEL	GW	WELL-GRADED GRAVEL, FINE TO COARSE GRAVEL
			GP	POORLY-GRADED GRAVEL
		GRAVEL WITH FINES	GM	SILTY GRAVEL
			GC	CLAYEY GRAVEL
	SAND More Than 50% of Coarse Fraction Passes No. 4 Sieve	CLEAN SAND	SW	WELL-GRADED SAND, FINE TO COARSE SAND
			SP	POORLY-GRADED SAND
		SAND WITH FINES	SM	SILTY SAND
			SC	CLAYEY SAND
FINE GRAINED SOILS More Than 50% Passes No. 200 Sieve	SILT AND CLAY Liquid Limit Less Than 50	INORGANIC	ML	SILT
			CL	CLAY
		ORGANIC	OL	ORGANIC SILT, ORGANIC CLAY
	SILT AND CLAY Liquid Limit 50 or More	INORGANIC	MH	SILT OF HIGH PLASTICITY, ELASTIC SILT
			CH	CLAY OF HIGH PLASTICITY, FAT CLAY
		ORGANIC	OH	ORGANIC CLAY, ORGANIC SILT
HIGHLY ORGANIC SOILS			PT	PEAT

NOTES:

1. Field classification is based on visual examination of soil in general accordance with ASTM D2488-90.
2. Soil classification using laboratory tests is in general accordance with ASTM D2487-90.
3. Descriptions of soil density or consistency are based on interpretation of blow count data, visual appearance of soils, and/or test data.

SOIL MOISTURE MODIFIERS:

Dry - Absence of moisture, dusty, dry to the touch

Moist - Damp, but no visible water

Wet - Visible free water or saturated, usually soil is obtained from below water table

Geo Engineers

SOIL CLASSIFICATION SYSTEM

FIGURE E-1

f:\soila-1.doc

LABORATORY TESTS

AL	Atterberg limits
CA	Chemical analysis
CP	Compaction
CS	Consolidation
DS	Direct shear
SA	Sieve analysis
%F	Percent fines
HA	Hydrometer analysis
SK	Permeability
SM	Moisture content
MD	Moisture and density
ST	Swelling test
TX	Triaxial compression
UC	Unconfined compression
OC	Organic Content

FIELD SCREENING TESTS

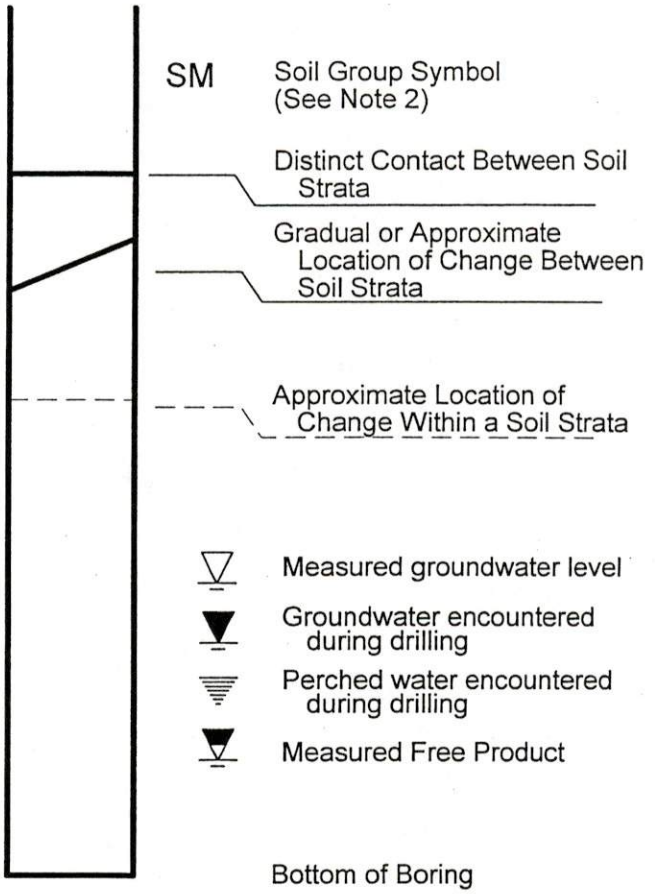
Visual Sheen Test Classifications

NS	No Visible Sheen
SS	Slight sheen
MS	Moderate sheen
HS	Heavy sheen
--	Not tested

Vapor Measurements

TLV	TLV™ sniffer
PID	Photo ionization detector
FID	Flame ionization detector
OVA	Organic vapor analyzer
--	Not tested

SOIL GRAPHICS



BLOW-COUNT

Blows required to drive sampler 12 inches using a 140-pound hammer falling 30-inches — 15

"P" indicates sampler pushed against with weight of hammer or against weight of drill rig

SAMPLE GRAPHICS

- Location of sampling interval with relatively undisturbed recovery
- Location of sampling interval with disturbed recovery
- Location of sampling interval with no recovery

NOTES:

1. The reader must refer to the discussion in the report text, the Key to Log Symbols and the exploration logs for a proper understanding of subsurface conditions.
2. Soil classification system is summarized in Figure E-1.

KEY TO LOG SYMBOLS

GeoEngineers

Project:	Cornish College, 9th & Lenora
Project Location:	Seattle, Washington
Project Number:	8022-004-00

Figure: E-2
Sheet 1 of 1

Date Excavated: 08/13/02 Logged by: GJA

Equipment: Hand Auger Surface Elevation (ft):

Depth feet	Sample Testing	Water	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Sheen	Headspace Vapor TLV(ppm)	NOTES
0				SM	Brown silty fine to medium sand with occasional gravel (medium dense, moist)			
	CA					HS	<100	
	CA					HS	<100	
					Hand auger completed at 4 feet No groundwater seepage observed			
5								
10								

Note: See Figure E-2 for explanation of symbols

The depths on the hand auger logs are based on an average of measurements across the hand auger and should be considered accurate to 0.5 foot.

LOG OF HAND AUGER HA-1

Geo Engineers

Project: Cornish College, 9th & Lenora

Project Location: Seattle, Washington

Project Number: 8022-004-00

Figure: E-3

Sheet 1 of 1

8022-004-00 GEI_ENVTESTPIT_2.1.0 P:\GINTTE~1\SEATTLE\8022004.GPJ GEIV2.GDT 8/23/02

Date(s) Drilled	08/12/02	Logged By	GJA	Checked By	TMK
Drilling Contractor	ESN Drilling	Drilling Method	Direct Push	Sampling Methods	Split-spoon Sampler
Auger Data		Hammer Data		Drilling Equipment	Limited Access Rig
Total Depth (ft)	32	Surface Elevation (ft)		Groundwater Level (ft. bgs)	Approximately 24
Datum/ System					

Depth feet	SAMPLES Interval	Testing	Recovered (in)	Blows/foot	Water Level	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Sheen	Headspace Vapor TLV(ppm)	NOTES
0							CC	6 inches concrete			
							SP-SM	Gray fine to medium sand with silt (medium dense, moist)	NS	<100	
									NS	<100	
5							SM	Gray silty fine sand (medium dense, moist)	NS	<100	
									NS	<100	
							ML	Gray silt with trace fine sand (stiff, moist)	NS	<100	
10									NS	<100	
									SS	<100	
15									SS	<100	
		CA							MS	<100	
20							SM	Gray silty fine sand with occasional gravel (very dense, moist	SS	<100	
									SS	<100	
		CA			▽		SP-SM	Gray fine to medium sand with silt and occasional wood pieces (dense, moist)	SS	<100	
25							ML	Gray silt (stiff, moist)	SS	<100	
									SS	<100	
							SP-SM	Gray fine to medium sand with silt (medium dense, wet)	SS	<100	
							ML	Gray silt (stiff, moist)			
30									NS	<100	
									NS	<100	

Note: See Figure E-2 for explanation of symbols

8022-004-00 GEI_ENVBORING_2.1.0 P:\GINTTE~1\SEATTLE\8022004.GPJ GEIV2.GDT 8/23/02

LOG OF BORING B-1

Geo Engineers

Project: Cornish College, 9th & Lenora
Project Location: Seattle, Washington
Project Number: 8022-004-00

Figure: E-4
Sheet 1 of 1

Date(s) Drilled	08/12/02	Logged By	GJA	Checked By	TMK
Drilling Contractor	ESN Drilling	Drilling Method	Direct Push	Sampling Methods	Split-spoon Sampler
Auger Data		Hammer Data		Drilling Equipment	Limited Access Rig
Total Depth (ft)	33	Surface Elevation (ft)		Groundwater Level (ft. bgs)	Approximately 22
Datum/ System					

Depth feet	SAMPLES Interval	Testing	Recovered (in)	Blows/foot	Water Level	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Sheen	Headspace Vapor TLV(ppm)	NOTES
0							CC	6 inches concrete			
							SM	Brown gray fine to medium sand with trace silt (medium dense, moist)	NS	<100	
									NS	<100	
5									NS	<100	
							ML	Gray silt with fine to medium sand (stiff, moist)	SS	<100	
									SS	<100	
10							SP	Brown fine to medium sand with trace silt (medium dense, moist)	NS	<100	
									SS	<100	
15									NS	<100	
							SM	Gray silty fine sand (dense, moist)	NS	<100	
							SM	Gray brown silty fine to medium sand (medium dense, moist)	NS	<100	
20					▽				SS	<100	
		CA					SP-SM	Gray fine to medium sand with silt (dense, moist)	HS	400	
25									HS	200	
							ML	Gray green mottled silt (very stiff, moist)	SS	<100	
									MS	<100	
30								Gray silt (very stiff, moist)	SS	<100	
		CA									

Note: See Figure E-2 for explanation of symbols

8022-004-00 GEI ENVBORING 2.1.0 P:\GINTTE~1\SEATTLE\8022004.GPJ GEIV2.GDT 8/23/02

LOG OF BORING B-2

Geo Engineers

Project: Cornish College, 9th & Lenora
Project Location: Seattle, Washington
Project Number: 8022-004-00

Figure: E-5
Sheet 1 of 1

Date(s) Drilled	08/12/02	Logged By	GJA	Checked By	TMK
Drilling Contractor	ESN Drilling	Drilling Method	Direct Push	Sampling Methods	Split-spoon Sampler
Auger Data		Hammer Data		Drilling Equipment	Limited Access Rig
Total Depth (ft)	24	Surface Elevation (ft)		Groundwater Level (ft. bgs)	Approximately 7
Datum/ System					

Depth feet	SAMPLES: Interval	SAMPLES: Testing	SAMPLES: Recovered (in)	SAMPLES: Blows/foot	Water Level	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Sheen	Headspace Vapor TLV(ppm)	NOTES
0							CC	8 inches concrete			
							SM	Brown gray silty fine to medium sand with occasional gravel and pieces of wood (medium dense, moist)	SS	<100	
									SS	<100	
5									HS	100	
					▽		ML	Gray silt (stiff, moist)	HS	200	
		CA							HS	100	
10									HS	150	
								Grades to green			
		CA							HS	100	
15							SP-SM	Gray fine sand with silt (medium dense, moist)	MS	<100	
							ML	Gray silt (very stiff, moist)	MS	<100	
									SS	<100	
20							SP-SM	Brown fine sand with trace silt (medium dense, moist)	NS	<100	
							SM	Gray silty fine sand (very dense, moist)	NS	<100	

Note: See Figure E-2 for explanation of symbols

8022-004-00 GEI_ENVBORING_2.1.0 P:\GINTTE~1\SEATTLE\8022004.GPJ GEIV2.GDT 8/23/02

LOG OF BORING B-3

Geo Engineers

Project: Cornish College, 9th & Lenora
Project Location: Seattle, Washington
Project Number: 8022-004-00

Figure: E-6
Sheet 1 of 1

Date(s) Drilled	08/12/02	Logged By	GJA	Checked By	TMK
Drilling Contractor	ESN Drilling	Drilling Method	Direct Push	Sampling Methods	Split-spoon Sampler
Auger Data		Hammer Data		Drilling Equipment	Limited Access Rig
Total Depth (ft)	24	Surface Elevation (ft)		Groundwater Level (ft. bgs)	None observed
Datum/ System					

Depth feet	SAMPLES Interval	Testing	Recovered (in)	Blows/foot	Water Level	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Sheen	Headspace Vapor TLV(ppm)	NOTES
0							CC	6 inches concrete			
							SM	Gray silty fine to medium sand (medium dense, moist)	NS	<100	
									SS	<100	
5									SS	<100	
							SP-SM	Brown fine to medium sand with silt (medium dense, moist)	SS	<100	
							SM	Brown silty fine sand (medium dense, moist) (slough?)	SS	<100	
10		CA					SP-SM	Brown fine to medium sand with silt (medium dense, wet)	SS	<100	
							ML	Gray blue silt (stiff, moist)	SS	<100	
		CA							SS	<100	
15									NS	<100	
									NS	<100	
							SP/ML	Gray silt with layers of fine sand (dense to stiff, moist)	NS	<100	
20									SS	<100	
							SP	Brown fine sand (dense, moist)	NS	<100	

Note: See Figure E-2 for explanation of symbols

LOG OF BORING B-4

Geo Engineers

Project: Cornish College, 9th & Lenora
Project Location: Seattle, Washington
Project Number: 8022-004-00

Figure: E-7
Sheet 1 of 1

Date(s) Drilled	08/13/02	Logged By	GJA	Checked By	TMK
Drilling Contractor	ESN Drilling	Drilling Method	Direct Push	Sampling Methods	Split-spoon Sampler
Auger Data		Hammer Data		Drilling Equipment	Truck-mounted Rig
Total Depth (ft)	20	Surface Elevation (ft)		Groundwater Level (ft. bgs)	13
Datum/ System					

Depth feet	SAMPLES Interval	Testing	Recovered (in)	Blows/foot	Water Level	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Sheen	Headspace Vapor TLV(ppm)	NOTES
0							CC	8 inches concrete			
							SM	Gray silty fine to medium sand with occasional gravel (medium dense, moist)	SS	<100	
								Grades to dark brown black silty fine sand with wood	SS	<100	
5								Grades to dark gray with occasional gravel	SS	100	
							ML	Gray silt with wood pieces (medium stiff, moist)	MS	400	
							SM	Gray silty fine to medium sand with free product (medium dense, moist)	HS	200	
10		CA									
							ML	Gray silt with trace fine sand (stiff, moist)	HS	100	
							SM	Gray fine sand with silt (medium dense, wet)	HS	<100	
							ML	Gray silt (stiff, moist)	MS	<100	
15							SP-SM	Gray fine sand with silt (dense, moist)	MS	<100	
							ML	Gray silt (stiff, moist)	NS	<100	
20											

Note: See Figure E-2 for explanation of symbols

8022-004-00 GEI_ENVBORING_2.1.0 P:\GINTTE~1\SEATTLE\8022004.GPJ GEIV2.GDT 8/23/02

LOG OF BORING B-5

Geo Engineers

Project: Cornish College, 9th & Lenora
Project Location: Seattle, Washington
Project Number: 8022-004-00

Figure: E-8
Sheet 1 of 1

Date(s) Drilled	08/13/02	Logged By	GJA	Checked By	TMK
Drilling Contractor	ESN Drilling	Drilling Method	Direct Push	Sampling Methods	Split-spoon Sampler
Auger Data		Hammer Data		Drilling Equipment	Truck-mounted Rig
Total Depth (ft)	24	Surface Elevation (ft)		Groundwater Level (ft. bgs)	None observed
Datum/ System					

Depth feet	SAMPLES Interval	Testing	Recovered (in)	Blows/foot	Water Level	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Sheen	Headspace Vapor TLV(ppm)	NOTES
0							CC	8 inches concrete			
							SM	Brown silty fine to medium sand with occasional gravel (medium dense, moist)	NS	<100	
									NS	<100	
5							SM	Gray silty fine to medium sand with occasional gravel (medium dense, moist)	SS	<100	
								Rock in sampler	-	-	
							ML	Gray silty with trace fine sand (stiff, moist)	SS	<100	
10		CA							SS	<100	
								Grades to medium stiff, wet	SS	<100	
15									SS	<100	
								Grades to brown			
							SP	Gray fine sand with trace silt (dense, moist)	SS	<100	
20									SS	<100	
							SP-SM	Gray fine to medium sand with silt (dense, moist)	NS	<100	
									NS	<100	

Note: See Figure E-2 for explanation of symbols

LOG OF BORING B-6

Geo Engineers

Project: Cornish College, 9th & Lenora
Project Location: Seattle, Washington
Project Number: 8022-004-00

Figure: E-9
Sheet 1 of 1

Date(s) Drilled	08/13/02	Logged By	GJA	Checked By	TMK
Drilling Contractor	ESN Drilling	Drilling Method	Direct Push	Sampling Methods	Split-spoon Sampler
Auger Data		Hammer Data		Drilling Equipment	Truck-mounted Rig
Total Depth (ft)	24	Surface Elevation (ft)		Groundwater Level (ft. bgs)	None observed
Datum/ System					

Depth feet	SAMPLES Interval	Testing	Recovered (in)	Blows/foot	Water Level	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Sheen	Headspace Vapor TLV(ppm)	NOTES
0							CC	8 inches concrete			
							SM	Brown silty fine to medium sand with occasional gravel (medium dense, moist)	NS	<100	
		CA							SS	<100	
5									NS	<100	
								Grades to gray brown silty fine sand (dense, moist)			
10								Grades to gray	NS	<100	
									NS	<100	
							SP-SM	Gray fine sand with silt (dense, moist)	NS	<100	
15								Grades to brown	NS	<100	
								Grades to gray fine to medium sand with silt	NS	<100	
20									NS	<100	
							SP-SM	Gray fine to medium sand with silt and occasional gravel (medium dense, moist)	NS	<100	

Note: See Figure E-2 for explanation of symbols

LOG OF BORING B-7

Geo Engineers

Project: Cornish College, 9th & Lenora
Project Location: Seattle, Washington
Project Number: 8022-004-00

Figure: E-10
Sheet 1 of 1

Date(s) Drilled	08/13/02	Logged By	GJA	Checked By	TMK
Drilling Contractor	ESN Drilling	Drilling Method	Direct Push	Sampling Methods	Split-spoon Sampler
Auger Data		Hammer Data		Drilling Equipment	Truck-mounted Rig
Total Depth (ft)	24	Surface Elevation (ft)		Groundwater Level (ft. bgs)	None observed
Datum/ System					

Depth feet	SAMPLES Interval	Testing	Recovered (in)	Blows/foot	Water Level	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Sheen	Headspace Vapor TLV(ppm)	NOTES
0							CC	8 inches concrete			
							SM	Brown silty fine to medium sand with occasional gravel (loose, moist)	NS	<100	
									SS	<100	
5							SP-SM	Brown fine to medium sand with silt and occasional gravel (medium dense, moist)	NS	<100	
		CA							NS	<100	
							SM	Gray silty fine sand with occasional gravel (dense, moist)	NS	<100	
10							ML	Gray silt (stiff, moist)			
							SP-SM	Gray fine sand with silt (dense, moist)	NS	<100	
									NS	<100	
15								Grades to moist to wet	NS	<100	
							SP	Gray fine sand with trace silt (very dense, moist)	NS	<100	
20							SP	Brown fine sand with trace silt (very dense, moist)	NS	<100	
									NS	<100	
									NS	<100	

Note: See Figure E-2 for explanation of symbols

LOG OF BORING B-8

Geo Engineers

Project: Cornish College, 9th & Lenora
Project Location: Seattle, Washington
Project Number: 8022-004-00

Figure: E-11
Sheet 1 of 1

Date(s) Drilled	08/13/02	Logged By	GJA	Checked By	TMK
Drilling Contractor	ESN Drilling	Drilling Method	Direct Push	Sampling Methods	Split-spoon Sampler
Auger Data		Hammer Data		Drilling Equipment	Truck-mounted Rig
Total Depth (ft)	12	Surface Elevation (ft)		Groundwater Level (ft. bgs)	None observed
Datum/ System					

Depth feet	SAMPLES: Interval	SAMPLES: Testing	SAMPLES: Recovered (in)	SAMPLES: Blows/foot	Water Level	Graphic Log	Group Symbol	MATERIAL DESCRIPTION	Sheen	Headspace Vapor TLV(ppm)	NOTES
0	☒						CC	6 inches concrete			
							SM	Brown silty fine to medium sand with occasional gravel (medium dense, moist)	NS	<100	
	☒								NS	<100	
5	☒								NS	<100	
	☒	CA						Grades to gray silty fine sand with trace gravel (dense, moist)	SS	<100	
									NS	<100	
10	☒							Grades to without trace gravel	NS	<100	

Note: See Figure E-2 for explanation of symbols

8022-004-00 GEI_ENVBORING_2.1.0 P:\GINTTE~1\SEATTLE\8022004.GPJ GEIV2.GDT 8/23/02

LOG OF BORING B-9

Geo Engineers

Project: Cornish College, 9th & Lenora
Project Location: Seattle, Washington
Project Number: 8022-004-00

Figure: E-12
Sheet 1 of 1

APPENDIX H

REPORT LIMITATIONS AND GUIDELINES FOR USE

APPENDIX H

REPORT LIMITATIONS AND GUIDELINES FOR USE[4]

This Appendix provides information to help you manage your risks with respect to the use of this report.

ENVIRONMENTAL SERVICES ARE PERFORMED FOR SPECIFIC PURPOSES, PERSONS AND PROJECTS

This report has been prepared for use by Cornish College and its authorized agents. This report is not intended for use by others, and the information contained herein is not applicable to other sites.

GeoEngineers structures our services to meet the specific needs of our clients. For example, an environmental site assessment study conducted for a prospective purchaser may not fulfill the needs of an owner of the same property. Because each environmental study is unique, each environmental report is unique, prepared solely for the specific client and project site. No one except Cornish College and its authorized agents should rely on this environmental report without first conferring with GeoEngineers. This report should not be applied for any purpose or project except the one originally contemplated.

THIS ENVIRONMENTAL REPORT IS BASED ON A UNIQUE SET OF PROJECT-SPECIFIC FACTORS

This report has been prepared for Lots 11 and 12 of Block 24 of Sarah A. Bell's Second Addition, Ninth Avenue and Lenora Street, Seattle, Washington. GeoEngineers considered a number of unique, project-specific factors when establishing the scope of services for this project and report. Unless GeoEngineers specifically indicates otherwise, do not rely on this report if it was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

If important changes are made after the date of this report, GeoEngineers should be given the opportunity to review our interpretations and recommendations and provide written modifications or confirmation, as appropriate.

RELIANCE CONDITIONS FOR THIRD PARTIES

Our report was prepared for the exclusive use of our Client. No other party may rely on the product of our services unless we agree in advance to such reliance in writing. This is to provide our firm with reasonable protection against open-ended liability claims by third parties with

[4] Developed based on material provided by ASFE, Professional Firms Practicing in the Geosciences; www.asfe.org.

whom there would otherwise be no contractual limits to their actions. Within the limitations of scope, schedule and budget, our services have been executed in accordance with our Agreement with the Client and generally accepted environmental practices in this area at the time this report was prepared.

ENVIRONMENTAL REGULATIONS ARE ALWAYS EVOLVING

Some substances may be present in the site vicinity in quantities or under conditions that may have led, or may lead, to contamination of the subject site, but are not included in current local, state or federal regulatory definitions of hazardous substances or do not otherwise present current potential liability. GeoEngineers cannot be responsible if the standards for appropriate inquiry, or regulatory definitions of hazardous substance, change or if more stringent environmental standards are developed in the future.

UNCERTAINTY MAY REMAIN EVEN AFTER THIS PHASE I/II ESA IS COMPLETED

No ESA can wholly eliminate uncertainty regarding the potential for contamination in connection with a property. Our interpretation of subsurface conditions in this study is based on field observations and chemical analytical data from widely-spaced sampling locations. It is always possible that contamination exists in areas that were not explored, sampled or analyzed.

SUBSURFACE CONDITIONS CAN CHANGE

This environmental report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time, by manmade events such as construction on or adjacent to the site, by new releases of hazardous substances, or by natural events such as floods, earthquakes, slope instability or groundwater fluctuations. Always contact GeoEngineers before applying this report to determine if it is still applicable.

SOIL AND GROUNDWATER END USE

The cleanup levels referenced in this report are site- and situation-specific. The cleanup levels may not be applicable for other sites or for other on-site uses of the affected media (soil and/or groundwater). Note that hazardous substances may be present in some of the site soil and/or groundwater at detectable concentrations that are less than the referenced cleanup levels. GeoEngineers should be contacted prior to the export of soil or groundwater from the subject site or reuse of the affected media on site to evaluate the potential for associated environmental liabilities. We cannot be responsible for potential environmental liability arising out of the transfer of soil and/or groundwater from the subject site to another location or its reuse on site in instances that we were not aware of or could not control.

MOST ENVIRONMENTAL FINDINGS ARE PROFESSIONAL OPINIONS

Our interpretations of subsurface conditions are based on field observations and chemical analytical data from widely spaced sampling locations at the site. Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. GeoEngineers reviewed field and laboratory data and then applied our professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ – sometimes significantly – from those indicated in this report. Our report, conclusions and interpretations should not be construed as a warranty of the subsurface conditions.

DO NOT REDRAW THE EXPLORATION LOGS

Environmental scientists prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in an environmental report should never be redrawn for inclusion in other design drawings. Only photographic or electronic reproduction is acceptable, but recognize that separating logs from the report can elevate risk.

READ THESE PROVISIONS CLOSELY

Some clients, design professionals and contractors may not recognize that the geoscience practices (geotechnical engineering, geology and environmental science) are far less exact than other engineering and natural science disciplines. This lack of understanding can create unrealistic expectations that could lead to disappointments, claims and disputes. GeoEngineers includes these explanatory "limitations" provisions in our reports to help reduce such risks. Please confer with GeoEngineers if you are unclear how these "Report Limitations and Guidelines for Use" apply to your project or site.

GEOTECHNICAL, GEOLOGIC AND GEOENVIRONMENTAL REPORTS SHOULD NOT BE INTERCHANGED

The equipment, techniques and personnel used to perform an environmental study differ significantly from those used to perform a geotechnical or geologic study and vice versa. For that reason, a geotechnical engineering or geologic report does not usually relate any environmental findings, conclusions or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. Similarly, environmental reports are not used to address geotechnical or geologic concerns regarding a specific project.