PES Environmental, Inc.
Engineering & Environmental Services

March 6, 2008

827.001.12

Washington State Department of Ecology
Northwest Regional Office
3190 160th Avenue SE
Bellevue, Washington 98008-5452

Attention: Mr. Hideo Fujita

FINAL FOCUSED REMEDIAL INVESTIGATION SUMMARY AND FEASIBILITY STUDY REPORT
BSB PROPERTY, KENT, WASHINGTON

Dear Mr. Fujita:

On behalf of B.S.B. Diversified Company, Inc., please find attached one copy of the Final Focused Remedial Investigation Summary/Feasibility Study (FRI/FS) for the BSB property in Kent, Washington. The report copy contains a copy of the report on a compact disc. The Final FRI/FS was prepared consistent with the FRI/FS scope of work contained in Exhibit B of BSB's Agreed Order No. DE-2551. Note that for the purpose of maintaining continuity and due to the age of the draft FRI/FS report, the FRI/FS report has not been revised to reflect Ecology's required Method B cleanup level for vinyl chloride; that change, however, was included in the Draft Cleanup Action Plan just submitted.

In order to meet the goal of cleanup action construction in 2008, please provide all of your comments on the attached document by March 28, 2008, or earlier as required by the schedule. If you need additional copies of the report or the compact discs, please feel free to contact either of us at (206) 529-3980.

Sincerely,

PES ENVIRONMENTAL, INC.

William R. Haldeman

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PES Environmental, Inc.
Engineering & Environmental Services

A Report Prepared for:

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565 Fifth Avenue, Fourth Floor
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FINAL
FOCUSED REMEDIAL INVESTIGATION SUMMARY/FEASIBILITY STUDY REPORT

BSB PROPERTY
KENT, WASHINGTON

MARCH 6, 2008

By:

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1.0 INTRODUCTION

1.1 Purpose

B.S.B. Diversified Company, Inc. (BSB) has prepared this Focused Remedial Investigation Summary/ Feasibility Study Report (FRI/FS) to document the development and evaluation of cleanup action alternatives (CAA) to address contamination present on BSB's property in Kent, Washington (the site) in compliance with BSB's Agreed Order No. DE-2551XXXX (*complete number yet to be assigned by Ecology)* (BSB AO). The FRI/FS was prepared consistent with the FRI/FS scope of work (PES, 2004) contained in Exhibit B of the BSB AO and the Model Toxics Control Act (MTCA, WAC 173-340) and is designed to provide the necessary documentation so that the Washington State Department of Ecology (Ecology) can select the most appropriate CAA. This FRI/FS is being conducted in parallel with Hexcel Corporation's RI/FS for contamination present on their property in accordance with Hexcel's Enforcement Order No. DE-2552YYYY (*complete number yet to be assigned by Ecology)* (Hexcel EO). Potential migration of contamination downgradient of the Hexcel property is being addressed under Agreed Order No. DE-2553ZZZZ (*complete number yet to be assigned by Ecology)* entered into by Hexcel and BSB (Offsite AO).

As described in more detail in the following sections, a metal finishing and electroplating plant operated at the location of the current BSB and Hexcel Corporation (Hexcel) facilities from the mid-1950s until 1985. Beginning in the early 1980s, waste management activities and associated releases of hazardous substances were investigated and cleanup actions initiated under the Resource Conservation and Recovery Act (RCRA). These initial RCRA cleanup actions included the excavation and/or stabilization of the metal plating sludges and soils associated with the waste management lagoons, as well as excavation of soils in a former drum handling area that were contaminated with volatile organic compounds (VOCs). These initial cleanup actions addressed the metal-related waste and contamination, as well as the primary VOC source area in unsaturated soil.

The remaining primary environmental concern at the site, which has been the focus of cleanup actions since the early 1990s, is VOCs in groundwater. Therefore, while the RI portion of this document includes detailed descriptions of all of the previous investigations and historical cleanup actions, the primary objective of the focused FS (FFS) portion of this document is development of CAAs for VOCs in groundwater.

1.2 Report Organization

Section 1 – Introduction: Describes the background, purpose, and organization of this report.

Section 2 – Site Background: Provides a summary of the site location and history.

Section 3 – Environmental Setting: Summarizes the environmental background of the site, including climate, hydrology, geology, and area water wells.

Section 4 – Site Investigations: Describes the subsurface explorations, hydraulic and chemical testing, groundwater monitoring, and surveying conducted at the site.

Section 5 – Previous and Ongoing Cleanup Actions: Summarizes the RCRA closure and post-closure activities and groundwater remediation.

Section 6 – Investigation Results: Describes the site geology, groundwater flow, and nature and extent of contamination.

Section 7 – Conceptual Site Model: Provides a summary of the indicator hazardous substances, contaminant sources, chemical fate and transport, exposure pathways and receptors, and cleanup standards for the site.

Section 8 – Feasibility Study Scoping: Summarizes the regulatory requirements and develops cleanup action objectives.

Section 9 – Identification and Screening of Remedial Technologies: Identifies potential cleanup technologies and screens the technologies to determine those most likely to be effective at the site.

Section 10 – Development of Cleanup Action Alternatives: Assembles the retained technologies into a range of preliminary CAAs.

Section 11 – Evaluation of Cleanup Action Alternatives: Evaluates the CAAs against the criteria defined in WAC 173-340-360.

Section 12 – Comparative Evaluation and Recommended Cleanup Action: Compares the alternatives to each other and recommends a CAA, provides the rationale for the recommendation, and discusses the implementation of the preferred CAA.

Section 13 – References: Lists the sources of information referenced in the document.

2.0 SITE BACKGROUND

2.1 Site Location and Description

The BSB property (also referred to as the site or Parcel G) is located at 8202 South 200th Street in Kent, Washington (Figure 1). The site is located in Township 22 North, Range 4 East, Section 1H at a latitude of 47 degrees 25’ 22” North and a longitude of 122 degrees 13’ 51” West. The 4.2-acre site is currently a fenced, vacant lot that slopes gently to the north. The area surrounding the site is topographically flat and is zoned “Limited Industrial.” The site is bounded on the north by South 200th Street and the Hexcel industrial facility. Commercial and industrial park properties are located to the west and south of the site, and the Carr industrial facility is immediately to the east of the site.

2.2 Site History and Development

2.2.1 Site History

The Hytek Finishes Company (Hytek), a division of Criton Technologies, operated a metal finishing and electroplating plant at 8202 South 200th Street (now part of the Hexcel Facility). Criton Technologies also had an adjacent composite products manufacturing division named Heath Tecna Aerospace Company at 19819 84th Avenue South. The Hytek division ceased treatment, storage, and disposal (TSD) operations regulated under RCRA in 1985. In 1987, BSB obtained both the Hytek and Heath Tecna Aerospace divisions, including real property described as Parcels A through G (Figure 2). In 1988, BSB sold the Heath Tecna Aerospace division and Parcels A through F to the Phoenix Washington Corporation, a wholly owned subsidiary of Ciba-Geigy. The Phoenix Washington Corporation subsequently changed its name to Heath Tecna Aerospace Company. BSB relocated Hytek's operations off-site and sold the division in 1989, retaining ownership of Parcel G. By mid 1996, Hexcel had acquired Heath Tecna Aerospace Company, including Parcels A through F, and had assumed all obligations of Heath Tecna regarding Parcels A through F. Parcel F, located adjacent to Parcel G to the east, was sold by Hexcel in August 2003 to Carr Prop II, LLC.

2.2.2 Parcel G Waste Treatment Operations

A variety of industrial and hazardous wastes that were generated on Parcels A through E were formerly treated and stored in a waste treatment area located on Parcel G (Figure 3). The wastewater treated contained metals and inorganics. The waste treatment area was located in the northeast and southern portions of Parcel G; a parking lot was located in the northwest portion of the parcel. The waste treatment area was equipped to treat large volumes of dilute wastewater as well as highly concentrated plating baths. The processes that were available included reduction/oxidation of chromium, cyanide, and nickel; neutralization of acids; precipitation of heavy metals; and dewatering of metal hydroxide sludges. Waste handling reportedly occurred on Parcel G between the mid 1950s, when electroplating operations were begun on the property north of South 200th Street, and 1985, when Hytek TSD activities ceased. Following is a brief discussion of the former waste handling and treatment components and practices that occurred on Parcel G:

- Wastewater generated on Parcels A through E was transferred to Parcel G through pipes under South 200th Street (Hytek, 1985a). The pipe run entered the northeast corner of Parcel G. According to former Hytek employees, the pipes were buried approximately 3 to 4 feet below grade and were constructed of steel and polyvinyl chloride (PVC); some of the pipes have been abandoned. Based on employee interviews (Ecology and Environment [E&E], 1981), approximately 40,000 gallons of wastewater were generated daily in 1981.

- The waste pipes from Parcel E discharged into a 160-foot-long by 40-foot-wide by 6-foot-deep unlined equalizing lagoon (also called an equalizing basin, a holding basin, or a holding lagoon) located in the northeast portion of Parcel G. Wastewater was held in this lagoon until a treatment batch (22,000 gallons) had accumulated (E&E, 1981).

- Batches of water from the equalizing lagoon were pumped into one of four 22,000-gallon treatment tanks located to the immediate west of the equalizing lagoon. Metals were precipitated, cyanide was removed, and wastewater was neutralized in the treatment process.

- The treated solution in the tanks was pumped into a 75-foot-long by 25-foot-wide unlined sludge settling lagoon (also referred to as a sedimentation pond, settling pond, or settling basin) located approximately 40 feet west of the equalizing lagoon. After settling of the solids in this lagoon, the water was pumped into the sanitary sewer, and the wet sludge was pumped into drying beds. According to Hytek (1985a), the sludge settling lagoon was used until approximately 1965 when it was filled and paved over.

- The first sludge drying beds (also referred to as surface impoundments) used on Parcel G were located in the southeast portion of the parcel. The area of the drying beds was approximately 190 feet long by 175 feet wide. These beds received metal hydroxide sludge from the late 1960s until the summer of 1979 (Hytek, 1985a).

- The four most recently used sludge drying beds were located in the southwest portion of Parcel G. They were used between 1979 and 1985. The area of these drying beds was approximately 190 feet long by 160 feet wide. According to E&E (1981), approximately 200,000 to 260,000 gallons of sludge were generated yearly.

- A drum storage area was formerly located in the central portion of Parcel G. The area was used to store raw materials, store hazardous wastes awaiting shipment to disposal facilities or recyclers, and transfer chemicals. This area was used between the early 1960s and 1979. According to Hytek (1985a), the hazardous materials stored in this area primarily consisted of degreasing and paint stripping chemicals, including methyl ethyl ketone, trichloroethene (TCE), methylene chloride, phenol (in paint strips), hydrofluoric acid, nitric acid, and chromium and lead compounds. Any spills or container leakage that may have taken place in this area would have flowed to an unlined ditch running in an east-west direction near the southern boundary of this area; Hytek (1985a) states that the ditch was located near the southern fenceline.

3.0 ENVIRONMENTAL SETTING

3.1 Physical Setting

The BSB site is located in the southeastern portion of the Puget Sound Lowland, a topographic low between the Cascade Range and the Olympic Mountains. Alluvial valleys and plains, and glacially formed or modified hills and ridges dominate the lowland. The site lies in the Duwamish Valley between the Covington Plain on the east and the Des Moines Plain on the west. The elevation of the valley ranges from about 25 to 100 feet above sea level, with the site at an elevation of approximately 35 feet.

3.2 Climate

Air masses originating over the Pacific Ocean strongly affect the climate of the Puget Sound Lowland, with generally overcast, cool, damp, and mild weather during the autumn, winter, and spring, and warm and dry weather during the summer. The annual precipitation ranges from about 30 to over 60 inches in the lowland. The average annual precipitation in the Kent area is about 38 inches, with 76 percent of it falling between October and March.

3.3 Surface Water Hydrology

The Duwamish Valley lies in the Duwamish-Green River Watershed, a northwest-southeast trending basin extending from the Cascade foothills to Puget Sound. Major surface water bodies in the Duwamish Valley include the Green River, the Black River, the Duwamish River, Mill Creek, and Springbrook Creek. The closest surface water body to the site is a ditch located about 2,000 feet northeast of the site (Figure 1). The ditch, referred to as the 196th East Valley Highway Drainage, receives water from Garrison Creek (located on the plateau southeast of the site) and an unnamed creek southeast of the site; the ditch discharges to Springbrook Creek about 2,800 feet northeast of the site. Although data are unavailable for the ditch, the monthly mean streamflow in Springbrook Creek ranges from about 4 cubic feet per second (cfs) in July, August, and September to about 20 cfs in December.

3.4 Regional Geology

The Duwamish Valley is thought to have been formed during the last glacial advance between 14,000 and 18,000 years ago (Mullineaux, 1970; Jones, 1999). The valley is filled with over 300 feet of Quaternary alluvium interbedded with marine sand deposited after the last glaciation. Beneath that lies approximately 500 feet of older unconsolidated, undifferentiated deposits (Woodward and others, 1995), and beneath that Tertiary bedrock consisting of sandstone, shale, and coal (Mullineaux, 1970).

According to the U.S. Geological Survey (Mullineaux, 1970), most of the upper 100 feet of deposits in the Duwamish Valley consist of sand, gravel, silt, clay, and peat deposited by the White River. In a series of borings drilled in the valley, the U.S. Geological Survey found finer-grained deposits (fine sand, silt, clay, and peat) up to 35 feet thick at the surface with underlying sand and gravel deposited by the White River. Environmental investigations and water well logs near Kent report that the finer-grained surficial deposits (interbedded sand, silty sand, sandy silt, and silt) extend to depths greater than 50 feet. The shallowest layers of sandy silt or silt are generally found within 30 feet bgs and are generally continuous across a given site.

3.5 Regional Hydrogeology

The Duwamish Valley lies in the South King County Groundwater Management Area. Groundwater is found at shallow depths throughout the Duwamish Valley. Groundwater elevations in shallow valley wells near Kent are about 25 feet above mean sea level (Woodward and others, 1995). In general, groundwater elevations in deeper wells in the Duwamish Valley are higher than in shallower wells, indicating upward groundwater flow. Hydraulic conductivities measured in water wells in the valley vary from 10^{-4} to 3 cm/sec, with average or geometric mean values ranging from 3×10^{-3} to 1×10^{-1} cm/sec (Jones, 1999).

Groundwater flows regionally from topographic highs to topographic lows, with recharge in unpaved areas and discharge to streams, lakes, or saltwater bodies (Vaccaro and others, 1998). Shallow groundwater flow in the Kent area is generally toward the Green River, Mill Creek, or Springbrook Creek.

3.6 Water Supply Wells

To determine the number of beneficial users of groundwater and surface water within a 1-mile radius of the site, Ecology's well log database and the Washington State Department of Health's (DOH's) public water system databases were accessed, and water rights information was obtained from Ecology's water rights tracking system. The latter was only used to provide additional information for well locations found in Ecology's well log database, due to the admitted inaccuracies in the water rights tracking system to account for unused or abandoned water rights. Although public water system information was also requested from the drinking water program of Public Health – Seattle & King County (who track public water systems with less than nine connections), this information was not available due to the lack of an easily searchable database.

Figure 4 and Table 1 present the results of the beneficial use survey. Thirty-six potential water supply wells were identified within a 1-mile radius of the site: 12 (map numbers 1 through 5 and 16 through 22) in Ecology's well log database and 24 (map numbers 6 through 15 and 23 through 36) in the DOH databases. Well logs for the 12 wells found in Ecology's database are provided in Appendix A.

Fifteen of the potential 36 water supply wells identified within a 1-mile radius of the site (map numbers 1 though 15) likely no longer exist; all were installed west of Highway 167 prior to industrialization of the area (those with records were installed prior to 1960) and were installed for irrigation, stock watering, and domestic purposes that no longer exist in the area. The presence of numerous abandonment logs in Ecology's database, which could not be precisely matched to the well installation logs, also indicates that it is likely that these wells no longer exist. Two of these wells that likely no longer exist (map numbers 6 and 7) are the only wells reported to be downgradient and between the site and the 196th East Valley Highway Drainage Ditch. Based on the Washington State Plane coordinates provided in the DOH database, the two wells (which were reported to be 200 and 300 feet deep, respectively) plot beneath a commercial building and in a grassy field. A field check of the area and inquiries of tenants in the adjacent commercial buildings did not locate the wells, indicating that the wells no longer serve as water supply wells and were very likely abandoned when the area was developed as a business park.

Twenty-one of the potential 36 water supply wells identified within a 1-mile radius of the site (map numbers 16 through 36) are known to or likely exist; those with records were installed after 1960, most are in the DOH database, and most are domestic wells. None of the likely or known water supply wells are located closer than 1,000 feet of the site, and none are reported to be downgradient and between the site and the 196th East Valley Highway Drainage Ditch. One represents a test well installed by the City of Kent, 4 represent City of Kent municipal water supply wells, 13 represent domestic water supply wells, 1 represents an irrigation well, 1 represents an industrial supply well, and the use of 1 well is unknown.

Two of the water supply wells that are known to or likely exist are located in the valley west of Highway 167. One is a test well (map number 21) installed in 1998 approximately 3,500 feet southwest of the site. According to City of Kent personnel, the well was installed for an environmental restoration project; the well is not in use but has not been abandoned. The other well is an industrial water supply well (map number 36) with conflicting location data; the Washington State Plane coordinates locate the well almost a mile east of the BSB property (beneath the Covington Plain), while the reported township, range, and section locate the well approximately 1,200 feet northwest of the BSB property. To be conservative, the well is shown on Figure 4 in the latter location; even in this location, the well is not downgradient of the BSB property.

Nineteen of the water supply wells that are known to or likely exist (map numbers 16 through 20 and 22 through 35) are located east of Highway 167 under the western edge of the Covington Plain. Given that regional groundwater flows to the west (from the plain to the valley), these wells are not located downgradient of the site. The four City of Kent water supply wells (map numbers 17, 18, 19, and 22) are completed at significantly greater depths than the deepest impacts at Parcel G, and the domestic and irrigation water supply wells are known to or likely are completed at significantly higher elevations (beneath the Covington Plain) than the Parcel G impacts.

In summary, 20 likely existing water supply wells were found within a 1-mile radius of the site. None are downgradient of the site, all but one are located east of Highway 167, the location of one is questionable, and none are likely completed in the same hydrogeologic unit as the units investigated and monitored at the site.

4.0 SITE INVESTIGATIONS

Site investigations were performed on Parcel G between 1980 and 2000, with routine groundwater monitoring still being performed. This section discusses the investigations conducted at Parcel G and, for the sake of completeness, the other parcels previously operated by Hytek. Drawing 1 and Figure 5 provide a site map of Parcel G showing the exploration locations, and Figure 6 shows the exploration locations on all of the former Criton Technologies property (the current BSB, Hexcel, and Carr properties), as well as off-site locations.

4.1 <u>1980-1981 USEPA Site Investigation</u>

The United States Environmental Protection Agency (USEPA) initiated investigation of Parcel G in 1980 under the Field Investigation Team program. The investigation was performed to evaluate the hazard potential of the Hytek waste treatment facility and the potential for subsurface contamination. A USEPA contractor reviewed agency files for the site and interviewed company personnel. In December 1980, the same USEPA contractor drilled three borings around the former equalizing lagoon (HTP-1, HTP-2, and HTP-3) and three borings around the former sludge drying beds located in the southwestern portion of Parcel G (HTP-4, HTP-5, and HTP-6). The boring locations are shown on Figure 5. The equalizing lagoon and sludge drying beds were in use at the time of the investigation. Each boring was advanced to a depth of 6 feet with an auger, a polyvinyl chloride (PVC) casing was installed to hold open the boring, soil samples were collected for lithologic identification from the bottom of the PVC casing to the bottom of the hole, and a well was installed through the casing to a depth of approximately 3 feet below the water table. Groundwater samples were collected from HTP-1 through HTP-6 in January 1981 and submitted for laboratory analysis of VOCs, semivolatile organic compounds (SVOCs), pesticides, cyanide, and metals (arsenic, barium, beryllium, cadmium, chromium, copper, iron, lead, manganese, mercury, nickel, selenium, silver, and zinc). The locations of the wells were surveyed, and groundwater levels were measured in February 1981.

The investigation found organic and inorganic compounds in the subsurface and recommended additional groundwater monitoring to determine groundwater flow direction and the nature and extent of groundwater contamination. The work and results were summarized in Ecology and Environment (1981).

4.2 1982 Hytek Phase 1 Investigation

Based on the results of the USEPA Parcel G investigation and the recommendation for additional groundwater monitoring, Hytek installed shallow monitoring wells HY-1s, HY-2, HY-3, and HY-4 in June 1982. HY-1s was installed on Parcel G, HY-3 was installed to the south of Parcel G, and HY-2 and HY-4 were installed north of South 200th Street on the south side of the current Hexcel Plant 1 building (Figure 6). The wells were completed with nominal 2-inch-diameter PVC with 5-foot-long screens located at depths below grade between 9 and 19 feet. The wells were surveyed and developed, and slug tests were subsequently performed in each well. Groundwater levels were measured and groundwater samples were collected in each well in June and October 1982. The samples were submitted for laboratory analysis of pH, specific conductance, metals (cadmium, chromium, copper, nickel, and zinc), hardness, total organic carbon (TOC), and total organic halides (TOX).

The Phase 1 investigation identified a northeasterly shallow groundwater flow direction and detected VOCs in wells HY-2 and HY-4. The results were presented in tabular fashion in Sweet, Edwards & Associates (1984a).

4.3 1983-1984 Hytek Phase 2 Investigation

Based on the groundwater quality data and estimated groundwater flow direction developed during the Phase 1 investigation, Hytek and the USEPA agreed that additional investigation was required. A Phase 2 groundwater investigation plan was developed and negotiated with the USEPA and Ecology. Per the final plan, the following activities were conducted:

- **Sampling and analysis of soil in the equalizing basin.** One soil sample was collected and submitted for laboratory analysis of metals (antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, and zinc), total cyanide, total phenol, and VOCs.

- Sampling and analysis of equalizing basin water (plant effluent). One water sample was collected and submitted for laboratory analysis of metals (antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, and zinc), total cyanide, total phenol, VOCs, dibutyl phthalate, and bis(2-ethylhexyl)phthalate.

- Sampling and analysis of drying bed sludge. One sludge sample from the drying beds located on the southwestern portion of Parcel G was collected and submitted for laboratory analysis of metals (antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, and zinc), total cyanide, total phenol, VOCs, dibutyl phthalate, and bis(2-ethylhexyl)phthalate.

- Installation of shallow monitoring wells. HY-5, HY-6, and HY-7s were installed in October 1983. HY-5 was installed north of the current Hexcel Plant 1 building, and HY-6 and HY-7 were installed east of the current Hexcel Plant 1 building (Figure 6). The wells were completed with nominal 2-inch-diameter PVC with 10-foot-long screens located at depths below grade between 12.5 and 26 feet. The wells were surveyed and developed.

- Installation of intermediate and deep monitoring wells. Monitoring well HY-8i and deep monitoring well HY-8d were installed in January 1984. Both wells were installed east of the current Hexcel Plant 1 building (Figure 6) to determine the extent of downward migration of VOCs detected in the adjacent shallow monitoring wells. Prior to the installation of HY-8i and HY-8d, groundwater was extracted from temporary monitoring points placed in six test holes (TH-1 through TH-6) on the north side of the current Hexcel Plant 1 building between HY-5 and HY-6. The electrical conductance (specific conductance) of water extracted from each test hole and from HY-5 and HY-6 was measured. Since the highest specific conductance was measured in HY-6 (1,550 microsiemens/cm [μS/cm]), monitoring wells HY-8i and HY-8d were located adjacent to HY-6. HY-8i and HY-8d were completed with 10-foot-long PVC screens located between 35 and 45 feet and 50 and 60 feet below grade, respectively. HY-8i was completed with a nominal 2-inch-diameter monitoring well, and HY-8d was completed with a nominal 4-inch-diameter monitoring well. The wells were surveyed and developed.

- Groundwater level measurement. Groundwater levels were measured during six events during the Phase 2 investigation. Water levels were measured in HY-1s through HY-4 on January 10, 1983; in HY-1s through HY-4 and HTP-1 through HTP-6 on April 8, 1983; in HY-1s through HY-7s on November 2, 1983; in HY-1s through HY-7s and HTP-1 through HTP-6 on November 22, 1983, and January 23, 1984; in HY-1s through HY-7s, HY-8i, HY-8d, and HTP-1 through HTP-6 on February 22, 1984.

- Hydraulic conductivity testing. Constant rate, single-well pumping tests were conducted in HY-5, HY-6, HY-7, and HY-8d in April 1984.

- Groundwater sampling. Four rounds of groundwater samples were collected during the Phase 2 investigation. Groundwater samples were collected from HY-1s through HY-4 in January and April 1983. The samples were submitted for laboratory analysis of pH, specific conductance, metals (cadmium, chromium, copper, nickel, and zinc), hardness, TOC, TOX, VOCs, dibutyl phthalate, and bis(2-ethylhexyl)phthalate. Groundwater samples were collected from HY-1s through HY-7s in November 1983 and from HY-1s through HY-7s, HY-8i, and HY-8d in February 1984. The samples were submitted for laboratory analysis of pH, specific conductance, metals (antimony, arsenic, beryllium, cadmium, chromium, copper, lead, mercury, nickel, selenium, silver, and zinc), total cyanide, TOC, TOX, total phenol, VOCs, dibutyl phthalate, and bis(2-ethylhexyl) phthalate.

The Phase 2 investigation verified that groundwater flow is toward the northeast, and found inorganic constituent concentrations below USEPA primary drinking water maximum contaminant levels (MCLs) in wells downgradient of Parcel G and VOC detections downgradient of Parcel G only in shallow monitoring wells. The Phase 2 investigation results were presented in Sweet, Edwards & Associates (1984a); the report recommended additional groundwater monitoring and the installation of two additional wells downgradient of the HY-5, HY-6, and HY-7 area.

4.4 1984 Hytek Phase 3 Investigation

Based on the Phase 2 investigation results and with concurrence from USEPA and Ecology, Hytek conducted a Phase 3 investigation to provide additional Parcel G data, additional monitoring in the area downgradient of areas previously investigated, and continued groundwater monitoring. The following activities were conducted:

- **Drilling and sampling of 14 soil borings.** Soil borings HYSS-1 through HYSS-14 were drilled in August 1984. Borings HYSS-3 and HYSS-5 were drilled south of the current Hexcel Plant 1 building, HYSS-13 was drilled north of the former Hytek building, and HYSS-1 and HYSS-2 were drilled southwest of Parcel G (Figure 6). The remaining nine borings were drilled on Parcel G (Figure 5). Due to limited drilling rig access, borings HYSS-1, HYSS-2, HYSS-9 through HYSS-12, and HYSS-14 were hand augered to depths ranging from 6.5 to 10.5 feet bgs. Borings HYSS-3 through HYSS-8 and HYSS-13 were drilled to depths between 11.5 and 18 feet bgs with a drilling rig equipped with hollow-stem augers. Continuous soil samples were collected during drilling; the samples were screened for VOCs with a photoionization detector (PID), with selected samples submitted for laboratory analysis. HYSS-1 and HYSS-2 were first hand augered southwest of Parcel G to test the effect of background VOCs on the PID; three soil samples were collected from each boring and screened with a PID. HYSS-3 through HYSS-14 were then drilled and sampled. Eighty-four soil samples were collected from HYSS-3 through HYSS-14, with 28 of the samples being submitted for laboratory analysis of VOCs.

- Installation of shallow monitoring wells HY-9, HY-10, and HY-11. In September 1984, HY-9 and HY-10 were installed to the northeast of the current Hexcel Plant 1 building, east of 84th Avenue South, and HY-11 was installed off site, south of the southwestern corner of Parcel G (Figure 6). The wells were completed with nominal 2-inch-diameter PVC with 10-foot-long screens located at depths below grade between 12 and 24 feet (HY-9 and HY-10) and 8 and 18 feet (HY-11). The wells were surveyed and developed.

- Installation and groundwater level measurement of temporary groundwater monitoring points. In September 1984, three groundwater level monitoring points, HYHT-1, HYHT-2, and HYHT-3, were installed off site to the southwest of the southwestern quarter of Parcel G to evaluate the extent of seasonal groundwater mounding beneath the sludge drying beds (Figure 6). The groundwater monitoring points were surveyed. Although the depths and installation methods of the points were not reported, it is likely that the groundwater level monitoring points were installed at shallow depths, similar to HYHT-4 and HYHT-5 (see Section 4.5).

- Groundwater level measurement. Groundwater levels were measured during three events during the Phase 3 investigation. Water levels were measured in HY-1s through HY-7s, HY-8i, HY-8d, and HTP-1 through HTP-6 on February 22, 1984; and in HY-1s through HY-7s, HY-8i, HY-8d, HY-9, HY-10, HY-11, HTP-1 through HTP-6, and HYHT-1 through HYHT-3 on September 12 and September 22, 1984.

- Hydraulic conductivity testing. Constant rate, single-well pumping tests were conducted in HY-8d, HY-9, HY-10, and HY-11 in October 1984.

- Groundwater sampling. One round of groundwater samples was collected during the Phase 3 investigation. Groundwater samples were collected from HY-1s, HY-3, HY-5 through HY-7s, HY-8i, HY-8d, and HY-9 through HY-11 in September 1984. The samples were submitted for laboratory analysis of pH, specific conductance, metals (arsenic, chromium, copper, nickel, silver, and zinc), total cyanide, TOC, TOX, total phenol, VOCs, dibutyl phthalate, and bis(2-ethylhexyl) phthalate. HY-2 was sampled in October 1984; the sample was submitted for laboratory analysis of the Appendix VIII parameters, VOCs, semivolatile organic compounds (SVOCs), pesticides, and metals.

- Surface water monitoring and evaluation. Two surface water locations in the 196th East Valley Highway Drainage Ditch (Figure 6) were screened for VOCs on September 12, 1984. Samples collected at locations designated SW-1 and SW-2 were screened with a PID. Neither sample had VOC concentrations above background; thus, no additional sampling was conducted. Surface water metals data collected by Metro in the 196th East Valley Highway Drainage Ditch at South 208th Street were reviewed and compared to site groundwater data.

- Sewer monitoring. The specific conductance of liquids in two sanitary sewer manholes located on South 200th Street was measured in September 1984.

The Phase 3 investigation confirmed the Phase 2 investigation results. The Phase 3 investigation also concluded that the highest Parcel G soil and groundwater VOC concentrations were in and immediately downgradient of the former drum storage area and that the low specific conductance values in the sanitary sewer indicated that the sewer pipe on South 200th Street was not a significant interceptor of groundwater VOCs. The Phase 3 investigation results were presented in Sweet, Edwards & Associates (1984b). The Phase 3 investigation report recommended additional groundwater monitoring and the installation of the HYCP-1 through HYCP-4 wells in and downgradient of the former drum storage area and drainage ditch.

4.5 1984 and 1985 Hytek Monitoring Well Installation

Based on the Phase 3 investigation results and with concurrence from USEPA and Ecology, Hytek implemented recommendations of the Phase 3 report, including the following:

- **Drilling and sampling of five soil borings.** Soil borings HYSS-15 through HYSS-19 were drilled in December 1984 immediately north of the unlined ditch on the south side of the former Parcel G drum storage area (Figure 5). The borings were drilled with a hollow-stem auger drilling rig to depths ranging from 20.5 to 41 feet bgs. Soil samples were collected on a continuous basis from ground surface to at least 10 feet bgs and at 5-foot intervals thereafter. The samples were screened for VOCs with a PID, with selected samples submitted for laboratory analysis of VOCs.

- Installation and development of monitoring wells. Shallow wells HYCP-1s, HYCP-2, HYCP-3s, HYCP-4, HYO-2, and HYO-4, intermediate wells HYCP-1i and HYCP-3i, and deep wells HYCP-1d, HYCP-3d, HYO-1, and HYO-3 were installed in November and December 1984. All wells were installed on or immediately north of Parcel G (Figure 5). The shallow wells were completed with nominal 2-inch-diameter PVC with 5-to 20-foot-long screens located at depths below grade between 8 and 33 feet. The intermediate wells were completed with nominal 2-inch-diameter Schedule 80 PVC with 10-foot-long (HYCP-3i) or 20-foot-long (HYCP-1i) screens located at depths below grade between 16 and 36 feet. The deep wells were completed with nominal 2-inch or 3-inch-diameter Schedule 80 PVC with 20-to 30-foot-long screens located at depths below grade between 53.5 and 83.5 feet. Each well was surveyed and developed.

- Hydraulic conductivity testing. Constant rate, single-well pumping tests were conducted in HY-8d, HY-9, HY-10, and HY-11 in October 1984. Constant rate, multiple-well pumping tests were conducted using HYO-2, HYO-4, HYCP-1s, HYCP-1i, HYCP-2, HYCP-3s, and HYCP-4 in January 1985; all but HYO-2 were used as pumping wells in these tests. All of the field hydraulic conductivity tests conducted through January 1985 were tabulated and presented in Hytek (1985b).

- Installation and groundwater level measurement of temporary groundwater monitoring points. Two groundwater level monitoring points, HYHT-4 and HYHT-5, were installed in December 1985 to evaluate groundwater levels around the former sludge drying beds. HYHT-4 was installed to the east of the southeastern Parcel G sludge drying beds, and HYHT-5 was installed to the south of the southwestern Parcel G sludge drying beds (Figure 6). The groundwater monitoring points were surveyed. Based on field notes, both monitoring points were drilled to 15 feet bgs, with well screens installed between 13 and 15 feet bgs.

- Installation and development of additional monitoring wells. Monitoring wells HY-1i, HY-1d, HY-7i, HY-7d, HY-11i, and HY-11d were installed in December 1985 to determine the lateral extent of VOCs in groundwater. Additionally in December 1985, HY-7ss was installed to investigate the affect of well material on water quality, and HY-11, which was installed in September 1984, was abandoned and replaced with HY-11s to comply with state well construction standards. All wells were installed adjacent to their shallow counterparts (Figures 5 and 6). The shallow wells were completed with nominal 2-inch-diameter PVC with 10-foot-long screens located at depths below grade between 8 and 22.5 feet. The intermediate wells were completed with nominal 2-inch-diameter Schedule 80 PVC with 10-foot-long screens located at depths below grade between 26 and 50.5 feet. The deep wells were completed with nominal 2-inch or 3-inch-diameter PVC with 10-foot-long screens located at depths below grade between 69 and 94 feet. Each well was surveyed and developed.

- Groundwater level measurement. Groundwater levels were measured in all available monitoring wells and points in December 1984, and in October, November, and December 1985. Additionally, surface water levels were measured in the Equalizing Basin in October 1985; in the 196th East Valley Highway Drainage Ditch in October, November, and December 1985; and in the Sludge Lagoon and Equalizing Lagoon in December 1985. Water levels were provided in Sweet-Edwards & Associates (1986).

4.6 1986 Hytek Soil Gas Survey

Two soil gas surveys were conducted on the Parcel G and current Hexcel and Carr properties to evaluate the extent of the VOC plume, check the assumptions used in an analytical transport model, and evaluate on-site and off-site sources of VOCs. Twenty-five locations were tested in February 1986. Due to complications with high water levels in February 1986, 43 locations were tested in August 1986. To collect the samples, iron pipe was driven into the ground to a depth generally less than 5 feet bgs, the end cap was knocked off, the pipe was retracted a few inches, the vapor in the pipe was allowed to equilibrate, and a vacuum was applied to the pipe to fill sample bottles. The February 1986 samples were analyzed for TCE, and the August 1986 samples were analyzed for tetrachloroethene (perchloroethene or PCE), TCE, and DCE. An on-site laboratory was used for all analyses.

Soil gas sampling locations, techniques, and results were presented in Sweet-Edwards & Associates (1986). The report concluded that the soil gas survey was not successful in delineating the extent of VOCs in groundwater but did confirm VOC hot spot locations.

4.7 1987 Hytek Groundwater Investigation

In March 1987, the USEPA issued a RCRA Section 3013 order to develop and implement a proposal for additional monitoring, analysis, and testing. An investigation plan was developed and negotiated with the USEPA. Per the final plan, the following activities were conducted:

- **Sludge sampling in the abandoned sludge drying beds.** In June 1987, six core samples (RS6/103, RS19/108, RS72/119, RS76/111, RS77/70, and RS103/34) were collected in random locations with the former sludge drying beds located in the southeastern portion of Parcel G (Figure 5). Samples were collected between 1.7 and 3.7 feet bgs using a 1-foot-long split spoon sampler. Samples were tested in an on-site laboratory for VOCs and an off-site laboratory for arsenic and cyanide.

- Drilling and sampling of 35 soil borings. Hand-auger borings HA-1 through HA-4, HA-4N, HA-4S, HA-4E, HA-5, HA-6, HA-6S, HA-6E, HA-6W, HA-7 through HA-27, HA-BN, and HA-BS were drilled in June and July 1987. Borings HA-1 through HA-4, HA-4N, HA-4S, HA-4E, HA-5, HA-6, HA-6S, HA-6E, HA-6W, and HA-7 through HA-12 were drilled around the current Hexcel Plant 1 building (Figure 6). Borings HA-13 through HA-27 were drilled near and downgradient of the former Parcel G drum storage area (Figure 5). Borings HA-BN and HA-BS (Figure 6) were drilled off-site to the southwest of Parcel G (on the east shoulder of 80th Avenue South) to provide information on background soil quality. All borings were advanced with a 3-inch-diameter hand auger, and soil samples were collected with a 1-foot-long split spoon sampler. One unsaturated and one saturated soil sample were collected from each boring at depths ranging from 3 to 6 feet bgs. Samples were analyzed in an on-site laboratory for VOCs and an off-site laboratory for arsenic and cyanide.

- Installation and development of 6 piezometers and 15 monitoring wells. Piezometers were installed at six locations (A, D, E, F, I, and J), and monitoring wells were installed at six locations (B, C, G, H, K, and L) between June and August 1987. Locations I and L were on Parcel G, and the remaining locations were off site (Figures 5 and 6). A hollow-stem auger drilling rig was used to first drill a test boring at each location, soil samples were collected from each test boring approximately every 5 feet during drilling, representative soil samples were submitted for grain-size analysis, random soil samples (one each from B, D, and F, and two from C) were tested in an on-site laboratory for VOCs, and one to three groundwater samples were collected from each test boring and analyzed for VOCs in an on-site laboratory. If the test boring VOC results were below action levels (generally 10 parts per billion), deep piezometers were installed to allow water level monitoring. If the test boring VOC results were above action levels, monitoring wells were installed at multiple depths to allow both groundwater level monitoring and sampling. Deep piezometers were installed at test boring locations A, D, E, F, I, and J. The piezometers were completed with nominal 2-inch-diameter, Schedule 80 PVC with 10-foot-long screens located at depths below grade between 43 and 99 feet. Shallow and deep monitoring wells were installed at locations B, C, and L. Shallow, intermediate, and deep monitoring wells were completed at locations G, H, and K. All monitoring wells were completed with nominal 2-inch-diameter stainless steel with 10-foot-long. Shallow well screens were located at depths below grade between 4 and 15 feet, intermediate well screens were located at depths below grade between 23 and 38 feet, and deep well screens were located at depths below grade between 47 and 79 feet. Each well was surveyed and developed. Development techniques included surging, bailing, pumping, and air lifting.

- Drilling and sampling of 4 test borings. In addition to the test borings at locations A through L, four additional test borings were drilled and sampled to provide additional groundwater data near locations B and C. The soil borings were designated B’, M, M’, and N. Soil samples were not collected from these borings. Each boring was drilled with a hollow-stem auger drilling rig to a total depth of 32 feet bgs, and groundwater samples were collected at shallow and intermediate depths. Groundwater samples were collected from 2-foot-long temporary well screens. The shallow screens were set between 9 and

16 feet bgs, and the intermediate screens were set between 30 and 32 feet bgs. The groundwater samples were analyzed in an on-site laboratory for VOCs.

- Hydraulic conductivity testing. One soil sample collected in a Shelby tube from the silt at the base of test boring A was submitted for analysis of vertical hydraulic conductivity. In-situ hydraulic conductivity testing of the silt at the base of test borings G and K was also conducted; the rising head slug test method was used for these tests.

- Groundwater level measurement. Groundwater levels were measured in all available monitoring wells and piezometers in August, September, October, and November 1987.

- Groundwater sampling. Groundwater samples were collected from 42 monitoring wells in August, September, October, and December 1987. Groundwater samples were collected from Bs, Bd, Cs, Cd, Gs, Gi, Gd, Hs, Hi, Hd, Ks, Ki, Kd, Ls, Ld, HY-1s, HY-1i, HY-1d, HY-2 through HY-7s, HY-7ss, HY-7i, HY-7d, HY-8i, HY-8d, HY-9 through HY-11s, HY-11i, HY-11d, HYCP-1s, HYCP-1i, HYCP-1d, HYCP-2, HYCP-3s, HYCP-3d, HYCP-4, and HYO-4. The samples were submitted for laboratory analysis of VOCs by USEPA Method 624, arsenic, and cyanide.

The investigation identified six hydrogeologic units at the site, two aquifers, horizontal groundwater flow to the northeast, upward flow between the two aquifers, VOC plume boundaries similar to previous investigations, and significantly lower VOC concentrations in the lower aquifer than the upper aquifer. Results were presented in Sweet-Edwards/EMCON (1988a).

4.8 1988 Hytek Parcel G Investigation of Unsaturated Soil Contamination

To further evaluate the extent of VOCs in unsaturated soil on Parcel G, 25 shallow test borings (designated TH-1 through TH-25; see Figure 5) were drilled in the area of the former unlined ditch near the southern boundary of former drum storage area. All borings were completed in April 1988 using a post-hole digger, hand auger, or portable hollow-stem auger drilling rig. Boring depths ranged from 1.7 to 6.5 feet deep. Soil samples collected from each boring were analyzed for halogenated VOCs (HVOCs) using Modified USEPA Method 601 in an on-site analytical laboratory.

The soil VOC results indicated two areas with total VOCs in unsaturated soil above 5 mg/kg, both located in the former drum storage area. The volume of soil with VOCs above 5 mg/kg was estimated to be 1,730 cubic yards. Results were presented in Sweet-Edwards/EMCON (1988b).

4.9 1989 BSB Pilot Recovery Program Investigation

A pilot recovery program investigation was conducted in 1989 in accordance with the final Post-closure Permit Condition IV.C.4.b (USEPA, 1989). The objective of the investigation was to develop the hydrogeological and operational data necessary to design a groundwater extraction and treatment system. The investigation included the following:

- **Monitoring well installation and development.** Parcel G monitoring wells HYCP-5 and HYCP-6 were installed, and HYCP-3s and HYCP-3i were replaced in March 1989 (Figure 5). HYCP-5 and HYCP-6 were installed per Post-closure Permit Condition V.F.1.a to monitor groundwater on the northeast side of Parcel G. HYCP-3s and HYCP-3i were installed to replace the original wells that were abandoned during October 1988 remediation activities (see below). Each well boring was drilled with a hollow-stem auger drilling rig. Soil samples collected at 5-foot intervals from HYCP-5 were submitted for laboratory analysis of grain size; the results were used to design the well screen of HYR-1. HYCP-5 and HYCP-6 were completed with nominal 2-inch-diameter stainless steel with 20-foot-long screens located at depths below grade between 10 and 30 feet. HYCP-3s and HYCP-3i were completed as the original wells, with nominal 2-inch-diameter Schedule 80 PVC, HYCP-3s screened between 8 and 13 feet bgs and HYCP-3i screened between 22 and 32 feet bgs. Each well was surveyed and developed.

- Observation well installation and development. Observation wells OW-2a, OW-2b, OW-2c, OW-3, and OW-4 were installed on the east side of the current Hexcel Building 1 in March 1989 (Figure 6). Each well boring was drilled with a hollow-stem auger drilling rig. Soil samples collected at 5-foot intervals from OW-2a, OW-3, and OW-4 were submitted for laboratory analysis of grain size; the results were used to design the well screens of CG-2, CG-3, and CG-4, respectively. OW-2a, OW-2b, and OW-2c were placed 6, 28, and 57 feet, respectively, south of the subsequent location of recovery well CG-2. OW-3 was placed 10 feet north of the location of subsequent recovery well CG-3, and OW-4 was placed 13 feet south of the subsequent location of recovery well CG-4. Each observation well was completed with nominal 2-inch-diameter Schedule 40 PVC, screened between 10 and 30 feet bgs. Each observation well was surveyed and developed.

- Recovery well installation and development. Recovery wells HYR-1, CG-1, CG-2, CG-3, and CG-4 were installed in March and April 1989. HYR-1 was installed on the north side of Parcel G, and CG-1 through CG-4 were installed on the east side of the current Hexcel Building 1 (Figures 5 and 6). A cable tool drilling rig was used to install each well. Soil samples collected at 5-foot intervals from CG-1 were submitted for laboratory analysis of grain size, and the results were used to design the well screen. All wells were completed with nominal 6-inch-diameter stainless steel screens and risers in 35- to 36-foot-deep borings. CG-1 through CG-4 were screened between 15 and 30 feet bgs, with screen slot sizes ranging from 0.010 to 0.020 inches. HYR-1 was screened between 10 and 30 feet, with a screen slot size of 0.010 inches. Recovery well HYR-2 was installed after the conclusion of the pilot recovery program investigation. The well boring was drilled, sampled, and completed similar to the other recovery wells; the well was screened between 9 and 29 feet bgs, with slot sizes of 0.010 and 0.015 inches. The wells were surveyed and developed using surging and pumping techniques.

- Recovery well step tests. Step tests were performed in HYR-1, CG-1, CG-2, CG-3, and CG-4 in April and May 1989. The tests were performed to determine preliminary estimates of aquifer parameters and to determine optimum pumping rates for each well. HYR-1 was pumped at increasing rates of 5, 10, and 20 gallons per minute (gpm) for a period of one hour per step. Water levels were allowed to recover for 1 hour between each pumping step. CG-1 through CG-4 were each pumped at three different rates ranging from 6 to 20 gpm with varying recovery periods between pumping steps.

- Short-term aquifer tests. Short-term, constant-rate aquifer tests were performed in HYR-1 in April and CG-2 in October 1989. The tests were performed to refine estimates of aquifer parameters. HYR-1 was pumped at a rate of 20 gpm for 10 hours. HYR-1, HYCP-1s, HYCP-1d, HYCP-2, HYCP-5, and HYCP-6 were monitored with pressure transducers during pumping and for a period of 12 hours after pumping ceased. Periodic water levels in Gs, Gi, Gd, HY-2, and HY-4 were also collected with an electric well probe. CG-2 was pumped at a rate of 10.3 gpm for 24 hours. CG-2, HY-6, OW-2a, OW-2b, and OW-2c were monitored with pressure transducers during pumping and for a period of 24 hours after pumping ceased.

- Pilot recovery well system test. An extended pumping test of the entire pilot system was conducted in October 1989. The test was conducted to evaluate the aquifer response to long-term pumping stress, the reliability of estimated aquifer parameters, and vertical and horizontal hydraulic head responses. The test also provided additional data for numerical modeling of groundwater conditions. HYR-1, CG-1, CG-2, CG-3, and CG-4 were pumped for a two-week period at 18, 6, 10, 10, and 14 gpm, respectively. Water levels were monitored in the recovery wells and adjacent observation and monitoring wells using a combination of pressure transducers and an electric well probe. Following the cessation of pumping, water level recovery was monitored for a period of one week.

- Recovery well water sampling. Groundwater samples were collected from each recovery well before and after step testing. Samples were submitted for laboratory analysis of VOCs; total and dissolved arsenic, iron, and manganese; major cations and anions; cyanide; total dissolved solids (TDS); total suspended solids (TSS); and settleable solids. Groundwater samples were collected from HYR-1 at the beginning and end of the short-term aquifer test; these samples were submitted for laboratory analysis of VOCs, major cations and anions, cyanide, TDS, TSS, and settleable solids. During the pilot recovery well system test, groundwater samples were collected four times from the recovery wells, twice from HYCP-1i, HYO-2, Gs, Gi, HY-4, Cs, HY-7s, Ks, and HY-9, and once from HYCP-2 and HYCP-5. Samples were submitted for laboratory analysis of VOCs; total and dissolved arsenic, iron, and manganese; major cations and anions; cyanide; TDS; TSS; and settleable solids.

The results of the pilot recovery program field activities were used to estimate and evaluate aquifer parameters, evaluate the shallow aquifer response to long-term pumping stress, assess recovered groundwater quality, and provide additional data for numerical modeling of groundwater conditions. Results were presented in Sweet-Edwards/EMCON (1990).

4.10 1988 through 2004 Groundwater Monitoring

Groundwater samples were collected on a regular basis from most available wells on the present BSB, Hexcel, and Carr properties between 1988 and 2004. These samples were collected to provide baseline data prior to remediation system startup and to provide data used to assess groundwater conditions during remediation. Three sampling events were conducted each year in 1988, 1989, and 1990; quarterly sampling events were conducted between 1991 and 1997; three events were conducted in 1998; and biannual events have been conducted from 1999 through the present.

Groundwater samples collected between October 1992 and September 1998 were collected in accordance with the Evaluation Monitoring Plan (EMP; Sweet-Edwards/EMCON, 1991), which was prepared per the final Post-closure Permit Conditions IV.C.4.c and V.F.2 (USEPA, 1989). Groundwater samples were collected from Bs, Bd, Cs, Cd, Gs, Gi, Gd, Hs, Hi, Hd, Ks, Ki, Kd, Ls, Ld, HY-1s, HY-1i, HY-1d, HY-2 through HY-7s, HY-7ss, HY-7i, HY-7d, HY-8i, HY-8d, HY-9 through HY-11s, HY-11i, HY-11d, HYCP-1i, HYCP-1d, HYCP-2, HYCP-3s, HYCP-3i, HYCP-4, HYCP-5, HYCP-6, and HYO-2. Between 1992 and 1998, groundwater levels were measured approximately monthly from all available wells on the present BSB, Hexcel, and Carr properties.

Groundwater samples collected between the fourth quarter of 1998 and the present have been collected per an approved Evaluation Monitoring Plan Amendment (EMPA; EMCON, 1998a). Per the EMPA, groundwater samples were collected from Cs, Hi, Hd, Ks, Ki, Kd, Ls, HY-1s, HY-1i, HY-1d, HY-7ss, HY-7i, HY-9, HY-11s, HY-11i, HY-11d, HYCP-1i, HYCP-1d, HYCP-2, HYCP-3s, HYCP-3i, HYCP-5, and HYCP-6. Groundwater levels were measured approximately monthly from all available wells on the present BSB, Hexcel, and Carr properties between 1999 and 2004.

Groundwater samples were submitted for laboratory analysis of VOCs, dissolved arsenic, and total cyanide by USEPA Methods 8010/8020, 7060, and 335.3, respectively. Annually, groundwater samples from monitoring wells Cs, HY-6, HYCP-2, and HYCP-5 were also analyzed for VOCs, SVOCs, PCBs, and metals (barium, cadmium, chromium, copper, nickel, and zinc) by USEPA Methods 8240, 8270, 8080, and 6010, respectively.

Groundwater monitoring results were presented and discussed in annual progress reports (EMCON, 1993, 1994, 1996, 1997, 1998b, 1999; IT Corporation, 2000 and 2002; and PES Environmental, 2002 and 2003).

4.11 1999 and 2000 BSB Parcel G Source Area Investigations

Additional investigations of Parcel G soil and groundwater was conducted in 1999 and 2000 to evaluate the nature and extent of VOC contamination of the parcel. The 1999 investigation involved the following activities:

- **Drilling and sampling of 15 borings.** Borings were advanced at 15 locations downgradient and cross-gradient of the former drum storage area (Figure 5) in April 1999. Borings GP-1 through GP-15 were drilled with a direct-push drilling rig to depths ranging from 36 to 58 feet bgs to provide additional soil lithology. Soil samples were collected on a nearly continuous basis during drilling for lithologic logging and screening for VOCs with a PID.

- Grain size vertical hydraulic conductivity analysis. Soil samples from GP-1, GP-2, GP-3, GP-4, GP-5, GP-6, GP-8, GP-9, GP-11, GP-12, GP-13, and GP-14 were submitted for laboratory grain size testing. Soil cores from GP-10 and separate borings next to GP-5 and GP-7 were submitted for laboratory testing of vertical hydraulic conductivity.

- Groundwater sampling of five borings. After identification of the lithology at GP-1 through GP-15, separate borings were advanced next to GP-1, GP-2, GP-12, GP-13, and GP-14 to allow collection of groundwater samples; two to three groundwater samples were collected from each boring at depths ranging from 10 to 39 feet bgs. Thirteen groundwater samples were submitted for laboratory analysis of HVOCs by USEPA Method 8010 or 8260; five samples were also submitted for laboratory analysis of chloride, nitrate, sulfate, TDS, TOC, and dissolved metals (calcium, iron, magnesium, manganese, and sodium).

- In-situ hydraulic conductivity testing. Two separate borings next to GP-1 and one boring next to GP-2 were drilled to allow constant rate aquifer testing of the shallow aquifer. GP-1c was tested between 9 and 14 feet bgs, GP-1d was tested between 22 and 27 feet bgs, and GP-2b was tested between 27 and 32 feet bgs. A peristaltic pump and an electric well probe were used to perform the tests.

The 2000 investigation was conducted to investigate the VOC source area on Parcel G, to investigate the potential for contaminant migration onto Parcel G from an unknown source upgradient of the property, and to confirm the absence of significant contamination in the area of the former sludge drying beds, and the area west of the former drum storage area. Additionally, during investigation of the area in and around the former drum storage area, efforts were made to identify the presence of dense nonaqueous phase liquid (DNAPL) in soil samples. Techniques employed included direct-push drilling, continuous coring, visual examination of soil samples, PID screening of soil cores, and laboratory VOC analysis of soil samples.

The 2000 investigation was performed in two phases and involved the use of a mobile laboratory. The following activities were conducted:

- **Drilling and sampling of 43 borings.** Forty-three borings were advanced in November and December 2000 at the locations shown on Figure 5. Borings SP-1 through SP-39, SP-12b, SP-13b, SP-30b, and SP-38b were drilled with a direct-push drilling rig to depths ranging from 27 to 47 feet bgs. Soil and groundwater samples were collected out of separate borings. Soil samples were collected on a nearly continuous basis during drilling for lithologic logging and screening for VOCs with a PID.

- Laboratory soil testing. Soil samples were analyzed for VOCs in an on-site mobile laboratory. Two to nine samples were submitted from each boring from which soil was tested. Samples were selected for laboratory analysis based on boring location, field screening results, lithology, mobile laboratory capacity, and analytical results from other borings. One-hundred, thirty-one soil samples were submitted for analysis of HVOCs using USEPA Method 8021B. Seven soil samples were submitted to an analytical laboratory for analysis of treatability parameters, chromium, iron, and manganese by USEPA Method 6010B and chemical oxygen demand (COD) by USEPA Method 410.4.

Four soil sample cores collected from the aquitard at the base of the shallow aquifer were submitted for laboratory testing of vertical hydraulic conductivity by American Society for Testing and Materials (ASTM) Method D5084.

- Laboratory groundwater testing. Thirty-nine groundwater samples were submitted for laboratory analysis of HVOCs using USEPA Method 8021B. Two to three samples were submitted from each boring from which groundwater was tested.

The investigations refined the understanding of the upper three hydrogeologic units at the site, identified a widespread intermediate silt layer in the middle of the shallow aquifer, and refined the understanding of the nature and extent of HVOCs in Parcel G soil and groundwater. Results were presented in IT Corporation (2001).

4.12 Summary

To summarize, the following activities have been conducted in the course of investigations at Parcel G over a period of 24 years:

- Drilling of 112 temporary borings;
- Installation of 28 wells or piezometers, with subsequent abandonment of 10 of them;
- VOC analysis of 23 soil gas samples;
- Chemical analysis of 8 sludge samples, 1 effluent sample, 218 soil samples, and over 700 groundwater samples;
- Physical parameter analysis of 19 soil samples;
- Measurement of over 2,000 groundwater levels; and
- Field hydraulic conductivity testing at 14 locations.

The following activities have been conducted by BSB in the course of investigations off site (upgradient and downgradient of Parcel G) over a period of 22 years:

- Drilling of 35 temporary borings;
- Installation of 47 wells or piezometers, with subsequent abandonment of 6 of them;
- VOC analysis of 45 soil gas samples;
- Chemical analysis of 10 soil samples and over 1,200 groundwater samples;
- Physical parameter analysis of 1 soil sample;
- Measurement of over 5,000 groundwater levels; and

- Field hydraulic conductivity testing at 24 locations.

5.0 PREVIOUS AND ONGOING CLEANUP ACTIONS

RCRA closure of all regulated units occurred in 1987 and 1988. In November 1988, USEPA and Ecology jointly issued a Post-closure Permit (WAD 07 665 5182) covering Parcels A through G. The permit identified the permitted facility as Parcels G and E, with recognition that Parcel E was subject to a pending transfer to Heath Tecna (later Hexcel). The permit did not name Heath Tecna and did not define the permitted facility to include Parcels A, B, C, D and F based upon the agencies' acceptance of a private agreement between BSB and Heath Tecna (later Hexcel). Under this private agreement, BSB agreed to be named as the sole permittee and Heath Tecna (later Hexcel) agreed to reimburse BSB for the costs of conducting the remedial action on the Hexcel Parcels. In accordance with the permit, a groundwater recovery program was implemented to meet the post-closure permit groundwater corrective action requirements for solid waste management units on the BSB Parcel G and on the Hexcel Parcel E.

5.1 RCRA Closure Activities

5.1.1 Former Equalizing and Sludge Settling Lagoons

The former equalizing lagoon and former sludge settling lagoon were closed between September and December 1987 consistent with the EPA-approved closure plan. During closure, lagoon sludges were removed and disposed off-site, at least 12 inches of underlying native soil were removed and disposed off-site, geotextile was installed to stabilize several areas of the settling basin, the excavations were filled with clean, granular soil, and an asphalt concrete cover system was constructed over each area.

Five confirmation soil samples were collected below the bottom of the former equalizing lagoon excavation, the samples were composited into one sample, and the sample was analyzed for water-soluble cyanide and EP Toxicity metals (arsenic, cadmium, chromium, lead, copper, nickel, and zinc). Twenty-five confirmation soil samples were collected below the bottom of the former settling lagoon excavation, the samples were composited into five samples, and the samples were analyzed for water-soluble cyanide and EP Toxicity metals.

Although the water table was encountered only at the base of the excavations, the moisture content of the excavated native soil was higher than that allowed for disposal. Therefore, kiln dust was mixed with soil to adjust the moisture content of the soil prior to transportation and disposal. A total of 614 tons of sludge, soil, and kiln dust were transported to Chemical Waste Management's TSD facility in Arlington, Oregon, for disposal. The closure procedures and laboratory analyses were documented in Landau (1988a).

5.1.2 Former Sludge Drying Beds

The former sludge drying beds located on the southwest portion of Parcel G were closed between July and October 1988 consistent with the EPA-approved closure plan. Closure activities consisted of excavation of sludge, excavation of 6 inches of underlying native soil (including the entire berms between the former sludge drying beds), lining the base of the excavations with woven geotextile for stabilization, installing an impermeable liner over the geotextile, filling the center of the excavations with mixed stabilized sludge and soil, filling the perimeter of the excavations with clean granular soil, and installation of an asphalt concrete cover system that was sloped to the north. The cover system includes two geotextile layers, a PVC liner, a granular backfill layer, a crushed rock base layer, and asphalt concrete pavement.

Confirmation soil samples were collected below the bottom of the former southwestern sludge drying beds. Sixty grab samples and one composite sample were collected. The sixty grab samples were composited into 12 samples, and all 13 composite samples were analyzed for pH, EP Toxicity metals (arsenic, cadmium, chromium, lead, copper, nickel, and zinc), and EP Toxicity cyanide. Fifty-four stabilized test cylinders were collected from the stabilized sludge; from 2 to 18 samples were collected from each of the 7 lifts of stabilized sludge. All of the test cylinders were analyzed for unconfined compressive strength, and 12 of the test cylinders were submitted for laboratory analysis of pH, EP Toxicity metals, and EP Toxicity cyanide. All of the test cylinders analyzed for chemical parameters were tested before they had fully cured. Approximately 2,105 cubic yards (cy) of sludge and 2,415 cy of excavated soil were stabilized. The closure procedures and laboratory analyses were documented in Landau (1988b).

Per Post-closure Permit Condition V.E.3.b.ii.B, the first sludge drying beds used on Parcel G (located in the southeast portion of the parcel) were filled with clean soil and capped in the same timeframe as the former southwestern sludge drying beds. The former southeastern sludge beds were filled and capped to prevent the accumulation of stormwater in the area.

5.1.3 Former Drum Storage Area

Unsaturated, contaminated soil from the former drum storage area was excavated and removed from the site in October and November 1988. Per Post-closure Permit Condition V.E.3.b.ii.A, soil with total VOC concentrations greater than 5 mg/kg was removed from ground surface to the water table (at seasonal low water levels). The approximate dimensions of the excavation footprint are shown on Figure 5. Based on the reported excavation footprint and depths, approximately 2,000 cy of soil were removed. Confirmation soil samples were collected from a backhoe bucket along the excavation sidewalls (Figure 5). At each sampled location, samples were collected at the top, middle, and bottom of the excavation, at approximate depths below grade of 2.5, 5, and 7 feet, respectively. Samples were submitted for laboratory analysis of VOCs. Monitoring wells HYCP-3s, HYCP-3i, and HYCP-3d, which were located in the excavation footprint, were abandoned prior to remediation; HYCP-3s and HYCP-3i were replaced as described in Section 4.9. The boundaries of the excavation and the confirmation soil sampling results were provided in a letter report (Sweet-Edwards/EMCON, 1988d).

5.1.4 Former Off-site Underground Septic Tank

In October 1988, an underground septic tank on the south side of the former Hytek building (south of the current Hexcel Building 1 near HY-2) was removed. Per Post-closure Permit Condition V.E.3.b.ii.D, soil with total VOC concentrations greater than 5 mg/kg was removed from ground surface to the water table and disposed of off site. Approximately 17 tons of soil were removed (Sweet-Edwards/EMCON, 1988c).

5.2 Post-Closure Groundwater Remediation

In 1989, EMCON designed and implemented a pilot groundwater remediation program for both the BSB and Hexcel parcels, in accordance with the post-closure permit and private cost-sharing agreement between BSB and Heath Tecna (later Hexcel). S.S. Papadopulos and Associates Inc. (SSPA), as Heath Tecna Aerospace Company's consultant, developed the groundwater flow model for the site. The model defines target pumping rates for each recovery well and evaluates the performance of the remediation program with respect to the capture of groundwater contaminants. In August 1991, USEPA provided final approval for implementation of the recovery and treatment program.

In August 1992, EMCON activated the groundwater extraction and treatment program required by the post-closure permit. The groundwater extraction program, which is currently still in operation, consists of six groundwater recovery wells that recover VOCs from the shallow aquifer zone consistent with the post-closure permit conditions. Recovery wells HYR-1 and HYR-2 are located on the BSB parcel and recovery wells CG-1, CG-2, CG-3, and CG-4 are located on the Hexcel parcels. An automated control system controls pumping rates, signals system alarms, records pumping volumes and rates, and collects water level data.

The groundwater program initially included a groundwater treatment system. However, following approval to discharge effluent water directly to the publicly-owned treatment works (POTW) in 1995, the on-site treatment system has been idle. Currently, groundwater enters a bypass line that transfers the water from the treatment area directly to the King County (formerly Metro) sewer treatment system.

BSB submitted a request for a Class 2 permit modification in 1998. The modification sought to streamline the groundwater monitoring program, documented in the Evaluation Monitoring Plan (Sweet-Edwards/ EMCON, 1991), by reducing the number of groundwater sampling wells and the frequency of sampling required. Ecology approved the modification in 1998, and an Evaluation Monitoring Plan Amendment (EMCON, 1998a) was prepared to reflect the approved groundwater monitoring program changes. A Post-Closure Care Permit Renewal Application (BSB, 1999) was submitted to Ecology in 1999.

Under the BSB AO and Hexcel EO the remediation responsibilities are divided by parcel with BSB responsible for remediation of Parcel G and Hexcel responsible for remediation of Parcels A through F. The groundwater treatment system will be separated with each party having a separate discharge to the sewer treatment system as described in the orders.

6.0 INVESTIGATION RESULTS

This section presents a summary of the Parcel G (the site) investigation results. Off-site results are discussed when necessary to provide clarity to the Parcel G results. Detailed results of investigations performed on Parcel G and off site are in the documents referenced in Section 4.

6.1 Geology

Appendix B presents boring logs and well completion figures for monitoring and recovery wells completed on and immediately adjacent to Parcel G; off-site, upgradient wells HY-11s, HY-11i, and HY-11d logs are also included. Tables 2 and 3 provide summaries of the Parcel G and off-site well completions, respectively. The maximum depth penetrated by the borings drilled on or adjacent to Parcel G was 96 feet bgs. Figure 5 presents the location of eight geologic cross sections (provided as Figures 7 through 14) across Parcel G. The geologic cross sections are based on boring logs from groundwater monitoring wells and the GP and SP borings drilled in 1999 and 2000. The geologic materials encountered in these borings consisted of sand, silty sand, silt, and organic silt. Previous investigation reports have categorized the materials encountered at the site into six zones, designated Layers A, B, C, D, E, and F (Sweet-Edwards/EMCON, 1988a). These layers are generally present beneath Parcel G and off-site to the northeast, although larger sampling intervals in some borings prevented the identification of some of the thinner layers in some off-site borings. Following are brief descriptions of the soil types encountered in each layer. Table 4 provides laboratory-derived soil physical properties for samples collected from direct-push borings (GP-11, SP-3, SP-4, SP-21, and SP-35) and piezometer borings (I and L). The geologic materials encountered at the site were consistent with those encountered by the U.S. Geological Survey and by other environmental investigations in the valley.

Layer A. In general, the uppermost material encountered in this layer consisted of a sand and silty sand with a thickness ranging from approximately 0 to 11 feet. This material was generally fine to medium and ranged from well to poorly graded. Beneath the sand and silty sand lay a silt unit, which varied in thickness from approximately 1 to 13 feet and extended to a maximum depth of 15 feet bgs. The silt was brown to gray, nonplastic to medium plasticity, with trace fine sand and lenses varying from sand to silty sand.

Layer B. Layer B consisted of an upper sand, intermediate silt, and a lower sand. The upper sand varied in thickness from 1 to 12 feet and the top of the unit was typically encountered between approximately 10 and 15 feet bgs. The fine sand was typically dark gray with reddish grains and contained occasional lenses varying from sand with silt to silty sand.

An intermediate silt layer was encountered at most boring locations throughout the site between depths of approximately 15 and 23 feet bgs. In general, the intermediate silt layer was represented as a series of thin discontinuous pockets in the southwest that increased in thickness, becoming a continuous layer in the northern and eastern portions of the site. Figure 9, along C-C’, represents the continuous silt layer along the northern portion of the site. In the southwestern half of the site, along B-B’ and E-E’ (Figures 8 and 11, respectively), the silt encountered in each of the borings was either a thin discontinuous lens or completely absent. In some of the borings, where the silt layer was absent, a corresponding peat layer at the approximate depth intervals was present. The silt, where found, varied in thickness from approximately 0.5 to 8 feet and was typically dark gray and nonplastic to low plasticity, and contained varying amounts of fine sand.

The lower sand of Layer B was found beneath the intermediate silt unit, with the top at approximately 18 to 23 feet bgs. It varied in thickness from approximately 8 to 23 feet. The sand was typically dark gray with reddish grains, fine to medium with coarse sand locally, and contained occasional lenses varying from sand with silt to silt. Additionally, lenses of peat and scattered organic debris were encountered at various depths and locations within Layer B.

Layer C. A third silt unit was encountered throughout the site, with the top of it at approximately 27 to 44 feet bgs (Table 5). The gray silt ranged from nonplastic to medium plasticity and contained scattered shell fragments. Layer C was encountered in all but one of the boring locations on or immediately north (south side of South 200th Street) of Parcel G. The one location in which Layer C was not encountered (HYO-1) was likely not sampled sufficiently to identify Layer C, given that nearby locations sampled more frequently did identify Layer C. The entire thickness of Layer C was only penetrated in 16 boring locations, varying from approximately 0.8 (SP-25) to 15 feet thick (Ld; see Table 5).

Layer D. Sand corresponding to Layer D was encountered in the 16 Parcel G explorations that fully penetrated Layer C. The top of the unit was encountered at approximately 35.5 to 48 feet bgs. Layer D ranged in thickness from 30 to 36 feet at the five exploration locations that fully penetrated the unit (HY-1d, HYO-1, HYO-3, I, and Ld). Layer D was composed primarily of fine to medium sand, with occasional thin interbeds of silty sand and silt. Shell fragments and occasional accumulations of wood fragments were also found in Layer D.

Layer E. Layer E was identified during the 1987 groundwater investigation as a transitional unit between the Layer D sand and the underlying fine-grained Layer F. The unit was reported (Sweet-Edwards/EMCON, 1988a) to consist of silty sand with increasing interbeds of silt with depth, typically less than 8 feet thick. Based on the deep boring logs HY-1d, HYO-1, HYO-3, I, and Ld, it appears that beneath Parcel G the unit consists of sand with increasing interbeds of silt and clay with depth. The bottom 16.5 feet of the HYO-3 boring log notes interbedded sand, clayey silt, and clay, which may represent Layer E or the top of Layer F.

Layer F. Layer F, the deepest unit encountered during on- or off-site investigations, consisted of laminated to massive, greenish gray to dark gray, moderately plastic clay and silt, with scattered wood fragments. The unit was encountered in three deep Parcel G borings (HYO-1, I, and Ld) and potentially in HYO-3, as discussed above. The top of the unit was encountered at approximately 74 to 83 feet bgs. None of the borings were advanced deep enough to penetrate the base of Layer F, but the unit is potentially 100 feet thick based on well logs for deep wells in the vicinity of the site.

6.2 Groundwater Flow

6.2.1 Groundwater Elevations

Appendix C provides Parcel G water levels (Tables C-1, C-2, and C-3), historical monthly precipitation (Table C-4), and hydrographs for Parcel G wells. Table 6 summarizes the maximum and minimum depths to groundwater and groundwater elevations for Parcel G wells; data from the HY-11 well cluster are also included since they are located adjacent to an unpaved recharge area. Between 1992 and December 2004, depth to groundwater at Parcel G varied from approximately 2.3 to 12.2 feet. Parcel G groundwater elevations during this same time period ranged from 11.31 to 20.82 feet (relative to the National Geodetic Vertical Datum of 1929

[NGVD 29]) in wells screened in Layers A and B and ranged from 13.60 to 21.03 feet in wells screened in Layers D and E. As seen in the hydrographs (Appendix C), groundwater elevations vary up to approximately 6.5 feet seasonally in wells completed in Layers A and B and up to approximately 5 feet seasonally in wells completed in Layers D and E. Groundwater elevations were highest winter to spring and lowest in the fall, lagging approximately 2 to 4 months behind precipitation.

Tables C-5 through C-10 in Appendix C provide Layer B and Layer D groundwater elevations at Parcel G well clusters HY-1, L, and HYCP-1 and off-site well clusters HY-11, G, and H. For comparison, Tables C-11 through C-15 in Appendix C provide Layer B and Layer D groundwater elevations at off-site well clusters B, C, HY-7, HY-8, and K, which are located at or downgradient of the Carr and Hexcel properties. Hydrographs comparing groundwater elevations in shallow, intermediate, and deep monitoring zones are also provided in Appendix C. The Layer D potentiometric heads were higher than the Layer B potentiometric heads more than 90 percent of the time at the HY-1, HYCP-1, G, and H well clusters for the period of record (July 1992 through December 2004). During the period of record, the Layer D heads were higher than the Layer B heads 82 percent of the time at the L well pair and 54 percent of the time at the HY-11 well cluster (which is located adjacent to an unpaved shallow groundwater recharge area). The comparison of Layer B and Layer D potentiometric heads at the L well pair location is hampered by the lack of an intermediate well; since heads in shallow wells were typically higher than heads in intermediate wells, the upward gradient was likely stronger than that indicated by a comparison of the Ld and Ls data.

The mean Layer D heads were higher than the mean Layer B heads by 0.89, 0.74, 2.07, 0.05, 1.94, and 0.95 feet at the HY-1, L, HYCP-1, HY-11, G, and H well clusters, respectively. The mean upward gradients at the HY-1, L, HYCP-1, HY-11, G, and H well clusters were 0.017, 0.012, 0.056, 0.001, 0.069, and 0.033 feet/foot, respectively. Downward vertical gradients across Layer C occurred periodically during winter and spring recharge. The vertical heads at well clusters HY-1, L, HYCP-1, G, and H were likely influenced to some degree by the Layer B groundwater extraction at HYR-1 and HYR-2. However, similar vertical gradients occurred at off-site piezometer cluster B, located over 500 feet away from the nearest extraction well.

6.2.2 Aquifer Test Results

Horizontal hydraulic conductivities determined from a slug test, single-well pumping tests, and constant rate, multiple-well pumping tests are summarized in Table 7. The horizontal hydraulic conductivities determined in wells screened across portions of Layers A and B ranged from 1.5 to 1,020 feet/day (5.3 x 10^{-4} to 3.6 x 10^{-1} cm/sec), and the horizontal hydraulic conductivities determined in wells screened solely in Layer B varied from 0.3 to 56 feet/day (1.0 x 10^{-4} to 2.0 x 10^{-2} cm/sec). The variability in the data is likely due to variation in aquifer testing methods, aquifer test lengths, and screened units. The most reliable aquifer test data, from the short-term pumping test in HYR-1, generated Layer B horizontal hydraulic conductivities varying from 43 to 56 feet/day (1.51 x 10^{-2} to 1.96 x 10^{-2} cm/sec). These results are consistent with those generated in off-site monitoring wells. No aquifer tests were conducted in Layer D at Parcel G, but one conducted in off-site well HY-8d east of the current Hexcel building yielded horizontal hydraulic conductivity results of 57 to 85 feet/day (2 x 10^{-2} to 3 x 10^{-2} cm/sec).

The vertical hydraulic conductivities of the GP-7b and GP-10 Layer B intermediate silt samples submitted for laboratory analysis were 6.9 x 10^{-7} and 3.5 x 10^{-6} cm/sec, respectively. The GP-5b, GP-7b, SP-3, SP-4, SP-21, and SP-35 Layer C silt samples submitted for laboratory analysis yielded vertical hydraulic conductivities varying from 1.3 x 10^{-7} to 2.6 x 10^{-7} cm/sec. No Layer F soil samples from Parcel G were analyzed for vertical hydraulic conductivity. However, the basal silt sample (Layer F) from off-site test boring A was submitted for laboratory analysis of vertical hydraulic conductivity, yielding a result of 3.6 x 10^{-7} cm/sec. These results are consistent with published hydraulic conductivity values for silt (Wolff, 1982).

6.2.3 Hydrostratigraphy

Five hydrostratigraphic units have been identified at the site: two aquifers (Layers B and D) and three low-permeability zones (Layers A, C, and E/F). Layers A, C, E, and F are fine-grained and exhibit low permeability. Layers B and D are composed of relatively high permeability sand.

Layer A. The uppermost portion of this unit is unsaturated or only seasonally saturated. The unit is laterally continuous and likely serves as a barrier to downward groundwater movement. Four wells, HYCP-2, HYCP-3s, HYO-2, and Ls, are completed partially in this layer.

Layer B. The entire thickness of Layer B is saturated, and the Layer B sand forms the shallow aquifer at the site. The intermediate silt found in most boring locations between 15 and 23 feet bgs largely divides Layer B into two subunits. For the purpose of assessing groundwater flow and the nature and extent of contamination, Layer B has historically been divided into two aquifer zones. The shallow aquifer zone is defined as the upper portion of Layer B, above the intermediate silt, and the intermediate aquifer zone is defined as the lower portion of Layer B, below the intermediate silt. Eight Parcel G wells or piezometers completed in the lower portion of Layer A and upper portion of Layer B (HYCP-2, HYCP-3s, HYO-2, and Ls) or in the upper portion of Layer B (HY-1s, HYCP-4, HYCP-5, HYCP-6) monitor the shallow aquifer zone. Due to their long wells screens, four of these wells (HYCP-2, HYCP-4, HYCP-5, and HYCP-6) also monitor the upper portion of the intermediate aquifer zone; historically, the data generated from these wells have been analyzed with the shallow aquifer zone wells. Three Parcel G monitoring wells, HY-1i, HYCP-1i, and HYCP-3i, monitor the intermediate aquifer zone. Both Parcel G extraction wells intercept the shallow aquifer zone and upper portion of the intermediate aquifer zone.

Layer C. The silt of Layer C was encountered throughout Parcel G. This unit serves as a barrier to groundwater flow and a restriction to the vertical transport of contaminants at the site. No Parcel G wells or piezometers are screened in Layer C.

Layers D and E. The saturated sand of Layers D and E form the deeper aquifer at the site, historically referred to as the deep aquifer zone. Although no aquifer tests have been conducted in the Layer D and E sand, it is likely that the horizontal hydraulic conductivity of the Layer D and E sand is similar to Layer B. Five Parcel G monitoring wells or piezometers monitor the deep aquifer zone: HYCP-1d, HYO-1, I, HY-1d, and Ld.

Layers E and F. Similar to the Layer C silt, the silt and clay of Layers E and F serve as a barrier to groundwater flow and a restriction to the vertical transport of contaminants at the site.

6.2.4 Groundwater Flow Direction

Figures 15 through 20 present groundwater potentiometric surface contour maps in the shallow, intermediate, and deep aquifer zones during April and October 2003. Off-site wells and piezometers are included in these maps to provide areal context. These groundwater contour maps are typical of those generated using data collected during periods of groundwater extraction. Groundwater flow in the shallow, intermediate, and deep aquifer zones is generally toward the northeast, with the contours showing groundwater capture by the extraction wells. Groundwater recharge likely occurs by precipitation and surface water (drainage ditches) infiltration in significant unpaved areas to the southwest of Parcel G. Groundwater discharge likely occurs to the 196th East Valley Highway Drainage Ditch, located about 2,000 feet northeast of the site.

A north-northeast to northeast flow direction was indicated by historical data collected before the groundwater extraction system was installed (Sweet-Edwards/EMCON, 1988a), with seasonal variations within a 20- to 30-degree range (S.S. Papadopulos, 1990). This is seen in groundwater potentiometric surface contour maps (Figures 21, 22, and 23) prepared using data collected on January 6, 1997, when the groundwater extraction system was down for maintenance. In 1997, groundwater flow during non-pumping conditions was to the northeast.

6.2.5 Groundwater Flow Velocity

Groundwater flow velocity is determined using the following equation:

$$v = \frac{ki}{n},$$

where v = groundwater flow velocity (cm/sec),
k = hydraulic conductivity (cm/sec),
i = hydraulic gradient (feet/foot), and
n = effective porosity.

The average horizontal hydraulic gradients in the shallow, intermediate, and deep aquifer zones on January 6, 1987, were about 0.0034, 0.0029, and 0.0021 feet/foot, respectively. The typical effective porosity of unconsolidated alluvium similar to that at the site is about 40 percent (Wolff, 1982). Using horizontal hydraulic conductivity ranges of 1.51×10^{-2} to 1.96×10^{-2} cm/sec for the shallow and intermediate zones and 2×10^{-2} to 3×10^{-2} cm/sec for the deep zone (see Section 6.2.2), the horizontal groundwater flow rate (average linear velocity) in the shallow, intermediate, and deep aquifer zones varied from 135 to 175, 115 to150, and 110 to 165 feet per year, respectively.

As discussed in Section 6.2.1, the mean upward gradients at the HY-1, L, HYCP-1, HY-11, G, and H well clusters were 0.017, 0.012, 0.056, 0.001, 0.069, and 0.033 feet/foot, respectively. Using a conservative estimate of effective porosity of 40 percent (Wolff, 1982) and vertical hydraulic conductivities between 1.3×10^{-7} and 6.9×10^{-7} cm/sec, the estimated ranges in the upward groundwater flow rate across Layer C were 0.03 to 0.2 feet per 100 years upgradient of Parcel G (at HY-11), 0.4 to 3 feet per 100 years near the middle of Parcel G (at the HY-1 and L locations), and 1 to 12 feet per 100 years at and near the downgradient edge of Parcel G (at the HYCP-1, G, and H locations).

6.3 Nature and Extent of Contamination

Soil and groundwater chemistry data tables are provided in Appendix D, and groundwater VOC time-trend plots are presented in Appendix E.

6.3.1 Effluent Water Chemistry

Tables D-1 and D-2 provide the analytical results of the effluent water sample collected from the equalizing basin in 1983. Ten of the 12 metals analyzed for were detected, with results ranging from 2.2 µg/L mercury to 300 mg/L total chromium. Total cyanide was detected at 88 µg/L. Five of the 13 VOCs analyzed for were detected, with results varying from 8.5 µg/L 2-nitrophenol to 213 µg/L methylene chloride. Of the three SVOCs analyzed for, total phenol was not detected, and dibutyl phthalate and bis(2-ethylhexyl)phthalate were detected at 5.2 and 25.5 µg/L, respectively.

6.3.2 Equalizing Basin and Drying Bed Sludge Chemistry

Analytical results for the soil (sludge) sample collected from the equalizing basin and the sludge sample collected from the southwestern drying beds are provided in Tables D-1 and D-2. Analytical results for the sludge samples collected in random locations in the southeastern drying beds are provided in Table D-3. Table D-4 presents EP Toxicity metals and cyanide results for sludge cores collected after stabilization of the sludge in the southwestern drying beds.

6.3.2.1 Inorganic Constituents

Eleven of the 12 metals analyzed in the equalizing basin soil (sludge) sample were detected, with detected concentrations varying from 60 µg/kg mercury to 300 mg/kg total chromium. Similarly, 11 of the 12 metals analyzed in the southwestern drying beds sludge sample were detected, with detected concentrations ranging from 300 µg/kg beryllium to 80,000 mg/kg total chromium. The detected concentrations of cadmium, copper, lead, and nickel were also above 1,000 mg/kg. Total cyanide was detected at 14 and 1,000 mg/kg in the equalizing basin and southwestern drying bed samples, respectively. Arsenic, the only metal analyzed for in the southeastern drying bed sludge samples, was detected in five of the six samples, with all results below 10 mg/kg. Cyanide concentrations in the southeastern drying bed sludge samples varied from 100 to 390 mg/kg; cyanide was not detected in one of the samples.

6.3.2.2 Organic Constituents

Seven of the 13 VOCs were detected in the equalizing basin sludge sample; detected concentrations ranged from 10 µg/kg 1,1-dichloroethene (1,1-DCE) to 3,900 µg/kg trans-1,2-dichloroethene (trans-1,2-DCE). TCE was detected at 3,900 µg/kg in the equalizing basin sludge sample. Only 2 of 13 VOCs were detected in the southwestern drying beds sludge sample, methylene chloride (95 µg/kg) and acetone (45 µg/kg); only one of three SVOCs were detected, bis(2-ethylhexyl)phthalate at 2,256 µg/kg. In the six southeastern drying bed sludge samples, none of the 12 VOCs were detected in two of the samples. Six of the 12 VOCs were detected in at least one of the other four southeastern drying bed sludge samples, 1,1-DCE (20 and 24 µg/kg), 1,1-dichloroethane (1,1-DCA; 17 µg/kg), TCE (3 µg/kg), toluene (13 µg/kg), PCE (30 µg/kg), and total xylenes (13, 38, and 74 µg/kg).

6.3.2.3 Stabilized Sludge

Eight of the 12 test cylinders of stabilized sludge from the southwestern drying beds were analyzed for EP Toxicity metals and cyanide before the test cylinders were fully stabilized. Four of the test cylinders were tested when more fully stabilized (see Table D-4). EP Toxicity arsenic and lead were not detected in any of the 12 sludge test cylinders. EP Toxicity cadmium was detected in five of the partially stabilized test cylinders, at concentrations ranging from 0.03 to 3.3 mg/L; EP Toxicity cadmium was not detected in any of the four more stabilized cylinders. EP Toxicity copper was detected four of the eight partially stabilized test cylinders and in three of the four more stabilized test cylinders; detected concentrations ranged from 0.1 to 0.4 mg/L. EP Toxicity nickel was detected in five of the partially stabilized test cylinders, at concentrations ranging from 0.3 to 3.3 mg/L; EP Toxicity nickel was not detected in any of the four more stabilized cylinders. EP Toxicity zinc was detected in two of the partially stabilized test cylinders, at concentrations of 0.2 and 0.5 mg/L, and in none of the four more stabilized cylinders. EP Toxicity chromium was detected in all of the test cylinders, ranging from 0.6 to 1.8 mg/L. EP Toxicity cyanide was detected in all but one of the partially stabilized test cylinders, at concentrations varying from 0.008 to 0.98 mg/L, and in none of the more stabilized test cylinders.

6.3.3 Soil Gas Chemistry

Soil gas analytical results are provided in Table D-5. PCE was not detected in any of the samples in which it was analyzed. TCE was detected at low concentrations (5 and 15 parts per billion [ppb]) in two of the six background samples and in most of the Parcel G samples. Detected TCE concentrations ranged from 5 (SG-107) to 250,000 ppb (SG-5), with the highest concentrations in samples collected near the former drum storage area (at SG-5, SG-6, SG-24, and SG-106). DCE (cis- + trans-1,2-dichloroethene) was detected at low concentrations (trace to 5 ppb) in two of the three background samples and in most of the Parcel G samples in which it was analyzed. Detected concentrations varied from 5 to 90 ppb but did not correlate well with the detected TCE concentrations.

6.3.4 Soil Chemistry

6.3.4.1 Inorganic Constituents

Confirmation soil samples collected during closure of the equalizing and settling lagoons, and the southwestern drying beds are presented in Tables D-6 and D-7, respectively. Soil inorganics data generated during the Parcel G source area investigation are presented in Table D-8. Arsenic, chromium, and lead were not detected in the EP Toxicity analyses of confirmation samples from the lagoons and drying beds. Copper, nickel, and zinc were not detected in the EP Toxicity analyses of confirmation samples from the southwestern drying beds. EP Toxicity cadmium was only detected (0.53 mg/L) in one drying bed confirmation sample, and EP Toxicity copper was only detected in two (0.2 and 1.0 mg/L) lagoon samples. EP Toxicity cadmium, nickel, and zinc were detected in most lagoon confirmation samples, ranging from 0.01 to 2.5 mg/L, 0.2 to 0.8 mg/L, and 0.1 to 0.2 mg/L, respectively. Chromium, iron, manganese, and COD results from the source area investigation ranged from 6 to 17, 5,560 to 12,800, 47 to 129, and 1,648 to 17,193 mg/kg, respectively.

6.3.4.2 Organic Constituents

Soil VOC results are provided in Tables D-9 through D-12. Total chlorinated VOCs (CVOCs) detected in soil samples collected above the water table in the former drum storage area (Table D-9) ranged from less than the laboratory method reporting limit (MRL) to 111.6 mg/kg. Twelve VOCs were detected in at least one of the confirmation soil samples collected above the water table in the former drum storage area after excavation and off-site disposal of soil (Table D-10); TCE (0.1 to 130 mg/kg), cis-1,2-DCE (0.1 to 36 mg/kg), vinyl chloride (0.1 to 2 mg/kg), and methylene chloride (0.1 to 0.4 mg/kg) were the compounds detected the most frequently.

Tables D-11 and D-12 present soil VOC results from samples collected above and below the water table in the 1987 hand-augered borings and the 1984 hand-augered and drilled borings. The highest VOC concentrations and most frequent VOC detections were in borings located in the former drum storage area and along the former ditch. TCE (0.002 to 2,000 mg/kg), TCA (0.002 to 61 mg/kg), trans-1,2-DCE (0.011 to 21 mg/kg), vinyl chloride (0.012 to 3.7 mg/kg), methylene chloride (0.012 to 0.084 mg/kg), toluene (0.010 to 60 mg/kg), and total xylenes (0.10 to 40 kg/kg) were detected the most often. Locations with few and relatively low-concentration VOC detections included the small drying bed north of the southwestern drying bed, the southwestern and southeastern drying beds, the east end of the former ditch, and the area north of the former waste handling facility.

Table D-13 provides the soil VOC results from the 2000 Parcel G source area investigation (IT Corporation, 2001), and Figure 24 presents total VOC isoconcentration contours in soil in both the upper and lower portions of Layer B that were generated during the 2000 source area investigation. The primary VOCs found during the source area investigation were TCE, cis-1,2-DCE, and vinyl chloride. Consistent with the previous soil sampling, the extent of contamination appears to be centered around the location of the former drum storage area. Total VOC concentrations above 10 mg/kg were found between depths of 17 and 34 feet below grade, with maximum VOC concentrations typically located within or directly above the confining layers (i.e., intermediate silt layer in Layer B and the top of Layer C). The maximum total VOC concentration in the depth range of the intermediate silt was 329 mg/kg at a depth of 20 feet in SP-9, and the maximum total VOC concentration at the base of Layer B was 600 mg/kg at a depth of 34 feet in SP-11. Although these soil sampling investigations included monitoring for DNAPL, none was observed. While the PID readings (see boring logs in Appendix B) measured during drilling were helpful in identifying soil samples for laboratory analysis, their inconsistent correlation with laboratory VOC results made them far less useful in identifying potential DNAPL zones. The highest soil laboratory VOC results indicate the potential presence of DNAPL. As discussed in Section 6.3.5, the concentrations of TCE in groundwater are consistent with the likely presence of DNAPL.

6.3.5 Groundwater Quality

This section provides a discussion of groundwater quality in monitoring wells installed within the boundaries of Parcel G and immediately north of Parcel G (between the site and South 200th Street). Off-site results are discussed when necessary to provide clarity to the Parcel G results.

6.3.5.1 Metals

Metals results for groundwater samples collected from HY-1s in the early 1980's, HY-1d in the mid 1980's, and HYCP-2 and HYCP-5 since 1995 are presented in Table D-14. Arsenic results for groundwater samples collected during routine sampling are presented in the Appendix E tables. In general, Parcel G groundwater metals concentrations were either infrequently detected or detected at low concentrations.

Dissolved arsenic was infrequently detected in groundwater samples from shallow wells HYCP-3s, HYCP-5, and HYCP-6, but dissolved arsenic was frequently detected in groundwater samples from shallow wells HY-1s, HYCP-2, HYCP-4, and HYO-2. Detections ranged from the MRL of 5 µg/L to 34 µg/L, with the higher detections in HYCP-2 and HYCP-4. These detected concentrations were similar to those in upgradient shallow well HY-11s, where dissolved arsenic was frequently detected at concentrations ranging from 5 to 37 µg/L. Dissolved arsenic was not detected in intermediate wells HY-1i, HYCP-1i, and upgradient intermediate well HY-11i, but dissolved arsenic was frequently detected in intermediate well HYCP-3i at concentrations ranging from 6 to 19 µg/L. In the deep aquifer zone, dissolved arsenic was infrequently detected in HYCP-1d and frequently detected in HY-11d and upgradient well HY-11d. Detections ranged from 5 to 10 µg/L. The relatively uniform spread of arsenic results from upgradient to downgradient across Parcel G and the generally decreasing arsenic concentrations with depth indicate that the source of arsenic is shallow and either area-wide or upgradient of Parcel G. It should be noted that the site is located in an area likely affected by the former Tacoma metals smelter that processed high-arsenic ore (Area-Wide Soil Contamination Task Force, 2003).

Dissolved barium was detected in all but one HYCP-2, HYCP-5, and HY-1d samples, ranging from 7 to 32 µg/L. Dissolved cadmium was only detected in one HY-1s sample just above the MRL. Dissolved trivalent chromium was detected in one HY-1s sample near the MRL, and dissolved trivalent and hexavalent chromium, not detected in HYCP-2 and only detected once in HY-1s, was detected in all HYCP-5 and HY-1d samples, varying from 7.8 to 18 µg/L. Dissolved copper, largely undetected in HYCP-2 and HYCP-5, was detected in both of the HY-1d samples and some of the HY-1s samples; copper detections ranged from 2 to 26 µg/L. Dissolved nickel was not detected in HY-1s, HYCP-2, or HY-1d. HYCP-5 dissolved nickel concentrations varied from 48 to 114 µg/L. Dissolved zinc, infrequently detected in HYCP-2 and HYCP-5 but detected in all analyzed HY-1s and HY-1d samples, ranged from 2 to 120 µg/L. Dissolved antimony, beryllium, hexavalent chromium, lead, mercury, selenium, and silver were not detected in the HY-1s samples analyzed for those constituents.

6.3.5.2 General Chemistry

General chemistry results for groundwater samples collected from HY-1s in the early 1980's are provided in Table D-15. General chemistry results and field parameter measurements for groundwater samples collected from direct-push borings advanced in 1999 are presented in Tables D-16 and D-17. Total cyanide results for groundwater samples collected during routine sampling are presented in the Appendix E tables. The results varied as follows:

- Specific conductance: 250 to 1,528 µmhos/cm;
- pH: 5.9 to 6.9;
- Hardness: 140 to 210 mg/L;
- TOC: 1 to 37.8 mg/L;
- TOX: <5 to 22,000 µg/L;
- Chloride: 5 to 197 mg/L;
- Sulfate: 0.3 to 501 mg/L;
- TDS: 280 to 1,010 mg/L;
- Total cyanide: 2 to 140 µg/L;
- Nitrate as nitrogen: < 0.2 to 0.5 mg/L;
- Dissolved calcium: 15.8 to 54.8 mg/L;
- Dissolved iron: 4.7 to 52.6 mg/L;
- Dissolved magnesium: 7.3 to 19.1 mg/L;
- Dissolved manganese: 0.36 to 5.4 mg/L;
- Dissolved sodium: 27 to 223 mg/L;
- Alkalinity: 220 to 420 mg/L;
- Oxidation reduction potential: -69 to –464 millivolts; and
- Dissolved oxygen: 0.1 to 3.9 mg/L.

6.3.5.3 Organic Constituents

VOC results for groundwater samples collected from the 1999 and 2000 Parcel G direct-push-boring investigation are presented in Tables D-18 and D-19. VOC results for groundwater samples collected during routine Parcel G sampling are presented in the Appendix E tables. Results of additional annual VOC analyses are presented in Table D-20. Parcel G groundwater SVOC, PCB, and pesticide results are provided in Tables D-21, D-22, and D-23, respectively.

No PCBs or pesticides were detected in any of the groundwater samples analyzed from HYCP-2, HYCP-5, and HY-1d. Only two SVOCs were detected in the analyzed HY-1s, HYCP-2, HYCP-5, and HY-1d groundwater samples: phenol was detected at 8 µg/L in HY-1s in November 1984, and bis(2-ethylhexyl) phthalate was detected at 17 µg/L in HY-1d in January 1985. Neither constituent was detected in any other analyzed sample.

VOCs in Direct-Push Borings. Fifteen VOCs were detected in groundwater samples collected from the Parcel G direct-push borings (sampled in the shallow and intermediate aquifer zones) in 1999 and 2000. The results from the 52 samples varied as follows:

- TCE: 9 detections, from 1.4 to 21,000 µg/L;
- cis-1,2-DCE: 33 detections, from 1.7 to 92,000 µg/L;
- Vinyl chloride: 24 detections, from 5.2 to 4,100 µg/L;
- 1,1-DCA: 23 detections, from 0.6 to 95 µg/L;
- 1,1-DCE: 13 detections, from 0.7 to 160 µg/L;
- trans-1,2-DCE: 15 detections, from 2.6 to 95 µg/L;
- 1,2-DCA: 2 detections, 1.1 and 1.3 µg/L;
- 1,2-dichloropropane: 1 detection at 79 µg/L;
- Chlorobenzene: 2 detections, 1.0 and 140 µg/L;
- 1,2-dichlorobenzene: 1 detection at 91 µg/L;
- 1,3-dichlorobenzene: 1 detection at 7 µg/L;
- 1,4-dichlorobenzene: 1 detection at 67 µg/L;
- Toluene: 3 detections, from 1.8 to 52 µg/L;
- Ethylbenzene: 2 detections, 2.1 and 4.2 µg/L; and
- Total xylenes: 2 detections, 13 and 15 µg/L.

The highest concentrations of VOCs were in borings located near and downgradient of the former drum storage area (GP-1b, GP-2b, GP-13b, and SP-12B), two borings at the north end of the former southeastern drying bed (SP-13 and SP-24), and four borings located near the western (upgradient) boundary of Parcel G (SP-15, SP-17, SP-18, and SP-21).

VOCs in Monitoring Wells. Tabulated primary VOC detections in wells located on or adjacent to Parcel G are presented in Appendix E and Table D-20. Since sampling of the wells began in the mid-1980s, fourteen VOCs have been detected routinely during at least part of the sampling history. As discussed below, Parcel G groundwater VOC concentrations have decreased since implementation of the groundwater extraction system in August 1992. Following are the 14 primary VOCs that have been detected with the ranges of detected concentrations between 1999 and 2003:

- TCE: from <0.12 to 710 µg/L in shallow wells, from <0.5 to 6,900 µg/L in shallow/intermediate recovery wells, from <0.12 to 76,000 µg/L in intermediate wells, and not detected (reporting limits from 0.12 to 0.5 µg/L) in deep wells;

- cis-1,2-DCE: from <0.12 to 26,000 µg/L in shallow wells, from <5 to 8,400 µg/L in shallow/intermediate recovery wells, from 22 to 42,000 µg/L in intermediate wells, and <0.12 to 11 µg/L in deep wells;

- Vinyl chloride: from <1.2 to 4,900 µg/L in shallow wells, from 19 to 1,100 µg/L in shallow/intermediate recovery wells, from 6.1 to 8,200 µg/L in intermediate wells, and <0.22 to 80 µg/L in deep wells;

- 1,1-DCA: from 0.15 to 270 µg/L in shallow wells, not detected (reporting limits from 0.5 to 100 µg/L) in shallow/intermediate recovery wells, from 0.42 to 32 µg/L in intermediate wells, and not detected (reporting limits from 0.09 to 0.5 µg/L) in deep wells;

- 1,1-DCE: from 0.18 to 80 µg/L in shallow wells, from <0.5 to 27 µg/L in shallow/intermediate recovery wells, from <0.12 to 52 µg/L in intermediate wells, and not detected (reporting limits from 0.12 to 0.5 µg/L) in deep wells;

- trans-1,2-DCE: from <0.14 to 72 µg/L in shallow wells, from <0.5 to 51 µg/L in shallow/intermediate recovery wells, from <0.5 to 190 µg/L in intermediate wells, and not detected (reporting limits from 0.14 to 0.5 µg/L) in deep wells;

- 1,2-DCA: from <0.12 to 0.8 µg/L in shallow wells, not detected (reporting limits from 0.5 to 100 µg/L) in shallow/intermediate recovery wells, from <0.12 to 1.1 µg/L in intermediate wells, and not detected (reporting limits from 0.12 to 0.5 µg/L) in deep wells;

- 1,1,1-trichloroethane: from <0.11 to 78 µg/L in shallow wells, not detected (reporting limits from 0.5 to 100 µg/L) in shallow/intermediate recovery wells, not detected (reporting limits from 0.12 to 500 µg/L) in intermediate wells, and not detected (reporting limits from 0.12 to 0.5 µg/L) in deep wells;

- PCE: not detected (reporting limits from 0.12 to 50 µg/L) in shallow wells, not detected (reporting limits from 0.5 to 100 µg/L) in shallow/intermediate recovery wells, from <0.11 to 3.8 µg/L in intermediate wells, and not detected (reporting limits from 0.11 to 0.5 µg/L) in deep wells;

- Methylene chloride: from <0.2 to 26 µg/L in shallow wells, not detected (reporting limits from 15 to 1,000 µg/L) in shallow/intermediate recovery wells, from <0.12 to 120 µg/L in intermediate wells, and not detected (reporting limits from 0.2 to 5 µg/L) in deep wells;

- Benzene: not detected (reporting limits from 0.11 to 50 µg/L) in shallow wells, not detected (reporting limits from 0.5 to 100 µg/L) in shallow/intermediate recovery wells, from <0.11 to 1.6 µg/L in intermediate wells, and not detected (reporting limits from 0.11 to 0.5 µg/L) in deep wells;

- Toluene: from 0.1 to 19 µg/L in shallow wells, not detected (reporting limits from 0.5 to 100 µg/L) in shallow/intermediate recovery wells, from 0.13 to 180 µg/L in intermediate wells, and from 0.14 to 1 µg/L in deep wells;

- Ethylbenzene: from <0.13 to 74 µg/L in shallow wells, not detected (reporting limits from 0.5 to 100 µg/L) in shallow/intermediate recovery wells, from 0.13 to 68 µg/L in intermediate wells, and not detected (reporting limits from 0.13 to 0.5 µg/L) in deep wells; and

- Total xylenes: from <0.3 to 97 µg/L in shallow wells, not detected (reporting limits from 1 to 200 µg/L) in shallow/intermediate recovery wells, from 0.3 to 130 µg/L in intermediate wells, and not detected (reporting limits from 0.3 to 1 µg/L) in deep wells.

In addition to being detected at the highest concentrations, TCE, cis-1,2-DCE, and vinyl chloride were also the most frequently detected compounds.

Between 1999 and 2003, 1,1-DCA and PCE were detected at least once in upgradient shallow well HY-11s, toluene was detected twice in upgradient intermediate well HY-11i, and vinyl chloride, 1,1-DCA, and toluene were detected at least once in upgradient deep well HY-11d. Except for one toluene detection in HY-11d (11 µg/L), the upgradient VOC detections were below 1 µg/L. Other VOCs that have been detected infrequently and at low concentrations in Parcel G monitoring wells have included acetone, chloroethane, carbon disulfide, chlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4-dichlorobenzene. Two of these (acetone and carbon disulfide) are chemicals used in analytical laboratories and may represent laboratory contamination of the samples.

6.3.5.4 VOC Time Trends

Appendix F provides time-trend plots for the primary VOCs routinely detected in Parcel G wells (TCE, cis- and trans-1,2-DCE, and vinyl chloride, see above). Plots were prepared for all Parcel G wells sampled for at least 5 years and, for reference, upgradient monitoring wells HY-11s, HY-11i, and HY-11d. All data available for each well were plotted; solid symbols represent concentrations detected above the MRL, and open symbols represent non-detections (plotted at the MRL). For wells with significant variation in VOC concentrations over time, multiple time-trend plots are presented to allow for different concentration scales.

TCE, cis- and trans-1,2-DCE, and vinyl chloride concentrations have varied in each well over time, with much of the shorter-term variation likely due to seasonal changes. Except for monitoring wells HY-1s and HY-1i, VOC concentrations in Layer B (shallow and intermediate aquifer zone) monitoring wells have decreased significantly since activation of the groundwater recovery system in August 1992. VOC concentrations in wells located near the former drum storage area (HYCP-3s, HYCP-3i, and HYCP-4) have fluctuated the most with less significant longer-term VOC concentration declines than those apparent in Layer B monitoring wells installed further from the former drum storage area (HYCP-1i, HYCP-2, HYCP-5, HYCP-6, HYO-2, and Ls). After the initial significant decrease in VOC concentrations, the wells installed further from the former drum storage area (HYCP-1i, HYCP-2, HYCP-5, HYCP-6, HYO-2, and Ls) experienced a shorter-term, less significant increase in VOC concentrations with a subsequent VOC concentration decrease; these concentration spikes occurred in different years in the wells. TCE, cis- and trans-1,2-DCE, and vinyl chloride concentrations in monitoring wells HY-1s and HY-1i increased after activation of the groundwater recovery system in August 1992, peaking in HY-1s between 1995 and 1996 and peaking in HY-1i between 1994 and 1998. VOC concentrations in both HY-1s and HY-1i have decreased since then.

No TCE, cis- and trans-1,2-DCE, and vinyl chloride concentration time trends are apparent in HY-1d due to the infrequent detections. Though low in concentration, TCE, cis- and trans-1,2-DCE, and vinyl chloride concentrations in Ld have trended downward since activation of the groundwater recovery system. HYCP-1d vinyl chloride concentrations and, to a lesser degree cis- and trans-1,2-DCE concentrations, have trended upward since 1996. These VOC detections are relatively low, but with the presence of the Layer C aquitard and the presence of higher hydraulic heads in Layer D than in Layer B, the increasing VOC trends in HYCP-1d are unexpected. HYCP-1d is installed in the same boring as HYCP-1i, and it is possible that the increasing VOC concentrations in HYCP-1d are due to downward groundwater flow through a leaking well seal induced during groundwater purging and sampling of HYCP-1d.

6.3.5.5 Spatial Distribution of VOCs

The vertical distribution of groundwater VOCs at Parcel G is depicted in Geologic Cross Sections A-A’ through H-H’ (Figures 7 through 14). The data were generated from samples collected in 1999 and 2000 in direct-push borings and monitoring wells. As seen in the cross sections, VOC concentrations were typically higher in the groundwater samples collected from the upper portion of Layer B (i.e., above the intermediate silt layer) compared to groundwater samples collected from the lower portion of Layer B. The intermediate silt layer appears to have been effective in mitigating VOC migration into the lower portion of Layer B. At four locations (GP-1, GP-13, GP-14, and the HYCP-3 groundwater monitoring well pair), however, groundwater VOC concentrations were higher in the lower portion of Layer B.

The horizontal distributions of TCE, cis-1,2-DCE, and vinyl chloride beneath Parcel G, the Hexcel Corporation property, and the Carr property are depicted in a series of isoconcentration contour maps prepared using 1992, 1995, 2000, and 2003 data (Figures 25 through 36). The 1992 maps were prepared using data collected before activation of the groundwater recovery system. The remaining maps were prepared with data collected during groundwater recovery.

Parcel G groundwater impacted with VOCs originates primarily near the former drum storage area and adjacent ditch. Although groundwater analytical results from some borings (e.g., SP-18, SP-21, SP-30) installed upgradient of the former drum storage area and downgradient of the former sludge drying beds indicated elevated levels of cis-1,2-DCE, minimal levels of TCE were detected. Because much higher levels of TCE and cis-1,2-DCE have been detected within and near the former drum storage area (e.g., HYCP-3i, SP-12b) than have been detected at the downgradient edge of the former sludge lagoons (SP-19, SP-20, and SP-22), the investigation results indicate that the predominant source on Parcel G is located in the former drum storage area, not in the former sludge drying beds.

Another source of comparatively low-level Parcel G VOCs appears to be from a location off site to the southwest of Parcel G. Monitoring wells HY-1s and HY-1i, located cross-gradient of the former drum storage area, have had consistent detections of VOCs since installation with significant increases in VOC concentrations after activation of the groundwater recovery system. Groundwater samples collected from direct-push borings SP-15, SP-16, SP-17, SP-18, SP-19, and SP-21, located upgradient or cross-gradient of the former drum storage area, also contained elevated concentrations of cis-1,2-DCE or vinyl chloride (Figures 31, 32, and 33).

The VOC plume extends from the former drum storage area to the northeast, in the direction of local groundwater flow. The maximum extent of the VOC plume is depicted in the vinyl chloride plots (Figures 27, 30, 33, and 36). The plume currently covers the northern half of Parcel G, the northwest corner of the Carr Property, and the southeastern portion of the Hexcel property. Contour lines on the Hexcel Property between the South 200th Street monitoring wells and the 84th Avenue South monitoring wells are estimated due to the lack of monitoring wells west of and beneath the Hexcel buildings (including the former Hytek building). Groundwater data collected in wells installed and sampled by Hexcel in 2003 and included in the 2003 isoconcentration contour maps (Figures 34, 35, and 36) were used to assist in positioning the estimated contours in the earlier maps. The 1995, 2000, and 2003 isoconcentration contour maps show the progressive influence of groundwater recovery at HYR-1, HYR-2, CG-1, CG-2, CG-3, and CG-4, resulting in a slightly smaller VOC plume with considerably lower VOC concentrations in the plume. The continued presence of cis-1,2-DCE and vinyl chloride beyond the northern boundary of Parcel G (where groundwater is captured by recovery wells HYR-1 and HYR-2) is currently unexplained, but is likely due to (1) dissolution or desorption into groundwater of secondary source material north of Parcel G, (2) undiscovered sources near the former Hytek building, and/or (3) the off-site VOC source southwest of Parcel G.

6.3.5.6 DNAPL

Direct-push drilling, continuous coring, visual examination of soil samples, PID screening of soil cores, and laboratory VOC analysis of soil and groundwater samples were used at Parcel G to try to identify the presence of DNAPL. As stated in Section 6.3.4, DNAPL was not observed during Parcel G drilling, but the highest soil laboratory VOC results indicate the potential presence of DNAPL. Similarly, DNAPL has not been observed in any Parcel G monitoring well; however, two lines of indirect evidence indicate that DNAPL is likely present in or near the former drum storage area:

- **Groundwater VOC concentrations.** A common indicator for the potential presence of DNAPL upgradient of the area monitored is VOC concentrations greater than 1 percent of the water solubility of the DNAPL component of interest (Kueper et al, 2003). Concentrations of TCE detected in groundwater were initially as high as 380,000 µg/L (in HYCP-3i, April 1992), which is 35 percent of the solubility limit of TCE in water (1,100 mg/L). The highest concentration in the 1999 through 2003 data set was 76,000 µg/L (HYCP-3i, April 2002), which is still 7 percent of the solubility limit of TCE in water; and

- Persistence of contamination. Contamination persistent at a location may be indicative of DNAPL upgradient of the location. TCE concentrations in recovery well HYR-1 (Appendix F) have been fairly consistent for the last 9 years, indicating the likelihood of an upgradient DNAPL source.

7.0 CONCEPTUAL SITE MODEL

7.1 Contaminant Sources

Based on historical Parcel G waste treatment operations and the distribution of contaminants at Parcel G, it appears that the VOCs in the subsurface were sourced primarily by releases in the former drum storage area. Possible release mechanisms in the former drum storage area included spillage during product transfer, leaks from product drums, and surface spillage of raw products washed into the former ditch at the southern edge of the former drum storage area.

7.2 Chemical Fate and Transport

This section describes the physical, chemical, and biological processes that influence Parcel G-related contaminant migration through the subsurface.

7.2.1 Contaminant Fate Processes

Several physical, chemical, and biological processes affect the mobility and behavior of liquid- (or pure-) phase and vapor-phase contaminants in the unsaturated zone and dissolved- or pure-phase contaminants in the saturated zone. These processes can generally be classified into two categories: nondestructive and destructive. Nondestructive processes primarily affect contaminant mobility and behavior, but do not alter the chemical composition of the contaminant. Destructive processes either destroy the contaminant or change the chemical behavior. Both processes result in effective decreases in contaminant concentration.

7.2.1.1 Non-destructive Processes

The nondestructive processes controlling the contaminant migration rate at Parcel G are sorption, dispersion, volatilization, dissolution, and dilution. These are defined as follows:

- **Sorption** is the chemical bonding of contaminants to soil particles, which slows the rate of soil vapor and pure-phase contaminant migration in the unsaturated zone and the rate of dissolved- and pure-phase contaminant migration in the saturated zone. Sorption effects are directly related to soil organic carbon content. Based on the amount of silt and organic matter in an aquifer, sorption may slow the rate of contaminant transport;

- Dispersion is the longitudinal and transverse spreading of contaminants as they move through a porous media. Dispersion spreads out the contaminant plume, which slows the migration rate and decreases the contaminant concentration of the plume boundary. Dispersion occurs when variations in soil pore size, pore "roughness," and particle flow path length result in different advective transport rates for different solute molecules. Dispersion is most significant in stratified soil zones. Its effects increase with flow path length. A narrow, high concentration plume near the source area will become a broad, low concentration plume several hundred feet from the source area. Dispersion may be more significant in siltier portions of an aquifer;

- Volatilization occurs when pure-phase contaminants in the unsaturated soil or dissolved-phase contaminants in groundwater transfer into the vapor-phase in unsaturated soil. Volatilization from groundwater occurs only at the water table. Volatilization rates depend on the relative volatility of the contaminant (TCE is moderately volatile, while vinyl chloride is highly volatile);

- Dissolution occurs when pure-phase contaminants transfer into the dissolved-phase in soil pore water above the water table or into groundwater below the water table, and when vapor-phase contaminants transfer into groundwater at the water table. This process depends on the relative solubility of the contaminant (TCE is moderately soluble, while vinyl chloride is highly soluble); and

- Dilution occurs when relatively cleaner water from natural or artificial sources infiltrates through the unsaturated soil and mixes with contaminated groundwater resulting in lower contaminant concentrations. Because Parcel G is largely paved, significant natural dilution is likely limited.

Except for dilution, the nondestructive processes described above are generally active at Parcel G. However, given the relatively high concentrations at the source, and the short distance from the source to the Parcel G boundary, attenuation by these processes has not significantly reduced concentrations as they approach the Parcel G boundary. Desorption of VOCs from soil and, probably, dissolution of DNAPL in the saturated zone likely generate most of the dissolved VOCs in groundwater at Parcel G.

7.2.1.2 Destructive Processes

Destructive processes are either biotic (biodegradation) or abiotic. Biodegradation includes all microbial activity occurring in the subsurface that permanently destroys contaminants. Abiotic processes include various chemical reactions, primarily hydrolysis, that destroys contaminants. Biodegradation processes are generally much more significant than abiotic processes; thus, only the biodegradation processes are discussed.

Microbial metabolic degradation of TCE occurs under both aerobic and anaerobic conditions. Aerobic metabolism includes direct oxidation of CVOCs as an energy source, and fortuitous degradation of CVOCs (co-metabolism) during metabolism of other organic compounds. Under anaerobic conditions, CVOCs are degraded by reductive dechlorination (the sequential removal of chlorine atoms from a CVOC molecule). Figure 37 shows the sequential dechlorination steps from primary CVOCs to secondary CVOCs to organic gases (e.g., ethene) and other breakdown products.

Anaerobic reductive dechlorination is defined as the degradation of a compound in the absence of oxygen; thus, only in the presence of other organic material that serves as the primary energy source (McCarty, 1987). Bacterial metabolism under anaerobic conditions requires both electron acceptor and electron donor compounds. Electron donors (primary energy sources or substrates) include organic compounds such as readily degradable sugars, volatile fatty acids (e.g., acetate, lactate), naturally occurring organic matter, and alcohols, or longer chain aliphatic and aromatic hydrocarbons (petroleum fuels). Under anaerobic conditions, electron acceptors include (in order of decreasing metabolic energy yield) nitrate, manganese (V), iron (III), sulfate, and carbon dioxide. During anaerobic reductive dechlorination, CVOCs (i.e., PCE, TCE, DCE, and vinyl chloride) may increasingly serve as an electron acceptor, particularly as the naturally occurring electron acceptors are consumed by microbial metabolism. Degradation of both petroleum hydrocarbons and CVOCs may occur simultaneously during reductive dechlorination. Anaerobic reductive dechlorination is most favorable under methanogenic conditions. Anaerobic reductive dechlorination efficiency decreases as chlorine atoms are removed, PCE is most readily degraded, and vinyl chloride is the most recalcitrant. Vinyl chloride, however, may be degraded aerobically with oxygen as an electron acceptor, or co-metabolically under aerobic conditions in the presence of methane and the Fe^{3+} ion.

Although a detailed evaluation of biodegradation has not been performed at Parcel G, the high groundwater iron content, the low groundwater dissolved oxygen content, the presence of the expected degradation products, and the results of biodegradation evaluations conducted in other environmental investigations conducted in the Kent valley suggest that anaerobic reductive dechlorination is occurring at Parcel G. Biodegradation has evidently contributed to substantial destruction of contaminants in the subsurface at Parcel G, but, because of the relatively high concentrations at the source and the short distance to the Parcel G boundary, has not been sufficient to attenuate contaminants to acceptable levels before they approach the downgradient Parcel G boundary.

7.2.2 Migration Mechanisms and Pathways

Residual contaminants residing in saturated and unsaturated soil may be further mobilized by flow of water or air in the subsurface. Several migration processes are likely to occur, and are described below.

7.2.2.1 Unsaturated Soil

VOCs were originally released into the subsurface during spills that occurred during waste handling in the former drum storage area. The contamination in the unsaturated soils was removed by excavating the drum storage area and ditch in 1988. This area has since been paved.

The processes that caused migration of VOCs in the unsaturated zone before it was excavated are discussed below. As noted, these processes are of much less significance since the removal action and installation of surface pavement.

- **Pure Phase Flow.** Pure-phase chemical product spilled at the surface would have migrated downward due to gravity through unsaturated soil. This pathway was probably the primary contaminant migration route in the former drum storage area. Because waste handling activities ceased at Parcel G 20 years ago, it is likely that all pure-phase VOCs originally released into the unsaturated zone have migrated into the saturated zone, adsorbed onto unsaturated soil, or volatilized. Therefore, pure-phase migration in the unsaturated soil is not considered an active migration pathway.

- **Leaching to Groundwater.** This process includes infiltration of natural precipitation through unsaturated soil, dissolution of pure-phase contaminants or flushing of soil pore water contaminants into the water, and transport of the contaminants to the saturated zone. While likely an active contaminant migration pathway when the drum storage area was active, this process is not considered a significant migration pathway at Parcel G since all unsaturated soil in the former drum storage and ditch areas is located beneath pavement.

- Diffusion. Diffusion is driven by chemical concentration gradients, and is the primary mechanism for vapor transport in unsaturated soil where soil vapor is usually stagnant. Diffusion may be an active migration pathway, though it is likely limited due to the relatively thin unsaturated zone.

7.2.2.2 Saturated Soil and Groundwater

When a release of a VOC product occurs in the subsurface, the product moves downward through the unsaturated soil as a non-aqueous phase liquid (NAPL) under the force of gravity. If the release is large enough, the NAPL eventually reaches the water table and the saturated zone. If the NAPL is denser than water, DNAPL will continue to move downward, in a typically tortuous fashion along multiple flowpaths, with downward movement controlled by the pore size distribution and bedding of the geologic unit. As DNAPL moves through the subsurface, disconnected blobs and ganglia are left behind the trailing edge of the DNAPL, effectively diminishing the migrating mass. The blobs and ganglia are small (less than 10 grain diameters in length) and occupy between approximately 5 to 20 percent of the invaded pore space behind the DNAPL body (Kueper et al., 2003). Downward DNAPL movement will continue until the mass of DNAPL is exhausted or a soil layer fine enough to stop the DNAPL is encountered. In the latter case, the DNAPL will pool and spread laterally. DNAPL in a pool is connected between adjacent pores; pore space in DNAPL pools can be up to 70 percent saturated with DNAPL (Kueper et al., 2003). Portions of a site containing DNAPL pools and/or residual DNAPL (blobs and ganglia) are termed the DNAPL source zone.

As groundwater moves through the DNAPL source zone, a plume of dissolved contaminants is generated; soluble constituents partition into groundwater dictated by the effective solubility of the solvent mixture. Dissolved contaminants then migrate by advection with groundwater. Volatile constituents from groundwater partition into the unsaturated zone vapor phase and migrate in soil gas. Over time, the DNAPL remaining in the subsurface weathers as volatile and soluble components are depleted from NAPL interfaces, with residual NAPL continuing to be a source of contaminants to both groundwater and soil gas. According to Kueper et al. (2003), the lifespan of residual DNAPL in the unsaturated zone is considerably shorter than residual DNAPL in the saturated zone due to high unsaturated zone volatilization rates.

As discussed in Section 6.3.5.6, elevated groundwater VOC concentrations and the persistence of VOC contamination in Layer B at Parcel G indicate that DNAPL is likely present in Layer B in or near the former Parcel G drum storage area with the migration mechanisms described above active at Parcel G. The probable presence of DNAPL coupled with the difficulty of finding it with wells and borings suggests that it occurs at Parcel G primarily as disseminated residuals, blobs, and ganglia in Layer B rather than extensive pooled accumulations.

7.3 Exposure Pathways and Receptors

This section evaluates the potential exposure pathways and receptors that may be impacted by contaminants present at Parcel G. Figure 38 presents the conceptual site model (CSM), which is based on the current and future industrial land use, the results of the water supply well search (Section 3.6), the soil and groundwater sampling results described in Section 6.3, and the active and potentially active fate and transport mechanisms described previously.

7.3.1 Soil

Currently, the vast majority of Parcel G is covered by asphalt pavement, an asphalt concrete cap, or concrete foundations. Parcel G characterization data and confirmation soil sampling data indicate that VOCs are present in unsaturated and saturated soil in and around the former drum storage area. The potential future exposure pathways and receptors for contaminants in soil are the following:

- Exposure to site workers through direct contact with, ingestion of, or inhalation of vapors emanating from contaminated soil during site maintenance or construction activities that disturb the existing structures or pavement (i.e., soil excavation); and

- Exposure to indoor workers in a future Parcel G occupational setting through inhalation of vapors originating from contaminated soil and migrating up through a future building floor. This is not a current pathway because there are no structures on Parcel G. However, there is a potential that future Parcel G development could include commercial or industrial buildings.

There is the potential for exposure to site workers or off-site residents/workers through consumption of contaminants that may leach from soil to groundwater. This is currently an incomplete pathway because (1) leaching is limited by the presence of the asphalt cap, (2) migration of contaminated Parcel G groundwater is controlled by the Parcel G groundwater recovery system, and (3) there are currently no groundwater supply wells located within the extent of the plume or within 1-mile downgradient of Parcel G. Furthermore, future cleanup actions will all include maintenance of (or improvements to) the existing cap. As a result, this is not considered a significant future exposure pathway and will not be evaluated as part of the FFS.

Because the residual contaminated soil is located entirely beneath pavement, there is no potential for exposure to terrestrial ecological receptors. Furthermore, Parcel G qualifies for an exclusion from a terrestrial ecological evaluation in accordance with the requirements of WAC 173-340-7491(c). Specifically, there is no area of contiguous undeveloped land on Parcel G or within 500 feet of the contaminated soil (requirement is less than 1.5 acres) and Parcel G does not contain any of the hazardous substances of concern listed in WAC 173-340-7491(1)(c)(ii). As a result, this is not considered a significant future exposure pathway and will not be evaluated as part of the FFS.

7.3.2 Groundwater

As described in Section 5.2, Parcel G groundwater is currently captured and extracted by two groundwater recovery wells (HYR-1 and HYR-2). Local groundwater flow outside of the Parcel G capture zone flows to the northeast. Some of this groundwater is currently captured by the CG extraction wells located along 84th Avenue South on the Hexcel parcels. The remainder of the groundwater not captured by the CG extraction wells continues flowing northeast, eventually discharging into the 196th East Valley Highway Drainage Ditch, approximately 2,000 feet northeast of Parcel G.

Groundwater contamination in areas immediately downgradient of Parcel G (i.e., the Hexcel property) is being addressed through site investigation and cleanup activities conducted by Hexcel under the Hexcel EO and are, therefore, not considered as part of this evaluation.

7.3.2.1 Potential Groundwater Ingestion Exposure Pathways

As described in the beneficial use evaluation (Section 3.6), 20 water supply wells may be located within a 1-mile radius of Parcel G. However, none of the potential water supply wells are located closer than 2,000 feet of Parcel G; none are reported to be between Parcel G and the 196th East Valley Highway Drainage Ditch, the local point of discharge for downgradient groundwater; and all are completed either at significantly greater depths than the deepest impacts at Parcel G or at significantly higher elevations (beneath the Covington Plain) than the Parcel G impacts. Residences and businesses in the Kent valley adjacent to Parcel G are serviced by public water districts, so there is an extremely low probability that groundwater in an aquifer hydraulically connected to the shallow aquifer at Parcel G will be used for water supply in the future.

King County’s Groundwater Protection Program 2002 Annual Report (King County, 2003) indicates that arsenic is present at naturally elevated concentrations in the glacial and bedrock aquifers that feed the alluvial aquifer in the vicinity of Parcel G. Furthermore, background monitoring well HY-11s, which represents background for Parcel G, contains dissolved arsenic at concentrations of up to 37 µg/L. Background arsenic levels are therefore above the drinking water standard of 10 µg/L MCL that will become enforceable in January 2006 and orders of magnitude higher than the MTCA Method B groundwater cleanup level of 0.0583 µg/L.

For all of the reasons described above, and consistent with the requirements of WAC 173-340-720(2) related to the definition of potable groundwater, the groundwater beneath Parcel G and between Parcel G and the 196th East Valley Highway Drainage Ditch is determined to be nonpotable. Therefore, ingestion of groundwater is not a potential future exposure pathway.

7.3.2.2 Potential Groundwater to Indoor Air Exposure Pathway.

Indoor workers in a future Parcel G occupational setting could potentially be exposed through inhalation of vapors originating from contaminated groundwater and migrating up through the soil and a building floor. This is not a current pathway because there are no structures on Parcel G. However, there is a potential that future Parcel G development could include commercial or industrial buildings. Therefore, this is a potential future pathway.

7.3.2.3 Potential Groundwater to Surface Water Exposure Pathway

Groundwater downgradient of the Hexcel property (across 84th Avenue South) is currently the subject of an ongoing groundwater investigation being conducted jointly by BSB and Hexcel in accordance with the Offsite AO. Based on the available information, the low VOC concentrations in the wells located east of 84th Avenue South, the presence of active containment systems at the Hexcel and BSB properties, and the distance to the drainage ditch indicate that the ditch is not likely a current receptor. In the absence of ongoing containment at Parcel G and at the Hexcel parcels, however, VOCs would have the potential to migrate to the ditch and enter surface water. Therefore, this potential future exposure pathway will be retained for evaluation.

Possible receptors associated with the potential future surface water exposure pathway include humans through consumption of aquatic organisms and through consumption of surface water (i.e., drinking water scenario). As noted above, residences and businesses in the Kent valley adjacent to Parcel G are serviced by public water districts, so there is an extremely low probability that surface water from the drainage ditch would be used as a drinking water source. Because significant stormwater runoff from the industrialized areas surrounding the ditch discharge into the ditch, the water quality in the ditch is likely not suitable for human consumption. There is the small potential, however, that persons may attempt to catch fish from the ditch and consume these fish. Therefore, human consumption of aquatic organisms is the only human exposure pathway associated with the groundwater-to-surface water pathway that will be evaluated as part of this FFS.

In addition to the potential human exposures considered above, aquatic organisms that may use the 196th East Valley Highway Drainage Ditch as habitat also have the potential to be exposed to VOCs in the future. Therefore, this receptor to the potential future groundwater-to-surface water exposure pathway will also be evaluated.

7.3.2.4 Summary of Groundwater Exposure Pathways

Summarizing the above discussion, the potential future exposure pathways and receptors for contaminants in groundwater associated with Parcel G are the following:

- Exposure to recreational (fishing) users of the surface water (i.e., the 196th East Valley Highway Drainage Ditch) through consumption of aquatic organisms;
- Exposure of aquatic organisms in surface water (i.e., the 196th East Valley Highway Drainage Ditch) via direct contact; and
- Exposure to indoor workers in a Parcel G occupational setting through inhalation of vapors originating from contaminated shallow groundwater that may migrate up through a future building floor.

7.4 Groundwater Cleanup Standards

MTCA-defined cleanup standards (WAC 173-340-700(2)) are composed of three separate components: cleanup levels; points of compliance; and additional regulatory requirements. Groundwater cleanup levels and points of compliance are the two primary components and are described in the following sections. The additional regulatory requirements that may apply to specific cleanup actions are addressed in Section 11. As previously discussed, soil cleanup standards are not discussed since soil remediation (excavation, on-site soil stabilization, and/or capping) has already been completed.

Cleanup levels will not be developed for the groundwater-to-indoor air and soil-to-indoor air pathways as part of the FFS. These potential pathways are only a concern if future Parcel G development includes construction of habitable structures on Parcel G. Any future development of Parcel G will have to consider this pathway and incorporate engineering controls (e.g., vapor barriers) as appropriate to control potential exposures. These engineering controls are well established. The requirement to conduct an evaluation of this pathway prior to future site development and/or to implement engineering controls will be placed in a notice on the property deed.

7.4.1 Development of Cleanup Levels

The approach to developing cleanup levels consists of the following steps:

- Selection of indicator hazardous substances (IHSs);
- Development of cleanup levels; and
- Selection of the point(s) of compliance.

The selection of IHSs and development of cleanup levels is described in this section, and the selection of the point(s) of compliance is described in Section 7.4.2.

7.4.1.1 Selection of Indicator Hazardous Substances

The investigation results indicate that 14 individual VOCs, dissolved arsenic, and total cyanide have been detected during routine groundwater sampling at Parcel G. Table 8 summarizes the Parcel G VOC, dissolved arsenic, and total cyanide detections between 1999 and 2003. The frequency of detection, maximum detected concentration, and minimum detected concentrations are summarized for each parameter at the bottom of the table.

To determine which of these 16 compounds will be selected as IHSs, and used in the development of cleanup action alternatives, they were evaluated consistent with the approach presented in WAC 173-340-703. This approach is used to reduce the number of hazardous substances being considered during development of cleanup actions by eliminating those substances that contribute a small percentage of the overall threat to human health and the environment. The remaining hazardous substances are designated as IHSs for purposes of defining site cleanup requirements.

The parameters listed in Table 8 were first evaluated based on their frequency of detection, with parameters detected less than 5 percent of the time dropped from consideration. Benzene, methylene chloride, PCE, and 1,1,1-TCA were dropped as IHSs based on frequencies of detection less than 5 percent.

The remaining parameters were then evaluated to determine if any were detected at concentrations below naturally occurring background concentrations. Based on this evaluation, arsenic was dropped as an IHS based on the similarity of the frequency and range of arsenic detections in the Parcel G wells and upgradient well HY-11s. As noted above, arsenic has been detected at concentrations up to 37 µg/L in HY-11s, while the maximum concentration detected in the remaining Parcel G monitoring wells was 27 µg/L in well HYCP-2.

The remaining 11 parameters include 10 VOCs and total cyanide and are considered potential IHSs. Further screening of these potential IHSs was conducted by comparing the detected concentrations of these parameters against the range of published cleanup levels and standards. The range of published groundwater cleanup levels was identified using Ecology's online *Cleanup Levels and Risk Calculation (CLARC)* tool (https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx) and other published standards including water quality criteria established under USEPA's National Toxic Rule (40 CFR 131). Both MTCA Method A and Method B cleanup levels were identified. Table 9 summarizes these published cleanup levels and standards for the 10 VOCs and cyanide as well as the frequency of detection and maximum detected concentration for each parameter.

As can be seen in Table 9, the maximum concentrations of 1,1-DCA, ethylbenzene, toluene, and total xylenes were less than any of the published cleanup levels or standards; these four VOCs are dropped from consideration as IHSs. Of the remaining six VOCs, TCE, vinyl chloride, and cis-1,2-DCE were frequently detected and detected at concentrations well above their published cleanup levels and standards; these three VOCs are retained as IHSs for the FFS. The three remaining VOCs (trans-1,2-DCE, 1,1-DCE, and 1,2-DCA) are co-located with, and present in much lower concentrations than, the detections of TCE, cis-1,2-DCE, and vinyl chloride. The maximum concentrations for all three of these VOCs were much lower than the published surface water standard that would apply to the groundwater-to-surface water pathway. Based on this analysis, trans-1,2-DCE, 1,1-DCE, and 1,2-DCA do not contribute a significant percentage of the overall risk to human health and are dropped from consideration as IHSs.

Cyanide was detected in 18 percent of samples and at a maximum concentration of 40 µg/L. This maximum concentration is well below the lowest of the published cleanup level or standard based on the protection of human health (140 µg/L), but above both the chronic and acute surface water quality standards based on protection of aquatic organisms (5.2 µg/L and 22 µg/L, respectively). It should be noted that the cyanide results reported in Table 8 are for total cyanide, while the published water quality standards are for free or dissociable cyanide. Free cyanide values would be lower than the total cyanide values. A careful review of the data in Table 8 shows that of the 20 detections, eight are at the MRL of 10 µg/L. Nine of the 12 remaining detections, including the maximum detected value, are from monitoring well HYCP-3i located in the center of the source area.

Monitoring results downgradient of Parcel G on the Hexcel property also show sporadic, low-level detections of cyanide at or slightly above the MRL. Downgradient of the Hexcel property, the cyanide detections are even more sporadic than immediately downgradient of Parcel G. No cyanide data are available near the potential receiving surface water body located 1,000 ft downgradient of 84th Avenue South. Because the intermittent presence of low-level cyanide on and downgradient of Parcel G does not represent a risk to human health, and the potential impacts on the receiving water are minimal given the distance between the detections that are marginally above the standards and the receiving water, cyanide is not considered an IHS for purposes of this FFS.

To summarize, the following hazardous substances have been selected as IHSs:

- TCE;
- cis-1,2-DCE; and
- Vinyl chloride.

7.4.1.2 Determination of Cleanup Levels

The next step in establishing cleanup standards is to determine the appropriate cleanup levels for the IHSs identified above. MTCA provides several methods for determining cleanup levels including Method A (tables and applicable state and federal laws), Method B (universal method), and Method C (conditional method). Method C is typically used where Method A or B cleanup levels are impossible to achieve or for certain industrial properties; Method C will not be used for the Parcel G FFS. The applicability of Method A is described in WAC 173-340-704(1). Method A may be used to establish cleanup levels at sites that have few hazardous substances and meet one of the following criteria:

- Sites undergoing a routine cleanup action as defined by WAC 173-340-200; or
- Sites where numerical standards are available either in the MTCA regulations or applicable state and federal laws for all IHSs.

The three IHSs for this site have numerical standards. Furthermore, the cleanup actions being contemplated for Parcel G are consistent with the criteria listed in WAC 173-340-200 under the definition of "routine cleanup action," and as described later in this FFS, there is a limited range of cleanup actions under consideration. Therefore, cleanup levels for the Parcel G FFS will be determined using Method A.

Based on the potential future pathways identified in Section 7.3 and in the conceptual site model (Figure 38), groundwater cleanup levels were identified for the IHSs for the groundwater-to-surface water pathway for the following receptor: protection of humans through consumption of aquatic organisms (TCE, cis-1,2-DCE, and vinyl chloride). No cleanup levels have been developed for the potential aquatic ecological receptors for these substances because there are no promulgated standards available and the human health standards are assumed to be protective.

Method A cleanup levels based on protection of surface water receptors are described in WAC 173-340-730(2). Consistent with this chapter, the numerical standards for each of the IHSs are (Table 10):

- TCE – 30 µg/L;
- cis-1,2-DCE – 70 µg/L; and
- Vinyl Chloride – 2.4 µg/L.

With the exception of cis-1,2-DCE, these standards are from USEPA's water quality criteria established under the National Toxics Rule (40 CFR Part 131). There is no surface water standard for cis-1,2-DCE, so the lowest available human health based standard of 70 µg/L was used (state MCL).

7.4.2 Groundwater Point of Compliance

The point of compliance refers to the point or points where cleanup levels will be attained. Under the RCRA Post-closure Permit (WAD 07 665 5182) the Parcel G point of compliance is the downgradient property boundary. Because all of the cleanup levels are based on the groundwater-to-surface water pathway, and consistent with WAC 173-340-720(8)(d)(ii), a conditional point of compliance at or near the point where groundwater discharges into the surface water may be appropriate, but the property boundary will be used as the POC for the purposes of this FFS.

7.5 Areas Exceeding Groundwater Cleanup Levels

The current distributions of TCE, cis-1,2-DCE, and vinyl chloride in Layer B groundwater are presented in Figures 34 through 36. Layer B groundwater beneath the northern half of Parcel G exceeds the cis-1,2-DCE and vinyl chloride cleanup levels. A wedge-shaped section of Layer B groundwater from the former drum storage area northeast to the property boundary exceeds the TCE cleanup level.

In addition, Layer D groundwater at HYCP-1d exceeds the vinyl chloride cleanup level. The likely source of VOCs detected in HYCP-1d is a faulty well seal. BSB proposes to properly abandon the HYCP-1i/HYCP-1d well pair (WAC 173-160); the details of this abandonment will be described in the Deep Aquifer Investigation Work Plan that will be prepared by BSB as required by Exhibit B of BSB's Agreed Order.

8.0 FEASIBILITY STUDY SCOPING

The process of developing cleanup action alternatives (CAAs) and selecting a final cleanup action includes the following major steps:

- Determine cleanup goals and levels;
- Identify applicable regulations and standards;
- Define cleanup action objectives (CAOs);
- Identify general response actions;
- Identify and screen cleanup action technologies;
- Develop and evaluate CAAs; and
- Select the preferred alternative.

The CULs for Parcel G were developed in Section 7. This section describes the next three steps, including defining the CAOs and general response actions. CAOs are media-specific goals that provide the framework for developing and evaluating CAAs. Section 9 identifies the potentially applicable cleanup action technologies and screens the technologies on the basis of the CAOs and site-specific information. Section 10 describes the development of a range of potentially applicable CAAs, while Section 11 describes the detailed evaluation of these alternatives. The preferred alternative is described in Section 12.

8.1 Scope of Focused Feasibility Study

As described in Sections 2 through 6 of this report, extensive site characterization, monitoring, and remedial actions have been implemented at Parcel G over the last 25 years. Particularly relevant to the performance of this FFS are the remedial actions conducted at Parcel G that are described in Section 5 and include:

- Removal and closure of solid and hazardous waste management units;
- Removal of contaminated solids from the former settling lagoon and settling basin;
- Excavation of approximately 2,000 cy of contaminated soil from the primary source area on Parcel G;
- Consolidation, stabilization, and isolation of dangerous waste solids in the former sludge drying beds;

- Capping of potentially impacted portions of Parcel G; and
- Installation and operation of a groundwater extraction and treatment corrective measures system (CMS).

As a result of these cleanup actions, conditions at Parcel G have stabilized, contaminated soil and waste has been treated and/or removed from Parcel G, over 10,000 pounds of VOCs have been removed and treated by operation of the existing CMS, and the potential risks to human health and the environment have been reduced and controlled. The existing CMS is effectively protecting human health and the environment by controlling off-site migration of VOCs, and potential on-site exposures are being controlled through a combination of engineering and institutional controls. However, residual VOC concentrations in groundwater remain in the primary source area of Parcel G, and VOC concentrations within the groundwater capture zone at the downgradient property boundary remain above potentially applicable cleanup levels.

Notwithstanding these historical and ongoing remedial actions, BSB has entered into the Agreed Order with Ecology and, consistent with Exhibit B of the Agreed Order, prepared this FRI/FS. The FRI/FS will evaluate whether the existing remedy, which has been in place for 13 years, can be updated by developing and evaluating CAAs for Parcel G. BSB has also agreed that until a final CAA is implemented as recommended by the FFS, that the existing groundwater CMS will be operated as described in the Interim Corrective Action and Post Closure Monitoring and Implementation Plan (Interim CAPMIP; PES, 2005). The Interim CAPMIP describes in detail, the implementation, operation and maintenance, evaluation, and reporting activities associated with the existing groundwater CMS.

8.2 <u>Regulatory Requirements</u>

The following regulations may be applicable to specific technologies or CAAs. The evaluation of specific regulations will be conducted as necessary during the CAA development and detailed analysis in Sections 10 and 11, respectively.

8.2.1 Model Toxics Control Act

Ecology's MTCA regulations were the primary regulations used to guide the performance of the FFS. Specifically, the FFS was conducted following the procedures outlined in WAC 173-340-350.

8.2.2 Applicable State and Federal Laws

As noted above, MTCA's threshold requirements listed in WAC 173-340-360(2) include the requirement to "comply with applicable state and federal laws" which are defined at WAC 173-340-710. The following Washington State laws and their associated regulations may be applicable to the CAAs developed for Parcel G:

- Washington Water Well Construction Regulations (WAC 173-160) establish state standards for installing, maintaining, and decommissioning groundwater monitoring and recovery wells.

- Washington Ground Water Quality Standards (WAC 173-201) establish standards to protect groundwater quality (e.g., MCLs) and beneficial uses.

- Washington Surface Water Quality Standards (WAC 173-201A) are applicable to surface waters of the state, are protective of aquatic life and other beneficial uses, and can be applicable if an alternative includes discharge of treated water is needed.

- Washington State NPDES Program Regulations (WAC 173-220) would be applicable for discharge to surface waters under an NPDES permit.

- Washington Dangerous Waste Regulations (WAC 173-303) establish procedures and standards related to the definition, management, and disposal of dangerous wastes.

- Washington Clean Air Act Regulations (WAC 173-400) provide standards and procedures for managing the discharge of contaminants to the atmosphere.

- Washington Industrial Safety and Health Act Regulations (WAC 296-62) contain health and safety training requirements for on-site workers. They also contain permissible exposure limits for conducting work at Parcel G.

8.3 Cleanup Action Objectives (COAs)

CAOs form the basis for evaluating potential cleanup technologies and actions for Parcel G. CAOs are based on an evaluation of the data collected during previous investigations (summarized in Sections 4 through 6 above) and on the cleanup levels established in Section 7. The focus of the CAOs is protection of human health. As described in Section 7.3.1, Parcel G qualifies for an exclusion from a terrestrial ecological evaluation in accordance with the requirements of WAC 173-340-7491(c). Therefore, no terrestrial ecological-based CAOs are developed. Although the site conceptual model (Figure 38) identifies the groundwater-to-surface water pathway as a potentially complete future pathway for aquatic organisms, there are no IHSs for this pathway because there are no promulgated standards for these substances and the human health standards are assumed to be protective as described in Section 7.4.1. Therefore, there are no aquatic ecological-based CAOs for this FFS.

The following human health-based CAOs are proposed for use at Parcel G.

8.3.1 Soil Cleanup Action Objectives

The CAO for soil at Parcel G is as follows: Control incidental ingestion of and dermal contact with soil, and inhalation of particulates and vapors from soil, by future subsurface construction workers on-site.

8.3.2 Groundwater Cleanup Action Objectives

The CAOs for groundwater at Parcel G are as follows:

- Control migration of groundwater containing IHSs at concentrations exceeding the applicable CULs to surface water from Parcel G; and
- Control inhalation of VOC--containing vapors from groundwater by subsurface construction workers on site.

8.4 General Response Actions

General response actions are the general approaches that can be used, either alone or in combination with other response actions, to meet the CAOs. Like the CAOs, general response actions are medium specific.

8.4.1 Presumed Response Actions

For both soil and groundwater, CAOs address potential exposure of subsurface construction workers on site. In order to address this potential future exposure pathway, BSB will incorporate a presumed response action into all cleanup action alternatives (CAAs) developed in Section 10. This presumed response action would establish specific procedures to ensure that the potential risks to site workers are adequately assessed prior to and during invasive site work and that adequate protective measures (e.g., personal protective clothing, respiratory protection) are used. The requirement for establishing these procedures will be documented in the implementation plan for the selected cleanup action alternative and placed in a notice on the deed.

In addition, all CAAs developed in Section 10 will include a surface cap either through maintenance of the existing cap, replacement or repair of the cap should it be damaged during implementation of other CAA technologies, and/or incorporation of buildings and other impervious features when the property is redeveloped.

The general response actions that address the remaining CAOs are described below.

8.4.2 Soil General Response Actions

The presumed response actions described above address all of the CAOs for unsaturated soil at Parcel G and no additional general response actions are required.

8.4.3 Groundwater General Response Actions

The general response actions for groundwater at Parcel G are as follows:

- Institutional controls (e.g., monitoring, deed restrictions);
- Engineering Controls (e.g., surface cap, vapor barriers);
- Groundwater Containment (e.g., hydraulic controls, vertical barriers);
- Ex situ groundwater treatment/discharge; and
- In situ groundwater source treatment (e.g., in situ oxidation, enhanced bioremediation).

The first four of these groundwater general response actions are currently being utilized at Parcel G.

9.0 IDENTIFICATION AND SCREENING OF CLEANUP ACTION TECHNOLOGIES

Cleanup action technologies are actions that could be implemented to address, whether alone or in combination with other technologies, one or more of the CAOs listed in Section 8.3. The list of potentially applicable technologies was based on the general response actions discussed in Section 8.4. This section describes the process and the results of identifying and screening potentially applicable technologies for achieving the CAOs at Parcel G.

Once identified, the potentially applicable technologies are screened based on the estimated effectiveness, implementability, and overall applicability to Parcel G. In general, technologies with a low overall applicability were screened out, and technologies with a medium or high applicability were retained.

9.1 Preliminary Technology Identification

The potentially applicable technologies considered for Parcel G, organized by general response action, are listed in Table 11. This list of technologies was compiled based on the nature of the contaminants at Parcel G (VOCs), the environmental media impacted (soil and/or groundwater), and the types of exposures that need to be addressed (as defined by the CAOs). The technologies associated with the presumed response actions defined in Section 8.4.1 are included in Table 11. In general, the technologies considered have been proven effective at full-scale for similar contaminants, although some technologies in earlier stages of development were considered.

Due to the amount of site investigation, monitoring, and remediation activities that has been conducted at Parcel G, the range of technologies considered has been focused for certain types of actions, including:

- Soil Treatment – As summarized in Section 5, significant cleanup actions have been implemented at Parcel G, including a number of soil excavation, treatment, and stabilization efforts. The scope of these cleanup actions and the available sampling information (Section 6) indicate that the major areas of historical vadose zone soil contamination have been effectively addressed. As discussed in Section 8.4.1, to the extent that residual contamination exists in the vadose zone, the FFS presumes that potential exposures to these contaminants will addressed through implementation of institutional controls (e.g., requirement to evaluate indoor air pathway for future Parcel G development), engineering measures (e.g., cap, vapor control systems for possible future buildings, if required), and worker protection measures; and

- Treatment and Disposal of Extracted Groundwater – The existing CMS at Parcel G discharges extracted groundwater directly to the King County sanitary sewer system for treatment at King County's treatment plant. It is anticipated that the range of cleanup actions evaluated in this FFS will continue to use this method of groundwater treatment and disposal if required in an alternative. It is possible that in some instances, it may be necessary to pretreat the groundwater to meet King County discharge standards. In this case where supplemental ex situ groundwater treatment is determined to be necessary, treatment would be accomplished using air stripping to lower VOC concentrations in groundwater, and activated carbon adsorption would be used to treat the vapor emissions from the air stripper.

9.2 Technology Screening

The potentially applicable technologies listed in Table 11 were screened on the basis of the following criteria:

- Effectiveness - technology's ability to meet one or more of the CAOs;

- Implementability - accounts for constraints or difficulties in implementing the technology and ability to assess and verify the technology's continued effectiveness; and

- Relative Cost - overall cost of the technology relative to other technologies that address the same CAOs and with similar effectiveness and implementability.

The screening process for the potentially applicable technologies is detailed in Table 12. The retained technologies are summarized in Table 13. Technologies that were considered applicable were retained and are assembled into remedial alternatives in Section 10. Technologies that were not considered to be applicable were not retained for further consideration. A summary of the screening process is described below.

9.2.1 Groundwater Containment Technologies

Groundwater containment will be a critical component of the final cleanup action selected for Parcel G given the following combination of site-specific factors:

- The likely presence of DNAPL on Parcel G;
- The short distance between the primary source area and the point of compliance at the downgradient property boundary (i.e., South 200th Street);
- Very low cleanup levels for certain IHSs, especially vinyl chloride; and
- The inability to effectively utilize natural attenuation as a component of a cleanup action due to the ongoing cleanup actions by the downgradient property owner.

Three technologies are considered in Table 12 for groundwater containment at Parcel G: groundwater extraction, vertical barriers, and permeable reactive barriers (PRBs). All three are established technologies that have been shown to be implementable and effective in providing containment of contaminated groundwater at numerous sites. In addition to providing containment, groundwater extraction and PRB technologies also provide for some contaminant mass removal and treatment. With respect to cost, the three technologies vary significantly in their relative capital (i.e., implementation) versus operations and maintenance (O&M) costs. Specifically, groundwater extraction has relatively low to moderate capital costs but higher long-term O&M costs whereas the vertical barrier and PRB technologies have much higher capital costs and lower O&M costs. PRB technology in particular can be extremely expensive depending on how it is implemented. If a continuous PRB were deployed at Parcel G to intercept the VOC plume, it would need to be approximately 650 feet long, an average of approximately 3 feet thick, and contain in excess of 5,000 tons of zero valent iron (ZVI). An alternative based around such a PRB would cost at least $10,000,000 at the current price of ZVI, a cost that is greatly disproportionate with the other containment technologies being evaluated. Therefore, the continuous PRB application of this technology will not be considered for use in alternative development. There are other applications of the PRB technology, such as a funnel-and-gate approach, that may be cost-effective.

In order to fully evaluate these technologies, groundwater extraction, vertical barriers, and the limited application of PRB technologies will be retained for use in development of CAAs in Section 10.

9.2.2 Ex situ Groundwater Treatment/Discharge Technologies

As noted above, the existing CMS discharges extracted groundwater directly to the King County sanitary sewer system for treatment at King County’s treatment plant and this method of managing extracted groundwater, possibly with the addition of supplemental on-site pretreatment, would be used if required for an alternative.

9.2.3 In Situ Groundwater Source Treatment Technologies

As shown in Table 12, there are numerous in situ treatment technologies that are potentially applicable to the Parcel G contaminants including biological, chemical, and physical treatment technologies. The effectiveness and implementability of these technologies, and whether one or more of these technologies should be retained for use in development of CAAs, must be determined in the context of the CAOs for Parcel G as well as site-specific considerations.

One of the two CAOs for the groundwater (prevent inhalation of vapors by subsurface construction workers) will be addressed through institutional and engineering controls. The remaining groundwater CAO is controlling off site migration of groundwater containing VOCs above cleanup levels. This CAO can be addressed by containment technologies and, at least potentially, through in situ treatment. In theory, if the source area can be adequately treated, then concentrations of VOCs will decline and presumably meet cleanup levels at the point of compliance after some period of time. The critical question is: can source treatment be implemented to achieve cleanup levels at the point of compliance (POC) in a reasonable timeframe, thereby eliminating the need for long-term containment? At Parcel G, the answer to this question is no for the reasons described below.

The factors that limit the effectiveness of source treatment technologies to meet groundwater cleanup levels at the point of compliance On Parcel G include:

- Presence of DNAPL. As described in Section 6.3.5.6, the elevated groundwater VOC concentrations and the persistence of VOC contamination at Parcel G indicate that DNAPL is likely present in or near the former Parcel G drum storage area in the form of disseminated residuals, blobs, and ganglia. The difficulties associated with achieving low cleanup levels in heterogeneous aquifers contaminated with DNAPL are well documented. USEPA (2003) concluded that although partial source zone depletion is possible, there is “no documented, peer-reviewed case study of DNAPL source-zone depletion beneath the water table where U.S. drinking water standards or MCLs have been achieved and sustained throughout the affected subsurface volume, regardless of the in-situ technology applied.” A survey of the environmental community conducted for the Naval Facilities Engineering Services Center (Geosyntec, 2004) similarly concluded, “none of the remediation attempts presented in this survey/review achieved MCLs or regulatory site closure;”

- Very low cleanup levels. As shown in Table 10, there are very low proposed groundwater cleanup levels for several of the VOCs at Parcel G. This is especially important for TCE and vinyl chloride that have proposed cleanup levels 30 µg/L and 2.4 µg/L, respectively. These two IHSs have been detected at concentrations of up to 76,000 µg/L and 8,200 µg/L, respectively. Most, if not all, of the available groundwater treatment technologies are not capable of achieving these extremely low cleanup levels where residual DNAPL is present;

- Proximity of point of compliance to source area. The point of compliance is the downgradient Parcel G property boundary along South 200th Street, approximately 100 to 150 ft downgradient of the source area. Given the proximity of the POC to the source, available treatment technologies cannot reduce contaminant concentrations on-site to the levels required such that natural attenuation could further reduce contaminant concentrations in groundwater to below cleanup levels prior to moving off-site;

- Heterogeneous aquifer. The shallow aquifer at Parcel G is present mainly within Layer B that consists of an upper sand, intermediate silt, and a lower sand unit. As described in Section 6.1, the upper and lower sand units are comprised of fine to medium sands with lenses of lower permeability soil including silt, silty sand, and peat. VOCs have been detected in both the upper and lower sand as well as the intermediate silt (Section 6.3.5.3). The distribution of VOCs throughout the heterogeneous soils of the source area would make it extremely difficult for treatment technologies to effectively and uniformly achieve treatment (e.g., deliver treatment chemicals) throughout the source area; and

- Source delineation. In order to effectively implement an in situ treatment approach it is imperative that the contaminant source be accurately and completely defined. This is especially true where treatment chemicals must come in direct contact with the contaminants (e.g., DNAPL). As noted above, it is likely that DNAPL is present at Parcel G in the form of disseminated residuals, blobs, and ganglia. Although the general area where this residual DNAPL is present has been defined (i.e., former Parcel G drum storage area), it is extremely difficult to find each and every location within the source area where residual DNAPL has come to be located. This problem of identifying small discontinuous areas of DNAPL is exacerbated by the heterogeneous nature of the aquifer.

The combined and compounding effects of these five factors result in a situation where it is extremely unlikely that currently available in situ source treatment technologies could be implemented at Parcel G in a manner that would result in achievement of cleanup levels at the POC within a reasonable timeframe, or for that matter anytime in the foreseeable future. In order for in situ groundwater source treatment to achieve cleanup levels by the POC, all of the following would have to occur:

- All of the disparate areas containing residual DNAPL and high concentrations of sorbed VOCs would have to be nearly perfectly delineated;

- In situ treatment technologies would have to be effectively delivered to all of these areas, many of which are in low permeability lenses within Layer B; and

- The very low cleanup levels would have to be achieved at, or within tens of feet of, the source areas.

None of these three steps have been demonstrated to be feasible at sites similar to BSB. Looked at another way, the current concentrations of TCE and vinyl chloride on Parcel G are up to four or five orders of magnitude above their respective cleanup levels. Even if in situ treatment resulted in a 99 percent reduction in vinyl chloride concentrations, a level of treatment that has not been achieved in full-scale applications at sites similar to BSB (Geosyntec, 2004), residual concentrations would still be three orders of magnitude above cleanup levels. Furthermore, assuming that some residual DNAPL zones would remain untreated (either because they were not identified and/or incompletely treated), they would continue to result in dissolved VOC concentrations well in excess of cleanup levels (Kueper et al, 2003).

At other sites where source treatment is effective, the remedial approach that has been utilized is to implement source treatment technologies to reduce source concentrations and then control the residual concentrations using natural attenuation processes. For this approach to be feasible, however, sufficient space is required between the source area and the POC, and the prerequisite geochemical conditions present, so that natural attenuation processes can reduce contaminant concentrations to cleanup levels. At Parcel G, there is at most 100 ft between the source area and the POC at South 200th Street, greatly limiting the viability of this approach.

At some sites where insufficient space is available on site, there is the option of using off-site and downgradient portions of the aquifer to facilitate the use of natural attenuation in managing residual contaminant concentrations. However, given the site investigation and future cleanup actions being evaluated by the downgradient property owner (Hexcel), this option does not appear to be available.

As a result of all these factors, in situ groundwater source treatment cannot be used to achieve the CAOs, and groundwater containment at Parcel G will be required for the foreseeable future. Therefore, none of the source treatment technologies described in Table 12 are retained for use in developing CAAs.

9.2.4 Engineering Control Technologies

Surface capping (e.g., asphalt paving, buildings, or other structures) will be retained for use in development of CAAs, both as a means of controlling direct contact with potentially contaminated soil and for minimizing infiltration of precipitation.

9.2.5 Institutional Controls

As shown in Table 12, all three institutional controls evaluated for use at Parcel G will be retained for use in CAA development, including:

- Water- and land-use restriction;
- Worker protection measures; and
- Access restrictions.

9.3 Retained Technologies

The technologies retained for use in development of CAAs are listed in Table 13.

10.0 DEVELOPMENT OF CLEANUP ACTION ALTERNATIVES

CAAs are combinations of technologies designed to meet the CAOs. The retained technologies from the screening process were assembled into three CAAs that address the CAOs and meet MTCA's minimum requirements to the extent practicable. This section presents a detailed description of the three CAAs with respect to conceptual design, implementation, and estimated cost. The conceptual design is developed in sufficient detail to evaluate the effectiveness, performance, and estimated restoration timeframe in the detailed evaluation of CAAs presented in Section 11 and to conduct the detailed comparative evaluation of the alternatives presented in Section 12.

The costs of the CAAs discussed below were developed by accounting for capital costs as well as recurring and future costs. Capital costs include work plans, design reports, other Ecology-required documents, and construction to implement the remedy. Recurring and future costs include groundwater monitoring, operation and maintenance, and reporting for 30 years. Consideration of a longer period for recurring and future costs will not materially impact the CAAs cost evaluation.

A construction contingency cost of 20 percent was added to each alternative to reflect a level of uncertainty in the estimated costs given the conceptual design of the CAAs. The contingency on capital cost reflects uncertainty in design, permitting, and construction costs. A 10 percent contingency on recurring and future costs generally reflects uncertainty of the operation and maintenance costs and the duration of the remedy. Consistent with industry standards, these cost estimates should be considered to represent the actual CAA implementation cost within a range of minus 30 percent to plus 50 percent of the estimated cost. The cost estimates are rounded to the nearest $10,000.

Cost details are provided in Tables 14 through 16. These cost estimates do not include the significant investigation- or remediation-related project costs incurred to date including previous site assessments, routine monitoring, reporting, and costs for the existing CMS system operation and maintenance. The net present value (NPV) for future and recurring costs is based on a discount rate of 5 percent, which is the rate BSB uses for their financial planning. All costs are presented in 2006 dollars.

10.1 Ongoing Cleanup Actions

BSB is currently operating the existing CMS to control migration of VOC-containing groundwater from Parcel G. A brief description of the existing CMS system is provided below.

Since August 1992, two extraction wells, HYR-1 and HYR-2 (Figure 5), have been operated on the north side of BSB's Parcel G, and extraction wells CG-1 through CG-4 have been operated on the eastern sides of Hexcel's Parcels C, D, and E. Each extraction well is 6-inches in diameter, 30- to 35-feet-deep, and screened between 10 and 30 feet below grade. The top of each well is completed below grade in a vault. Groundwater is extracted from each well with a submersible pump and is pumped through an individual, underground conveyance line to an aboveground manifold. The individual conveyance lines (two from Parcel G and the others from the Hexcel parcels) are currently joined together at the manifold into a common header that leads to the sanitary sewer. Extracted groundwater is discharged to the sanitary sewer under King County Waste Discharge Permit No. 7575. Access ports in the system allow sampling of individual wells and the combined discharge.

Consistent with the requirements of their respective Orders, BSB and Hexcel will initiate activities that will result in the independent operation of the HYR and CG extraction wells. This separation process is scheduled to be completed by March 24, 2006, or 14 days after King County grants Hexcel a discharge permit for the CG wells, whichever is later. Following separation of the HYR and CG wells, BSB will continue operation and maintenance of the HYR extraction system consistent with the Interim CAPMIP (PES, 2005) and Hexcel will operate and maintain the CG wells consistent with their Enforcement Order.

10.2 Alternative 1 – Enhanced Groundwater Extraction System

The enhanced groundwater extraction system alternative builds on the existing extraction system described above and consists of a total of seven extraction wells located along the downgradient boundary of Parcel G, discharge of extracted groundwater to the King County sanitary sewer system for treatment, and maintenance of the existing capping at Parcel G. A detailed description of the installation, operations and maintenance, monitoring, performance evaluation, and reporting for the enhanced groundwater extraction system is provided in PES' report[1] dated June 1, 2004 (PES, 2004b). Figure 39 provides the proposed locations of the existing and new extraction wells.

10.2.1 Cleanup Action Description

10.2.1.1 Groundwater Extraction System

Under this alternative, BSB would enhance the existing Parcel G extraction system with the addition of five new extraction wells to assure and significantly augment future performance. The existing site groundwater model (MODFLOW and Path3D) was updated with the 1999 and 2000 Parcel G data, recalibrated, and used to simulate a worst-case scenario to develop an enhanced extraction system (Patterson Planning & Services, 2003). The enhanced groundwater extraction system of Alternative 1 is designed to increase the margin of safety provided by the existing system. The enhanced system includes the two existing extraction wells (HYR-1 and HYR-2) and five new extraction wells (HYR-3 through HYR-7). The new wells, like the existing extraction wells, would be installed along the north side of Parcel G (Figure 39) as follows:

- HYR-3 would be installed approximately 100 feet west of HYR-2 to provide supplemental coverage on the west end of Parcel G;

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[1] This report, entitled *Corrective Action and Postclosure Monitoring and Implementation Plan,* was developed to describe how the enhanced groundwater extraction system approach would be implemented. To avoid confusion with the current Interim CAPMIP included in Exhibit D of BSB's Agreed Order, it will be referred to as PES 2004b.

- HYR-4 and HYR-5 would be installed in the upper and lower sands of Unit B, respectively, approximately 50 feet east of HYR-1; and
- HYR-6 and HYR-7 would be installed in the upper and lower sands of Unit B, respectively, approximately 100 feet west of HYR-1.

Well installation procedures are described in the PES 2004b report.

10.2.1.2 Groundwater Extraction and Conveyance

Groundwater will be extracted from each well with a submersible pump and transferred through individual, underground conveyance lines to an aboveground manifold. At the manifold, the individual conveyance lines from HYR-1 through HYR-7 will be joined together into a common header from which extracted groundwater will be discharged to the sanitary sewer under the existing waste discharge permit. Access ports will be placed in the system to allow sampling of individual wells and the combined discharge.

As described in Section 4.1 of the PES 2004b report, an initial target pumping rate of 26 gallons per minute (gpm) has been established based on the existing site flow model updated with the latest geologic data (Patterson Planning & Services, 2003). The existing site groundwater flow model uses the U.S. Geological Survey MODFLOW code (McDonald and Harbaugh, 1988) to simulate three-dimensional groundwater flow and the PATH3D code (Zheng, 1989) to determine the extraction system capture zone. The PES 2004b report also defines increased target pumping rates based on measured hydraulic gradients at Parcel G.

Following system startup and an initial operational period, the performance of the enhanced extraction system will be evaluated as described Section 5 of the PES 2004b report. Based on this evaluation, the extraction well target pumping rates may be changed. Section 5.3.2 of the PES 2004b report requires the development of a contingency plan within three months of start-up to ensure that a well failure or a system shutdown will not allow contaminants to escape capture by the groundwater recovery system. The plan will specify responses to well failures or a full system shutdown.

O&M requirements of the enhanced extraction system will be detailed in an O&M manual consistent with Section 4.2 of the PES 2004b report. Specific O&M activities will include inspections (both remote groundwater extraction system operation checks and field inspections) and routine maintenance of extraction system components (e.g., conveyance line and pump cleaning, periodic extraction well redevelopment). Over the longer term, individual extraction system components will be replaced as needed including pumps, piping, and the extraction wells themselves if redevelopment fails to maintain well production rates.

10.2.1.3 Extraction System Control

The enhanced extraction system will be automatically operated using a PLC define to control the individual extraction pump flow rates, similar to the existing extraction system. Each extraction well will include a submersible well pump, flow rate transmitter, flow rate controller, and water level pressure transducer. A PLC interface will be installed to allow both remote and local operator control and monitoring, similar to the existing extraction system.

10.2.1.4 Monitoring Wells and Piezometers

Twenty-seven monitoring wells are currently located on Parcel G and immediately adjacent to the north, east, and southwest sides of Parcel G (Figures 5 and 6). Thirteen of these wells are shallow, six are intermediate, and eight are deep. To supplement existing monitoring points, one new monitoring well (G4) and 13 piezometers (P-1 through P-13) will be installed in Unit B in conjunction with extraction well installation. Section 2.2.3 of the PES 2004b report provides a detailed description of the new wells and piezometers and Section 4.3 of the PES 2004b report details the groundwater monitoring approach.

10.2.1.5 Asphalt Cap

The former settling basin, the former equalization lagoon, and the former sludge drying beds were capped during closure activities in the 1980s. The capped areas encompass an approximate total area of 75,000 square feet. Each cap consists of two geotextile layers, a PVC liner, a granular backfill layer, a crushed rock base layer, and asphalt concrete pavement. BSB will maintain the integrity and effectiveness of each cap by making repairs as necessary to correct the effects of settling, subsidence, erosion, or other damage. BSB will prevent run-on and run-off from damaging each cap. BSB will routinely inspect each cap. If the site is redeveloped, buildings and other impervious features may replace portions of the asphalt cap.

10.2.1.6 Security and Signage

BSB will maintain the existing security and signage system by routinely inspecting the fence, gates, and signs for deterioration or damage and repairing all defects that could cause a breach in security. The system includes a 7-foot-high chain-link fence with a barbwire top that completely surrounds the former treatment and storage areas. The perimeter of the former treatment and storage areas are placarded with highly visible signs that bear the legend “DANGER – UNAUTHORIZED PERSONNEL KEEP OUT.”

10.2.1.7 Institutional Controls

Institutional controls, which include property use restrictions including a prohibition on the consumptive use of groundwater, maintenance requirements for engineered controls (e.g., inspections), educational programs (e.g., signs), and financial assurances, have been in place since RCRA closure of the site to limit or prohibit activities that may interfere with the integrity of the cleanup action. These controls will be maintained during implementation and operations of the enhanced groundwater extraction system at Parcel G. Fencing and signage, as discussed above, will be maintained. BSB will perform the inspection and maintenance requirements of the engineered controls. The existing deed restriction will be modified to include the requirement to evaluate the potential indoor air pathway and/or implement vapor migration controls in the event of future site development activities as well as provisions requiring protection measures for future subsurface site workers.

10.2.2 Cost

For costing purposes, it is assumed that Alternative 1 will be designed, installed, and started up in 2008, and will operate for 29 years (2009 through 2037).

The capital costs would include the cost of designing and constructing the enhanced groundwater extraction system. It is assumed that capital costs for Alternative 1 will be incurred in 2008 and include the following:

- Preparation of design plans and specifications;
- Installing groundwater extraction wells and pumps;
- Installing monitoring wells and piezometers;
- Conducting aquifer testing and model recalibration;
- Installing conveyance piping and controls; and
- System startup and reporting.

It is assumed that future and recurring costs include the following costs starting in late 2008:

- Routine operations and maintenance costs associated with the enhanced groundwater extraction;
- Additional performance evaluation and reporting described in the PES 2004b report;
- Groundwater monitoring and reporting; and
- Maintenance of the asphalt surface in the source area.

Total capital costs for this Alternative 1 would be approximately $390,000. The NPV of recurring and future costs over the 30-year project life would be approximately $4,150,000. The total estimated NPV for this alternative is $4,540,000. Refer to Table 14 for a breakdown of capital and projected recurring and future costs for Alternative 1.

10.3 Alternative 2 – Slurry Wall Containment and Gradient Control using ZVI Reactor Vessels

Alternative 2 includes the following components:

- Installing a slurry wall around, and a cap over, all of Parcel G; and
- Gradient control within the Parcel G containment area using ZVI reactor vessels.

Figure 40 provides a conceptual layout of the slurry wall alignment, capped area, and location of the ZVI reactor vessel system.

10.3.1 Cleanup Action Description

10.3.1.1 Overall Conceptual Approach

In this alternative, the entire Parcel G property would be (1) capped and (2) contained by a soil-bentonite slurry wall keyed into the Layer C silt aquitard and equipped with ZVI reactor vessels. The slurry wall would follow the perimeter of Parcel G, and the reactor vessels would be located within the northeast (i.e., downgradient) corner of the wall (Figure 40). The cap would minimize surface water infiltration, the slurry wall would prevent groundwater from passing into the contaminated area, and the ZVI reactor vessels would destroy contaminants in the groundwater that is allowed to exit the containment cell by directing it through the ZVI reactor vessels. This alternative is similar to a funnel-and-gate arrangement, but differs in that the funnel is closed at the top (upgradient boundary) so that flow through both the contaminated area and the ZVI reactor vessels is nearly eliminated except for small amounts of water that may infiltrate the slurry wall and cap, and for flows induced by seasonal changes in water levels in the surrounding aquifer. Minimizing flow through the reactor vessels in this manner significantly reduces the mass of ZVI needed and maximizes its effective treatment life.

Groundwater levels at Parcel G rise and fall seasonally. Due to the large (at least five or six orders-of-magnitude) difference in permeability between the ZVI material and the slurry wall, the reactor vessel system would allow hydraulic heads inside the contained area to adjust to changing conditions while treating any contaminated groundwater that passes through the vessels.

A description of the major components of this alternative is provided below.

10.3.1.2 Slurry Containment Wall

The wall would be approximately 2-ft thick, 1,820 ft long, and extend to an average depth of approximately 40 ft bgs (average depth to Layer C). The slurry used at Parcel G will be a made of on-site soils and bentonite mixed on-site to provide a designed maximum hydraulic conductivity of 1 x 10^{-7} cm/sec. The design of the slurry mix will be based on soil types present and an evaluation of the compatibility of the slurry mix with site groundwater and contaminants. A short portion of the slurry wall (i.e., less than 50 feet in length) will be constructed using a cement/bentonite/soil slurry to facilitate the construction of the ZVI reactor vessel system described below. The permeability of this short section will be designed to have a maximum hydraulic conductivity of 1 x 10^{-6} cm/sec. The slurry wall would be installed using a single-pass trencher. Prior to installing the wall, a focused push-probe investigation will be conducted along portions of the proposed alignment that have not been previously investigated (e.g., along portions of the southern property line) to confirm soil types present and the depth to, and thickness of, Layer C.

10.3.1.3 ZVI Reactor Vessels

The reactor vessels would be constructed such that they would contain sufficient ZVI to provide the required contact time at the maximum anticipated flow velocities through the vessels. The reactor vessel system would consist of the following major components:

- A collection trench located inside the slurry wall near the northeast corner of the containment area which would collect water and route it to the ZVI reactor vessels through a pipe;
- The reactor vessels, which would consist of a series of concrete vaults that would contain the required amount of ZVI;
- A discharge pipe from the reactor vessels that would lead through the slurry wall to the infiltration gallery located outside the wall. The discharge pipe would be equipped with a valve that would allow it be closed to prevent backflow into the containment cell (see discussion below); and
- An infiltration gallery located outside the slurry wall in the northeast corner of Parcel G that would infiltrate the treated groundwater from the ZVI reactor vessels back into the shallow aquifer.

The amount of ZVI required to effectively treat groundwater flowing out of the containment area, is based primarily on: (1) the reaction kinetics of the ZVI with contaminants in site groundwater and, (2) the flow rate of groundwater out of the containment area (i.e., system hydraulics). Based on the evaluation of these factors below and in Appendices G and H, approximately 1,850 cubic feet of ZVI would provide the required contact time and treatment. With this amount of ZVI and the hydraulic parameters defined below, the reactor vessels will provide at least the minimum required residence time of 3.5 days and will effectively treat the groundwater flowing out of the containment area to at or below cleanup levels.

Reaction Kinetics. The reaction kinetics of ZVI with Parcel G contaminants have been investigated through performance of a bench-scale treatability study (Environmental Technologies Inc. [ETI], 1999), a copy of which is included in Appendix G. A sample of groundwater collected from extraction well HYR-1 was shipped to ETI’s laboratory in Waterloo, Ontario, where it was used in a series of column tests designed to:

- Determine the degradation rates of VOCs using ZVI;
- Characterize the breakdown products from treatment of VOCs and subsequent degradation of these products; and
- Evaluate changes in inorganic geochemistry to assess the potential for mineral precipitation.

The results of the bench test confirmed that ZVI would treat VOCs in Parcel G groundwater to non-detect levels at calculated half-lives consistent with those measured in other studies. As part of the development of this CAA, ETI reviewed the bench-scale test results and based on a recent study (O’Hannesin et al, 2004), adjusted the half-lives calculated in the bench test by a factor of three to account for the lower temperatures that would be expected in a field application as compared to the bench test.

To calculate the required residence time to achieve cleanup levels, assumptions were made regarding VOC concentrations in groundwater entering the ZVI reactor vessels. For purposes of this evaluation, the following VOC concentrations were assumed: TCE at 4,000 µg/L, cis-1,2-DCE at 5,500 µg/L, and vinyl chloride at 4,000 µg/L. These concentrations were based on maximum concentrations observed in monitoring wells, extraction wells, or push probe borings along the downgradient portion of Parcel G. Because the reactor vessel system uses a collection gallery to collect water prior to treatment, effectively averaging the concentration of VOCs in groundwater from an approximately 100 ft section of the shallow aquifer, it is extremely unlikely that concentrations will be higher than these maximum concentrations observed in single samples. The cleanup levels for these compounds are listed in Table 10. The critical compound that drives the residence time calculations is vinyl chloride, which has a fairly high influent concentration of 4,000 µg/L and a very low cleanup level of 2.4 µg/L. Based on the temperature corrected half-lives and these assumed influent and effluent conditions, the required residence time is calculated to be 3.5 days.

System Hydraulics. The other critical design component of the ZVI reactor vessels is the expected maximum rate at which groundwater would flow out of the containment system. This maximum flow rate combined with the required residence time will determine the volume of ZVI required to achieve effective treatment. An evaluation of the hydraulics of the containment system is presented in Appendix H and summarized below.

To estimate the maximum expected groundwater flow rate out through the ZVI reactor vessels, which is used to design the vessels, the maximum expected water inflows to the containment area were estimated. There are three mechanisms by which water can enter into the containment cell:

- Infiltration of precipitation through the asphalt cap;
- Flow through the slurry wall induced by higher water levels outside the wall compared to inside; and
- Flow upward from the deep aquifer (Layer D) through Layer C due to the upward hydraulic gradient,

Additionally, since the Layer B aquifer within the containment area would communicate with the Layer B aquifer outside of the containment area through the reactor vessel system, the amount of water released from aquifer storage in the containment area during declining water level periods was considered. The infiltration through the surface cap was estimated using analytical methods (see Appendix H, Section H.2) while the other mechanisms described above were estimated using the numerical flow model (see Appendix H, Section H.4). The maximum predicted discharge rate out through the reactor vessel system was 1.1 gpm. The maximum predicted discharge rates are at least an order of magnitude lower than the current Parcel G groundwater extraction rates.

As noted above, the reactor vessel system will be equipped with a valve between the ZVI reactor vessels and in the discharge infiltration gallery. When groundwater levels are falling outside the containment area, the valve will be open and allow groundwater to flow from inside the containment area, through the ZVI reactors, and into the infiltration gallery outside the wall. In the fall when water levels begin to rise, the valve will be closed and prevent the flow of water back into the containment area. By preventing this “backflow” hydraulic heads within the containment area will be lower than they would be if backflow was permitted.

Residence Time. As noted above, the required residence time to treat the maximum anticipated VOC concentrations to the lowest applicable CUL was calculated to be 3.5 days. The volume of ZVI needed to provide the required residence time for flow out through the reactor vessels is based in the following assumptions:

- Maximum flow rate of 1.1 gpm (212 cubic feet per day); and
- A porosity of 0.4 for the pure ZVI material that will be used in the reactor vessels.

Based on these assumptions, 1,850 cubic feet of ZVI would be required.

10.3.1.4 Slurry Wall Installation

The first step of the installation process consists of excavating an approximately 16-ft wide, 2-ft deep bench along the slurry wall alignment. The one-pass trenching machine will operate inside this trench that will also serve to contain the excess slurry that overflows the top of the trench. The trenching begins by lowering the cutting/mixing boom on the trencher until it has reached a vertical position at the appropriate depth. The slurry wall installation will proceed using the combination cutting/mixing boom that will simultaneously cut the trench to the required depth, inject the bentonite slurry into the subsurface through a tube attached to the boom, and mix the bentonite slurry and native soils. This continuous trenching and in situ mixing of the slurry greatly reduces the potential for higher permeability “windows” to form in the slurry wall. As the trencher moves forward, a laser-guided control system will adjust the installation depth to keep the bottom of the slurry wall keyed into the top of Layer C. To provide the structural integrity needed to install the discharge pipe connecting the ZVI reactor vessels to the discharge gallery (see description below), a small section (i.e., less than 50 ft long) of the slurry wall will be constructed using a concrete/bentonite slurry.

Once the slurry wall installation process has been completed, the excess slurry will be removed from the bench, and the bench will be backfilled with native and/or imported soil. It us assumed that the excess slurry and soil and other debris from the construction (e.g., broken asphalt and concrete) could be disposed of off-site as solid waste.

10.3.1.5 ZVI Reactor Vessel Installation

The ZVI reactor vessel system would be constructed after completion of the slurry wall using standard construction techniques and equipment. The groundwater collection trench would be installed just inside the northern side of the slurry wall near the northeast corner (see Figure 40). The trench would be excavated to a depth of approximately 15 ft (above the intermediate silt) and a 6-inch perforated pipe would be installed in the bottom of the trench prior to backfilling the trench with gravel. The collection pipe would lead to a cleanout that would allow for removal of silt that might accumulate in the pipe or cleaning of biogrowth or scale.

The reactor vessels would consist of a series of 8-ft diameter concrete vaults installed to a depth of approximately 22 ft. At this depth, each vault would be able to contain a 10 ft deep bed of ZVI material and keep the ZVI submerged at even historically low water levels. Each vault could contain up to approximately 500 ft^3 if filled to the full 10 ft bed thickness. In order to provide the required 1,850 ft^3 of ZVI, four reactor vessels would be utilized. A fifth vessel, which would remain empty at startup, could be installed as a contingency to provide additional treatment capacity if needed based on performance monitoring results.

The pipe from the collection trench would be connected to the first vault just above the level of the ZVI bed. Water at the bottom of the first ZVI vault would be collected in a perforated pipe and connected to the next vault at a point just above the level of the ZVI bed using solid wall pipe, and so on to the last vault. Accordingly, water would flow from top to bottom of each reactor vessel. ZVI material would be added into the vaults through the open tops prior to placement of concrete covers. Each vault would also have a monitoring access point installed on the interior of the vault on the discharge pipe to allow sampling of the treated groundwater.

From the last reactor vessel, a pipe would be installed through the cement/bentonite portion of the slurry wall and to the location of the infiltration gallery at the northeast corner of Parcel G. The trench used to install the pipe would be backfilled with native soil except for the slurry wall crossing, which would be backfilled using bentonite slurry. This discharge pipe would include a valve, accessible through a 4-ft diameter manhole, which could be used to prevent backflow into the containment area as described above.

Finally, the infiltration gallery would be constructed by excavating an area approximately 10 ft by 30 ft in the northeast corner of the site to a depth of 15 ft (above the intermediate silt), installing a series of perforated pipes in the bottom of the excavation, and backfilling the excavation with gravel.

Most of the construction activities described above include excavation to well below the shallow water table (typically about 10 feet deep during the later summer when construction would occur), and dewatering would be required. Dewatering would be accomplished through a series of temporary well points and the extracted groundwater treated in a temporary system and discharged to the sanitary sewer under the facility’s existing permit.

10.3.1.6 Asphalt Cap

Currently, approximately the southern half of Parcel G is covered with the low permeability asphalt cap installed in 1988 as part of the RCRA closure activities. The remaining portion of Parcel G (i.e., the northern half of Parcel G) is currently covered by a combination of asphalt and concrete.

After the slurry wall construction is complete, the portions of the existing low permeability asphalt cap that are damaged during the construction of the slurry wall will be repaired to their original condition. The northern portion of Parcel G will have a new asphalt cover installed in a manner that would result in a continuous cover system over all of Parcel G. Approximately 5,000 to 10,000 cubic yards of imported fill will be used to create adequate surface grades on the new asphalt cover to promote runoff of precipitation. Runoff from the capped areas will be directed into culverts, pipes, or ditches and ultimately into the storm sewer system along 200th Avenue. When the site is redeveloped, buildings and other impervious structures may replace portions of the asphalt cap, and grading and filling for development may replace portions of the filling needed to promote site runoff of precipitation.

10.3.1.7 Performance Monitoring

The main goal of performance monitoring for Alternative 2 will be ensuring that the groundwater exiting the containment area through the ZVI reactor vessels is being treated to achieve cleanup levels. To accomplish this goal, a piezometer would be installed near the infiltration gallery outside the slurry wall. Water levels measured monthly in this piezometer would be used to determine whether water levels outside the slurry wall were falling or rising. As described above, in the late spring and summer when regional water levels drop in the shallow and intermediate aquifer zones, flow would be induced from the collection trench inside the containment cell, through the reactor vessels, and outward into the infiltration gallery. When water levels outside the wall begin to rise, the valve on the discharge side of the reactor vessels would be closed, effectively preventing backflow into the containment cell and keeping water levels inside the containment lower than they would otherwise be.

When the hydraulic gradient is outward and groundwater is flowing out through the reactor vessels, groundwater samples would be collected quarterly to confirm that the required treatment objectives were being achieved. These samples would be collected from the inlet of the first reactor vessel and the discharge pipe leading from the last ZVI reactor vessel to the infiltration gallery. Annually, samples will be collected to evaluate inorganic parameters that may effect the system operation. When gradients are directed into the containment area in the fall and winter and the backflow prevention valve is closed, collection of water quality samples would not be necessary.

10.3.1.8 ZVI Maintenance

The ZVI in the reactor vessels may, over time, require periodic maintenance to maintain its hydraulic properties and/or to augment the ZVI treatment capacity. This need for this type of maintenance is due to the potential for precipitation or other geochemical mechanisms to: (1) partially clog spaces and reducing the hydraulic conductivity of the ZVI in the reactor vessels, and/or (2) partially coat the ZVI particles thereby reducing their reactivity. Available information obtained from analysis of full-scale ZVI-based systems that have been in operation as long as 10 years suggest that these potential issues occur at a gradual rate. Furthermore, depending on the specific conditions present at a given site, the ZVI systems are expected to last 10 to 30 years or more before maintenance activities are required (ITRC, 2005). In most cases observed, these issues occur near the upgradient edge of the ZVI reaction zone. The monitoring necessary to evaluate the maintenance requirements for the ZVI reactor vessels will be defined in the performance monitoring plan developed during system design. However, this is presumed to include (1) periodic monitoring of VOC concentrations at the inlet to the reactor system and at the outlet of the first vessel to detect diminished treatment effectiveness, (2) periodic analysis of relevant inorganic parameters to monitor geochemical evolution of the system, and (3) piezometric monitoring upgradient and downgradient of the reactor vessels to detect gradient increases indicating decreased flow capacity.

Depending on the nature of the issues that may develop over time, maintenance of the ZVI in the reactor vessels may include flushing or jetting of the upstream face of the ZVI bed(s) in the reactor vessels to remove small particulate matter than may be reducing porosity or placing supplemental ZVI into the vessels. For purposes of this FFS, it is assumed that maintenance of the iron in the reactor vessels will be required every 30 years. This time frame is reasonable for this site given the relatively low flow rates that the system will be exposed to as a result of the surface cap and the slurry wall encircling Parcel G.

10.3.2 Cost

For costing purposes, it is assumed that Alternative 2 will be designed and constructed in 2008, and operate for 29 years (2009 through 2037). The existing CMS system will continue operating until construction of the slurry wall begins in mid 2008.

The capital costs would include the cost of designing and constructing the slurry wall, the ZVI reactor vessels, and the capping containment systems. Capital costs for Alternative 2 will be incurred in 2008 and include the following:

- Preparation of design plans and specifications;
- Installing the slurry wall and ZVI reactor vessels;
- Installing the capping system;
- Installing monitoring wells and piezometers; and
- Reporting.

Future and recurring costs include the following costs starting in 2008:

- Periodic maintenance of the ZVI reactor vessels;
- Groundwater monitoring and reporting; and
- Maintenance of the cap in the containment area.

Total capital costs for this Alternative 2 would be approximately $2,100,000. The NPV of recurring and future costs over the 30-year project life would be approximately $820,000. The total estimated NPV for this alternative is $2,920,000. Refer to Table 15 for a breakdown of capital and projected recurring and future costs for Alternative 2.

10.4 <u>Alternative 3 – Slurry Wall Containment and Gradient Control using Groundwater Extraction</u>

Alternative 3 includes the following components:

- Installing a slurry wall around, and an cap over, all of Parcel G;

- Hydraulic gradient control within the containment area using groundwater extraction; and
- Treatment of the extracted groundwater prior to discharge to the sanitary sewer.

Figure 41 provides a conceptual layout of the slurry wall alignment, capped area, and location of the gradient control extraction wells.

10.4.1 Cleanup Action Description

10.4.1.1 Overall Conceptual Approach

This alternative is very similar to Alternative 2, except that that the ZVI reactor vessels used in Alternative 2 for gradient control are replaced with groundwater extraction within the slurry wall containment area. In Alternative 3, the entire Parcel G property would be (1) capped and (2) contained by a soil-bentonite slurry wall keyed into the Layer C silt aquitard. The slurry wall would follow the entire perimeter of Parcel G, and three to five groundwater extraction wells would be installed within the containment area (Figure 41). The cap and slurry wall would deflect the bulk of surface infiltration and groundwater from passing into the contaminated area, and groundwater extraction wells would pump groundwater at a rate sufficient to prevent groundwater from flowing out of the containment area through the slurry wall or Layer C.

A description of the major components of this alternative is provided below.

10.4.1.2 Slurry Containment Wall

The wall would be approximately 2-ft thick and 1,780 ft long and extend to an average depth of approximately 40 ft bgs (average depth to Layer C). The slurry used at Parcel G would be a made of on-site soils and bentonite mixed on-site to provide a designed maximum hydraulic conductivity of 1×10^{-7} cm/sec. The slurry wall would be installed using a single-pass trencher. Prior to installing the wall, a focused push-probe investigation would be conducted along portions of the proposed alignment that have not been previously investigated (e.g., along portions of the southern property line) to confirm soil types present and the depth to, and thickness of, Layer C.

The slurry wall will be installed using the same procedures as described in Alternative 2.

10.4.1.3 Groundwater Extraction Hydraulic Control Wells

The slurry wall would effectively eliminate the movement of VOC-contaminated groundwater from Parcel G. To ensure that contaminated groundwater does not leave the Parcel G containment area, groundwater would be extracted with wells from within the containment cell to ensure maintenance of inward hydraulic gradients across the slurry wall and Layer C.

The rate at which groundwater would be extracted from the containment area to maintain inward flow is estimated in Appendix H, Section H.4. The minimum flow rate that would achieve this objective was estimated at 0.6 gpm. For cost estimating purposes, it is assumed that three extraction wells would installed throughout the containment area; the exact number and location of wells would be determined during the detailed CAA design process. Groundwater would be extracted from each well with a submersible pump and transferred through individual, underground conveyance lines and joined together at an aboveground manifold into a common header. Access ports in the system would allow sampling of individual wells and the combined flow in the header.

O&M requirements of the groundwater extraction system will be detailed in an O&M manual. Specific O&M activities will include inspections and routine maintenance of extraction system components (e.g., conveyance line and pump cleaning, periodic extraction well redevelopment). Over the longer term, individual extraction system components will be replaced as needed including pumps, piping, and the extraction wells themselves if redevelopment fails to maintain well production rates.

10.4.1.4 Groundwater Treatment and Discharge

The extracted groundwater would ultimately be discharged to the sanitary sewer under a King County Waste Discharge Permit. Because of the VOC concentrations in the groundwater inside the slurry wall, it is assumed that the extracted groundwater would require pretreatment prior to discharge. Given the relatively low flow rate of 0.6 gpm (i.e., 860 gallons per day), the groundwater would be treated on a batch basis using air stripping. Extracted groundwater would be collected in a 2,000-gallon receiving tank, and then processed through a small air stripper in approximately 500-gallon batches at a rate of approximately 5 gpm. Emissions from the air stripper would be treated using two activated carbon adsorption vessels. The treated groundwater would be discharged into the sanitary sewer.

O&M requirements of the groundwater treatment system will be detailed in the O&M manual. Specific O&M activities will include inspections and routine maintenance of treatment system components (e.g., air stripper and pump cleaning, periodic replacement of activated carbon). Over the longer term, individual treatment system components will be replaced as needed including pumps, blowers, piping, and valves.

10.4.1.5 Asphalt Cap

Currently, approximately the southern half of Parcel G is covered with the low permeability asphalt cap installed in 1988 as part of the RCRA closure activities. The remaining portion of the Parcel G (i.e., the northern half) is currently covered by a combination of asphalt and concrete that is generally in poor to moderate condition.

After the slurry wall construction is complete, the portions of the existing low permeability asphalt cap that are damaged during the construction would be repaired to their original condition. The northern portion of Parcel G would have a new asphalt cover installed in a manner that would result in a continuous cover system over all of Parcel G. Approximately 5,000 to 10,000 of imported fill would be used to create adequate surface grades on the new asphalt cover to promote runoff of precipitation. Runoff from the capped areas would be directed into culverts, pipes, or ditches and ultimately into the storm sewer system along 200th Avenue. When the site is redeveloped, buildings and other impervious structures may replace portions of the asphalt cap, and grading and filling for development may replace portions of the filling needed to promote site runoff of precipitation.

10.4.1.6 Performance Monitoring

The main goal of performance monitoring for Alternative 3 would be to ensure that groundwater flow is directed into the containment cell. This monitoring would consist of measurement of water levels inside the containment cell, outside the containment cell in Layer B, and outside the containment cell in Layer D. For cost estimating purposes, it is assumed that four piezometers would be installed inside the containment cell, and the water levels measured monthly in these four piezometers would be used to determine an average water level. This would be compared with the measured water levels outside of the slurry wall and in the deep aquifer in Layer D. Based on the results of this monitoring, the pumping rates will be adjusted as necessary to maintain the average groundwater level inside the containment cell is at or below the water levels outside the slurry wall and in the deep aquifer of Layer D.

10.4.2 Cost

For costing purposes, it is assumed that Alternative 3 will be designed and constructed in 2008 and operate for 29 years (2009 through 2037). The existing CMS system will continue operating until construction of the slurry wall begins in 2008.

The capital costs would include the cost of designing and constructing the slurry wall and capping containment systems. Capital costs for Alternative 3 will be incurred in 2008 and include the following:

- Preparation of design plans and specifications;
- Installing the slurry wall;
- Installing the capping system;
- Installing groundwater extraction wells and discharge piping;
- Installing the groundwater and vapor treatment systems;
- Installing monitoring wells and piezometers; and
- Reporting.

Future and recurring costs include the following costs starting in 2008:

- Ongoing operations and maintenance of the hydraulic control groundwater extraction and treatment systems;
- Groundwater monitoring and reporting; and

- Maintenance of the cap in the containment area.

Total capital costs for this Alternative 3 would be approximately $1,610,000. The NPV of recurring and future costs over the 30-year project life would be approximately $2,850,000. The total estimated NPV for this alternative is $4,460,000. Refer to Table 16 for a breakdown of capital and projected recurring and future costs for Alternative 3.

11.0 EVALUATION OF CLEANUP ACTION ALTERNATIVES

This section of the FFS provides a detailed evaluation of the CAAs developed in Section 10. The criteria used for analysis and the approach for evaluating the CAA against these criteria are presented in Sections 11.1 and 11.2. The evaluation of individual CAAs against these criteria is presented in Section 11.3. The comparative evaluation of the retained remedial alternatives for each evaluation criteria is presented in Section 12.1.

11.1 Evaluation Criteria

As noted in Section 8.2.1, MTCA is the primary regulation that outlines the procedure for conducting the FFS. With respect to the criteria and procedure for evaluating CAAs, WAC 173-340-360(2) establishes the following requirements:

Threshold Requirements

- Protect human health and the environment;
- Comply with cleanup standards (WAC 173-340-700 through –760);
- Comply with applicable state and federal laws (WAC 173-340-710); and
- Provide for compliance monitoring.

Other Requirements

- Use permanent solutions to the maximum extent practicable;
- Provide for a reasonable restoration time frame; and
- Consider public concerns.

In addition to these criteria, Ecology’s expectations for cleanup actions listed in WAC 173-340-370 will also be considered. If the evaluation of CAAs conclude that more than one alternative meets the cleanup action selection criteria, a disproportionate cost analysis will be conducted pursuant to WAC 173-340-360(3)(e) to determine if the incremental costs of one alternative over that of a lower cost alternative exceed the incremental degree of benefits achieved by the alternative over that of the other lower cost alternative.

11.2 Approach to Detailed Analysis

The three CAAs developed in Section 10 are similar in several important aspects that will allow for the detailed analysis of CAAs presented in Section 11.3 to focus on those requirements listed above that will differentiate the benefits between the CAAs. The key similarity between the three retained CAAs is that they are all containment alternatives designed to control migration of VOC-containing groundwater at the point of compliance at the downgradient boundary of Parcel G. The rationale for focusing the design of the CAAs in this manner is provided in Section 9.2.3. The discussion in Section 9.2.3 demonstrates that it was not technically feasible to treat the source areas within Parcel G to the required levels such that downgradient containment would not be necessary to meet cleanup levels at the POC. In other words, containment along the downgradient boundary of Parcel G would be required for the foreseeable future with or without source treatment. Based on this conclusion, the evaluation of the restoration timeframe requirement will not be a differentiating factor between the alternatives – all the alternatives compare the same against this requirement and the evaluation of alternatives below will not include a detailed discussion with respect to this requirement.

Other MTCA requirements that are addressed essentially the same for all three CAAs include:

- **Comply with applicable state and federal laws.** All of the CAAs will comply with the applicable legal requirements, including MTCA. Where off-site management and disposal of wastes is required, the applicable solid and dangerous waste regulations will be complied with. For alternatives that include discharge of groundwater to the sanitary sewer, the requirements of a King County Industrial Waste Discharge Permit will be complied with. For Alternatives that have the potential to emit VOCs to the air, the substantive requirements of the Puget Sound Clean Air Agency (PSCAA) regulations would be met.

- **Provide for compliance monitoring.** All CAAs include compliance monitoring to assess the ongoing performance of the alternative and to monitor compliance with cleanup goals.

- **Consideration of Public Concerns.** During the preparation of this FFS, including during the detailed development of the CAAs, BSB has carefully considered input from Hexcel with respect to how the CAAs may or may not effect Hexcel's site investigation and cleanup activities. Additional consideration of public concerns following submittal of the FFS to Ecology will occur in the context of the public review and comment period.

Therefore, the detailed analysis of CAAs will focus on the following MTCA requirements:

- Protecting human health and the environment;

- Complying with cleanup standards; and

- Using permanent solutions to maximum extent practicable.

The evaluation process for determining whether a cleanup action uses permanent solutions to maximum extent practicable is defined in WAC 173-340-360(3). Since none of the alternatives meet the definition of a permanent cleanup action contained in WAC 173-340-200 (a cleanup action where cleanup standards are met without any further cleanup actions being required), the evaluation of this criteria utilizes a disproportionate cost analysis that focuses on determining which CAA provides the greatest degree of permanence [WAC 173-340-360(3)(e)(ii)(B)]. This evaluation uses the following criteria described in WAC 173-340-360(3)(f) to determine which CAA is the most permanent solution:

- Protectiveness;
- Permanence;
- Cost;
- Effectiveness over the long term;
- Management of short-term risks;
- Technical and administrative implementability; and
- Consideration of public concerns.

The evaluation of these criteria for each of the alternatives is presented in Table 14 and summarized below in Section 11.3. Based on the evaluation of these criteria, and as required by WAC 173-340-360(3)(e)(ii), the alternatives will be ranked from the most to the least permanent solution. Next, alternatives will be compared based on cost to determine if the benefits provided by a higher cost alternative (as defined by the permanence of the alternative) outweigh the incremental increase in cost of the alternative. The alternatives will be compared in this manner and the alternative that provides the best balance of permanence and cost will be selected for implementation. Where two or more alternatives have equal benefits, the less costly alternative will be selected for implementation. This comparative part of the disproportionate cost analysis is described in Section 12.1.

The evaluation of Ecology's expectations for cleanup actions will be addressed for the CAA recommended for implementation in Section 12.2.

11.3 Detailed Analysis of Alternatives

As described above, because of the significant similarities between the three alternatives being evaluated, the detailed analysis of alternatives has been focused on three criteria: protectiveness, compliance with cleanup standards, and the use of permanent solutions to the maximum extent practicable.

The evaluation of the "use of permanent solutions to the maximum extent practicable" criterion is presented in Table 14. Based on this evaluation, the sub-criteria that will be most important in differentiating Alternative 1 from the other alternatives are the permanence, cost, and long-term effectiveness. The permanence sub-criterion addresses the "degree to which the alternative permanently reduces the toxicity, mobility, or volume of hazardous substances." Because all of the alternatives developed as part of this FFS are containment alternatives (see Section 9.2.3 for rationale), the evaluation of the permanence criteria here will focus on how permanent the containment technology or approach is. The long term effectiveness sub-criterion evaluates the "degree of certainty that the alternative will be successful, the reliability of the alternative during the period of time hazardous substances are expected to remain onsite. . ." Similar to the permanence sub-criterion, the evaluation of the long-term effectiveness criteria will focus on the certainty and reliability of the containment technology or approach. These two sub-criteria are discussed further below for each alternative.

The cost sub-criterion will be used as the basis for comparison of the alternatives in the comparative analysis in Section 12 and discussed further in that section.

11.3.1 Alternative 1 – Enhanced Groundwater Extraction System

Alternative 1 consists of an enhanced groundwater extraction system alternative utilizing a total of seven extraction wells located along the downgradient boundary of Parcel G, discharge of extracted groundwater to the King County sanitary sewer system for treatment, and maintenance of the existing capping at Parcel G.

11.3.1.1 Protecting Human Health and the Environment

As described in Section 7, the potential future exposure pathway associated with Parcel G where IHSs have the potential to exceed cleanup levels at the conditional point of compliance is exposure to recreational (fishing) users of the surface water through consumption of aquatic organisms. The potential exposure point for this pathway is where groundwater discharges to surface water. Alternative 1 will achieve containment of VOCs at the downgradient Parcel G property boundary, thereby protecting the receptors for this pathway.

Alternative 1 addresses the potential exposure of subsurface construction workers on-site by ensuring that the potential risks to site workers are adequately assessed prior to and during invasive site work and that adequate protective measures (e.g., personal protective clothing, respiratory protection) are used. The requirement for establishing these procedures will be documented in the implementation plan for the selected cleanup action alternative and placed in a notice on the deed.

Finally, Alternative 1 addresses the possible future exposure pathway for indoor workers in a future Parcel G occupational setting through inhalation of vapors originating from contaminated vadose zone soil and shallow groundwater that may migrate up through a future building floor. This potential pathway is only a concern if future Parcel G development includes construction of habitable structures on Parcel G; such development will have to evaluate this pathway and incorporate engineering controls (e.g., vapor barriers) as appropriate to control potential exposures.

11.3.1.2 Complying with Cleanup Standards

The cleanup standard (i.e., the cleanup level and point of compliance) for this FFS is developed in Section 7.4. The applicable cleanup levels for the three IHSs are listed in Table 10. The point of compliance is the downgradient Parcel G property boundary.

Alternative 1 achieves compliance with this cleanup standard by controlling migration of VOC-containing groundwater from Parcel G to downgradient receptors. Alternative 1 achieves the cleanup standard for protection of future site and indoor workers through application of the appropriate engineering controls and the use of institutional controls to require their use and to evaluate the indoor air pathway if future site development activities result in the construction of a habitable building.

11.3.1.3 Use of Permanent Solutions to Maximum Extent Practicable

Permanence. Alternative 1 uses groundwater extraction to achieve capture of groundwater migrating from Parcel G. This approach has been documented to be effective on numerous sites, including the Parcel G and Hexcel properties. The effectiveness of this alternative will need to be carefully monitored and demonstrated through modeling. Sustaining the required extraction rates requires significant ongoing O&M activities. Therefore, the permanence of Alternative 1 is reduced by the need for significant long-term O&M and monitoring activities.

Long-Term Effectiveness. As noted above, groundwater extraction has been demonstrated to be effective both at the Parcel G property and on numerous other sites. The basis for the design of the enhanced system is described in the PES 2004b report. The system was designed to provide a very robust capture zone for Parcel G. Therefore, the effectiveness of Alternative 1 has a high degree of certainty.

From an operational standpoint, the system has the operational flexibility to maintain capture even if one or more of the extraction wells are out of service for significant periods of time. Therefore, Alternative 1 also has a high degree of certainty from an operational standpoint. Because the effectiveness is ultimately dependent on the ongoing performance of these O&M activities, the permanence of this alternative is somewhat reduced compared to approaches that maintain containment passively or with reduced O&M requirements.

11.3.2 Alternative 2 - Slurry Wall Containment and Gradient Control using ZVI Reactor Vessels

In Alternative 2, the entire Parcel G property would be (1) capped and (2) contained by a soil-bentonite slurry wall keyed into the Layer C silt aquitard and equipped with ZVI reactor vessels. The cap would minimize surface water infiltration, the slurry wall would prevent groundwater from passing into the contaminated area, and the ZVI reactor vessels would destroy contaminants in the small area where groundwater is allowed to exit the containment cell by directing it through the ZVI treatment zone.

11.3.2.1 Protecting Human Health and the Environment

The evaluation of this criterion for Alternative 2 is essentially the same as the discussion above for Alternative 1. Alternative 2 will prevent migration of groundwater containing VOCs at concentrations exceeding cleanup levels at the point of compliance. It will address the potential exposure of subsurface construction workers on-site by ensuring that the potential risks to site workers are adequately assessed prior to and during invasive site work and that adequate protective measures (e.g., personal protective clothing, respiratory protection) are used. Finally, Alternative 2 will prevent potential future exposure of indoor on-site office workers via the indoor air exposure pathway by requiring that any future site development evaluate this pathway and implement the necessary engineering controls to mitigate the potential risks.

11.3.2.2 Complying with Cleanup Standards

As described above for Alternative 1, Alternative 2 achieves compliance with this cleanup standard by controlling migration of VOC-containing groundwater from Parcel G to downgradient receptors. It also achieves the cleanup standard for protection of future site and indoor workers through application of the appropriate engineering controls and the use of institutional controls to require their use and to evaluate the indoor air pathway if future site development activities result in the construction of a habitable building.

11.3.2.3 Use of Permanent Solutions to Maximum Extent Practicable

Permanence. Alternative 2 uses a slurry wall that encircles Parcel G as the primary means of providing containment. The slurry wall is equipped with ZVI reactor vessels along the downgradient edge to allow a relatively small volume of groundwater to flow in and out of the slurry wall containment area thereby minimizing the potential for hydraulic gradients to develop that could induce migration of VOCs through the slurry wall. VOCs in the groundwater flowing through the reactor vessels would be treated to below cleanup levels by the ZVI. Alternative 2 also includes a surface cap that would minimize infiltration of precipitation into the containment cell.

Once emplaced, the slurry wall essentially requires no ongoing O&M and will permanently function passively to provide containment. The ZVI treatment technology has been in full scale commercial use for approximately 10 years, and available information indicates that the ZVI will continue to function for a long period of time (measured in decades) before some kind of maintenance is required to “refresh” the reactor vessels to either return it to its original hydraulic condition and/or augment the treatment capacity. Therefore, with this infrequent and relatively straightforward maintenance requirement, the ZVI reactor vessels will permanently function in a passive manner to treat groundwater exiting the containment cell to below cleanup levels.

Finally, the surface cap will permanently minimize infiltration as long as routine maintenance of the cap (inspections, sealing, periodic replacement of the damaged surfaces) is performed.

Long-Term Effectiveness. The slurry wall technology utilized in Alternative 2 as the primary means of providing containment at Parcel G is a well-demonstrated and conventional technology that has been used effectively at numerous other sites. There is a high degree of certainty that this approach will be effective because once emplaced, the slurry wall provides a significant low permeability physical barrier that will function passively without O&M requirements for the foreseeable future. The key to the effectiveness of the slurry wall is ensuring it is designed correctly to tie into the Layer C aquitard and that the slurry wall is carefully constructed to avoid creating high permeability “windows” in the wall due to incomplete mixing or preparation of the slurry. The information needed to complete the design (lithological information, depth to aquitard, soil properties) are either already available or will be obtained during a focused push-probe investigation that would be conducted along portions of the proposed alignment that have not been previously investigated. The use of the one pass trenching technology will greatly reduce the risks of creating “windows” in the wall, ensure that the slurry is placed at the appropriate depths, and will help ensure that the slurry wall will be a seamless, low permeability barrier to groundwater flow.

There is a similar degree of certainty associated with the function of the ZVI reactor vessels. The effectiveness of the ZVI material in treating the VOCs of concern at the site is well documented, and has been demonstrated for the groundwater at the site through performance of a bench scale study (see Appendix G). The key to the effectiveness of the reactor vessels is designing them to account for the variable groundwater flow through the vessels over the annual cycle. The basis for the groundwater flow hydraulics used for the conceptual ZVI reactor vessels design is discussed in detail in Section 10.3 and is supported by the extensive analysis and modeling provided in Appendix H. By using the worst case flows through the reactor vessels, and using conservative assumptions regarding contaminant concentrations, the design basis for the ZVI reactor vessels is very conservative. This preliminary design will be revisited during the final design process to ensure that the configuration and ZVI content of the reactor vessels are adequate to address the anticipated VOC loading.

The reliability of the slurry wall/ZVI reactor vessels system is also very high. Both components function completely passively and with the exception of the potential need for infrequent “refreshing” of the ZVI reactor vessels (e.g., every 30 years), require no active maintenance. The effectiveness of the alternative is also readily monitored by measuring water levels and collection of water quality samples in and around the reactor vessels. Importantly, the potential changes in the hydraulic properties and treatment effectiveness will occur over a period of years or decades (if at all), and these changes can be readily identified by performance monitoring and appropriate remedies identified, designed, and implemented.

11.3.3 Alternative 3 - Slurry Wall Containment and Gradient Control using Groundwater Extraction

Alternative 3 is similar to Alternative 2, except that that the ZVI reactor vessels used in Alternative 2 for gradient control are replaced with groundwater extraction within the slurry wall containment area. In Alternative 3, the entire Parcel G property would be (1) capped and (2) contained by a soil-bentonite slurry wall keyed into the Layer C silt aquitard. The slurry wall would follow the entire perimeter of Parcel G, and three groundwater extraction wells would be installed within the containment area and pumped at a rate sufficient to prevent groundwater from flowing out of the containment area through the slurry wall or Layer C. Extracted groundwater would be pretreated to reduce VOC concentrations to acceptable levels prior to discharge to the King County sanitary sewer.

11.3.3.1 Protecting Human Health and the Environment

The evaluation of this criterion for Alternative 3 is essentially the same to the discussions above for Alternatives 1and 2.

11.3.3.2 Complying with Cleanup Standards

As described above for Alternatives 1 and 2, Alternative 3 achieves compliance with this cleanup standard by controlling migration of VOC-containing groundwater from Parcel G to downgradient receptors. It also achieves the cleanup standard for protection of future site and indoor workers through application of the appropriate engineering controls and the use of institutional controls to require their use and to evaluate the indoor air pathway if future site development activities result in the construction of a habitable building.

11.3.3.3 Use of Permanent Solutions to Maximum Extent Practicable

The evaluation of this criterion for Alternative 3 is very similar to that described above for Alternative 2, with the primary difference being the replacement of the ZVI reactor vessels with groundwater extraction for hydraulic control. Therefore, the discussion below will focus only on the permanence and long-term effectiveness of the groundwater extraction and treatment system.

Permanence. Alternative 3 uses groundwater extraction from within the slurry wall to provide hydraulic gradient control within the containment area. The extracted groundwater is pretreated on-site with an air stripper and vapor-phase carbon adsorption system prior to discharge to the sanitary sewer. The use of groundwater extraction for gradient control has been documented to be effective on numerous sites, including the Parcel G and Hexcel properties (see discussion for Alternative 1 above). Sustaining the required extraction rates requires significant ongoing O&M of both the extraction and treatment systems. Therefore, the permanence of Alternative 3 is reduced by the need for significant long-term O&M and monitoring activities.

Long-Term Effectiveness. As noted above, groundwater extraction has been demonstrated to be effective both at the Parcel G property and on numerous other sites. The certainty that this approach will be effective is directly related to the consistent operation of the groundwater extraction system. The preliminary basis for the design flow rate of the extraction system is described in Appendix H. Because the groundwater extraction system is operating within a slurry wall containment cell, it will easily provide the required gradient control. Therefore, from a design standpoint, the effectiveness of Alternative 2 has a high degree of certainty.

From an operational standpoint, mechanisms will be put in place to ensure that the required O&M activities are adequately funded and implemented. Therefore, Alternative 3 also has a high degree of certainty from an operational standpoint. Because the effectiveness is ultimately dependent on the ongoing performance of these O&M activities, the permanence of this alternative is reduced compared to approaches that maintain containment passively or with reduced O&M requirements.

12.0 COMPARITIVE EVALUATION AND RECOMMENDED CLEANUP ACTION

In this section, the CAAs developed in Section 10 and evaluated individually in Section 11 are compared against each other for each of the MTCA evaluation criteria. Based on this comparison, the preferred CAA is recommended for implementation. A description of how the preferred CAA meets the MTCA criteria and Ecology expectations is provided.

12.1 Comparison of Alternatives

12.1.1 Protectiveness

All of the alternatives will achieve containment of VOCs at the downgradient Parcel G property boundary, thereby protecting the potential human receptors for the groundwater to surface water pathway. All three alternatives address the potential exposure of subsurface construction workers on-site in the same fashion by ensuring that the potential risks to site workers are adequately assessed prior to and during invasive site work and that adequate protective measures (e.g., personal protective clothing, respiratory protection) are used. Similarly, all three alternatives address the potential future indoor air pathway by requiring that this pathway be evaluated and engineering controls (e.g., vapor barriers) incorporated, as appropriate, to control potential exposures if future Parcel G development includes construction of habitable structures.

12.1.2 Compliance With Cleanup Standards

All three alternatives achieve compliance with the groundwater cleanup standards by controlling migration of VOC-containing groundwater from Parcel G to downgradient receptors. The primary difference between the alternatives is the technology employed to achieve containment.

All three alternatives achieve the cleanup standard for protection of future site and indoor workers through the use of institutional controls to require the use of appropriate engineering controls and evaluation of the indoor air pathway if future site development activities result in the construction of a habitable building.

12.1.3 Compliance with Regulatory Requirements

All of the CAAs will comply with the applicable legal requirements, including MTCA. Where off-site management and disposal of wastes is required, the applicable solid and dangerous waste regulations will govern cleanup activities. Alternatives 1 and 3 include discharge of groundwater to the sanitary sewer; for these alternatives, a King County Industrial Waste Discharge Permit will be obtained and complied with. Alternative 3 also includes emission control equipment to prevent the discharge of VOCs from the groundwater treatment system to the atmosphere; this system will meet the substantive requirements of the PSCAA regulation.

12.1.4 Compliance Monitoring

All CAAs include compliance monitoring to assess the ongoing performance of the alternative and to monitor compliance with cleanup goals. Of the three alternatives, Alternative 1 has the most involved compliance monitoring (see the PES 2004b report for details), with significant water quality sampling, water level monitoring, and numerical modeling required to document compliance with the performance objectives. The compliance monitoring associated with Alternatives 2 and 3 is simpler and the performance objectives easier to document compared to Alternative 1.

12.1.5 Use of Permanent Solutions

The comparative evaluation of this criterion is presented in the last column of Table 14. As noted in Section 11.3, the sub-criteria that are most important in differentiating the three alternatives, and will be used as the basis for the disproportionate cost analysis, are permanence, long-term effectiveness, and cost. These three sub-criteria are discussed below, while the disproportionate cost analysis is presented in Section 12.2.

12.1.5.1 Permanence

As noted in Table 14, the main differentiating factors regarding the permanence of the three alternatives are: (1) the amount and complexity on the long-term O&M activities required to maintain containment and (2) how well the alternative maintains containment should O&M activities be interrupted. Alternative 1 is the most O&M intensive, as it would require the ongoing O&M of seven extraction wells, periodic replacement of the extraction wells, and the associated control and discharge systems. Performance monitoring associated with Alternative 1 is also more intensive than the other two alternatives, and includes significant data evaluation and modeling to demonstrate system performance. Alternative 3 is the next most O&M intensive CAA. Although the slurry wall will function without maintenance, the groundwater extraction and treatment systems will require ongoing O&M similar in nature to Alternative 1 in order to maintain hydraulic control inside the containment cell. Alternative 2 is the least dependent on ongoing O&M actions to maintain its effectiveness in that the encircling slurry wall will provide containment without maintenance and the ZVI reactor vessels function passively with only the potential need for periodic “refreshing” of the reactor vessels every several decades, if at all.

In summary, Alternative 2 rates the highest of the three alternatives under the permanence criterion. Alternative 3 rates lower and Alternative 1 rates the lowest due to their need for significant regular ongoing O&M.

12.1.5.2 Long-Term Effectiveness

As described in Section 11, the main factors evaluated relative to the long-term effectiveness of the three alternatives are: (1) the certainty of success of the alternative and (2) how reliable the alternative is. With respect to the certainty of success factor, there is a high degree of certainty that all three alternatives will be effective at preventing migration of VOCs from Parcel G over the long term.

The reliability of the three alternatives is also high. In general, Alternative 1 is the least reliable because of it requires more O&M compared to Alternatives 2 and 3. The reliability of both Alternatives 2 and 3 is also high due to the use of the slurry wall as the primary mechanism for containment. The differences between Alternatives 2 and 3 is how hydraulic gradients inside the containment cell are managed. The ZVI reactor vessels system used in Alternative 2 functions completely passively and, with the exception of the potential need for infrequent “refreshing” of the ZVI in the reactor vessels (e.g., every 30 years), requires no active maintenance.

The positive aspect of the reliability of Alternative 3’s approach to gradient control is based on the well understood and somewhat simpler technology (groundwater extraction) that has been demonstrated effective over the long term at many sites. On the other hand, the reliability of this approach is adversely affected by the need for ongoing O&M including periodic replacement of the extraction wells and the significant O&M required for the air stripper system.

In summary, Alternative 2 would be the most effective over the long term because it utilizes passive controls that do not require regular O&M. Alternatives 1 and 3, although still effective over the long term, are somewhat less reliable than the Alternative 2.

12.1.5.3 Cost

The costs for the three alternatives are detailed in Tables 14, 15, and 16 and summarized in Table 17. Based on the overall net present value (capital costs plus 30 years of O&M), Alternatives 1 and 3 have essentially the same cost of $4.5 million. The major cost factor for these two alternatives is the costs associated with ongoing O&M of the groundwater extraction systems. Alternative 2, although it has the highest capital costs, has an overall net present value cost of approximately $2.9 million because it does not have high ongoing O&M costs.

12.1.6 Restoration Time Frame

All three alternatives rely on containment at the downgradient Parcel G property boundary to provide protection of human health and the environment and achieve compliance with cleanup standards. The rationale for focusing the development and evaluation of alternatives to those based on containment is provided in Section 9.2.3. As a result, all three alternatives will all have essentially the same restoration time frame and the comparison of the alternatives for this criterion is not a differentiating factor between the alternatives.

12.1.7 Public Acceptance

As noted previously, during the preparation of this FFS BSB has carefully considered input from Hexcel with respect to how the CAAs may or may not effect Hexcel’s site investigation and cleanup activities. Additional consideration of public concerns following submittal of the FFS to Ecology will occur in the context of the public review and comment period.

12.2 Recommendation of Preferred Cleanup Action

Based on the evaluation above, Alternative 2 is somewhat superior to Alternative 3 under the evaluation criteria, including the “use of permanent solutions to maximum extent practicable” criterion. Alternative 1 compares less favorably to the criteria than both Alternatives 2 and 3. Alternative 2 is also the least costly alternative over the long term; Alternative 2 costs

$2.9 million followed by Alternatives 1 and 3 which both cost approximately $4.5 million. Therefore under the MTCA regulations [WAC 173-340-360(e)(ii)(C)], it must be selected as the preferred alternative for implementation at Parcel G.

Ecology Expectations. WAC 173-340-370 outlines a series of eight expectations that Ecology has regarding selection and implementation of cleanup actions. Selection of Alternative 2 for implementation at Parcel G is consistent with these expectations in that it:

- Uses engineering controls (containment) to contain large volumes of materials where treatment is impracticable;
- Minimizes migration of hazardous substances by preventing precipitation and runoff from contacting contaminated soils and waste materials;
- Takes active measures to prevent releases of hazardous substances to surface waters via groundwater discharges; and
- Does not result in a greater overall threat to human health and the environment compared to other alternatives.

There is an expectation or preference for treatment technologies. However, this expectation includes the idea that it is applicable to “areas of hazardous substances that lend themselves to treatment.” As discussed in detail in Section 9.2.3, the source area at Parcel G does not lend itself to treatment and, therefore, alternatives based on treatment technologies were not developed or evaluated as part of this FFS. It is also important to note the historical cleanup actions at Parcel G (see Section 5) have included significant treatment of contaminants in both soil and groundwater. Also, the ZVI reactor vessels will provide treatment for the VOCs that pass through it.

12.3 Implementation of Preferred Cleanup Action

12.3.1 Overall Implementation Approach

The final selection and implementation of Alternative 2 as the preferred cleanup action will include the following general steps:

- Finalize the FFS and solicit public input on the cleanup action selection;
- Prepare a Cleanup Action Plan (CAP);
- Based on the CAP, Ecology and BSB will negotiate a consent decree for designing, constructing, and operating the selected alternative;
- Prepare a detailed design of the alternative;
- Following Ecology’s approval of the final design, construct the cleanup action (e.g., slurry wall, ZVI reactor vessels, surface cap); and

- Begin long-term operations, maintenance, and compliance monitoring activities.

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LIMITATIONS

The services described in this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, nor the use of segregated portions of this report.

TABLES

ILLUSTRATIONS

APPENDIX A

LOGS FOR WATER WELLS WITHIN ONE MILE OF PARCEL G

(Appendix A Provided on the Attached Compact Disc)

APPENDIX B

PARCEL G BORING AND WELL LOGS

(Appendix B Provided on the Attached Compact Disc)

APPENDIX C

PARCEL G WATER LEVELS AND HYDROGRAPHS

(Appendix C Provided on the Attached Compact Disc)

APPENDIX C TABLES

APPENDIX D

PARCEL G SOIL AND GROUNDWATER CHEMISTRY DATA TABLES

(Appendix D Provided on the Attached Compact Disc)

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APPENDIX E

PARCEL G ROUTINE GROUNDWATER CHEMISTRY DATA TABLES

(Appendix E Provided on the Attached Compact Disc)

APPENDIX F

PARCEL G VOC TIME-TREND PLOTS

(Appendix F Provided on the Attached Compact Disc)

APPENDIX G

BENCH-SCALE TREATABILITY STUDY

APPENDIX H

PRELIMINARY CONTAINMENT AREA HYDRAULIC ANALYSIS

Table 1

Water Supply Wells Within a 1-Mile Radius
BSB Property, Kent, Washington

Well Number on Map	Listed Owner	Year Installed	Reported Location T	R	S	Drilled Depth	Open Interval	Use	In DOH Databases	Notes
Wells that likely no longer exist										
1	Liesinger	1914	23	5	31N	220	NA	D, Irr?	Yes	Flowed at 25 gpm
2	Liesinger	1916	22	5	6D	196	NA	D, Irr?	Yes	Flowed at 15 gpm
3	Liesinger	1921	22	4	1A	260	255 - 260	S, Irr	No	Flowed at 55 gpm
4	Wilson	1955	22	5	6N	212	202	D, Irr?	Yes	Flowed, yielded 1730 gpm, may be well referenced in a 1986 abandonment log
5	Komoto	1956	22	4	12H	321	313 - 321	D, Irr?	Yes	Flowed at 75 gpm
6	Brewer	NA	22	5	6M	300	NA	D	Yes	Well not found in field search
7	Bridges	NA	22	5	6E	200	NA	D	Yes	Well not found in field search
8	Carrll	NA	23	5	31M	60	NA	D	Yes	
9	Dickison	NA	23	5	31M	385	NA	D	Yes	
10	Hickson	NA	23	5	31M	116	NA	D	Yes	
11	Ikuta	NA	23	4	36R	370	NA	D	Yes	
12	Nash	NA	22	5	7E	92	NA	D	Yes	
13	Nowotny	NA	22	5	6N	210	NA	D	Yes	
14	Tanaka	NA	22	4	12D	20	NA	D	Yes	
15	Wilson	NA	22	5	6N	155	NA	D	Yes	
Wells that are likely to exist or are known to exist										
16	Krohn	1980	22	5	6B	49	49	D	Yes	Yields 20 gpm; reported address = 9235 South 192nd Street
17	City of Kent	1982	22	5	7F	367	336 - 367	M	Yes	Located SE of 212th and Hwy 167, flows at 450 gpm, "Well #1"; unused per DOH
18	City of Kent	1983	22	5	6P	395	184 - 221	M	Yes	S 208th Street well, flows at 450 gpm; public supply per DOH
19	City of Kent	1983	22	5	7F	463	331 - 356	M	Yes	Located at 212th and Hwy 167, flows at 550 gpm, "Well #2"; public supply per DOH
20	Koopmans	1984	22	5	7C	55	50 - 55	D	No	Yields 16 gpm
21	City of Kent	1998	22	4	1P	100	85 - 95	T	No	Located at 72nd Ave S next to fire station, not currently in use
22	City of Kent	2001	22	5	7F	522	290 - 480	M	Yes	Located at SE corner of 212th and Hwy 167, flows > 200 gpm, "Well #3"
23	Jolly	NA	22	5	6K	NA	NA	D, S	Yes	Reported address = 9455 South 202nd Street
24	K-T Supply	NA	22	5	6G	NA	NA	NA	Yes	Reported address = 19903 92nd Avenue South
25	Sloan	NA	22	5	6K	NA	NA	D	Yes	Reported address = 9206 South 200th Street
26	Anderson	NA	22	5	6K	100	NA	D	Yes	
27	Bunkowski	NA	22	5	6Q	90	NA	D	Yes	
28	Canyon Home	NA	22	5	6G	200	NA	D	Yes	

Table 1

Water Supply Wells Within a 1-Mile Radius
BSB Property, Kent, Washington

Well Number on Map	Listed Owner	Year Installed	Reported Location T	R	S	Drilled Depth	Open Interval	Use	In DOH Databases	Notes
29	DeWitt	NA	22	5	6K	161	NA	D	Yes	
30	Engle	NA	22	5	6P	150	NA	D	Yes	
31	McComb	NA	22	5	6Q	45	NA	Irr	Yes	
32	Minshall	NA	22	5	6L	178	NA	D	Yes	
33	Upper	NA	22	5	6C	30	NA	D	Yes	
34	Wagner Jacob	NA	22	5	6L	196	NA	D	Yes	
35	Warehime	NA	22	5	6P	132	NA	D	Yes	
36	Wieser	NA	22	4	1H	209	NA	Ind	Yes	Conflicting information in DOH database; well existence and/or location questionable

Notes:
1. Well locations shown on Figure 4.
2. Well logs provided in Appendix A.
3. Location abbreviations: T = township (north), R = range (east), S = section and subsection identifier.
4. Information about wells 1 through 5 and 16 through 22 from the Washington State Department of Ecology's well log database.
5. Information about wells 6 through 15 and 23 through 36 from the Washington State Department of Health's (DOH's) databases.
6. Drilled depths and open interval depths in feet below grade.
7. NA = not available.
8. Well uses:
   D = domestic supply   M = municipal supply
   Irr = irrigation supply   S = stock watering
   Ind = industrial supply   T = test well

Table 2

Parcel G and South 200th Street Well Completion Data
BSB Property, Kent, Washington

Well	Date Installed	Northing	Easting	Monitoring Point Elevation	Surface Casing Rim Elevation	Well Type	Monument	Log	Boring Depth	Screen Depth	Filter Pack Depth	Seal Depth
Shallow Aquifer Zone Monitoring Wells												
Ls	07/15/87	157,158.27	1,294,518.78	24.02	25.18	2" SS, 0.010"-slot size	Above	C	18	5 - 15	4 - 19	0 - 4
HY-1s	06/25/82	157,370.32	1,294,202.23	24.19	24.33	2" PVC	Above	B	20.5	14 - 19	10 - 20.5*	0 - 10
HYCP-2	12/03/84	157,370.41	1,294,617.54	20.47	21.57	2" Sch 80 PVC, 0.010" slots	Above	B	28	8 - 28	6 - 28	0 - 6
HYCP-3s	12/04/84	157,190.45	1,294,417.09	24.03	24.47	2" Sch 80 PVC, 0.010" slots	Above	C	13	8 - 13	7 - 13	0 - 7
HYCP-4	12/03/84	157,188.39	1,294,297.21	23.90	24.36	2" Sch 80 PVC, 0.010" slots	Flush	B	33	11 - 33	7 - 33	0 - 7
HYCP-5	03/15/89	157,331.49	1,294,674.50	22.31	23.01	2" SS, 0.010"-slot size	Above	B	31.5	10 - 30	7 - 31.5	0 - 7
HYCP-6	03/14/89	157,247.92	1,294,672.18	23.52	23.69	2" SS, 0.010"-slot size	Above	B	31.5	10 - 30	7 - 31.5	0 - 7
HYO-2	11/29/84	157,368.19	1,294,678.22	20.27	20.62	2" Sch 80 PVC, 0.010" slots	Flush	C	18.5	8.5 - 18.5	7 - 18.5	0 - 7
Intermediate Aquifer Zone Monitoring Wells												
HY-1i	12/13/85	157,364.56	1,294,202.34	24.89	25.15	2" Sch 80 PVC, 0.010" slots	Above	C	80	30 - 40	28 - 42	0 - 28, 42 - 52^
HYCP-1i	12/03/04	157,367.28	1,294,673.31	21.33	21.35	2" Sch 80 PVC, 0.010" slots	Above	C	73	16 - 36	14 - 45	0 - 14
HYCP-3i	12/01/84	157,190.43	1,294,408.33	23.45	24.25	2" Sch 80 PVC, 0.010" slots	Above	C	33	22 - 32	20 - 33	0 - 20
Deep Aquifer Zone Monitoring Wells and Piezometers												
I	07/13/87	157,361.79	1,294,379.27	24.14	24.36	2" Sch 80 PVC, 0.010" slot size	Above	B	86	74 - 84	66 - 84	0 - 66
Ld	07/15/87	157,154.91	1,294,506.20	24.19	24.45	2" SS, 0.010"-slot size	Above	B	82.5	69 - 79	67 - 82.5	0 - 67
HY-1d	12/18/85	157,352.31	1,294,202.00	25.60	21.35	2" Sch 80 PVC, 0.010" slot size	Above	C	96	84 - 94	81 - 96	0 - 81
HYCP-1d	12/03/84	157,367.28	1,294,673.31	21.27	21.35	2" Sch 80 PVC, 0.010" slot size	Above	C	73	53 - 73	14 - 45, 47 - 49.5, 52 - 73	0 - 14, 45 - 47, 49.5 - 52
HYO-1	11/29/84	157,366.84	1,294,678.28	21.13	21.20	3" Sch 80 PVC, 0.020" slot size	Above	B	84.5	53.5 - 83.5	15 - 84.5*	0 - 15
Extraction Wells												
HYR-1	03/28/89	157,345.31	1,294,623.18	18.69	20.89	6" SS, 0.010" slot size	Above	B	35	10 - 30	8 - 35	0 - 8
HYR-2	02/27/90	157,355.66	1,294,386.77	19.49	22.74	6" SS, 0.010/0.015" slot sizes&	Flush	B	35	9 - 29	7 - 35	0 - 7
Abandoned Monitoring Wells and Piezometers												
HTP-1	01/24/81	–	–	–	–	2" stainless steel well point	Above	B	10.5	7 - 10.5	None	0 - 6
HTP-2	01/24/81	–	–	–	–	2" stainless steel well point	Above	B	10.5	7 - 10.5	None	0 - 6
HTP-3	01/24/81	–	–	–	–	2" stainless steel well point	Above	B	10.5	7 - 10.5	None	0 - 6
HTP-4	01/24/81	–	–	–	–	2" stainless steel well point	Above	B	10.5	7 - 10.5	None	0 - 6
HTP-5	01/24/81	–	–	–	–	2" stainless steel well point	Above	B	10.5	7 - 10.5	None	0 - 6
HTP-6	01/24/81	–	–	–	–	2" stainless steel well point	Above	B	10.5	7 - 10.5	None	0 - 6
HYCP-1s	11/29/84	–	–	–	–	2" PVC, 0.010" slots	Flush	C	13	8 - 13	6 - 13	0 - 6

Table 2

Parcel G and South 200th Street Well Completion Data
BSB Property, Kent, Washington

Well	Date Installed	Northing	Easting	Monitoring Point Elevation	Surface Casing Rim Elevation	Well Type	Monument	Log	Boring Depth	Screen Depth	Filter Pack Depth	Seal Depth
HYCP-3d	12/01/84	–	–	–	–	2" Sch 80 PVC, 0.010" slot size	Above	C	79	59 - 79	56 - 79	33 - 56
HYO-3	11/30/84	–	–	–	–	3" Sch 80 PVC, 0.020" slot size	Above	B	91	47 - 77	35 - 78	0 - 35, 78 - 91
HYO-4	11/30/84	–	–	–	–	2" PVC, 0.010" slots	Flush	C	18	8 - 18	7 - 18	0 - 7

Notes: Northing/Easting in feet relative to the WA State Plane System North Zone (NAD 83).

Monitoring point (top of well casing) in feet relative to the National Geodetic Vertical Datum (NGVD 29).

All depths shown in feet below ground surface.

SS = stainless steel. Above = above-grade completion. Below = below grade completion.

B = boring log with well completion shown. C = well completion figure.

* = lower portion of filter pack includes native material. ^ = boring wall caved in 52 - 80 feet bgs.

& = 0.010" slot size, 8.85 - 18.85'; 0.015" slot size, 18.85 - 28.85'.

HYCP-1i and HYCP-1d completed in the same borehole.

HTP piezometers (completions approximate) abandoned during 1987 and 1988 closure activities.

HYCP-1s and HYO-4 abandoned sometime after June 1988.

HYO-3 abandoned sometime after January 1986 due to grout intrusion into the filter pack.

Table 3

Off-Site Well Completion Data
BSB Property, Kent, Washington

Well	Date Installed	Well Type	Monument	Log	Boring Depth	Screen Depth	Filter Pack Depth	Seal Depth	Comments
Shallow Aquifer Zone Monitoring Wells and Piezometers									
Bs	06/19/87	2" SS, 0.010" slot size	Above	C	17	4 - 14	3 - 17	0 - 3	
Cs	06/11/87	2" SS, 0.010" slot size	Above	C	17	4 - 14	3 - 17	0 - 3	
Gs	07/09/87	2" SS, 0.010" slot size	Above	C	17.5	5.5 - 15.5	3.5 - 15.5	0 - 3.5	
Hs	07/06/87	2" SS, 0.010" slot size	Flush	C	18	5 - 15	3 - 18	0 - 3	
Ks	07/29/87	2" SS, 0.010" slot size	Flush	C	19	5 - 15	4 - 18	0 - 4	
HY-2	06/25/82	2" PVC	Above	B	20	9 - 14	5 - 20	0 - 5	Heave from 14 to 20 feet
HY-3	06/25/82	2" PVC	Above	B	20	10 - 15	5 - 20	0 - 5	Heave from 13 to 20 feet
HY-4	06/25/82	2" PVC	Above	B	20	9.5 - 14.5	5 - 20	0 - 5	Heave from 15 to 20 feet
HY-5	10/05/83	2" PVC	Flush	B	23.5	13.5 - 23.5	12.5 - 23.5	0 - 12.5	Formation sand used as filter pack
HY-6	10/05/83	2" PVC	Flush	B	26	16 - 26	10 - 26	0 - 10	Formation sand and silt used as filter pack
HY-7s	10/06/83	2" PVC	Flush	B	30.5	12.5 - 22.5	11.5 - 30.5	0 - 11.5	Formation sand used as filter pack
HY-7ss	12/30/85	2" SS, 0.010" slot size	Flush	C	25	12.5 - 22.5	11.5 - 25	0 - 11.5	Completion from 1/7/86 well completion sketch
HY-9	09/05/84	2" PVC	Flush	B	25.5	12 - 22	8 - 25.5	0 - 8	Heave from 20 to 25.5 feet
HY-11s	12/20/85	2" PVC, 0.010" slots	Flush	C	18	8 - 18	6 - 18	0 - 6	Completion from 1/7/86 well completion sketch
HY-12s	07/11/03	2" Sch 40 PVC, 0.010" slots	Flush	B	30	20 - 30	17 - 30	0 - 17	
HY-13s	07/11/03	2" Sch 40 PVC, 0.010" slots	Flush	B	30	20 - 30	17 - 30	0 - 17	
HYHT-1^	Sep-84	2" stainless steel well point	Above	NA	15	13 - 15	None	NA	
HYHT-4^	Dec-85	2" stainless steel well point	Above	C	15	13 - 15	None	NA	
Intermediate Aquifer Zone Monitoring Wells and Piezometers									
D	07/01/87	2" Sch 80 PVC, 0.010" slots	Flush	B	100	43 - 53	40 - 57.5	0 - 40, 57.5 - 76	
Gi	07/09/87	2" SS, 0.010" slot size	Above	C	41	28 - 38	25 - 41	0 - 25	
Hi	07/06/87	2" SS, 0.010" slot size	Flush	C	40	28 - 38	25 - 40	0 - 25	
Ki	07/29/87	2" SS, 0.010" slot size	Flush	C	39	23 - 33	22 - 38	0 - 22	
HY-7i	12/30/85	2" Sch 80 PVC, 0.010" slot size	Flush	C	50.5	40.5 - 50.5	35 - 50.5*	0 - 35	Completion from 1/7/86 well completion sketch
HY-8i	01/26/84	2" Sch 80 PVC	Flush	B	78.5	35 - 45	32 - 47	0 - 32, 47 - 49	Completed in same boring as HY-8d
HY-11i	12/20/85	2" Sch 80 PVC, 0.010" slot size	Flush	C	38	26 - 36	24 - 38	0 - 24	Completion from 1/7/86 well completion sketch
Deep Aquifer Zone Monitoring Wells and Piezometers									
A	07/23/87	2" Sch 80 PVC, 0.010" slot size	Flush	B	60	45 - 55	43 - 55	0 - 43	
Bd	06/19/87	2" SS, 0.010" slot size	Above	B	65	47 - 57	45 - 59	0 - 45	
Cd	06/11/87	2" SS, 0.010" slot size	Above	B	71	57 - 67	55 - 71	0 - 55	
E	07/17/87	2" Sch 80 PVC, 0.010" slot size	Flush	B	81	68 - 78	65 - 81	0 - 65	
F	06/16/87	2" Sch 80 PVC, 0.010" slot size	Above	B	96	80 - 90	77 - 96	0 - 77	

Table 3

Off-Site Well Completion Data
BSB Property, Kent, Washington

Well	Date Installed	Well Type	Monument	Log	Boring Depth	Screen Depth	Filter Pack Depth	Seal Depth	Comments
Gd	07/09/87	2" SS, 0.010" slot size	Above	B	73.5	56 - 66	53 - 70	0 - 53	
Hd	07/06/87	2" SS, 0.010" slot size	Flush	B	71	57 - 67	53 - 71	0 - 53	
J	07/23/87	2" Sch 80 PVC, 0.010" slot size	Above	B	100	89 - 99	66 - 100	0 - 66	
Kd	07/29/87	2" SS, 0.010" slot size	Flush	B	81	65 - 75	59 - 78	0 - 59	
HY-7d	12/24/85	2" Sch 80 PVC, 0.010" slot size	Flush	C	81	69 - 79	66 - 81	0 - 66	Completion from 1/7/86 well completion sketch
HY-8d	01/26/84	4" Sch 40 PVC	Flush	B	78.5	50 - 60	49 - 65	47 - 49, 65 - 78.5	Completed in same boring as HY-8i
HY-11d	12/20/85	2" Sch 80 PVC, 0.010" slot size	Flush	C	94.5	82 - 92	80 - 94.5	0 - 80	Completion from 1/7/86 well completion sketch
Recovery Wells									
CG-1	04/19/89	6" SS, 0.015" slot size	Above	B	36	15 - 30	12 - 30	0 - 12, 30 - 36	
CG-2	04/19/89	6" SS, 0.010" and 0.015" slot size	Above	B	36	15 - 30	12 - 30	0 - 12, 30 - 36	
CG-3	04/18/89	6" SS, 0.010" and 0.020" slot size	Above	B	36	15 - 30	12 - 30	0 - 12, 30 - 36	
CG-4	04/13/89	6" SS, 0.010" and 0.020" slot size	Above	B	36	15 - 30	12 - 30	0 - 12, 30 - 36	
Observation Wells									
OW-2A	03/20/89	2" Sch 40 PVC, 0.010" slot size	Above	B	31.5	10 - 30	7 - 31.5	0 - 7	
OW-2B	03/20/89	2" Sch 40 PVC, 0.010" slot size	Flush	B	31.5	10 - 30	7 - 31.5	0 - 7	
OW-2C	03/21/89	2" Sch 40 PVC, 0.010" slot size	Above	B	31.5	10 - 30	5 - 31.5	0 - 5	
OW-3	03/17/89	2" Sch 40 PVC, 0.010" slot size	Above	B	31.5	10 - 30	7 - 31.5	0 - 7	
OW-4	03/16/89	2" Sch 40 PVC, 0.010" slot size	Above	B	31.5	10 - 30	7 - 31.5	0 - 7	
Abandoned Monitoring Wells and Piezometers									
HY-10	09/06/84	2" PVC	Flush	B	25.5	14 - 24	10 - 25.5	0 - 10	Well destroyed during sidewalk construction in 5/00
HYHT-2^	Sep-84	2" stainless steel well point	Above	NA	15	13 - 15	None	NA	Piezometer abandoned sometime after December 1987
HYHT-3^	Sep-84	2" stainless steel well point	Above	NA	15	13 - 15	None	NA	Piezometer abandoned sometime after December 1987
HYHT-5^	Dec-85	2" stainless steel well point	Above	C	15	13 - 15	None	NA	Piezometer abandoned sometime after December 1987

Note: All depths shown in feet below ground surface.
SS = stainless steel.
Above = above-grade completion.
Below = below grade completion.

B = boring log with well completion shown.
C = well completion figure.
# = boring wall caved in 52 - 80 feet bgs.
* = native material in lower portion of filter pack.

TOC elev = top of casing elevation in feet above mean sea level.
NA = not available.
^ = incomplete completion logs available; information estimated based on other groundwater leve monitoring completions installed in the mid-1980's.

Table 4

Summary of Soil Physical Properties
BSB Property, Kent, Washington

Location	Sample Depth (ft)	Layer Sampled	Unified Soil Classification	Percent Sand	Percent Silt	Vertical Hydraulic Conductivity (cm/sec)	Moisture Content (%)	Bulk Density (pcf)	Dry Density (pcf)
Direct-Push Borings									
GP-1	16	B	ML	36.4	63.6	–	40	–	–
GP-1	38	C	ML	8.9	91.1	–	39	–	–
GP-2	16	B	ML	12.4	87.6	–	44	–	–
GP-2	38	B	SM	63.0	37.0	–	35	–	–
GP-2	40	C	SM	62.3	37.7	–	37	–	–
GP-3	20	B	ML	49.4	50.6	–	60	–	–
GP-3	44	D	SM	58.4	41.4	–	31	–	–
GP-4	18	B	ML	19.6	80.4	–	44	–	–
GP-5	16	B	SM	86.3	13.7	–	35	–	–
GP-5	20	B	ML	4.0	96.0	–	51	–	–
GP-5b	31	C	ML	–	–	2.6E-07	43	–	77.3
GP-6	26	B	SP	95.2	4.8	–	23	–	–
GP-7b	18	B	ML	–	–	6.9E-07	45	–	75.0
GP-7b	41	C	ML	–	–	2.1E-07	38	–	80.5
GP-8	30	B	SP	95.7	4.3	–	29	–	–
GP-9	36	C	ML	33.3	66.7	–	37	–	–
GP-9	38	D	SM	56.9	43.1	–	34	–	–
GP-10	17	B	SM	–	–	3.5E-06	44	–	73.6
GP-11	44	C	ML	22.0	78.0	–	48	–	–
GP-11	46	C	SM	68.0	32.0	–	28	–	–
GP-12	40	C	ML	14.2	85.8	–	34	–	–
GP-13	17	B	ML	29.6	70.4	–	48	–	–
GP-14	17	B	ML	41.4	58.6	–	48	–	–
SP-3	39	C	ML	–	–	1.6E-07	42	123.1	86.6
SP-4	42	C	CL	–	–	1.3E-07	47	109.7	74.9
SP-21	39	C	CL	–	–	1.3E-07	41	111.6	79.4
SP-35	34	C	CL	–	–	2.3E-07	45	104.6	72.4
Piezometers									
I	40 - 41	C	ML	28.5	71.5	–	–	–	–
L	29.5 - 31	B	SM	77.0	23.0	–	–	–	–
L	49 - 51	D	SP	89.2	10.8	–	–	–	–
Monitoring Wells									
HYCP-6	5	A	ML	25.7	74.3	–	–	–	–
HYCP-6	10	B	SM	83.1	16.2	–	–	–	–
HYCP-6	15	B	ML	2.3	97.7	–	–	–	–
HYCP-6	20	B	ML	20.1	77.3	–	–	–	–
HYCP-6	25	B	ML	1.5	88.5	–	–	–	–

Notes:
1. Depths in feet below ground surface.
2. NP = non plastic.
3. pcf = pounds per cubic foot.
4. The HYCP-6 sample at 25 feet also contained 10 percent clay.

Table 5

Parcel G Layer C Elevations and Thicknesses
BSB Property, Kent, Washington

Well or Boring	Northing	Easting	Ground Surface Elevation (ft)	Depth to Top of Layer C (ft)	Top of Layer C Elevation (ft)	Layer C Thickness (ft)	Plotted Layer C Thickness (ft)
GP-1	157,359.0	1,294,502.0	20.50	38.0	-17.5	> 6.0	>6.0
GP-2	157,343.0	1,294,670.0	20.60	40.0	-19.4	1.5	1.5
GP-3	157,357.0	1,294,573.0	20.50	38.0	-17.5	2.0	2.0
GP-4	157,228.0	1,294,670.0	21.70	30.0	-8.3	> 6.0	>6.0
GP-5	157,181.4	1,294,597.7	22.00	30.5	-8.5	> 5.5	>5.5
GP-6	157,360.0	1,294,401.0	22.70	38.5	-15.8	> 5.5	>5.5
GP-7	157,361.0	1,294,302.0	22.70	39.8	-17.1	> 6.3	>6.3
GP-8	157,352.0	1,294,540.0	20.50	38.0	-17.5	1.5	1.5
GP-9	157,294.0	1,294,670.0	21.20	30.0	-8.8	6.0	6.0
GP-10	157,356.0	1,294,646.0	20.60	40.0	-19.4	3.5	3.5
GP-11	157,361.0	1,294,452.0	22.50	39.5	-17.0	8.3	8.3
GP-12	157,360.0	1,294,354.0	22.70	39.1	-16.4	> 8.9	>8.9
GP-13	157,324.0	1,294,588.0	20.90	42.0	-21.1	2.0	2.0
GP-14	157,207.4	1,294,633.7	21.70	28.9	-7.2	> 6.1	>6.1
GP-15	157,269.4	1,294,553.7	21.20	42.0	-20.8	4.0	4.0
SP-1	157,297.6	1,294,329.5	23.24	40.0	-16.8	> 3.0	>3.0
SP-2	157,293.4	1,294,430.5	22.72	40.5	-17.8	> 0.5	>0.5
SP-3	157,299.8	1,294,533.6	20.88	37.5	-16.6	> 3.5	>0.5
SP-4	157,246.0	1,294,378.7	23.13	40.7	-17.6	3.8	3.8
SP-5	157,239.8	1,294,470.0	22.77	41.3	-18.5	> 1.5	>1.5
SP-6	157,211.4	1,294,588.7	21.71	35.0	-13.3	> 3.0	>3.0
SP-7	157,197.5	1,294,328.3	23.69	43.0	-19.3	> 2.0	>2.0
SP-8	157,195.0	1,294,378.5	23.33	43.5	-20.2	4.5	4.5
SP-9	157,198.8	1,294,427.4	23.09	27.2	-4.1	> 10.8	>10.8
SP-10	157,197.0	1,294,531.5	21.69	32.5	-10.8	> 3.5	>3.5
SP-11	157,145.2	1,294,380.5	24.75	34.5	-9.8	> 0.5	>0.5
SP-12	157,141.4	1,294,480.1	24.00	32.0	-8.0	> 9.0	>9.0
SP-13	157,135.5	1,294,578.2	24.89	32.2	-7.3	> 1.8	>1.8
SP-14	157,305.7	1,294,633.0	21.22	38.0	-16.8	> 1.0	>1.0
SP-15	157,301.3	1,294,238.8	23.61	39.0	-15.4	> 2.0	>2.0
SP-16	157,323.7	1,294,293.5	23.09	40.5	-17.4	> 2.5	>2.5
SP-17	157,249.9	1,294,223.4	23.93	39.8	-15.9	> 1.2	>1.2
SP-18	157,177.7	1,294,259.7	24.39	43.0	-18.6	> 1.0	>1.0
SP-19	157,160.9	1,294,306.3	24.54	32.7	-8.2	2.8	2.8
SP-20	157,145.9	1,294,360.9	24.75	33.0	-8.3	> 1.0	> 1.0
SP-21	157,117.8	1,294,215.7	25.64	32.0	-6.4	> 10.0	>10.0
SP-22	157,118.6	1,294,405.5	25.20	33.9	-8.7	> 0.1	>0.1
SP-23	157,116.6	1,294,454.7	24.65	32.5	-7.9	> 2.5	>2.5
SP-24	157,114.4	1,294,503.0	24.41	32.0	-7.6	> 4.0	>4.0
SP-25	157,110.6	1,294,566.5	25.11	40.0	-14.9	0.8	0.8
SP-26	157,047.2	1,294,583.8	26.36	44.0	-17.6	1.7	1.7
SP-27	156,976.4	1,294,210.5	27.16	41.0	-13.8	> 3.0	>3.0
SP-28	156,968.2	1,294,371.7	27.02	36.0	-9.0	> 3.0	>3.0
SP-29	156,969.1	1,294,579.2	27.03	34.9	-7.9	> 6.1	>6.1
SP-30	157,122.3	1,294,369.0	25.14	33.5	-8.4	> 1.5	>1.5
SP-31	157,233.0	1,294,435.8	22.84	40.2	-17.4	> 3.8	>3.8
SP-32	157,193.7	1,294,472.6	23.04	29.0	-6.0	> 3.0	>3.0

Table 5

Parcel G Layer C Elevations and Thicknesses
BSB Property, Kent, Washington

Well or Boring	Northing	Easting	Ground Surface Elevation (ft)	Depth to Top of Layer C (ft)	Top of Layer C Elevation (ft)	Layer C Thickness (ft)	Plotted Layer C Thickness (ft)
SP-33	157,247.7	1,294,588.2	21.63	29.0	-7.4	> 7.0	>7.0
SP-34	157,249.4	1,294,537.7	21.32	39.0	-17.7	> 3.0	>3.0
SP-35	157,143.9	1,294,429.8	24.22	33.0	-8.8	> 4.0	>4.0
SP-36	157,279.1	1,294,471.6	22.68	39.8	-17.1	2.4	2.4
SP-37	157,168.6	1,294,409.6	23.65	32.0	-8.4	> 3.0	>3.0
SP-38	157,078.4	1,294,471.5	24.97	32.9	-7.9	> 4.1	>4.1
HYCP-3d	157,190.4	1,294,408.3	23.45	33.0	-9.5	> 6.5	>6.5
I	157,361.8	1,294,379.3	24.14	40.0	-15.9	7.0	7
Ld	157,154.9	1,294,506.2	24.20	33.0	-8.8	15.0	15
HY-1d	157,352.3	1,294,202.0	25.60	40.7	-15.1	> 5.8	>5.8
HYCP-1d	157,367.3	1,294,673.3	Layer C not identified; only sampled at 5-ft intervals				–
HYR-1	157,345.31	1,294,623.18	Layer C not identified; well not deep enough				–
HYR-2	157,355.66	1,294,386.77	Layer C not identified; well not deep enough				–
					Arithmetic Mean:	3.9	
					Geometric Mean:	2.9	
					Median:	3.0	

Notes: Northing/Easting in feet relative to the WA State Plane System North Zone (NAD 83).

Monitoring point (top of well casing) in feet relative to the National Geodetic Vertical Datum (NGVD 29).

All depths shown in feet below ground surface.

HYCP-3d, I, Ld, HY-1d, and HYCP-1d ground surface elevations approximate.

Mean and median thickness calculated including partially penetrated thickness values.

Table 6

Summary of Parcel G Groundwater Elevations
BSB Property, Kent, Washington

Well	Layer Screened	Screen Depth	Maximum Depth to Water	Minimum Depth to Water	Maximum Groundwater Elevation	Minimum Groundwater Elevation
Shallow Parcel G Locations						
HYCP-2	A/B	8 - 28	8.64	2.33	18.14	11.83
HYCP-3s	A/B	8 - 13	10.86	3.21	20.82	13.17
HYO-2	A/B	8.5 - 18.5	8.93	2.57	17.70	11.34
Ls	A/B	5 - 15	11.02	4.71	19.31	13.00
HY-1s	B	14 - 19	11.23	3.79	20.40	12.96
HYCP-4	B	11 - 33	11.13	3.78	20.12	12.77
HYCP-5	B	10 - 30	11.00	4.60	17.71	11.31
HYCP-6	B	10 - 30	11.52	5.78	17.74	12.00
Intermediate Parcel G Locations						
HY-1i	B	30 - 40	12.22	5.38	19.51	12.67
HYCP-1i	B	16 - 36	9.85	3.57	17.76	11.48
HYCP-3i	B	22 - 32	11.16	4.42	19.03	12.29
Deep Parcel G Locations						
HYCP-1d	D/E	53 - 73	7.69	2.82	18.45	13.58
HYO-1	D/E	53.5 - 83.5	7.42	2.70	18.43	13.71
I	D/E	74 - 84	10.02	4.07	20.07	14.12
HY-1d	E	84 - 94	11.27	6.62	18.98	14.33
Ld	E	69 - 79	9.83	3.16	21.03	14.36
Upgradient Off-site Locations						
HY-11s	A/B	8 - 18	11.25	2.97	22.20	13.92
HY-11i	B	26 - 36	10.71	3.38	21.70	14.37
HY-11d	D/E	82 - 92	11.14	5.04	19.99	13.89
J	D/E	89 - 99	12.39	5.16	21.90	14.67
Nearby Downgradient Off-site Locations						
Gs	A/B	5.5 - 15.5	9.31	3.48	17.47	11.64
Gi	B/C	28 - 38	9.71	3.81	17.52	11.62
Gd	D	56 - 66	8.11	2.63	18.16	12.68
Hs	A/B	5 - 15	7.42	2.32	17.67	12.57
Hi	B/C	28 - 38	7.29	2.41	17.68	12.80
Hd	D/E	57 - 67	5.93	1.92	19.35	14.22

Notes:
1. Data collected between July 1992 and December 2004.
2. All depths shown in feet below ground surface.
3. MP elevation = monitoring point elevation (top of PVC casing).
4. All elevations in feet relative to the National Geodetic Vertical Datum (NGVD 29).

Table 7

Parcel G Hydraulic Conductivities
BSB Property, Kent, Washington

Well	Date Tested	Layer Screened	Testing Method	Q (gpm)	Analytical Method	K (cm/sec)	K (ft/day)	T (gpd/ft)	T (ft^2/day)	S	Comments
Parcel G Locations											
HYO-2	01/14/85	A/B	Observation Well	–	Jacob	5.99E-02	170	12,700	1,698	0.065	K calculated from drawdown data; HYCP-1i pumping
HYO-2	01/14/85	A/B	Observation Well	–	Theis	6.15E-02	174	13,000	1,738	–	K calculated from drawdown data; HYCP-1i pumping
HYO-2	04/24/89	A/B	Observation Well	–	Theis	1.6E-02	45	10,170	1,360	–	K calculated from drawdown data; HYR-1 pumping
HYO-4	01/14/85	A/B	Pumping Well	20	Jacob	3.37E-02	96	14,300	1,912	–	K calculated from recovery data
HYCP-1s	01/14/85	A/B	Observation Well	–	Theis	1.5E-01	425	16,000	2,139	0.64	K calculated from recovery data; HYCP-1i pumping
HYCP-1s	01/14/85	A/B	Observation Well	–	Jacob	1.3E-01	369	13,800	1,845	0.44	K calculated from recovery data; HYCP-1i pumping
HYCP-1s	01/15/85	A/B	Pumping Well	1.46	Jacob	5.2E-03	15	551	74	–	K calculated from recovery data
HYCP-2	01/15/85	A/B	Pumping Well	16.6	Jacob	2.1E-02	60	8,980	1,200	–	K calculated from recovery data
HYCP-3s	01/14/85	A/B	Observation Well	–	Theis	3.6E-01	1,020	37,800	5,053	–	K calculated from recovery data; HY-04 pumping
HYCP-3s	01/14/85	A/B	Observation Well	–	Jacob	2.8E-01	794	29,300	3,917	0.37	K calculated from drawdown data; HY-04 pumping
HYCP-3s	01/16/85	A/B	Pumping Well	0.15	Jacob	5.3E-04	1.5	56.6	7.6	–	K calculated from drawdown data
HY-1s	09/02/83	B	Slug Test	–	Cedergren	7.3E-04	2.1	–	–	–	H_o derived from slug volume calculations
HYCP-4	01/15/85	B	Pumping Well	18.8	Jacob	6.5E-02	184	27,500	3,676	–	K calculated from recovery data
HYCP-5	04/24/89	B	Observation Well	–	Jacob	1.5E-02	42	9,500	1,270	–	K calculated from drawdown data; HYR-1 pumping
HYCP-6	04/24/89	B	Observation Well	–	Theis	1.7E-02	48	10,850	1,450	–	K calculated from recovery data; HYR-1 pumping
HYCP-6	04/24/89	B	Observation Well	–	Jacob	1.8E-02	51	11,370	1,520	3.0E-04	K calculated from drawdown data; HYR-1 pumping
GP-1c	04/14/99	B	Pumping Well	0.2	Jacob	1.0E-04	0.3	15.3	2.0	–	K calculated from drawdown/recovery data
GP-1d	04/14/99	B	Pumping Well	1.7	Jacob	3.1E-03	8.8	991	132	–	K calculated from recovery data
GP-2b	04/06/99	B	Pumping Well	1.7	Thiem	3.2E-03	9.1	1,024	137	–	K calculated from drawdown data
HYCP-1i	01/14/85	B	Pumping Well	12.5	Jacob	1.95E-02	55	8,250	1,103	–	K calculated from recovery data
HYCP-1i	04/24/89	B	Observation Well	–	Jacob	1.58E-02	45	10,020	1,339	–	K calculated from drawdown data; HYR-1 pumping
HYR-1	04/05/89	B	Pumping Well	5/10/20	Sp. Capacity	1.96E-02	56	12,492	1,670	2.5E-04	K calculated from the first step specific capacity
HYR-1	04/24/89	B	Pumping Well	20.8	Jacob	1.58E-02	45	10,020	1,339	–	K calculated from drawdown data
HYR-1	04/24/89	B	Pumping Well	20.8	Theis	1.51E-02	43	9,570	1,279	–	K calculated from recovery data
Upgradient Off-site Location											
HY-11s	10/09/84	A/B	Pumping Well	0.21	Jacob	4.1E-04	1.2	80 - 163	10.7 - 21.8	–	

Notes:
1. K = horizontal hydraulic conductivity, shown in centimeters per second and feet per day.
2. T = transmissivity, shown in gallons per day per foot and square feet per day.
3. S = storage coefficient.
4. gpm = gallons per minute.
5. Analytical methods discussed in Kruseman and deRidder (1990).

Table 8

Summary Statistics for Groundwater VOCs
BSB Property, Kent, Washington

Site	Date	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloro-ethene µg/L	cis-1,2-Dichloro-ethene µg/L	1,1-Di-chloro-ethene µg/L	1,1-Di-chloro-ethane µg/L	1,2-Di-chloro-ethane µg/L	1,1,1-Tri-chloro-ethane µg/L	Tri-chloro-ethene µg/L	Tetra-chloro-ethene µg/L	Toluene µg/L	Ethyl-benzene µg/L	Total Xylenes µg/L	Benzene µg/L	Dissolved Arsenic mg/L	Total Cyanide mg/L
HY-1s	04/22/99	65	5 U	6.8	350	2.5	5.6	0.8	0.5 U	5.7	0.5 U	1 U	1 U	1 U	0.5 U	0.009	0.01 U
HY-1s	10/05/99	75	5 U	8.4	480	3.2	6.5	0.8	0.5 U	6.5	0.5 U	1 U	1 U	1 U	0.5 U	0.01	0.01 U
HY-1s	04/14/00	48	5 U	5.8	320	2	4.6	0.5 U	0.5 U	4.6	0.5 U	1 U	1 U	1	0.5 U	0.01	0.01 U
HY-1s	10/10/00	76	1 U	15	430	3	6.9	0.71	0.5 U	5.3	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.012	0.01
HY-1s	04/25/01	70	1 U	6.8	340	2	5.9	0.78	0.5 U	6.2	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.0155	0.01
HY-1s	10/25/01	53	7.3	6	310	2.5 U	5.1	2.5 U	2.5 U	7.9	2.5 U	2.5 U	2.5 U	5 U	2.5 U	0.0086	0.01 U
HY-1s	04/23/02	50	2 U	5.5	240	1.3	4.9	1 U	0.5 U	4.7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.01	0.02
HY-1s	10/16/02	23	2 U	3.1	150	0.86	3.2	0.66	0.5 U	2.8	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.0097	0.01 U
HY-1s	04/09/03	22	0.2 U	2.6	78	0.54	1.2	0.28 J	0.12 U	1.4	0.11 U	0.14 J	0.13 U	0.299 U	0.11 U	0.01	0.01
HY-1s	10/21/03	36 J	2 UJ	5.4 J	250 J	1.3 J	4.4 J	0.63 J	0.5 UJ	2.7 J	0.5 UJ	0.5 UJ	0.5 UJ	1 UJ	0.5 UJ	0.0101	0.01
HY-1i	04/22/99	22	5 U	0.8	65	0.5 U	1.2	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	0.005 U	0.01 U
HY-1i	10/05/99	6.2	5 U	0.7	41	0.5 U	0.8	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	0.005 U	0.01 U
HY-1i	04/14/00	10	5 U	0.5 U	29	0.5 U	0.7	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	0.005 U	0.01 U
HY-1i	10/10/00	6.1	1 U	0.57	22	0.5 U	0.65	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.005 U	0.01 U
HY-1i	04/26/01	22	1 U	0.5 U	39	0.5 U	0.9	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.005 U	0.01 U
HY-1i	10/25/01	6.5	1 U	1.3	33	0.5 U	0.53	0.5 U	0.5 U	5.1	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.005 U	0.01 U
HY-1i	04/23/02	14	1 U	0.5 U	33	0.5 U	0.59	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.005 U	0.01
HY-1i	10/16/02	15	2 U	0.56	31	0.5 U	0.66	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.005 U	0.01 U
HY-1i	04/09/03	18	0.2 U	0.41 J	22	0.18 J	0.42 J	0.12 U	0.12 U	0.12 U	0.11 U	0.13 J	0.13 U	0.299 U	0.11 U	0.005 U	0.01 U
HY-1i	10/21/03	11	2 U	0.5 U	23	0.5 U	0.51	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.005 U	0.01 U
HY-1d	04/22/99	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	0.005 U	0.01 U
HY-1d	10/05/99	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	0.005 U	0.01 U
HY-1d	04/14/00	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	0.007	0.01 U
HY-1d	10/10/00	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.008	0.01 U
HY-1d	04/26/01	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.01 U	0.01 U
HY-1d	10/25/01	0.5 U	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.01 U	0.01 U
HY-1d	04/24/02	0.5 U	2 U	0.5 U	1.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.01 U	0.01 U
HY-1d	10/16/02	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.0052	0.01 U
HY-1d	04/09/03	0.22 U	0.2 U	0.14 U	0.12 U	0.12 U	0.091 U	0.12 U	0.12 U	0.12 U	0.11 U	0.14 J	0.13 U	0.299 U	0.11 U	0.0053	0.01 U
HY-1d	10/21/03	0.5 U	2 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.0089	0.01 U
HYCP-1i	04/23/99	650	5 U	8.1	380	1.4	15	0.5 U	0.5 U	1.2	0.5 U	1 U	1 U	1	0.5 U	0.005 U	0.01 U
HYCP-1i	10/05/99	600	12 U	61	1600	1 U	2	1 U	1 U	2	1 U	2 U	2 U	2 U	1 U	0.005 U	0.01 U
HYCP-1i	04/17/00	560	5 U	72	1600	6	2	0.5 U	0.5 U	35	0.5 U	1 U	1 U	1 U	0.5 U	0.005 U	0.01 U
HYCP-1i	10/10/00	1300	1 U	180	4500	14	1.6	0.5 U	0.5 U	74	0.5 U	1.7	0.5 U	0.5 U	0.5 U	0.005 U	0.01 U
HYCP-1i	04/26/01	860	6	78	2500	10	11	2.5 U	2.5 U	270	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0.005 U	0.01 U
HYCP-1i	10/24/01	1000	27	190	6100	22	13 U	13 U	13 U	21	13 U	13 U	13 U	13 U	13 U	0.005 U	0.01 U
HYCP-1i	04/24/02	1000	40 U	150	5000	10 U	10 U	10 U	10 U	160	10 U	10 U	10 U	10 U	10 U	0.01 U	0.01 U
HYCP-1i	10/18/02	580	10 U	37	1300	6.3	5	2.5 U	2.5 U	2.7	2.5 U	2.5 U	2.5 U	5 U	2.5 U	0.005 U	0.01 U
HYCP-1i	04/10/03	590	2 U	63	2200	11	3.7 J	1.2 U	1.2 U	30	1.1 U	0.98 U	1.3 U	2.99 U	1.1 U	0.005 U	0.01 U
HYCP-1i	10/21/03	920	10 U	56	1700	5.8	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	5 U	2.5 U	0.005 U	0.01 U
HYCP-1d	04/23/99	8	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	0.005 U	0.01 U
HYCP-1d	10/05/99	37	5 U	0.5 U	0.9	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	0.005 U	0.01 U
HYCP-1d	04/17/00	52	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	0.006	0.01 U
HYCP-1d	10/10/00	80	1 U	0.5 U	1.9	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1	0.5 U	1 U	0.5 U	0.005	0.01 U
HYCP-1d	04/26/01	21	1 U	0.5 U	2.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1	0.5 U	1 U	0.5 U	0.01 U	0.01 U

Table 8

Summary Statistics for Groundwater VOCs
BSB Property, Kent, Washington

Site	Date	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloro-ethene µg/L	cis-1,2-Dichloro-ethene µg/L	1,1-Di-chloro-ethene µg/L	1,1-Di-chloro-ethane µg/L	1,2-Di-chloro-ethane µg/L	1,1,1-Tri-chloro-ethane µg/L	Tri-chloro-ethene µg/L	Tetra-chloro-ethene µg/L	Toluene µg/L	Ethyl-benzene µg/L	Total Xylenes µg/L	Benzene µg/L	Dissolved Arsenic mg/L	Total Cyanide mg/L
HYCP-1d	10/24/01	47	1 U	0.5 U	2.3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1	0.5 U	1 U	0.5 U	0.01 U	0.01 U
HYCP-1d	04/24/02	74	1 U	0.5 U	4.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1	0.5 U	1 U	0.5 U	0.01 U	0.01 U
HYCP-1d	10/18/02	55	2 U	0.5 U	6.3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.01 U	0.01 U
HYCP-1d	04/15/03	65	2 U	0.5 U	11	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.0105	0.01 U
HYCP-1d	10/21/03	76	2 U	0.5 U	9.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.005 U	0.01 U
HYCP-2	04/22/99	42 J	1 U	0.5 U	33	0.5 U	7.9	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.014	0.01 U
HYCP-2	10/05/99	74	1 U	1	62 J	0.6	6.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.027	0.01 U
HYCP-2	04/17/00	8	5 U	0.5 U	23	0.5 U	2	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	0.024	0.01 U
HYCP-2	10/10/00	220	1 U	2.5	240	1.3	11	0.5 U	0.5 U	0.5 U	0.5 U	0.78	0.5 U	1 U	0.5 U	0.02	0.01 U
HYCP-2	04/26/01	0.84	1 U	0.5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.027	0.01 U
HYCP-2	10/24/01	1.4	1 U	0.5 U	5 U	0.5 U	0.84	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.023	0.01 U
HYCP-2	04/25/02	14	1 U	0.5 U	0.87	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.0217	0.01 U
HYCP-2	10/24/02	16	2 U	0.5 U	3.2	0.5 U	1.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.0176	0.01 U
HYCP-2	04/10/03	1.2	0.2 U	0.14 U	0.27 J	0.12 U	0.49 J	0.12 U	0.12 U	0.12 U	0.11 U	0.12 J	0.13 U	0.299 U	0.11 U	0.0207	0.01 U
HYCP-2	10/21/03	20	2 U	0.5 U	0.5 U	0.5 U	0.62	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.0274	0.01 U
HYCP-3s	04/22/99	8.9	5 U	0.5 U	67	0.5 U	1.3	0.5 U	0.5 U	6.8	0.5 U	1 U	1 U	1 U	0.5 U	0.005 U	0.01 U
HYCP-3s	10/05/99	510 J	5 U	1	59	0.5 U	24	0.5 U	1.5	0.5 U	0.5 U	9 B	2	5	0.5 U	0.005 U	0.01 U
HYCP-3s	04/14/00	7	5 U	0.5 U	49	0.5 U	1	0.5 U	0.5 U	5	0.5 U	1 U	1 U	1 U	0.5 U	0.005 U	0.01 U
HYCP-3s	10/10/00	150	10 U	5 U	5 U	5 U	26	5 U	5 U	5 U	5 U	6.6	5 U	5 U	5 U	0.005 U	0.01 U
HYCP-3s	04/26/01	1.6	1 U	0.5 U	46	5 U	0.85	0.5 U	0.5 U	6.2	0.5 U	0.5 U	0.5 U	5 U	5 U	0.005 U	0.01 U
HYCP-3s	10/25/01	1100	26	13 U	1900	13 U	67	13 U	13 U	13	13 U	19	13 U	14	13 U	0.005 U	0.01 U
HYCP-3s	04/23/02	4.1	2 U	0.5 U	49	0.5 U	0.5 U	0.5 U	0.5 U	5.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.01 U	0.01 U
HYCP-3s	10/16/02	4900	200 U	72	26000	80	270	50 U	78	710	50 U	69	50 U	97	50 U	0.005 U	0.01 U
HYCP-3s	04/09/03	1.7	0.2 U	0.14 U	6.5	0.12 U	0.18 J	0.12 U	0.12 U	1.6	0.11 U	0.13 J	0.13 U	0.299 U	0.11 U	0.005 U	0.01 U
HYCP-3s	10/22/03	580	4 U	2.4	390	1.7	9.3	1 U	1 U	4.5	1 U	2.6 B	1.3	2.9	1 U	0.0067	0.01 U
HYCP-3i	04/22/99	4700	500 U	170	33000	50 U	50 U	50 U	50 U	75000	50 U	180	100 U	100 U	50 U	0.011	0.04
HYCP-3i	10/05/99	5100	500 U	180	32000	52	50 U	50 U	50 U	63000	50 U	100 U	100 U	100 U	50 U	0.01	0.02
HYCP-3i	04/14/00	3600	5000 U	500 U	30000	500 U	500 U	500 U	500 U	67000	500 U	1000 U	1000 U	1000 U	500 U	0.012	0.02
HYCP-3i	10/10/00	8200	1 U	200 U	41000	46	32	1.1	0.5 U	72000	3.8	500 U	55	130	1.6	0.012	0.04
HYCP-3i	04/26/01	730	20 U	10 U	760	10 U	11	10 U	10 U	960	10 U	22	18	19	10 U	0.015	0.02
HYCP-3i	10/25/01	630	110	50 U	3000	50 U	50 U	50 U	50 U	4100	50 U	50 U	50 U	50 U	50 U	0.011	0.03
HYCP-3i	04/24/02	3700	400 U	130	32000	100 U	100 U	100 U	100 U	76000	100 U	140	100 U	100 U	100 U	0.0103	0.02
HYCP-3i	10/16/02	7500	500 U	190	42000	130 U	130 U	130 U	130 U	59000	130 U	170	130 U	260 U	130 U	0.0107	0.04
HYCP-3i	04/09/03	1400	9.7 U	24 U	5500	11 J	10 J	5.7 U	5.7 U	8500	5.5 U	45	43	53	5.3 U	0.0122	0.01
HYCP-3i	10/22/03	240	2 U	2	200	0.5 U	3.1	0.5 U	0.5 U	110	0.5 U	7.8	7	31	0.5 U	0.0147	0.04
HYCP-5	04/23/99	280	1 U	26	1300	8.4	3	0.5 U	0.5 U	12	0.5 U	1	0.5 U	1 U	0.5 U	0.005 U	0.01 U
HYCP-5	10/05/99	780	25 U	40	3600	10	3	2 U	2 U	2 U	2 U	5 U	5 U	5 U	2 U	0.005 U	0.01 U
HYCP-5	04/17/00	570	250 U	25 U	2400	25 U	25 U	25 U	25 U	25 U	25 U	50 U	50 U	50 U	25 U	0.008	0.01 U
HYCP-5	10/10/00	660	50 U	26	2100	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	50 U	25 U	0.005 U	0.01 U
HYCP-5	04/26/01	70	1 U	2.1	150	0.52	0.73	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.005 U	0.01 U
HYCP-5	10/23/01	490	1 U	19	1500	5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.005 U	0.01 U
HYCP-5	04/25/02	360	10 U	12	1100	3.1	2.5 U	2.5 U	2.5 U	4.3	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	0.005 U	0.01 U
HYCP-5	10/16/02	110	2 U	5.3	380	1.3	1.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.01 U	0.01 U
HYCP-5	04/09/03	180	0.39 U	5.2	440	1.5	0.8 J	0.23 U	0.23 U	0.24 U	0.22 U	0.2 J	0.26 U	0.6 U	0.21 U	0.0057	0.01 U
HYCP-5	10/21/03	8.4	2 U	0.5 U	2.9	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	1 UJ	0.5 U	0.0051	0.01 U
HYCP-6	04/23/99	42	5 U	1.7	88	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	0.005 U	0.02

Table 8

Summary Statistics for Groundwater VOCs
BSB Property, Kent, Washington

Site	Date	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloro-ethene µg/L	cis-1,2-Dichloro-ethene µg/L	1,1-Di-chloro-ethene µg/L	1,1-Di-chloro-ethane µg/L	1,2-Di-chloro-ethane µg/L	1,1,1-Tri-chloro-ethane µg/L	Tri-chloro-ethene µg/L	Tetra-chloro-ethene µg/L	Toluene µg/L	Ethyl-benzene µg/L	Total Xylenes µg/L	Benzene µg/L	Dissolved Arsenic mg/L	Total Cyanide mg/L
HYCP-6	10/05/99	80	5 U	2	63	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	0.005 U	0.01
HYCP-6	04/17/00	63	5 U	2	81	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	0.006 U	0.01
HYCP-6	10/10/00	75	1 U	1.9	54	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2	0.5 U	1.18	0.5 U	0.005 U	0.03
HYCP-6	04/26/01	68	1 U	1.1	35	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.005 U	0.01 U
HYCP-6	10/23/01	48	1 U	0.69	14	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.005 U	0.01 U
HYCP-6	04/25/02	36	1 U	0.72	20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.01 U	0.01 U
HYCP-6	10/16/02	26	2 U	0.5 U	2.3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.53	0.5 U	1 U	0.5 U	0.005 U	0.01 U
HYCP-6	04/09/03	29	0.2 U	0.67	22	0.19 J	0.15 J	0.12 U	0.12 U	0.12 U	0.11 U	0.28 J	0.13 U	0.3 U	0.11 U	0.005 U	0.01 U
HYCP-6	10/21/03	11	2 U	0.5 U	11	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.0078	0.01 U
HYR-1	04/05/99	1100	50 U	50	5 U	27	20	5 U	5 U	4200	5 U	NA	NA	NA	NA	NA	NA
HYR-1	04/04/00	870	1000 U	100 U	7300	100 U	100 U	100 U	100 U	5100	100 U	NA	NA	NA	NA	NA	NA
HYR-1	11/08/01	1100	200 U	100 U	8400	100 U	100 U	100 U	100 U	5300	100 U	100 U	100 U	200 U	100 U	NA	NA
HYR-1	07/02/02	690	50 U	43	7900	19	13 U	13 U	13 U	6900	13 U	NA	NA	NA	NA	NA	NA
HYR-1	05/01/03	850	50 U	42	8200	25 U	25 U	25 U	25 U	5300	25 U	NA	NA	NA	NA	NA	NA
HYR-1	08/11/03	580	100 U	36	6400	25 U	25 U	25 U	25 U	4000	25 U	NA	NA	NA	NA	NA	NA
HYR-1	11/11/03	370	40 U	51	6500	17	10 U	10 U	10 U	4400	10 U	NA	NA	NA	NA	NA	NA
HYR-2	04/02/99	47	5 U	0.8	75	0.6	4.1	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA
HYR-2	04/04/00	27	5 U	1.1	44	0.5 U	1.8	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA
HYR-2	11/08/01	34	1 U	0.62	42	0.5 U	1.9	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	NA	NA
HYR-2	07/02/02	21	2 U	0.5 U	25	0.5 U	1.3	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA
HYR-2	05/01/03	22	2 U	0.5 U	19	0.5 U	0.85	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA
HYR-2	08/11/03	19	2 U	0.5 U	20	0.5 U	0.89	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA
HYR-2	11/11/03	19	2 U	0.5 U	18	0.5 U	0.83	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA	NA
Ls	04/22/99	80	5 U	0.7	23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2	0.5 U	0.02	0.01 U
Ls	10/05/99	6.2	5 U	0.5 U	1.2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	0.014	0.01 U
Ls	04/17/00	2.4	5 U	0.5 U	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1	0.5 U	0.019	0.01 U
Ls	10/10/00	6.3	1 U	0.5 U	0.85	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1	0.5 U	1 U	0.5 U	0.014	0.01 U
Ls	04/26/01	1.6	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.75	1.7	0.5 U	0.016	0.01 U
Ls	10/25/01	3.7	1 U	0.5 U	0.53 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	1 U	0.5 U	0.015	0.01 U
Ls	04/23/02	2.2	1 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	1 U	0.5 U	0.0139	0.01 U
Ls	10/16/02	4.9	2 U	0.5 U	0.75	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.014	0.01 U
Ls	04/09/03	1.6	0.2 U	0.14 J	0.41 J	0.12 U	0.091 U	0.12 U	0.12 U	0.12 U	0.11 U	0.21 J	0.24 J	0.75 U	0.11 U	0.0163	0.01 U
Ls	10/22/03	21	2 U	0.5 U	29	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.0175	0.01 U
Total Samples Analyzed		124	124	124	124	124	124	124	124	124	124	112	112	112	112	110	110
Non-Detections		10	119	62	18	88	61	116	122	77	123	83	104	98	111	57	90
Qualified Detections		3	0	3	4	4	8	2	0	1	0	10	1	0	0	0	0
Unqualified Detections		111	5	59	102	32	55	6	2	46	1	19	7	14	1	53	20
Frequency of Detection		92%	4.0%	50%	85%	29%	51%	6.5%	1.6%	38%	0.8%	26%	7.1%	13%	0.9%	48%	18%
Maximum		8,200	110	190	42,000	80	270	1.1	78	76,000	3.8	180	55	130	1.6	0.0274	0.04
Minimum		0.84	6	0.14 J	0.6	0.18 J	0.18 J	0.66	1.5	1.2	3.8	0.12 J	0.24 J	1	1.6	0.0051	0.01

Table 9
Potentially Applicable Groundwater Cleanup Levels and Standards
BSB Property, Kent, Washington

				Potentially Applicable Cleanup Levels and Standards									Retained as IHS?	
				Surface Water Cleanup Levels and Standards (µg/L)					Groundwater Cleanup Levels and Drinking Water Maximum Contaminant Levels (µg/L)					
				Protection of Human Health			Protection of Aquatic Organisms							
					EPA Recommended Criteria (National Toxics Rule)		State Surface Water Quality Standards							
CAS Number	Chemical of Potential Concern	Frequency of Detection (%)	Maximum Detected Concentration (µg/L)	Method B Surface	Water + Organism	Organism Only	Freshwater Acute	Freshwater Chronic	Method A	Method B	State MCL	Federal MCL	Human Health	Aquatic Organisms
57-12-5	Cyanide	18	40	51,900	140	140	22.0[b]	5.2[b]	–	320	200	200	No	No[c]
75-34-3	1,1-Dichloroethane (1,1-DCA)	51	270	–	–	–	–	–	–	800	–	–	No	No
75-35-4	1,1-Dichloroethene (1,1-DCE)	29	80	1.93	330	7,100	–	–	–	400	7[a]	7	No	No
107-06-2	1,2-Dichloroethane (1,2-DCA or EDC)	6.5	1.1	59.4	0.38	37	–	–	5	0.481	5[a]	5	No	No
156-59-2	cis-1,2-Dichloroethene (cis-1,2-DCE)	85	42,000	–	–	–	–	–	–	80	70[a]	70	Yes	No
156-60-5	trans-1,2-Dichloroethene (trans-1,2-DCE)	50	190	32,800	140	10,000	–	–	–	160	100[a]	100	No	No
100-41-4	Ethylbenzene	7.1	55	6,910	530	2,100	–	–	700	800	700[a]	700	No	No
79-01-6	Trichloroethene (TCE)	38	76,000	55.6	2.5	30	–	–	5	0.11	5[a]	5	Yes	No
108-88-3	Toluene	26	180	48,500	1,300	15,000	–	–	1,000	1,600	1,000[a]	1,000	No	No
1330-20-7	Total Xylenes	13	130	–	–	–	–	–	1,000	1,600	10,000[a]	10,000	No	No
75-01-4	Vinyl Chloride	92	8,200	3.69	0.025	2.4	–	–	0.2	0.0291	2[a]	2	Yes	No

Notes:
1. CUL = cleanup level, – = not available.
2. Method A groundwater cleanup levels from WAC 173-340-900, Table 720-1.
3. Method B groundwater and surface water cleanup levels from Ecology's on-line Cleanup Levels and Risk Calculations under the Model Toxics Control Act Cleanup Regulation (CLARC) tool, (https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx).
4. State MCL = Washington State maximum contaminant level (from WAC 246-290-310).
5. Federal MCL = Federal maximum contaminant level (from http://www.epa.gov/safewater/mcl.html#mcls; last accessed 5/26/05).
6. Washington State surface water quality standards from WAC 173-201A-040.
7. EPA National Recommended Water Quality Criteria from http://www.epa.gov/waterscience/criteria/wqcriteria.html; last accessed 5/26/05.

[a] Federal MCLs adopted by reference.

[b] Surface water standards are for free cyanide; test results represent total cyanide.

[c] See Section 7.4.1 for rationale regarding not including cyanide as an IHS.

Table 10
Final Indicator Hazardous Substances
BSB Property, Kent, Washington

Final IHS	Cleanup Level (μg/L)
cis-1,2-Dichloroethene (cis-1,2-DCE)	70[a]
Trichloroethene (TCE)	30[b]
Vinyl Chloride	2.4[b]

Notes:

[a] Cleanup level based on state and federal MCLs.

[b] Cleanup level based on National Toxics Rule (40 CFR Part 131).

Table 11

Preliminary Cleanup Action Technologies
BSB Property, Kent, Washington

General Response Action	Preliminary Technology
Groundwater Containment	Groundwater Pumping Vertical Barriers (Containment Walls) Permeable Reactive Barriers
Ex Situ Groundwater Treatment/Discharge	King County Sanitary Sewer[1]
In Situ Groundwater Source Treatment	
Biological Treatment	Natural Attenuation Enhanced Aerobic Biodegradation Enhanced Anaerobic Biodegradation
Chemical/Physical Treatment	Air Sparging Steam Stripping *In Situ* Thermal Treatment Dual-Phase Extraction Surfactant/Co-Solvent Flushing Reactive Metal Injection *In situ* Oxidation
Engineering Controls (Soil and Groundwater)	Surface Cap[2] Subsurface Vapor Barrier[2]
Institutional Controls (Soil and Groundwater)	Water- and Land-Use Restrictions[2] Worker Protection Measures[2] Access Restrictions[2]

Notes –
1 – Presumed method of managing extracted groundwater (see Section 9.1 for discussion)
2 – Technologies included in presumed response actions to address (1) trench worker exposure pathway and (2) potential future groundwater/soil to indoor air exposure pathway.

Table 12

Cleanup Action Technology Screening
BSB Property, Kent, Washington

			Comments Specific to BSB Site			
Technology	Description	General Applicability/Limitations	Effectiveness[a]	Implementability[b]	Relative Cost[c]	Retained?
Groundwater Containment						
Groundwater Extraction	Groundwater is pumped to extract contaminants and generate hydraulic gradients that contain the contaminant plume. Extracted groundwater is treated above ground.	**Applicability.** Groundwater pumping is currently in use at the site to achieve hydraulic control and is a common technology for achieving hydraulic control and recovering contaminant mass. Extracted groundwater would be treated on-site as necessary to meet pretreatment standards and then discharged to the King County treatment works. **Limitations.** The potential limitations of groundwater pumping include site hydrogeology and sorption processes, biofouling and precipitation of inorganics (e.g., iron), and high operational costs. These factors are well understood at the BSB site based on operation of the current CMS.	**Medium to High** Concepts and performance of groundwater pumping are well understood at the site. Groundwater extraction provides reliable containment and removal of groundwater contamination. Can effectively reduce contaminant migration and remove some contaminant mass, although potential presence of NAPL in source area may require very long-term operation.	**Easy to Moderate** Lack of aboveground structures and underground utilities make construction relatively easy. Requirement for long-term operations and maintenance increases difficulty of implementation.	**Capital:** Low to Moderate **O&M:** High **Overall:** Moderate to High	Yes
Vertical Barriers (Containment Walls)	Subsurface barriers, such as slurry walls or sheet piles, are installed to contain impacted groundwater.	**Applicability.** Containment barriers are proven technologies that can contain or divert contaminated groundwater or can be used to isolate portions of a plume undergoing different types of treatment. **Limitations.** Typically requires heavy construction techniques to install. Technology contains contaminants and provides no treatment. Generally higher capital costs than groundwater pumping system, but often have lower long-term O&M costs.	**High** Barriers could control groundwater movement and contaminant migration. Use of physical barriers can reduce some uncertainties relative to groundwater pumping systems.	**Moderate** Significant subsurface construction required for installation, although methods are well established and equipment and materials readily available. Lack of aboveground structures and underground utilities increases constructability.	**Capital:** Moderate **O&M:** Low **Overall:** Moderate	Yes
Permeable Reactive Barrier	Permeable reactive barriers treat contaminants as groundwater passes through the barrier and contacts reactive material. Barriers designed for treatment of CVOCs typically constructed of zero-valent iron (ZVI).	**Applicability.** PRBs constructed using ZVI are well documented for treatment of CVOCs. Effectiveness of ZVI for treating CVOCs present at site is well documented. **Limitations.** Typically requires significant subsurface construction. Hydrogeology must be compatible with application. Barriers may lose hydraulic or reactive capacity over long-term.	**Medium to High** Reactive media (e.g., ZVI) apply to contaminants present at site. High iron content in groundwater could result in fouling of permeable walls over time. Technology can be used alone (i.e., permeable reactive barrier) or in conjunction with barrier wall technologies (i.e., funnel and gate).	**Moderate** Significant subsurface construction required for installation, although methods are well established and equipment and materials readily available. Lack of aboveground structures and underground utilities increases constructability.	**Capital:** Low to High (application dependent) **O&M:** Low **Overall:** Low to High (application dependent)	Yes
Ex Situ Groundwater Treatment/Discharge						
On-Site Groundwater Treatment (Air Stripping)	Extracted groundwater would be treated, if necessary, to meet the King County pretreatment standards. Air stripping would be the primary treatment technology for VOC removal.	**Applicability.** Air stripping used previously for treatment of CMS groundwater and would be effective at reducing VOC concentrations to below King County pretreatment standards. VOCs in vapor discharge from air stripper would be removed using vapor-phase granular activated carbon adsorption. **Limitations.** High dissolved iron content in groundwater will increase O&M requirements. Potential concentrations of TCE in vapor discharge from air stripper will likely require treatment prior to discharge.	**Medium to High** Air stripping effective at reducing VOC concentrations in groundwater to below pretreatment standards, and activated carbon adsorption effective at removing TCE from vapor stream.	**Moderate** Construction methods for treatment system are well established and equipment and materials readily available. Permitting requirements with King County and Puget Sound Clean Air Agency straightforward.	**Capital:** Moderate **O&M:** Moderate to High **Overall:** Moderate to High	Yes

Table 12

Cleanup Action Technology Screening
BSB Property, Kent, Washington

Technology	Description	General Applicability/Limitations	Comments Specific to BSB Site			Retained?
			Effectiveness[a]	Implementability[b]	Relative Cost[c]	
King County Sanitary Sewer	Groundwater is discharged to King County Sanitary Sewer system (either with or without pretreatment, depending on application) for treatment.	**Applicability.** This is the current treatment and discharge approach for the existing CMS and would be used for future groundwater discharges. Depending on the nature of the groundwater extraction system, on-site pretreatment may be required to meet discharge standards. **Limitations.** Primary limitation is concentration of VOCs in discharged water. If concentrations exceed occupational health-based threshold values established by King County, pretreatment may be required to lower VOC levels. Current concentrations in groundwater extracted from Parcel G are well below threshold values.	**High** Provides effective water treatment and disposal for the concentrations of VOCs currently present in extracted groundwater from downgradient boundary of Parcel G. Pretreatment may be required in alternative extraction scenarios (e.g., extraction from within slurry wall containment cell).	**High** Current method for water treatment and disposal.	**Capital:** Low **O&M:** Moderate to High **Overall:** Moderate	Yes
In Situ Groundwater Treatment						
Biological Treatment						
Natural Attenuation	Natural processes—such as dilution, volatilization, biodegradation, adsorption, and chemical reactions—are used to reduce contaminant concentrations, potentially to acceptable levels.	**Applicability.** Natural attenuation is potentially applicable to the VOCs present at the site. Can potentially be applied in combination with other technologies to address residual contamination. **Limitations.** Process can be slow and many site conditions can limit or modify effectiveness of biodegradation. Significant data needed to document performance. Degradation products can be mobile and toxic. Typically applied after residual sources of contamination or NAPL have been controlled or removed. Requires adequate space downgradient of source area for attenuation processes to reduce contamination concentrations.	**Low** Site data suggest ongoing anaerobic biodegradation of VOCs, although concentrations exceed cleanup levels at downgradient property boundary. Specific factors affecting long-term performance are uncertain and would require evaluation and monitoring. Technology very unlikely to achieve low cleanup levels at downgradient property boundary.	**Moderately Difficult** Substantial work including monitoring and modeling would be required to document natural attenuation at the site. Natural attenuation components of remedy do not require expensive and disruptive construction.	**Capital:** Low to Moderate **O&M:** Moderate **Overall:** Moderate	No
Enhanced *In situ* Aerobic Biodegradation	Adding oxygen, nutrients, or other co-factors to the groundwater increases the rate of biodegradation.	**Applicability.** Aerobic bioremediation is applicable to petroleum hydrocarbons, some solvents, and other organic chemicals. Effective for remediating low level residual contamination in conjunction with source removal. **Limitations.** Applies only to particular classes of compounds that can be degraded aerobically. Contaminant, oxygen, and contaminant-degrading microorganisms must be in contact. Fouling can result from biomass accumulation. Hydrogeologic conditions, nutrient limitations, toxic conditions (heavy metals or adverse pH) can limit effectiveness. Groundwater extraction and treatment might be required for plume control.	**Low** Key site contaminants (e.g., TCE) are not amenable to aerobic biodegradation without a suitable co-substrate. Current site conditions are highly reducing and anaerobic, and would make creating and maintaining aerobic conditions difficult.	**Difficult** Effective implementation requires mechanisms to provide uniform delivery of oxygen, nutrients, and inoculum. Substantial study required to document potential for biodegradation and to develop design.	**Capital:** Moderate **O&M:** Moderate **Overall:** Moderate	No

Table 12

Cleanup Action Technology Screening
BSB Property, Kent, Washington

			Comments Specific to BSB Site			
Technology	Description	General Applicability/Limitations	Effectiveness[a]	Implementability[b]	Relative Cost[c]	Retained?
Enhanced *In situ* Anaerobic Biodegradation	Adding electron acceptors or electron donors, nutrients, or co-factors to the groundwater increases or sustains the rate of biodegradation.	**Applicability.** Site contaminants are known to degrade under anaerobic conditions. **Limitations.** Anaerobic biodegradation rates are typically slower than aerobic biodegradation rates. Microorganisms are typically strict anaerobes that are sensitive to even low oxygen concentrations. Delivery of co-factors is often restricted by site hydrogeologic conditions. Groundwater extraction and treatment might be required for plume control and to enhance electron donor and nutrient delivery.	**Medium** Anaerobic biodegradation appears to be occurring at site. Effectiveness of anaerobic degradation is typically limited by degradation kinetics. Important consideration is ensuring that degradation products (e.g., vinyl chloride) are themselves degraded. Technology very unlikely to achieve low cleanup levels at downgradient property boundary.	**Moderately Difficult to Difficult** Effective enhancement requires mechanisms to uniformly deliver co-factors and amendments. Subsurface geology could limit effectiveness of delivery systems.	**Capital:** Low to Moderate **O&M:** Moderate **Overall:** Moderate	No
Chemical/Physical Treatment						
Air Sparging	Air is injected into groundwater to volatilize contaminants. Contaminants sparged from groundwater air are typically recovered in vadose zone by soil vapor extraction (SVE). Groundwater containment is almost always required around the sparged area to minimize migration of contaminants	**Applicability.** Target contaminants for sparging include VOCs. Removal mechanisms can include stripping and enhanced bioremediation. Methane can be used as an amendment to sparged air to enhance cometabolism of chlorinated organics. Sparging wells could be used as injection points to enhance cometabolic bioremediation. **Limitations.** Effectiveness requires uniform flow of air through saturated soil. Heterogeneous soils can result in non-uniform treatment and uncontrolled movement of potentially dangerous vapors. High contaminant solubility limits transfer to gas phase. Oxygen could cause oxidation and precipitation of iron and stop anaerobic biological systems. SVE typically required to recover sparged contaminants.	**Low** Site contaminants are generally volatile and amenable to air sparging. High solubility can limit transfer to vapor phase. Presence of interbedded low permeability layers, including the intermediate silt layer present throughout much of Parcel G, could significantly limit effectiveness in lower portion of shallow aquifer.	**Moderately Difficult** Sparge wells and aboveground conveyance can be installed in most areas. Low permeability layers in subsurface will complicate SVE system design and installation.	**Capital:** Moderate **O&M:** High **Overall:** Moderate to High	No
Steam Stripping	Steam is forced into groundwater to vaporize contaminants. Vaporized components rise to unsaturated zone and are removed by vacuum extraction. Groundwater containment is almost always required around the area being treat to minimize the potential migration of contaminants	**Applicability.** Steam stripping typically applies to oily wastes and semi-volatile hydrocarbons. VOCs also can be treated, but other processes are generally more cost-effective. Can be used to enhance recovery of NAPL. **Limitations.** Soil type, contaminant characteristics and concentrations, geology, and hydrogeology impact process effectiveness.	**Low to Medium** Although no NAPL has been observed at site, it may be present in a residual state. Contaminants are generally volatile. Could increase vaporization of highly soluble contaminants. Presence of interbedded low permeability layers, including the intermediate silt layer present throughout much of Parcel G, could significantly limit effectiveness in lower portion of shallow aquifer.	**Moderately Difficult to Difficult** Installation of injection and extraction points can be installed in most areas. May be difficult to uniformly deliver steam to impacted areas. Steam equipment can increase complexity of design, construction, and operation.	**Capital:** High **O&M:** High **Overall:** High	No
In Situ Thermal Treatment	Hot air or other heat source (e.g., electrical heating) are used to enhance desorption, volatilization, and mobility of contaminants. Groundwater containment is almost always required around the area being treat to minimize the potential migration of contaminants	**Applicability.** Thermal processes typically apply to NAPL or dissolved contaminants where heating would improve partitioning to vapor phase and recovery. Can improve recovery of VOCs. **Limitations.** Effectiveness requires uniform heating of saturated soil. Heterogeneous soils can result in non-uniform treatment.	**Low to Medium** Although no NAPL has been observed at site, it may be present in a residual state. Contaminants are generally amenable to conventional removal methods without thermal enhancement.	**Moderately Difficult to Difficult** Soil heating techniques are not routinely applied, and additional technology development could be required. May be difficult to uniformly heat soils in impacted area. Companion technologies, such as air sparging would likely be implemented. Heating equipment would increase implementation complexity.	**Capital:** High **O&M:** High **Overall:** High	No

Table 12

Cleanup Action Technology Screening
BSB Property, Kent, Washington

Technology	Description	General Applicability/Limitations	Comments Specific to BSB Site			Retained?
			Effectiveness[a]	Implementability[b]	Relative Cost[c]	
Dual-Phase Extraction	A vacuum is applied to an extraction well to simultaneously extract groundwater, NAPL, and vapors.	**Applicability.** Dual-phase extraction applies to VOCs and LNAPLs in soil and groundwater. Dual-phase extraction is more effective than SVE in heterogeneous soils. Can increase groundwater recovery rates **Limitations.** Can leave isolated lenses of undissolved product in low-permeability soils. Effectiveness depends on lithology and contaminant characteristics/distribution. Requires both water treatment and vapor treatment.	**Low to Medium** Although groundwater extraction is effective and applicable at the site, the effectiveness of SVE is significantly limited by subsurface heterogeneities including the intermediate silt layer. Although no NAPL has been observed at site, it is likely present in a residual state in the form of blobs and ganglia. Would require significant drawdown of water table to be more effective than standard SVE and groundwater extraction; this would require relatively high groundwater extraction rates.	**Moderately Difficult** Significant requirements for vacuum and groundwater conveyance. May be difficult to achieve desired water table drawdown at reasonable groundwater extraction rates	**Capital:** Moderate to High **O&M:** High **Overall:** High	No
Surfactant/Co-Solvent Flushing	Chemicals are injected and subsequently extracted into source area to solubilize and/or mobilize DANPL constituents. Chemicals typically used can include co-solvents (including alcohols), aqueous surfactants, or electrolytes that enhance solubilization.	**Applicability.** CVOCs present at the site are suitable for co-solvent application. Residual contaminant levels remaining after surfactant/co-solvent flushing would likely require follow-up treatment in order to achieve cleanup levels. **Limitations.** This technology has limited full-scale application data available at this time. Accurate identification of all areas with residual DNAPL required and then uniform delivery of surfactant/co-solvent chemicals required for effective treatment. Potential for mobilization of contaminants would likely require significant hydraulic controls to be in place before application.	**Low** Although the technology has the potential to treat site contaminations, it is most often used where significant DANPL sources (i.e., pooled DANPL) are present and source areas are well defined. Technology very unlikely to achieve low cleanup levels at downgradient property boundary without substantial follow-up treatment using a different technology.	**Moderately Difficult** Effective treatment requires uniform application surfactant/co-solvent chemicals that may be difficult due to subsurface heterogeneities and nature of residual DNAPL sources. Implementation of hydraulic controls around application area increases overall operational complexity of technology.	**Capital:** Moderate to High **O&M:** Moderate to High **Overall:** Moderate to High	No
Reactive Metal Particle Injection	Very small particles (micro- or nano-scale) of zero-valent iron are injected into the DNAPL source zone where chemical reduction reactions degrade chlorinated solvents. Can be used in conjunction with pneumatic fracturing technologies to enhance delivery of ZVI particles.	**Applicability.** ZVI has been shown effective at treating CVOCs in general, and at the bench and pilot scale with micro- or nano-scale particle injection technology. Applicability of injection/ZVI delivery technologies at this site is uncertain. **Limitations.** This technology has not been demonstrated in full-scale applications at this time and bench-scale performance data is limited. Accurate identification of all areas with residual DNAPL required and then uniform delivery of ZVI particles required for effective treatment.	**Low to Medium** Although the technology has the potential to treat site contaminations, there are many uncertainties regarding this technology due to its lack of full-scale implementation data. It is likely that multiple applications would be required and it is very unlikely to achieve low cleanup levels at downgradient property boundary.	**Moderately Difficult** Effective treatment requires uniform application of ZVI particles that may be difficult due to subsurface heterogeneities and nature of residual DNAPL sources.	**Capital:** Moderate to High **O&M:** Low to Moderate **Overall:** Moderate to High	No
In situ Chemical Oxidation (e.g., Permanganate, Fenton's Reagent)	Strong oxidizer is injected into subsurface to oxidize and destroy organic contaminants.	**Applicability.** Chemical oxidation commonly applied to inorganics, although use for halogenated and nonhalogenated VOCs, SVOCs, fuel hydrocarbons has increased in recent years. **Limitations.** Incomplete oxidation results in intermediate contaminants. Process may not be cost-effective for high contaminant concentrations because large amounts of oxidizing agent required. Some oxidizers in some environments can be explosive. Uniform application of oxidants required for effective treatment. High COD reduces effectiveness (e.g., high iron in groundwater).	**Medium** Significant amount of VOCs could be oxidized. Oxidized and precipitated iron could result in aquifer fouling. High contaminant concentrations and high COD would require large amount of oxidizer. Ability to deliver oxidizer(s) to contaminants in heterogeneous subsurface could limit effectiveness. Technology very unlikely to achieve low cleanup levels at downgradient property boundary.	**Moderately Difficult** Effective treatment requires uniform application of oxidizing agent that may be difficult due to subsurface heterogeneities and nature of residual DNAPL sources. Limited long-term operation required an advantage. Handling large quantities of strong oxidizers presents significant health and safety concerns.	**Capital:** Moderate to High **O&M:** Low to Moderate **Overall:** Moderate to High	No

Table 12

Cleanup Action Technology Screening
BSB Property, Kent, Washington

			Comments Specific to BSB Site			
Technology	Description	General Applicability/Limitations	Effectiveness[a]	Implementability[b]	Relative Cost[c]	Retained?
Engineering Controls						
Surface Cap or Barrier	Low permeability cover (e.g., asphalt paving) is placed over contaminated soils and groundwater to prevent direct contact and limit infiltration of precipitation.	**Applicability.** Capping is a well established technology that is currently in use for portions of Parcel G site. **Limitations.** Currently no impediments that would limit capping. Capping design must accommodate potential future traffic and/or site development structural requirements. Cap must be sloped or graded to promote effective runoff of precipitation.	**High** Capping would be very effective at controlling direct contact with potentially contaminated soils, limit exposures to VOCs in soil gas emanating from soil or groundwater, and prevent infiltration of precipitation. Maintenance activities are straightforward and effective.	**Easy** No aboveground obstructions and adequate working pace would make construction relatively easy. Flat topography of northern portion of site may require importing soil to achieve adequate grades for surface drainage.	**Capital:** Moderate **O&M:** Low to Moderate **Overall:** Moderate	Yes
Subsurface Vapor Barriers	Low permeability barriers and/or subsurface ventilation structures placed beneath buildings to limit intrusion of VOC-containing vapors.	**Applicability.** Commonly used and well-established technology for controlling vapor migration beneath and around buildings. **Limitations.** None.	**High** Not currently used at the site, as there are no aboveground structures. If future site development includes construction of buildings, subsurface vapor barriers would be very effective at controlling this potential exposure pathway.	**Easy** Since there are no existing structures on site, there is no need for somewhat difficult retrofitting of barrier systems. Any potential new construction can have subsurface vapor barriers incorporated into the design and construction.	**Capital:** Low to Moderate **O&M:** Low to Moderate **Overall:** Low to Moderate	Yes
Institutional Controls						
Water- and Land-Use Restrictions	Restrict use of groundwater for domestic or industrial purposes where contaminant concentrations are above regulatory limits. Define requirements to limit exposure if land use changes.	**Applicability.** Common controls to reduce exposure. **Limitations.** Can be difficult to implement for off-site locations.	**Medium to High** Can effectively prevent human exposure to VOC-containing groundwater on-site.	**Easy** Easy to implement on site.	**Capital:** Low **O&M:** Low **Overall:** Low	Yes
Worker Protection Measures	Health and safety techniques such as personal protective equipment, monitoring, and planning are implemented to protect workers involved subsurface activities.	**Applicability.** Common controls to reduce exposure. **Limitations.** None.	**Medium to High** Can prevent exposure.	**Easy** Easy to implement on site.	**Capital:** Low **O&M:** Low **Overall:** Low	Yes
Access Restrictions	Restrict access by unauthorized personnel to site.	**Applicability.** Common controls to reduce potential exposure or interference/damage of other remediation systems. **Limitations.** None.	**Medium** Can prevent exposure.	**Easy** Easy to implement on site.	**Capital:** Low **O&M:** Low **Overall:** Low	Yes

NOTE:

[a] Preliminary effectiveness ratings of high, medium, and low reflect estimated relative effectiveness of the technology to treat the site contaminants and meet CAOs.

[b] Implementability rating of easy, moderately difficult, and difficult reflect estimated relative complexity of implementing the technology.

[c] Relative costs for capital, O&M, and overall costs compared to other technologies evaluated.

Table 13

Summary of Retained Technologies
BSB Property, Kent, Washington

Treatment Category	Technologies	
	Retained	Screened Out
Containment	Groundwater Pumping Vertical Barriers (Containment Walls) Permeable Reactive Barriers (limited application)	Continuous Permeable Reactive Barrier
Ex Situ Groundwater Treatment/Discharge	On Site Groundwater Treatment (Air Stripping) King County Sanitary Sewer[1]	None
In Situ Groundwater Source Treatment		
Biological Treatment	None	Natural Attenuation Enhanced Aerobic Biodegradation Enhanced Anaerobic Biodegradation
Chemical/Physical Treatment	None	Air Sparging Steam Stripping *In Situ* Thermal Treatment Dual-Phase Extraction Surfactant/Co-Solvent Flushing Reactive Metal Injection *In situ* Oxidation
Engineering Controls (Soil and Groundwater)	Surface Cap[2] Subsurface Vapor Barrier[3]	None
Institutional Controls (Soil and Groundwater)	Water- and Land-Use Restrictions[2] Worker Protection Measures[2] Access Restrictions[2]	None

Notes –

1 – Presumed method of discharging extracted groundwater (see Section 9.1 for discussion); pretreatment may be required depending on application.

2 – Technologies included in presumptive general response actions to address subsurface construction worker exposure pathway

3 – Use of subsurface vapor barriers will be evaluated in the event of future Parcel G development to address the potential groundwater/soil to indoor air exposure pathway.

Table 14
Construction and Operation and Maintenance Costs
Alternative 1 - Enhanced Groundwater Extraction System

Construction Costs							
ITEM	UNIT COST		UNITS	QUANTITY		COST	
	low	high		low	high	low	high
Construction Costs							
1. Extraction Wells/Vaults	$ 70,000	$ 80,000	LS	1	1	$ 70,000	$ 80,000
2. Piping, Electrical, Controls	$ 115,000	$ 125,000	LS	1	1	$ 115,000	$ 125,000
3. Piezometers/Monitoring Wells	$ 1,200	$ 1,400	EA	14	14	$ 16,800	$ 19,600
4. Mechanical Checkout/Startup	$ 10,000	$ 15,000	LS	1	1	$ 10,000	$ 15,000
5. Construction and O&M Reports	$ 12,000	$ 15,000	LS	1	1	$ 12,000	$ 15,000
6. Aquifer Tests and Model Calibration	$ 40,000	$ 50,000	LS	1	1	$ 40,000	$ 50,000
7. Contingency Plan	$ 15,000	$ 25,000	LS	1	1	$ 15,000	$ 25,000
						$ -	$ -
Subtotal						$ 278,800	$ 329,600
Sales Tax on Materials (8.8%)						$ 17,800	$ 19,800
System Engineering and Permitting (10%						$ 21,200	$ 24,000
Construction Cost Contingency (15 %						$ 41,800	$ 49,400
Total Estimated Capital Costs						**$ 360,000**	**$ 420,000**
Average Capital Cost						**$ 390,000**	

Operation and Maintenance Costs			
	Estimated Annual Cost		**PW[1]**
Activity	**low**	**high**	**(30 Years)**
1. Baseline Extraction System O&M and Reporting	$ 180,000	$ 200,000	$ 2,921,000
2. Initial CAPMIP Performance Sampling, Modeling, and Reporting (year	$ 80,000	$ 105,000	$ 88,000
3. Additional Performance Sampling and Reporting (years 2-30	$ 25,000	$ 40,000	$ 469,000
4. Baseline EMP Groundwater Monitoring	$ 19,000	$ 19,000	$ 292,000
Subtotal			$ 3,770,000
O&M Cost Contingency (10 %)			$ 377,000
Total Estimated O&M Costs			**$ 4,150,000**
TOTAL ESTIMATED PRESENT WORTH COST			**$ 4,540,000**

[1] PW = present worth, calculated assuming a 5% discount rate using the average annual cost and years o operation indicated in the following formula

$$PW = A\frac{(1+i)^n - 1}{i(1+i)^n}$$

where
A = average annual cost
i = discount rate
n = number of years of operation

All total costs are in 2006 dollars and rounded to nearest $10,000

Table 15
Construction and Operation and Maintenance Costs
Alternative 2 - Slurry Wall around Parcel G with Zero Valent Iron Reactor Vessels

Construction Costs							
ITEM	UNIT COST		UNITS	QUANTITY		COST	
	low	high		low	high	low	high
Construction Costs							
1. Barrier Wall Installation	$ 200	$ 350	LF	1,820	1,820	$ 364,000	$ 637,000
2. Mobilization/Demobilization	$ 70,000	$ 80,000	LS	1	1	$ 70,000	$ 80,000
3. Reactor Vessel inc. infiltration gallery	$ 160,000	$ 320,000	LS	1	1	$ 160,000	$ 320,000
4. Granular ZVI Material	$ 1,000	$ 1,200	ton	140	210	$ 140,000	$ 252,000
5. EnviroMetal Licensing Fee (15%)						$ 36,000	$ 64,000
6. Cap Repair/Repaving	$ 2.00	$ 2.25	SF	130,000	145,000	$ 260,000	$ 326,250
7. Drainage Improvements	$ 15,000	$ 25,000	LS	1	1	$ 15,000	$ 25,000
8. Soil/Debris Disposal (Off-site as SW)	$ 35	$ 40	ton	2100	2,800	$ 73,500	$ 112,000
9. Performance Monitoring Piezometers	$ 1,200	$ 1,500	EA	8	8	$ 9,600	$ 12,000
10. Utility Realignment	$ 10,000	$ 20,000	LS	1	1	$ 10,000	$ 20,000
11. Wall Alignment Investigation	$ 15,000	$ 25,000	LS	1	1	$ 15,000	$ 25,000
					Subtotal	$ 1,153,100	$ 1,873,250
					Sales Tax on Materials (8.8%)	$ 101,500	$ 164,800
					Engineering and Permitting (10%)	$ 115,300	$ 187,300
					Construction Cost Contingency (20%)	$ 230,600	$ 374,700
					Total Estimated Capital Costs	**$ 1,600,000**	**$ 2,600,000**
					Average Capital Cost	**$ 2,100,000**	

Operation and Maintenance Costs			Baseline O&M Case
	Estimated Annual Cost		PW[1]
Activity	low	high	(30 Years)
1. Startup Performance Sampling and Reporting (in addition to routine monitoring; years 1-3)	$ 10,000	$ 20,000	$ 41,000
2. Additional Performance Sampling and Reporting (years 4-30)	$ 5,000	$ 10,000	$ 95,000
3. Baseline EMP Groundwater Monitoring	$ 24,000	$ 24,000	$ 369,000
4. Cap Maintenance	$ 10,000	$ 20,000	$ 231,000
5. ZVI Reactor Vessel Maintenance (assumes $50,000 per "refresh" event)			$ 12,000
		Subtotal	$ 748,000
		O&M Cost Contingency (10 %)	$ 74,800
		Total Estimated O&M Costs	**$ 820,000**
TOTAL ESTIMATED PRESENT WORTH COST			**$ 2,920,000**

[1] PW = present worth, calculated assuming a 5% discount rate using the average annual cost and years of operation indicated in the following formula:

$$PW = A\frac{(1+i)^n - 1}{i(1+i)^n}$$

where
A = average annual cost
i = discount rate
n = number of years of operation

All total costs are in 2006 dollars and rounded to nearest $10,000.

Table 16
Construction and Operation and Maintenance Costs
Alternative 3 - Slurry Wall around Parcel G with Limited Pumping for Gradient Control

Construction Costs							
ITEM	UNIT COST		UNITS	QUANTITY		COST	
	low	high		low	high	low	high
Construction Costs							
1. Barrier Wall Installatio	$ 175	$ 350	LF	1,780	1,780	$ 311,500	$ 623,000
2. Mobilization/Demobilizatio	$ 50,000	$ 75,000	LS	1	1	$ 50,000	$ 75,000
3. Gradient Control Wells/vault	$ 10,000	$ 12,000	EA	3	5	$ 30,000	$ 60,000
4. Piping, Electrical, Site Preparatio	$ 60,000	$ 75,000	LS	1	1	$ 60,000	$ 75,000
5. GW Treatment Systen	$ 50,000	$ 70,000	LS	1	1	$ 50,000	$ 70,000
6 Cap Repair/Repaving	$ 2.00	$ 2.25	SF	130,000	145,000	$ 260,000	$ 326,250
7. Drainage Improvement	$ 15,000	$ 25,000	LS	1	1	$ 15,000	$ 25,000
8. Soil/Debris Disposal (Offsite as S	$ 35	$ 40	ton	2,100	2,800	$ 73,500	$ 112,000
9 Performance Monitoring Wel	$ 1,200	$ 1,500	EA	12	12	$ 14,400	$ 18,000
10. Utility Realignmen	$ 10,000	$ 20,000	LS	1	1	$ 10,000	$ 20,000
11. Wall Alignment Investigatio	$ 15,000	$ 25,000	LS	1	1	$ 15,000	$ 25,000
					Subtotal	$ 889,400	$ 1,429,250
					Sales Tax on Materials (8.8%	$ 78,300	$ 125,800
					Engineering and Permitting (10%	$ 88,900	$ 142,900
					Construction Cost Contingency (20%	$ 177,900	$ 285,900
					Total Estimated Capital Cost	**$ 1,230,000**	**$ 1,980,000**
					Average Capital Cost	**$ 1,610,000**	

Operation and Maintenance Costs			Baseline O&M Case
Activity	**Estimated Annual Cost** **low**	**high**	**PW[1]** **(30 Years)**
1. Baseline Gradient Control System O&M and Reportin	$ 60,000	$ 100,000	$ 1,230,000
2. Baseline Groundwater Treatment System O&M	$ 30,000	$ 50,000	$ 615,000
3. Startup Performance Sampling and Reporting (in addition to routine monitoring; years 1-	$ 10,000	$ 20,000	$ 65,000
4. Additional Performance Sampling and Reporting (years 6-3	$ 5,000	$ 10,000	$ 83,000
5. Baseline EMP Groundwater Monitorin	$ 24,000	$ 24,000	$ 369,000
6. Cap Maintenanc	$ 10,000	$ 20,000	$ 231,000
		Subtotal	$ 2,593,000
		O&M Cost Contingency (10 %	$ 259,300
		Total Estimated O&M Costs	**$ 2,850,000**
TOTAL ESTIMATED PRESENT WORTH COST			**$ 4,460,000**

[1] PW = present worth, calculated assuming a 5% discount rat using the average annual cost and years o operation indicated in the following formul

$$PW = A\frac{(1+i)^n - 1}{i(1+i)^n}$$

where
A = average annual cos
i = discount rat
n = number of years of operatio

All total costs are in 2006 dollars and rounded to nearest $10,000

Table 17

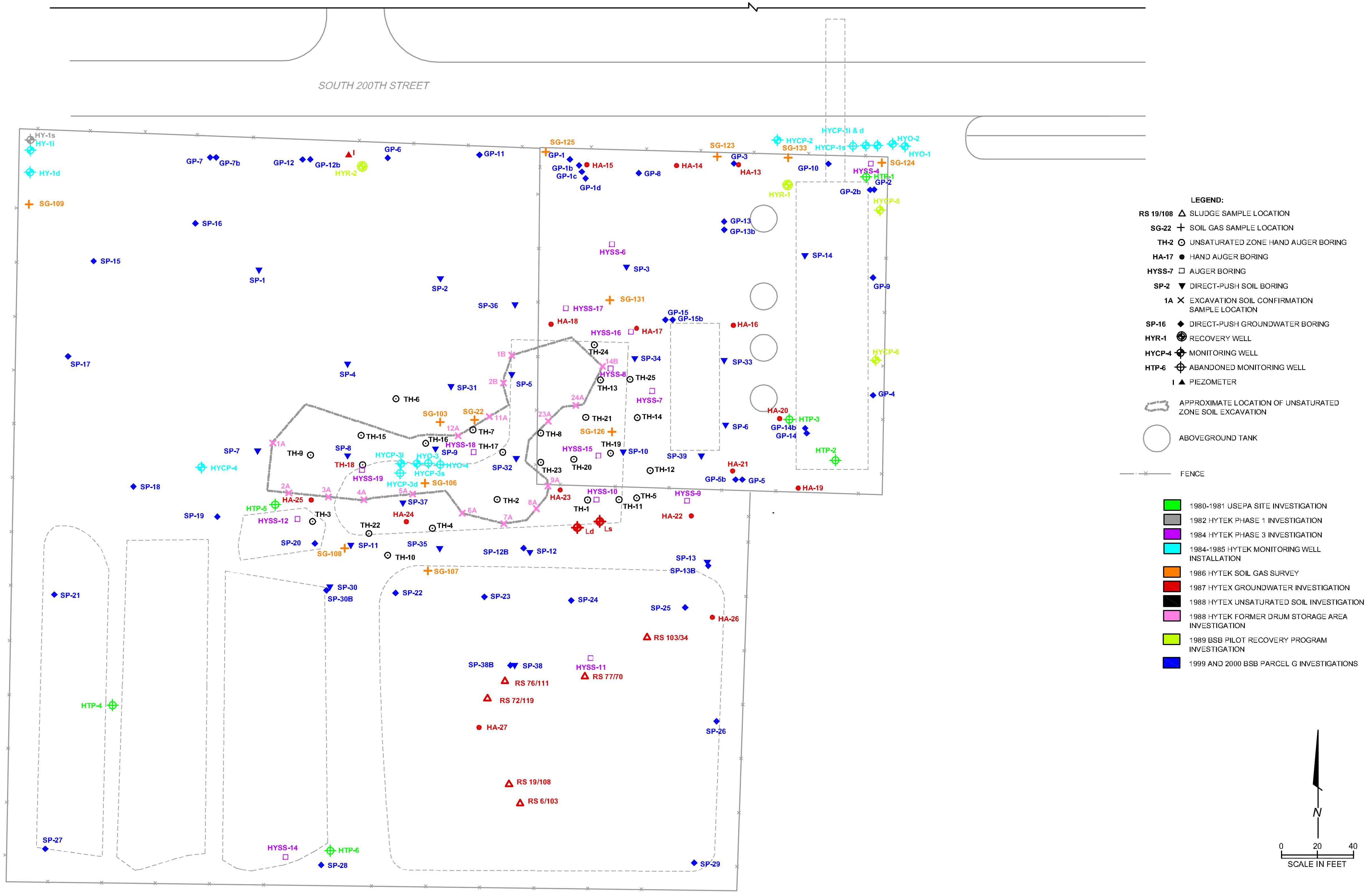
Evaluation of Use of Permanent Solutions to Maximum Extent Practicable
BSB Property, Kent, Washington

Evaluation Criteria	Alternative 1 – Enhanced Groundwater Extraction System	Alternative 2 – Slurry Wall Containment and Gradient Control Using ZVI Gate	Alternative 3 – Slurry Wall Containment and Gradient Control Using Groundwater Extraction	Comparative Evaluation
Protectiveness	Potential downgradient receptors at surface water will be protected by preventing migration of VOCs from Parcel G. Containment will be achieved far upgradient of the potential exposure point. Potential future onsite receptors (potential future site and/or office workers) will be protected through maintenance of the existing surface cap, implementation of engineering controls to prevent inhalation of VOCs in indoor air if a building is constructed in the future (if determined to be necessary), and institutional controls requiring worker protection measures (e.g., personal protective equipment) during subsurface construction or maintenance activities.	See Alternative 1 discussion.	See Alternative 1 discussion.	Although the approach to achieving containment varies between the three alternatives, they are all protective of human health and the environment in both the short and long term. Alternative 2 is the most protective because it relies less on long term O&M.
Permanence	The components of the enhanced groundwater extraction system (e.g., wells, pumps, control systems) will require significant ongoing O&M**,** including periodic replacement of system components, until cleanup standards are met in order to maintain the effectiveness of the alternative. Also, long-term performance monitoring and modeling will be required to document the alternative's effectiveness.	The components of the slurry wall, ZVI gate, and surface cap containment system in Alternative 2 are permanent engineered systems that require very little long-term O&M. The slurry wall requires no maintenance, while the ZVI gate may require periodic "refreshing" (assumed to be every 30 years) to maintain its hydraulic properties or augment the reactive iron. The surface cap will require routine inspection and maintenance typical of all paving systems. Performance monitoring will consist of relatively straightforward water quality and water level monitoring.	The components of the slurry wall and surface cap containment system in Alternative 3 are permanent engineered systems that require modest long-term O&M. The slurry wall requires no maintenance, while the surface cap will require routine inspection and maintenance typical of all paving systems. The groundwater extraction and treatment systems will require significant ongoing O&M, including periodic replacement of system components. Performance monitoring will consist of relatively straightforward water quality and water level monitoring.	The permanence of the three alternatives is, to varying degrees, dependent on the performance of long-term O&M activities. Alternative 1 is the most O&M intensive (i.e., least permanent) as it would require considerable ongoing O&M and performance monitoring. The extraction and treatment system components of Alternative 3 also require significant O&M, but less than Alternative 1 because fewer wells will have to be operated, maintained and periodically replaced. Alternative 2 is the least dependent on ongoing O&M actions to maintain its effectiveness (i.e., the most permanent). The ZVI gate functions passively, and based on existing information on this technology, may only require periodic "refreshing" every several decades, if at all. The need for these periodic gate maintenance events will be readily determined based on performance monitoring results.
Cost	**Capital:** $390,000 **O&M (30-yr NPV):** $4,150,000 **Overall Cost:** $4,540,000	**Capital:** $2,050,000 **O&M (30-yr NPV):** $950,000 **Overall Cost:** $3,000,000	**Capital:** $1,610,000 **O&M (30-yr NPV):** $2,850,000 **Overall Cost:** $4,460,000	Although it has the highest capital cost, the much lower long-term O&M costs make Alternative 2 the least costly over the 30-year period evaluated. Alternatives 1 and 3 have essentially the same overall cost over the 30-year period. The difference in costs between Alternative 2 and Alternatives 1 and 3 will increase with longer implementation time frames.
Long-Term Effectiveness	The enhanced groundwater extraction system has been shown through modeling to effectively contain VOCs and prevent their migration downgradient of Parcel G. Refer to the PES 2004b report for the detailed description of the effectiveness of this alternative in achieving containment. If implemented, the effectiveness would continue to be demonstrated through performance monitoring and modeling activities.	The function and effectiveness of this alternative is described in Section 10.3.1 and Appendices G and H. The slurry wall encircling Parcel G in this alternative will be extremely effective in preventing migration of VOCs, and will maintain this effectiveness over the very-long term. The ZVI gate technology has been shown to be effective in treating the VOCs present at the site to levels below the applicable cleanup levels, and the available information indicates that it will maintain its effectiveness over the long term. The long-term performance of the ZVI gate can be readily monitored, and maintenance activities implemented when required to preserve its hydraulic and treatment effectiveness.	The function and effectiveness of this alternative is described in Section 10.4.1 and Appendices G and H. The slurry wall encircling Parcel G in this alternative will be extremely effective in preventing migration of VOCs, and will maintain this effectiveness over the very-long term. The groundwater extraction system used to maintain hydraulic control inside the slurry wall is somewhat less effective than the ZVI gate in Alternative 2 because Alt 3 requires more O&M.	All three alternatives will be similarly effective at preventing migration of VOCs from Parcel G over the long term as long as O&M activities are implemented. The degree of certainty of success associated with Alternatives 2 and 3 is somewhat higher compared to Alternative 1 due to the presence of the slurry wall encircling Parcel G. Alternative 2 is more certain than Alternative 3 because Alternative 2 relies on a passive system that does not require regular O&M.

Table 17

Evaluation of Use of Permanent Solutions to Maximum Extent Practicable
BSB Property, Kent, Washington

Evaluation Criteria	Alternative 1 – Enhanced Groundwater Extraction System	Alternative 2 – Slurry Wall Containment and Gradient Control Using ZVI Gate	Alternative 3 – Slurry Wall Containment and Gradient Control Using Groundwater Extraction	Comparative Evaluation
Management of Short-Term Risks	There are limited short-term risks associated with this alternative. There are no current or short-term risks to human health that need to be addressed. The potential risks associated with implementation of this alternative are limited to construction activities (e.g., drilling, trenching) and potential exposure to subsurface contaminants during construction or management of contaminated materials. These risks can be easily mitigated through development and implementation of a site-specific health and safety plan, including appropriate use of engineering controls and personal protective equipment.	There are limited short-term risks associated with this alternative. `There are no current or short-term risks to human health that need to be addressed. Implementation risks associated with this alternative are related to the heavy construction activities involved with placement of the slurry wall, ZVI gate, and surface cap. Potential volatilization of subsurface VOCs should be minimized by the nature of one pass trencher operations and because trenching activities are limited to the site perimeter where VOC concentrations are much lower compared to the source area. With appropriate engineering design and careful implementation of health and safety procedures typical for this type of activity, these risks can be minimized to the extent practicable.	There are limited short-term risks associated with this alternative. There are no current or short-term risks to human health that need to be addressed. Implementation risks associated with this alternative are related to the heavy construction activities involved with placement of the slurry wall and surface cap. Potential volatilization of subsurface VOCs should be minimized by the nature of one pass trencher operations and because trenching activities are limited to the site perimeter where VOC concentrations are much lower compared to the source area. With appropriate engineering design and careful implementation of health and safety procedures typical for this type of activity, these risks can be minimized to the extent practicable. Potential risks associated with air emissions of VOCs from the groundwater treatment system will be mitigated with the carbon adsorption system.	All three alternatives have relatively little implementation risk associated with them, and what risks are present can be readily managed through application of standard construction health and safety procedures.
Technical and Administrative Implementability	Technical – All of the components are in common use and readily available, and there are no significant technical implementability issues for this alternative. Administrative – The primary permit required for implementation of this alternative is a King County Industrial Wastewater Discharge permit. Since the existing CMS already has such a permit, implementing Alternative 1 would only require modification (and periodic renewal) of the existing permit.	Technical – All of the components used in the slurry wall/ZVI gate system have been demonstrated at full-scale at dozens of other sites and the materials are readily available. The one-pass trencher technology used to place the slurry wall and gate has been demonstrated at the anticipated depths and used many times in similar applications. There are no significant technical implementability issues for this alternative. Administrative – There are no major permits required to implement this alternative as it is constructed entirely on-site. Excavated soils and other waste would need to be characterized and disposed of consistent with state and federal solid and dangerous/hazardous waste regulations.	Technical – All of the components are in common use and readily available. The one-pass trencher technology used to emplace the slurry wall has been demonstrated at the anticipated depths and used many times in similar applications. There are no significant technical implementability issues for this alternative. Administrative – The primary permit required for implementation of this alternative is a King County Industrial Wastewater Discharge permit. The substantive requirements for an air discharge authorization from the Puget Sound Clean Air Agency (PSCAA) will also have to be met. Since the existing ICM already has a King County permit, implementing Alternative 1 would only require modification (and periodic renewal) of the existing permit. The PSCAA substantive requirements for the air stripper will be met through installation of carbon adsorption. The only other permits required to implement this alternative are construction-related permits. Excavated soils and other waste would need to be characterized and disposed of consistent with state and federal solid and dangerous/hazardous waste regulations.	Technical – Although the slurry wall and ZVI gate systems require more complicated construction techniques compared to installation of extraction wells, these techniques are well demonstrated at similar sites. There are no significant technical implementations issues with any of the alternatives. Administrative – The permits required for implementing all three alternatives are readily obtainable and there are no major administrative obstacles to implementing any of the alternatives. Alternative 2 is the easiest to administratively implement as it requires no permits. Alternatives 1 and 3 each require a discharge permit and Alternative 3 also requires compliance with PSCAA regulations.
Consideration of Public Concerns	Public concerns associated with the possible implementation of this alternative will be addressed during the public review and comment process for this FFS.	Public concerns associated with the possible implementation of this alternative will be addressed during the public review and comment period for this FFS.	Public concerns associated with the possible implementation of this alternative will be addressed during the public review and comment process for this FFS.	Public concerns will be addressed in the same fashion for all three alternatives.



PES Environmental, Inc.
Engineering & Environmental Services

Parcel G Sampling Locations
BSB Property
Kent, Washington

DRAWING
1

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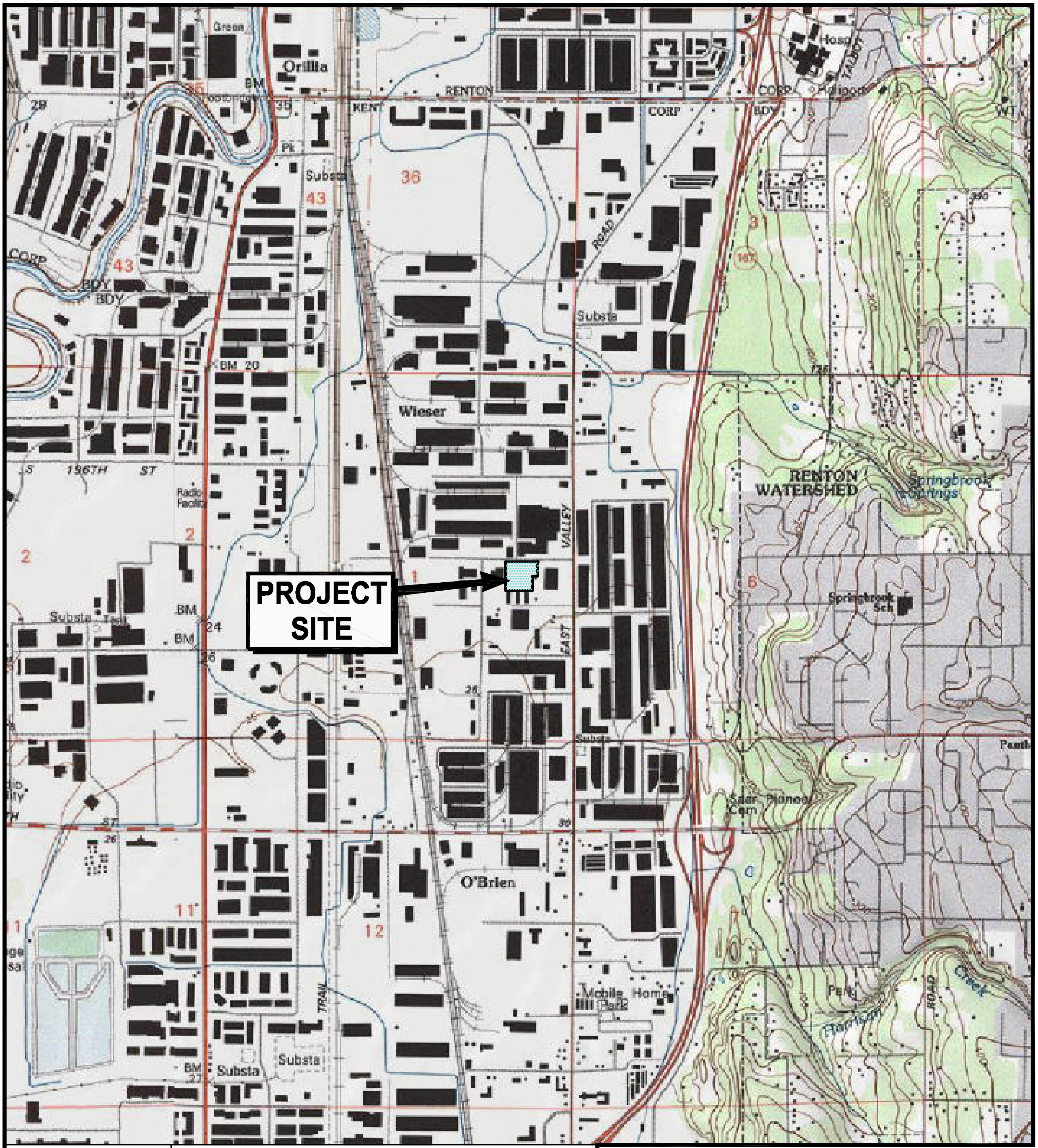
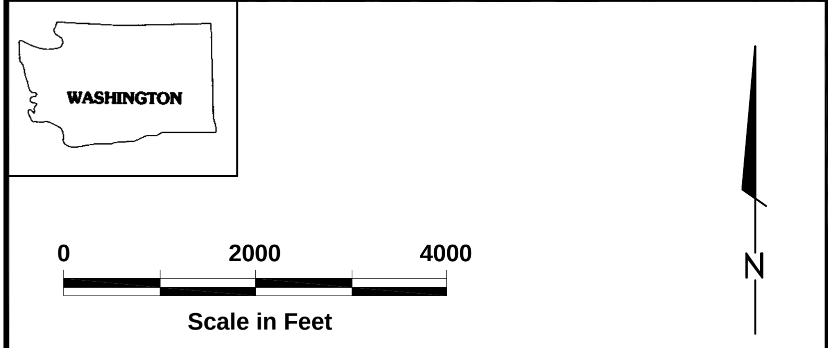
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE





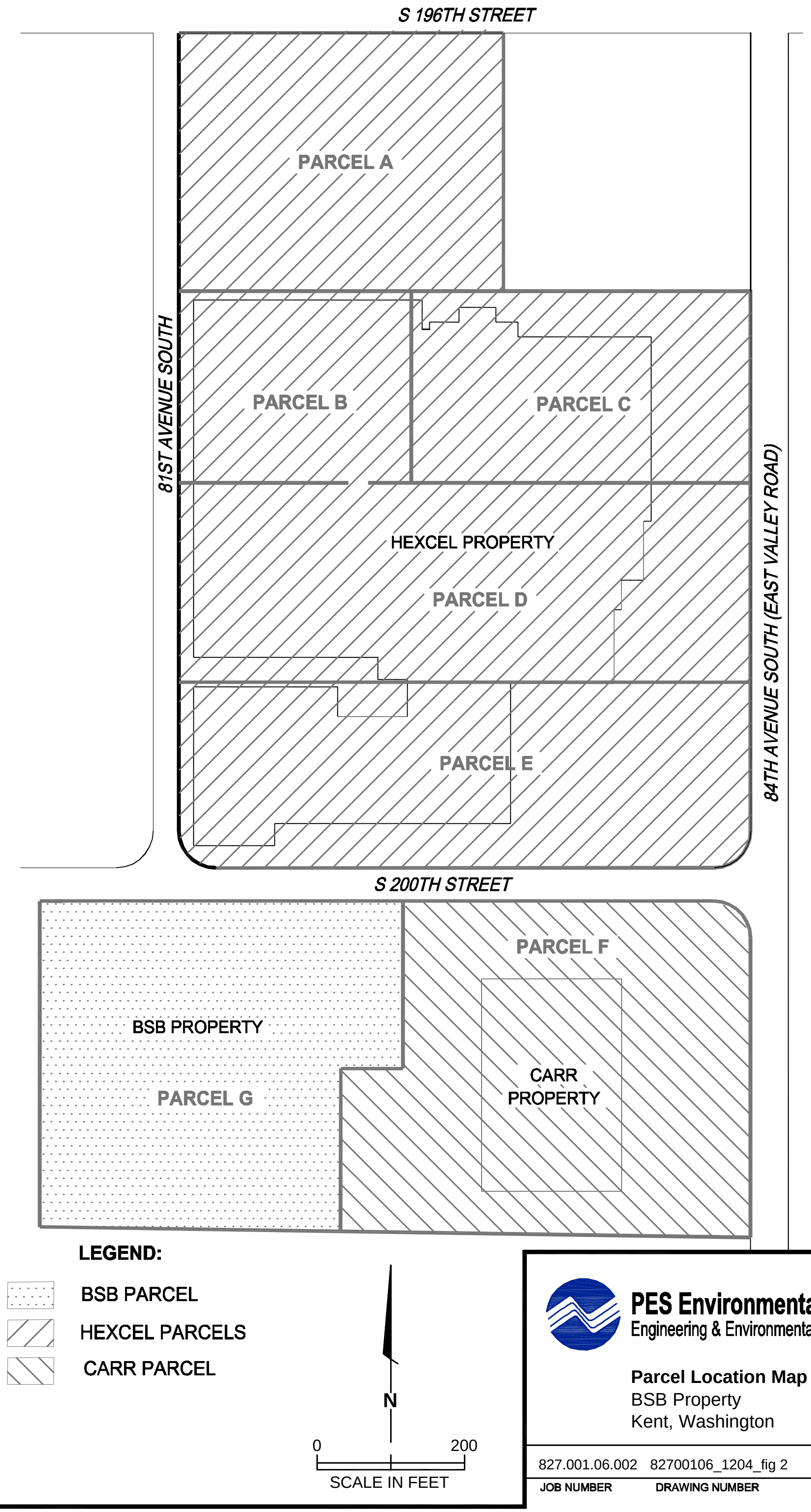
U.S.G.S. Topo Map - Renton, WA, 7.5-minute quadrangle.1949 revised 1994.

PES Environmental, Inc.
Engineering & Environmental Services

Site Location Map
BSB Property
Kent, Washington

FIGURE
1

827.001.06.002	82700106_1204_fig 1		12/04
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE

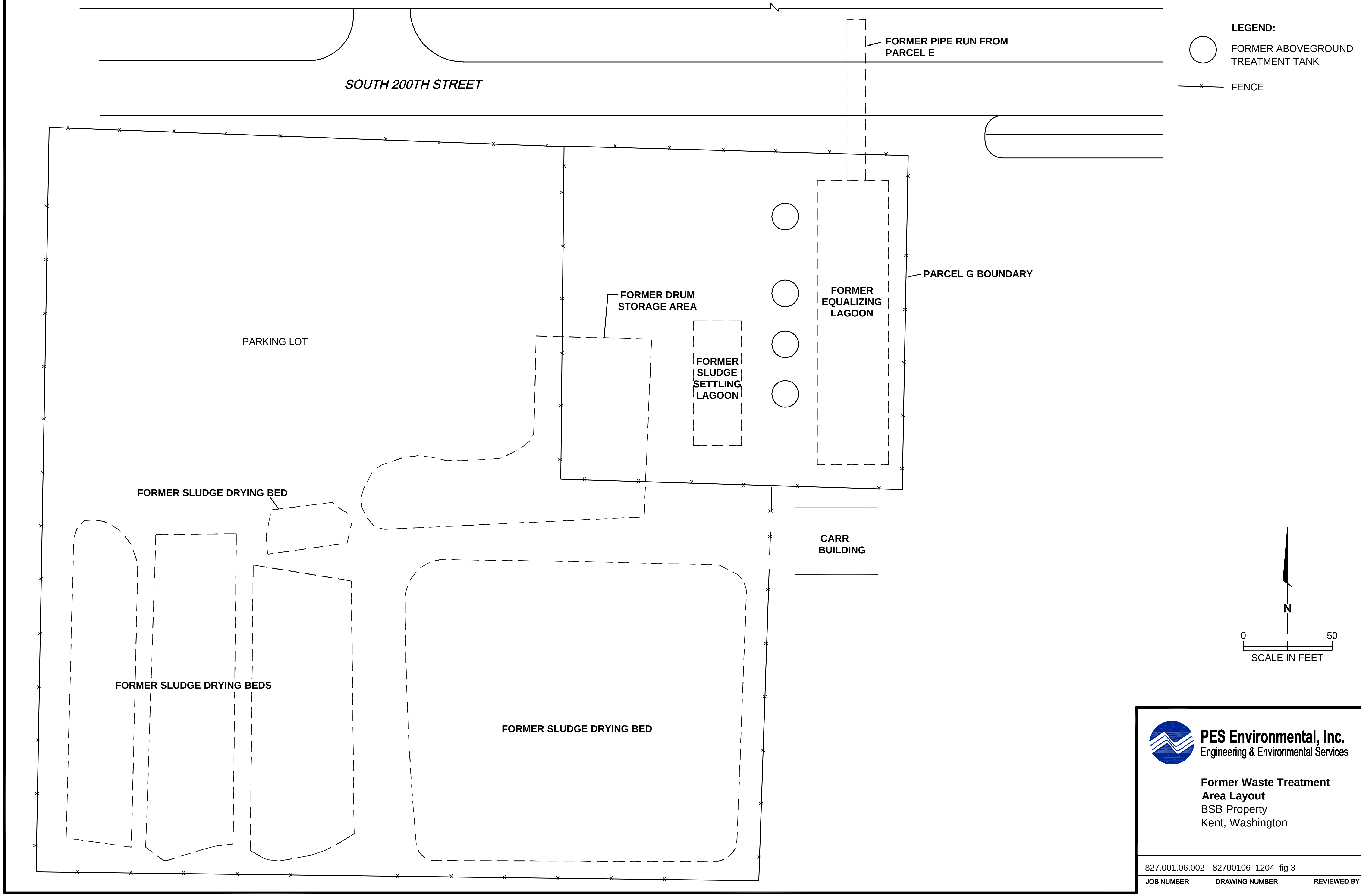


PES Environmental, Inc.
Engineering & Environmental Services

Parcel Location Map
BSB Property
Kent, Washington

FIGURE
2

827.001.06.002	82700106_1204_fig 2		12/04
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE

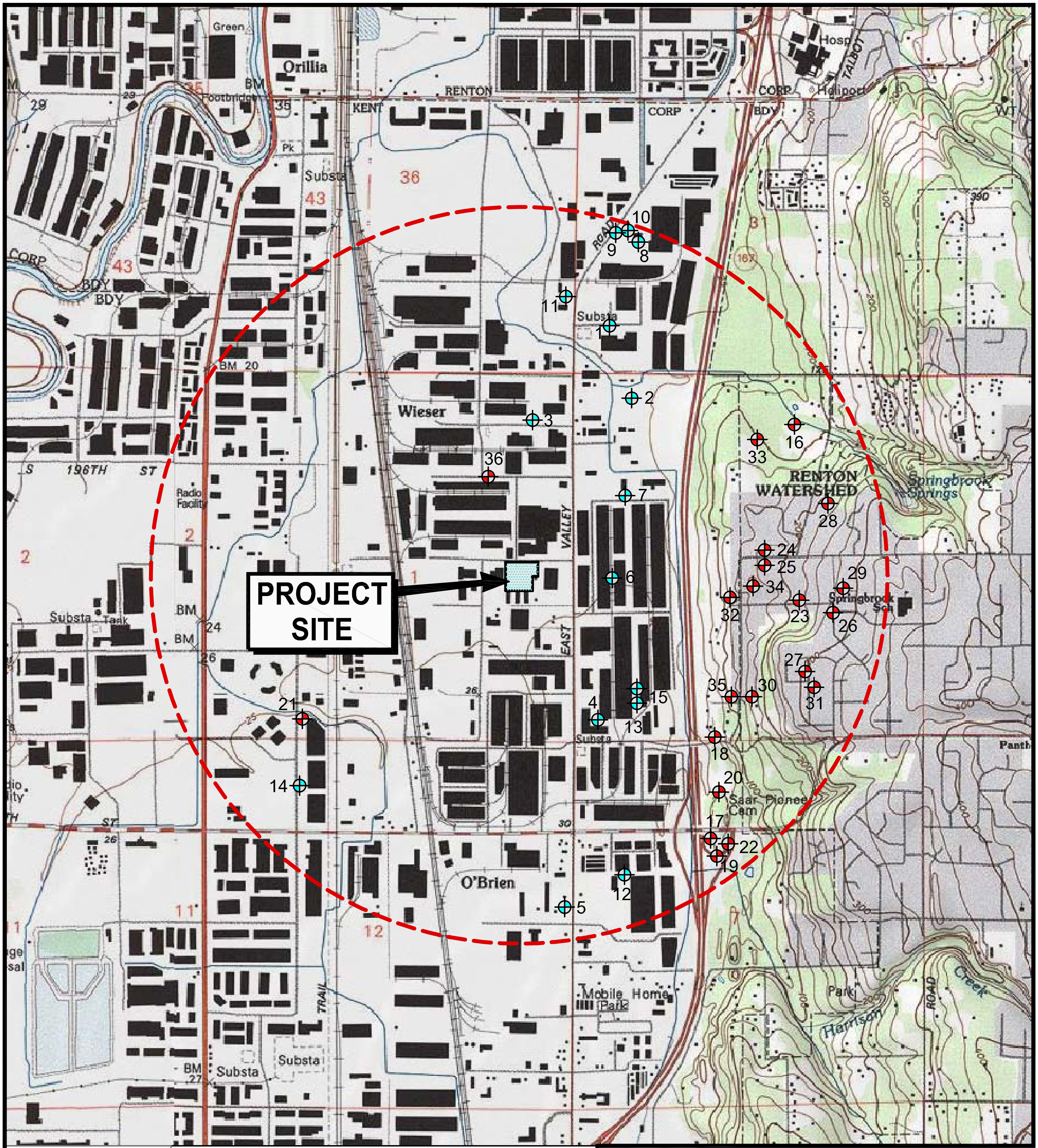


PES Environmental, Inc.
Engineering & Environmental Services

Former Waste Treatment
Area Layout
BSB Property
Kent, Washington

FIGURE
3

JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE
827.001.06.002	82700106_1204_fig 3		12/04



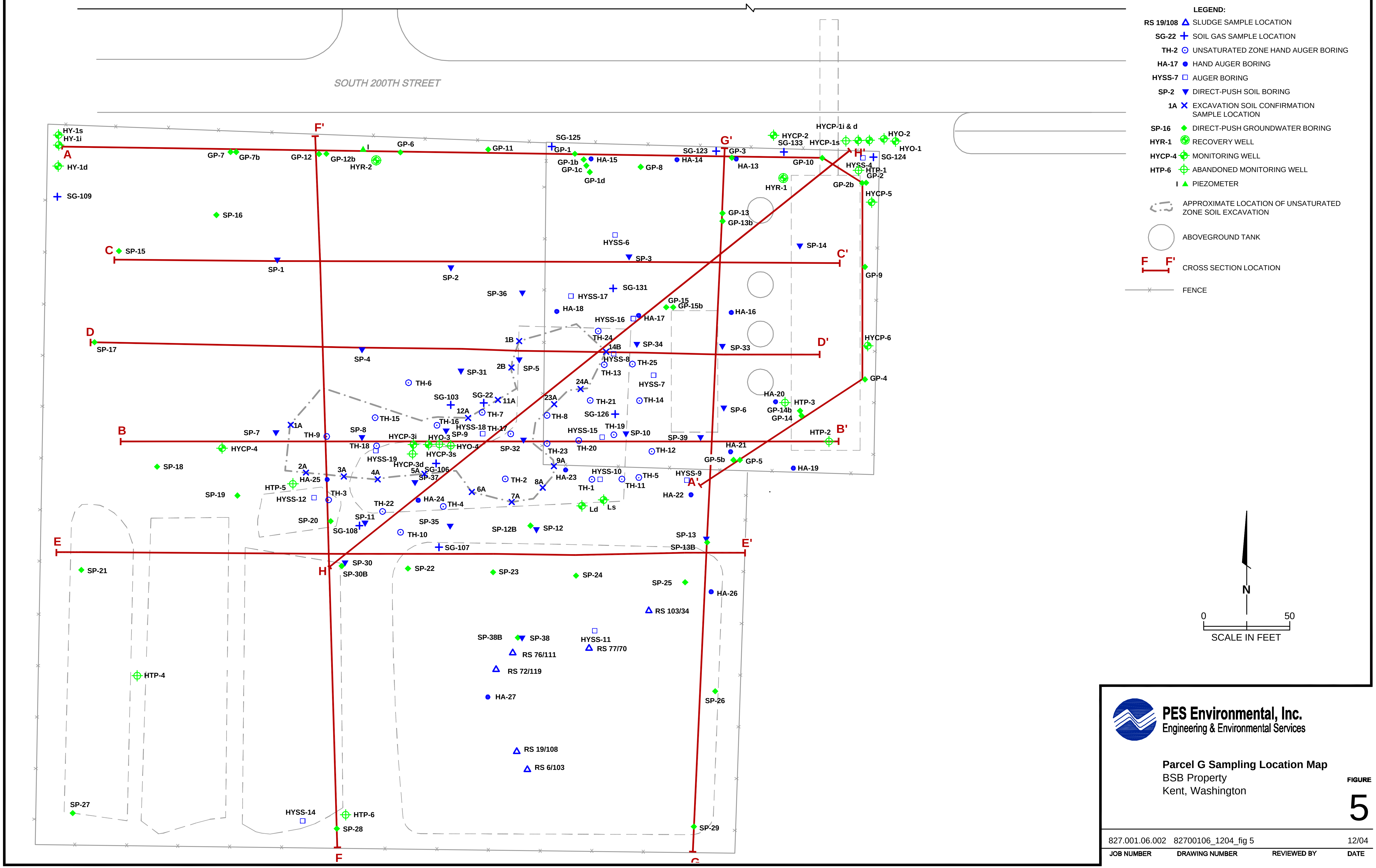
U.S.G.S. Topo Map - Renton, WA, 7.5-minute quadrangle.1949 revised 1994.

PES Environmental, Inc.
Engineering & Environmental Services

Water Supply Well Location Map
BSB Property
Kent, Washington

FIGURE
4

827.001.06.002	82700106_0805_fig 4		8/05
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE

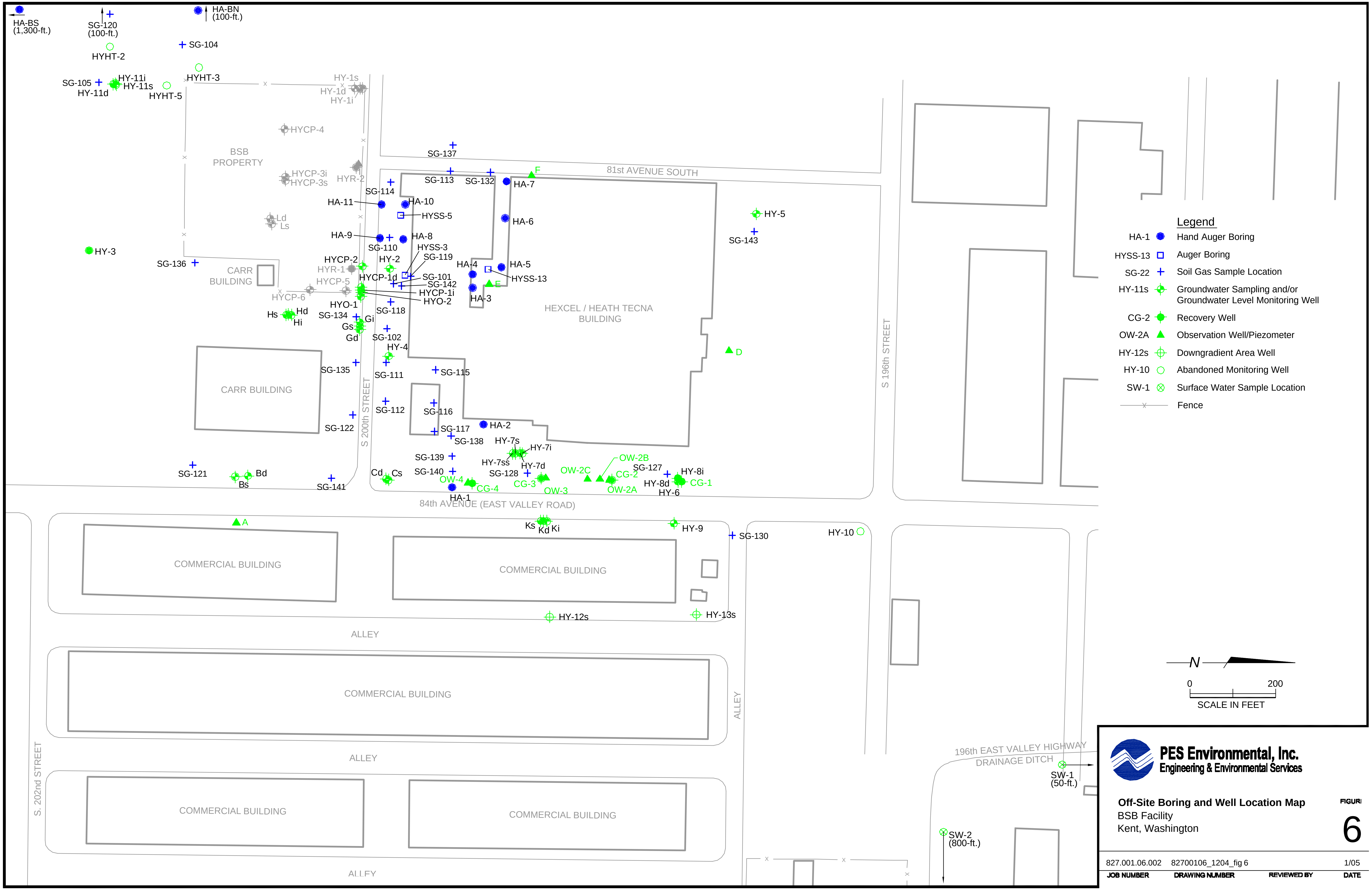


PES Environmental, Inc.
Engineering & Environmental Services

Parcel G Sampling Location Map
BSB Property
Kent, Washington

FIGURE
5

JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE
827.001.06.002	82700106_1204_fig 5		12/04

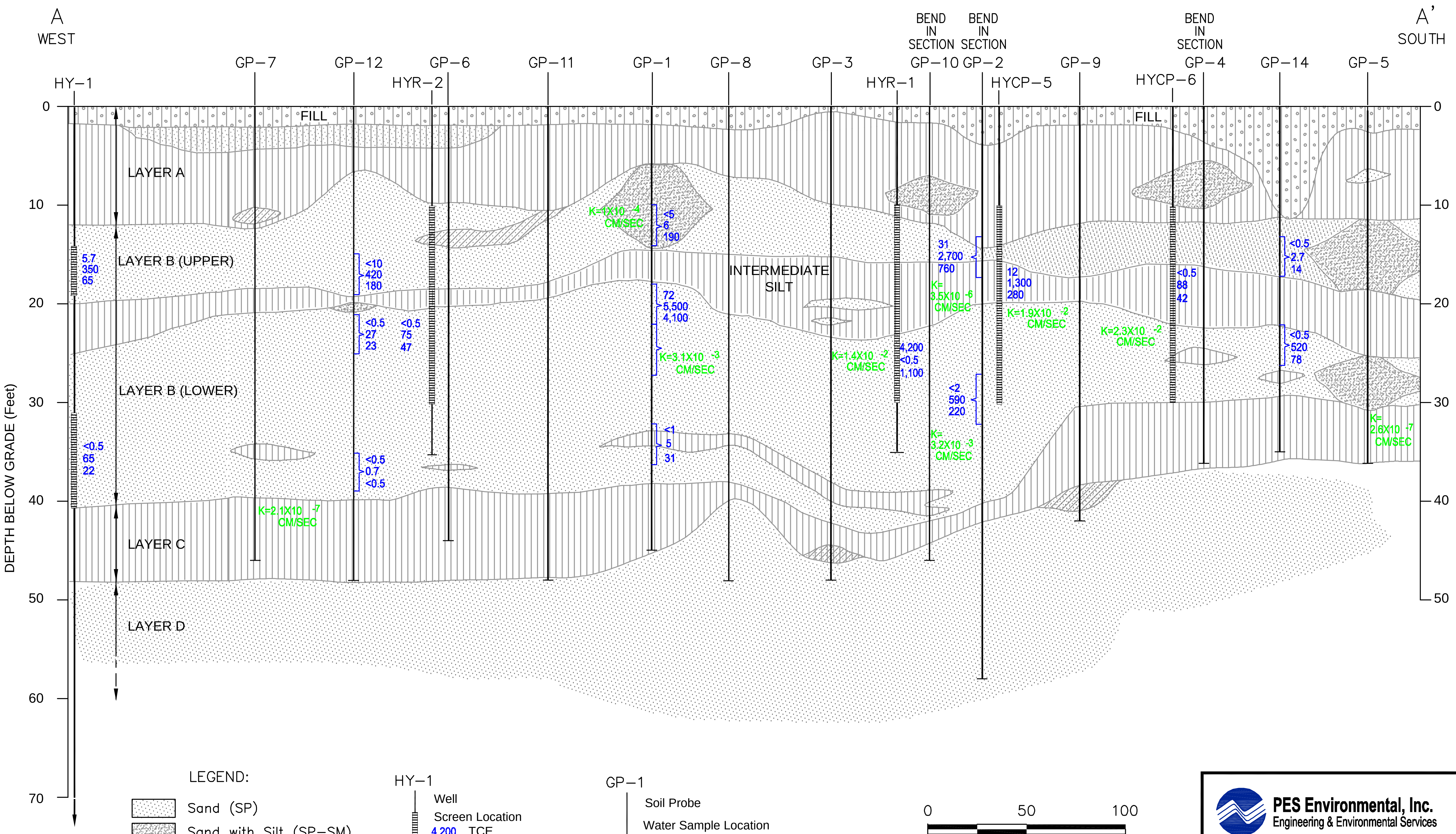


PES Environmental, Inc.
Engineering & Environmental Services

Off-Site Boring and Well Location Map
BSB Facility
Kent, Washington

FIGURE
6

827.001.06.002	82700106_1204_fig 6		1/05
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE



LEGEND:

- ⬚ Sand (SP)
- ▒ Sand with Silt (SP–SM)
- ▨ Silty Sand (SM)
- ▥ Silt (ML)

NOTE: VOC data collected in 1999.

HY–1

Well

Screen Location

4,200	TCE
<0.5	Cis-1,2-DCE
1,100	Vinyl Chloride

Results in ug/L

GP–1

Soil Probe

Water Sample Location

<5	TCE
6	Cis-1,2-DCE
190	Vinyl Chloride

Results in ug/L

0 50 100

SCALE IN FEET

VERTICAL EXAGGERATION = 5X

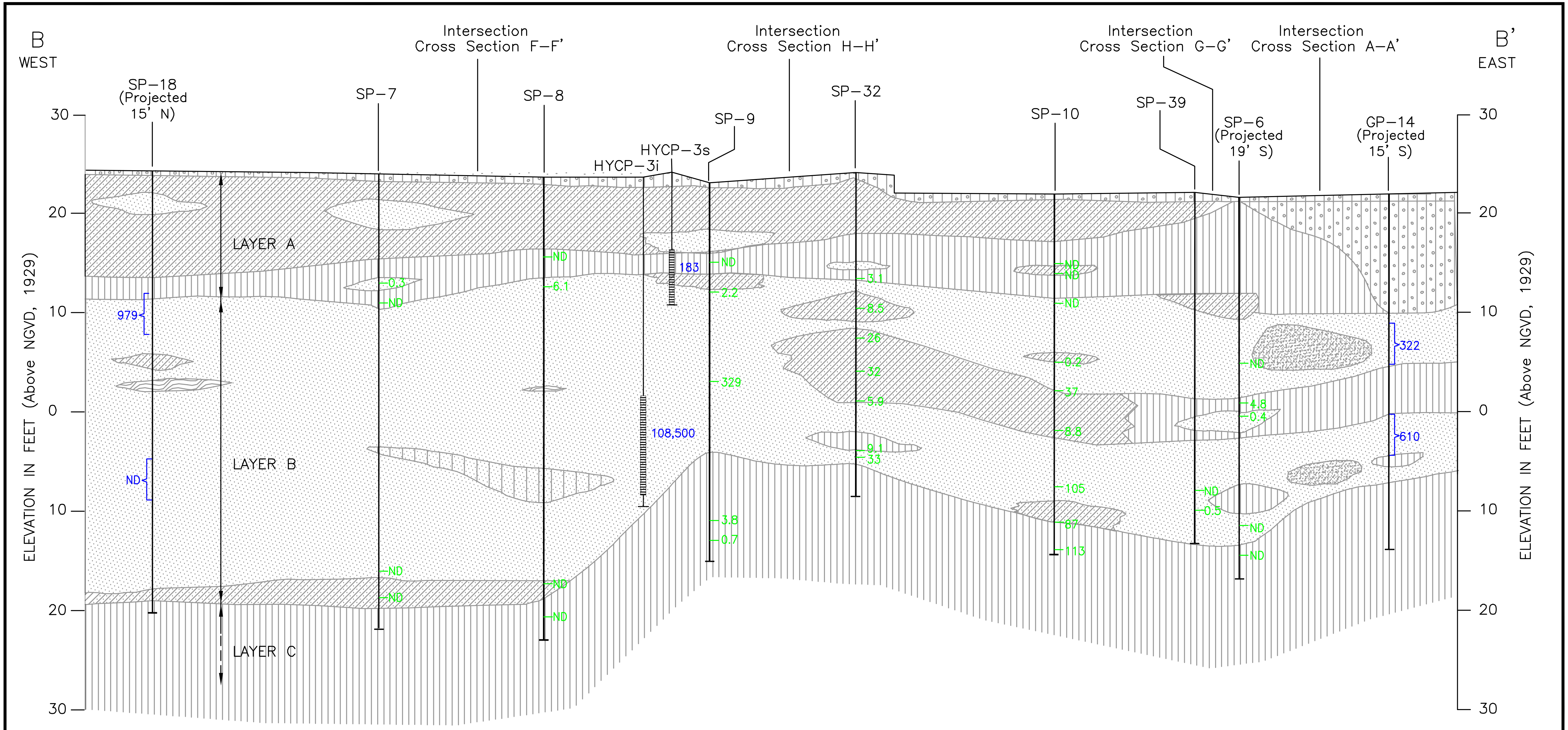
Source: IT Corporation (2001)

PES Environmental, Inc.
Engineering & Environmental Services

Geologic Cross Section A-A'
BSB Property
Kent, Washington

FIGURE
7

JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE
827.001.06.002	82700106_1204_fig 7		12/04



LEGEND:

- ▨ Sand (SP)
- ▨ Sand with Silt (SP–SM)
- ▨ Silty Sand (SM)
- ▥ Silt (ML)
- ▨ Peat (PT), Occurs locally with ML
- ▨ Sand (SP), Interbedded with Silt (ML)
- ▨ Sand (SP), and Silty Sand (SM)

HYCP–3i
Well
Screen Location
TCE
Water Sample Location
108,500 Total VOCs
Results in µg/L

GP–1
Soil Probe
Water Sample Location
30 Total VOCs
Results in µg/L
Soil Sample Location
10 Total VOCs
Results in mg/kg

ND = Not Detected
Above Listed Detection Limit
NOTE: VOC data collected in 1999 and 2000.
Source: IT Corporation (2001)

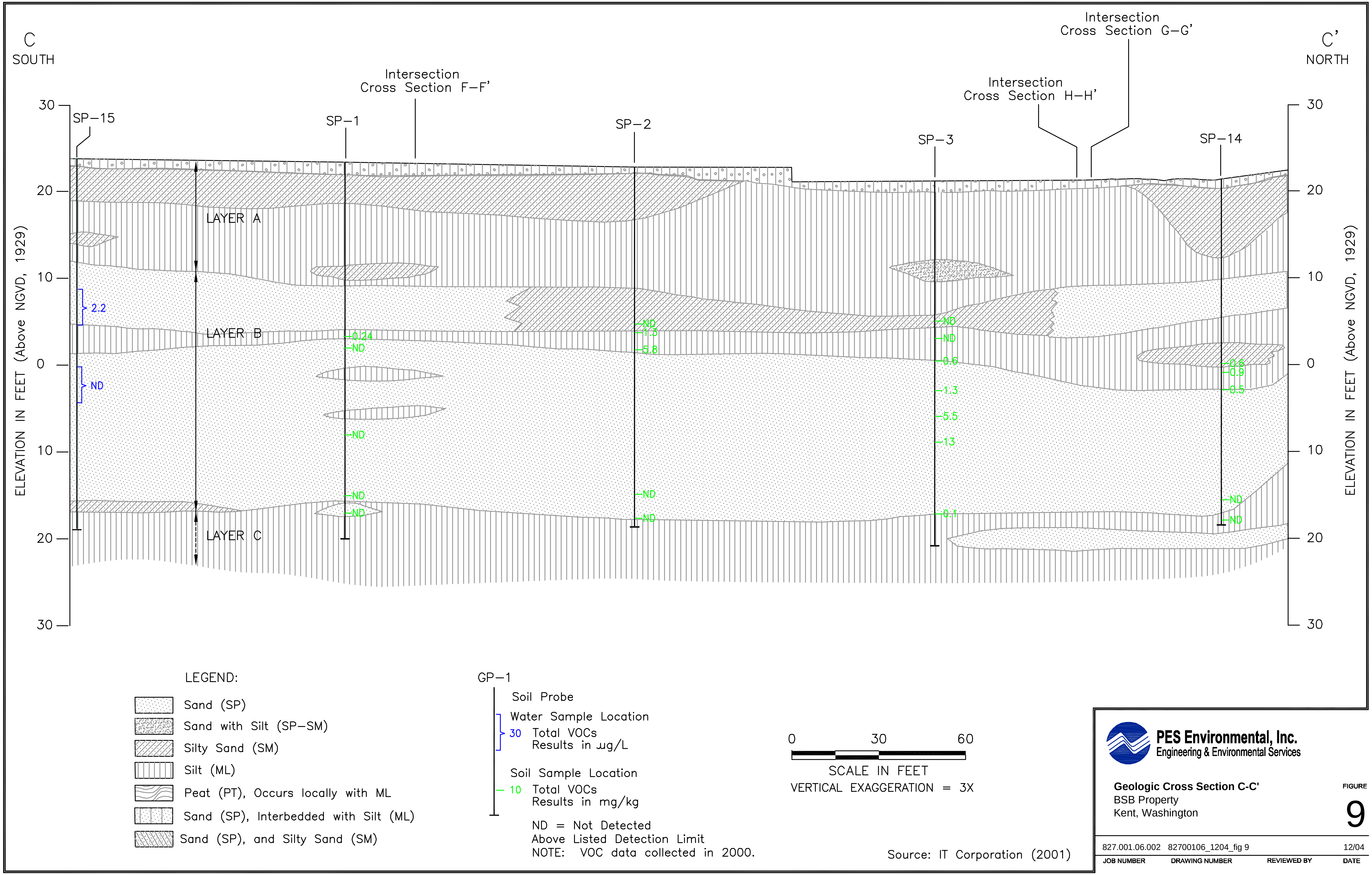
0 30 60
SCALE IN FEET
VERTICAL EXAGGERATION = 3X

PES Environmental, Inc.
Engineering & Environmental Services

Geologic Cross Section B-B'
BSB Property
Kent, Washington

FIGURE
8

JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE
827.001.06.002	82700106_1204_fig 8		12/04



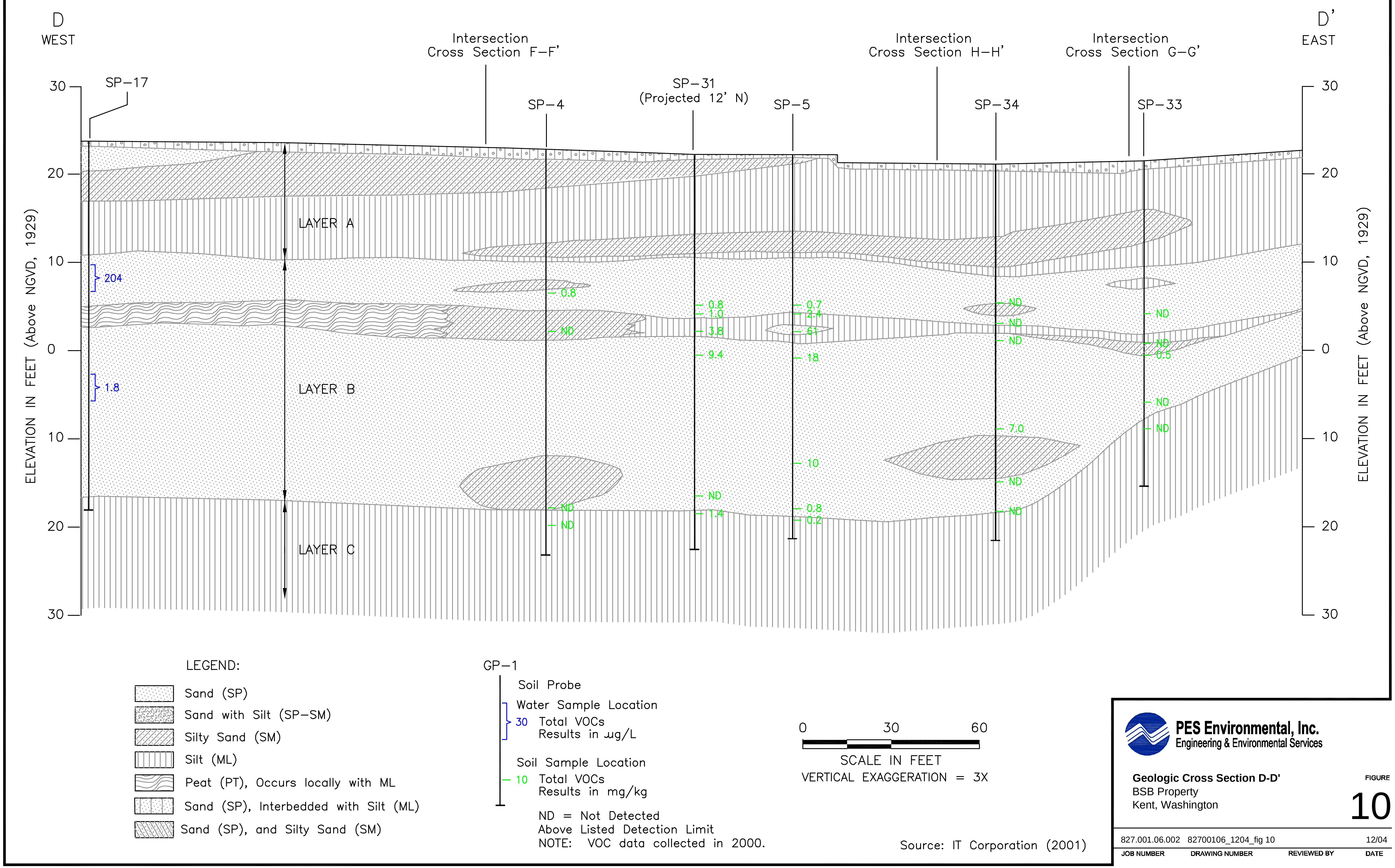
Source: IT Corporation (2001)

PES Environmental, Inc.
Engineering & Environmental Services

Geologic Cross Section C-C'
BSB Property
Kent, Washington

FIGURE
9

JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE
827.001.06.002	82700106_1204_fig 9		12/04



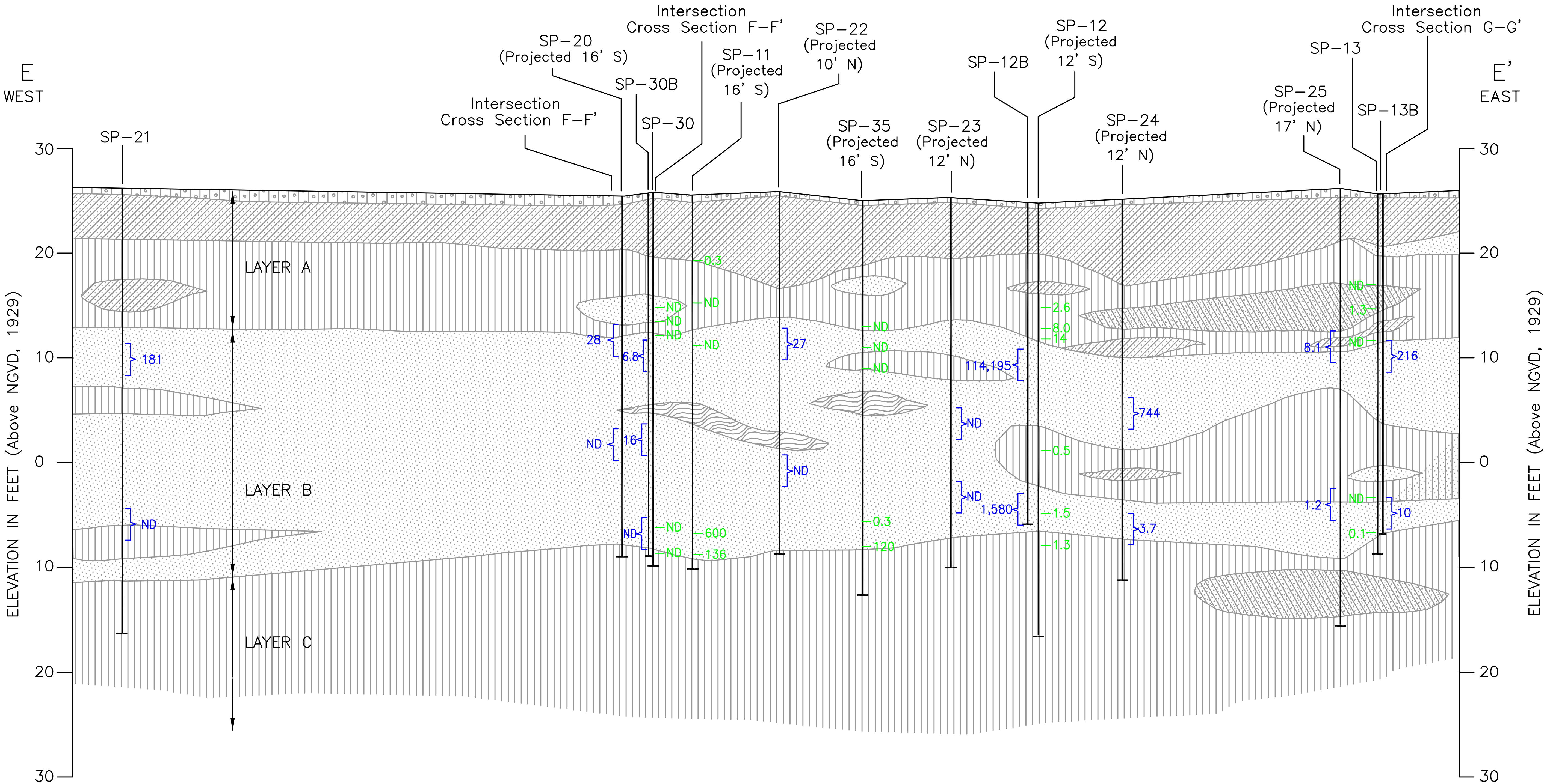
Source: IT Corporation (2001)

PES Environmental, Inc.
Engineering & Environmental Services

Geologic Cross Section D-D'
BSB Property
Kent, Washington

FIGURE
10

JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE
827.001.06.002	82700106_1204_fig 10		12/04



LEGEND:

- ▨ Sand (SP)
- ▨ Sand with Silt (SP–SM)
- ▨ Silty Sand (SM)
- ▥ Silt (ML)
- ▨ Peat (PT), Occurs locally with ML
- ▨ Sand (SP), Interbedded with Silt (ML)
- ▨ Sand (SP), and Silty Sand (SM)

GP–1

Soil Probe

Water Sample Location
30 Total VOCs
Results in µg/L

Soil Sample Location
10 Total VOCs
Results in mg/kg

ND = Not Detected
Above Listed Detection Limit
NOTE: VOC data collected in 2000.

0 30 60
SCALE IN FEET
VERTICAL EXAGGERATION = 3X

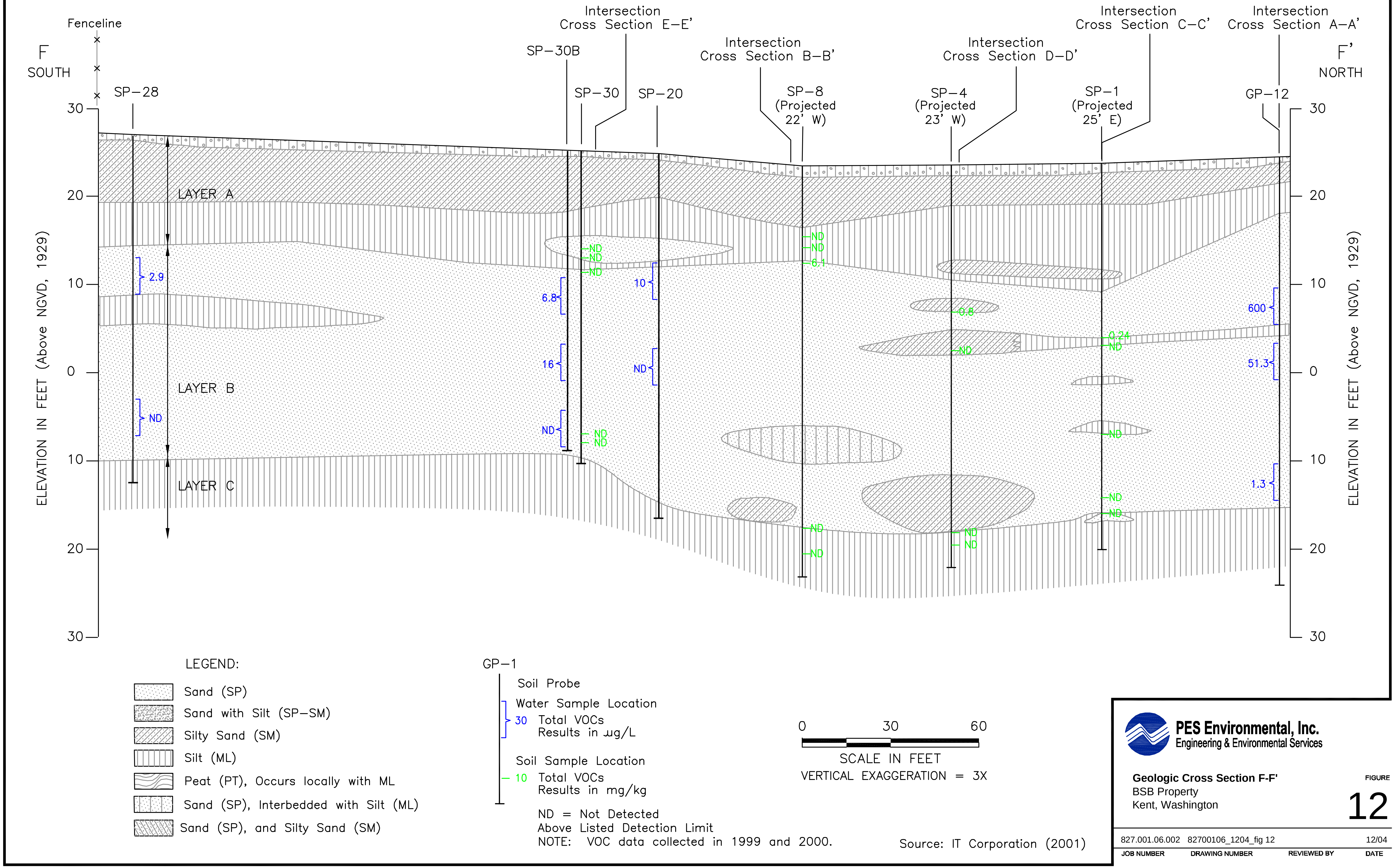
Source: IT Corporation (2001)

PES Environmental, Inc.
Engineering & Environmental Services

Geologic Cross Section E-E'
BSB Property
Kent, Washington

FIGURE
11

JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE
827.001.06.002	82700106_1204_fig 11		12/04



NOTE: VOC data collected in 1999 and 2000.

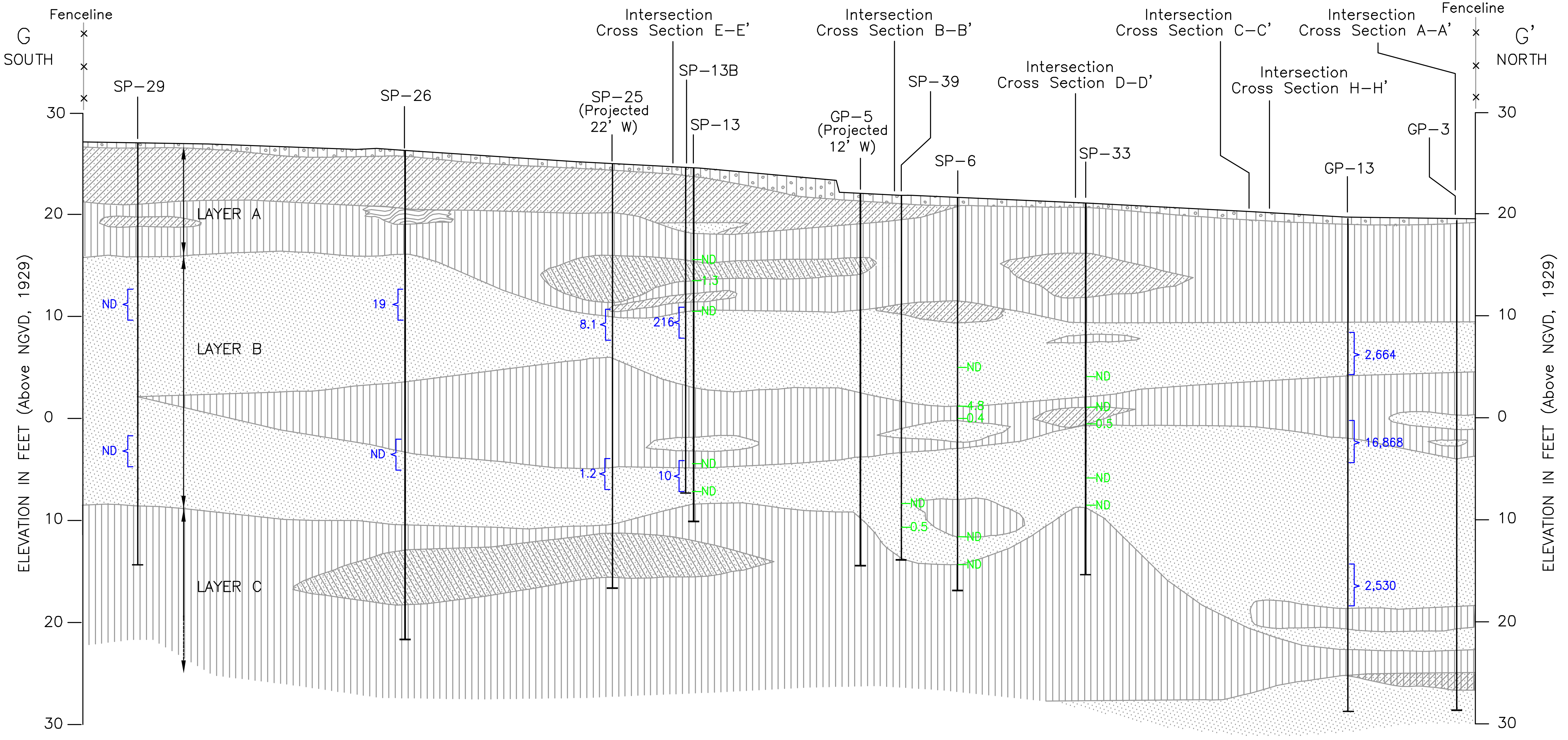
Source: IT Corporation (2001)

PES Environmental, Inc.
Engineering & Environmental Services

Geologic Cross Section F-F'
BSB Property
Kent, Washington

FIGURE
12

JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE
827.001.06.002	82700106_1204_fig 12		12/04



LEGEND:

- ▨ Sand (SP)
- ▨ Sand with Silt (SP−SM)
- ▨ Silty Sand (SM)
- ▥ Silt (ML)
- ▨ Peat (PT), Occurs locally with ML
- ▨ Sand (SP), Interbedded with Silt (ML)
- ▨ Sand (SP), and Silty Sand (SM)

GP−1
Soil Probe

Water Sample Location
30 Total VOCs
Results in µg/L

Soil Sample Location
10 Total VOCs
Results in mg/kg

ND = Not Detected
Above Listed Detection Limit
NOTE: VOC data collected in 1999 and 2000.

0 30 60
SCALE IN FEET
VERTICAL EXAGGERATION = 3X

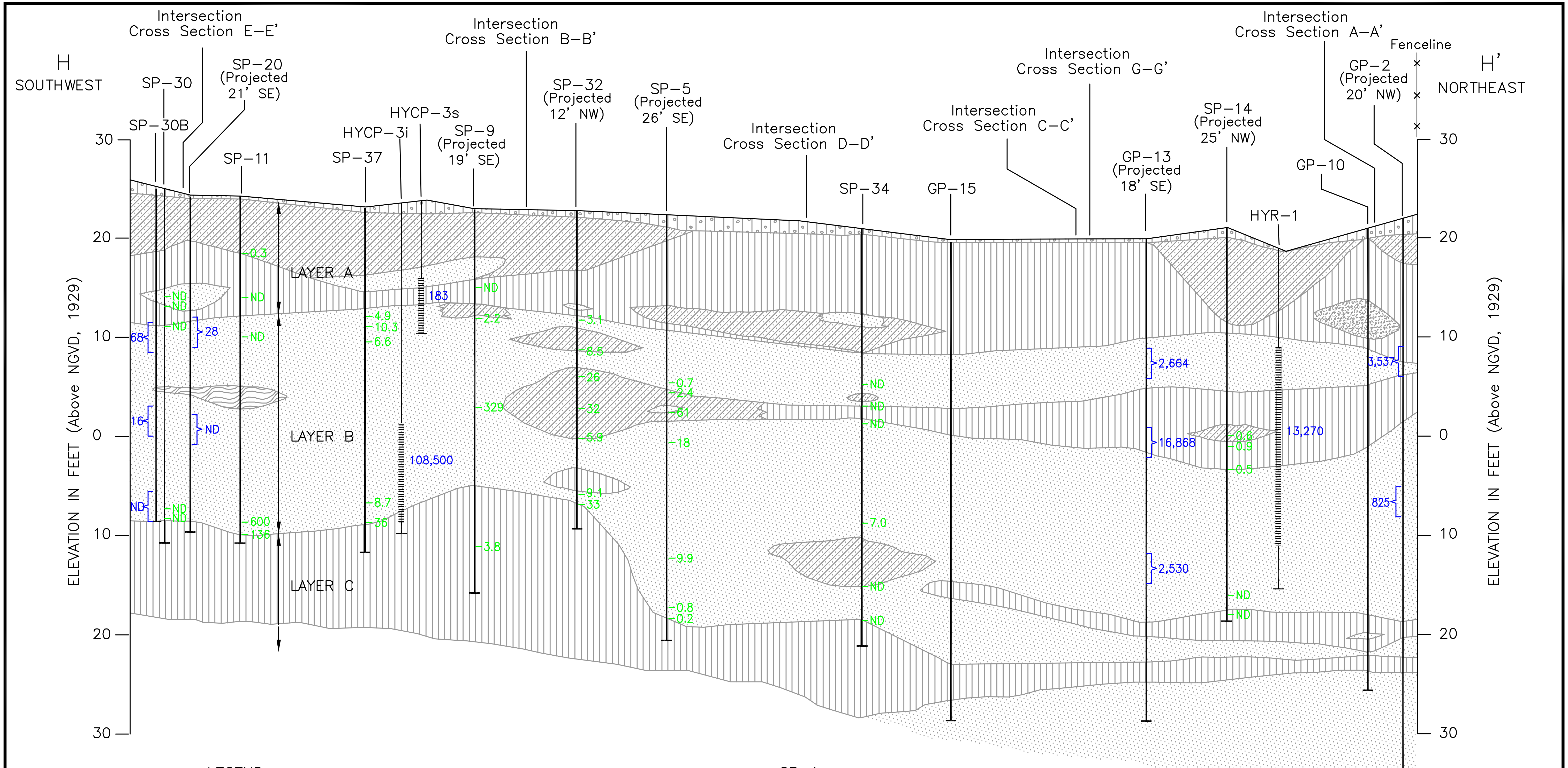
Source: IT Corporation (2001)

PES Environmental, Inc.
Engineering & Environmental Services

Geologic Cross Section G-G'
BSB Property
Kent, Washington

FIGURE
13

JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE
827.001.06.002	82700106_1204_fig 13		12/04



LEGEND:

- ░ Sand (SP)
- ▒ Sand with Silt (SP–SM)
- ▨ Silty Sand (SM)
- ▥ Silt (ML)
- ≋ Peat (PT), Occurs locally with ML
- ▦ Sand (SP), Interbedded with Silt (ML)
- ▧ Sand (SP), and Silty Sand (SM)

HYCP–3i
Well
Screen Location
TCE
Water Sample Location
108,500 Total VOCs
Results in µg/L

Source: IT Corporation (2001)

GP–1
Soil Probe
Water Sample Location
30 Total VOCs
Results in µg/L
Soil Sample Location
10 Total VOCs
Results in mg/kg
ND = Not Detected
Above Listed Detection Limit
NOTE: VOC data collected in 1999 and 2000.

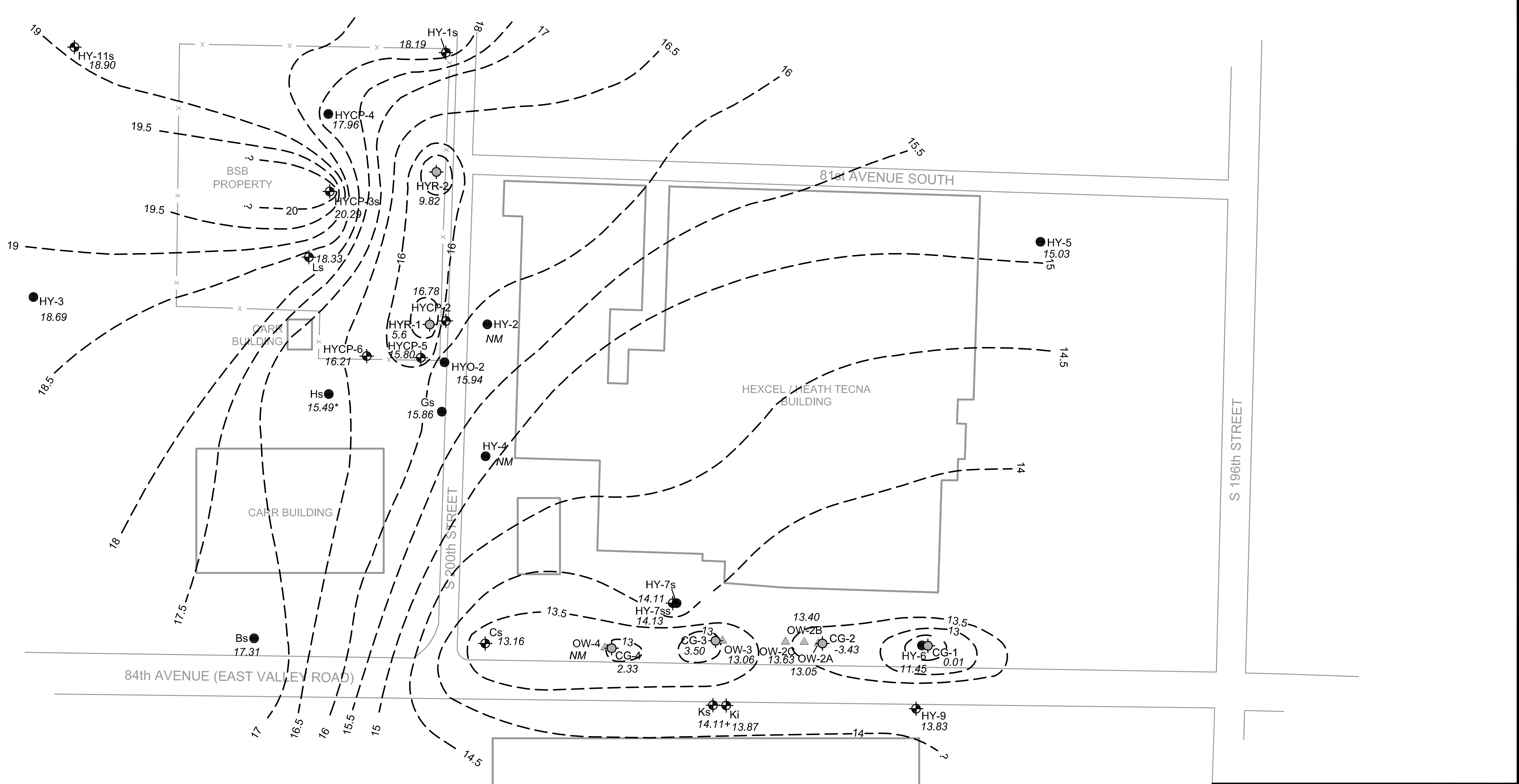
0 30 60
SCALE IN FEET
VERTICAL EXAGGERATION = 3X

PES Environmental, Inc.
Engineering & Environmental Services

Geologic Cross Section H-H'
BSB Property
Kent, Washington

FIGURE
14

827.001.06.002	82700106_1204_fig 14		12/04
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE



Legend

HY-11s ⊕	Groundwater Sampling and Groundwater Level Monitoring Well
CG-2 ⊕	Recovery Well
HYCP-4 ●	Water Level Monitoring Well
OW-2A ▲	Piezometer/Observation Well
*	Anomalous Groundwater Elevation Not Used in Contouring
NM	Not Measured
+	Groundwater Elevation Not Used in Contouring Due to Shallow Well Screen
—x—	Fence

N

0 150

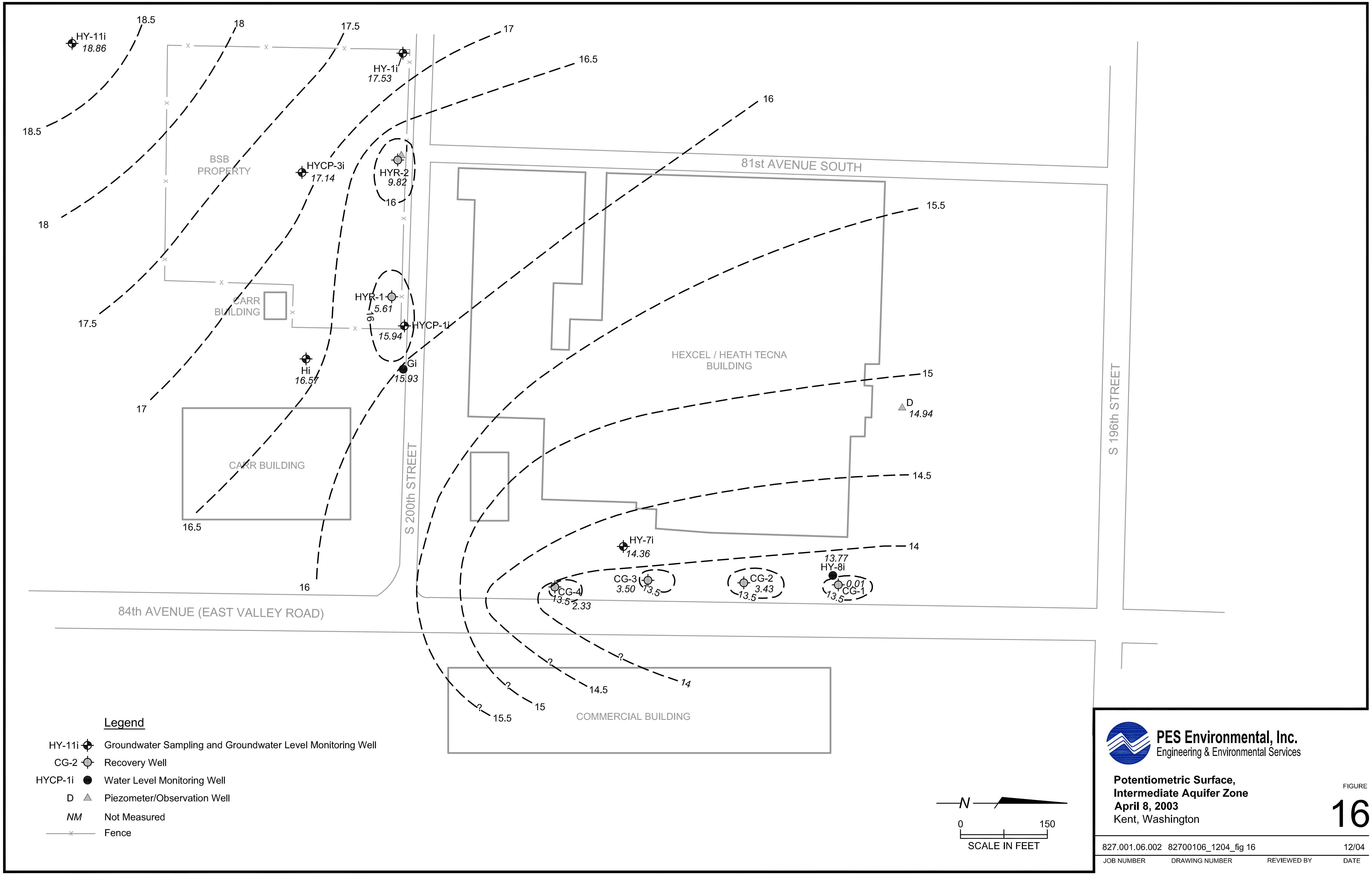
SCALE IN FEET

PES Environmental, Inc.
Engineering & Environmental Services

Water Table, Shallow Aquifer Zone
April 8, 2003
Kent, Washington

FIGURE
15

JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE
827.001.06.002	82700106_1204_fig 15		12/04

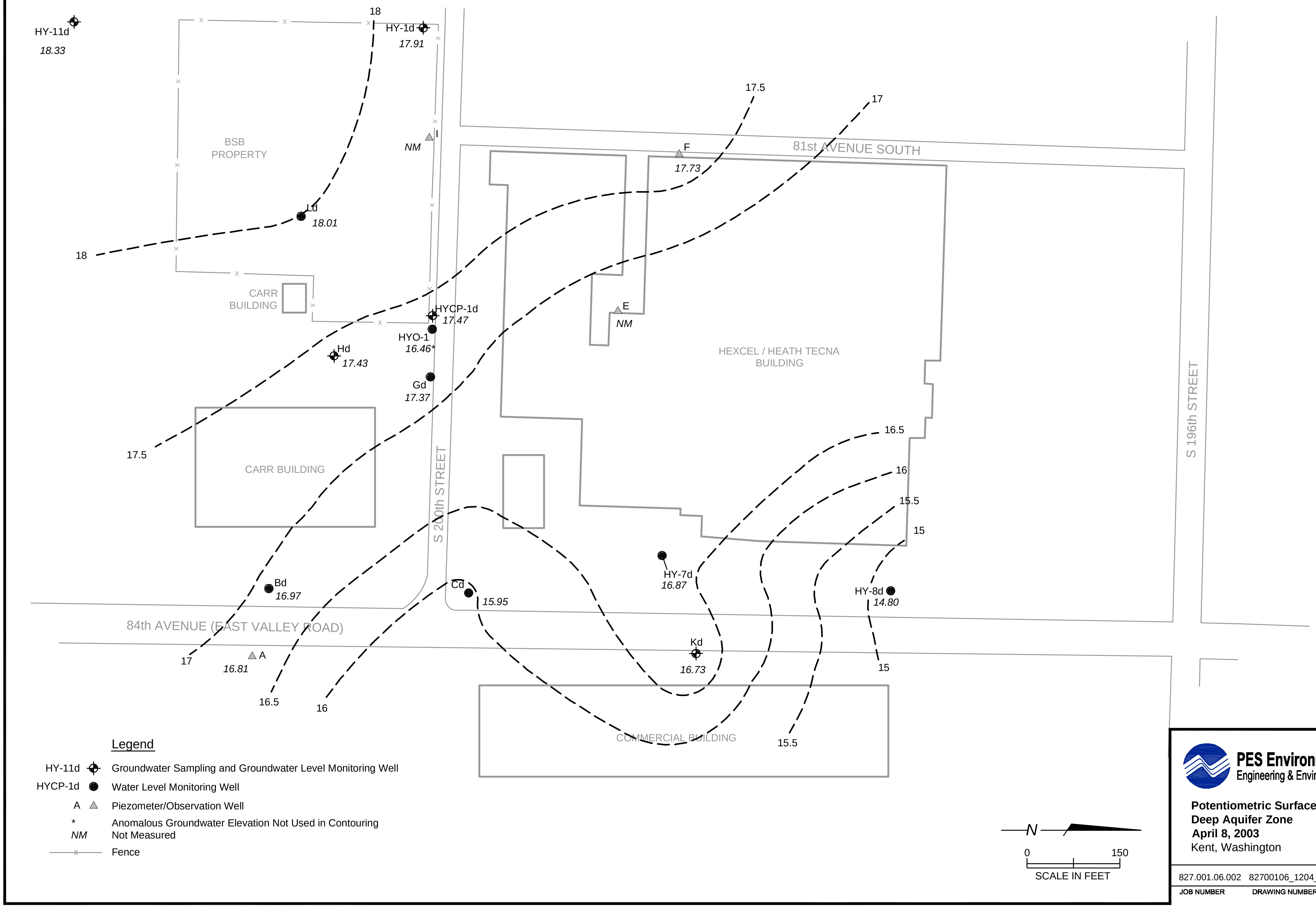


PES Environmental, Inc.
Engineering & Environmental Services

Potentiometric Surface, Intermediate Aquifer Zone
April 8, 2003
Kent, Washington

FIGURE
16

JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE
827.001.06.002	82700106_1204_fig 16		12/04

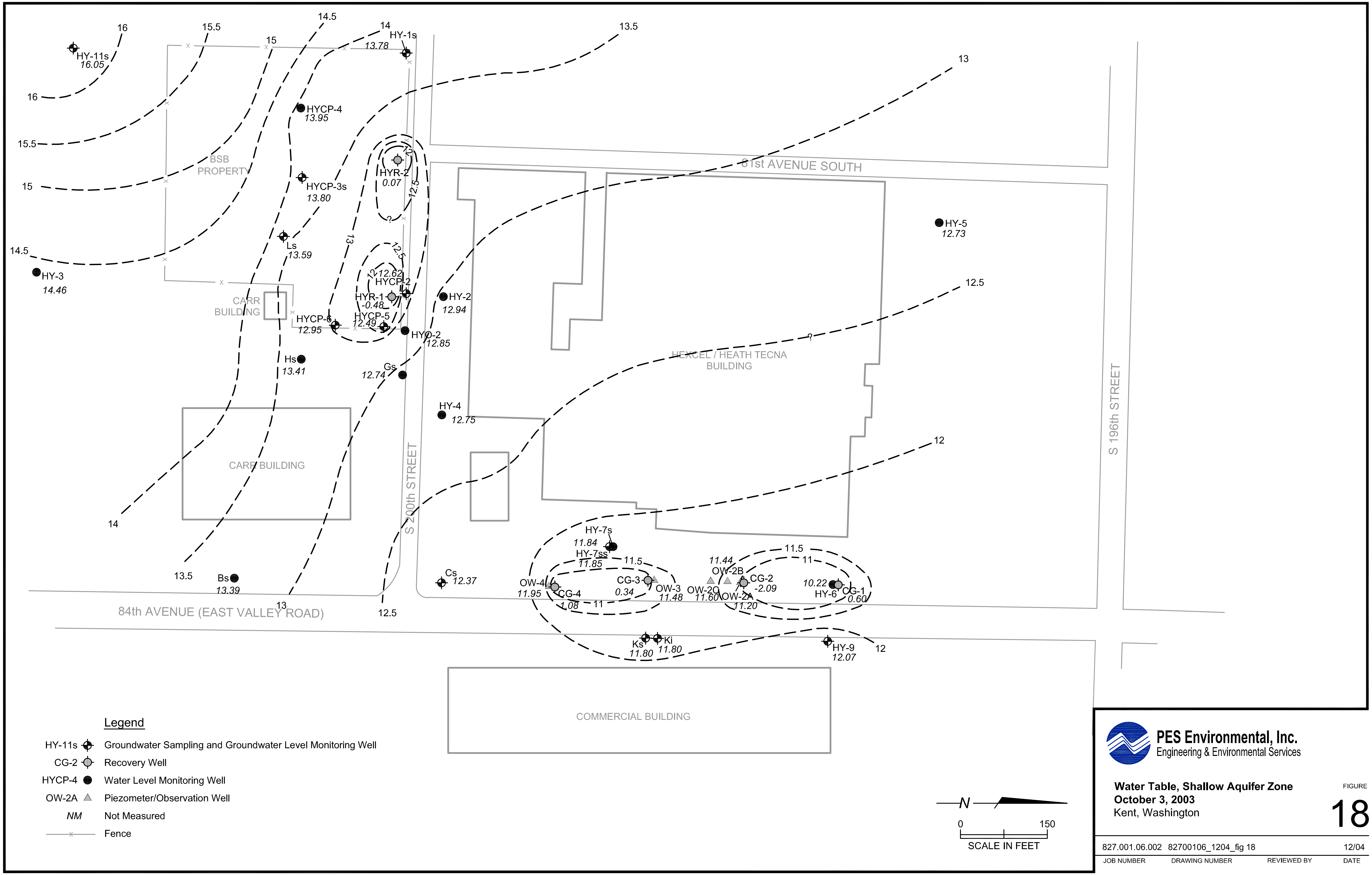


PES Environmental, Inc.
Engineering & Environmental Services

Potentiometric Surface,
Deep Aquifer Zone
April 8, 2003
Kent, Washington

FIGURE
17

JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE
827.001.06.002	82700106_1204_fig 17		12/04



Legend

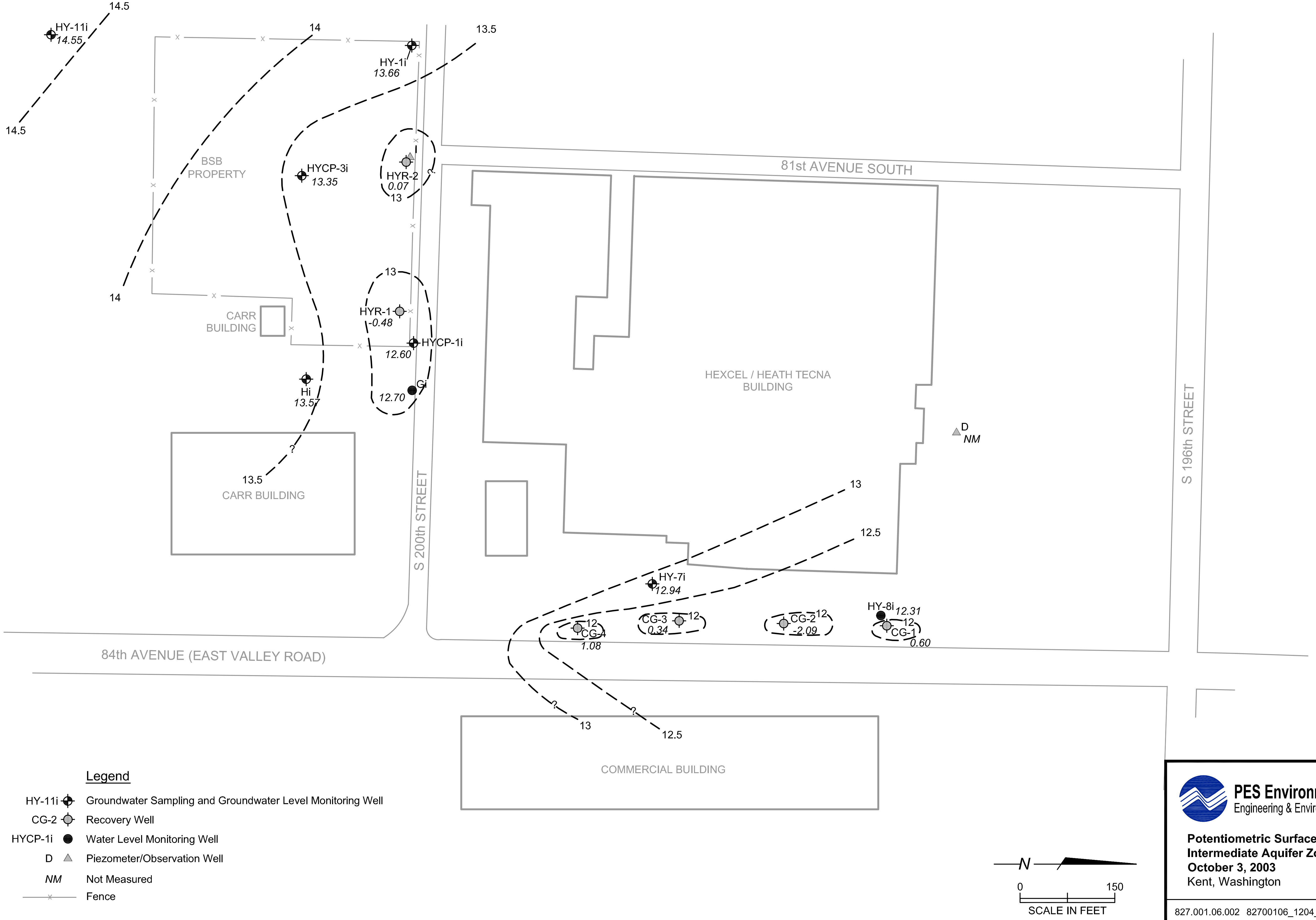
HY-11s ⌖	Groundwater Sampling and Groundwater Level Monitoring Well
CG-2 ⌖	Recovery Well
HYCP-4 ●	Water Level Monitoring Well
OW-2A ▲	Piezometer/Observation Well
NM	Not Measured
—x—	Fence

PES Environmental, Inc.
Engineering & Environmental Services

Water Table, Shallow Aquifer Zone
October 3, 2003
Kent, Washington

FIGURE
18

JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE
827.001.06.002	82700106_1204_fig 18		12/04

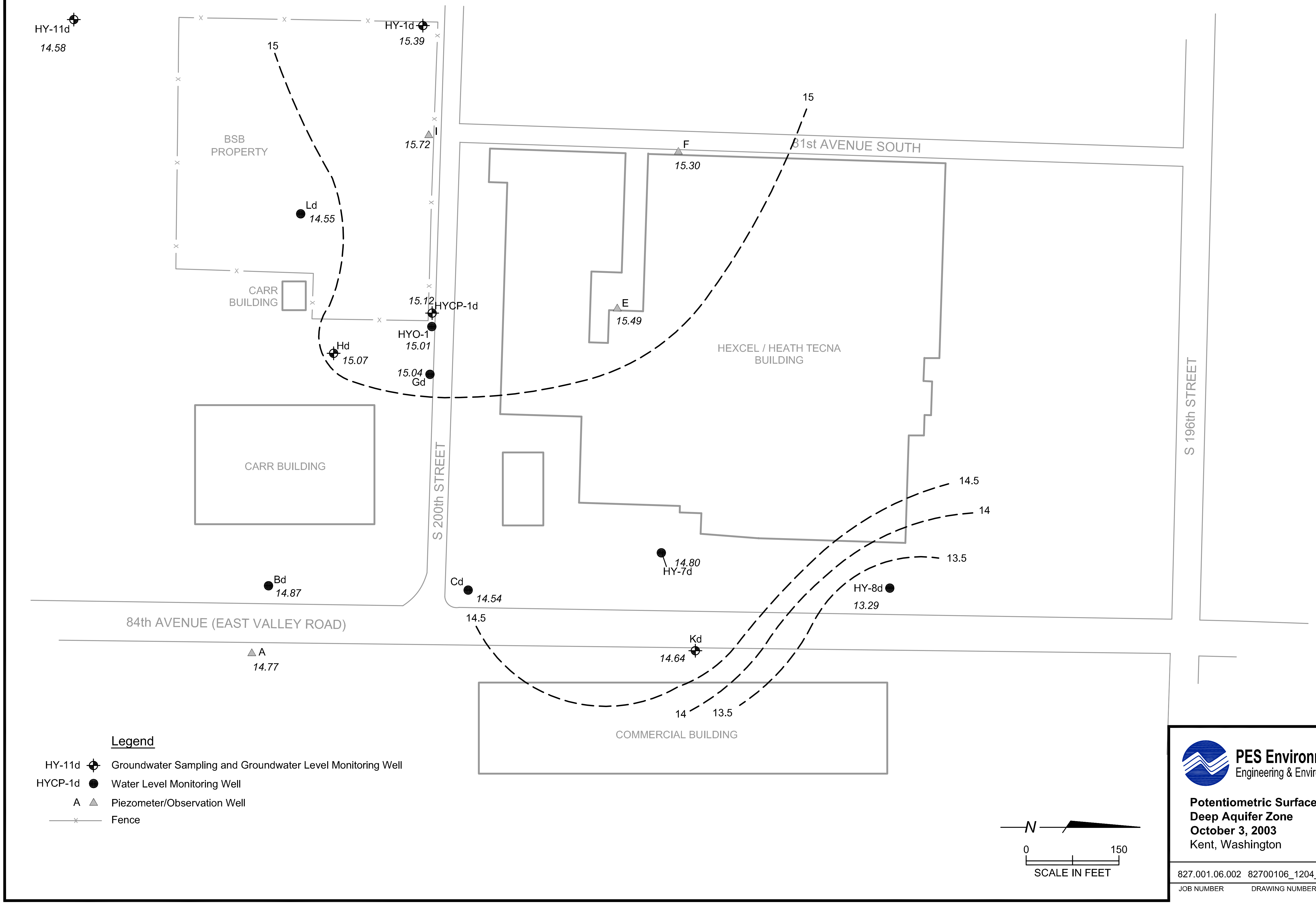


PES Environmental, Inc.
Engineering & Environmental Services

Potentiometric Surface,
Intermediate Aquifer Zone
October 3, 2003
Kent, Washington

FIGURE
19

JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE
827.001.06.002	82700106_1204_fig 19		12/04

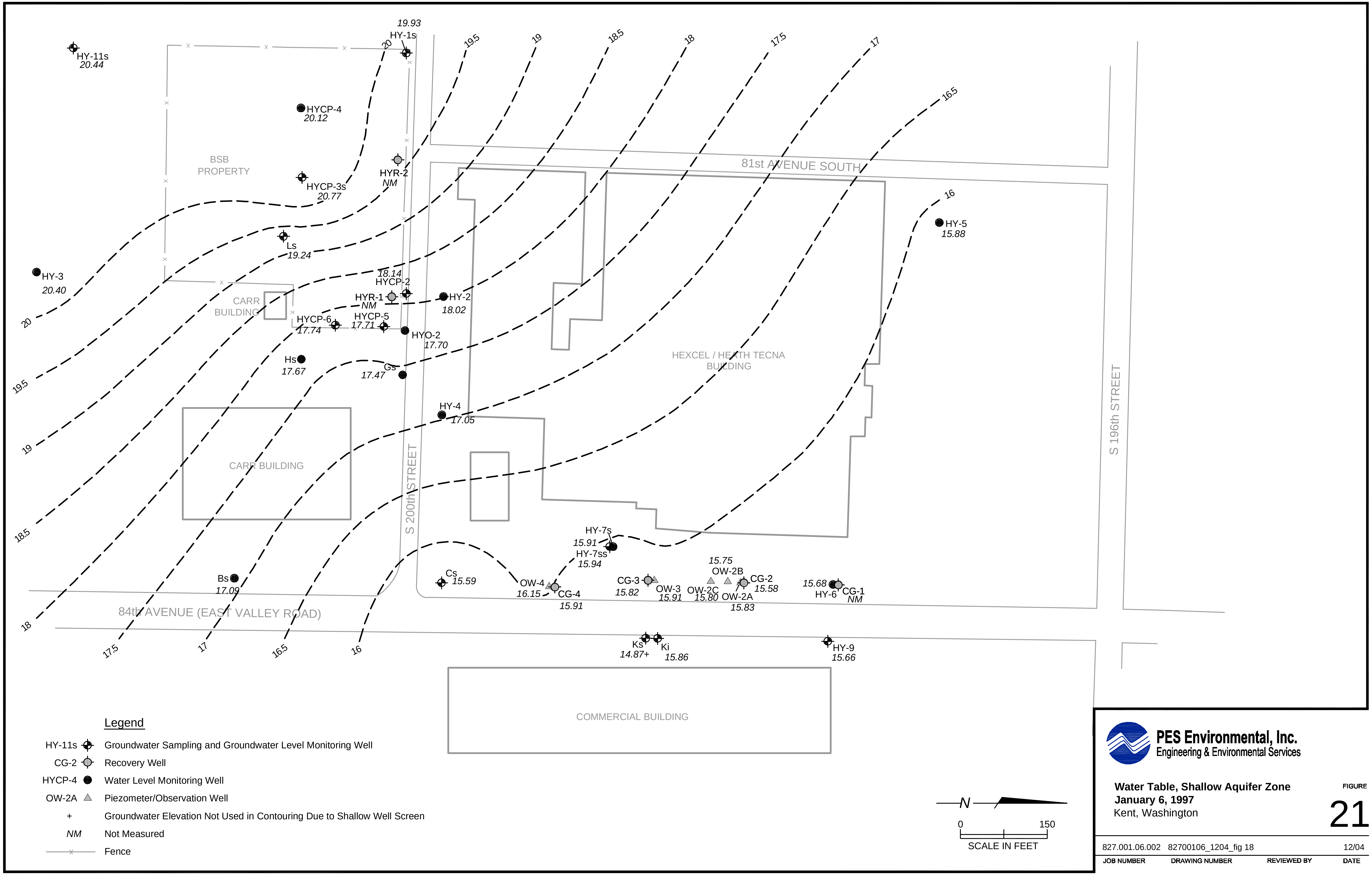


PES Environmental, Inc.
Engineering & Environmental Services

Potentiometric Surface,
Deep Aquifer Zone
October 3, 2003
Kent, Washington

FIGURE
20

JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE
827.001.06.002	82700106_1204_fig 20		12/04

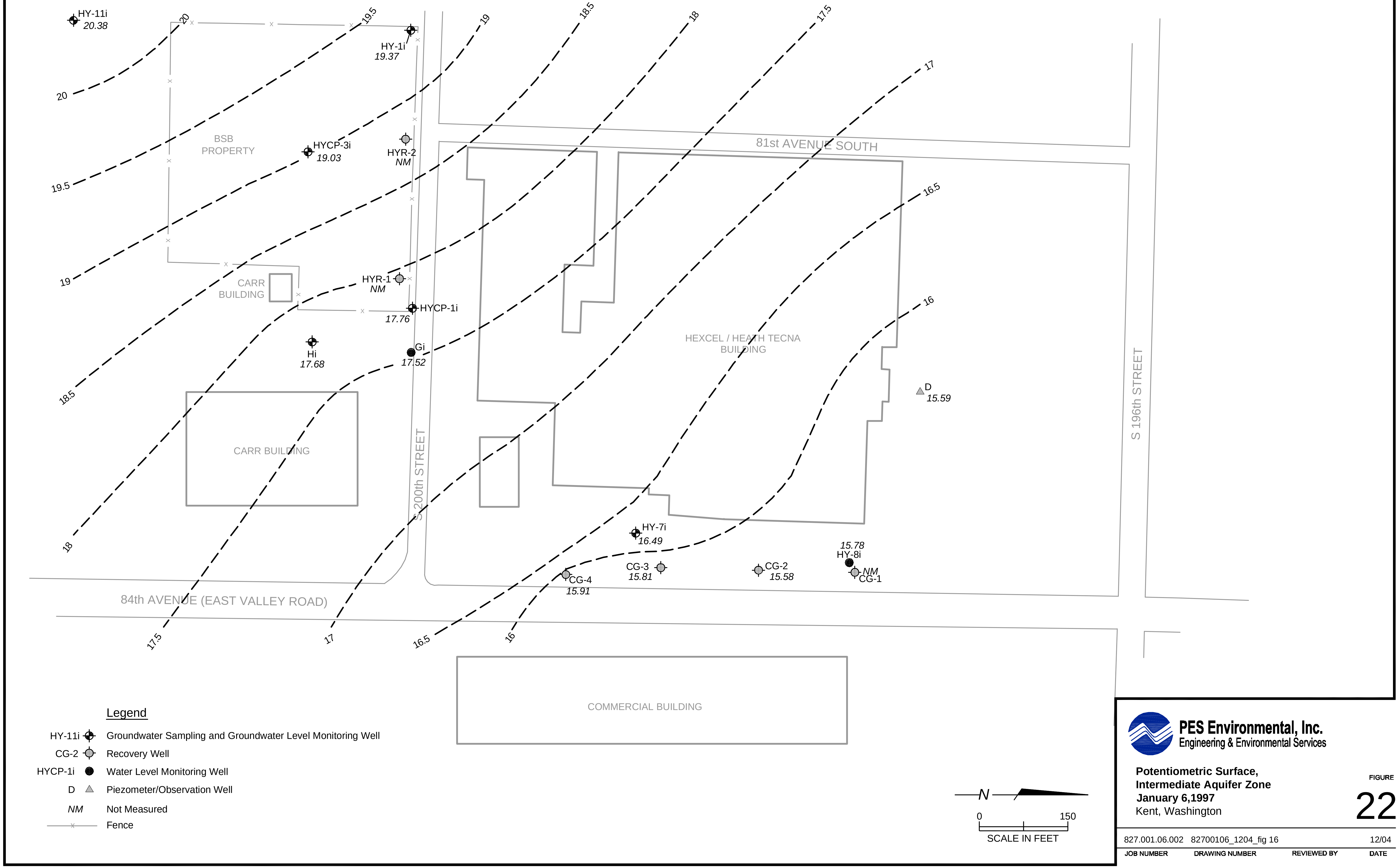


PES Environmental, Inc.
Engineering & Environmental Services

Water Table, Shallow Aquifer Zone
January 6, 1997
Kent, Washington

FIGURE
21

JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE
827.001.06.002	82700106_1204_fig 18		12/04

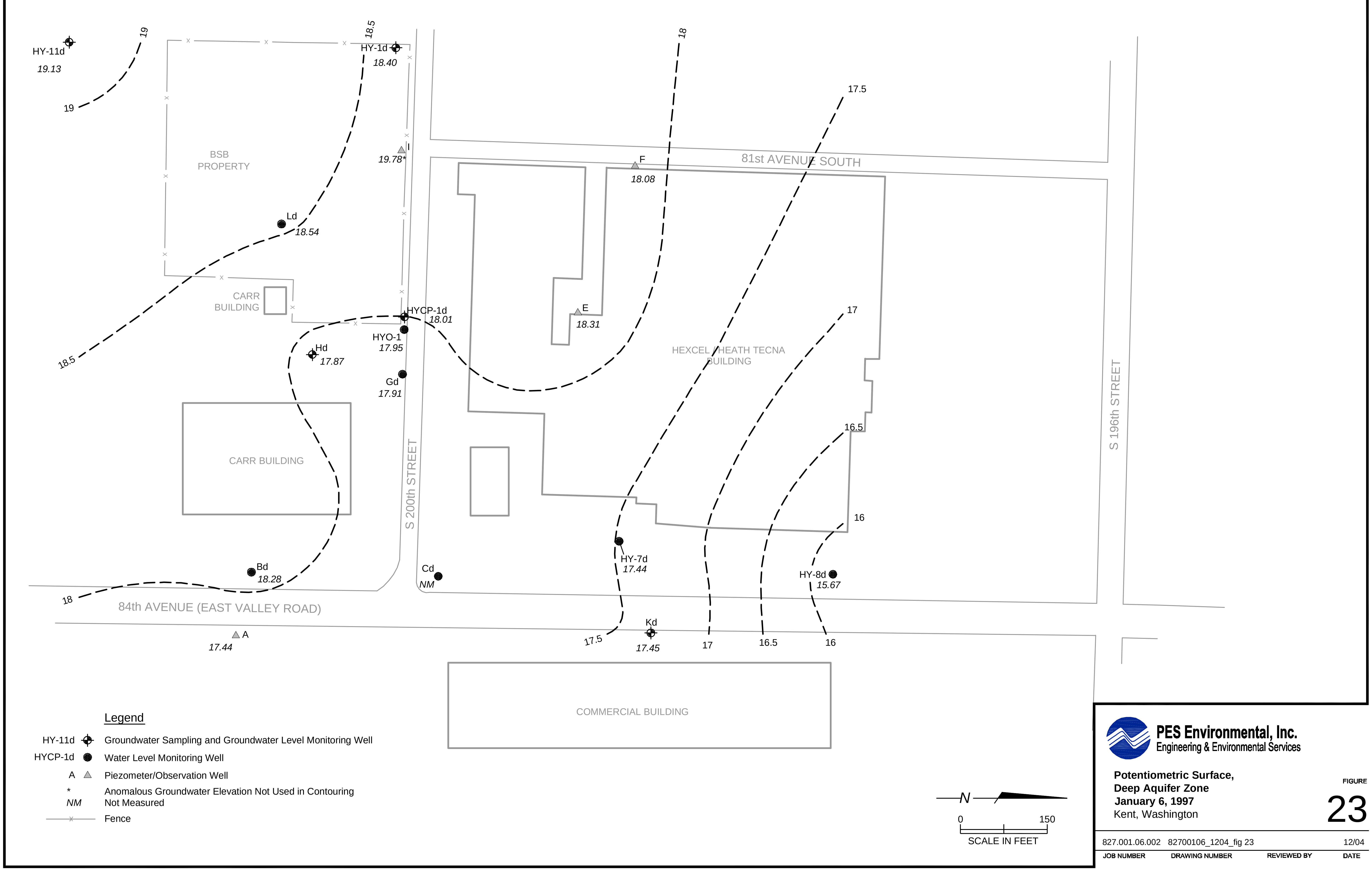


PES Environmental, Inc.
Engineering & Environmental Services

Potentiometric Surface,
Intermediate Aquifer Zone
January 6,1997
Kent, Washington

FIGURE
22

JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE
827.001.06.002	82700106_1204_fig 16		12/04

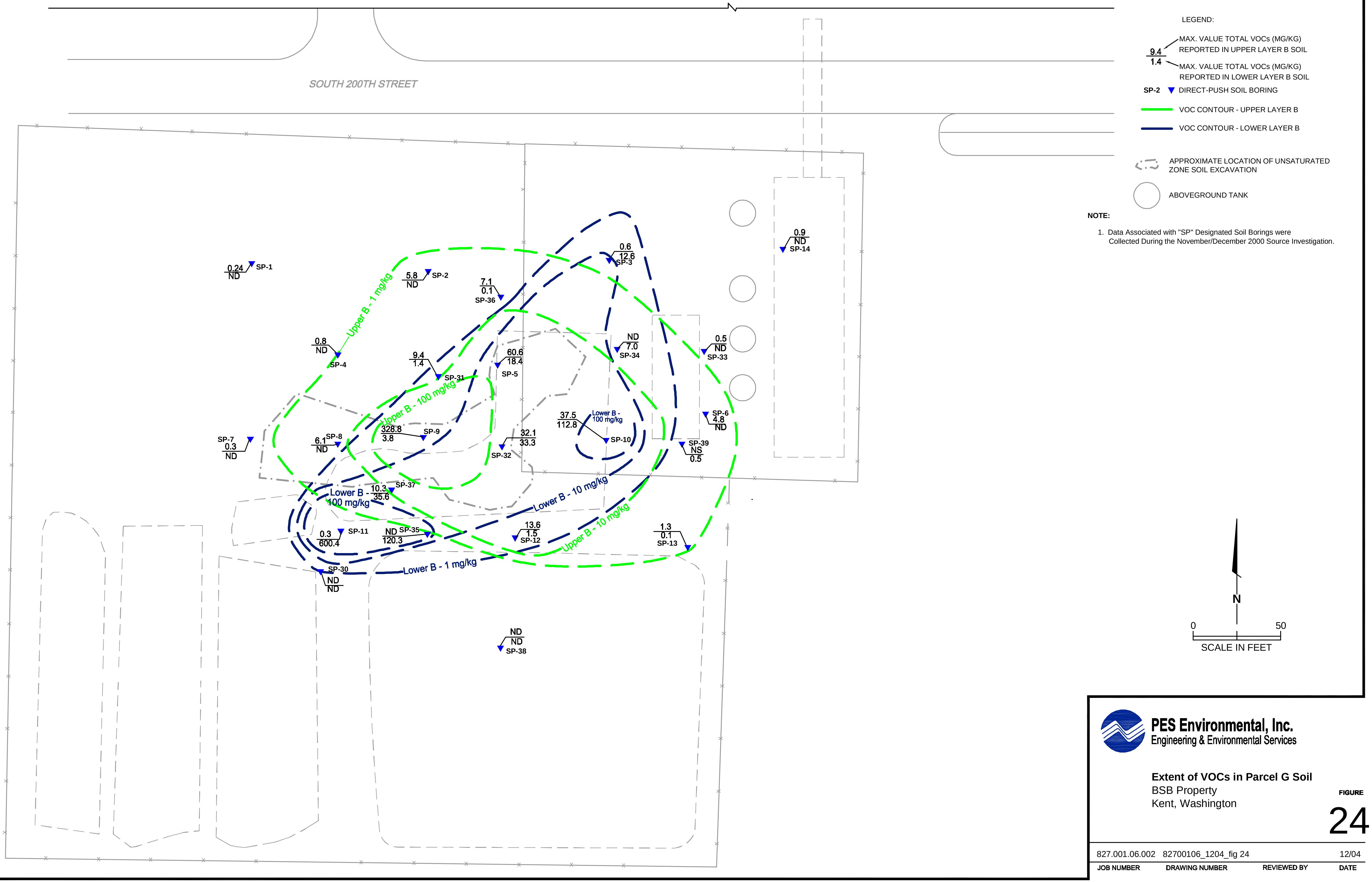


PES Environmental, Inc.
Engineering & Environmental Services

Potentiometric Surface,
Deep Aquifer Zone
January 6, 1997
Kent, Washington

FIGURE
23

827.001.06.002	82700106_1204_fig 23		12/04
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE



NOTE:

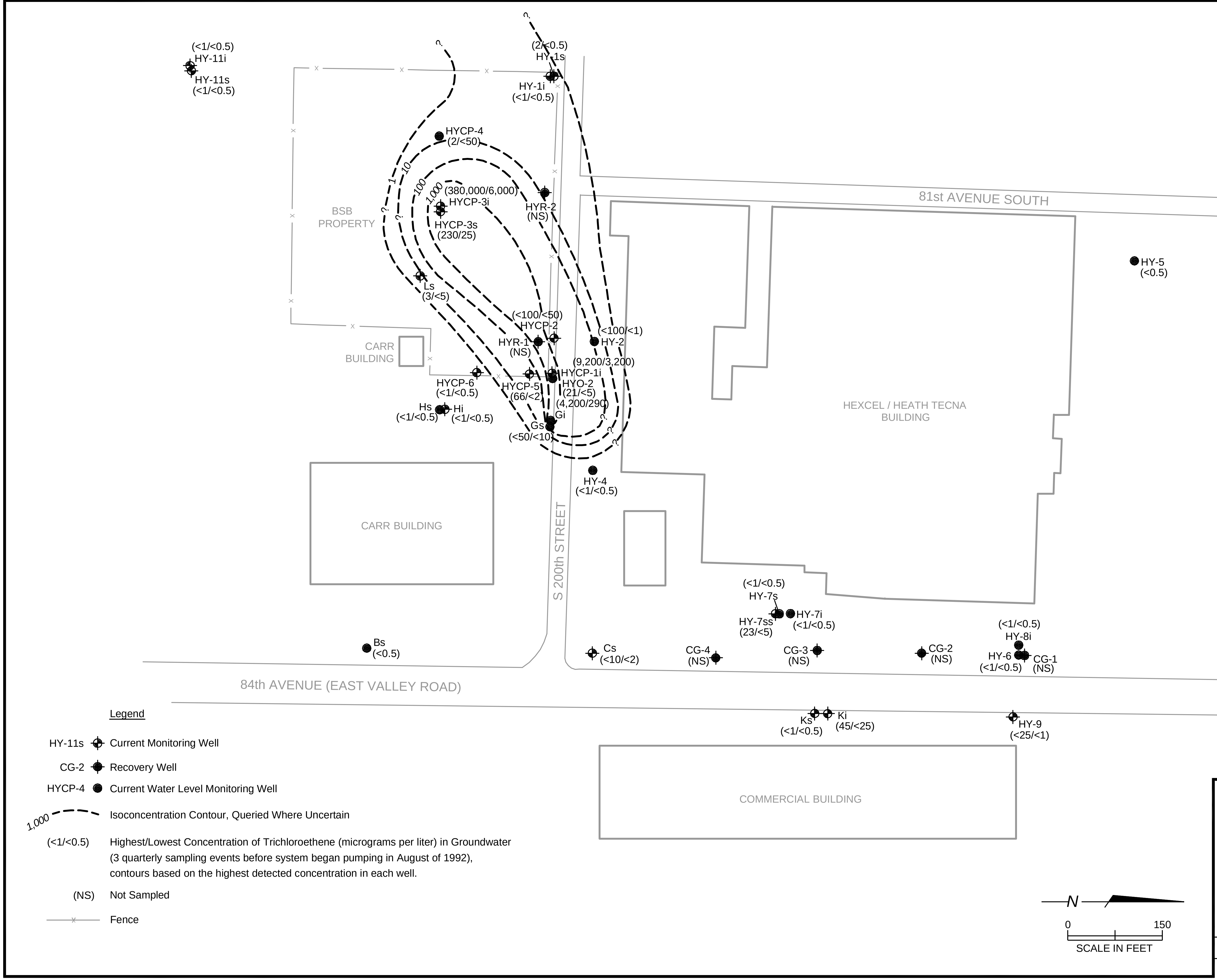
1. Data Associated with "SP" Designated Soil Borings were Collected During the November/December 2000 Source Investigation.

PES Environmental, Inc.
Engineering & Environmental Services

Extent of VOCs in Parcel G Soil
BSB Property
Kent, Washington

FIGURE
24

JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE
827.001.06.002	82700106_1204_fig 24		12/04

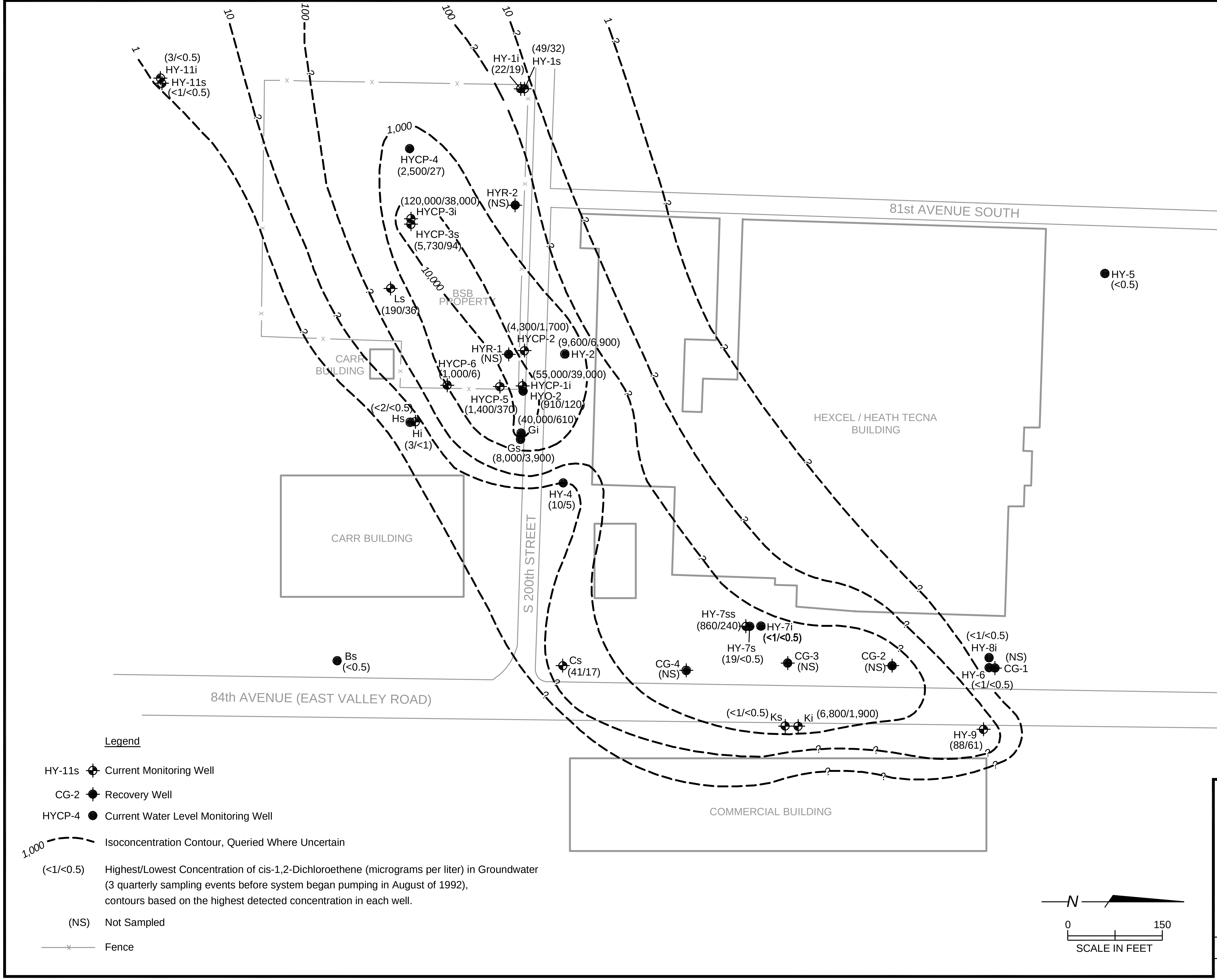


PES Environmental, Inc.
Engineering & Environmental Services

Pre-Pumping 1992 TCE
Isoconcentration Contours
in Layer B Groundwater
Kent, Washington

FIGURE
25

JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE
827.001.06.002	82700106_1204_fig 25		12/04

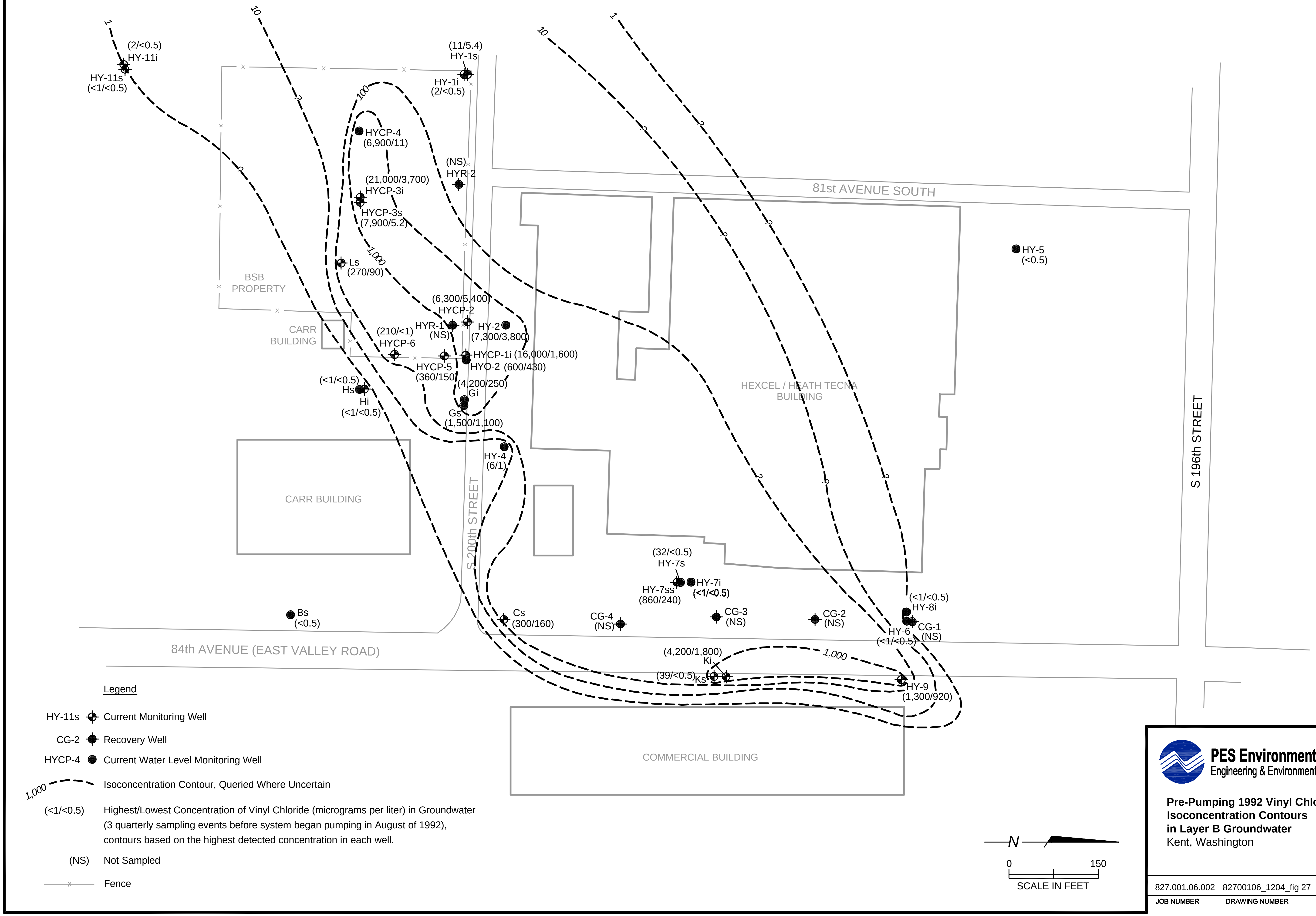


PES Environmental, Inc.
Engineering & Environmental Services

Pre-pumping 1992 cis-1,2-DCE Isoconcentration Contours in Layer B Groundwater
Kent, Washington

FIGURE
26

JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE
827.001.06.002	82700106_1204_fig 26		12/04



Legend

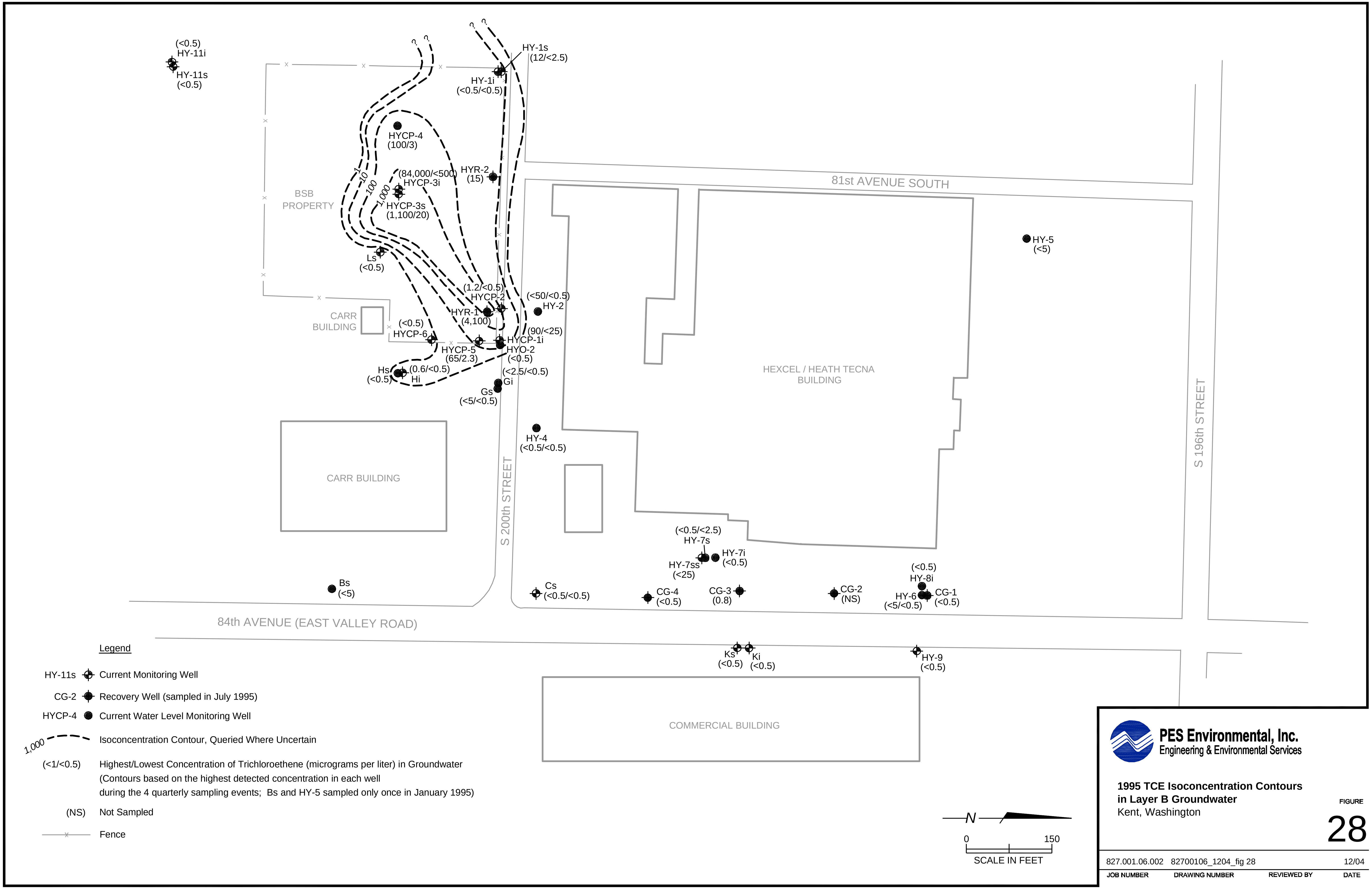
HY-11s ⌖	Current Monitoring Well
CG-2 ⌖	Recovery Well
HYCP-4 ●	Current Water Level Monitoring Well
1,000 - - -	Isoconcentration Contour, Queried Where Uncertain
(<1/<0.5)	Highest/Lowest Concentration of Vinyl Chloride (micrograms per liter) in Groundwater (3 quarterly sampling events before system began pumping in August of 1992), contours based on the highest detected concentration in each well.
(NS)	Not Sampled
—x—	Fence

PES Environmental, Inc.
Engineering & Environmental Services

Pre-Pumping 1992 Vinyl Chloride
Isoconcentration Contours
in Layer B Groundwater
Kent, Washington

FIGURE
27

JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE
827.001.06.002	82700106_1204_fig 27		12/04



Legend

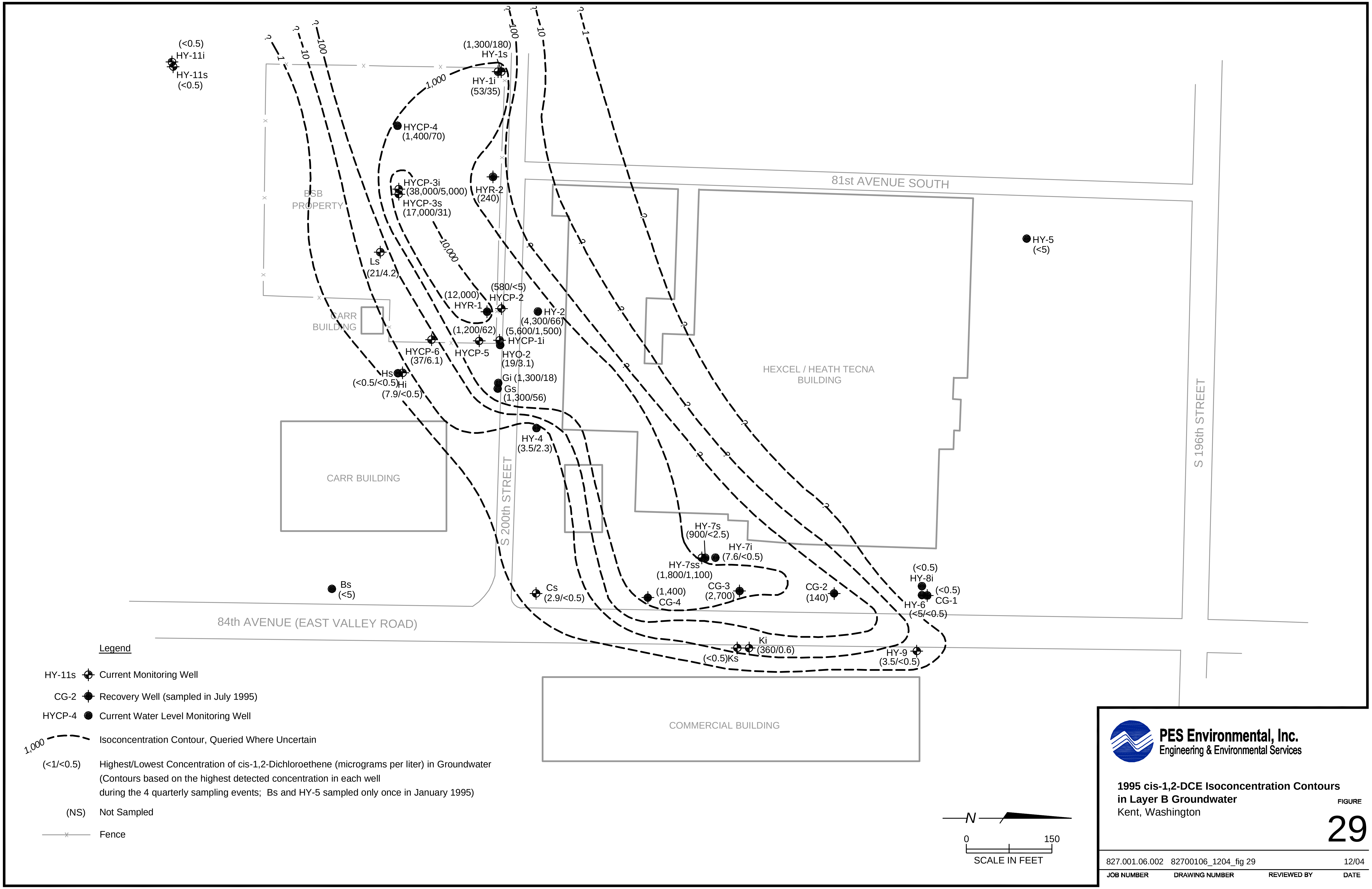
HY-11s ⌖	Current Monitoring Well
CG-2 ⌖	Recovery Well (sampled in July 1995)
HYCP-4 ●	Current Water Level Monitoring Well
1,000 — —	Isoconcentration Contour, Queried Where Uncertain
(<1/<0.5)	Highest/Lowest Concentration of Trichloroethene (micrograms per liter) in Groundwater (Contours based on the highest detected concentration in each well during the 4 quarterly sampling events; Bs and HY-5 sampled only once in January 1995)
(NS)	Not Sampled
—x—	Fence

PES Environmental, Inc.
Engineering & Environmental Services

1995 TCE Isoconcentration Contours
in Layer B Groundwater
Kent, Washington

FIGURE
28

JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE
827.001.06.002	82700106_1204_fig 28		12/04



Legend

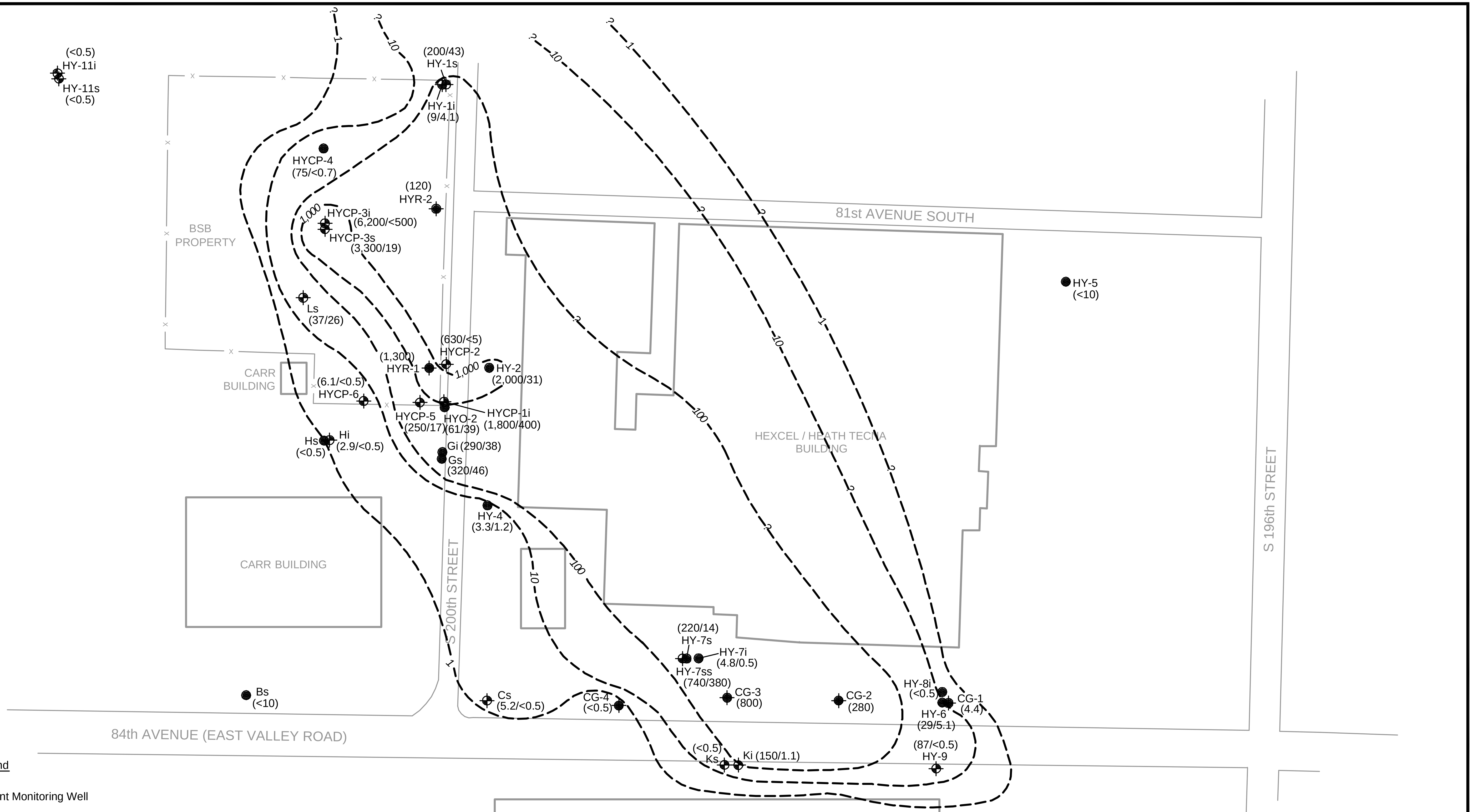
HY-11s ⌖	Current Monitoring Well
CG-2 ⌖	Recovery Well (sampled in July 1995)
HYCP-4 ●	Current Water Level Monitoring Well
1,000 - - -	Isoconcentration Contour, Queried Where Uncertain
(<1/<0.5)	Highest/Lowest Concentration of cis-1,2-Dichloroethene (micrograms per liter) in Groundwater (Contours based on the highest detected concentration in each well during the 4 quarterly sampling events; Bs and HY-5 sampled only once in January 1995)
(NS)	Not Sampled
—x—	Fence

PES Environmental, Inc.
Engineering & Environmental Services

1995 cis-1,2-DCE Isoconcentration Contours
in Layer B Groundwater
Kent, Washington

FIGURE
29

JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE
827.001.06.002	82700106_1204_fig 29		12/04



Legend

HY-11s ⌖ Current Monitoring Well

CG-2 ⌖ Recovery Well (sampled in July 1995)

HYCP-4 ● Current Water Level Monitoring Well

1,000 - - - Isoconcentration Contour, Queried Where Uncertain

(<1/<0.5) Highest/Lowest Concentration of Vinyl Chloride (micrograms per liter) in Groundwater
(Contours based on the highest detected concentration in each well
during the 4 quarterly sampling events; Bs and HY-5 sampled only once in January 1995)

(NS) Not Sampled

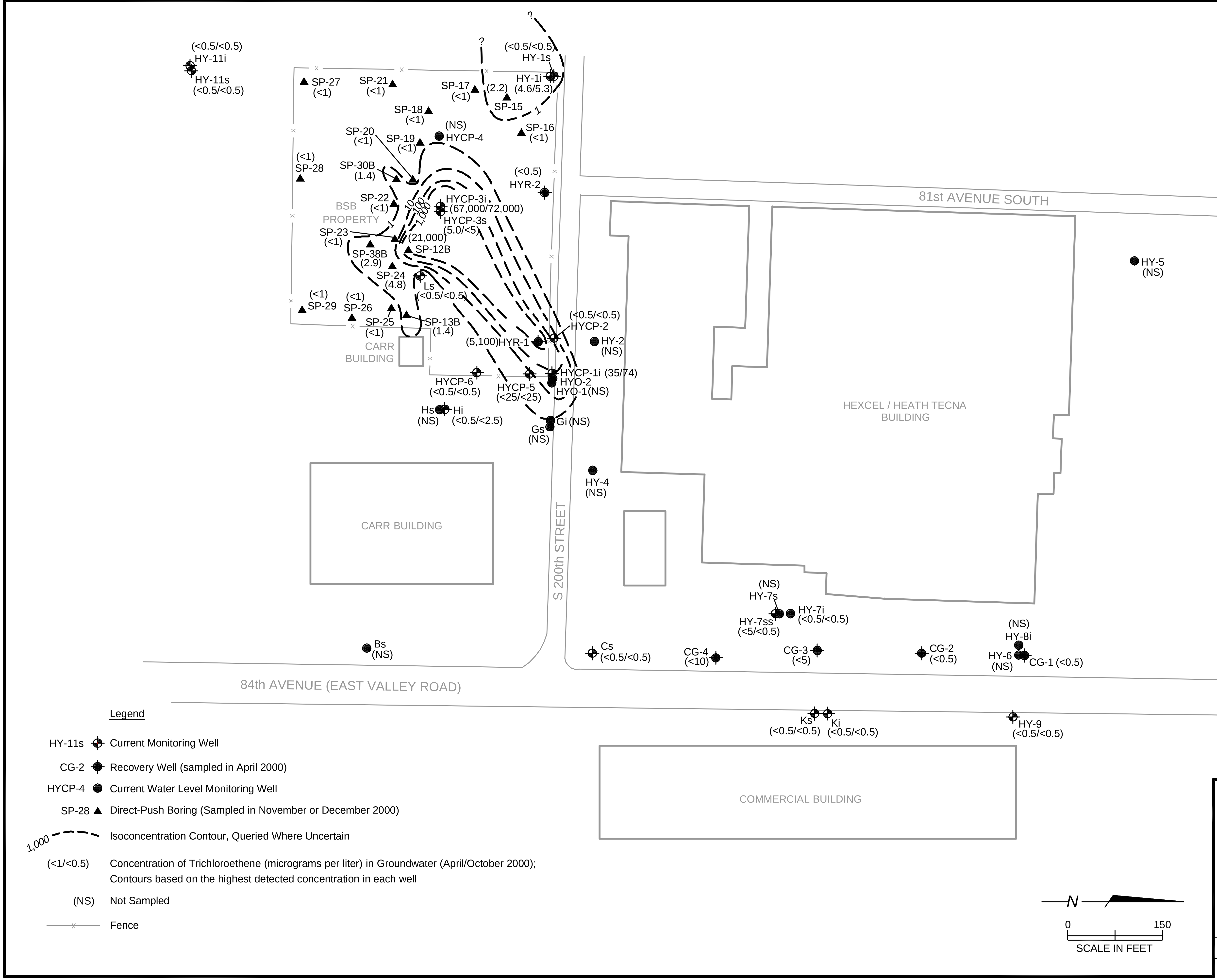
—x— Fence

PES Environmental, Inc.
Engineering & Environmental Services

1995 Vinyl Chloride Isoconcentration Contours
in Layer B Groundwater
Kent, Washington

FIGURE
30

827.001.06.002	82700106_1204_fig 30		12/04
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE

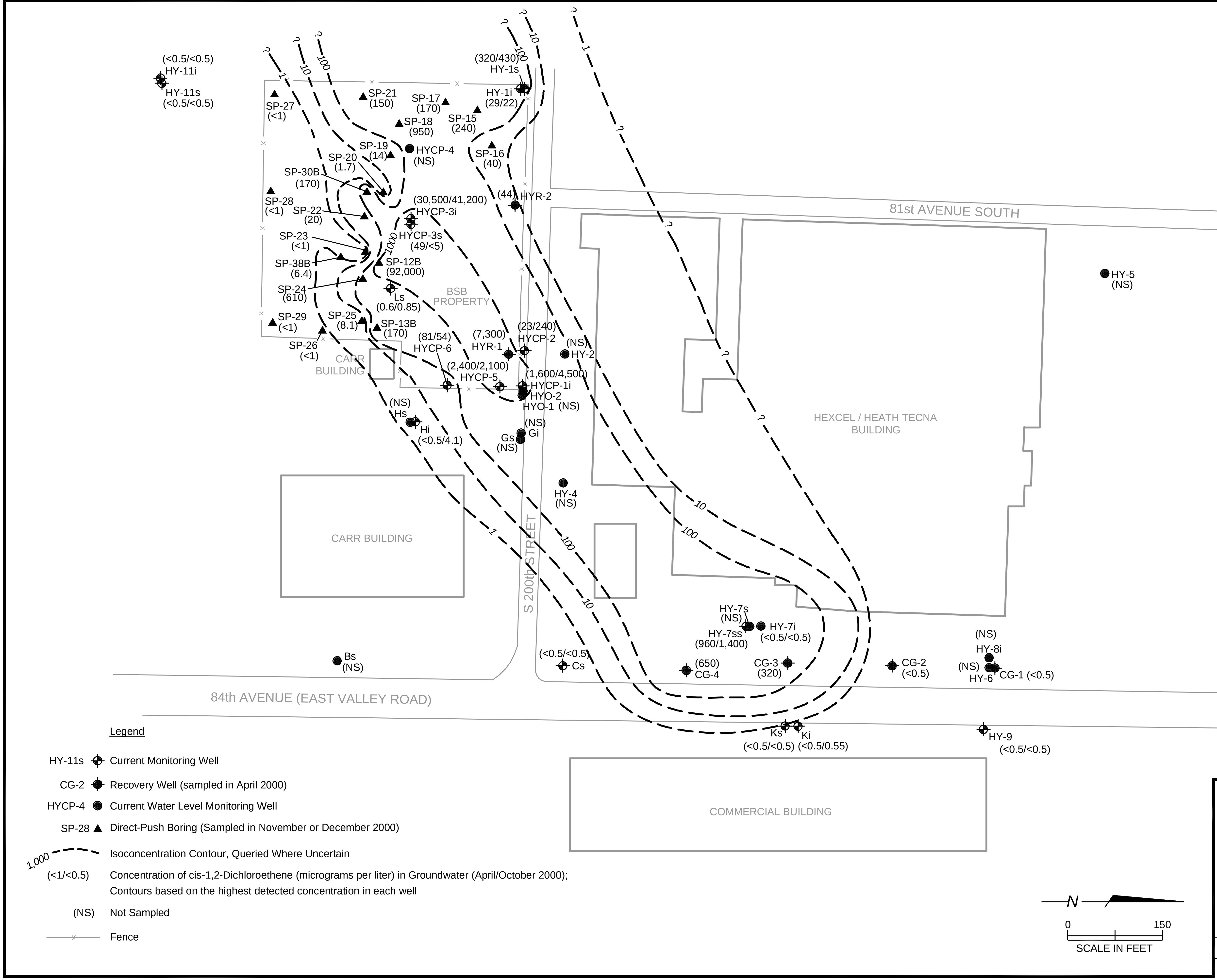


PES Environmental, Inc.
Engineering & Environmental Services

2000 TCE Isoconcentration Contours
in Layer B Groundwater
Kent, Washington

FIGURE
31

827.001.06.002	82700106_1204_fig 31		12/04
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE

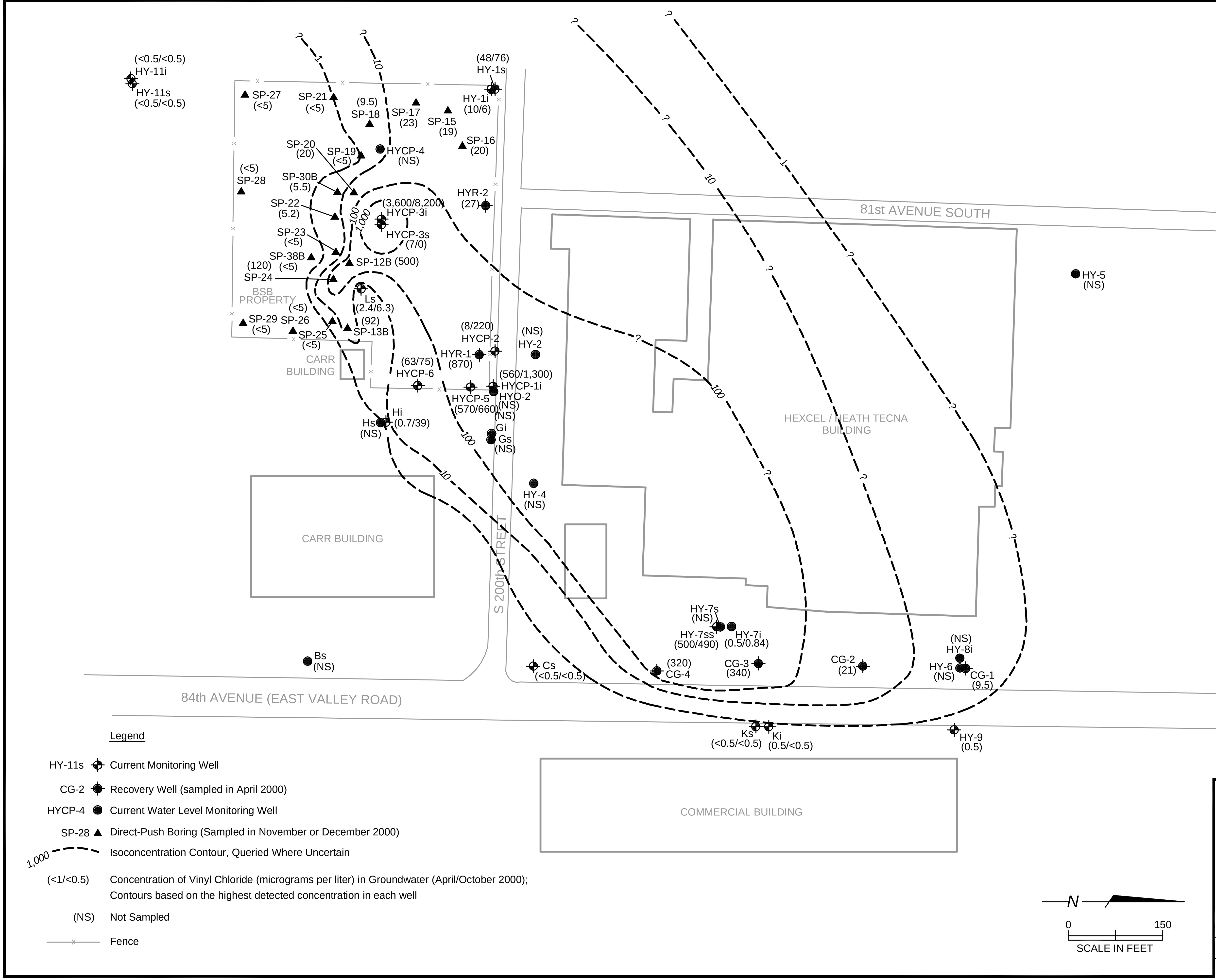


PES Environmental, Inc.
Engineering & Environmental Services

2000 cis-1,2-DCE Isoconcentration Contours in Layer B Groundwater
Kent, Washington

FIGURE
32

JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE
827.001.06.002	82700106_1204_fig 32		12/04

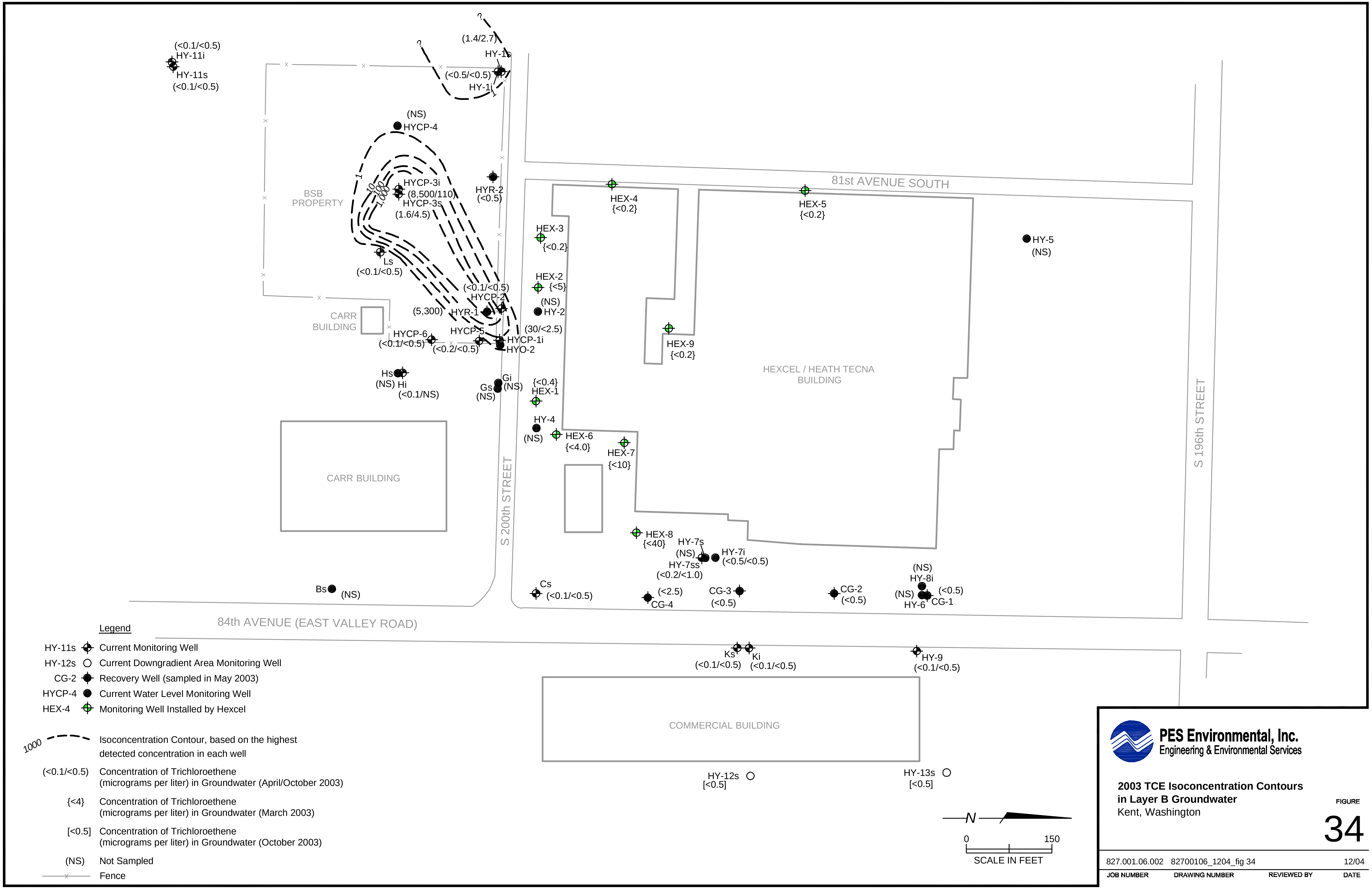


PES Environmental, Inc.
Engineering & Environmental Services

2000 Vinyl Chloride Isoconcentration Contours
in Layer B Groundwater
Kent, Washington

FIGURE
33

JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE
827.001.06.002	82700106_1204_fig 33		12/04

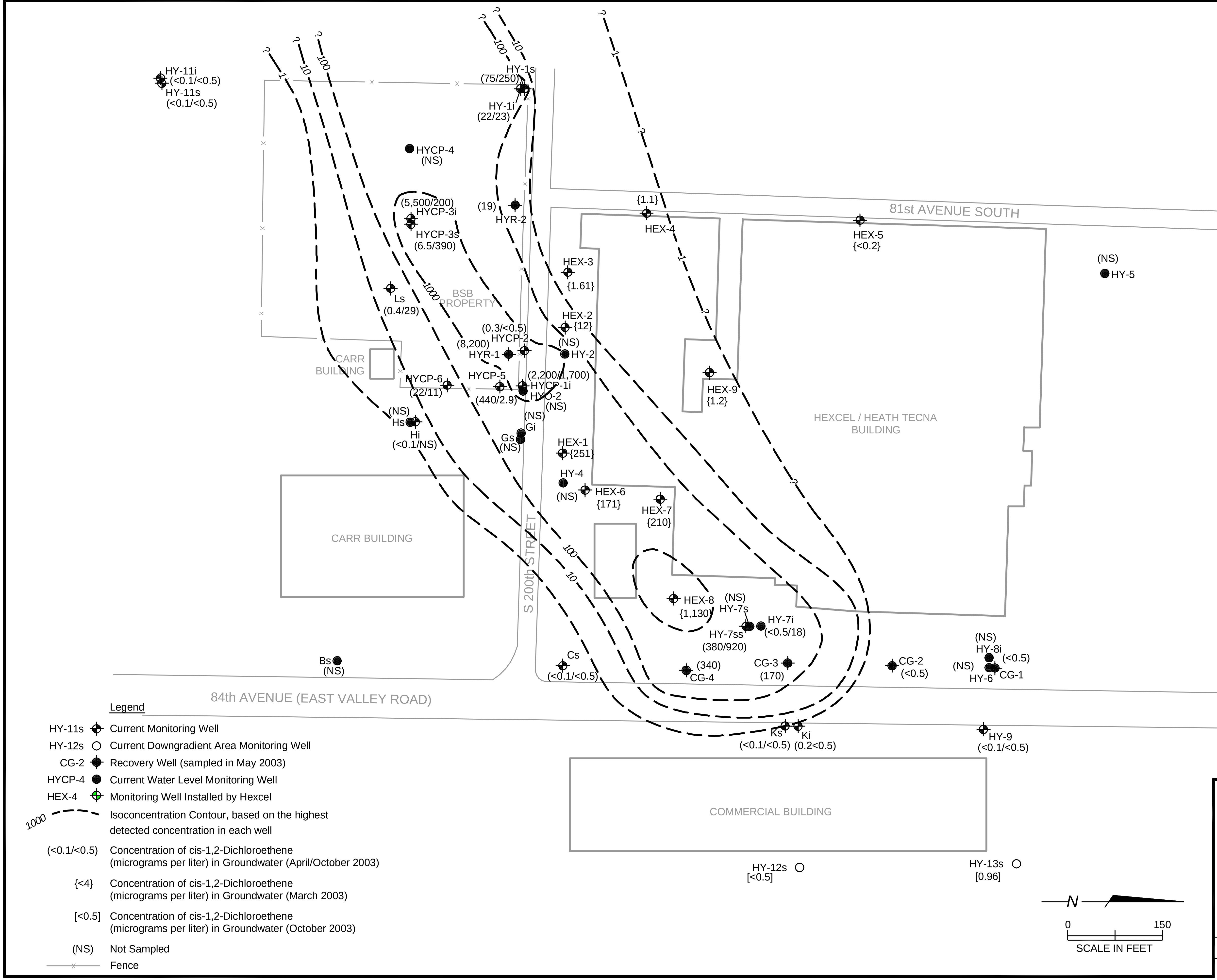


PES Environmental, Inc.
Engineering & Environmental Services

2003 TCE Isoconcentration Contours
in Layer B Groundwater
Kent, Washington

FIGURE
34

827.001.06.002	82700106_1204_fig 34		12/04
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE

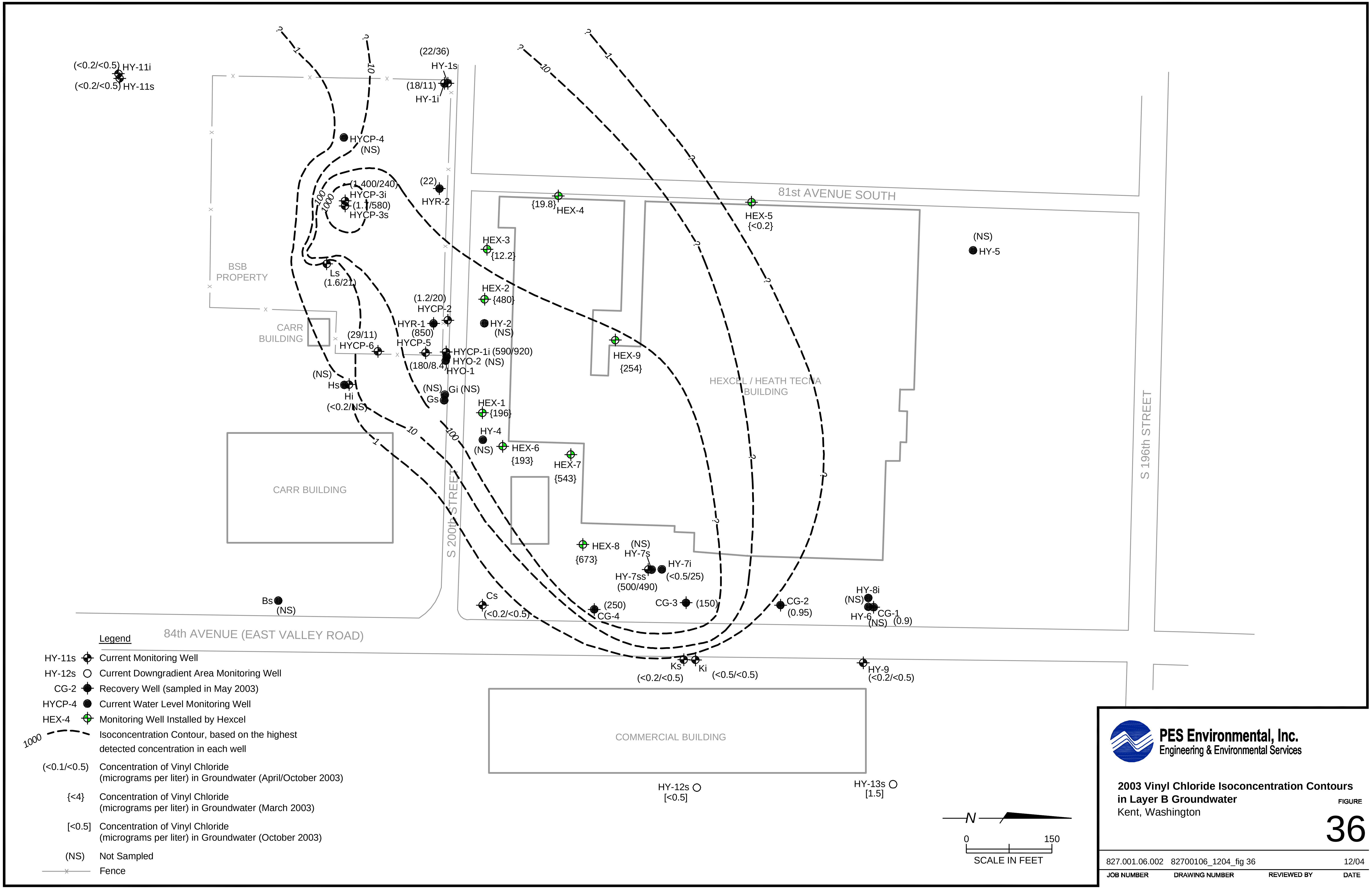


PES Environmental, Inc.
Engineering & Environmental Services

2003 cis-1,2-DCE Isoconcentration Contour
in Layer B Groundwater
Kent, Washington

FIGURE
35

JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE
827.001.06.002	82700106_1204_fig 35		12/04

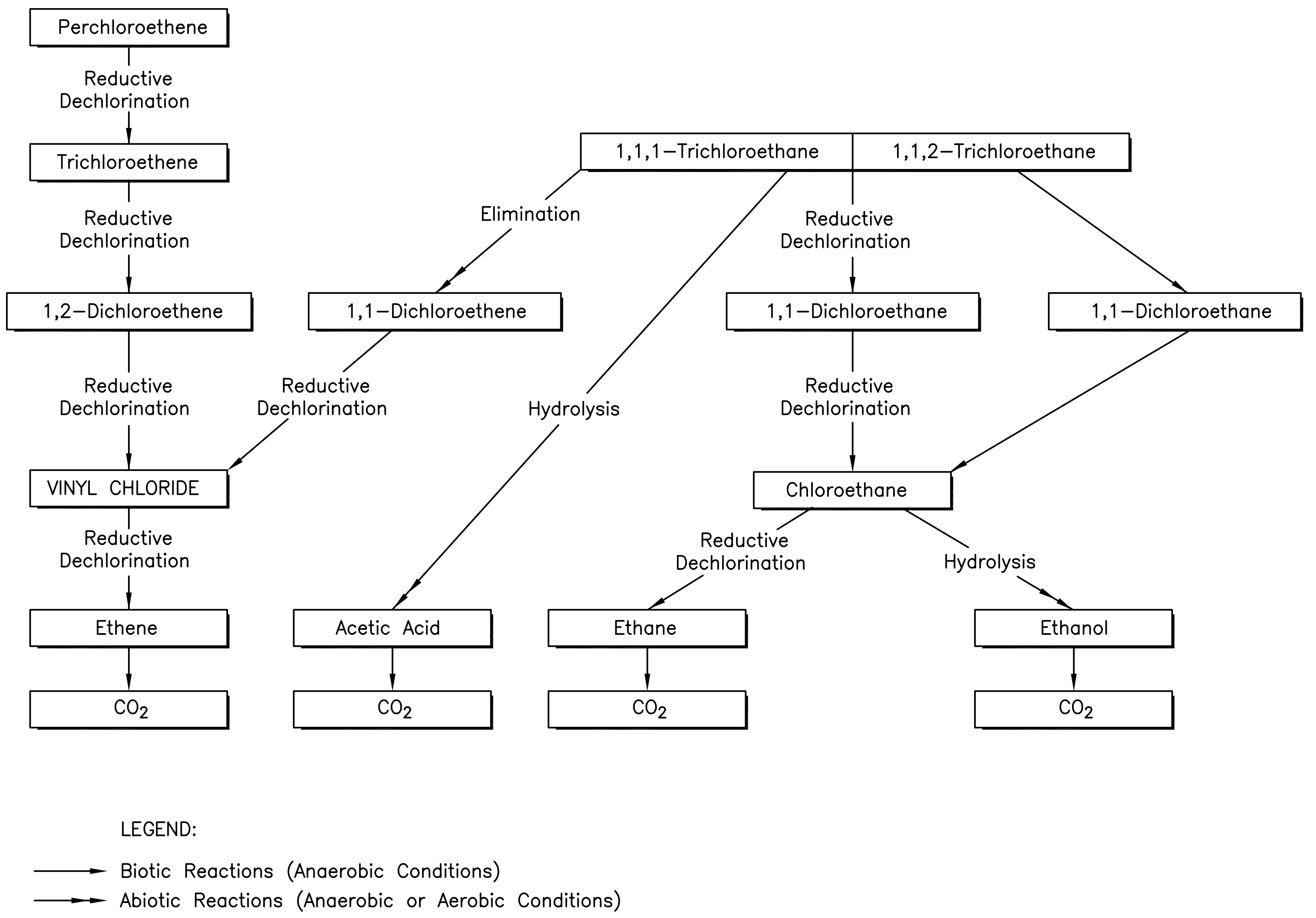


PES Environmental, Inc.
Engineering & Environmental Services

2003 Vinyl Chloride Isoconcentration Contours in Layer B Groundwater
Kent, Washington

FIGURE
36

JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE
827.001.06.002	82700106_1204_fig 36		12/04

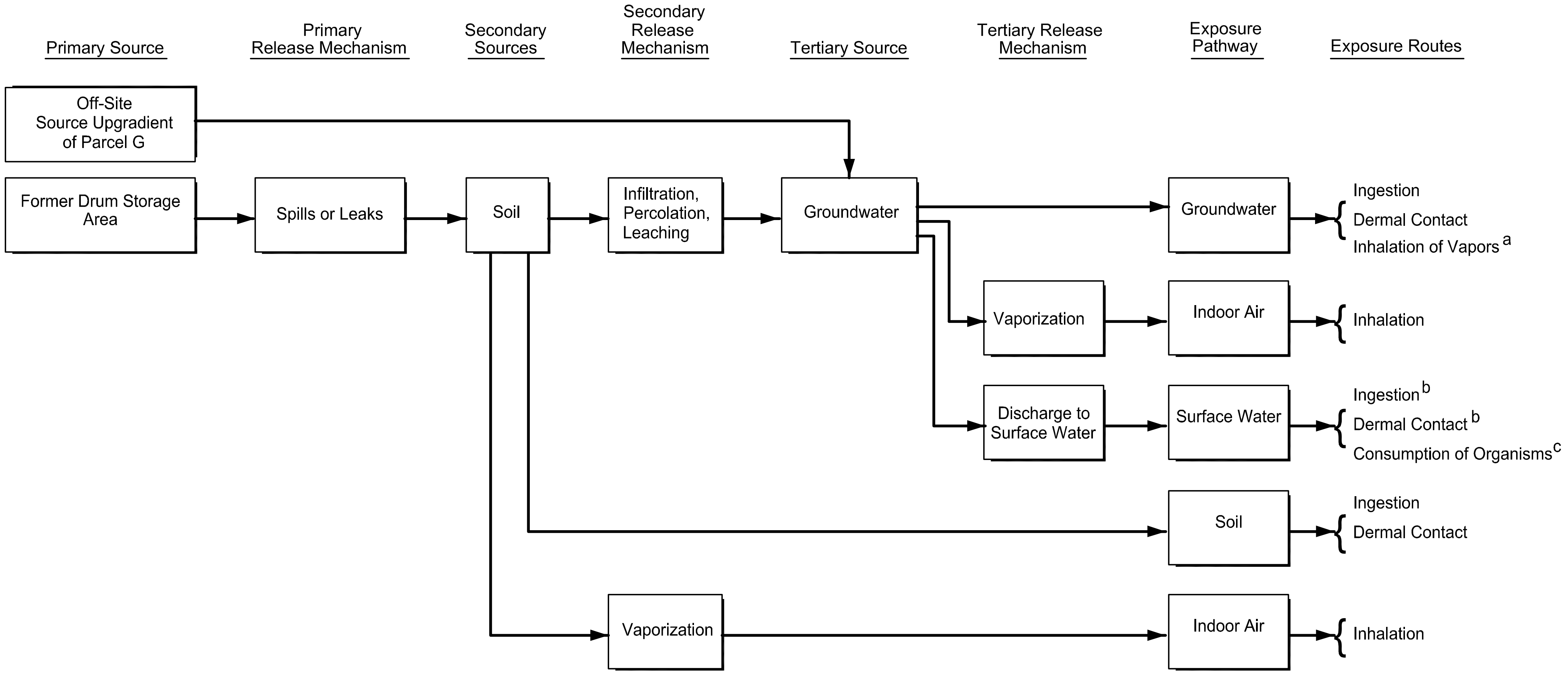


PES Environmental, Inc.
Engineering & Environmental Services

Degradation Pathways for Common Chlorinated Solvents
BSB Facility
Kent, Washington

FIGURE
37

JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE
827.001.06.002	82700106_1204_fig 37		1/05



RECEPTORS		
On-Site	Off-Site	
Site/ Office Worker	Site Worker/ Resident	Ecological
X	X	
○	X	
	○	○
○	X	
○	X	

LEGEND:

● Current Complete Pathway

○ Potential Future Pathway

X Incomplete Pathway

FOOTNOTE:

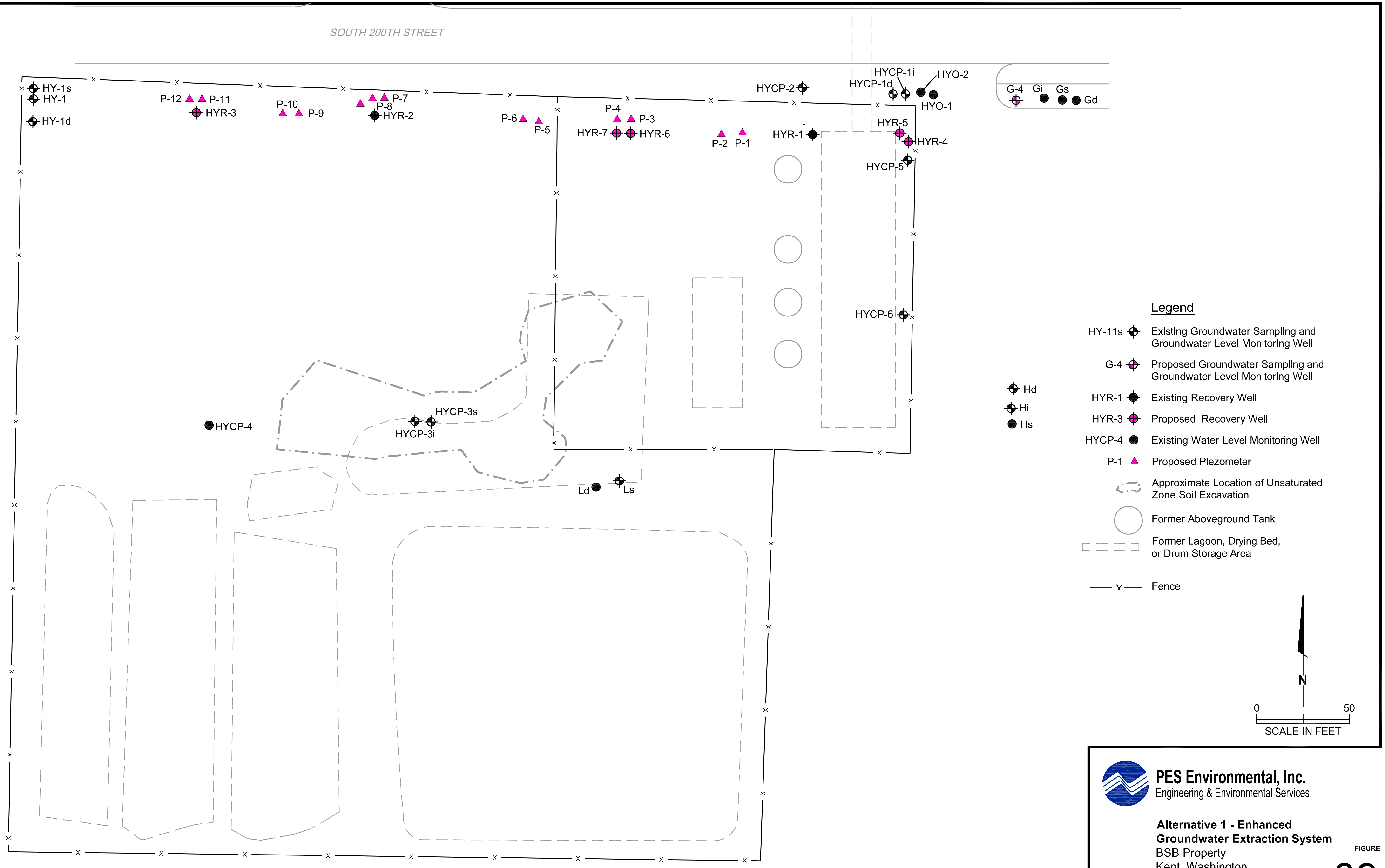
a From household use, such as showering.
b Ecological exposure route.
c Human exposure route.

PES Environmental, Inc.
Engineering & Environmental Services

Conceptual Site Model
BSB Facility
Kent, Washington

FIGURE
38

JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE
827.001.06.002	82700106_1204_fig 38		1/05

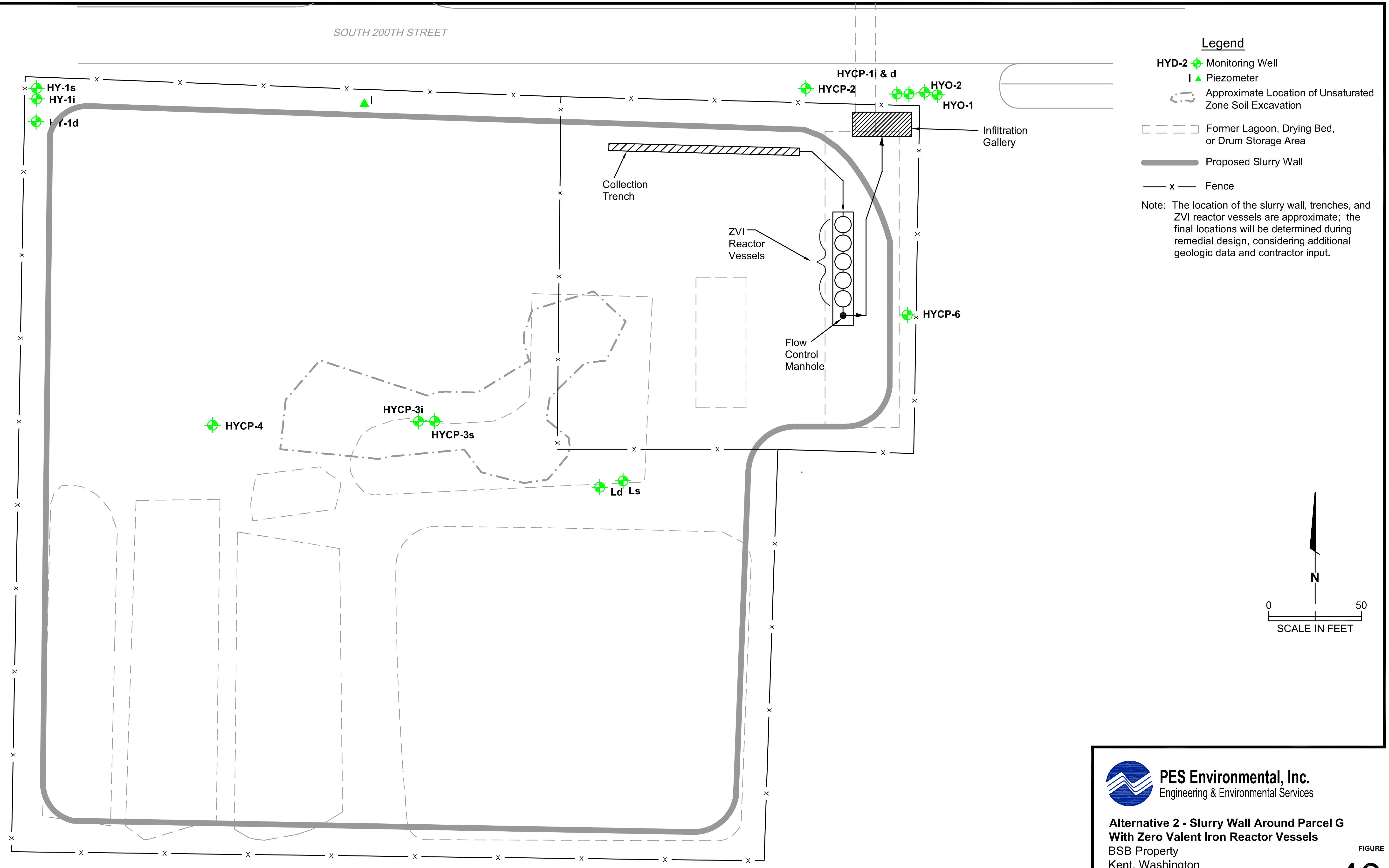


PES Environmental, Inc.
Engineering & Environmental Services

Alternative 1 - Enhanced
Groundwater Extraction System
BSB Property
Kent, Washington

FIGURE
39

827.001.06.002	82700106_1204_fig 39-R		8/05
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE



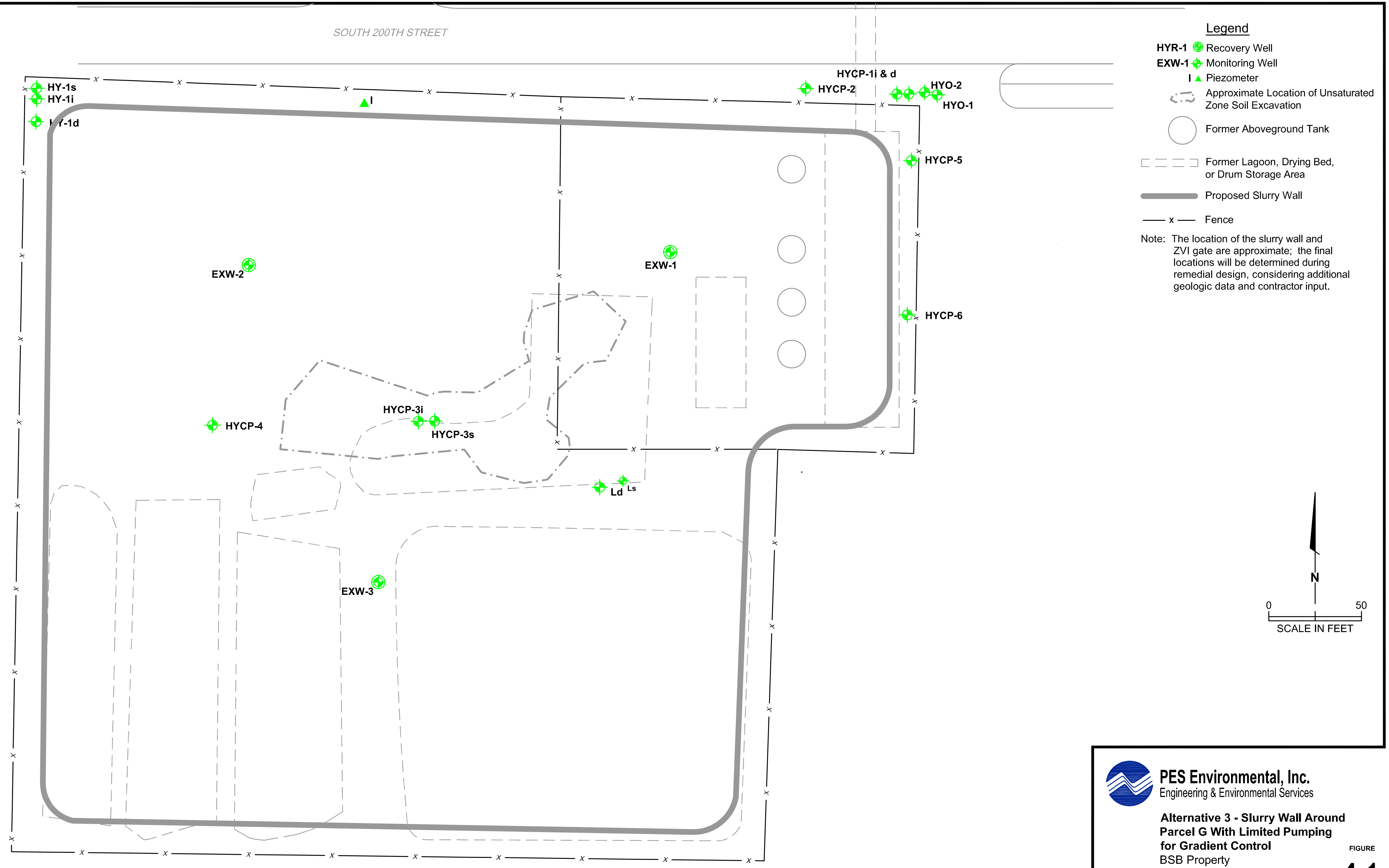
Note: The location of the slurry wall, trenches, and ZVI reactor vessels are approximate; the final locations will be determined during remedial design, considering additional geologic data and contractor input.

PES Environmental, Inc.
Engineering & Environmental Services

Alternative 2 - Slurry Wall Around Parcel G
With Zero Valent Iron Reactor Vessels
BSB Property
Kent, Washington

FIGURE
40

827.001.11.001	82700111_0906_fig 40		9/06
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE



Note: The location of the slurry wall and ZVI gate are approximate; the final locations will be determined during remedial design, considering additional geologic data and contractor input.

PES Environmental, Inc.
Engineering & Environmental Services

Alternative 3 - Slurry Wall Around Parcel G With Limited Pumping for Gradient Control
BSB Property
Kent, Washington

FIGURE
41

JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE
827.001.06.002	82700106_1204_fig 41		10/05

10

STATE OF WASHINGTO

Permit No. ...0 13

(1) OWNER: Name CIT. OF KENT Address KENT ENG DEPT P.O. BOX

(2) LOCATION OF WELL: County KING — SE ¼ SW ¼ Sec. 6 T. 22

Bearing and distance from section or subdivision corner APPROX. 2000'E OF SW COR OF SEC 6

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☒ Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one).... SOUTH 208th STREET

New well ☒ Method: Dug ☐ Bored ☐

Deepened ☐ Cable ☒ Driven ☐

Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 12 inches.

Drilled 395 ft. Depth of completed well 231 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 12 " Diam. from +2.5 ft. to 184 ft.

Threaded ☐ 16 " Diam. from 0 ft. to 40 ft.

Welded ☒ " Diam. from ft. to ft.

Perforations: Yes ☐ No ☒

Type of perforator used

SIZE of perforations in. by in.

perforations from ft. to ft.

perforations from ft. to ft.

perforations from ft. to ft.

Screens: Yes ☒ No ☐

Manufacturer's Name UOP - JOHNSON

Type STAINLESS Model No.

Diam. 12 TS Slot size 80 from 180.1 ft. to 221 ft.

Diam. Slot size from ft. to ft.

Gravel packed: Yes ☐ No ☒ Size of gravel:

Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 59 ft.

Material used in seal CEMENT GROUT

Did any strata contain unusable water? Yes ☐ No ☒

Type of water? Depth of strata

Method of sealing strata off

(7) PUMP: Manufacturer's Name —

Type: H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level. APPROX 30' ft.

Static level [redacted] ft. ~~below~~ Above top of well Date [redacted]

Artesian pressure lbs. per square inch Date

Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? Yes ☒ No ☐ If yes, by whom?

Yield: 1600 gal./min. with 138 ft. drawdown after 28 hrs.

" " " "

" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test

Bailer test gal./min. with ft. drawdown after hrs.

Artesian flow g.p.m. Date

Temperature of water Was a chemical analysis made? Yes ☒ No ☐

(10) WELL LOG:

Formation: *Describe by color, character, size of material and structure, show thickness of aquifers and the kind and nature of the material in stratum penetrated, with at least one entry for each change of forma*

MATERIAL	FROM	T
FILL MATERIAL AND OLD ROAD BED	0	7
DARK GRAY COMPACTED GRAVEL AND SILT	7	2
DARK GRAY COMPACTED SAND, GRAVEL AND SILT	24	4
LIGHT GRAY COMPACTED SILTY SAND AND GRAVEL	42	8
GRAY PEBBLY PEATY CLAY	80	9
GRAY SILT WITH GRAVEL	93	10
GRAY COMPACTED PEBBLY SILT	108	16
GRAY-GREEN SAND AND GRAVEL WITH OCCASIONAL LIGNITIC CLASTS	168	26
GRAY TO GRAY-GREEN FINE TO COARSE SAND WITH ABUNDANT LIGNITIC CLASTS, OCCASIONAL GRAVELLY ZONES AND LAYERS OF SILTY SAND AND GRAVEL	260	39
PREPARED BY:		
ROBINSON + NOBLE, INC		
Martin B. Sebren		

Work started MARCH, 19 83 Completed JUNE, 19

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report i true to the best of my knowledge and belief.

NAME ARMSTRONG DRILLING INC (Person, firm, or corporation) (Type or print)

Address 10715 66 Ave E. Puy Wa 9837

[Signed] (Well Driller)

License No. 0017 Date 2-26, 19 85

ORIGINAL SIGNED BY DRILL

(USE ADDITIONAL SHEETS IF NECESSARY)

S. F. No. 7356—OS—(Rev. 4-71).

9

Second Copy — Owner's Copy
Third Copy — Driller's Copy

STATE OF WASHINGT

18

Permit No. ....

(1) OWNER: Name City OF KENT Address 220 So. 4th ST. KENT, WA. 9803

(2) LOCATION OF WELL: County King - So. 208th ST. WELL - S.E.¼ S.W.¼ Sec. 6 T. 22 N., R. 5

Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☒ Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one)

New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☒ Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 12 inches.
Drilled 395 ft. Depth of completed well 231 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 12" Diam. from +2 ft. to 395 ft.
Threaded ☐ ______" Diam. from ______ ft. to ______ ft.
Welded ☑ ______" Diam. from ______ ft. to ______ ft.

Perforations: Yes ☐ No ☒
Type of perforator used ______
SIZE of perforations ______ in. by ______ in.
______ perforations from ______ ft. to ______ ft.
______ perforations from ______ ft. to ______ ft.
______ perforations from ______ ft. to ______ ft.

Screens: Yes ☒ No ☐
Manufacturer's Name UOP Johnson
Type Stainless Steel Model No. 304
Diam. 12" Slot size 80 from 221 ft. to 184 ft.
Diam. ______ Slot size ______ from ______ ft. to ______ ft.

Gravel packed: Yes ☐ No ☒ Size of gravel: ______
Gravel placed from ______ ft. to ______ ft.

Surface seal: Yes ☒ No ☐ To what depth? 40 ft.
Material used in seal Cement Grout
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? ______ Depth of strata ______
Method of sealing strata off ______

(7) PUMP: Manufacturer's Name ______
Type: ______ H.P. ______

(8) WATER LEVELS: Land-surface elevation above mean sea level.... 90 ft.
Static level + 50 ft. ~~below~~ top of well Date 6-83
Artesian pressure 22 lbs. per square inch Date ______
Artesian water is controlled by ______ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☑ No ☐ If yes, by whom? Driller
Yield: 1600 gal./min. with 198 ft. drawdown after 24 hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test ______
Bailer test ______ gal./min. with ______ ft. drawdown after ______ hrs.
Artesian flow 450 g.p.m. Date 6-83
Temperature of water ______ Was a chemical analysis made? Yes ☒ No ☐

(10) WELL LOG:

Formation: Describe by color, character, size of material and structu show thickness of aquifers and the kind and nature of the material stratum penetrated, with at least one entry for each change of form

MATERIAL	FROM	
FILL MATERIAL	0'	
DK. GRAY COMPACTED GRAVEL + SILT	7'	2
DK. GRAY COMPACTED SAND, GRAVEL + SILT	24'	4
LT. GRAY COMPACTED SILTY SAND + GRAVEL	42'	80
GRAY PEBBLY PEATY CLAY	80'	9
GRAY SILT WITH GRAVEL	93'	10
GRAY COMPACTED PEBBLY SILT	106'	16
GRAY-GREEN SAND + GRAVEL W/OCCASIONAL LIGNITIC CLASTS	168'	2
GRAY TO GRAY-GREEN FINE TO COARSE SAND W/ABUNDANT LIGNITIC CLASTS, OCCASIONAL GRAVELLY ZONES + LAYERS OF SILTY SAND + GRAVEL	260'	3

* SEE ATTACHMENT

RECEIVED
MAY 22 1987

Work started ______, 19____ Completed ______, 19

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this repor true to the best of my knowledge and belief.

NAME ARMSTRONG DRILLING, INC. (Person, firm, or corporation) (Type or print)

Address 10715 66th AVE. EAST Puyal

[Signed] John E. Armstrong (Well Driller)

License No. 0012 Date 5-20, 19

(USE ADDITIONAL SHEETS IF NECESSARY)

File Original and First Copy with
Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT
STATE OF WASHINGTON

Application No. 19
Permit No. ....

RECEIVED JUL 29 1983 DEPARTMENT OF ECOLOGY NORTHWEST REGION

(1) OWNER: Name CITY OF KENT Address KENT ENG DEPT PO BOX 310 KE 98

(2) LOCATION OF WELL: County KING SE ¼ NW ¼ Sec. 7 T. 22 N., R. 5E W.M.

Bearing and distance from section or subdivision corner APPROX 2100' E. AND 1500' S. OF NW COR OF SEC

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☒ Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) SOUTH 212th, No 2

New well ☒ Deepened ☐ Reconditioned ☐

Method: Dug ☐ Bored ☐ Cable ☒ Driven ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 16 inches.
Drilled 463 ft. Depth of completed well 366.4 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 16 " Diam. from 0 ft. to 248 ft.
Threaded ☐ 20 " Diam. from 0 ft. to 40 ft.
Welded ☒ ...... " Diam. from ...... ft. to ...... ft.

Perforations: Yes ☐ No ☒
Type of perforator used ......
SIZE of perforations ...... in. by ...... in.
...... perforations from ...... ft. to ...... ft.
...... perforations from ...... ft. to ...... ft.
...... perforations from ...... ft. to ...... ft.

Screens: Yes ☒ No ☐
Manufacturer's Name U.O.P. - JOHNSON
Type STAINLESS Model No. ......
Diam. 10 PS Slot size 100 from 331.4 ft. to 356.4 ft.
Diam. 10 PS Slot size 20 from 231.6 ft. to 235.6 ft.

Gravel packed: Yes ☒ No ☐ Size of gravel: PEA GV
Gravel placed from 226 ft. to 417 ft.

Surface seal: Yes ☒ No ☐ To what depth? APP 50 ft.
Material used in seal CEMENT GROUT
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? ...... Depth of strata ......
Method of sealing strata off ......

(7) PUMP: Manufacturer's Name ......
Type: ...... H.P. ......

(8) WATER LEVELS: Land-surface elevation above mean sea level APPROX 55' ft.
Static level +43 ft. below top of well Date 6/83
Artesian pressure ...... lbs. per square inch Date ......
Artesian water is controlled by ...... (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom? ......
Yield: 1860 gal./min. with 162 ft. drawdown after 24 hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test ......
Bailer test ...... gal./min. with ...... ft. drawdown after ...... hrs.
Artesian flow ...... g.p.m. Date ......
Temperature of water ...... Was a chemical analysis made? Yes ☑ No ☐

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
BROWN CLAY, SAND, GRAVEL	0	27
BROWN SAND AND CLAY	27	77
GRAY CLAY, SILT AND SAND	77	85
FINE SAND	85	87
GREEN SAND AND CLAY	87	97
GREEN SAND AND GRAVEL	97	102
BLUE-GREEN SAND, GRAVEL, SILT, AND CLAY	102	158
BLUE-GREEN SAND AND GRAVEL INTERLAYERED WITH DARK GREEN SANDY SILT	158	165
GRAY CLAY, SILT AND SAND OCCASIONAL PEAT, OCCASIONAL GRAVEL, GRADES TO BLUE-GREEN AND GRAY-GREEN	165	25
GRAY-GREEN, POORLY SORTED SAND AND GRAVEL, INTERLAYERED WITH SAND, GRAVEL, SILT, AND CLAY, OCCASIONAL PEAT AND WOOD	259	APP.
GRAY FINE TO MEDIUM SAND, SOME COARSE SAND, WOOD CHIPS.	420	45
BLUE-GREEN LAMINAR CLAY WITH COAL	458	460
GRAY SILTY SAND	460	46

PREPARED BY:
ROBINSON + NOBLE INC

Work started MARCH, 1983 Completed JUNE, 19

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report true to the best of my knowledge and belief.

NAME ARMSTRONG DRILLING (Person, firm, or corporation) (Type or print)

Address [illegible]215 66 Ave Puy Wa 983

[Signed] ...... (Well Driller)

License No. 0012 Date 7-26, 19

ORIGINAL SIGNED BY DR

3

File Original and First Copy with
Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT
STATE OF WASHINGTON

Permit No. ....

⑲

(1) OWNER: Name City of KENT Address 220 So. 4th ST. ~~So~~ KENT, WA 9803

(2) LOCATION OF WELL: County King - So. 212th ST. WELL # 2 - S.E. ¼ N.W. ¼ Sec 7 T. 22 N., R. 5E W.M.

Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☒ Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) #1
New well ☒ Deepened ☐ Reconditioned ☐
Method: Dug ☐ Bored ☐ Cable ☒ Driven ☐ Rotary ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 16 inches.
Drilled 463 ft. Depth of completed well 946 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 16" Diam. from +2 ft. to 446 ft.
Threaded ☐ 12" Diam. from +2 ft. to 463 ft.
Welded ☒ ......" Diam. from ...... ft. to ...... ft.

Perforations: Yes ☐ No ☒
Type of perforator used
SIZE of perforations ...... in. by ...... in.
...... perforations from ...... ft. to ...... ft.
...... perforations from ...... ft. to ...... ft.
...... perforations from ...... ft. to ...... ft.

Screens: Yes ☒ No ☐
Manufacturer's Name UOP Johnson
Type Stainless Steel Model No. 904
Diam. 10" Slot size 40 from 356 ft. to 331 ft.
Diam. 10" Slot size 20 from 231 ft. to 235 ft.

Gravel packed: Yes ☒ No ☐ Size of gravel: Pea
Gravel placed from 356 ft. to 200 ft.

Surface seal: Yes ☒ No ☐ To what depth? 40 FT ft.
Material used in seal Cement Grout
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? ...... Depth of strata ......
Method of sealing strata off ......

(7) PUMP: Manufacturer's Name ......
Type: ...... H.P. ......

(8) WATER LEVELS: Land-surface elevation above mean sea level.... 55 ft.
Static level +43 ft. ~~below~~ top of well Date 6-83
Artesian pressure 21 lbs. per square inch Date 6-83
Artesian water is controlled by Cap & Valve (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom? Driller.
Yield: 1884 gal./min. with 100 ft. drawdown after 24 hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test ......
Bailer test ...... gal./min. with ...... ft. drawdown after ...... hrs.
Artesian flow 550 g.p.m. Date 6-83
Temperature of water ...... Was a chemical analysis made? Yes ☒ No ☐

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

MATERIAL	FROM	TO
BROWN CLAY, SAND, + GRAVEL	0'	27'
BROWN SAND + CLAY	27'	77'
GRAY CLAY, SILT + SAND	77'	85'
FINE SAND	85'	87'
GREEN SAND AND CLAY	87'	97'
GREEN SAND AND GRAVEL	97'	102'
BLUE-GREEN SAND + GRAVEL, SILT + CLAY	102'	158'
BLUE-GREEN SAND + gravel, INTERLAYERED W/DARK GREEN SANDY SILT	158'	165
GRAY CLAY, SILT + SAND OCCA. PEAT, OCCA. GRAVEL, GRADES TO BLUE-GREEN + GRAY GREEN	165'	259
GRAY GREEN poorly SORTED SAND + GRAVEL, INTERLAYERED W/SAND, GRAVEL, SILT, + ~~CL~~ CLAY, OCCA. PEAT + WOOD — GRAY FINE TO MEDIUM SAND, SOME COARSE SAND, WOOD chips	259'	458
BLUE-GREEN LAMINAR CLAY, WITH COAL	458'	460
GRAY - SILTY SAND	460'	463

* SEE ATTACHMENT

RECEIVED
MAY 22 1987
DEPARTMENT OF ECOLOGY
NORTHWEST REGION

Work started ......, 19...... Completed ......, 19......

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report true to the best of my knowledge and belief.

NAME ARMSTRONG DRILLING, INC. (Person, firm, or corporation) (Type or print)

Address 10715 66th AVE. EAST Puy

[Signed] (Well Driller)

License No. 0012 Date 5-20, 19

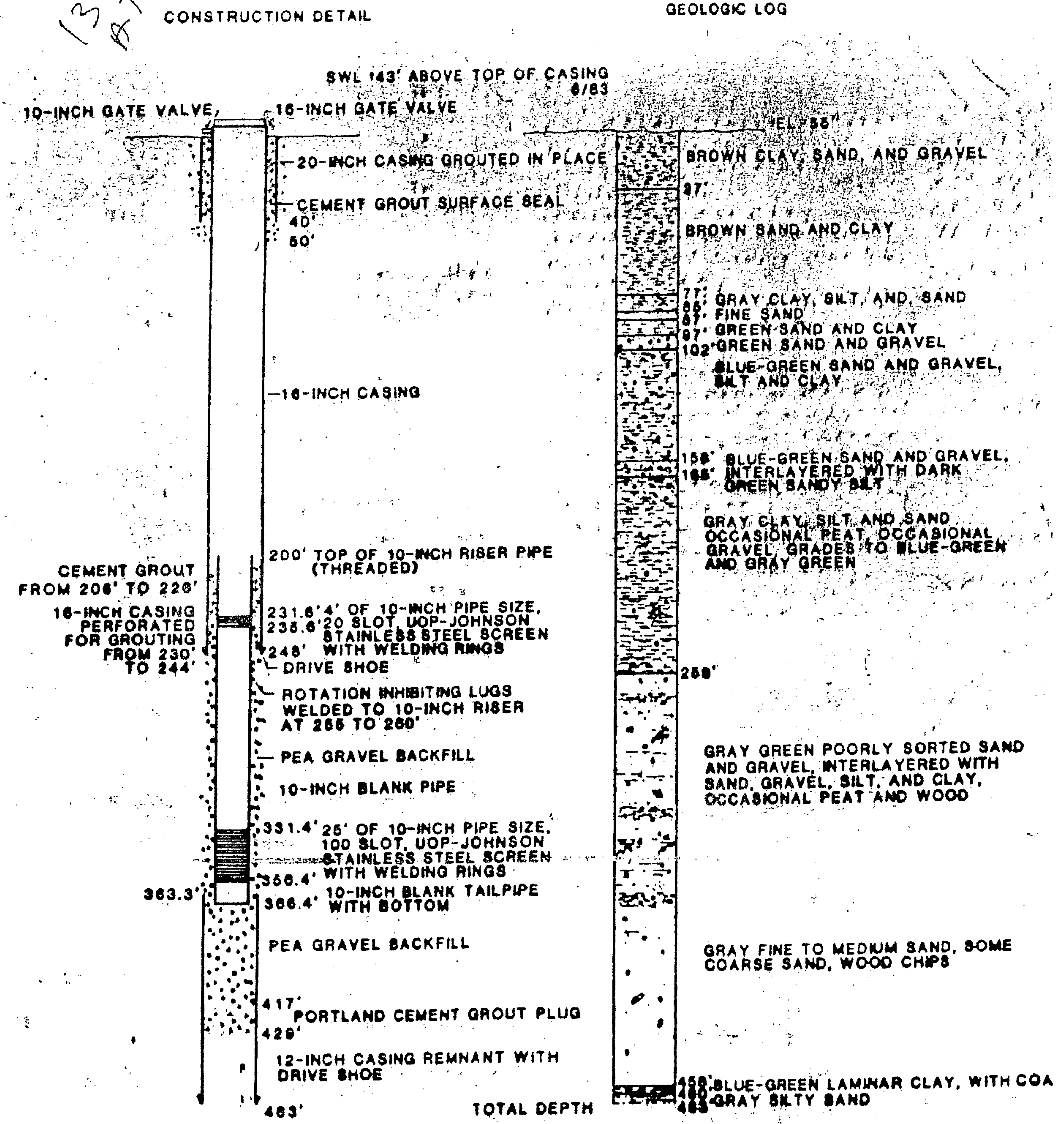
(USE ADDITIONAL SHEETS IF NECESSARY)

SOUTH 212th STREET WELL NO

⑲

S.E 1/4 NW 1/4 T22N R5E
Sec 7

13



RECEIVED
MAY 22 1987

ROBINSON & NOBLE, INC.

Second Copy — Owner's Copy
Third Copy — Driller's Copy

1.V

STATE OF WASHINGTON

Permit No. 17

(1) OWNER: Name CITY of KENT Address P.O. BOX 310 KENT, WA. 98031

(2) LOCATION OF WELL: County KING — SE ¼ NW ¼ Sec. 7E T. 22 N., R. 5E W.M.

Bearing and distance from section or subdivision corner 2100' E, 1500' S OF NW COR SEC 7

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☒ Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) 212TH #1

New well ☒ Deepened ☐ Reconditioned ☐

Method: Dug ☐ Cable ☒ Rotary ☐ Bored ☐ Driven ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 12 inches.

Drilled 371 ft. Depth of completed well 367 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 12 " Diam. from +2.6 ft. to 333 ft.

Threaded ☐ " Diam. from ft. to ft.

Welded ☒ " Diam. from ft. to ft.

Perforations: Yes ☐ No ☒

Type of perforator used

SIZE of perforations in. by in.

perforations from ft. to ft.

perforations from ft. to ft.

perforations from ft. to ft.

Screens: Yes ☒ No ☐

Manufacturer's Name JOHNSON

Type WATERMARK Model No.

Diam. 8"PS Slot size 80 from 336 ft. to 367 ft.

Diam. Slot size from ft. to ft.

Gravel packed: Yes ☒ No ☐ Size of gravel: PEA

Gravel placed from 367 ft. to 250 ft.

Surface seal: Yes ☒ No ☐ To what depth? 45 ft.

Material used in seal

Did any strata contain unusable water? Yes ☐ No ☒

Type of water? Depth of strata

Method of sealing strata off

(7) PUMP: Manufacturer's Name N/A

Type: H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level 55 ft.

Static level 49 ft. ~~below~~ ABV top of well Date 10/11/82

Artesian pressure 21.1 lbs. per square inch Date 10/11/82

Artesian water is controlled by CAP + VALVE (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? Yes ☒ No ☐ If yes, by whom? ROBINSON

Yield: 1194 gal./min. with 99 ft. drawdown after [illegible] hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test 7/82

Bailer test gal./min. with ft. drawdown after hrs.

Artesian flow 567 AVG. g.p.m. Date 10/6-8/82

Temperature of water 50°F Was a chemical analysis made? Yes ☒ No ☐

1982 DEPARTMENT OF ECOLOGY NORTHWEST

(10) WELL LOG:

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
SAND AND GRAVEL, WITH SILT AND CLAY, BROWN	0	21
SAND AND GRAVEL, WITH SILT AND CLAY, GREEN.	21	30
CLAY, GRAVELLY, GRAY, SOME WATER	30	37
CLAY, SILT, SAND WITH WOOD AND PEAT, OCCASIONAL GRAVEL, GRAY BROWN.	37	76
CLAY, SILTY, BLUE-GRAY	76	85
CLAY, SANDY, BROWN	85	90
SAND, GRAVEL, SILT, AND CLAY, TILL OR TILL LIKE, BROWN OR BLUE GRAY, GRADING TO BLUE GREEN, OCCASIONAL LAYERS OF PEAT.	90	129
SAND, SILTY CLAYEY, OCC. GRAVELS, SOME WATER	129	150
SAND AND GRAVEL WITH SILT AND CLAY, BLUE GREEN. THIN LAYER WATER BEARING GRAVEL AT 169'	150	195
CLAY, BROWN, WITH WOOD	195	199
CLAY, SILT, SAND, OCC. PEAT, OCC GRAVEL, GRAY-GREEN	199	260
SAND, WITH PEAT AND SILT, GRAY BROWN	260	265
SAND AND GRAVEL, GRAY GREEN, INTERLAYERED WITH SAND, GRAVEL SILT AND CLAY, OCC PEAT AND WOOD WATER BEARING 265-277, 284-298, AND 307-322.	265	333
GRAVEL WITH SAND, GRAY GREEN, WATER BEARING, OCC SILT OR CLAY LAYER	333	367

Work started 6/1 1982 Completed 10/11 198

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME ARMSTRONG DRILLING, INC (Person, firm, or corporation) (Type or print)

Address 10715 66th Ave EAST PUYALLU WA 9837

[Signed] (Well Driller)

License No. 0012 Date 10-31 198

(USE ADDITIONAL SHEETS IF NECESSARY)

S. F. No. 7356—OS—(Rev. 4-71).

2

File Original and First Copy with
Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Application No. ....

Permit No. ....

17

(1) OWNER: Name City of KENT Address 220 SO. 4th ST. KENT, WA 98032

(2) LOCATION OF WELL: County King - So. 212th ST. Well #1 - S.E.¼ N.W.¼ Sec 7 T. 22 N., R. 5E W.M.

Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☒ Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) #2

New well ☒ Deepened ☐ Reconditioned ☐

Method: Dug ☐ Cable ☒ Rotary ☐ Bored ☐ Driven ☐ Jetted ☐

(5) DIMENSIONS: Diameter of well 12" inches.

Drilled 367 ft. Depth of completed well 367 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 12 " Diam. from +2 ft. to 367 ft.

Threaded ☐ .... " Diam. from .... ft. to .... ft.

Welded ☒ .... " Diam. from .... ft. to .... ft.

Perforations: Yes ☐ No ☒

Type of perforator used ....

SIZE of perforations .... in. by .... in.

.... perforations from .... ft. to .... ft.

.... perforations from .... ft. to .... ft.

.... perforations from .... ft. to .... ft.

Screens: Yes ☑ No ☐

Manufacturer's Name UOP Johnsons

Type Stainless Steel Model No. 304

Diam. 10" Slot size 10 from 367 ft. to 332 ft.

Diam. 10" Slot size 20 from 297 ft. to 282 ft.

Gravel packed: Yes ☒ No ☐ Size of gravel: #8

Gravel placed from 367 ft. to 247 ft.

Surface seal: Yes ☒ No ☐ To what depth? 45'+ ft.

Material used in seal Cement Grout

Did any strata contain unusable water? Yes ☐ No ☒

Type of water? .... Depth of strata ....

Method of sealing strata off ....

(7) PUMP: Manufacturer's Name ....

Type: .... H.P. ....

(8) WATER LEVELS: Land-surface elevation above mean sea level.... 55 ft.

Static level +43 ft. ~~below~~ top of well Date 6-84

Artesian pressure 21 lbs. per square inch Date 6-84

Artesian water is controlled by Cap & Valves (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? Yes ☒ No ☐ If yes, by whom? Driller

Yield: 1860 gal./min. with 180 ft. drawdown after 24 hrs.

" " " "

" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

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DEPARTMENT OF ECOLOGY
NORTHWEST REGION

Date of test ....

Bailer test .... gal./min. with .... ft. drawdown after .... hrs.

Artesian flow 450 g.p.m. Date ....

Temperature of water .... Was a chemical analysis made? Yes ☒ No ☐

(10) WELL LOG:

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
S+G, w/SILT + CLAY, BROWN	0'	21'
S+G, w/SILT + CLAY, GREEN	21'	30'
CLAY, GRAVELLY, GRAY SOME WATER	30'	37'
CLAY, SILT, SAND w/WOOD + PEAT, OCCASIONAL GRAVEL, GRAY BROWN	37'	76'
CLAY, SILTY, BLUE-GRAY	76'	85'
CLAY, SANDY, BROWN	85'	90'
SAND, GRAVEL, SILT, + CLAY, TILL OR TILL LIKE, BROWN OR BLUE-GRAY GRADING TO BLUE GREEN, OCCASIONAL LAYERS OF PEAT	90'	129'
SAND SILTY, CLAYEY, OCCA. GRAVELS, SOME WATER	129'	150'
S+G, w/SILT + CLAY, GREEN, THIN LAYER OF WATER BEARING AT 169'	150'	195'
CLAY, BROWN, WITH WOOD	195'	199'
CLAY, SILT, SAND, OCCA. PEAT, OCCA. GRAVEL, GRAY-GREEN	199'	260'
SAND, w/PEAT + SILT, GRAY BROWN	260'	265'
SAND + GRAVEL GRAY GREEN INTERLAY w/SAND GRAVEL SILT + CLAY OCCA. PEAT + WOOD, WATER BEARING FROM 265' TO 277', 284' TO 298' + 307' TO 322'	265'	333'
GRAVEL w/SAND GRAY GREEN, WATER BEARING, OCCASIONAL SILT + CLAY LAYERS.	333'	367'
* SEE ATTACHMENT		

Work started ...., 19.... Completed ...., 19....

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME ARMSTRONG DRILLING, INC. (Person, firm, or corporation) (Type or print)

Address 10715 66th Ave. East Puyallup

[Signed] .... (Well Driller)

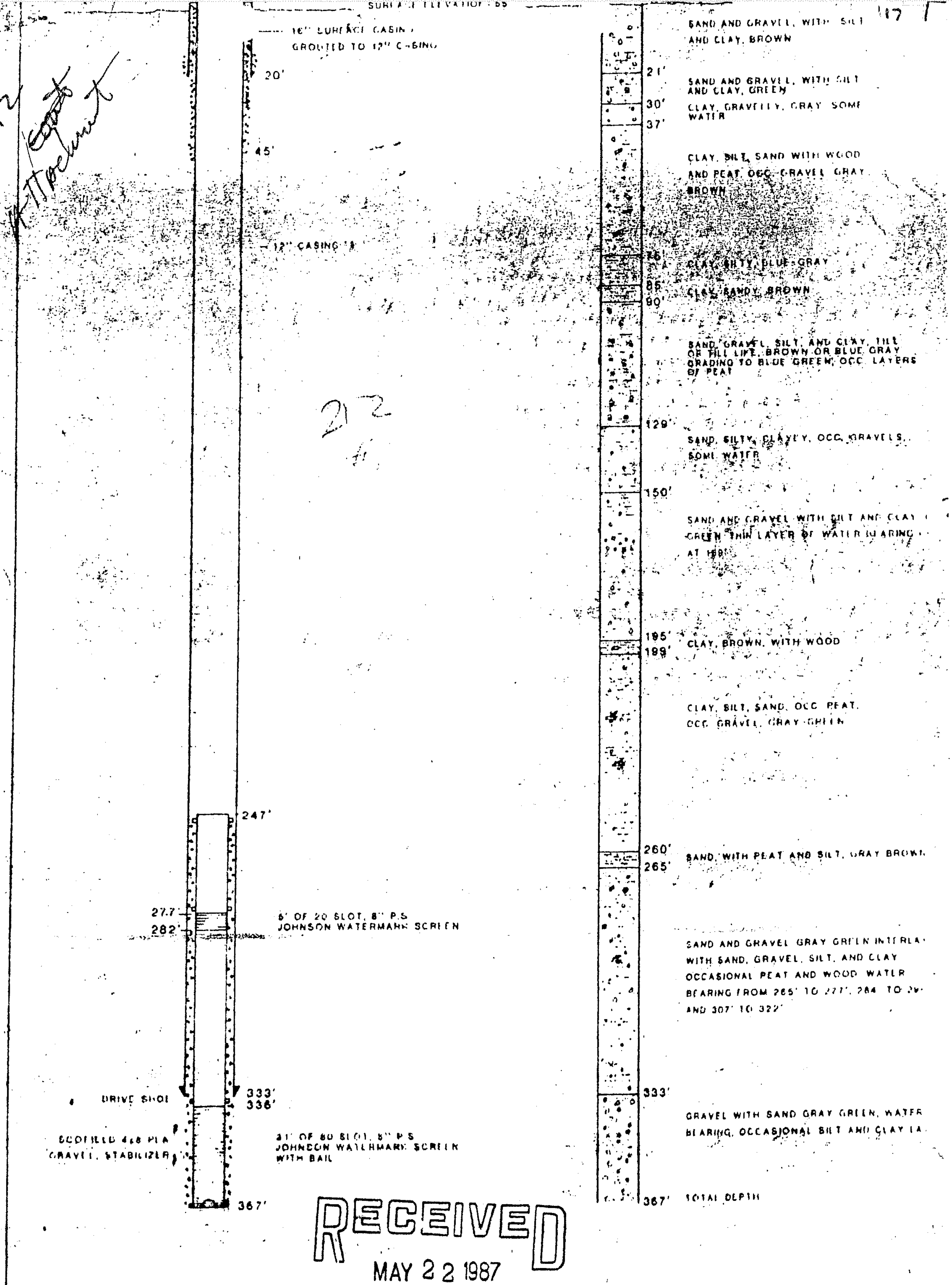
License No. 0012 Date 5-20, 1987

(USE ADDITIONAL SHEETS IF NECESSARY)

117

#12 East Kittochmit

212



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MAY 22 1987

File Original and First Copy with Department of Ecology
Second Copy—Owner's Copy
Third Copy—Driller's Copy

101814

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No W 135386
AFR 915
Water Right Permit No 22-5E-7F

(1) **OWNER:** Name City of Kent Address 220 Fourth Ave S., Kent, WA 98032 -5895

(2) **LOCATION OF WELL:** County King SE ¼ NW ¼ Sec 7 T 22 N., R 5E W.M

(2a) **STREET ADDDRESS OF WELL** (or nearest address) 212th St. Treatment Facility

(3) **PROPOSED USE:** ☐ Domestic ☐ Irrigation ☐ DeWater Industrial ☐ Test Well ☐ Municipal ☒ Other ☐

(4) **TYPE OF WORK:** Owner's number of well (if more than one) Well 3
Abandoned ☐ New well ☒ Deepened ☐ Reconditioned ☐
Method: Dug ☐ Cable ☒ Rotary ☐ Bored ☐ Driven ☐ Jetted ☐

(5) **DIMENSIONS:** Diameter of well 16/12 inches
Drilled 522 feet. Depth of completed well 495 ft.

(6) **CONSTRUCTION DETAILS:**
Casing installed: 20 " Diam from + .3 ft. to 120 ft
Welded ☒ 16 " Diam from + 3.4 ft to 293 ft
Liner installed ☐
Threaded ☐ 12 " Diam from 213 ft to 290 ft

Perforations: Yes ☐ No ☒
Type of perforator used
SIZE of perforations in by in
perforations from ft. to ft
perforations from ft to ft
perforations from ft to ft

Screens: Yes ☒ No ☐
Manufacturer's Name UOP Johnson
Type Stainless Model No. 304
Diam 10" Slot size 290-300, from 320-330 ft to, 340-360 ft
Diam Slot size 365-375, from 385-395, ft. to 400-410, ft 460-480,

Gravel packed: Yes ☒ No ☐ Size of gravel 4X8
Gravel placed from 222 ft to 495 ft

Surface seal: Yes ☒ No ☐ To what depth? 50' ft
Material used in seal Cement Grout
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? Depth of strata
Method of sealing strata off

(7) **PUMP:** Manufacturer's Name NA
Type H.P.

(8) **WATER LEVELS:** Land-surface elevation above mean sea level ~55 ft
Static level ~45 Above ft ~~below~~ top of well Date
Artesian pressure ~20 psi lbs per square inch Date
Artesian water is controlled by Cap + Valve (Cap, valve, etc))

(9) **WELL TESTS:** Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom? Holt, R+N
Yield 2,500 gal /min. with 66.5 ft drawdown after 12 hrs.

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
3½M	FLOWS				

Date of test 6/7/01
Bailer test gal /min with ft drawdown after hrs
Airtest gal /min with stem set at ft for hrs
Artesian flow 200+ g p m. Date
Temperature of water 50.2°F Was a chemical analysis made? Yes ☐ No ☐

(10) **WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION**

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information

MATERIAL	FROM	TO
Brown Silty clay, sand, gravel	0	40
Dark gray sand and gravel	40	43
Brown silty clay bound sand + gravel	43	50
Brown silty clay with sand	50	70
Green and gray silt and clay	70	90
Gray silty sand and gravel	90	100
Green gray silty clay sand + gravel	100	180
Gray green silty sand and gravel	180	193.5
Gray green clay	193.5	195.5
Gray brown sand and silt	195.5	229
Blue, green, gray clay	229	244
Gray fine sand	244	257
Blue gray brown clay some peat	257	290
Gray sand and gravel with	290	
clay layers, wood chips		490
Gray silty sand	490	522

RECEIVED
JUL 24 2001
DEPT OF ECOLOGY

Work started 4/24 ~~19~~ 2001 Completed 5/11 ~~19~~ 2001

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Holt Drilling Inc (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)
Address PO Box 1890
(Signed) (WELL DRILLER) License No 1099
Contractor's Registration No HOLTDI 1360G Date 6/20/01, 19

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20 (10/87) -1329- ® 18 101814

File Original and First Copy with Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

ENTERED

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. W16294
UNIQUE WELL I.D. # AEH 956
Water Right Permit No. 22-4E-1P

(1) **OWNER:** Name City of Kent Address N/A

(2) **LOCATION OF WELL:** County King SE 1/4 SW 1/4 Sec 1 T. 22 N., R 4 E W.M.

(2a) **STREET ADDRESS OF WELL** (or nearest address) 72nd Ave S next to fire station

(3) **PROPOSED USE:** ☐ Domestic ☐ Irrigation ☐ DeWater Industrial ☐ Test Well ☒ Municipal ☐ Other ☐

(4) **TYPE OF WORK:** Owner's number of well (If more than one)
Abandoned ☐ New well ☒ Deepened ☐ Reconditioned ☐
Method: Dug ☐ Cable ☒ Rotary ☐ Bored ☐ Driven ☐ Jetted ☐

(5) **DIMENSIONS:** Diameter of well 6" inches.
Drilled 100 feet. Depth of completed well 100 ft.

(6) **CONSTRUCTION DETAILS:**
Casing Installed: 6" Diam. from +2 ft. to 88 ft.
Welded ☒ " Diam. from ft. to ft.
Liner installed ☐ " Diam. from ft. to ft.
Threaded ☐

Perforations: Yes ☐ No ☒
Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes ☒ No ☐
Manufacturer's Name Johnson
Type Stainless 304 Model No.
Diam. 5' Slot size 14 from 95 ft. to 85 ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes ☐ No ☒ Size of gravel
Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 20 ft.
Material used in seal Bentonite
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? Depth of strata
Method of sealing strata off

(7) **PUMP:** Manufacturer's Name
Type: H.P.

(8) **WATER LEVELS:** Land-surface elevation above mean sea level ft.
Static level Ground ft. below top of well Date
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) **WELL TESTS:** Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☒ If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
" " " "
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test gal./min. with ft. drawdown after hrs.
Airtest gal./min. with stem set at ft. for hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes ☒ No ☐

(10) **WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION**

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
Silt	0	15
Silty sand + wood	15	53
Coarse sand some gravel	53	56
Fine to medium sand	56	100

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OCT 16 1998
NWRO-WR
DEPT OF ECOLOGY

Work Started 6-23-98 19. Completed 6-25-98 19

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Holt Drilling Inc (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)
Address 10621 Todd Rd E
(Signed) Rudy Holt (WELL DRILLER) License No. 1099
Contractor's Registration No. HOLTDI*126OG Date 8-12-98 19

(USE ADDITIONAL SHEETS IF NECESSARY)

Ecology is an Equal Opportunity and Affirmative Action employer. For special accommodation needs, contact the Water Resources Program at (206) 407-6600. The TDD number is (206) 407-6006.

ECY 050-1-20 (9/93)

STATE OF WASHINGTO
DEPARTMENT OF CONSERVATION AND DEVELOPMENT

WELL LOG No Appli. 4259
Cert. 2887-A

Date June , 19 56
Record by well driller
Source driller's record

22N/4E-12H
File number

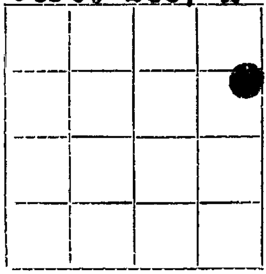


Diagram of Section

Location State of WASHINGTON
County King
Area
Map
SE ¼NE ¼ sec 12 T22 N, R 4 E ~~W~~
Drilling Co J. C. Maxwell
Address Seattle, Wash.
Method of Drilling Date , 19
Owner James T. & George Komoto
Address Kent, Wash.
Land surface, datum ft above below

CORRELATION	MATERIAL	THICKNESS (feet)	DEPTH (feet)
	(Transcribe driller's terminology literally but paraphrase as necessary in parentheses If material water-bearing so state and record static level if reported Give depths in feet below land surface datum unless otherwise indicated Correlate with stratigraphic column if feasible Following log of materials list all casings perforations screens etc)		
	Clay top soil	4	4
	Mixed sandy clay, some gravel	135	139
	Debris, wood, bark & coal	9	148
	Hardpan	62	210
	Sand & gravel, water 20 gpm. 125' head	8	218
	Gravel	8	226
	Brown clay & fine gravel	21	247
	Sandy clay & small gravel	47	294
	Sand & gravel	27	321
	PUMP TEST:		
	Dim. 321'x6"		
	SWLx +-		
	Flowing well: Measured discharge 75 g.p.m. Shut-in pressure at ground surface 34 lbs. per sq.in.		
	(over)		

Turn up Sheet of sheets

WELL LOG—Continued No 22 14 .12H'

Correlation	Material	Thickness (feet)	De (f
	Depth forward	——	
	Water is controlled by 4" valve		
	CASING: 6" diam. from Oto 315 ft.		
	4" diam. from 315 to 321 ft.		
	PERFORATIONS: 8' of 4" casing per-		
	forated ¼"x4", 8 slots per ft. from		
	313 to 321 ft.		

S F No 7449—12-54—3M 49108

X

Second Copy — Owner's Copy
Third Copy — Driller's Copy

STATE OF WASHINGTON 75-7C Permit No. 20

(1) **OWNER:** Name Arven Koopmans Address 10020-S.E. 192nd Renton, Wa. 98055

(2) **LOCATION OF WELL:** County King — NE ¼ NW ¼ Sec. 7 T. 23 N., R. 5E W.

Bearing and distance from section or subdivision corner

(3) **PROPOSED USE:** Domestic ☒ Industrial ☐ Municipal ☐ Irrigation ☐ Test Well ☐ Other ☐

(4) **TYPE OF WORK:** Owner's number of well (if more than one)
New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☒ Driven ☐
Reconditioned ☐ Rotary ☐ Jetted ☐

(5) **DIMENSIONS:** Diameter of well 6 inches.
Drilled 55 ft. Depth of completed well 55 ft.

(6) **CONSTRUCTION DETAILS:**

Casing installed: 6 " Diam. from 0 ft. to 51 ft.
Threaded ☐ " Diam. from ft. to ft.
Welded ☒ " Diam. from ft. to ft.

Perforations: Yes ☐ No ☒
Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes ☒ No ☐
Manufacturer's Name Johnson
Type stainless Model No.
Diam. 5" Slot size .015 from 50 ft. to 55 ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes ☐ No ☒ Size of gravel:
Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 18 ft.
Material used in seal Bentonite
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? Depth of strata
Method of sealing strata off

(7) **PUMP:** Manufacturer's Name
Type: H.P.

(8) **WATER LEVELS:** Land-surface elevation above mean sea level.... ft.
Static level 30 ft. below top of well Date 8/16/84
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) **WELL TESTS:** Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☐ If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test 16 gal./min. with 5 ft. drawdown after 4 hrs.
Artesian flow g.p.m. Date
Temperature of water 49 Was a chemical analysis made? Yes ☐ No ☒

(10) **WELL LOG:**

Formation: *Describe by color, character, size of material and structure, an show thickness of aquifers and the kind and nature of the material in eac stratum penetrated, with at least one entry for each change of formatio*

MATERIAL	FROM	TO
Topsoil	0	2
Brown Till	2	49
Gravel + Water	49	55

RECEIVED
DEPT. OF ECOLOGY

Work started 8/8 1984 Completed 8/16 1984

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME MORRIS DRILLING CO. (Person, firm, or corporation) (Type or print)
7215 - 122nd Ave. S. E.
Address Renton, WA 98056

[Signed] Thomas J. Morris (Well Driller)

License No. 0327 Date 9/2 1984

(USE ADDITIONAL SHEETS IF NECESSARY)

22/05-06 B

File Original and First Copy with
Department of Ecology
Second Copy — Owner's Copy
Third Copy — Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Application No. ....

Permit No. ....

Kroha

(1) OWNER: Name [redacted] Address [redacted]

(2) LOCATION OF WELL: County King — NW ¼ NE ¼ Sec. 6 T. 22 N., R. 5 W.M.

Bearing and distance from section or subdivision corner [redacted]

(3) PROPOSED USE: Domestic ☐ Industrial ☐ Municipal ☒ Irrigation ☐ Test Well ☐ Other ☐

(4) TYPE OF WORK: Owner's number of well (if more than one) ....

New well ☒ Method: Dug ☐ Bored ☐
Deepened ☐ Cable ☐ Driven ☐
Reconditioned ☐ Rotary ☒ Jetted ☐

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 49 ft. Depth of completed well 49 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6" Diam. from 0 ft. to 49 ft.
Threaded ☐ ......" Diam. from ...... ft. to ...... ft.
Welded ☒ ......" Diam. from ...... ft. to ...... ft.

Perforations: Yes ☐ No ☒
Type of perforator used ....
SIZE of perforations ...... in. by ...... in.
...... perforations from ...... ft. to ...... ft.
...... perforations from ...... ft. to ...... ft.
...... perforations from ...... ft. to ...... ft.

Screens: Yes ☐ No ☒
Manufacturer's Name ....
Type ...... Model No. ......
Diam. ...... Slot size ...... from ...... ft. to ...... ft.
Diam. ...... Slot size ...... from ...... ft. to ...... ft.

Gravel packed: Yes ☐ No ☒ Size of gravel: ......
Gravel placed from ...... ft. to ...... ft.

Surface seal: Yes ☒ No ☐ To what depth? 18 ft.
Material used in seal puddling clay-cement
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? ...... Depth of strata ......
Method of sealing strata off ......

(7) PUMP: Manufacturer's Name ....
Type: ...... H.P. ......

(8) WATER LEVELS: Land-surface elevation above mean sea level ...... ft.
Static level 11 ft. below top of well Date 1/4/80
Artesian pressure ...... lbs. per square inch Date ......
Artesian water is controlled by ...... (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☒ If yes, by whom? ......
Yield: ...... gal./min. with ...... ft. drawdown after ...... hrs.
" " " "
" " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test ......
Bailer test 20 gal./min. with 22 ft. drawdown after 3½ hrs.
Artesian flow ...... g.p.m. Date ......
Temperature of water ...... Was a chemical analysis made? Yes ☐ No ☒

(10) WELL LOG:

Formation: *Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.*

MATERIAL	FROM	TO
Surface	0	3
Brown sand	3	35
Gray clay	35	42
Gray water sand & gravel	42	49
Brown sand, sand fine	49	—

Work started 1/3, 1980. Completed 1/4, 1980

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Johnson Drilling Co, Inc. (Person, firm, or corporation) (Type or print)

Address 19415 108th Ave SE Renton 98053

[Signed] Brad Johnson (Well Driller)

License No. 0233 Date 1/4, 1979

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20

Well #2
Flowing

STATE OF WASHINGTON
DEPARTMENT OF CONSERVATION AND DEVELOPMENT

Unrecorded Well

WELL LOG No /

Date , 1914

Record by owner

Source Decla. of G. W. Claim

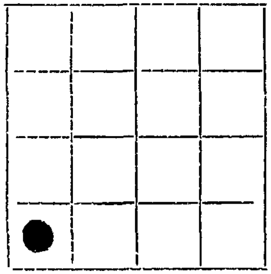


Diagram of Section

File number 23N/5E-31N

Location State of WASHINGTON

County King

Area

Map

SW ¼ SW ¼ sec 31 T 23 N, R 5 E

Drilling Co

Address

Method of Drilling drilled Date , 19

Owner Fritz Liesinger

Address Kent, Washington

Land surface, datum ft above / below

CORRELATION	MATERIAL	THICKNESS (feet)	DEPTH (feet)

(Transcribe driller's terminology literally but paraphrase as necessary in parentheses If material water bearing so state and record static level if reported Give depths in feet below land surface datum unless otherwise indicated Correlate with stratigraphic column if feasible Following log of materials list all casings perforations screens etc)

	Mud:	200	200
	Some hard pan before striking water		
	Dim: 2" x 220'		
	Yield: 25 g.p.m.		

Turn up Sheet of sheets

Well #1
Flowing

STATE OF WASHINGTON
DEPARTMENT OF CONSERVATION
AND DEVELOPMENT Unrecorded

WELL LOG

No / Well

Date , 19 16

Record by owner

Source Decla. of G. W. Claim

Location State of WASHINGTON

County King

~~Area~~ Gov't. Lot 4 of

Map

¼ ¼ sec 6 T22 N, R 5 E ~~W~~

Drilling Co

Address

Method of Drilling driven Date , 19

Owner Fritz Liesinger

Address Kent, Washington

Land surface, datum ft above below

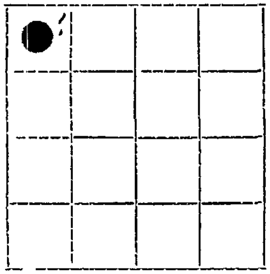


Diagram of Section

22N/5E-6D
File number

CORRELATION	MATERIAL	THICKNESS (feet)	DEPTH (feet)
	(Transcribe driller's terminology literally but paraphrase as necessary in parentheses If material water-bearing so state and record static level if reported Give depths in feet below land-surface datum unless otherwise indicated Correlate with stratigraphic column, if feasible Following log of materials, list all casings perforations, screens, etc)		
Pump	Test:		
	Dim: 1½" x 196'		
	Yield: 15 g.p.m.		

Turn up Sheet of sheets

STATE OF WASHINGTON
DEPARTMENT OF CONSERVATION
AND DEVELOPMENT

ARTESIAN

WELL LOG

No Decla. #11
Cert. #2

Date Spring, 1921

Record by Fritz Liesinger

Source Declaration of G. W. Claim

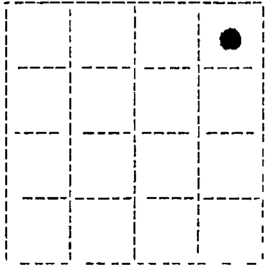


DIAGRAM OF SECTION

Location State of WASHINGTON

County King

Area

Map

NE ¼ NE ¼ sec 1 T 22 N, R 4 E W

Drilling Co

Address

Method of Drilling drilled Date 19

Owner Fritz Leisinger

Address Route 2, Kent, Washington

Land surface, datum ft above below

Correlation	Material	Thickness (feet)	Depth (feet)
	(Transcribe driller's terminology literally but paraphrase as necessary in parentheses. If material water bearing so state and record static level if reported. Give depths in feet below land surface datum unless otherwise indicated. Correlate with stratigraphic column if feasible. Following log of materials list all casings perforations screens etc.)		
	Earth - clay, hardpan, gravel to 260'		
	No record.		
Pump	Test:		
	Dim: 260' x 3"		
	SWL: flowing, measured discharge 55 g.p.m.		
	Shut-in pressure at ground surface 28 lbs.		
	per sq. in.; Water controlled by cap.		
	Casing: 3" diameter from 0 to 260'		
	Perforations: Screen from 255' to 260'		

Turn up

Sheet of shee

FLOWING

STATE OF WASHINGTON
DEPARTMENT OF CONSERVATION AND DEVELOPMENT

WELL LOG No Appln. 4140

Date Oct. 4, 1955

Record by J. W. Wilson

Source Driller's Record

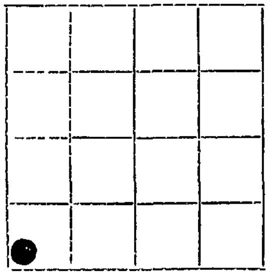


Diagram of Section

Location State of WASHINGTON

County King

Area

~~Mxxx Govt Lot~~ 7

SW ¼ SW ¼ sec 6 T 22 N, R 5 E ~~W~~

Drilling Co J. E. Maxwell

Address 15247 42nd Ave. S. Seattle, Wash.

Method of Drilling Drilled Date , 19

Owner James W. Wilson

Address Rt 2, Box 1050 Kent, Wn.

Land surface, datum ft above below -

(Transcribe driller's terminology literally but paraphrase as necessary, in parentheses If material water-bearing so state and record static level if reported Give depths in feet below land surface datum unless otherwise indicated Correlate with stratigraphic column if feasible Following log of materials, list all casings, perforations, screens, etc)

CORRELATION	MATERIAL	THICKNESS (feet)	DEPTH (feet)
	Soil	4	4
	Clay, Sandy, brown	28	32
	Sand, black, coarse	30	62
	Clay, sandy	35	97
	Sand, hard	6	103
	Clay, rubbery blue 80%	63	166
	hardpan layers 20%		
	Sand, hard-some artesian	3	169
	water		
	Clay rubbery, blue,	43	212
	80% hardpan layers 20%		
	Pump Test:		
	Dia: 210' X 6"		
	SWL: [illegible]		
	DD: -		

Turn up Sheet of sheets

File number 22N/5E-6N

WELL LOG —Continued

No 22/5-6N

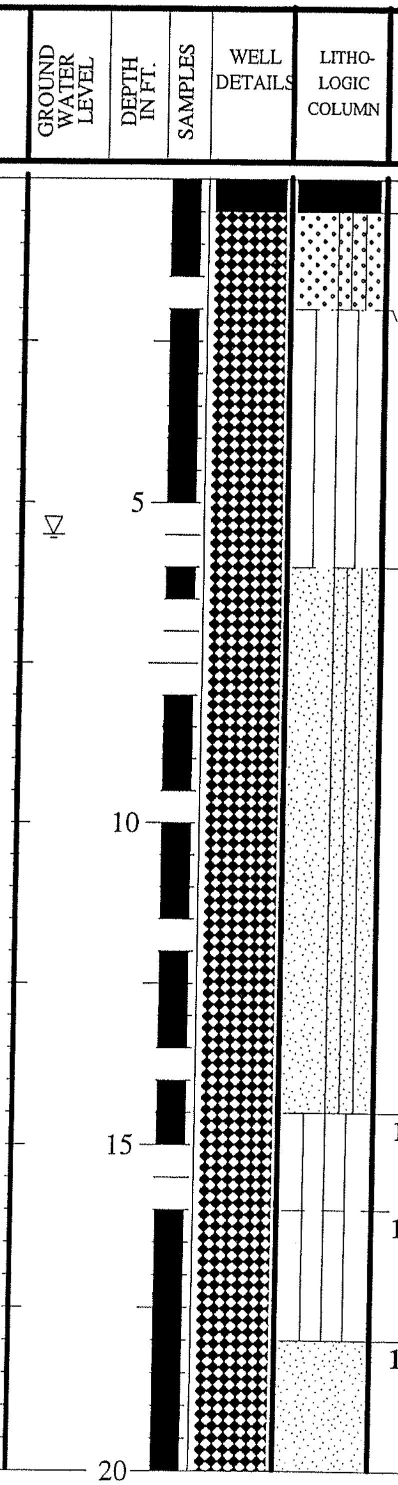
CORRELATION	MATERIAL	THICKNESS (feet)	DEPTH (feet)
	Depth forward	——	
	Yield: 1730 g.p.m.		
	Casing: 6" dia standard dr.		
	casing from ground to 202'		
	Perforations: NONE		

LOG OF EXPLORATORY BORING

PROJECT NAME **BSB Diversified**
LOCATION **Kent, Washington**
DRILLED BY **Cascade Drilling, Inc.**
DRILL METHOD **Geoprobe**
LOGGED BY **Michelle Macias**

BORING NO. **GP-1**
PAGE **1 OF 3**
REFERENCE ELEV.
TOTAL DEPTH **44 feet**
DATE COMPLETED **4/5/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)
1-0	SS	0
1-2	GP	0
1-4	GP	0
1-6	GP	0
1-8	GP	0
1-10	GP	0
1-12	GP	0
1-14	GP	0
1-16	GP	0
1-18	GP	22



LITHOLOGIC DESCRIPTION

0.0 to 0.5 foot: ASPHALT.

0.5 to 2.0 feet: SAND WITH SILT AND GRAVEL (SW-SM); reddish brown; fine to coarse; few nonplastic silt; few fine, subangular to subrounded gravel; damp. (FILL)

2.0 to 6.0 feet: SILT (ML); brown to gray; low plasticity; trace fine sand; moist; scattered wood debris.

6.0 to 14.5 feet: SAND WITH SILT (SP-SM); dark gray with reddish grains; few nonplastic silt; wet.

14.5 to 16.0 feet: SILT (ML); gray; low plasticity; trace fine sand.

16.0 to 18.0 feet: SANDY SILT (ML); dark gray; nonplastic; some reddish, fine sand.

18.0 to 32.7 feet: SAND (SP); dark gray with reddish grains; trace fines; wet; scattered wood debris and organics.

REMARKS

(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities.

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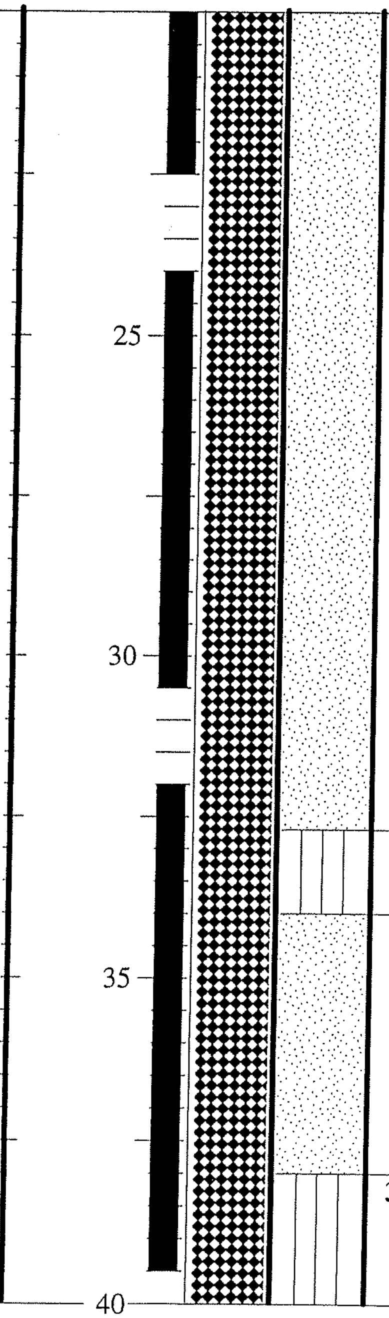
LOG OF EXPLORATORY BORING

PROJECT NAME	**BSB Diversified**	BORING NO.	**GP-1**
LOCATION	**Kent, Washington**	PAGE	**2 OF 3**
DRILLED BY	**Cascade Drilling, Inc.**	REFERENCE ELEV.	
DRILL METHOD	**Geoprobe**	TOTAL DEPTH	**44 feet**
LOGGED BY	**Michelle Macias**	DATE COMPLETED	**4/5/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)
1-20	GP	7
1-22	GP	0
1-24	GP	0
1-26	GP	0
1-28	GP	0
1-30	GP	0
1-32	GP	0
1-34	GP	0
1-36	GP	0
1-38	GP	0



LITHOLOGIC DESCRIPTION

@ 22.0 to 22.5 feet: scattered silt patches.

@ 26.0 to 32.7 feet: fine to medium sand.

32.7 to 34.0 feet: SILT (ML); pinkish to gray; nonplastic to medium plasticity.

34.0 to 38.0 feet: SAND (SP); dark gray with reddish grains; trace fines; wet; scattered wood debris and organics.

38.0 to 44.0 feet: SILT (ML); gray; nonplastic to medium plasticity; trace fine sand.

REMARKS

(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities.

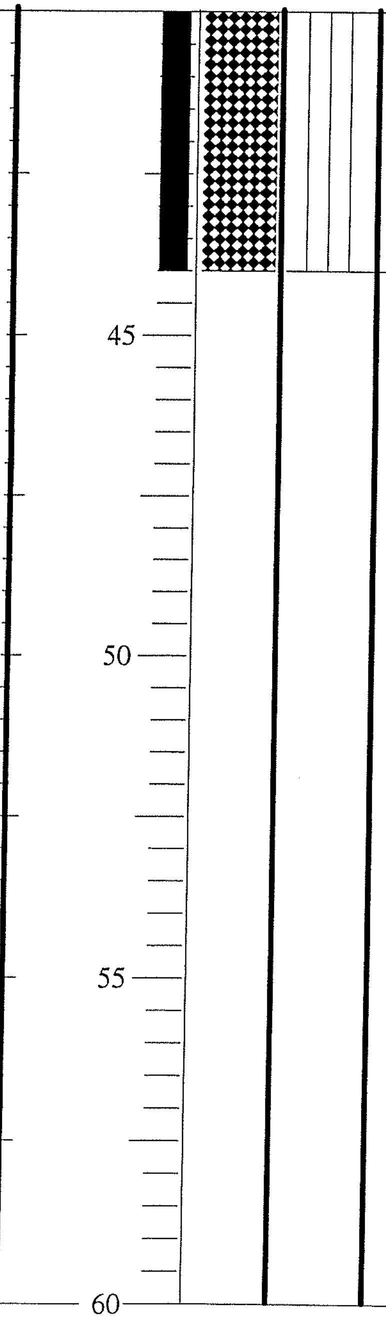
EMCON®

LOG OF EXPLORATORY BORING

PROJECT NAME **BSB Diversified**
LOCATION **Kent, Washington**
DRILLED BY **Cascade Drilling, Inc.**
DRILL METHOD **Geoprobe**
LOGGED BY **Michelle Macias**

BORING NO. **GP-1**
PAGE **3 OF 3**
REFERENCE ELEV.
TOTAL DEPTH **44 feet**
DATE COMPLETED **4/5/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)	GROUND WATER LEVEL	DEPTH IN FT.	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
1-40	GP	0						@ 40.0 to 44.0 feet: sandy to silty sand patches.
1-42	GP	0						@ 42.0 to 44.0 feet: scattered shell fragments.
				45				Total depth drilled = 42.0 feet. Total depth sampled = 44.0 feet.
								Boring abandoned with bentonite grout and an asphalt patch.
				50				
				55				
				60				



REMARKS

(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities.

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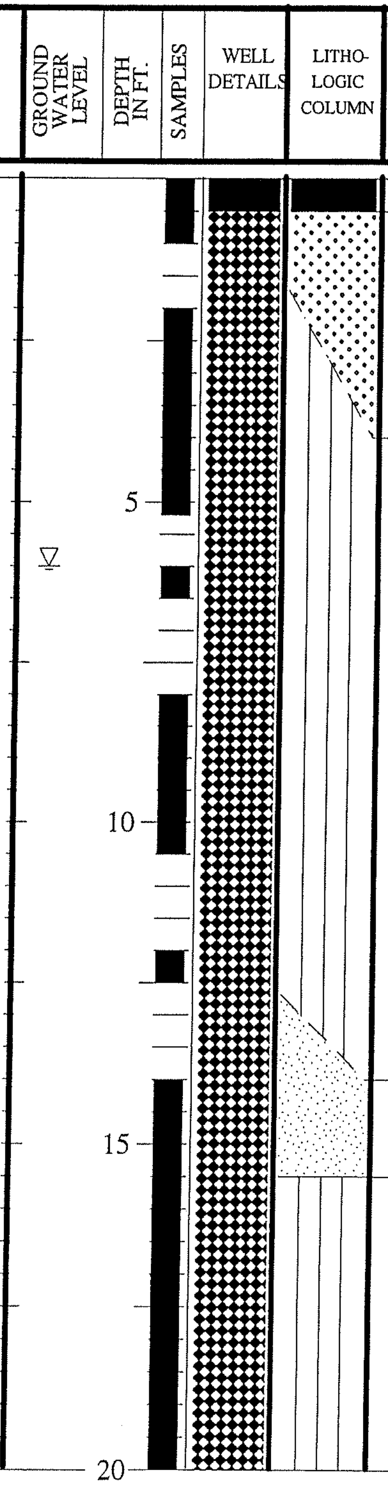
LOG OF EXPLORATORY BORING

PROJECT NAME **BSB Diversified**
LOCATION **Kent, Washington**
DRILLED BY **Cascade Drilling, Inc.**
DRILL METHOD **Geoprobe**
LOGGED BY **Michelle Macias**

BORING NO. **GP-2**
PAGE **1 OF 3**
REFERENCE ELEV.
TOTAL DEPTH **58 feet**
DATE COMPLETED **4/6/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)
2-0	SS	0
2-2	GP	--
2-4	GP	0
2-6	GP	0
2-8	GP	0
2-10	GP	0
2-12	GP	0
2-14	GP	4
2-16	GP	4
2-18	GP	2



LITHOLOGIC DESCRIPTION

0.0 to 0.5 foot: ASPHALT.

0.5 to 4.0 feet: SAND (SW); brown; fine to coarse; damp. (FILL)

@ 2.0 feet: no recovery; wood in shoe.

4.0 to 14.0 feet: SILT (ML); brownish to gray with scattered iron staining; nonplastic to low plasticity; trace fine sand; scattered rootlets; occasional sandy laminations.

14.0 to 15.5 feet: SAND (SP); dark gray with reddish grains; fine; wet.

15.5 to 20.0 feet: SILT (ML); gray; nonplastic to low plasticity; few fine sand; scattered organic debris.

REMARKS

(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities.

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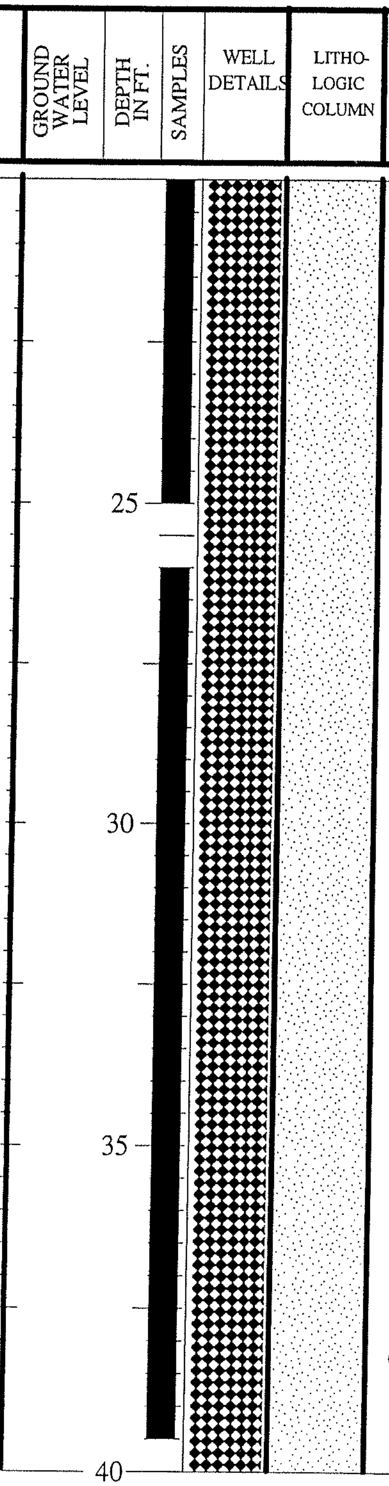
LOG OF EXPLORATORY BORING

PROJECT NAME **BSB Diversified**
LOCATION **Kent, Washington**
DRILLED BY **Cascade Drilling, Inc.**
DRILL METHOD **Geoprobe**
LOGGED BY **Michelle Macias**

BORING NO. **GP-2**
PAGE **2 OF 3**
REFERENCE ELEV.
TOTAL DEPTH **58 feet**
DATE COMPLETED **4/6/99**



SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)	LITHOLOGIC DESCRIPTION
2-20	GP	7	**20.0 to 40.0 feet: SAND (SP);** dark gray with reddish grains; fine; trace fines; wet.
2-22	GP	5	
2-24	GP	0	@ 24.0 to 32.0 feet: fine to medium sand.
2-26	GP	0	
2-28	GP	0	
2-30	GP	0	
2-32	GP	0	
2-34	GP	0	@ 34.5 to 36.0 feet: occasional silt laminations.
2-36	GP	0	
2-38	GP	0	@ 38.0 to 39.5 feet: scattered wood debris.

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REMARKS

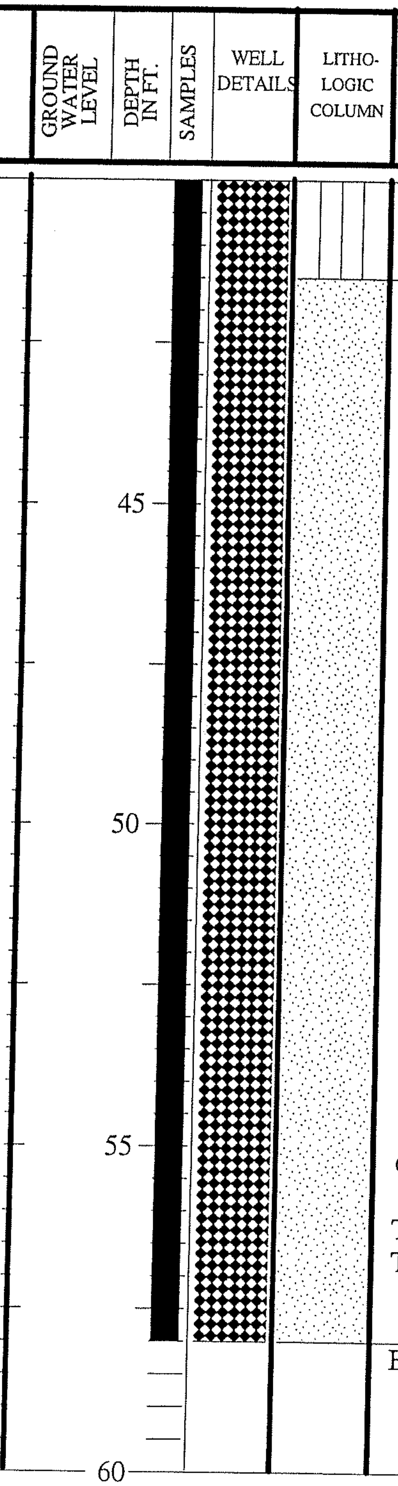
(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities.

LOG OF EXPLORATORY BORING

PROJECT NAME **BSB Diversified**
LOCATION **Kent, Washington**
DRILLED BY **Cascade Drilling, Inc.**
DRILL METHOD **Geoprobe**
LOGGED BY **Michelle Macias**

BORING NO. **GP-2**
PAGE **3 OF 3**
REFERENCE ELEV.
TOTAL DEPTH **58 feet**
DATE COMPLETED **4/6/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)
2-40	GP	0
2-42	GP	0
2-44	GP	0
2-46	GP	0
2-48	GP	0
2-50	GP	0
2-52	GP	0
2-54	GP	0
2-56	GP	0



LITHOLOGIC DESCRIPTION

40.0 to 41.5 feet: SILT WITH SAND (ML); gray; low plasticity; few fine sand.

41.5 to 58.0 feet: SAND (SP); dark gray with reddish grains; fine; trace fines; wet.

@ 55.0 to 56.0 feet: occasional silt laminations.

Total depth drilled = 56.0 feet.
Total depth sampled = 58.0 feet.

Boring abandoned with bentonite grout and an asphalt patch.

REMARKS

(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities.

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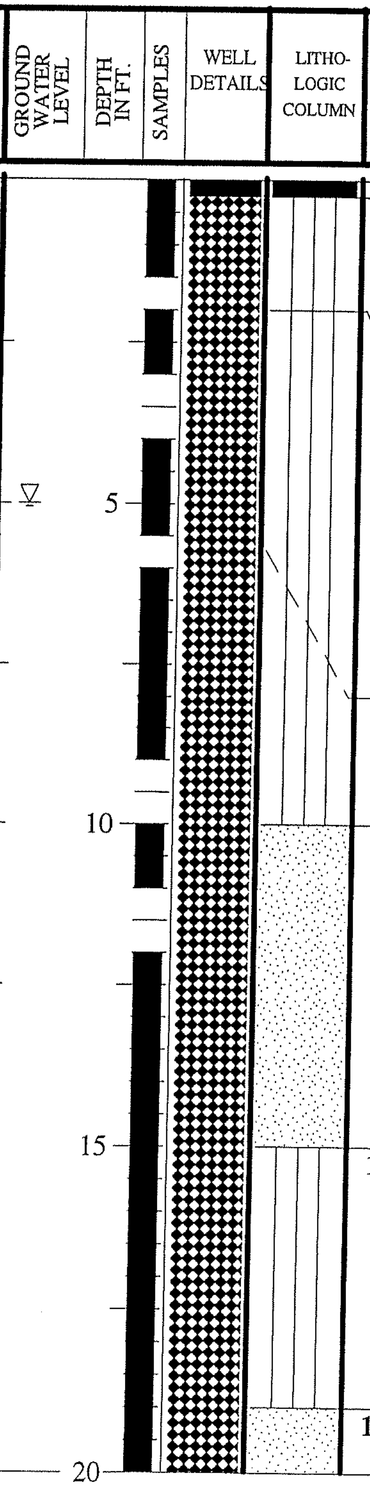
LOG OF EXPLORATORY BORING

PROJECT NAME **BSB Diversified**
LOCATION **Kent, Washington**
DRILLED BY **Cascade Drilling, Inc.**
DRILL METHOD **Geoprobe**
LOGGED BY **Michelle Macias**

BORING NO. **GP-3**
PAGE **1 OF 3**
REFERENCE ELEV.
TOTAL DEPTH **48 feet**
DATE COMPLETED **4/7/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)
3-0	SS	0
3-2	GP	91
3-4	GP	0
3-6	GP	--
3-8	GP	0
3-10	GP	0
3-12	GP	0
3-14	GP	0
3-16	GP	0
3-18	GP	0



LITHOLOGIC DESCRIPTION

0.0 to 0.25 foot: ASPHALT.

0.25 to 2.0 feet: SANDY SILT (ML); mottled reddish gray and brown to gray; nonplastic to low plasticity; some fine sand; trace medium to coarse sand; scattered organic debris. (FILL)

2.0 to 8.0 feet: SILT (ML); gray to mottled gray and orange; nonplastic to low plasticity; trace fine sand; scattered wood debris.

@ 5.0 to 5.5 feet: grades to silty sand.

@ 6.0 feet: no recovery.

8.0 to 10.0 feet: SANDY SILT (ML); mottled gray and brown with scattered iron staining; low plasticity; little fine sand.

10.0 to 15.0 feet: SAND (SP); dark gray with reddish grains; fine; trace fines; wet.

15.0 to 19.0 feet: SILT (ML); dark gray; low plasticity; few fine sand; scattered wood debris.

19.0 to 20.0 feet: SAND (SP); dark gray with reddish

REMARKS

(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities.

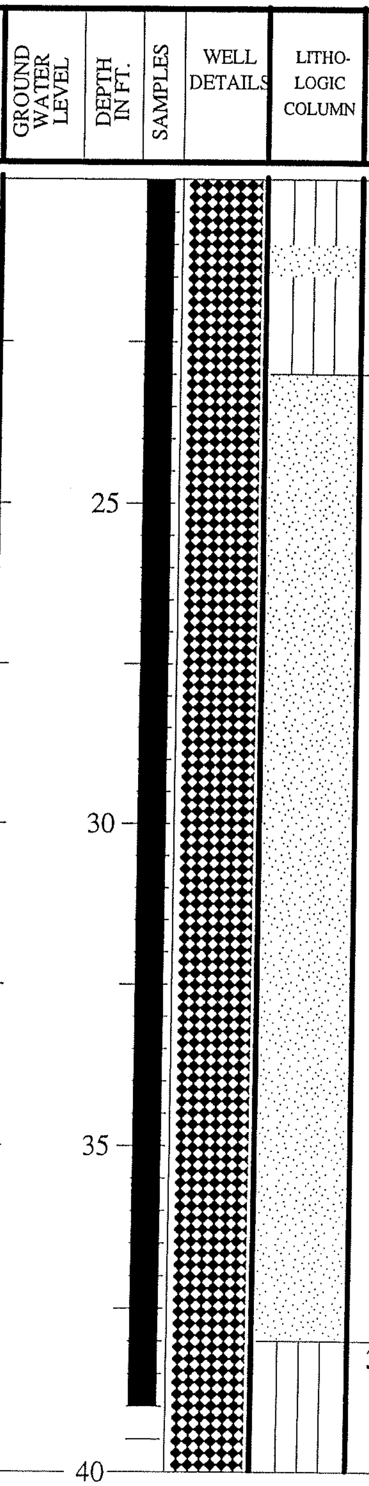
EMCON®

LOG OF EXPLORATORY BORING

PROJECT NAME **BSB Diversified**
LOCATION **Kent, Washington**
DRILLED BY **Cascade Drilling, Inc.**
DRILL METHOD **Geoprobe**
LOGGED BY **Michelle Macias**

BORING NO. **GP-3**
PAGE **2 OF 3**
REFERENCE ELEV.
TOTAL DEPTH **48 feet**
DATE COMPLETED **4/7/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)
3-20	GP	0
3-22	GP	0
3-24	GP	0
3-26	GP	0
3-28	GP	0
3-30	GP	0
3-32	GP	0
3-34	GP	0
3-36	GP	0
3-38	GP	0



LITHOLOGIC DESCRIPTION

grains; fine; trace fines; wet.

20.0 to 23.0 feet: SANDY SILT (ML); dark gray; low plasticity; some fine sand; scattered wood debris.

@ 21.0 to 21.5 feet: SAND (SP); dark gray sand with reddish grains; fine; trace fines; wet.

23.0 to 38.0 feet: SAND (SP); dark gray with reddish grains; fine; trace fines; wet.

@ 33.0 to 34.0 feet: occasional silt laminations.

38.0 to 40.0 feet: SILT (ML); dark gray; nonplastic; trace fine sand; scattered organic debris.

REMARKS

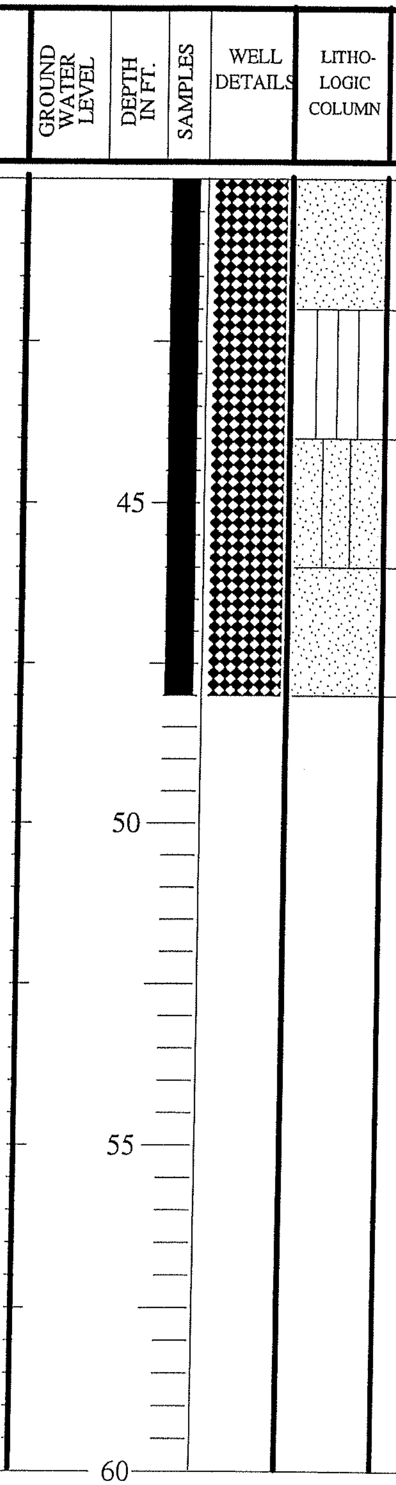
(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities.

EMCON®

LOG OF EXPLORATORY BORING

PROJECT NAME **BSB Diversified**
LOCATION **Kent, Washington**
DRILLED BY **Cascade Drilling, Inc.**
DRILL METHOD **Geoprobe**
LOGGED BY **Michelle Macias**

BORING NO. **GP-3**
PAGE **3 OF 3**
REFERENCE ELEV.
TOTAL DEPTH **48 feet**
DATE COMPLETED **4/7/99**



SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)	LITHOLOGIC DESCRIPTION
3-40	GP	0	**40.0 to 42.0 feet: SAND (SP);** dark gray with reddish grains; fine; trace fines; wet.
3-42	GP	0	**42.0 to 44.0 feet: SILT (ML);** dark gray; low plasticity; trace fine sand; scattered shell fragments; occasional sandy silt laminations.
3-44	GP	0	**44.0 to 46.0 feet: SILTY SAND (SM);** dark gray; fine; some low plasticity silt; scattered shell fragments.
3-46	GP	0	**46.0 to 48.0 feet: SAND (SP);** dark gray with reddish grains; fine; trace fines; wet.

Total depth drilled = 46.0 feet.
Total depth sampled = 48.0 feet.

Boring abandoned with bentonite grout and an asphalt patch.

REMARKS

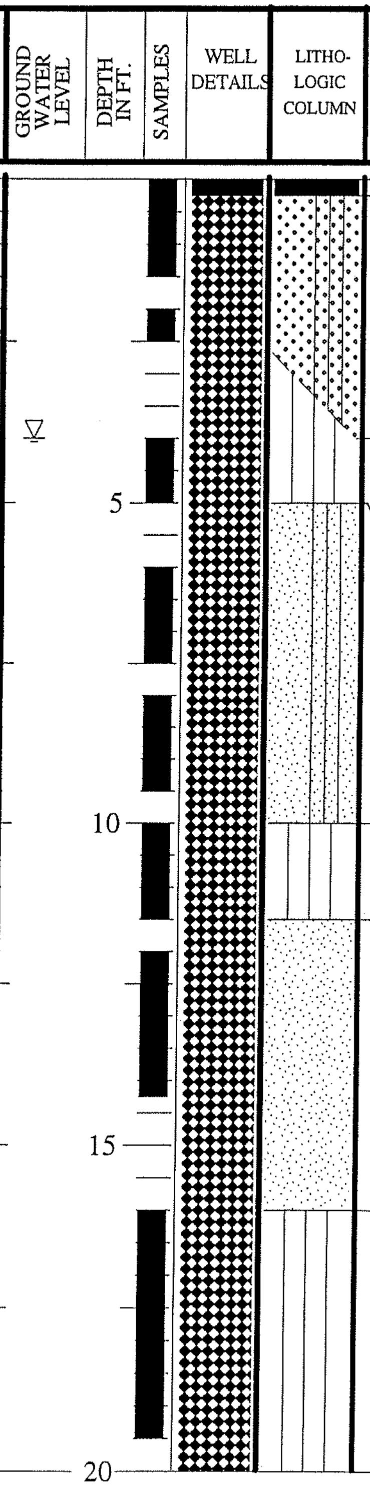
(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities.

EMCON®

LOG OF EXPLORATORY BORING

PROJECT NAME	**BSB Diversified**	BORING NO.	**GP-4**
LOCATION	**Kent, Washington**	PAGE	**1 OF 2**
DRILLED BY	**Cascade Drilling, Inc.**	REFERENCE ELEV.	
DRILL METHOD	**Geoprobe**	TOTAL DEPTH	**36 feet**
LOGGED BY	**Michelle Macias**	DATE COMPLETED	**4/7/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)
4-0	SS	0
4-2	GP	0
4-4	GP	0
4-6	GP	0
4-8	GP	0
4-10	GP	1.5
4-12	GP	0
4-14	GP	0
4-16	GP	0
4-18	GP	0



LITHOLOGIC DESCRIPTION

0.0 to 0.25 foot: ASPHALT.

0.25 to 4.0 feet: GRAVELLY SAND WITH SILT (SW-SM); brown, gray, and orangish; fine to medium; some subangular gravel; few nonplastic silt; damp. (FILL)

4.0 to 5.0 feet: SILT (ML); brown with scattered iron staining; nonplastic to low plasticity; few fine to coarse sand; scattered rootlets.

5.0 to 10.0 feet: SAND WITH SILT (SP-SM); mottled reddish gray to gray; fine; few nonplastic silt; wet; scattered organic debris; occasional laminations consisting of silt with sand.

10.0 to 11.5 feet: SILT (ML); gray; low plasticity; few fine sand; scattered organic debris.
@ 11.0 feet: sand increasing.

11.5 to 16.0 feet: SAND (SP); dark gray with reddish grains; fine; trace fines; wet.

16.0 to 22.0 feet: SILT WITH SAND (ML); gray; nonplastic to low plasticity; little fine sand; scattered wood and organic debris.

REMARKS

(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities.

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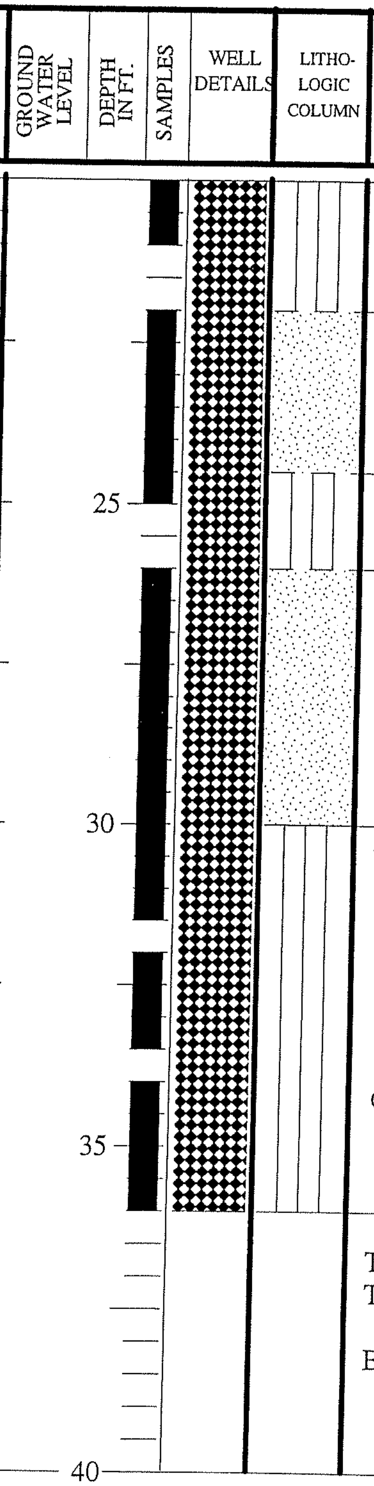
LOG OF EXPLORATORY BORING

PROJECT NAME **BSB Diversified**
LOCATION **Kent, Washington**
DRILLED BY **Cascade Drilling, Inc.**
DRILL METHOD **Geoprobe**
LOGGED BY **Michelle Macias**

BORING NO. **GP-4**
PAGE **2 OF 2**
REFERENCE ELEV.
TOTAL DEPTH **36 feet**
DATE COMPLETED **4/7/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)
4-20	GP	0
4-22	GP	0
4-24	GP	0
4-26	GP	0
4-28	GP	0
4-30	GP	0
4-32	GP	0
4-34	GP	0



LITHOLOGIC DESCRIPTION

22.0 to 24.5 feet: SAND (SP); dark gray with reddish grains; fine; trace fines; wet.

24.5 to 26.0 feet: SILT (ML); gray; nonplastic; trace fine sand; scattered wood debris.

26.0 to 30.0 feet: SAND (SP); dark gray with reddish grains; fine; trace fines; wet.
@ 26.0 to 27.0 feet: abundant wood debris.

@ 29.75 feet: silt increasing.

30.0 to 36.0 feet: SILT (ML); gray; low to medium plasticity; trace fine sand; scattered wood and organic debris.

@ 34.0 to 36.0 feet: scattered shell fragments.

Total depth drilled = 34.0 feet.
Total depth sampled = 36.0 feet.

Boring abandoned with bentonite grout and an asphalt patch.

REMARKS

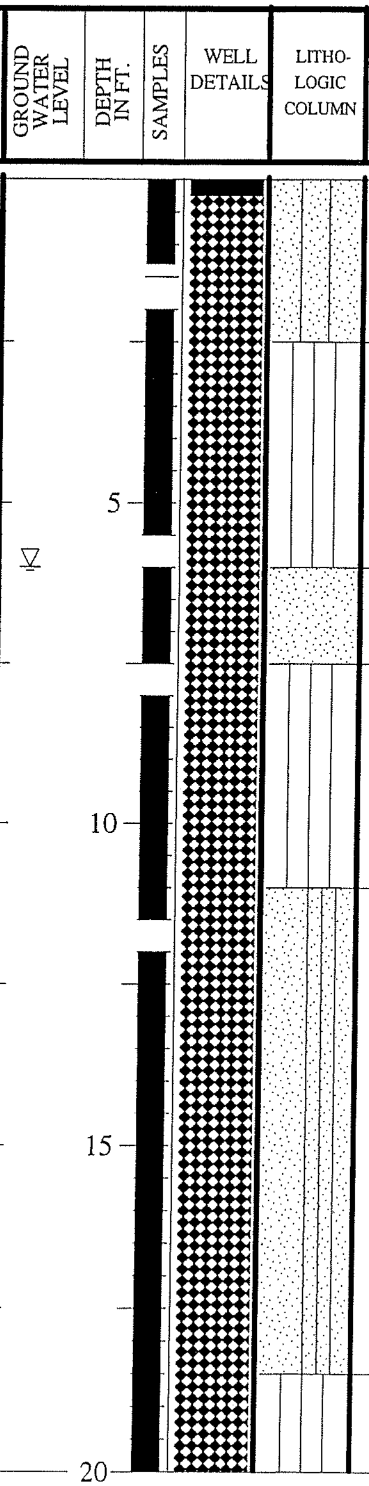
(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities.

LOG OF EXPLORATORY BORING

PROJECT NAME **BSB Diversified**
LOCATION **Kent, Washington**
DRILLED BY **Cascade Drilling, Inc.**
DRILL METHOD **Geoprobe**
LOGGED BY **Michelle Macias**

BORING NO. **GP-5**
PAGE **1 OF 2**
REFERENCE ELEV.
TOTAL DEPTH **36 feet**
DATE COMPLETED **4/7/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)
5-0	SS	0
5-2	SS	0
5-4	GP	1
5-6	GP	0
5-8	GP	--
5-10	GP	0
5-12	GP	0
5-14	GP	0
5-16	GP	0
5-18	GP	0



LITHOLOGIC DESCRIPTION

0.0 to 2.5 feet: SILTY SAND (SM); brown; fine to medium; little nonplastic silt; few coarse sand to fine subangular gravel; scattered wood debris; damp. (FILL)

2.5 to 6.0 feet: SILT (ML); gray to mottled orange and gray; nonplastic; trace fine sand; scattered organic debris and wood debris.

6.0 to 7.5 feet: SAND (SP); dark gray with reddish grains; fine; trace fines; wet.

7.5 to 11.0 feet: SILT WITH SAND (ML); brown to gray; low plasticity; little fine sand; very soft.
@ 8.0 feet: no recovery.

11.0 to 18.5 feet: SAND WITH SILT (SP-SM); dark gray with reddish grains; fine; few nonplastic silt; scattered organic debris.

18.5 to 25.0 feet: SILT (ML); gray; nonplastic to low plasticity; trace to few fine sand; very soft; scattered

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REMARKS

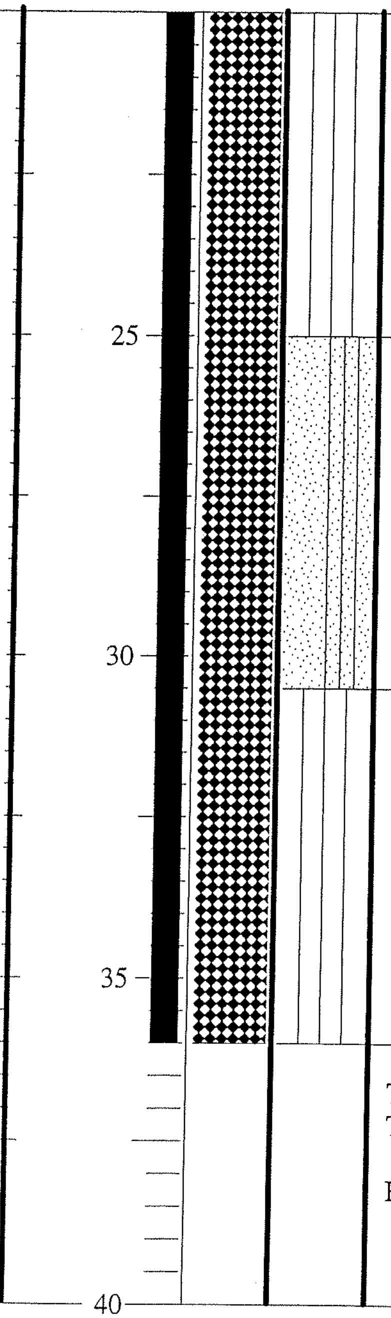
(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities.

LOG OF EXPLORATORY BORING

PROJECT NAME **BSB Diversified**
LOCATION **Kent, Washington**
DRILLED BY **Cascade Drilling, Inc.**
DRILL METHOD **Geoprobe**
LOGGED BY **Michelle Macias**

BORING NO. **GP-5**
PAGE **2 OF 2**
REFERENCE ELEV.
TOTAL DEPTH **36 feet**
DATE COMPLETED **4/7/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)
5-20	GP	0
5-22	GP	1
5-24	GP	0
5-26	GP	0
5-28	GP	0
5-30	GP	0
5-32	GP	0
5-34	GP	0



LITHOLOGIC DESCRIPTION

wood debris; occasional laminations consisting of fine sand.

25.0 to 30.5 feet: SAND WITH SILT (SP-SM); dark gray with reddish grains; fine; few nonplastic silt; scattered organic debris.

30.5 to 36.0 feet: SILT (ML); gray; nonplastic to low plasticity; trace fine sand; scattered organic and wood debris.

Total depth drilled = 34.0 feet.
Total depth sampled = 36.0 feet.

Boring abandoned with bentonite grout and an asphalt patch.

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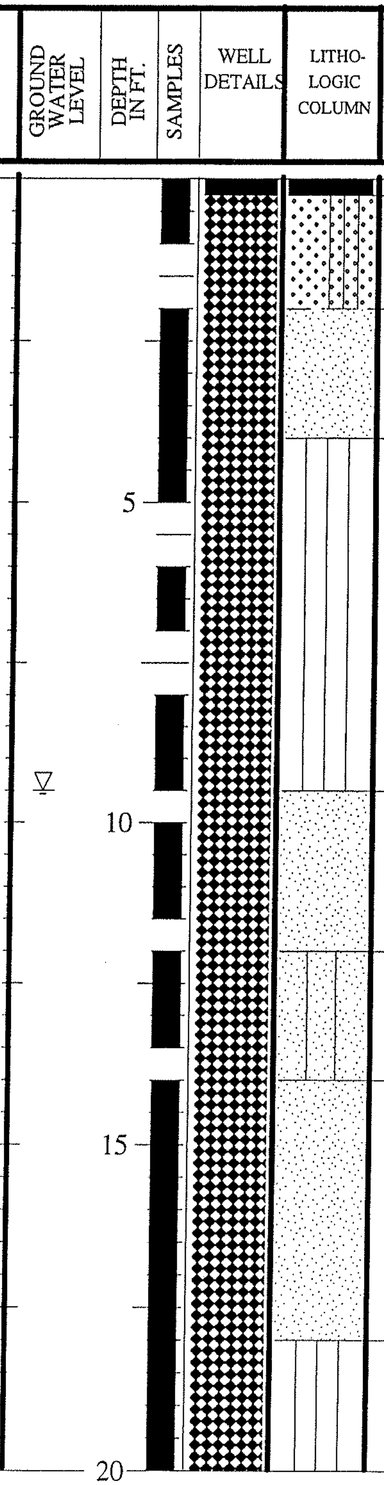
REMARKS

(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities.

LOG OF EXPLORATORY BORING

PROJECT NAME	**BSB Diversified**	BORING NO.	**GP-6**
LOCATION	**Kent, Washington**	PAGE	**1 OF 3**
DRILLED BY	**Cascade Drilling, Inc.**	REFERENCE ELEV.	
DRILL METHOD	**Geoprobe**	TOTAL DEPTH	**44 feet**
LOGGED BY	**Michelle Macias**	DATE COMPLETED	**4/8/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)
6-0	SS	0
6-2	SS	0
6-4	GP	0
6-6	GP	0
6-8	GP	0
6-10	GP	0
6-12	GP	0
6-14	GP	0
6-16	GP	0
6-18	GP	0



LITHOLOGIC DESCRIPTION

0.0 to 0.25 foot: ASPHALT.

0.25 to 2.0 feet: SAND WITH SILT (SW-SM); brown; fine to medium; few nonplastic silt; few coarse sand to fine subangular gravel; moist. (FILL)

2.0 to 4.0 feet: SAND (SP); mottled gray and orangish; fine; moist; scattered wood debris.

4.0 to 9.5 feet: SILT (ML); gray to greenish gray; nonplastic to low plasticity; trace to few fine sand; scattered wood debris.

9.5 to 12.0 feet: SAND (SP); dark gray with reddish grains; fine; loose; wet; occasional silty sand laminations.

12.0 to 14.0 feet: SILTY SAND (SM); brown; fine; some low plasticity silt; wet.

14.0 to 18.0 feet: SAND (SP); dark gray with reddish grains; fine; trace fines; wet.

18.0 to 20.0 feet: SILT (ML); gray; low plasticity; few fine sand; scattered wood debris; occasional sand laminations.

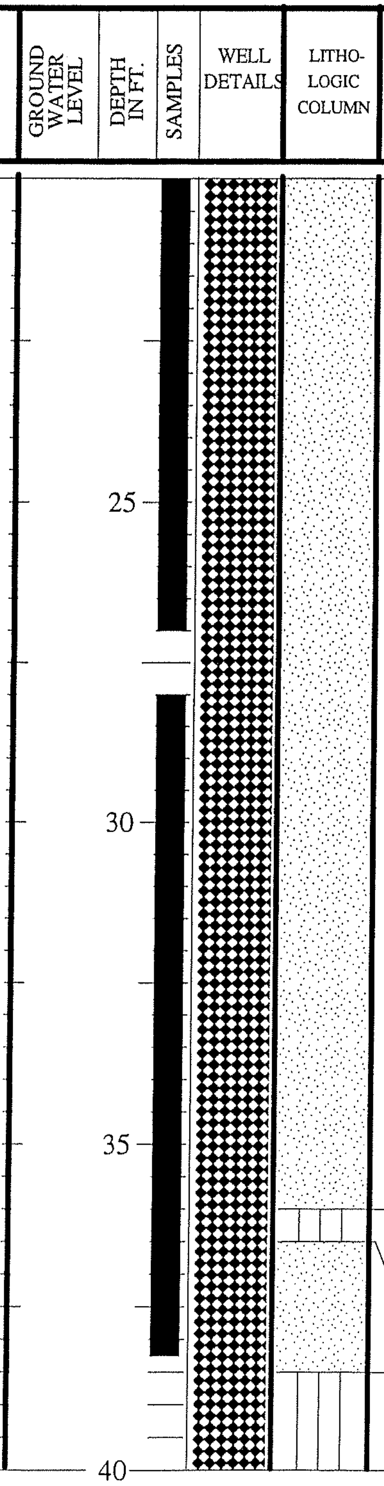
REMARKS

(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities.

LOG OF EXPLORATORY BORING

PROJECT NAME	**BSB Diversified**	BORING NO.	**GP-6**
LOCATION	**Kent, Washington**	PAGE	**2 OF 3**
DRILLED BY	**Cascade Drilling, Inc.**	REFERENCE ELEV.	
DRILL METHOD	**Geoprobe**	TOTAL DEPTH	**44 feet**
LOGGED BY	**Michelle Macias**	DATE COMPLETED	**4/8/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)
6-20	GP	2
6-22	GP	0
6-24	GP	0
6-26	GP	0
6-28	GP	0
6-30	GP	0
6-32	GP	0
6-34	GP	0
6-36	GP	0
6-38	GP	0



LITHOLOGIC DESCRIPTION

20.0 to 36.0 feet: SAND (SP); dark gray with reddish grains; fine; trace fines; wet.

@ 22.0 to 24.0 feet: trace medium sand and scattered wood debris.

36.0 to 36.5 feet: SILT (ML); gray; nonplastic to low plasticity; scattered organic debris.

36.5 to 38.5 feet: SAND (SP); dark gray with reddish grains; fine; trace fines; wet.

38.5 to 44.0 feet: SILT (ML); gray; nonplastic to low plasticity; few fine sand.

REMARKS

(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities.

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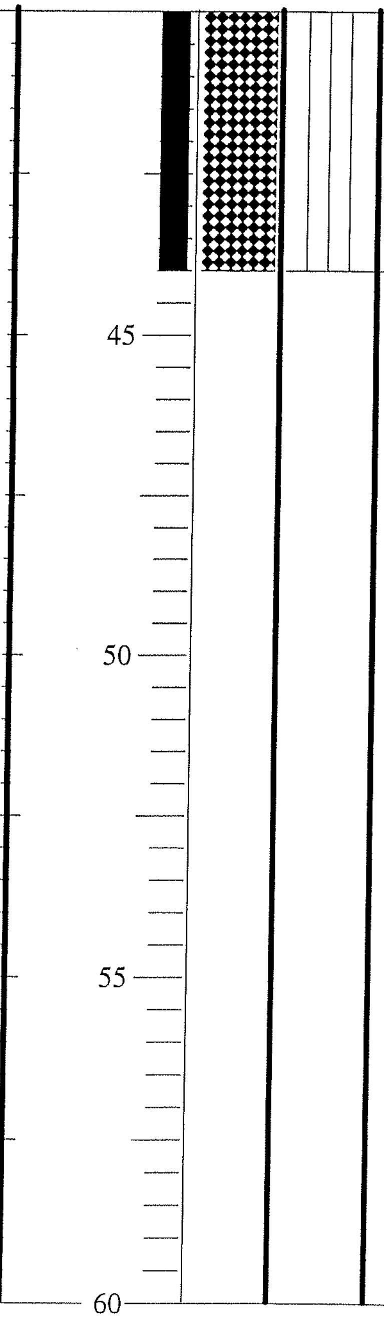
LOG OF EXPLORATORY BORING

PROJECT NAME **BSB Diversified**
LOCATION **Kent, Washington**
DRILLED BY **Cascade Drilling, Inc.**
DRILL METHOD **Geoprobe**
LOGGED BY **Michelle Macias**

BORING NO. **GP-6**
PAGE **3 OF 3**
REFERENCE ELEV.
TOTAL DEPTH **44 feet**
DATE COMPLETED **4/8/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)
6-40	GP	0
6-42	GP	0



LITHOLOGIC DESCRIPTION

Total depth drilled = 42.0 feet.
Total depth sampled = 44.0 feet.

Boring abandoned with bentonite grout and an asphalt patch.

REMARKS

(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities.

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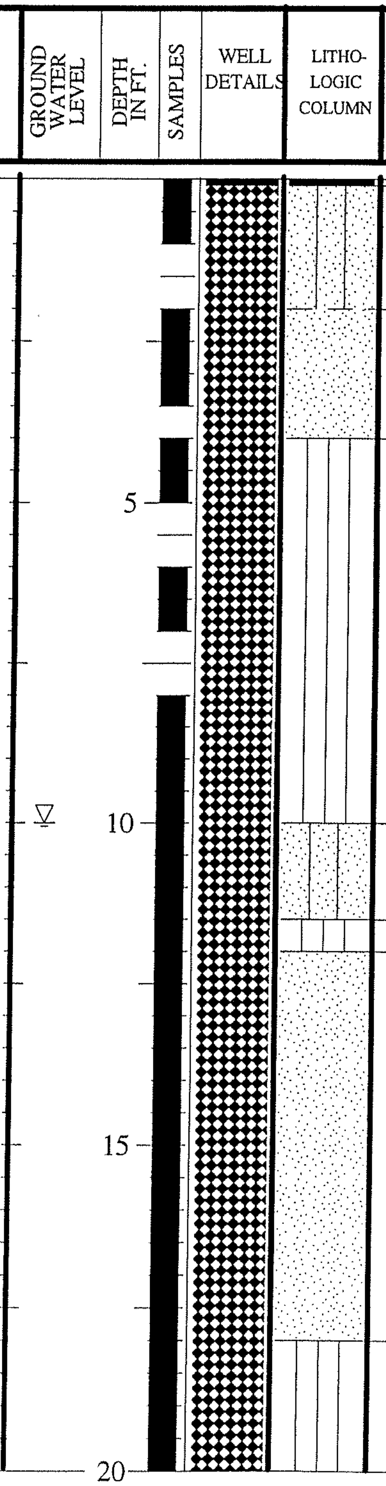
LOG OF EXPLORATORY BORING

PROJECT NAME **BSB Diversified**
LOCATION **Kent, Washington**
DRILLED BY **Cascade Drilling, Inc.**
DRILL METHOD **Geoprobe**
LOGGED BY **Michelle Macias**

BORING NO. **GP-7**
PAGE **1 OF 3**
REFERENCE ELEV.
TOTAL DEPTH **46 feet**
DATE COMPLETED **4/8/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)
7-0	SS	0
7-2	SS	0
7-4	GP	0
7-6	GP	0
7-8	GP	0
7-10	GP	0
7-12	GP	0
7-14	GP	0
7-16	GP	0
7-18	GP	0



LITHOLOGIC DESCRIPTION

0.0 to 0.1 foot: ASPHALT.

0.1 to 2.0 feet: SILTY SAND (SM); light brown; fine; some nonplastic silt; trace medium sand to fine subangular gravel; damp. (FILL)

2.0 to 4.0 feet: SAND (SP); brown with iron staining; fine; trace fines; damp.

4.0 to 10.0 feet: SILT (ML); gray with scattered iron staining; low to medium plasticity; scattered wood and organic debris.

10.0 to 11.5 feet: SILTY SAND (SM); gray; fine; some nonplastic silt; wet.

11.5 to 12.0 feet: SILT (ML); gray; nonplastic.

12.0 to 18.0 feet: SAND (SP); dark gray with reddish grains; fine; trace fines; wet.

18.0 to 20.4 feet: SILT (ML); gray; nonplastic; trace to few fine sand.

REMARKS

(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities.

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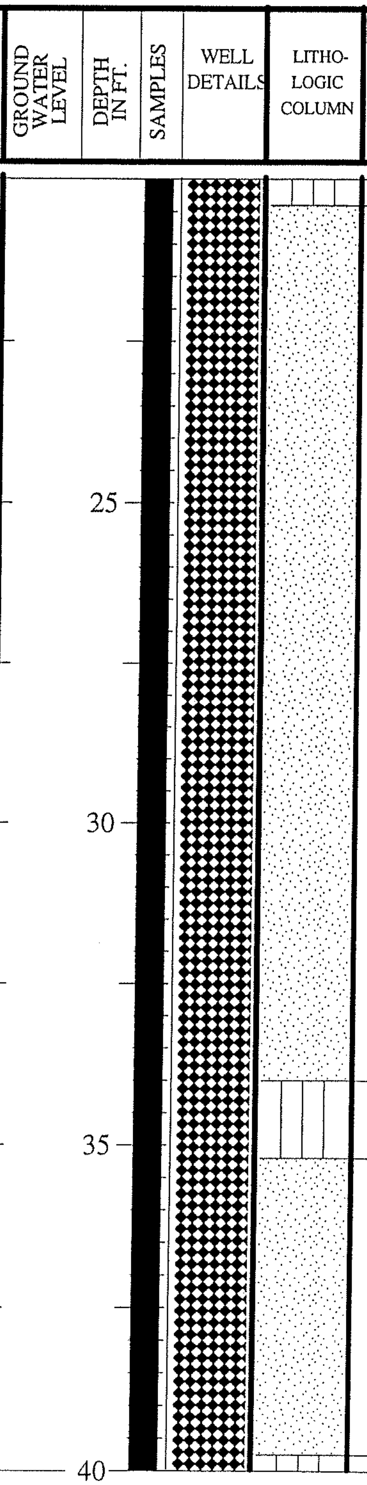
LOG OF EXPLORATORY BORING

PROJECT NAME	**BSB Diversified**	BORING NO.	**GP-7**
LOCATION	**Kent, Washington**	PAGE	**2 OF 3**
DRILLED BY	**Cascade Drilling, Inc.**	REFERENCE ELEV.	
DRILL METHOD	**Geoprobe**	TOTAL DEPTH	**46 feet**
LOGGED BY	**Michelle Macias**	DATE COMPLETED	**4/8/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)	LITHOLOGIC DESCRIPTION
7-20	GP	0	**20.4 to 34.0 feet: SAND (SP);** dark gray with reddish grains; fine; trace fines; wet; occasional silt laminations.
7-22	GP	0	
7-24	GP	0	@ 24.0 to 26.0 feet: scattered wood debris.
7-26	GP	0	
7-28	GP	0	@ 28.0 to 30.0 feet: fine to medium sand.
7-30	GP	--	@ 30.0 feet: no recovery.
7-32	GP	0	
7-34	GP	0	**34.0 to 35.2 feet: SILT (ML);** pinkish; medium plasticity.
7-36	GP	0	**35.2 to 39.75 feet: SAND (SP);** dark gray with reddish grains; fine; trace fines; wet.
7-38	GP	0	



REMARKS

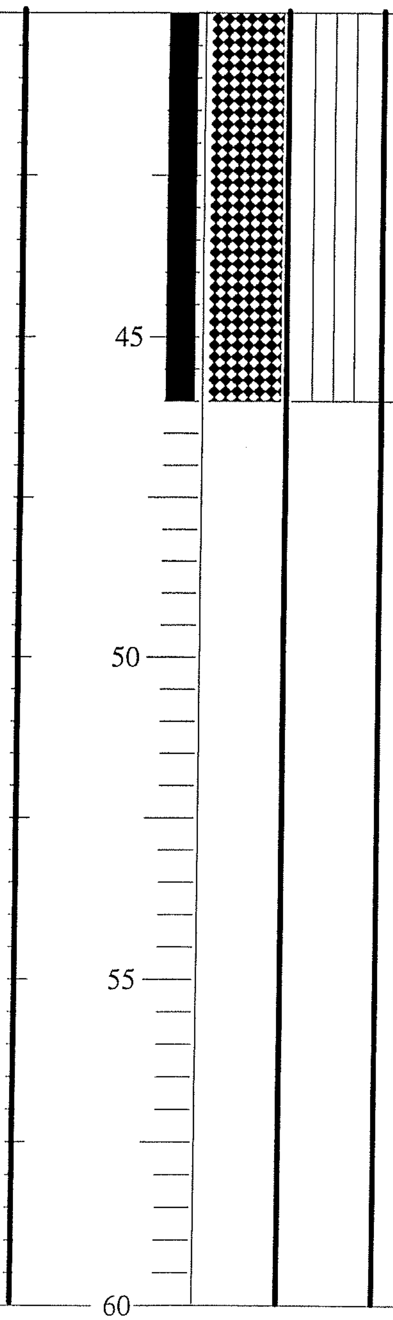
(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities.

LOG OF EXPLORATORY BORING

PROJECT NAME **BSB Diversified**
LOCATION **Kent, Washington**
DRILLED BY **Cascade Drilling, Inc.**
DRILL METHOD **Geoprobe**
LOGGED BY **Michelle Macias**

BORING NO. **GP-7**
PAGE **3 OF 3**
REFERENCE ELEV.
TOTAL DEPTH **46 feet**
DATE COMPLETED **4/8/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)	GROUND WATER LEVEL	DEPTH IN FT.	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
7-40	GP	0						**39.75 to 46.0 feet: SILT (ML)**; gray; nonplastic to medium plasticity; trace to few fine sand.
7-42	GP	0						
7-44	GP	0						@ 44.0 to 46.0 feet: scattered shell fragments.
								Total depth drilled = 44.0 feet. Total depth sampled = 46.0 feet. Boring abandoned with bentonite grout and an asphalt patch.



REMARKS

(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities.

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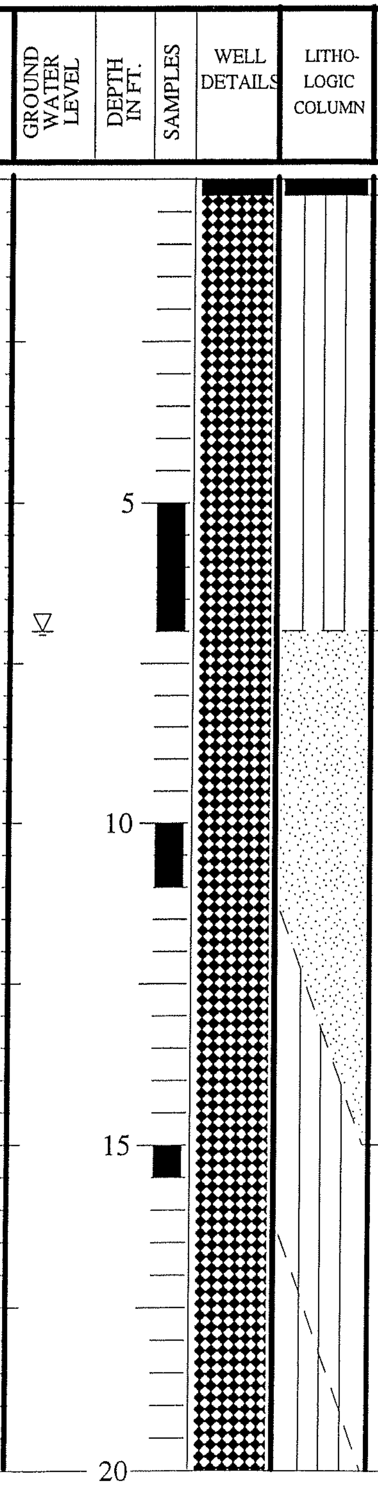
LOG OF EXPLORATORY BORING

PROJECT NAME **BSB Diversified**
LOCATION **Kent, Washington**
DRILLED BY **Cascade Drilling, Inc.**
DRILL METHOD **Geoprobe**
LOGGED BY **Michelle Macias**

BORING NO. **GP-8**
PAGE **1 OF 3**
REFERENCE ELEV.
TOTAL DEPTH **48 feet**
DATE COMPLETED **4/9/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)	DEPTH IN FT.
8-5	GP	0	5
8-10	GP	0	10
8-15	GP	0	15



LITHOLOGIC DESCRIPTION

0.0 to 0.25 foot: ASPHALT.

0.25 to 7.0 feet: SILT (ML); gray; low plasticity; few fine sand.

7.0 to 15.0 feet: SAND (SP); dark gray with reddish grains; fine; trace fines; wet.

15.0 to 20.0 feet: SILT (ML); gray; nonplastic; scattered wood debris.

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REMARKS

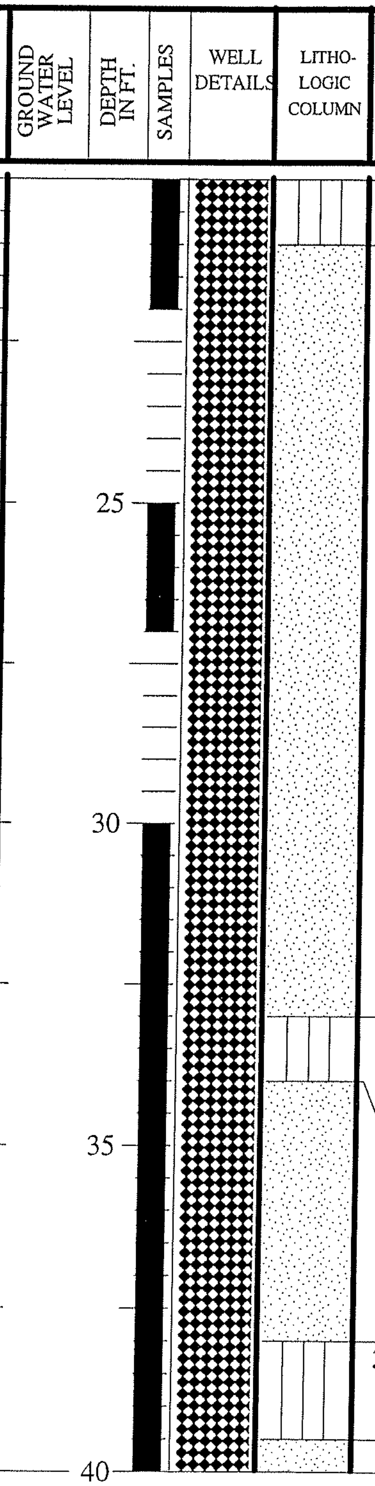
(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) *GP = sample collected with Shelby Tube. (5) White triangle = field approximation of water table during drilling activities.

LOG OF EXPLORATORY BORING

PROJECT NAME **BSB Diversified**
LOCATION **Kent, Washington**
DRILLED BY **Cascade Drilling, Inc.**
DRILL METHOD **Geoprobe**
LOGGED BY **Michelle Macias**

BORING NO. **GP-8**
PAGE **2 OF 3**
REFERENCE ELEV.
TOTAL DEPTH **48 feet**
DATE COMPLETED **4/9/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)
8-20	GP	0
8-25	GP	0
8-30	GP	0
8-32	GP	0
8-34	GP	0
8-36	GP	0
8-38	GP	0



LITHOLOGIC DESCRIPTION

20.0 to 21.0 feet: SILT WITH SAND (ML); gray; low plasticity; little fine sand; scattered wood debris.

21.0 to 33.0 feet: SAND (SP); dark gray with reddish grains; fine; trace fines; wet.

33.0 to 34.0 feet: SILT (ML); pinkish; low to medium plasticity; few fine sand; scattered wood debris; occasional fine sand laminations.

34.0 to 38.0 feet: SAND (SP); dark gray with reddish grains; fine; trace fines; wet.

38.0 to 39.5 feet: SILT (ML); gray; low plasticity; soft.

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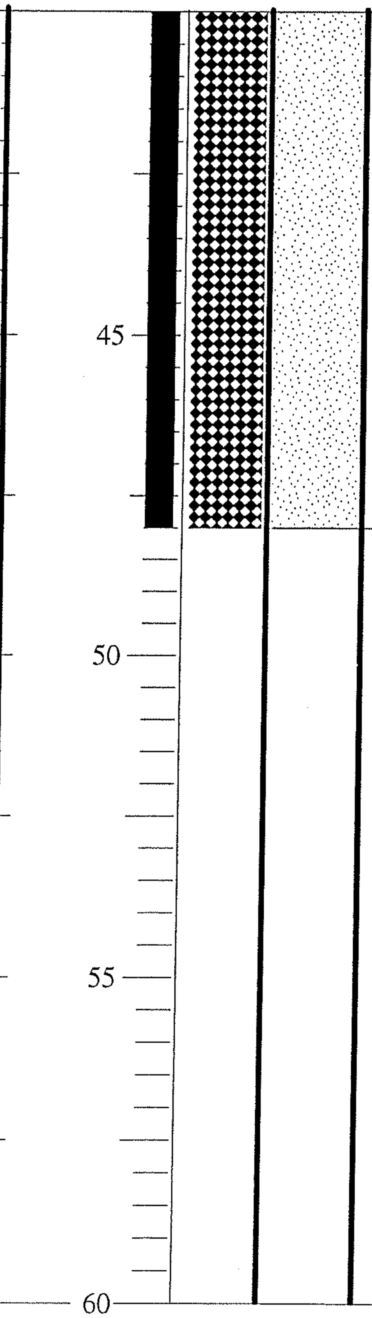
REMARKS

(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) *GP = sample collected with Shelby Tube. (5) White triangle = field approximation of water table during drilling activities.

LOG OF EXPLORATORY BORING

PROJECT NAME	**BSB Diversified**	BORING NO.	**GP-8**
LOCATION	**Kent, Washington**	PAGE	**3 OF 3**
DRILLED BY	**Cascade Drilling, Inc.**	REFERENCE ELEV.	
DRILL METHOD	**Geoprobe**	TOTAL DEPTH	**48 feet**
LOGGED BY	**Michelle Macias**	DATE COMPLETED	**4/9/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)	GROUND WATER LEVEL	DEPTH IN FT.	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
8-40	*GP	--						**39.5 to 48.0 feet: SAND (SP);** dark gray with reddish grains; fine; trace fines; wet.
8-44	GP	--						@ 44.0 feet: no recovery.
				45				
8-46	GP	0						
								Total depth drilled = 46.0 feet. Total depth sampled = 48.0 feet.
				50				
								Boring abandoned with bentonite grout and an asphalt patch.
				55				
				60				



REMARKS

(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) *GP = sample collected with Shelby Tube. (5) White triangle = field approximation of water table during drilling activities.

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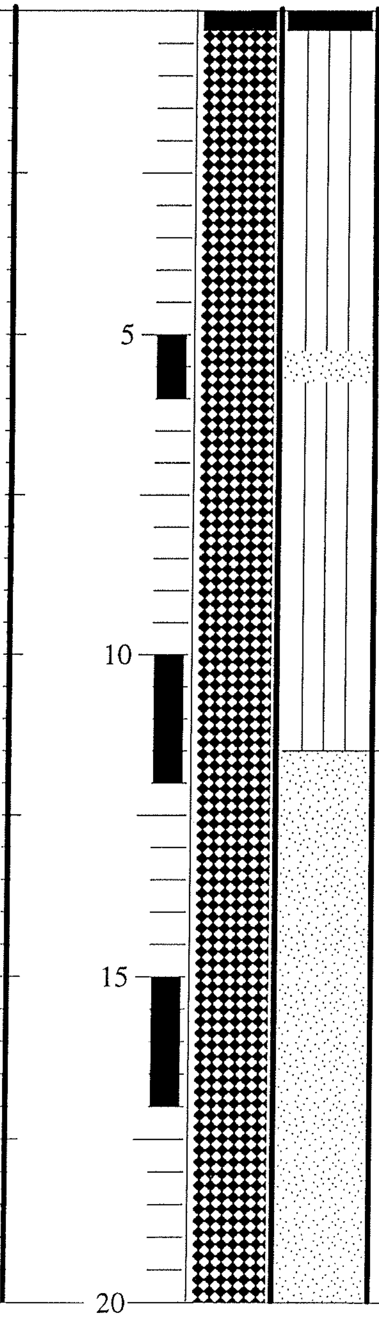
LOG OF EXPLORATORY BORING

PROJECT NAME **BSB Diversified**
LOCATION **Kent, Washington**
DRILLED BY **Cascade Drilling, Inc.**
DRILL METHOD **Geoprobe**
LOGGED BY **Michelle Macias**

BORING NO. **GP-9**
PAGE **1 OF 3**
REFERENCE ELEV.
TOTAL DEPTH **42 feet**
DATE COMPLETED **4/9/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)	DEPTH IN FT.
9-5	GP	0	5
9-10	GP	0	10
9-15	GP	0	15



LITHOLOGIC DESCRIPTION

0.0 to 0.3 foot: ASPHALT.

0.3 to 11.5 feet: SILT (ML); brown with scattered iron staining to gray; low plasticity; trace to few fine sand; scattered wood debris.

@ 5.25 to 5.75 feet: SAND (SP); reddish; fine; trace fines; moist.

11.5 to 30.0 feet: SAND (SP); gray; fine; trace fines; trace medium sand; wet; scattered wood debris; occasional silt laminations.

REMARKS

(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities.

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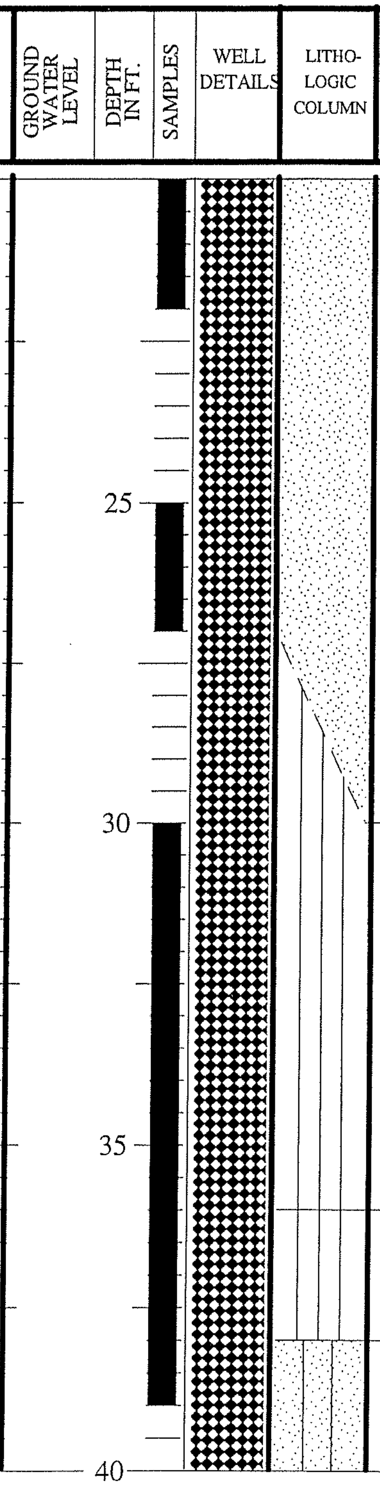
LOG OF EXPLORATORY BORING

PROJECT NAME	**BSB Diversified**	BORING NO.	**GP-9**
LOCATION	**Kent, Washington**	PAGE	**2 OF 3**
DRILLED BY	**Cascade Drilling, Inc.**	REFERENCE ELEV.	
DRILL METHOD	**Geoprobe**	TOTAL DEPTH	**42 feet**
LOGGED BY	**Michelle Macias**	DATE COMPLETED	**4/9/99**



SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)	LITHOLOGIC DESCRIPTION
9-20	GP	0	
9-25	GP	0	
9-30	GP	0	**30.0 to 36.0 feet: SILT** (ML); gray; low plasticity; trace fine sand; scattered wood and organic debris.
9-32	GP	--	@ 32.0 feet: no sample recovery.
9-34	GP	0	
9-36	GP	0	**36.0 to 38.0 feet: SANDY SILT** (ML); dark gray; low plasticity; some fine sand; scattered wood debris; sand increasing with depth.
9-38	GP	0	**38.0 to 40.0 feet: SILTY SAND** (SM); dark gray; fine; some nonplastic silt; wet; silt decreasing with depth.

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REMARKS

(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities.

LOG OF EXPLORATORY BORING

PROJECT NAME **BSB Diversified**
LOCATION **Kent, Washington**
DRILLED BY **Cascade Drilling, Inc.**
DRILL METHOD **Geoprobe**
LOGGED BY **Michelle Macias**

BORING NO. **GP-9**
PAGE **3 OF 3**
REFERENCE ELEV.
TOTAL DEPTH **42 feet**
DATE COMPLETED **4/9/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)	GROUND WATER LEVEL	DEPTH IN FT.	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
9-40	GP	0			■	▩	░	**40.0 to 42.0 feet: SAND (SP);** dark gray with reddish grains; fine; trace fines; trace medium sand; wet.
								Total depth drilled = 40.0 feet. Total depth sampled = 42.0 feet.
				45				Boring abandoned with bentonite grout and an asphalt patch.
				50				
				55				
				60				

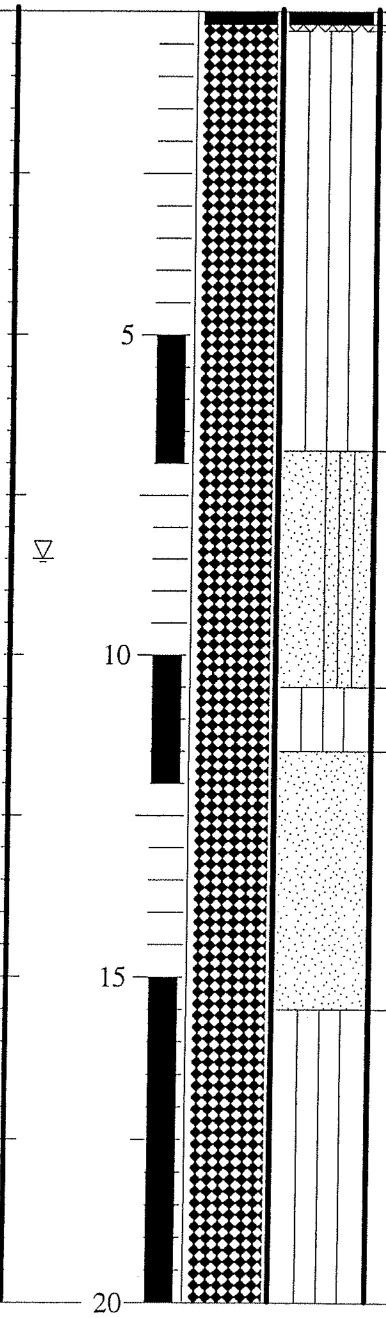
REMARKS

(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities.

LOG OF EXPLORATORY BORING

PROJECT NAME	**BSB Diversified**	BORING NO.	**GP-10**
LOCATION	**Kent, Washington**	PAGE	**1 OF 3**
DRILLED BY	**Cascade Drilling, Inc.**	REFERENCE ELEV.	
DRILL METHOD	**Geoprobe**	TOTAL DEPTH	**46 feet**
LOGGED BY	**Russell Thompson**	DATE COMPLETED	**4/12/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)
10-5	SS	0
10-10	GP	0
10-15	GP	0
10-17	*GP	--



LITHOLOGIC DESCRIPTION

0.0 to 0.2 foot: ASPHALT.

0.2 to 0.3 foot: CRUSHED ROCK.

0.3 to 6.8 feet: SILT (ML); brown; medium plasticity.

6.8 to 10.5 feet: SAND WITH SILT (SP-SM); dark gray; fine to medium; few nonplastic silt; moist to wet.

10.5 to 11.5 feet: SILT (ML); gray; medium plasticity.

11.5 to 15.5 feet: SAND (SP); dark gray with reddish grains; fine; trace fines; wet.

15.5 to 21.8 feet: SILT (ML); gray; nonplastic to medium plasticity; few fine sand; occasional sand laminations.

REMARKS

(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) *GP = sample collected with Shelby Tube. (5) White triangle = field approximation of water table during drilling activities.

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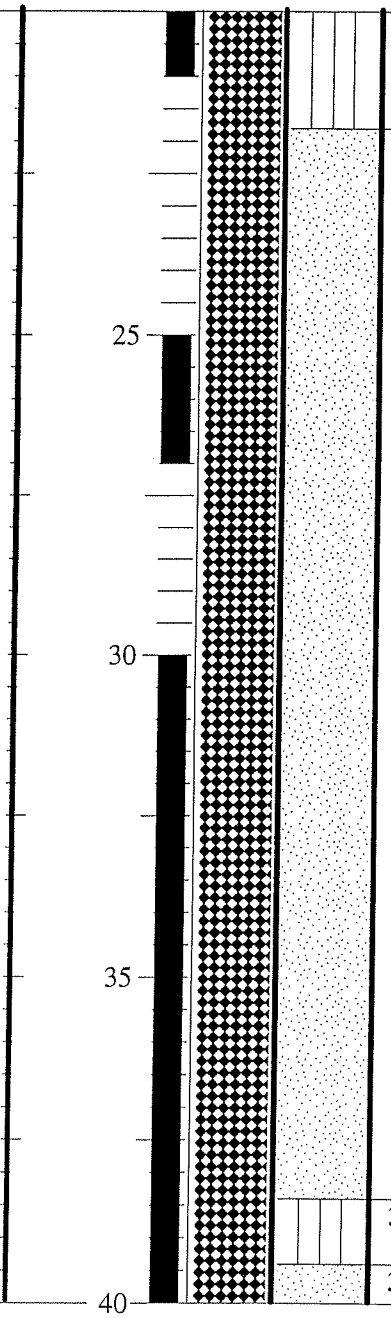
LOG OF EXPLORATORY BORING

PROJECT NAME	**BSB Diversified**	BORING NO.	**GP-10**
LOCATION	**Kent, Washington**	PAGE	**2 OF 3**
DRILLED BY	**Cascade Drilling, Inc.**	REFERENCE ELEV.	
DRILL METHOD	**Geoprobe**	TOTAL DEPTH	**46 feet**
LOGGED BY	**Russell Thompson**	DATE COMPLETED	**4/12/99**



SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)
10-25	GP	0
10-30	GP	0
10-32	GP	0
10-34	GP	0
10-36	GP	0
10-38	GP	0

LITHOLOGIC DESCRIPTION

21.8 to 38.4 feet: SAND (SP); dark gray with reddish grains; fine to medium; trace fines; wet; occasional silt laminations.

38.4 to 39.4 feet: SILT WITH SAND (ML); gray; low plasticity; little fine sand.

39.4 to 40.0 feet: SAND (SP); dark gray with reddish

REMARKS

(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) *GP = sample collected with Shelby Tube. (5) White triangle = field approximation of water table during drilling activities.

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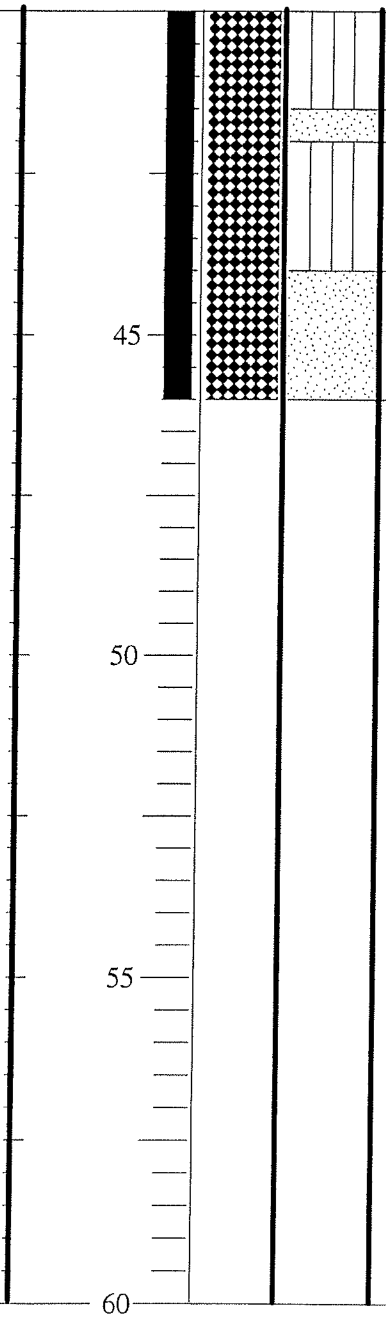
LOG OF EXPLORATORY BORING

PROJECT NAME **BSB Diversified**
LOCATION **Kent, Washington**
DRILLED BY **Cascade Drilling, Inc.**
DRILL METHOD **Geoprobe**
LOGGED BY **Russell Thompson**

BORING NO. **GP-10**
PAGE **3 OF 3**
REFERENCE ELEV.
TOTAL DEPTH **46 feet**
DATE COMPLETED **4/12/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)
10-40	GP	0
10-42	GP	0
10-44	GP	0



LITHOLOGIC DESCRIPTION

grains; fine; trace fines; wet.

40.0 to 41.5 feet: SILT (ML); brownish gray; low plasticity; trace fine sand.

41.5 to 42.0 feet: SAND (SP); dark gray with reddish grains; fine; trace fines; wet.

42.0 to 44.0 feet: SILT (ML); gray; medium plasticity; scattered shell fragments.

44.0 to 46.0 feet: SAND (SP); dark gray with reddish grains; fine to medium; trace fines; wet; occasional silt laminations.

Total depth drilled = 44.0 feet.
Total depth sampled = 46.0 feet.

Boring abandoned with bentonite grout and an asphalt patch.

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REMARKS

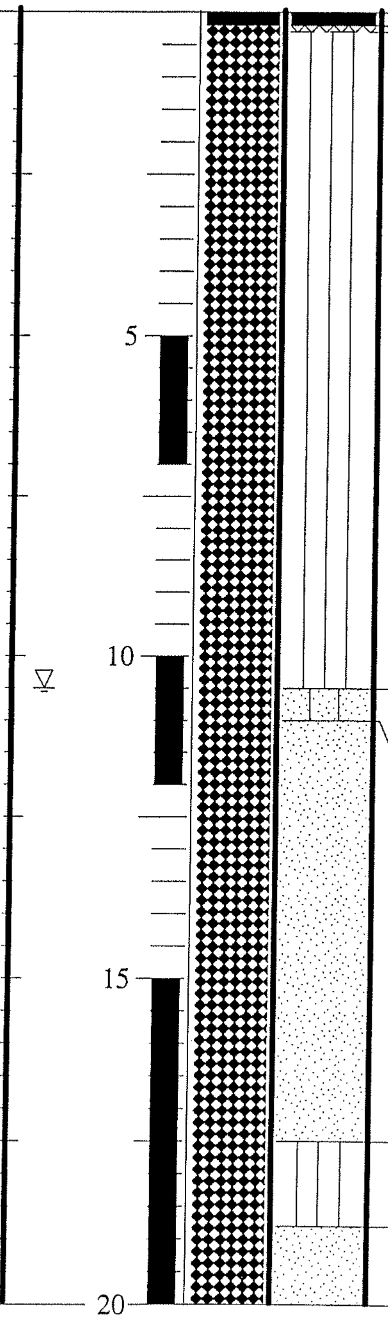
(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) *GP = sample collected with Shelby Tube. (5) White triangle = field approximation of water table during drilling activities.

LOG OF EXPLORATORY BORING

PROJECT NAME **BSB Diversified**
LOCATION **Kent, Washington**
DRILLED BY **Cascade Drilling, Inc.**
DRILL METHOD **Geoprobe**
LOGGED BY **Russell Thompson**

BORING NO. **GP-11**
PAGE **1 OF 3**
REFERENCE ELEV.
TOTAL DEPTH **48 feet**
DATE COMPLETED **4/12/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)
11-5	GP	0
11-10	GP	0
11-15	GP	0
11-17	GP	0
11-19	GP	0



LITHOLOGIC DESCRIPTION

0.0 to 0.2 foot: ASPHALT.

0.2 to 0.3 foot: CRUSHED ROCK.

0.3 to 10.5 feet: SILT (ML); gray to brown; low plasticity; trace fine sand.

10.5 to 11.0 feet: SILTY SAND (SM); greenish gray; fine; little nonplastic silt; wet.

11.0 to 17.5 feet: SAND (SP); dark gray with reddish grains; fine to medium; trace fines; wet.

@ 16.5 to 17.0 feet: occasional silt laminations.

17.5 to 18.8 feet: SILT (ML); gray; medium plasticity; scattered root fibers.

18.8 to 39.5 feet: SAND (SP); dark gray with reddish grains; fine to medium; trace fines; wet.

REMARKS

(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities. (5) Hollow circle = no recovery.

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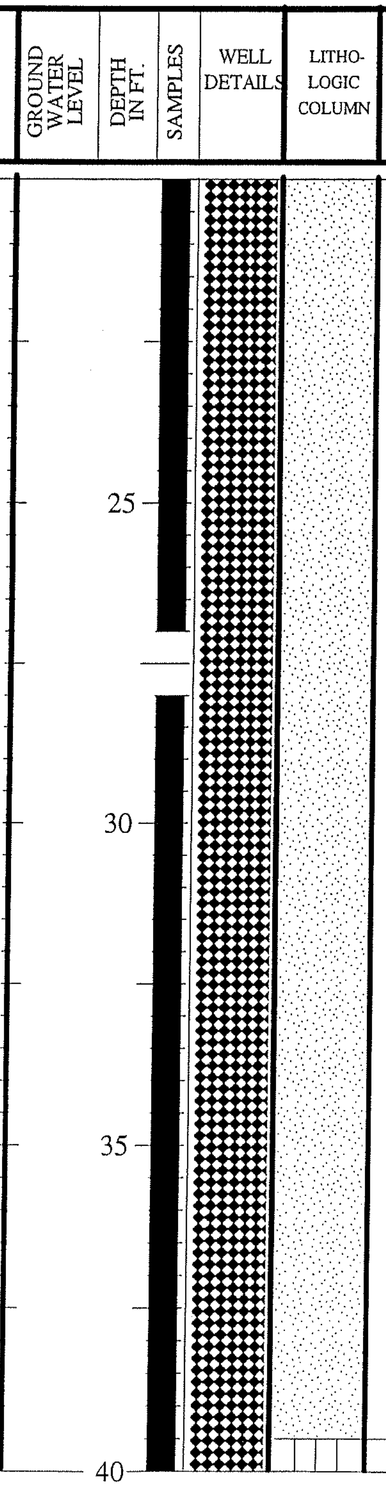
LOG OF EXPLORATORY BORING

PROJECT NAME	**BSB Diversified**	BORING NO.	**GP-11**
LOCATION	**Kent, Washington**	PAGE	**2 OF 3**
DRILLED BY	**Cascade Drilling, Inc.**	REFERENCE ELEV.	
DRILL METHOD	**Geoprobe**	TOTAL DEPTH	**48 feet**
LOGGED BY	**Russell Thompson**	DATE COMPLETED	**4/12/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)	LITHOLOGIC DESCRIPTION
11-21	GP	0	
11-23	GP	0	
11-25	GP	0	
11-28	GP	0	
11-30	GP	0	
11-32	GP	0	
11-34	GP	0	
11-36	GP	0	
11-38	GP	0	



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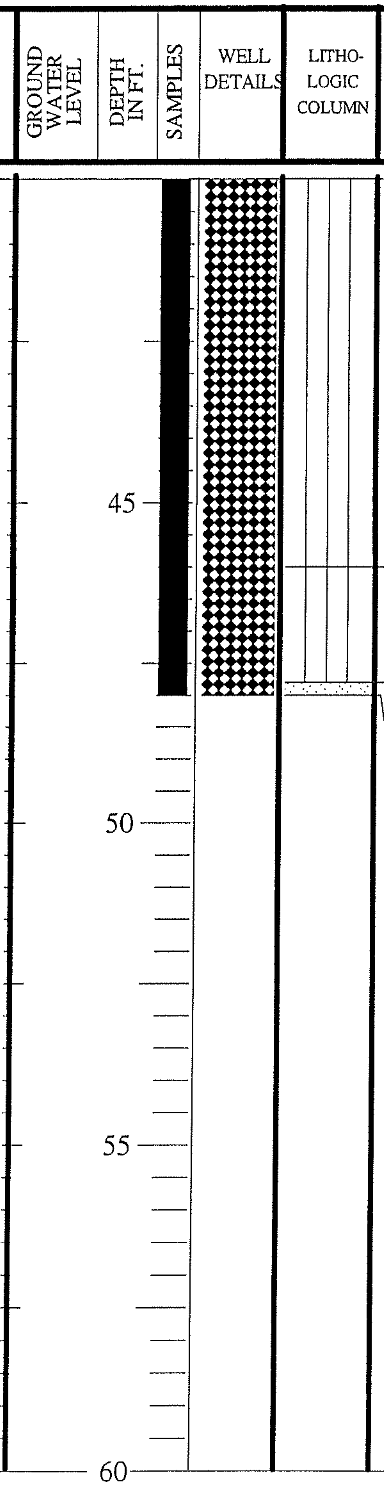
REMARKS

(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities. (5) Hollow circle = no recovery.

LOG OF EXPLORATORY BORING

PROJECT NAME **BSB Diversified**
LOCATION **Kent, Washington**
DRILLED BY **Cascade Drilling, Inc.**
DRILL METHOD **Geoprobe**
LOGGED BY **Russell Thompson**

BORING NO. **GP-11**
PAGE **3 OF 3**
REFERENCE ELEV.
TOTAL DEPTH **48 feet**
DATE COMPLETED **4/12/99**



SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)	LITHOLOGIC DESCRIPTION
11-40	GP	0	**39.5 to 46.0 feet: SILT WITH SAND (ML);** gray; low to medium plasticity; little fine sand; occasional scattered shell fragments and sand laminations.
11-42	GP	0	
11-44	GP	0	
11-46	GP	0	**46.0 to 47.8 feet: SILT WITH SAND (ML);** gray; nonplastic; little fine sand.
			47.8 to 48.0 feet: SAND (SP); dark gray with reddish grains; fine to medium; trace fines; wet; scattered shell fragments.

Total depth drilled = 46.0 feet.
Total depth sampled = 48.0 feet.

Boring abandoned with bentonite grout and an asphalt patch.

REMARKS

(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities. (5) Hollow circle = no recovery.

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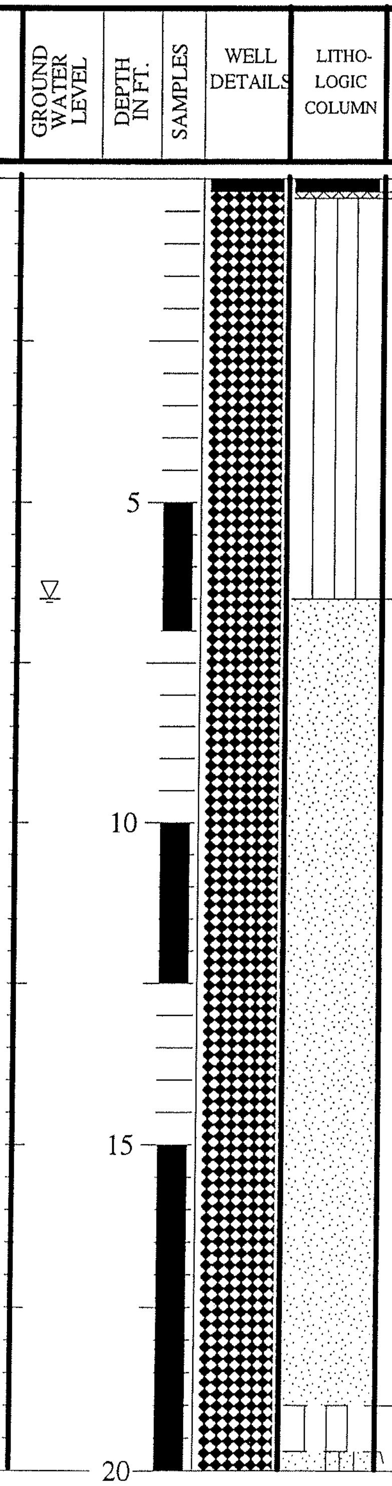
LOG OF EXPLORATORY BORING

PROJECT NAME **BSB Diversified**
LOCATION **Kent, Washington**
DRILLED BY **Cascade Drilling, Inc.**
DRILL METHOD **Geoprobe**
LOGGED BY **Russell Thompson**

BORING NO. **GP-12**
PAGE **1 OF 3**
REFERENCE ELEV.
TOTAL DEPTH **48 feet**
DATE COMPLETED **4/12/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)
12-5	GP	0
12-10	GP	0
12-15	GP	0
12-17	GP	0
12-19	GP	0



LITHOLOGIC DESCRIPTION

0.0 to 0.2 foot: ASPHALT.

0.2 to 0.3 foot: CRUSHED ROCK.

0.3 to 6.5 feet: SILT (ML); brown to gray; medium plasticity; scattered organic debris.

6.5 to 19.0 feet: SAND (SP); dark gray with reddish grains; fine to medium; trace fines; wet.

19.0 to 19.7 feet: SILT (ML); gray; medium plasticity;

REMARKS

(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities.

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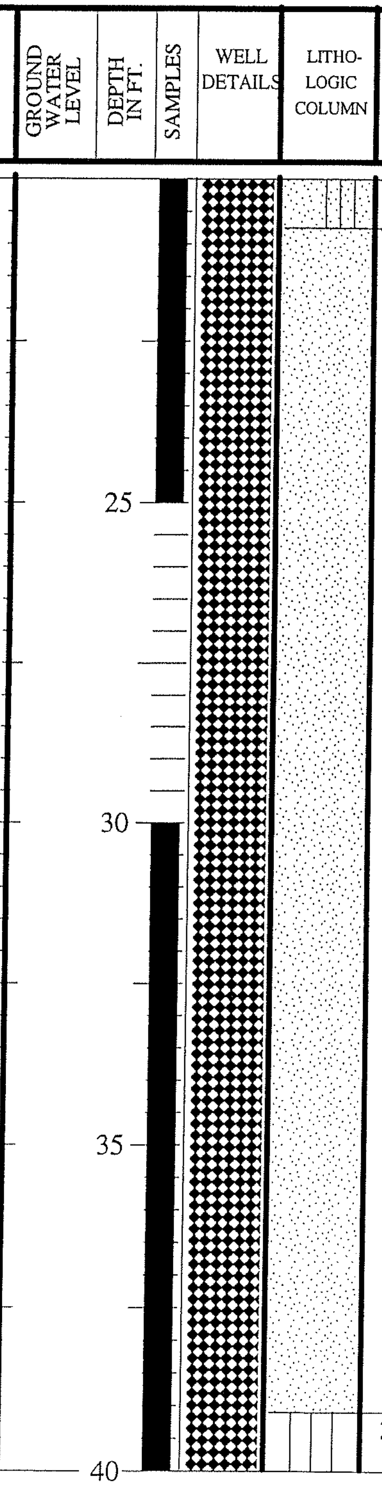
LOG OF EXPLORATORY BORING

PROJECT NAME **BSB Diversified**
LOCATION **Kent, Washington**
DRILLED BY **Cascade Drilling, Inc.**
DRILL METHOD **Geoprobe**
LOGGED BY **Russell Thompson**

BORING NO. **GP-12**
PAGE **2 OF 3**
REFERENCE ELEV.
TOTAL DEPTH **48 feet**
DATE COMPLETED **4/12/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)
12-21	GP	0
12-23	GP	0
12-30	GP	0
12-32	GP	0
12-34	GP	0
12-36	GP	0
12-38	GP	0



LITHOLOGIC DESCRIPTION

trace fine sand.

19.7 to 20.75 feet: SAND WITH SILT (SP-SM); gray; fine; few nonplastic silt; wet.

20.75 to 39.10 feet: SAND (SP); dark gray with reddish grains; fine; trace fines; wet; scattered wood debris; occasional silt with sand and sandy silt laminations.

39.10 to 48.0 feet: SILT (ML); gray; low to medium

REMARKS

(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities.

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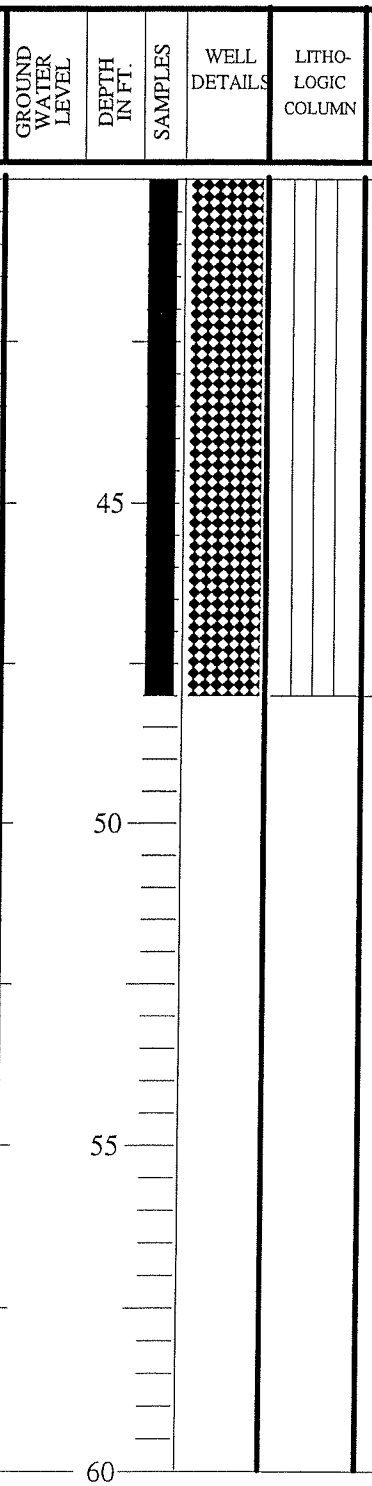
LOG OF EXPLORATORY BORING

PROJECT NAME **BSB Diversified**
LOCATION **Kent, Washington**
DRILLED BY **Cascade Drilling, Inc.**
DRILL METHOD **Geoprobe**
LOGGED BY **Russell Thompson**

BORING NO. **GP-12**
PAGE **3 OF 3**
REFERENCE ELEV.
TOTAL DEPTH **48 feet**
DATE COMPLETED **4/12/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)
12-40	GP	0
12-42	GP	0
12-44	GP	0
12-46	GP	0



LITHOLOGIC DESCRIPTION

plasticity; trace to few fine sand; scattered shell fragments.

Total depth drilled = 46.0 feet.
Total depth sampled = 48.0 feet.

Boring abandoned with bentonite grout and an asphalt patch.

EMCON®

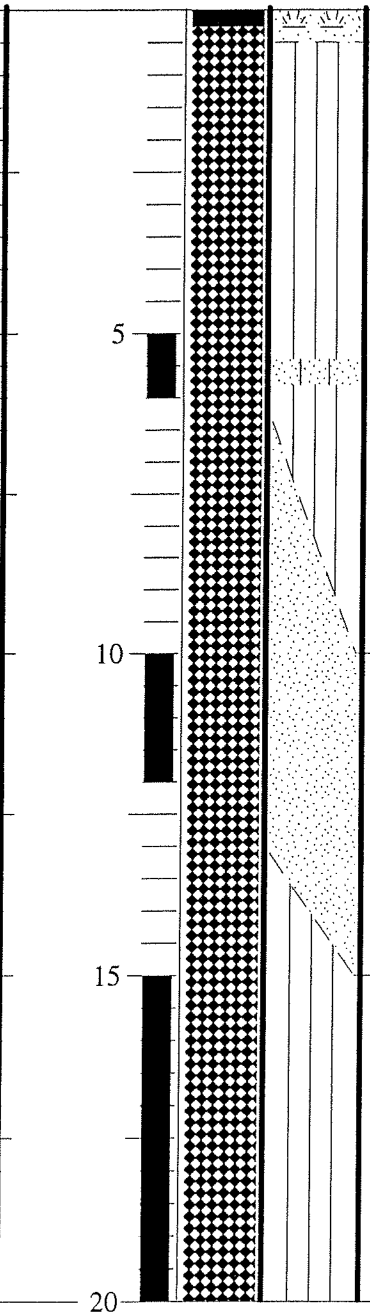
REMARKS

(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities.

LOG OF EXPLORATORY BORING

PROJECT NAME	**BSB Diversified**	BORING NO.	**GP-13**
LOCATION	**Kent, Washington**	PAGE	**1 OF 3**
DRILLED BY	**Cascade Drilling, Inc.**	REFERENCE ELEV.	
DRILL METHOD	**Geoprobe**	TOTAL DEPTH	**48 feet**
LOGGED BY	**Michelle Macias**	DATE COMPLETED	**4/13/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)	GROUND WATER LEVEL	DEPTH IN FT.	LITHOLOGIC DESCRIPTION
					0.0 to 0.5 feet: GRASS/TOPSOIL.
					0.5 to 10.0 feet: SILT (ML); mottled reddish brown to pinkish gray; low plasticity.
13-5	GP	0		5	
					@ 5.4 to 5.8 feet: SILTY SAND (SM); gray; fine; some low plasticity silt.
13-10	GP	0		10	**10.0 to 15.0 feet: SAND (SP);** dark gray with reddish grains; fine; trace fines; wet.
13-15	GP	0		15	**15.0 to 21.0 feet: SILT (ML);** gray; low plasticity; trace to few fine sand; scattered wood debris; occasional sand laminations.
13-17	GP	0			
13-19	GP	0			
				20	



REMARKS

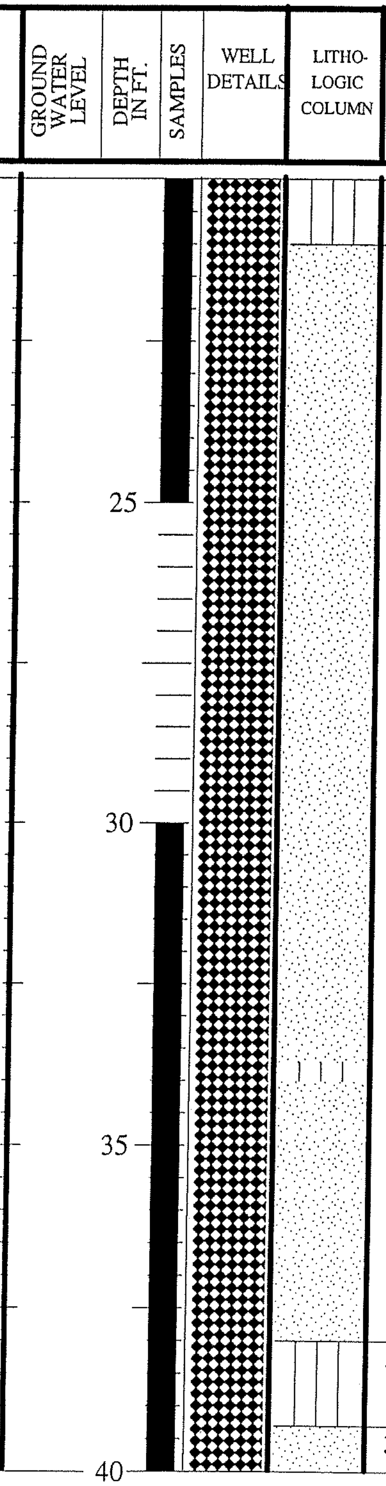
(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities.

LOG OF EXPLORATORY BORING

PROJECT NAME **BSB Diversified**
LOCATION **Kent, Washington**
DRILLED BY **Cascade Drilling, Inc.**
DRILL METHOD **Geoprobe**
LOGGED BY **Michelle Macias**

BORING NO. **GP-13**
PAGE **2 OF 3**
REFERENCE ELEV.
TOTAL DEPTH **48 feet**
DATE COMPLETED **4/13/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)
13-21	GP	0
13-23	GP	0
13-30	GP	0
13-32	GP	0
13-34	GP	0
13-36	GP	0
13-38	GP	0



LITHOLOGIC DESCRIPTION

21.0 to 38.0 feet: SAND (SP); dark gray with reddish grains; fine; trace fines; wet.

@ 21.0 to 23.0 feet: scattered wood debris.

@ 21.0 to 30.0 feet: trace medium sand.

@ 33.7 to 34.0 feet: SILT (ML); gray; nonplastic; trace fine sand; sandy laminations present.

38.0 to 39.3 feet: SILT (ML); gray; low plasticity; trace fine sand; scattered wood debris.

39.3 to 42.0 feet: SAND (SP); dark gray with reddish

REMARKS

(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities.

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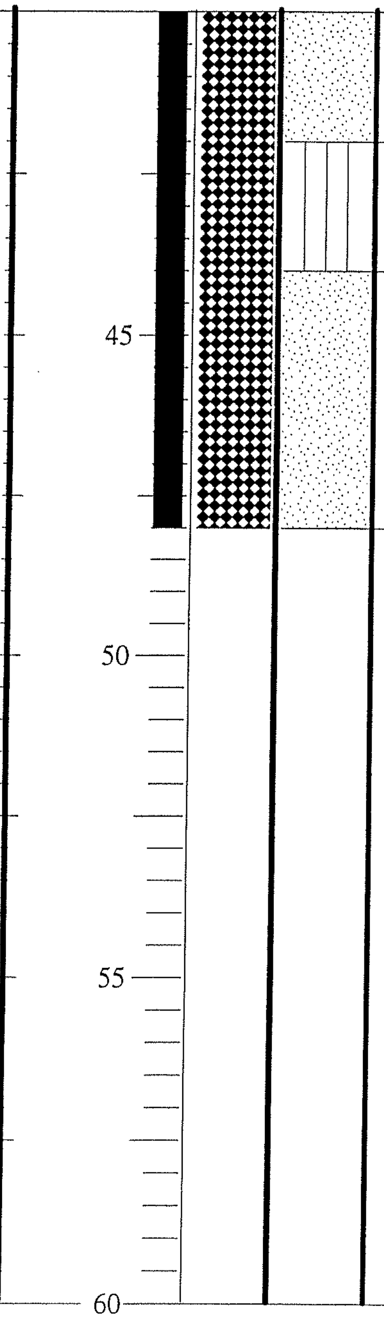
LOG OF EXPLORATORY BORING

PROJECT NAME **BSB Diversified**
LOCATION **Kent, Washington**
DRILLED BY **Cascade Drilling, Inc.**
DRILL METHOD **Geoprobe**
LOGGED BY **Michelle Macias**

BORING NO. **GP-13**
PAGE **3 OF 3**
REFERENCE ELEV.
TOTAL DEPTH **48 feet**
DATE COMPLETED **4/13/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)
13-40	GP	0
13-42	GP	0
13-44	GP	0
13-46	GP	0



LITHOLOGIC DESCRIPTION

grains; fine; trace medium sand; trace fines; scattered wood debris; occasional silt laminations.

42.0 to 44.0 feet: SILT (ML); gray; low plasticity; trace fine sand; scattered wood debris and shell fragments.

44.0 to 48.0 feet: SAND (SP); dark gray with reddish grains; wet; scattered shell fragments; occasional silty sand nodules.

Total depth drilled = 46.0 feet.
Total depth sampled = 48.0 feet.

Boring abandoned with bentonite grout and an asphalt patch.

REMARKS

(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities.

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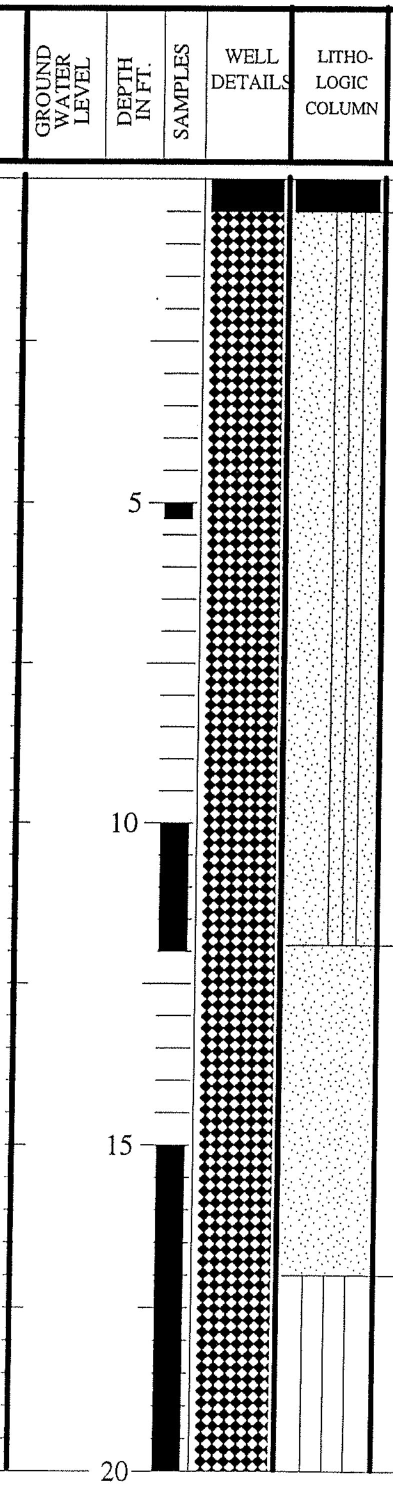
LOG OF EXPLORATORY BORING

PROJECT NAME **BSB Diversified**
LOCATION **Kent, Washington**
DRILLED BY **Cascade Drilling, Inc.**
DRILL METHOD **Geoprobe**
LOGGED BY **Michelle Macias**

BORING NO. **GP-14**
PAGE **1 OF 2**
REFERENCE ELEV.
TOTAL DEPTH **35 feet**
DATE COMPLETED **4/13/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)
14-5	GP	0
14-10	GP	0
14-15	GP	0
14-17	GP	0
14-19	GP	0



LITHOLOGIC DESCRIPTION

0.0 to 0.5 feet: ASPHALT.

0.5 to 11.9 feet: GRAVELLY SAND (SP-SM); brown; fine; few medium sand to coarse subangular gravel; trace fines; moist to wet. (FILL)

11.9 to 17.0 feet: SAND (SP); dark gray with reddish grains; fine; trace medium sand; trace fines; wet; scattered wood debris.

17.0 to 21.0 feet: SANDY SILT (ML); gray; low plasticity; some fine sand; scattered wood debris; occasional silty intervals.

REMARKS

(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities.

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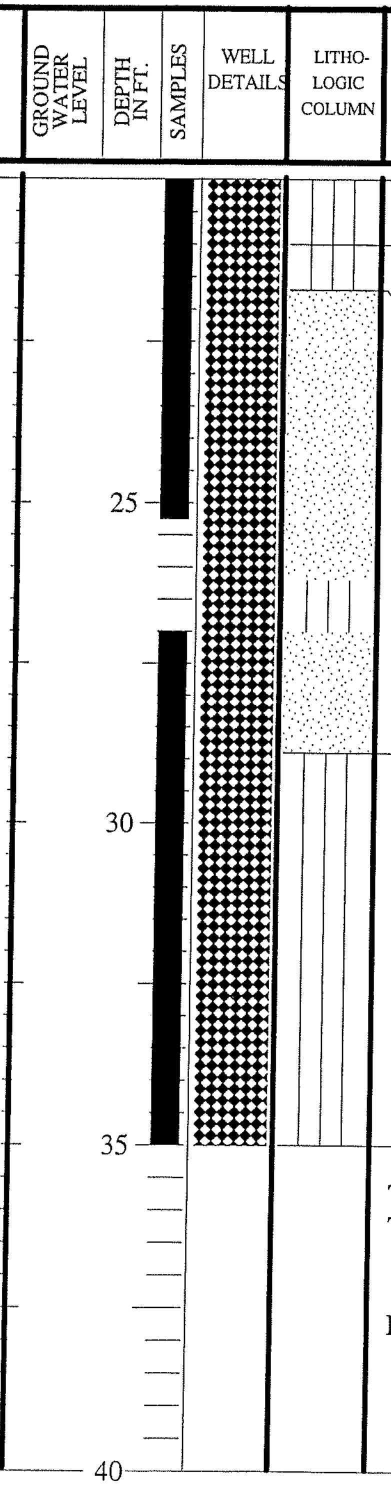
LOG OF EXPLORATORY BORING

PROJECT NAME	**BSB Diversified**	BORING NO.	**GP-14**
LOCATION	**Kent, Washington**	PAGE	**2 OF 2**
DRILLED BY	**Cascade Drilling, Inc.**	REFERENCE ELEV.	
DRILL METHOD	**Geoprobe**	TOTAL DEPTH	**35 feet**
LOGGED BY	**Michelle Macias**	DATE COMPLETED	**4/13/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)
14-21	GP	0
14-23	GP	0
14-25	GP	0
14-27	GP	0
14-29	GP	0
14-31	GP	0
14-33	GP	0



LITHOLOGIC DESCRIPTION

21.0 to 21.7 feet: SILT (ML); gray; low plasticity; trace fine sand; scattered wood debris.

21.7 to 28.9 feet: SAND (SP); dark gray with reddish grains; fine; trace medium sand; trace fines; wet; scattered wood debris; occasional silt laminations.

@ 26.2 to 27.0 feet: SILT (ML); gray; low plasticity; trace fine sand; very soft; scattered wood debris.

28.9 to 35.0 feet: SILT (ML); gray to pinkish; nonplastic to low plasticity; scattered wood debris.

Total depth drilled = 33.0 feet.
Total depth sampled = 35.0 feet.

Boring abandoned with bentonite grout and an asphalt patch.

REMARKS

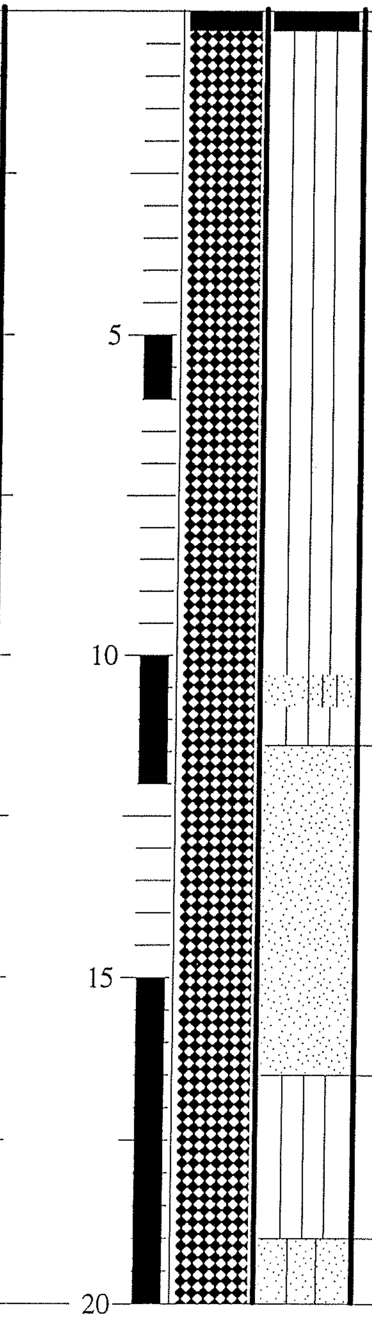
(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities.

EMCON®

LOG OF EXPLORATORY BORING

PROJECT NAME	**BSB Diversified**	BORING NO.	**GP-15**
LOCATION	**Kent, Washington**	PAGE	**1 OF 3**
DRILLED BY	**Cascade Drilling, Inc.**	REFERENCE ELEV.	
DRILL METHOD	**Geoprobe**	TOTAL DEPTH	**48 feet**
LOGGED BY	**Michelle Macias**	DATE COMPLETED	**4/15/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)	DEPTH IN FT.
15-5	GP	0	5
15-10	GP	0	10
15-15	GP	0	15
15b*-17	GP	0	
15-19	GP	0	



LITHOLOGIC DESCRIPTION

0.0 to 0.3 foot: ASPHALT.

0.3 to 11.4 feet: SILT (ML); mottled orange and gray to gray; low plasticity; trace fine sand; scattered wood debris; occasional sand laminations.

@ 10.3 to 10.8 feet: SAND WITH SILT (SP-SM); gray; fine; few low plasticity silt; wet.

11.4 to 16.5 feet: SAND (SP); dark gray with reddish grains; fine; trace fines; wet.

16.5 to 19.0 feet: SILT (ML); gray; low plasticity; trace fine sand; very soft; scattered wood debris.

@ 17.6 to 17.9 feet: little fine sand.

19.0 to 21.0 feet: SILTY SAND (SM); gray; fine; little

REMARKS

(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities. (5) * = Due to initial no recovery at the 17- to 19-foot interval, a sample was collected directly adjacent to this boring at that interval. This log reflects the additional sample lithology.

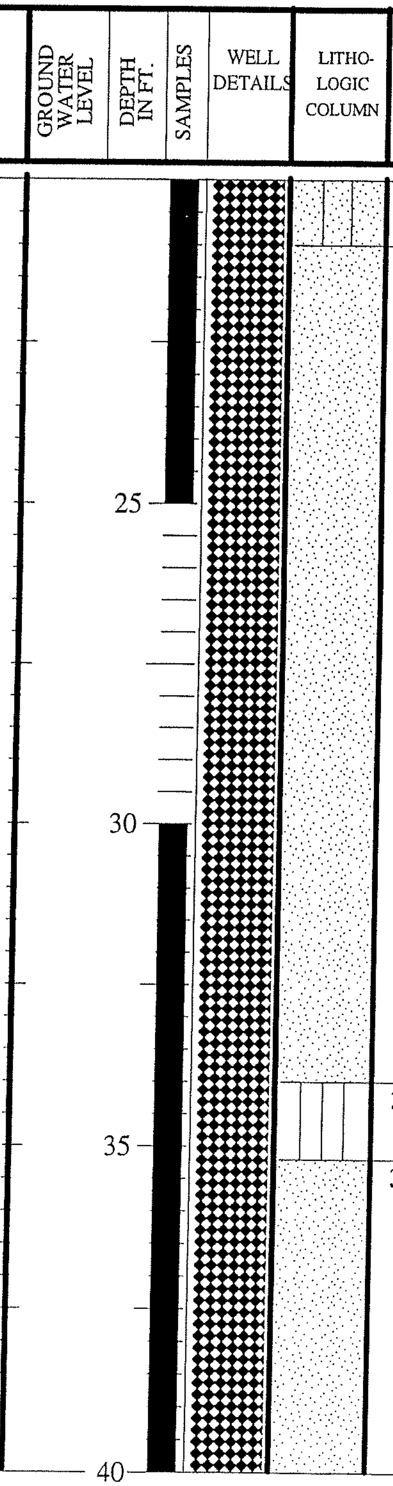
EMCON®

LOG OF EXPLORATORY BORING

PROJECT NAME **BSB Diversified**
LOCATION **Kent, Washington**
DRILLED BY **Cascade Drilling, Inc.**
DRILL METHOD **Geoprobe**
LOGGED BY **Michelle Macias**

BORING NO. **GP-15**
PAGE **2 OF 3**
REFERENCE ELEV.
TOTAL DEPTH **48 feet**
DATE COMPLETED **4/15/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)
15-21	GP	2
15-23	GP	0
15-30	GP	0
15-32	GP	0
15-34	GP	0
15-36	GP	0
15-38	GP	0



LITHOLOGIC DESCRIPTION

nonplastic to low plasticity silt; wet; occasional silt laminations.

21.0 to 34.0 feet: SAND (SP); dark gray with reddish grains; fine; trace medium sand; trace fines; wet; scattered wood debris; occasional silt laminations.

34.0 to 35.2 feet: SILT (ML); pinkish; medium plasticity; trace fine sand; very soft.

35.2 to 42.0 feet: SAND (SP); dark gray with reddish grains; fine; trace fines; wet; scattered wood debris; occasional silt laminations.

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REMARKS

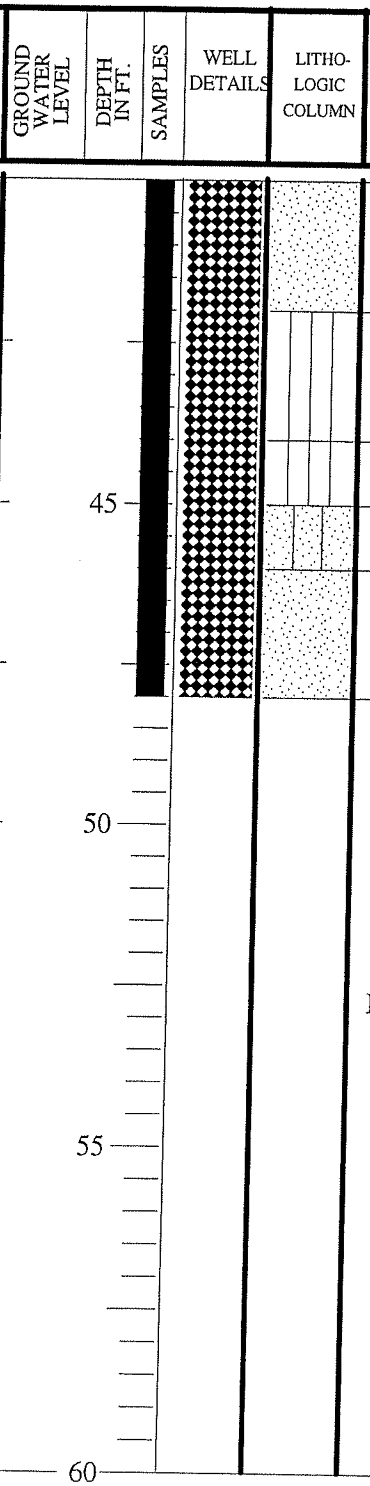
(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities. (5) * = Due to initial no recovery at the 17- to 19-foot interval, a sample was collected directly adjacent to this boring at that interval. This log reflects the additional sample lithology.

LOG OF EXPLORATORY BORING

PROJECT NAME **BSB Diversified**
LOCATION **Kent, Washington**
DRILLED BY **Cascade Drilling, Inc.**
DRILL METHOD **Geoprobe**
LOGGED BY **Michelle Macias**

BORING NO. **GP-15**
PAGE **3 OF 3**
REFERENCE ELEV.
TOTAL DEPTH **48 feet**
DATE COMPLETED **4/15/99**

SAMPLE NUMBER	SAMPLE TYPE	PID (ppm)
15-40	GP	0
15-42	GP	0
15-44	GP	0
15-46	GP	0



LITHOLOGIC DESCRIPTION

42.0 to 44.0 feet: SILT (ML); gray; low plasticity; trace fine sand; scattered shell fragments.

44.0 to 45.0 feet: SANDY SILT (ML); gray; low plasticity; some fine sand; scattered shell fragments.

45.0 to 46.0 feet: SILTY SAND (SM); gray; fine; some low plasticity silt.

46.0 to 48.0 feet: SAND (SP); dark gray with reddish grains; fine; trace fines; wet; scattered wood debris; occasional silt laminations.

Total depth drilled = 46.0 feet.
Total depth sampled = 48.0 feet.

Boring abandoned with bentonite grout and an asphalt patch.

REMARKS

(1) PID = photoionization detector calibrated to +/- 100 parts per million (ppm) isobutylene gas. (2) SS = samples collected with a 1.4-inch inside diameter by 2.5-foot-long split-spoon sampler. (3) GP = sample collected with a 1.0-inch inside diameter by 2-foot-long sampler with an acetate liner. (4) White triangle = field approximation of water table during drilling activities. (5) * = Due to initial no recovery at the 17- to 19-foot interval, a sample was collected directly adjacent to this boring at that interval. This log reflects the additional sample lithology.

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PROJECT: HYTEK-Finishes

TEST PIT LOGS

TEST PIT NO. HA-13
DATE 6/18/87
GROUND ELEV. 22.9'
COMMENTS:

Sample Interval

A 3.5-4
B 5-6

SAMPLE DATA				WATER TABLE	SYMBOL	SOIL AND ROCK DESCRIPTION
DEPTH (ft.)	NUMBER	LOCATION	CLASS			
					GP	FILL, gravel
					ML/ CL	CLAYEY SILT/SILTY CLAY, blue gray, 5% fine sand.
4	A	AG				
5						
6	B	SS			SP	SAND, blue gray, 1% fines, fine grained.
						Bottom of Boring 6'.
10						
15						

TEST PIT NO. HA-14
DATE 6/17/87
GROUND ELEV. 22.7'
COMMENTS:

Sample Interval

A 2-3
B. 4.5-5.5

SAMPLE DATA				WATER TABLE	SYMBOL	SOIL AND ROCK DESCRIPTION
DEPTH (ft.)	NUMBER	LOCATION	CLASS			
					GP	FILL, Gravel, coarse gravel dry.
3	A	SS			ML	SANDY SILT, blue gray, 15% fine sand, damp. CLAYEY SILT, blue gray, trace fine sand, wet.
5						
5.5	B	SS			SP	SAND, gray, fine to medium grained, wet.
						Bottom of Boring at 5.5'.
10						
15						

PROJECT: HYTEK-Finishes

TEST PIT LOGS

TEST PIT NO. HA-15
DATE 6/18/87
GROUND ELEV. 23.0'
COMMENTS:

Sample Interval

A 1.5-2.5
B 4-5

SAMPLE DATA				WATER TABLE	SYMBOL	SOIL AND ROCK DESCRIPTION
DEPTH (ft.)	NUMBER	LOCATION	CLASS			
					GP	FILL, gravel
2.5	A	SS			ML	SANDY SILT, clayey, blue gray 10-15% sand, moist. At 4' becomes more sandy, same color, wet.
5	B	SS				
						Bottom of Boring 5.5'.
10						
15						

TEST PIT NO. HA-16
DATE 6/18/87
GROUND ELEV. 23.9'
COMMENTS:

Sample Interval

A 2-3
B 4-5.5

Insuffcant sample for arsenic and cyanide analysis.

SAMPLE DATA				WATER TABLE	SYMBOL	SOIL AND ROCK DESCRIPTION
DEPTH (ft.)	NUMBER	LOCATION	CLASS			
					GP	FILL, gravel, cobble gravel.
3	A	SS			ML	CLAYEY SILT, blue gray, trace to 5% sand fine grained, moist.
5					SP	SAND, gray, fine to medium grained, wet.
5.5	B	SS				
						Bottom of Boring 5.5'.
10						
15						

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PROJECT: HYTEK-Finishes

TEST PIT LOGS

TEST PIT NO. HA-17

DATE 6/18/87

GROUND ELEV. 23.7'

COMMENTS:

Sample Interval

A 1.5-2.5
B 5-6.5

SAMPLE DATA				WATER TABLE	SYMBOL	SOIL AND ROCK DESCRIPTION
DEPTH (ft.)	NUMBER	LOCATION	CLASS			
					GP	FILL, gravel
2.5	A	SS			ML/ CL	CLAYEY SILT/SILTY CLAY, blue gray, moist.
5					SP	SAND, blue gray, fine to medium grained, wet.
6.5	B	SS				Bottom of Boring 6:5'.
10						
15						

TEST PIT NO. HA-18

DATE 6/18/87

GROUND ELEV. 25.1'

COMMENTS:

Sample Interval

A 4-4.5
B 5.5-6.5

SAMPLE DATA				WATER TABLE	SYMBOL	SOIL AND ROCK DESCRIPTION
DEPTH (ft.)	NUMBER	LOCATION	CLASS			
					GP	FILL/SILTY GRAVEL, sandy, 15% clayey silt, 10-15% sand, gravel well rounded, dry.
4.5	A	SS			ML	SILT, blue gray, 10% sand fine, root cast, moist.
5						Wet at 4.5 to 5'.
6.5	B	SS				Bottom of Boring at 6.5'.
10						
15						

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PROJECT: HYTEK-Finishes

TEST PIT LOGS

TEST PIT NO. HA-19

DATE 6/16/87

GROUND ELEV. 24.2'

COMMENTS:

Sample Interval

A 3-3.5
B 6-6.5

SAMPLE DATA						
DEPTH (ft.)	NUMBER	LOCATION	CLASS	WATER TABLE	SYMBOL	SOIL AND ROCK DESCRIPTION
					SW	FILL, Gravelly Sand, silty, brown, 15-20% fine to coarse sand, gravel to 9", dry.
3.5	A	SS			ML	CLAYEY SILT, mottled gray to brown, trace fine sand, sand stringers, wet.
5						
6.5	B		SS		SP	SAND, gray, fine grained, wet.
						Bottom of Boring 6.5'.
10						
15						

TEST PIT NO. HA-20

DATE 6/17/87

GROUND ELEV. 23.0'

COMMENTS:

Sample Interval

A 2-2.25
B 2.5-3

SAMPLE DATA						
DEPTH (ft.)	NUMBER	LOCATION	CLASS	WATER TABLE	SYMBOL	SOIL AND ROCK DESCRIPTION
					GP	FILL, Gravel 15-20% fines, 5-10% fine gravel to coarse sand, 70-80% cobbles, dry.
2.2	A	SS			ML	CLAYEY SILT, brown, 10% fine sand, moist.
3	B	SS			SP	SAND, gray, fine to medium grained, wet.
						Bottom of Boring 3'.
5						
10						
15						

PROJECT: HYTEK-Finishes

TEST PIT LOGS

TEST PIT NO. HA-21
DATE 6/16/87
GROUND ELEV. 24.1'
COMMENTS:

Sample Interval

A 3-3.5
B 6-6.5

SAMPLE DATA				WATER TABLE	SYMBOL	SOIL AND ROCK DESCRIPTION
DEPTH (ft.)	NUMBER	LOCATION	CLASS			
					SW	FILL, Gravelly Sand, silty, brown, dry.
3.5	A	SS			ML	CLAYEY SILT, mottled gray to brown, trace fine sand, sand stringers, iron staining.
5						Wet @ 5'.
6.5	B	SS				
						Bottom of Boring 6.5'.
10						
15						

TEST PIT NO. HA-22
DATE 6/16/87
GROUND ELEV. 22.6'
COMMENTS:

Sample Interval

A 1-2
B 2.75-3.25

SAMPLE DATA				WATER TABLE	SYMBOL	SOIL AND ROCK DESCRIPTION
DEPTH (ft.)	NUMBER	LOCATION	CLASS			
					ML	CLAYEY SILT, blue gray, trace sand, moist. At 2.5' wet.
2	A	SS				
3.25	B	SS				Bottom of Boring at 3.5'.
5						
10						
15						

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PROJECT: HYTEK-Finishes

TEST PIT LOGS

TEST PIT NO. HA-23
DATE 6/17/87
GROUND ELEV. 25.7'
COMMENTS:

Sample Interval

A 2-3
B 4.5-5.5

SAMPLE DATA				WATER TABLE	SYMBOL	SOIL AND ROCK DESCRIPTION
DEPTH (ft.)	NUMBER	LOCATION	CLASS			
					SP	FILL, silty sand, gravelly, green, 5-15% low plastic fines, fine grained, 15-20% fine gravel, possible chromium stained silt as hard lenses, dry.
3	A	SS				
5						
5.5	B	SS			ML	CLAYEY SILT, blue gray, trace sand, wet.
						Bottom of Boring at 5.5'.
10						
15						

TEST PIT NO. HA-24
DATE 6/22/87
GROUND ELEV. 27.2'
COMMENTS:

Sample Interval

A 2.5-3.5
B 6-7

SAMPLE DATA				WATER TABLE	SYMBOL	SOIL AND ROCK DESCRIPTION
DEPTH (ft.)	NUMBER	LOCATION	CLASS			
					SW	FILL, Gravelly Sand, Silty, buff colored, 10% fines, fine to medium grained 15-20%, cobble gravel, dry.
3.5	A	SS				
5					ML	SANDY SILT, brown 10-20% fine sand, moist to damp, solvent odor.
7	B	SS			ML	SILT, gray, wet, solvent odor
						Bottom of Boring at 7'.
10						
15						

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PROJECT: HYTEK-Finishes

TEST PIT LOGS

TEST PIT NO. HA-25

DATE 6/23/87

GROUND ELEV. 27.1'

COMMENTS:

Sample Interval

A 3-4
B 6-7

SAMPLE DATA				WATER TABLE	SYMBOL	SOIL AND ROCK DESCRIPTION
DEPTH (ft.)	NUMBER	LOCATION	CLASS			
					ML	FILL, silt, several colors, green, azurite blue, possible copper stain, dry.
4	A	SS			SM	SILTY SAND, brown 5-15% silt, fine grained, damp to wet, strong odor.
5						
7	B	SS				Bottom of Boring at 7'.
10						
15						

TEST PIT NO. HA-26

DATE 6/22/87

GROUND ELEV. 23.2'

COMMENTS:

Sample Interval

A 2.5-3.5
B 4.5-5.5

SAMPLE DATA				WATER TABLE	SYMBOL	SOIL AND ROCK DESCRIPTION
DEPTH (ft.)	NUMBER	LOCATION	CLASS			
					ML	FILL, sludge drying, brown sand silt, brown to blue gray, 10-15% fine sand, moist.
3.5	A	SS			SM	SILTY SAND, blue gray stain, 15-20% fines, fine to medium grained, wet.
5						
5.5	B	SS				Bottom of Boring 5.5'.
10						
15						

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PROJECT: HYTEK-Finishes

TEST PIT LOGS

TEST PIT NO. HA-27

DATE 6/22/87

GROUND ELEV. 25.6'

COMMENTS:

Sample Interval

A 2.5-3.5
B 5-6

SAMPLE DATA				WATER TABLE	SYMBOL	SOIL AND ROCK DESCRIPTION
DEPTH (ft.)	NUMBER	LOCATION	CLASS			
					ML	FILL, sludge, blue-stained, when dry light blue.
3.5	A	SS			SM	SILTY SAND, brown to blue gray, 15% fines, fine to medium grained, moist.
5 6	B	SS			ML	SANDY SILT, blue gray, 15-20% fine sand, wet.
						Bottom of Boring at 6'.
10						
15						

FIT WELL LOGS

HTP1	0 - 3.5'	Coarse sand and gravel cobbles (fill)
	3.5 - 8'	Mottled brown clay, fairly plastic, wet
	8 - 10'	Silty clay, grain size increases with depth
	10 - 12.8'	Fine sand
HTP2	0 - 2.5'	Coarse sand and gravel with cobbles (fill?)
	2.5 - 5.5'	Mottled brown clay, fairly plastic, moist
	5.5 - 9.7'	Fine sand
HTP3	0 - 2.5'	Coarse sand and gravel with cobbles (fill?)
	2.5 - 5.75'	Mottled brown clay, fairly plastic
	5.75- 7.6'	Fine sand, wet
	7.6 - 8.2'	Silty clay
	8.2 - 10'	Fine sand
HTP4	0 - 2'	Silty clay; generally silty with few gravels and cobbles, very moist (fill?)
	2 - 6'	Silty clay with organics, moist
	6 - 7.8'	Fine sand
	7.8 - 8'	Silty clay with sand lenses
HTP5	0 - 2'	Silty clay; generally silty clay with gravels and few cobbles
	2 - 4'	Silt, moist
	4 - 6.5'	Mottled brown, silty clay; moisture content increases with depth
	6.5 - 8'	Silt
	8 - 10'	Clay, fairly plastic
	10 - 14.4'	Fine sand
HTP6	0 - 2'	Silty clay, blue in color
	2 - 6'	Mottled brown silty clay, moist
	6 - 6.3'	Silt
	6.3 - 9.7'	Clay, fairly plastic, very moist
	9.7 - 13'	Fine sand, wet

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BORING LOG

PROJECT HYTEK

Page 1 **of** 2

Location

Boring No. HYSS-4

Surface Elevation

Drilling Method Hollow Stem Auger

Total Depth 17.5 ft.

Drilled By Sweet, Edwards & Assoc., Inc.

Date Completed 8/27/84

Logged By D.R. Dykes

WELL DETAILS	PENETRATION TIME/ RATE	DEPTH (FEET)	SAMPLE		PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
			NO.	TYPE				
							0-2.0' Fill, silt and gravel.	
		2	1	Composite		ML	2.0-5.0' Silt, gray, orange mottling, increases with depth, roots, crumbly.	
		4	2	Comp.				
		6	-	No Recovery				
		8	3	Comp.		SP	7.0-8.5' Sand, gray, fine, grades to silt, saturated.	
						ML	8.5-11.0' Sandy Silt, gray-green, sand is fine, some vegetal material.	
		10	4	Comp.				
		12	5	Comp.		SP	11.0-12.5' Sand, dark gray fine, silty, saturated.	
			6	Comp.		ML	12.5-14.0' Silt, green-gray, some fine sand, saturated.	
		14						

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK

Page 2 **of** 2

Boring No. HYSS-4

WELL DETAILS	PENETRATION TIME/ RATE	DEPTH (FEET)	SAMPLE		PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
			NO.	TYPE				
		14						
			7	Comp		SP	14.0-17.5' <u>Sand</u>, dark gray, fine, saturated, interbeds of silt in lower portion.	
		16						
			8	Comp				
		18						
		20						
		22						
		24						
		26						
		28						

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK

Page 1 of 1

Location

Boring No. HYSS-6

Surface Elevation

Drilling Method Hollow Stem Auger

Total Depth 11.5 ft.

Drilled By Sweet, Edwards & Assoc., Inc.

Date Completed 8/23/84

Logged By J.E. Edwards

WELL DETAILS	PENETRATION TIME/RATE	DEPTH (FEET)	SAMPLE		PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
			NO.	TYPE				
							0-0.5' Asphalt.	
							0.5-1.0' Gravel and Sand.	
		2	1	Composite		ML/CL	1.0-7.0' Silt, gray, with fine sand and clay, moist to saturated at 6 feet.	
			2	Comp.				
		4	3	Comp.				
		6						
			4	Comp.		ML	7.0-8.0' Silt, blue-gray, with clay, some plant fragments, moist.	
		8				SP	8.0-11.5' Sand, gray, fine to medium, loose, saturated.	
			5	Comp.				
		10	6	Comp.				
		12						
		14						

SEA-300-02a

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK

Page 1 **of** 2

Location

Boring No. HYSS-7

Surface Elevation

Drilling Method Hollow Stem Auger

Total Depth 17.0 ft.

Drilled By Sweet, Edwards & Assoc., Inc.

Date Completed 8/23/84

Logged By J.E. Edwards

WELL DETAILS	PENETRATION TIME/ RATE	DEPTH (FEET)	SAMPLE		PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
			NO.	TYPE				
							0-0.5' Asphalt.	
							0.5-1.5' Silt and Gravel, gray with plant fragments, odoriferous, fill.	
		2	1	Compo-Site		ML/CL/ SP	1.5- 3.0' Silt, Clay, Sand, dark gray, fine, with plant fragments, odoriferous.	
		4	2	Comp.		ML	3.0-6.0' Silt, gray with orange mottling, odoriferous.	
			3	Comp.				
		6	4	Comp.		SP	6.0-6.5' Sand, gray with orange staining, fine to medium, loose, saturated.	
						ML	6.5-7.5' Silt, gray, saturated.	
		8	5	Comp.		SP	7.5-9.0' Sand, gray, fine to medium, saturated.	
				No Recovery				
		10	6	Comp.		ML/SP	10.0-11.5' Silt, gray, moist, with interbedded fine to medium, saturated sand.	
		12	7	Comp.		SP	11.5-17.0' Sand, gray, fine to medium, loose, saturated.	
		14	8	Comp.				

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BORING LOG

PROJECT HYTEK

Page 2 **of** 2

Boring No. HYSS-7

WELL DETAILS	PENE-TRATION TIME/ RATE	DEPTH (FEET)	SAMPLE		PERME-ABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
			NO.	TYPE				
		14	8	Comp			11.5-17.0' See preceding page for description.	
			9	Comp				
		16						
			10	Comp				
		18						
		20						
		22						
		24						
		26						
		28						

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK

Page 1 of 2

Location

Boring No. HYSS-8

Surface Elevation

Drilling Method Hollow Stem Auger

Total Depth 17.5 ft.

Drilled By Sweet, Edwards & Assoc., Inc.

Date Completed 8/24/84

Logged By J.E. Edwards

WELL DETAILS	PENETRATION TIME/RATE	DEPTH (FEET)	SAMPLE		PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
			NO.	TYPE				
							0-1.0' Fill, gravel.	
		2	1	Composite		ML	1.0-7.5' Silt, gray, moist orange staining and nodules 4.5-6.0 feet.	
		4	2	Comp.				
			3	Comp.				
		6	4	Comp.				
		8				SP/CL	7.5-9.5' Sand, gray, fine to medium, loose, saturated, interbedded with silty clay, blue gray cohesive, moist.	
			5	Comp.				
		10	6	Comp.		SP	9.5-17.5' Sand, gray, fine to medium, saturated.	
		12	7	Comp.				
		14	8	Comp.				

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK

Page 2 **of** 2

Boring No. HYSS-8

WELL DETAILS	PENETRATION TIME/ RATE	DEPTH (FEET)	SAMPLE		PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
			NO.	TYPE				
		14	8	Comp.			9.5-17.5' See preceding page for description.	
			9	Comp.				
		16						
			10	Comp.				
		18						
		20						
		22						
		24						
		26						
		28						

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BORING LOG

PROJECT HYTEK

Page 1 **of** 1

Location

Boring No. HYSS-9

Surface Elevation

Drilling Method Hand Auger

Total Depth 9.0 ft.

Drilled By Sweet, Edwards & Assoc., Inc.

Date Completed 8/24/84

Logged By D.R. Dykes

WELL DETAILS	PENETRATION TIME/ RATE	DEPTH (FEET)	SAMPLE		PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
			NO.	TYPE				
			1	Composite		ML	0-3.0' Silt, mottled brown, gray and orange, crumbly.	
		2	2	Comp.				
		4	3	Comp.		SP	3.0-4.5' Sand, gray, very fine.	
			4	Comp.		SM	4.5-6.0' Silty Sand, gray, very fine.	
		6	5	Comp.		SP	6.0-7.5' Sand, black, medium, odoriferous, saturated.	
		8	6	Comp.			7.5-9.0' Silty Sand, gray, fine, saturated.	
		10						
		12						
		14						

SEA-300-02a

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK

Page 1 **of** 1

Location

Boring No. HYSS-10

Surface Elevation

Drilling Method Hand Auger

Total Depth 10.0 ft.

Drilled By Sweet, Edwards & Assoc., Inc.

Date Completed 8/28/84

Logged By

WELL DETAILS	PENETRATION TIME/ RATE	DEPTH (FEET)	SAMPLE		PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
			NO.	TYPE				
						SP	0-2.5' Sand, white, fine, roots, some pieces of sheet plastic.	
		2	1	Composite				
			2	Comp.			2.5-4.5' Brown and green glick, soft, plastic.	
		4						
			3	Comp.		ML	4.5-7.5' Silt, brown with orange mottling increasing in lower portion of sample	
		6	4	Comp.				
		8	5	Comp.		SM	7.5-10.0' Silty Sand, gray, fine, upper portion mottled orange and brown, some clean sand portions, odoriferious, saturated.	
		10						
		12						
		14						

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK

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Location

Boring No. HYSS-11

Surface Elevation

Drilling Method Hand Auger

Total Depth 10.0 ft.

Drilled By Sweet, Edwards & Assoc., Inc.

Date Completed 8/28/84

Logged By D.R. Dykes

WELL DETAILS	PENETRATION TIME/ RATE	DEPTH (FEET)	SAMPLE		PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
			NO.	TYPE				
							0-1.0' Root mass and dry powder.	
		2	1	Composite			1.0-2.5' Blue, gray, green and brown glick, soft, moist.	
			2	Comp.		ML	2.5-4.0' Silt, green brown and gray with orange mottling, moist in lower portion.	
		4	3	Comp.		ML	4.0-6.5' Silt, gray brown, with orange mottling, lower portion, saturated.	
		6	4	Comp.				
		8	5	Comp.		SP	6.5-10.0' Sand, gray, fine, odoriferous, saturated, 7.0-7.5' dark gray, 7.5-8.0' Greenish gray, 8.0-10' light gray, silty.	
			6	Comp.				
		10						
		12						
		14						

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK

Page 1 **of** 1

Location

Boring No. HYSS-12

Surface Elevation

Drilling Method Hand Auger

Total Depth 8.5 ft.

Drilled By Sweet, Edwards & Assoc., Inc.

Date Completed 8/28/84

Logged By D.R. Dykes

WELL DETAILS	PENETRATION TIME/ RATE	DEPTH (FEET)	SAMPLE		PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
			NO.	TYPE				
							0-0.5' Fill, root mass, silt with gravel.	
		2	1	Composite		ML	0.5-2.5' Silt, gray-brown, mottled orange, friable, moist lower part.	
			2	Comp.		ML	2.5-7.5' Clayey Silt, gray, some red staining, some roots, moist to saturated, cohesive.	
		4	3	Comp.				
		6	4	Comp.				
		8	5	Comp.		SP	7.5-8.5' Sand, gray, fine, saturated.	
		10						
		12						
		14						

SEA-300-02a

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK

Page 1 **of** 1

Location

Boring No. HYSS-14

Surface Elevation

Drilling Method Hand Auger

Total Depth 10.5 ft.

Drilled By Sweet, Edwards & Assoc., Inc.

Date Completed 8/28/84

Logged By D.R. Dykes

WELL DETAILS	PENETRATION TIME/RATE	DEPTH (FEET)	SAMPLE		PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
			NO.	TYPE				
							0-1.5' Trench.	
		2	1	Composite		SM	1.5-4.5' Silty Sand, brown, fine, loose, dry, roots.	
		4	2	Comp.				
			3	Comp.		ML	4.5-7.0' Silt, gray-brown, with red stained, hard areas, roots, moist to saturated.	
		6						
			4	Comp.		ML	7.0-10.0' Clayey Silt, gray, saturated.	
		8	5	Comp.				
			6	Comp.				
		10				SP	10.0-10.5' Sand, gray, fine, some silt, saturated	
		12						
		14						

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK

Page 1 of 3

Location See Soil Sampling Location Map

Boring No. HYSS-15

Surface Elevation

Drilling Method Hollow Stem Auger

Total Depth 41.0 ft

Drilled By JJM/JB

Date Completed 12/19/84

Logged By SRH

WELL DETAILS	PENE-TRATION TIME/ RATE	DEPTH (FEET)	SAMPLE		PERME-ABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
			NO.	TYPE				
		0					Asphalt pavement underlain by a base of fill and crushed rock.	
		2	1	SS		ML	1.5-3.0' Silt, gray to black from 1.5-2.5 ft, carbonateous inclusions, some wood fragments. Silt from 2.5-3.0 ft, mottled tan orange, some gray.	
		4	2	SS		CL	3.0-4.5' Clayey Silt, slightly mottled, predominatly gray, minor wood and root fragments, moist.	
		6	3	SS		ML/CL	4.5-6.0' Silty Clay, gray slightly mottled, minor carbonaceous fragments, saturated.	
			-	-		-	6.0-7.5' No return.	
		10	4	SS		SP	7.5-9.0' Sand, black, medium to fine, clean, poorly sorted, fining upward, stringers of silt near bottom of sample.	
		12	5	SS		SM	9.0-10.5' Silty Sand, black, medium grained, poorly sorted.	
			6	SS		SP/SM	10.5-11.5' Same as above.	
		14	7	SS		SP	11.5-13.0' Same as above.	
		16	8	SS		SP	13.0-14.5' Same as above. (Drove sample).	

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK

Page 2 **of** 3

Boring No. HYSS-15

WELL DETAILS	PENETRATION TIME/RATE	DEPTH (FEET)	SAMPLE NO.	SAMPLE TYPE	PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
		14	8	SS		SP	See preceeding page for description.	
			9	SS		SP	14.5-16.0' Same as above. (only recourded 0.5 ft of sample, chemical odor).	
		16	10	SS		SP	16.0-17.5' Same as above. Slightly coarser grain size. (pushed sample).	
		18	11	SS		SP/ML	17.5-19.0' Same as above. Silt stringer.	
		20	12	SS		SP/ML	19.0-19.11' Black sand clean. 19.11-20.5' Silt, gray-brown, little plasticity, concoidal fracturing tightly compacted.	
		22	13	SS		SM/SP	21.0-22.5' Sandy Silt to very fine grained Sand, gray, little plasticity, abundant wood fragments.	
			14	SS		SM/SP	22.5-24.0' Silt, Sandy Silt, Sand, black, clean, alternating with green silt stringers 1 to 2 in. thick.	
		24	15	SS		SM/SP	24.0-25.5' Top 0.25' Sandy Silt, gray black, stringer Remaining 0.33' Sand, fine to medium, black, clean. (only 0.58' of sample recovered).	
		26	16	SS		SM	25.5-27.0' Sandy Silt, gray, wood fragments, black sand stringer 1 inch thick located 0.10' from the bottom of the sample.	
		28						
		30	17	SS		CL	29.5-31.0' Clayey, Sandy, Silt, green cohesive, saturated.	

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK

Page 3 **of** 3

Boring No. HYSS-15

WELL DETAILS	PENETRATION TIME/RATE	DEPTH (FEET)	SAMPLE		PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
			NO.	TYPE				
		30	17	SS		CL	29.5-31.0' Description on preceeding page.	
		32						
		34						
			18	SS		ML	34.5-36.0' Sandy-Silt, gray brown, some wood fragments, pebbles, bottom of sample is laminated silt with inclusions of sand grading upward into a silty sand.	
		36						
		38						
		40	19	SS		ML	39.5-41.0' Silt, gray-green, traced lamination, concoidal fracturing.	
		42						

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK

Page 1 **of** 3

Location See Soil Sampling Location Map

Boring No. HYSS-16

Surface Elevation

Drilling Method Hollow Stem Auger

Total Depth 41.0 ft

Drilled By JJM/SRH

Date Completed 12/20/84

Logged By JB

WELL DETAILS	PENETRATION TIME/ RATE	DEPTH (FEET)	SAMPLE		PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
			NO.	TYPE				
		0						
		2	1			SM	1.0-2.5' Silty Sand, orange-brown mottled (top 2") becoming gray downward.	
		4	2			ML/SM	2.5-4.0' Silt to Silty Sand, light gray, some organics slightly mottled inclusions, orange-rust in color.	
			3			ML	4.0-5.5' Clayey Silt, light gray, mottled inclusions, orange-rust.	
		6	4			ML	5.5-7.0' Clayey Silt, to Sandy Silt, gray to mottled orange-rust.	
		8	5			SM/ML	7.0-8.5' Sandy Silt to Silt, gray to greenish gray, odorous, some wood fragments, fining downward.	
		10	6			SM SP	8.5-10.0' Top 6" Silty Sand, grading into greenish-gray Bottom 4" Sand, black, clean, fine, poorly sorted	
		12						
		14						

BORING LOG

PROJECT HYTEK

Page 2 **of** 3

Boring No. HYSS-16

WELL DETAILS	PENETRATION TIME/RATE	DEPTH (FEET)	SAMPLE		PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
			NO.	TYPE				
		14						
			7			SM	14.5-16.0' Silty Sand, greenish-gray, grading to cleaner medium-fine to fine sand at bottom 3".	
		16						
		18						
		20	8			SM	19.5-21.0' Sandy Silt, gray, some organics, stringers of medium to fine grained sand, odorous.	
		22						
		24						
			9			SM	24.5-26.0' Silty Sand, dark gray, fine with silt matrix, odorous.	
		26						
		28						
		30	10			SP	29.5-31.0' For description see following page.	

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK

Page 3 **of** 3

Boring No. HYSS-16

WELL DETAILS	PENETRATION TIME/RATE	DEPTH (FEET)	SAMPLE		PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
			NO.	TYPE				
		30	10			SP	29.5-31.0' Sand, medium fine, some silt, gray, odor decreasing from previous sample.	
		32						
		34						
			11			SP	34.5-36.0' Sand, gray, medium, clean, no odor detected.	
		36						
		38						
		40	12			ML	39.5-41.0' Clayey Silt, greenish-gray, sand stringers, fine gray sand, some silt at bottom 4" of spoon.	
		42						

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK

Page 1 **of** 2

Location See Soil Sampling Location Map

Boring No. HYSS-17

Surface Elevation

Drilling Method Hollow Stem Auger

Total Depth 20.5 ft.

Drilled By JJM/SRH

Date Completed 12/19/84

Logged By JB

WELL DETAILS	PENETRATION TIME/ RATE	DEPTH (FEET)	SAMPLE		PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
			NO.	TYPE				
		0						
		2	1			ML	1.0-2.5' Silt, brown, gray and black, some organics, odorous.	
			2			CL	2.5-4.0' Clayey Silt, greenish-gray, odorous.	
		4	3			ML	4.0-5.5' Silty Clay to Clayey Silt, some mottling, odorous, saturated.	
		6	4			ML/SM	5.5-7.0' Clayey Silt and Sandy Silt, stringers of medium fine black silty sand, odorous.	
		8	5			ML SM	7.0-8.5' Top Clay to Silty Clay, greenish grading into Silty Sand, black, organics, odorous.	
			6			SM	8.5-10.0' Silty Sand, greenish-black, (only 0.5' sample recovered).	
		10						
		12						
		14						

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK

Page 2 **of** 2

Boring No. HYSS-17

WELL DETAILS	PENE-TRATION TIME/ RATE	DEPTH (FEET)	SAMPLE		PERME-ABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
			NO.	TYPE				
		14	7			SM SP/CL	14.0-15.5' Top: Sandy Silt, greenish-black, Bottom: Sand, fine to med fine sand, black, clean, clay stringers, slightly odorous.	
		16						
		18						
		20	8			SM	19.0-20.5' Silty Sand, greenish-brown. Bottom 3" of sample fine sand, black, slight odor.	
		22						

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK

Page 1 **of** 2

Location See Soil Sampling Location Map

Boring No. HYSS-18

Surface Elevation

Drilling Method Hollow Stem Auger

Total Depth 23.0 ft.

Drilled By JJM/SRH

Date Completed 12/20/84

Logged By JB

WELL DETAILS	PENETRATION TIME/RATE	DEPTH (FEET)	SAMPLE		PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
			NO.	TYPE				
		0 2	1 & 2	SS		SM	0.0-3.0' Fill, tan to orange and brown, pebbles, cobbles, sand and silt. Poor sample retention.	
		4					3.0-5.0' No return.	
		6	3	SS		ML	5.0-7.5' Silt, brown, little return.	
		8	4	SS		SM	7.5-10.0' Sandy Silt, gray, odorous.	
		10	5	SS		ML SM	10.0-11.5' Top: Clayey Silt to Silt, greenish. Bottom: Silty Sand, gray, odorous.	
		12	6	SS		SM	11.5-13.0' Sandy Silt to Silty Sand, gray to gray-brown, no odor.	
		14	7	SS		SM	13.0-14.5' Sandy Silt to Silty Sand, gray, some odor.	

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK

Page 2 of 2

Boring No. HYSS-18

WELL DETAILS	PENETRATION TIME/ RATE	DEPTH (FEET)	SAMPLE		PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
			NO.	TYPE				
		14	7	SS		SM	See preceeding page for description.	
			8	SS		SM	14.5-16.0' Silty Sand, Sandy Silt to Silty Sand, gray, rythmically bedded, odorous.	
		16						
		18						
			9	SS		SM	18.5-20.0' Silty Sand, gray, odorous.	
		20	10	SS		SM	20.0-21.5' Silty Sand, to Sandy Silt, gray, odorous.	
		22	11	SS		SM	21.5-23.0' Silty Sand, dark gray, odorous.	
		24						
		26						

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK

Page 1 **of** 2

Location See Soil Sampling Location Map

Boring No. HYSS-19

Surface Elevation

Drilling Method

Total Depth 21.0 ft.

Drilled By

Date Completed 12/21/84

Logged By J.J. Maul

WELL DETAILS	PENETRATION TIME/RATE	DEPTH (FEET)	SAMPLE		PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
			NO.	TYPE				
		0						
		2						
		4						
							4.5-6.0' Sandy Silt to Silt, grayish brown, mottled, trace of sand.	
		6					6.0-7.5' Clayey Silt, gray, some mottling at top of sample.	
		8						
							9.0-10.5' Silty Clay, gray, some black streaks, slight odor.	
		10					10.5-12.0' Clayey Silt, gray, grades to gray sandy silt at bottom of sample, some odor.	
		12					12.0-13.5' Silty Sand, greenish gray, underlain by black fine to medium fine sand at base.	
		14					13.5-15.0' See following page for description.	

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK

Page 2 **of** 2

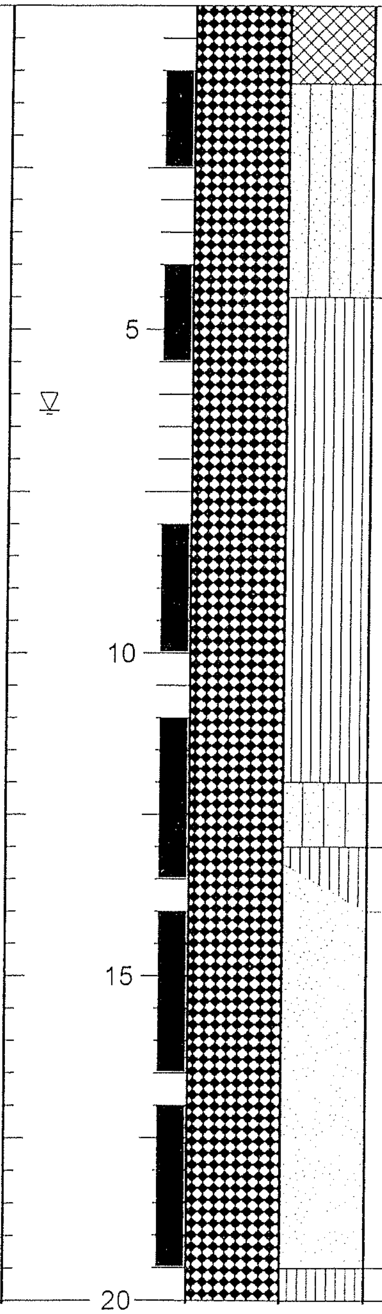
Boring No. HYSS-19

WELL DETAILS	PENETRATION TIME/RATE	DEPTH (FEET)	SAMPLE		PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
			NO.	TYPE				
		14					13.5-15.0' Silty Sand, black, fine.	
		16					15.0-16.5' Sand, black, fine to medium, some silty sand, pinkish silty layers near 16.5 ft.	
							16.5-18.0' Clayey Sandy Silt, greenish gray, black silty sand at bottom.	
		18					18.0-19.5' Sand, black, silty medium fine sand.	
		20					19.5-21.0' Sandy, Silty Sand, black, medium fine sand.	
		22						

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-1
LOCATION	Kent	PAGE	1 of 3
DRILLED BY	TEG	GROUND ELEV.	23.24'
DRILL METHOD	Strataprobe	TOTAL DEPTH	43.0'
LOGGED BY	Russell Thompson	DATE COMPLETED	11/28/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	0
(SP)	4-8	0
(SS)	8-11	0
(SS) SP-1-12	11-14	0
SP-1-14 (SS)	14-17	0
(SS)	17-20	4



LITHOLOGIC DESCRIPTION

0 to 1.2 feet: ASPHALT AND CRUSHED ROCK

1.2 to 4.5 feet: SILTY SAND (SM), brown, fine, damp.

@ 4.0 to 4.1 feet: gravel and asphalt layer.

4.5 to 12.0 feet: SILT (ML), gray, few fine sand, low plasticity, moist.

12.0 to 13.0 feet: SILTY SAND (SM), gray, fine, few silt, wet.

13.0 to 14.0 feet: SILT (ML), gray, medium plasticity, trace organics, wet.

14.0 to 19.5 feet: SAND (SP), brownish gray, fine to medium, interbedded silt (ML) layers ranging from 1- to 5-inches thick.

REMARKS

(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.

(2) SS = 2-inch O.D. split spoon sampler.

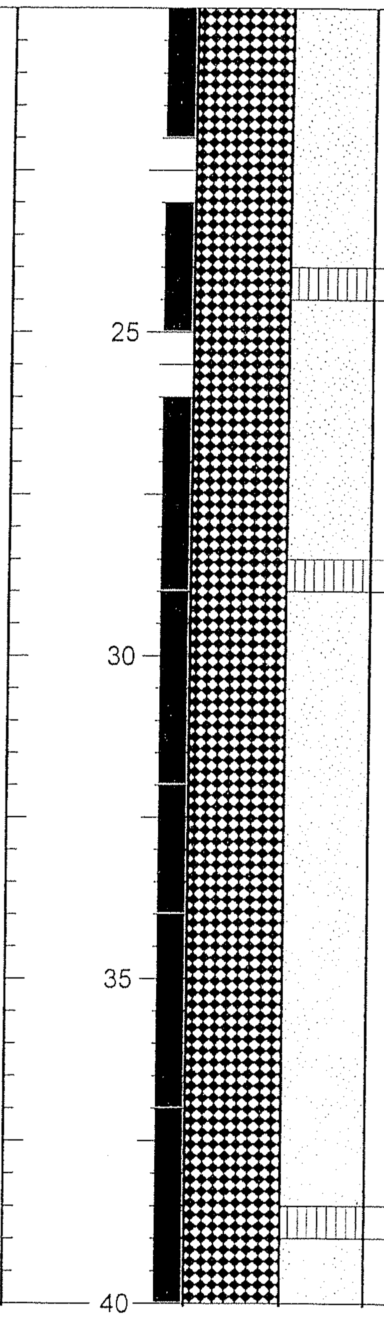
IT CORPORATION

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Russell Thompson

BORING NO. SP-1
PAGE 2 of 3
GROUND ELEV. 23.24'
TOTAL DEPTH 43.0'
DATE COMPLETED 11/28/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SS) SP-1-21	20-23	0
(SS)	23-26	4.2
(SS)	26-29	40.1
(SS)	29-32	0
(SS)	32-34	507
(SS)	34-37	
(SS) SP-1-38	37-40	2000



LITHOLOGIC DESCRIPTION

19.5 to 20.0 feet: SILT (ML), brown, medium plasticity, trace sand, wet.
20.0 to 24.0 feet: SAND (SP), dark gray, fine to medium, interbedded silt (ML) layers, 1- to 2-inches thick, wet.
24.0 to 24.5 feet: SILT (ML), brownish gray.
24.5 to 28.5 feet: SAND (SP), dark gray, fine to medium, trace coarse sand, wet.
28.5 to 29.0 feet: SILT (ML), brownish gray.
29.0 to 38.5 feet: SAND (SP), dark gray, fine to medium, wet.
@ 37.0 feet: strong unidentifiable odor.
38.5 to 39.0 feet: SILT (ML), brownish gray.
39.0 to 40.0 feet: SAND (SP), dark gray, fine to medium, wet, strong unidentifiable odor.

IT CORPORATION

REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Russell Thompson

BORING NO. SP-1
PAGE 3 of 3
GROUND ELEV. 23.24'
TOTAL DEPTH 43.0'
DATE COMPLETED 11/28/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
SP-1-40 (SS)	40-43	50						**40.0 to 43.0 feet: SILT WITH SAND (ML)**, gray, medium plasticity, little fine sand, trace organics, scattered shell fragments, moist.
								Total depth drilled = 43.0 feet. Total depth sampled = 43.0 feet. Boring abandoned with bentonite grout and an asphalt patch.
				45				
				50				
				55				
				60				

IT CORPORATION

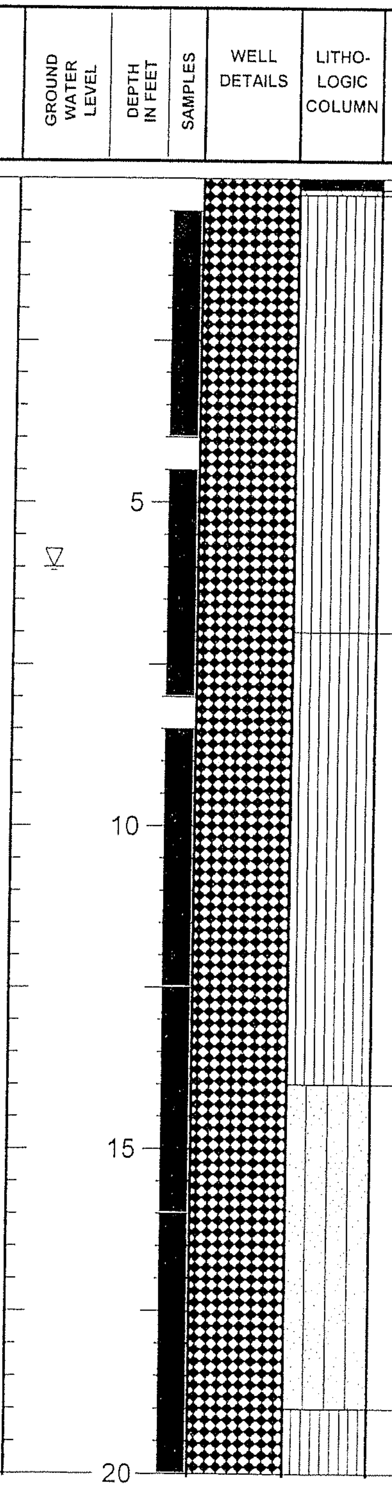
REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Erin McQuillan

BORING NO. SP-2
PAGE 1 of 3
GROUND ELEV. 22.72'
TOTAL DEPTH 41.0'
DATE COMPLETED 11/28/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	0
(SP)	4-8	0
(SP)	8-12	0
(SP)	12-16	0
(SP)	16-20	0
SP-2-18		
SP-2-19		



LITHOLOGIC DESCRIPTION

0 to 0.2 foot: ASPHALT

0.2 to 0.25 foot: CRUSHED ROCK

0.25 to 7.0 feet: SILT (ML), brown, low to no plasticity, trace fine sand, damp.

7.0 to 14.0 feet: SILT (ML), gray to green, medium plasticity, scattered wood debris, damp to moist, organic odor.

14.0 to 19.0 feet: SILTY SAND (SM), gray, fine, some silt, moist to wet.

19.0 to 21.0 feet: SILT (ML), gray, low plasticity, trace fine sand, moist.

IT CORPORATION

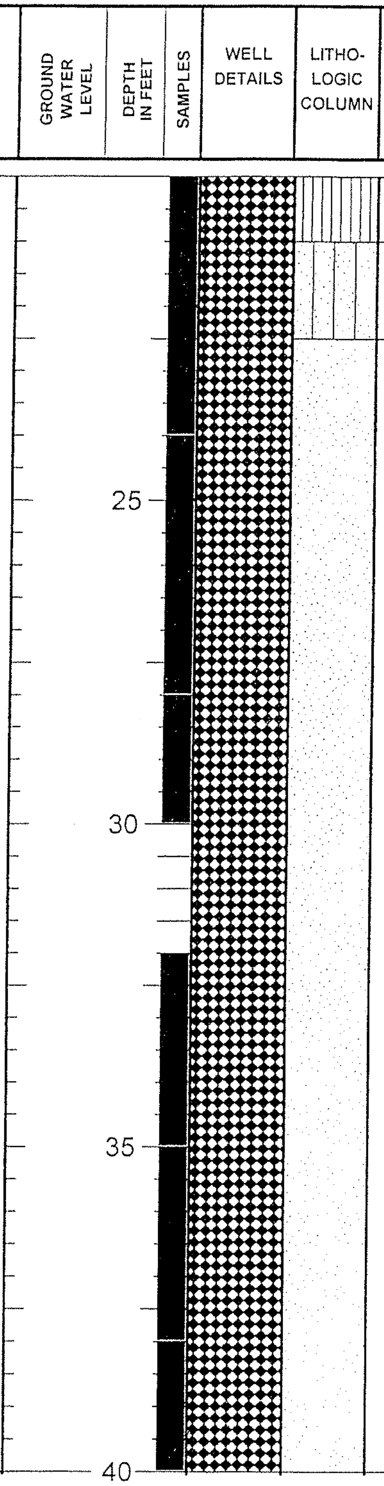
REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Erin McQuillan

BORING NO. SP-2
PAGE 2 of 3
GROUND ELEV. 22.72'
TOTAL DEPTH 41.0'
DATE COMPLETED 11/28/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	20-24	0
(SP)	24-28	0
(SP)	28-32	0
(SS)	32-35	0
(SS)	35-38	0
(SS)	38-41	0



LITHOLOGIC DESCRIPTION

19.0 to 21.0 feet: SILT (ML), continued.

21.0 to 22.5 feet: SILTY SAND (SM), gray, fine, some silt, moist.

22.5 to 40.5 feet: SAND (SP), grayish black, fine to medium, trace silt, scattered wood debris, interbedded silty sand (SM) layers ranging from 1- to 2-inches thick, moist to wet.

IT CORPORATION

REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Erin McQuillan

BORING NO. SP-2
PAGE 3 of 3
GROUND ELEV. 22.72'
TOTAL DEPTH 41.0'
DATE COMPLETED 11/28/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
(SS) SP-2- 40.5		682			■	▩	░	**22.5 to 40.5 feet: SAND (SP)**, continued.
						▩	▥	**40.5 to 41.0 feet: SILT (ML)**, gray, trace fine sand, low plasticity, moist. Total depth drilled = 41.0 feet. Total depth sampled = 41.0 feet. Boring abandoned with bentonite grout and an asphalt patch.
				45				
				50				
				55				
				60				

IT CORPORATION

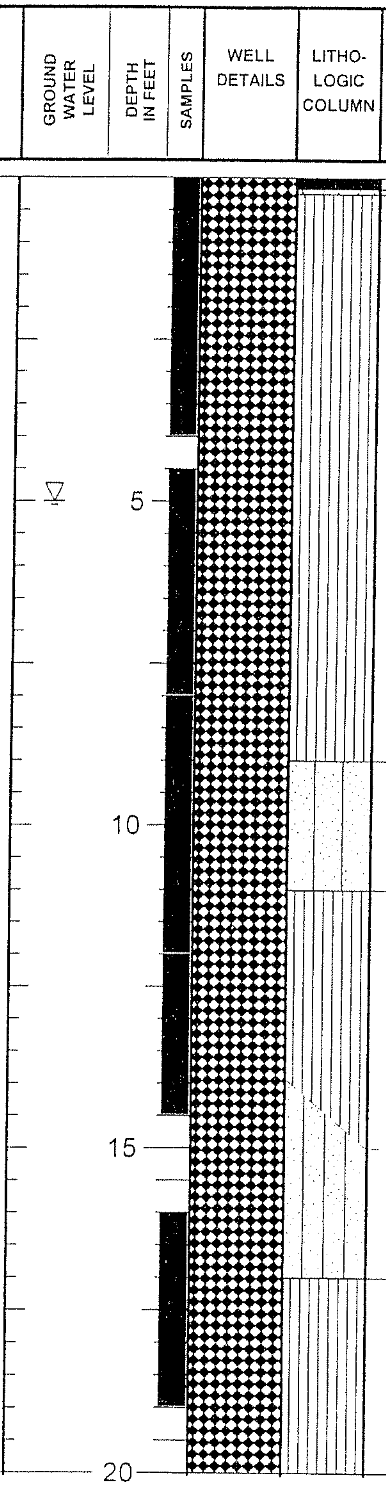
REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Erin McQuillan

BORING NO. SP-3
PAGE 1 of 3
GROUND ELEV. 20.88'
TOTAL DEPTH 41.0'
DATE COMPLETED 11/29/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	0
(SP)	4-8	0
(SP)	8-12	0
(SP)	12-16	0
SP-3-16 (SP)	16-20	0
SP-3-18		



LITHOLOGIC DESCRIPTION

0 to 0.2 foot: ASPHALT

0.2 to 0.25 foot: CRUSHED ROCK

0.25 to 9.0 feet: SILT (ML), gray, low plasticity, trace fine sand, damp to wet.

9.0 to 11.0 feet: SAND (SP-SM), gray, fine sand, few silt, wet.

11.0 to 15.0 feet: SILT (ML), gray, low plasticity, trace fine sand, scattered wood debris, moist to wet.

15.0 to 17.0 feet: SILTY SAND (SM), gray, fine, some silt, wet.

17.0 to 20.0 feet: SILT (ML), gray, low to medium plasticity, scattered wood debris, moist.

IT CORPORATION

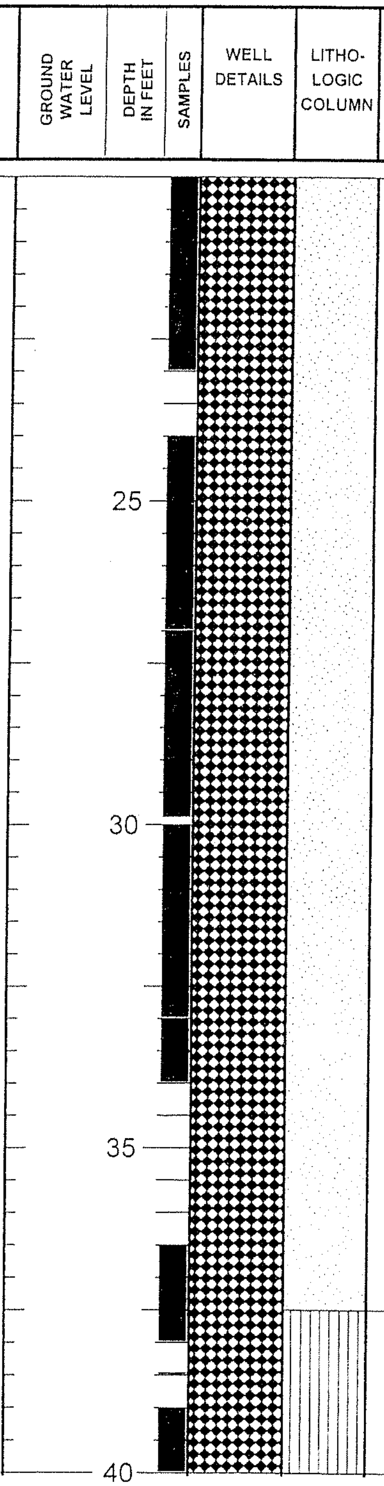
REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Erin McQuillan

BORING NO. SP-3
PAGE 2 of 3
GROUND ELEV. 20.88'
TOTAL DEPTH 41.0'
DATE COMPLETED 11/29/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	LITHOLOGIC DESCRIPTION
(SP)	20-24	0	20.0 to 37.5 feet: SAND (SP), gray, fine to medium, trace silt, moist.
SP-3-21		81.2	
SP-3-24 (SS)	24-27	193	
SP-3-27 (SS)	27-30	140	
SP-3-30 (SS)	30-33	542	@ 31.5 to 32.5 feet: grades to a fine SAND WITH SILT (SP-SM).
(SS)	33-36	6.5	@ 32.5 to 34.0 feet: interbedded silts and silty sands, pinkish gray.
(SS)	36-39	18.2	
SP-3-38.5 (SS)		682	37.5 to 41.0 feet: SILT (ML), gray, nonplastic, scattered shell debris, wet.



IT CORPORATION

REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Erin McQuillan

BORING NO. SP-3
PAGE 3 of 3
GROUND ELEV. 20.88'
TOTAL DEPTH 41.0'
DATE COMPLETED 11/29/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
SP-3-39 (SS)	39-41				■	▦	▥	**37.5 to 41.0 feet: SILT (ML)**, continued.
								Total depth drilled = 41.0 feet. Total depth sampled = 41.0 feet. Boring abandoned with bentonite grout and an asphalt patch.
				45				
				50				
				55				
				60				

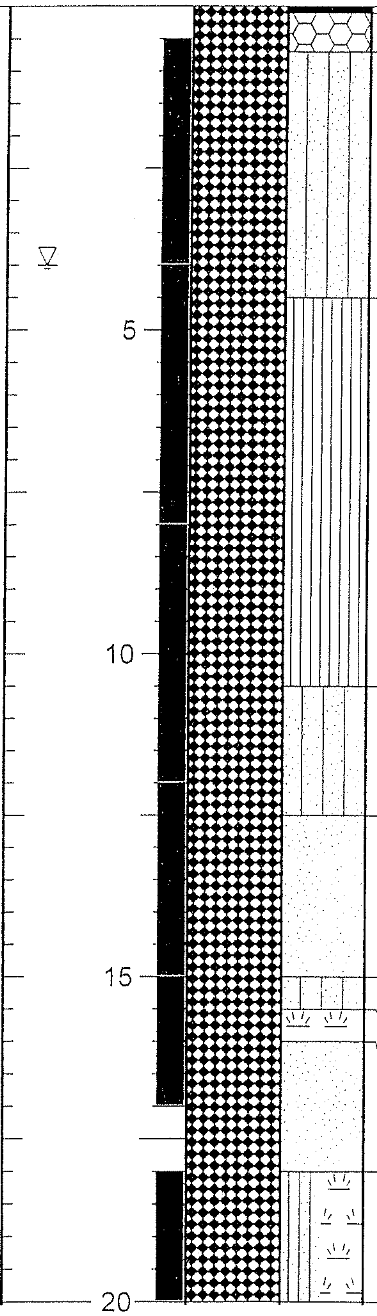
IT CORPORATION

REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-4
LOCATION	Kent	PAGE	1 of 3
DRILLED BY	TEG	GROUND ELEV.	23.13'
DRILL METHOD	Strataprobe	TOTAL DEPTH	45.0'
LOGGED BY	Erin McQuillan	DATE COMPLETED	12/1/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	0
(SP)	4-8	0
(SP)	8-12	0
(SS)	12-15	7.6
(SS)	15-18	41
SP-4-16.5		
(SS)	18-21	33



LITHOLOGIC DESCRIPTION

0 to 0.1 foot: ASPHALT

0.1 to 0.75 foot: SAND AND GRAVEL

0.75 to 4.5 feet: SILTY SAND (SM), grayish brown mottled orange, fine, some silt.

@ 4.4 to 4.5 feet: gravel layer.

4.5 to 10.5 feet: SILT (ML), grayish pink, medium plasticity, trace sand, scattered wood debris, wet.

10.5 to 12.5 feet: SILTY SAND (SM), grayish pink, fine, some silt, wet.

12.5 to 15.0 feet: SAND (SP), blackish gray, fine, trace silt, wet.

15.0 to 15.5 feet: SILTY SAND (SM), grayish pink, fine, little silt.

15.5 to 16.0 feet: PEAT (PT), orangish dark brown, wood debris.

16.0 to 18.0 feet: SAND (SP), gray, medium, trace silt, moist to wet.

18.0 to 21.0 feet: SILTY SAND INTERBEDDED WITH PEAT (SM/PT), layers ranging from 2- to 3-inches thick.

IT CORPORATION

REMARKS

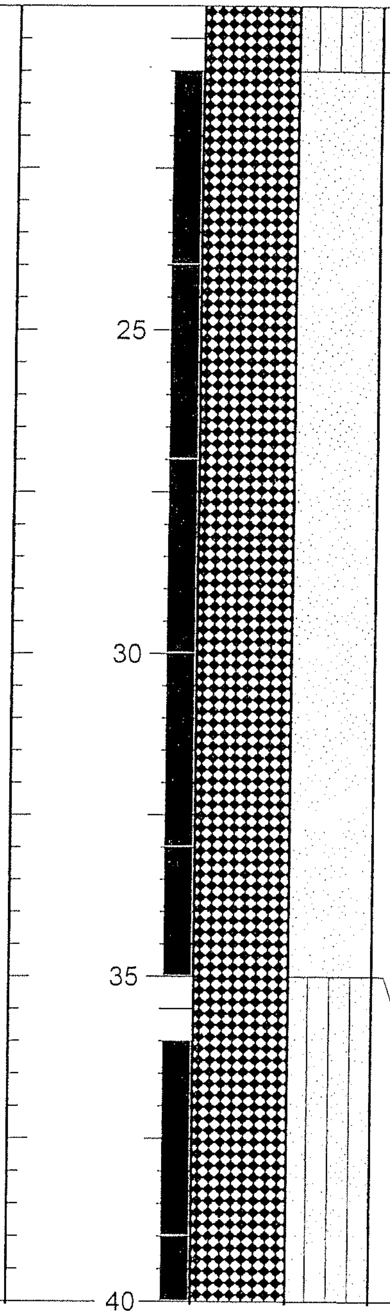
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.

(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-4
LOCATION	Kent	PAGE	2 of 3
DRILLED BY	TEG	GROUND ELEV.	23.13'
DRILL METHOD	Strataprobe	TOTAL DEPTH	45.0'
LOGGED BY	Erin McQuillan	DATE COMPLETED	12/1/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
SP-4-21 (SS)	21-24	10
(SS)	24-27	0
(SS)	27-30	0
(SS)	30-33	2.8
(SS)	33-36	3.6
(SS)	36-39	3.6
(SS)	39-42	



LITHOLOGIC DESCRIPTION

18.0 to 21.0 feet: **SILTY SAND INTERBEDDED WITH PEAT (SM/PT)**, continued.

@ 20.0 to 20.2 feet: silt increases to 30 to 40 percent.

21.0 to 35.0 feet: **SAND (SP)**, blackish gray, medium, wet.

@ 34.7 to 35.0 feet: SILTY SAND (SM), gray, fine, some silt, moist to wet.

35.0 to 40.7 feet: **SILTY SAND (SM)**, fine, some silt, moist to wet.

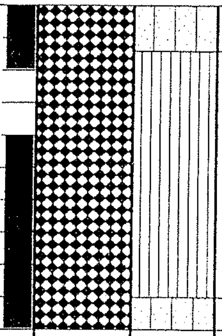
IT CORPORATION

REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Erin McQuillan

BORING NO. SP-4
PAGE 3 of 3
GROUND ELEV. 23.13'
TOTAL DEPTH 45.0'
DATE COMPLETED 12/1/00



SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
								35.0 to 40.7 feet: SILTY SAND (SM), continued.
SP-4-41 (SS) SP-4-43	42-45							**40.7 to 44.5 feet: SILT (ML)**, gray, medium plasticity, trace fine sand, moist to wet. @ 43.0 to 44.0 feet: scattered coarse shell debris.
				45				**44.5 to 45.0 feet: SILTY SAND (SM)**, gray, fine, little silt, wet. Total depth drilled = 45.0 feet. Total depth sampled = 45.0 feet. Boring abandoned with bentonite grout and an asphalt patch.
				50				
				55				
				60				

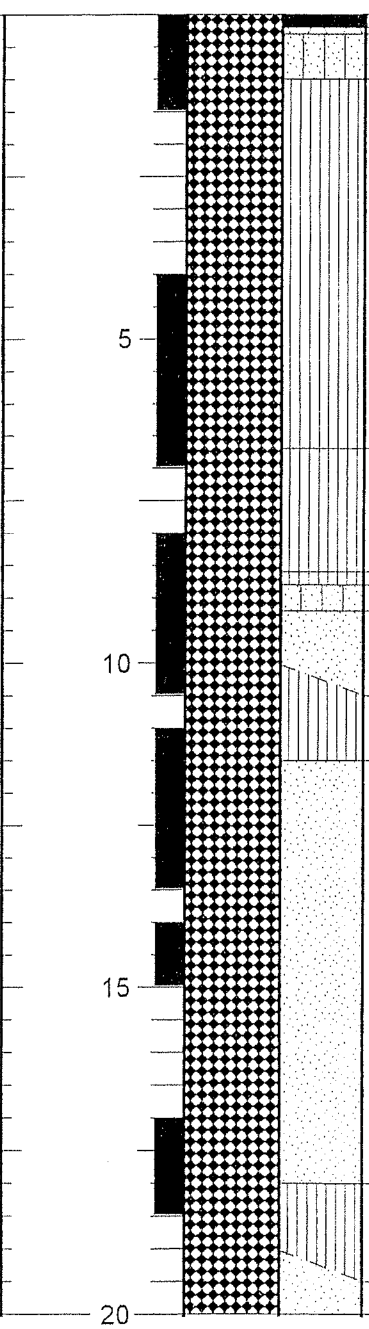
IT CORPORATION

REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Kent Facility**	BORING NO.	**SP-5**
LOCATION	**Kent**	PAGE	**1 of 3**
DRILLED BY	**TEG**	GROUND ELEV.	**22.77'**
DRILL METHOD	**Strataprobe**	TOTAL DEPTH	**43.0'**
LOGGED BY	**Russell Thompson**	DATE COMPLETED	**12/1/00**

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	0
(SP)	4-8	0
SP-5-8 (SS) SP-5-9	8-11	0
(SS)	11-14	0
(SS)	14-17	0
SP-5-17 (SS) SP-5-18	17-20	0



LITHOLOGIC DESCRIPTION

0 to 0.2 foot: ASPHALT

0.2 to 0.3 foot: CRUSHED ROCK

0.3 to 1.0 foot: **SILTY SAND WITH GRAVEL (SM)**, brown, fine to coarse, little silt, little fine to medium gravel, moist.

1.0 to 6.7 feet: **SILT (ML)**, gray mottled brown, medium plasticity, trace organics, moist.

@ 4.6 to 4.8 feet: SAND WITH SILT (SP-SM), tan, fine to medium, few silt, few gravel, wet.

6.7 to 8.6 feet: **SILT (ML)**, gray to olive green, low plasticity, few fine sand, wet.

8.6 to 8.8 feet: **SANDY SILT (ML)**, gray, some fine sand, wet.

8.8 to 9.2 feet: **SILTY SAND (SM)**, grayish olive green, fine, some silt.

9.2 to 10.5 feet: **SAND (SP)**, dark gray, fine to medium, trace silt, wet.

10.5 to 11.5 feet: **SILT (ML)**, pinkish olive green, medium plasticity, wet.

11.5 to 18.0 feet: **SAND (SP)**, dark gray, fine to medium, wet.

18.0 to 19.5 feet: **SILT (ML)**, gray, medium plasticity, wet.

IT CORPORATION

REMARKS

(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Russell Thompson

BORING NO. SP-5
PAGE 2 of 3
GROUND ELEV. 22.77'
TOTAL DEPTH 43.0'
DATE COMPLETED 12/1/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
SP-5-20 SP-5A (SS)	20-23	17						**19.5 to 20.3 feet: SAND (SP)**, dark gray, fine, trace silt, wet. **20.3 to 21.1 feet: SILT (ML)**, low plasticity, trace fine sand, wet. @ 20.8 feet: sand layer 4 cm thick.
SP-5-23 (SS)	23-26	140		25				**21.1 to 25.5 feet: SAND INTERBEDDED WITH SILT (SP/ML)**, dark gray, fine to medium sand with silt layers ranging from 3- to 4-inches-thick, brownish pink, medium plasticity, wet, unidentifiable odor.
(SS)	26-29	11						**25.5 to 41.2 feet: SAND (SP)**, dark gray, fine to coarse, trace fines, wet.
SP-5-29 (SS)	29-32	36		30				
(SS)	32-35							
(SS)	35-38	162		35				
SP-5-36								@ 36.0 to 36.7 feet: SILT (ML) layer, grayish pink, low to medium plasticity, wet.
(SS)	38-41	11		40				

IT CORPORATION

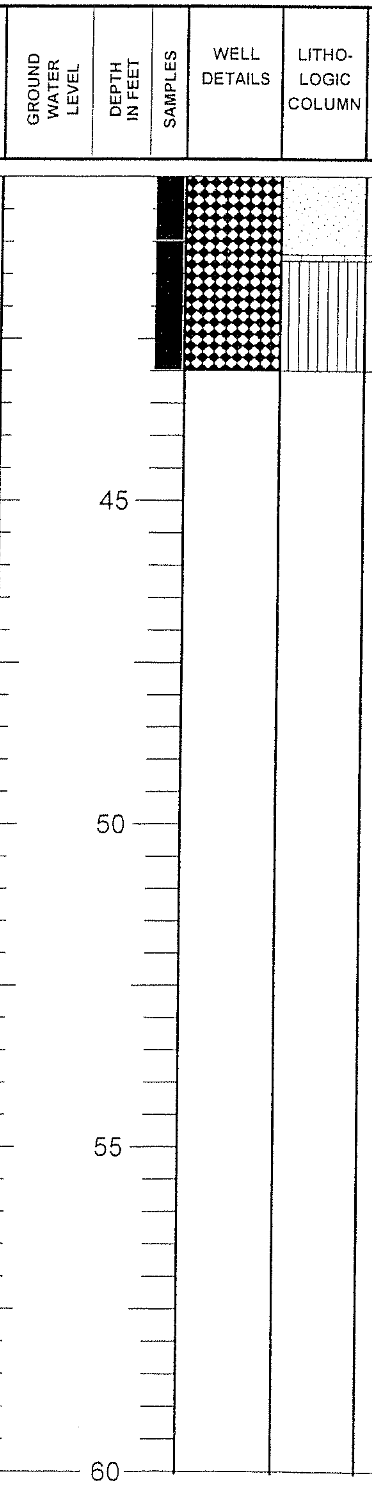
REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME **Kent Facility**
LOCATION **Kent**
DRILLED BY **TEG**
DRILL METHOD **Strataprobe**
LOGGED BY **Russell Thompson**

BORING NO. **SP-5**
PAGE **3 of 3**
GROUND ELEV. **22.77'**
TOTAL DEPTH **43.0'**
DATE COMPLETED **12/1/00**

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
SP-5-40 (SS)		
SP-5-41 (SS)	41-43	6



LITHOLOGIC DESCRIPTION

25.5 to 41.2 feet: SAND (SP), continued.

41.2 to 41.3 feet: SILTY SAND (SM), gray, fine, some silt.

41.3 to 42.8 feet: SILT (ML), gray, low to medium plasticity, few fine sand, moist.

@ 42.8 to 43.0 feet: SANDY SILT (ML), gray, low plasticity.
@ 43.0 feet: SILTY SAND (SM), gray, fine, little silt.
Total depth drilled = 43.0 feet.
Total depth sampled = 43.0 feet.

Boring abandoned with bentonite grout and an asphalt patch.

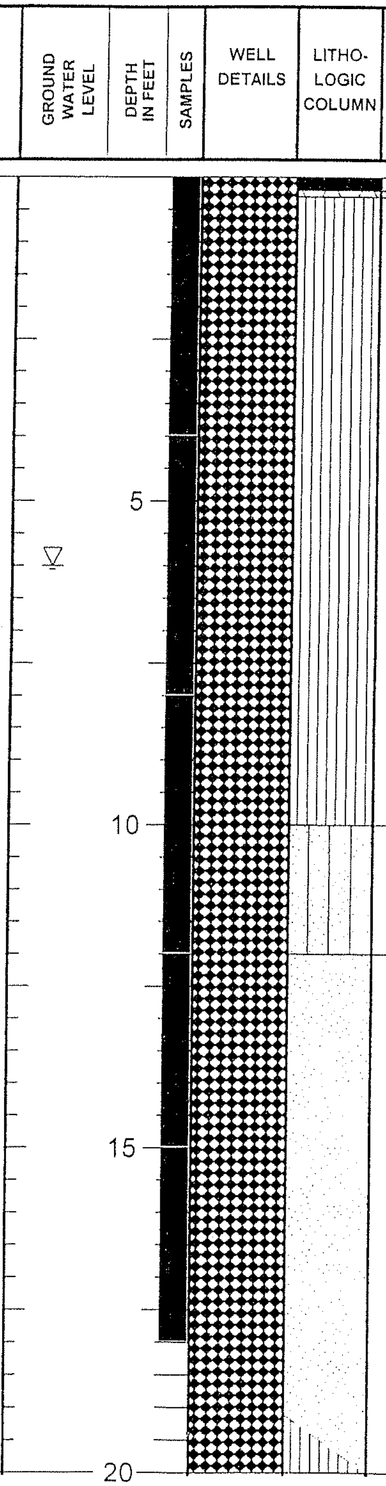
IT CORPORATION

REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-6
LOCATION	Kent	PAGE	1 of 2
DRILLED BY	TEG	GROUND ELEV.	21.71'
DRILL METHOD	Strataprobe	TOTAL DEPTH	38.0'
LOGGED BY	Erin McQuillan	DATE COMPLETED	11/29/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	0
(SP)	4-8	4.2
(SP)	8-12	10.1
(SS)	12-15	0
(SS)	15-18	0
SP-6-17 (SS)	18-21	



LITHOLOGIC DESCRIPTION

0 to 0.2 foot: ASPHALT

0.2 to 0.3 foot: CRUSHED ROCK

0.3 to 10.0 feet: SILT (ML), grayish green, nonplastic, scattered wood debris, moist.

@ 4.7 to 4.8 feet: crushed rock.

@ 5.5 feet: mottled gray brown.

@ 6.0 feet: wet.

@ 7.5 feet: dark grayish black, sulfurous organic odor.

10.0 to 12.0 feet: SILTY SAND (SM), wet, fine, little silt, moist to wet, organic sulfurous odor.

12.0 to 20.0 feet: SAND (SP), gray, fine, trace silt, wet.

@ 18.0 to 21.0 feet: no recovery.

IT CORPORATION

REMARKS

(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.

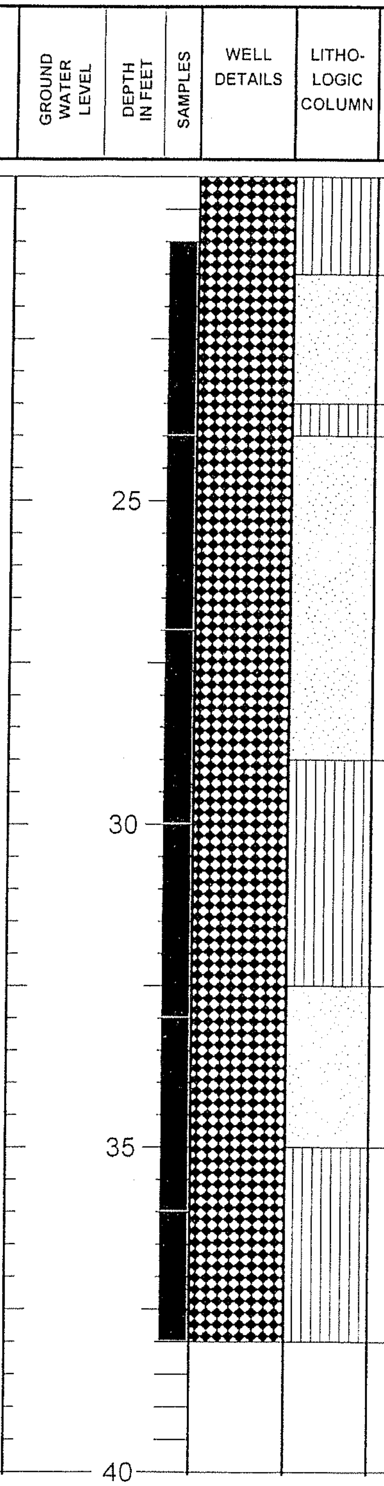
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Erin McQuillan

BORING NO. SP-6
PAGE 2 of 2
GROUND ELEV. 21.71'
TOTAL DEPTH 38.0'
DATE COMPLETED 11/29/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
SP-6-21 (SS) SP-6-22	21-24	12
(SS)	24-27	2.3
(SS)	27-30	0
(SS)	30-33	0
SP-6-33 (SS)	33-36	0
SP-6-36 (SS)	36-38	0



LITHOLOGIC DESCRIPTION

20.0 to 21.5 feet: SILT (ML), gray, low plasticity, trace fine sand.

21.5 to 23.5 feet: SAND (SP), gray, fine to medium, trace fines, scattered wood debris.

23.5 to 24.0 feet: SILT (ML), grayish brown, low to medium plasticity, trace fine sand.

24.0 to 29.0 feet: SAND (SP), gray, medium, trace silt.

@ 26.5 to 26.8 feet: interbedded SILT (ML) layers.

29.0 to 32.5 feet: SILT (ML), grayish brown, low plasticity, scattered wood debris, moist.

32.5 to 35.0 feet: SAND (SP), gray, fine to medium, trace fines.

35.0 to 38.0 feet: SILT (ML), gray, low to medium plasticity, trace sand, moist.

Total depth drilled = 38.0 feet.
Total depth sampled = 38.0 feet.
Boring abandoned with bentonite grout and an asphalt patch.

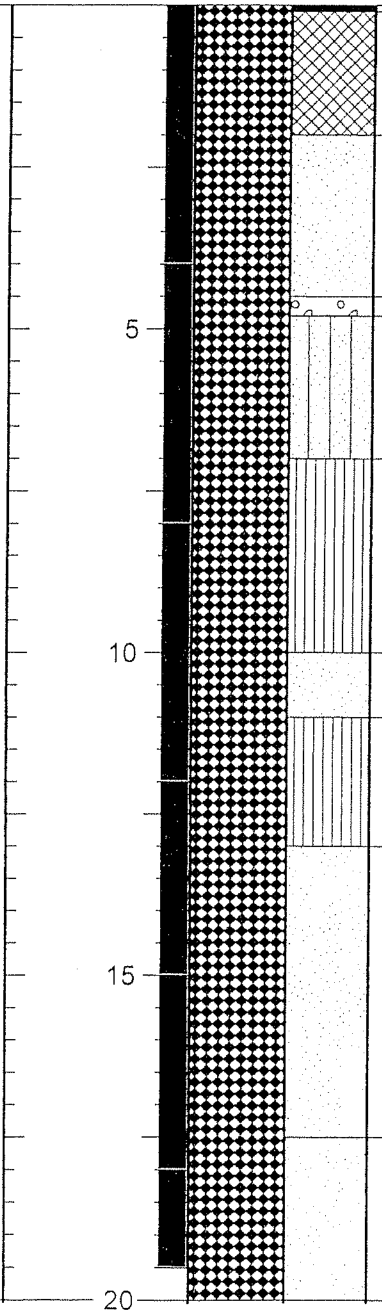
IT CORPORATION

REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-7
LOCATION	Kent	PAGE	1 of 3
DRILLED BY	TEG	GROUND ELEV.	23.69'
DRILL METHOD	Strataprobe	TOTAL DEPTH	45.0'
LOGGED BY	Erin McQuillan	DATE COMPLETED	11/30/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	7.2
(SP)	4-8	17.5
SP-7-11		
(SP)	8-12	11.6
(SS)	12-15	16.5
SP-7-13 SP-7-A		
(SS)	15-18	5.3
(SS)	18-21	35



LITHOLOGIC DESCRIPTION

0 to 0.1 foot: ASPHALT

0.1 to 2.0 feet: SAND AND GRAVEL FILL, orange brown.

2.0 to 4.5 feet: SAND (SP), brown, fine, few fines, iron-stained, moist.

4.5 to 4.8 feet: GRAVEL (GP)

4.8 to 7.0 feet: SILTY SAND (SM), brown, fine, medium plasticity, moist.

7.0 to 10.0 feet: SILT (ML), gray, trace fine sand, medium plasticity, scattered wood debris, moist to wet.

10.0 to 11.0 feet: SAND (SP), black, medium, trace silt, wet.

11.0 to 13.0 feet: SILT (ML), grayish green, medium plasticity, scattered wood debris, wet.

13.0 to 17.5 feet: SAND (SP), black, medium, wet.

17.5 to 27.0 feet: SAND (SP), dark gray, fine to coarse, trace silt, wet.

IT CORPORATION

REMARKS

(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.

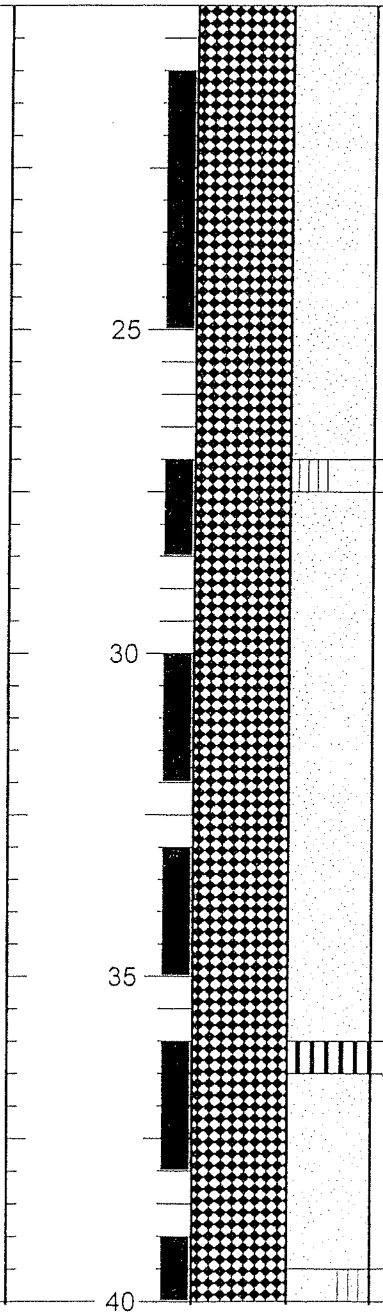
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Erin McQuillan

BORING NO. SP-7
PAGE 2 of 3
GROUND ELEV. 23.69'
TOTAL DEPTH 45.0'
DATE COMPLETED 11/30/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SS)	21-24	8
(SS)	24-27	12.1
(SS)	27-30	6.1
(SS)	30-33	8.2
(SS)	33-36	10.1
(SS)	36-39	7.6
(SS)	39-42	



LITHOLOGIC DESCRIPTION

17.5 to 27.0 feet: SAND (SP), continued.
@ 20.5 to 27.0 feet: SAND (SP), blackish gray, medium, wet.

27.0 to 27.5 feet: SILT INTERBEDDED WITH SAND (ML/SP), scattered wood debris.

27.5 to 36.0 feet: SAND (SP), black, medium, scattered wood debris, trace gravel, wet.

36.0 to 36.5 feet: ELASTIC SILT (MH), high plasticity, little clay, trace sand, wet.

36.0 to 39.5 feet: SAND (SP), black, medium, wet.

REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

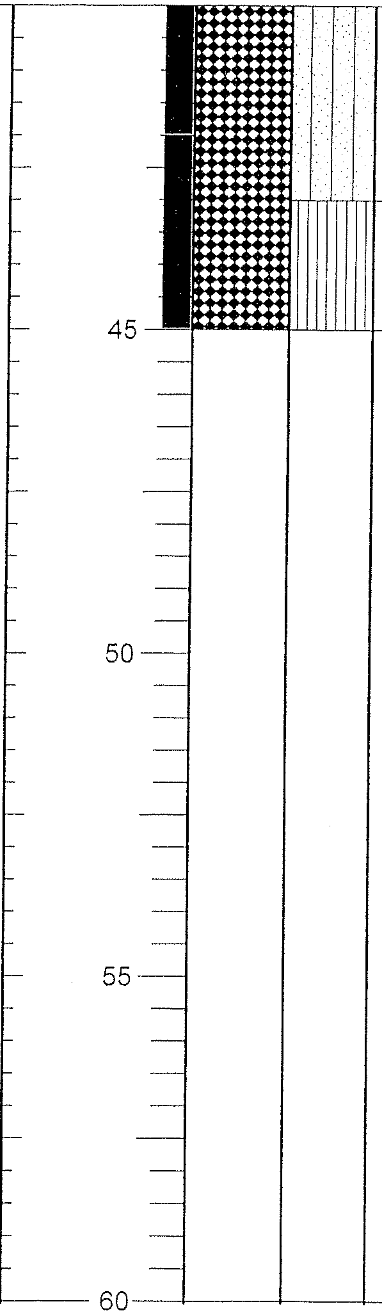
IT CORPORATION

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Erin McQuillan

BORING NO. SP-7
PAGE 3 of 3
GROUND ELEV. 23.69'
TOTAL DEPTH 45.0'
DATE COMPLETED 11/30/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
SP-7-40		8.2
(SS)	42-45	7.3
SP-7-43		



LITHOLOGIC DESCRIPTION

39.5 to 40.0 feet: SAND INTERBEDDED WITH SILTY SAND (SP/SM), black.

40.0 to 43.0 feet: SILTY SAND (SM), grayish brown, fine, some silt, moist.

43.0 to 45.0 feet: SILT (ML), gray, medium plasticity, trace sand, scattered shell fragments, wet.

Total depth drilled = 45.0 feet.
Total depth sampled = 45.0 feet.

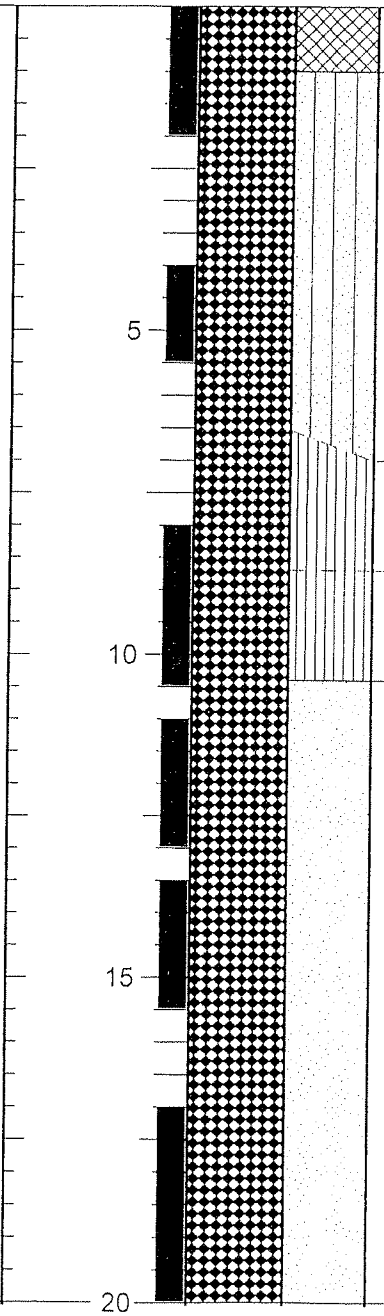
Boring abandoned with bentonite grout and an asphalt patch.

IT CORPORATION

REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-8
LOCATION	Kent	PAGE	1 of 3
DRILLED BY	TEG	GROUND ELEV.	23.33'
DRILL METHOD	Strataprobe	TOTAL DEPTH	46.0'
LOGGED BY	Russell Thompson	DATE COMPLETED	11/30/00



SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
(SP)	0-4							0 to 1.0 foot: **ASPHALT**, crushed rock, fill.
								1.0 to 7.0 feet: **SILTY SAND (SM)**, tan, fine to medium, little silt, few fine gravel, trace coarse gravel, wet.
(SP)	4-8							
				5				
								7.0 to 8.7 feet: **SILT WITH SAND (ML)**, gray, nonplastic, little fine sand, wet.
(SS) SP-8-8 SP-8-9	8-11	0						
								8.7 to 10.4 feet: **SILT (ML)**, gray to green, low to medium plasticity, few fine sand, wet.
				10				
								10.4 to 29.0 feet: **SAND (SP)**, black, fine to coarse, trace silt, wet.
SP-8-11 (SS)	11-14	278						
(SS)	14-16	0						
				15				
(SS)	17-20	0						
				20				

IT CORPORATION

REMARKS

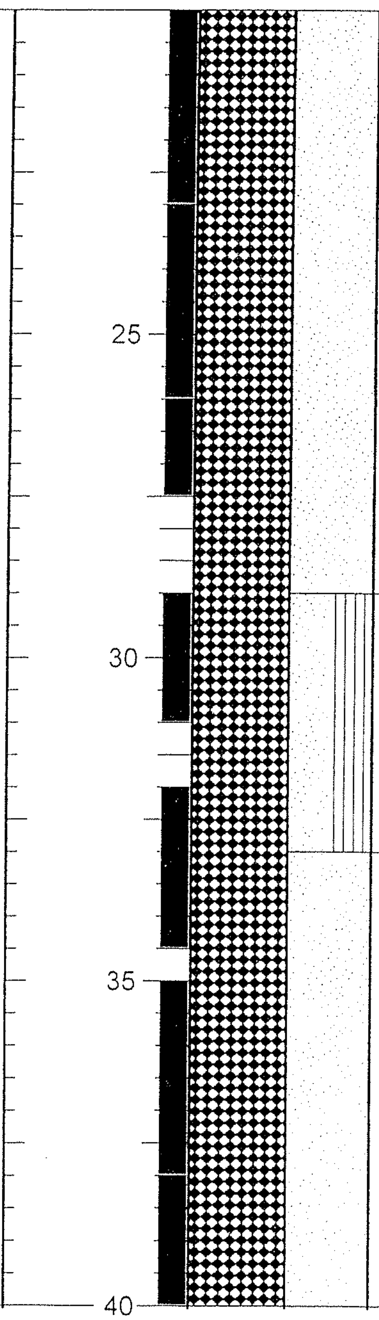
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.

(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Russell Thompson

BORING NO. SP-8
PAGE 2 of 3
GROUND ELEV. 23.33'
TOTAL DEPTH 46.0'
DATE COMPLETED 11/30/00



SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	LITHOLOGIC DESCRIPTION
(SS)	20-23	0	**10.4 to 29.0 feet: SAND (SP)**, continued. @ 21.8 to 21.9 feet: PEAT (PT) layer.
(SS)	23-26	0	
(SS)	26-29	0	
(SS)	29-32	0	**29.0 to 33.0 feet: SAND INTERBEDDED WITH SILT (SP/ML)**, black, fine to medium sand, silt layers 1-inch thick, brown, medium plasticity, root debris, moist to wet. @ 29.0 feet: SANDY SILT (ML) layer 1-inch thick.
(SS)	32-35	0	**33.0 to 40.5 feet: SAND (SP)**, black, fine to medium, trace silt, wet.
(SS)	35-38	0	
SP-8-38 (SS)	38-41	59	

IT CORPORATION

REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Russell Thompson

BORING NO. SP-8
PAGE 3 of 3
GROUND ELEV. 23.33'
TOTAL DEPTH 46.0'
DATE COMPLETED 11/30/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
								33.0 to 40.5 feet: SAND (SP), continued.
SP-8-41 (SS)	41-44							**40.5 to 43.5 feet: SILTY SAND INTERBEDDED WITH SILT (SM/ML)**, dark gray, fine sand, little silt, interbedded silt layers 1-inch thick, wet.
SP-8-44 (SS)	44-46							**43.5 to 45.0 feet: SILT (ML)**, gray, medium plasticity, trace fine sand, wet, unidentifiable odor.
				45				**45.0 to 46.0 feet: SAND (SP)**, dark gray, fine to medium, trace silt, wet. @ 45.2 to 45.7 feet: SILT (ML) layer, gray, medium plasticity. Total depth drilled = 46.0 feet. Total depth sampled = 46.0 feet. Boring abandoned with bentonite grout and an asphalt patch.
				50				
				55				
				60				

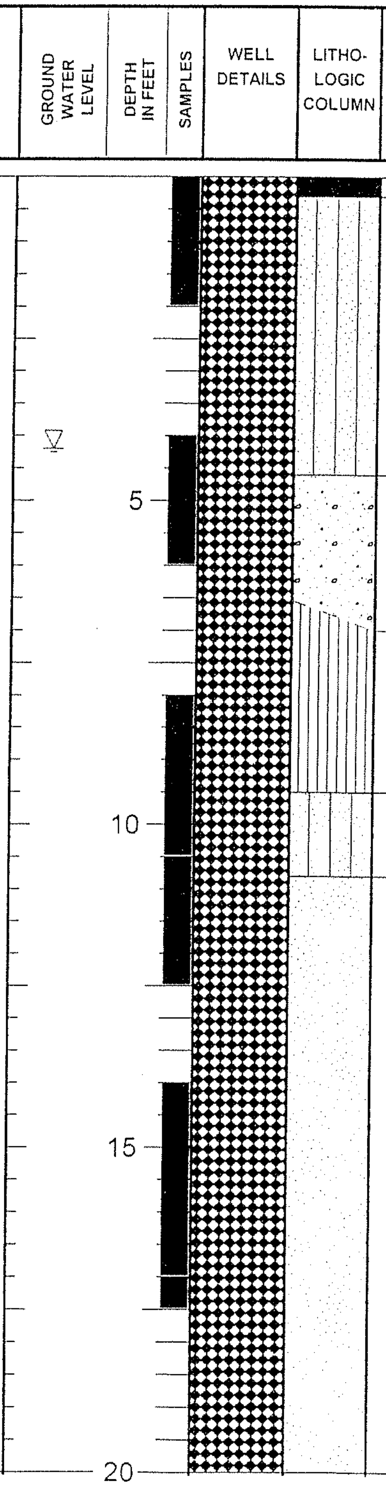
IT CORPORATION

REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-9
LOCATION	Kent	PAGE	1 of 2
DRILLED BY	TEG	GROUND ELEV.	23.09'
DRILL METHOD	Strataprobe	TOTAL DEPTH	38.0'
LOGGED BY	Russell Thompson	DATE COMPLETED	12/1/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SS)	0-4	0
(SS)	4-8	0
SP-9-8 (SS)	8-11	0
SP-9-11 (SS)	11-14	14
(SS)	14-17	48
(SS)	17-20	



LITHOLOGIC DESCRIPTION

0 to 0.3 foot: ASPHALT AND CRUSHED ROCK

0.3 to 4.6 feet: SILTY SAND WITH GRAVEL (SM), brown, fine to medium, little silt, little fine to medium gravel, damp.

4.6 to 7.0 feet: SAND WITH GRAVEL (SW), brown, fine to medium, some fine gravel, trace silt, trace coarse gravel, wet.

7.0 to 9.5 feet: SILT (ML), gray, low plasticity, trace fine sand, wet, no noticeable odor.

9.5 to 10.8 feet: SILTY SAND (SM), gray to olive green, fine, little silt, wet.

10.8 to 23.0 feet: SAND (SP), black to dark brown, fine, trace silt, wet.

@ 14.0 to 14.3 feet: SILT (ML) layer, gray, medium plasticity.

IT CORPORATION

REMARKS

(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.

(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-9
LOCATION	Kent	PAGE	2 of 2
DRILLED BY	TEG	GROUND ELEV.	23.09'
DRILL METHOD	Strataprobe	TOTAL DEPTH	38.0'
LOGGED BY	Russell Thompson	DATE COMPLETED	12/1/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
SP-9-20 (SS)	20-23	338
(SS)	23-26	0
(SS)	26-29	12
(SS) SP-9-30	29-32	34
(SS) SP-9-34	32-35	32
(SS) SP-9-36	35-38	0

GROUND WATER LEVEL / DEPTH IN FEET / SAMPLES / WELL DETAILS / LITHO-LOGIC COLUMN

DEPTH IN FEET: 25, 30, 35, 40

LITHOLOGIC DESCRIPTION

10.8 to 23.0 feet: SAND (SP), continued.

23.0 to 27.2 feet: SAND (SP), black to dark gray brown, fine, trace silt, interbedded with SILT (ML) layers.

@ 24.1 to 24.3 feet: scattered wood debris.

27.2 to 31.5 feet: SILT (ML), brown, medium plasticity, interbedded with fine to medium SAND (SP), brown, trace fines, 1- to 2-inch-thick laminations.

31.5 to 32.5 feet: SILT (ML), brown, medium plasticity, wet.

32.5 to 36.5 feet: SILT WITH SAND (ML), brown, low plasticity, little fine sand, scattered wood debris, wet.

36.5 to 38.0 feet: SILT (ML), gray, medium plasticity, moist.

Total depth drilled = 38.0 feet.
Total depth sampled = 38.0 feet.

Boring abandoned with bentonite grout and an asphalt patch.

REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

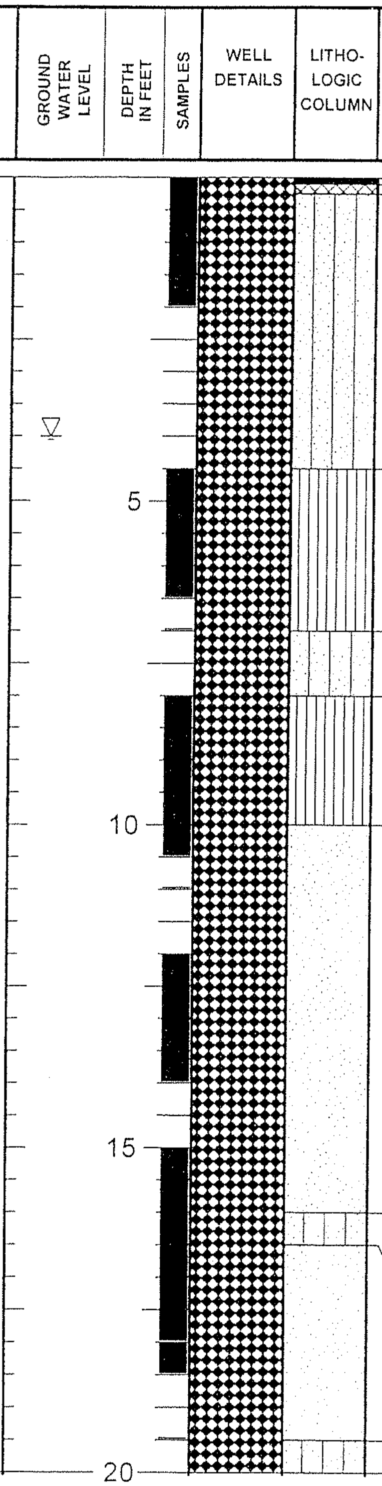
IT CORPORATION

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Erin McQuillan

BORING NO. SP-10
PAGE 1 of 2
GROUND ELEV. 21.69'
TOTAL DEPTH 36.0'
DATE COMPLETED 12/1/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	
(SP)	4-8	
SP-10-7		
SP-10-8 (SP)	8-12	
SP-10-11		
(SS)	12-15	
(SS)	15-18	
SP-10-17		
(SS)	18-21	
SP-10-		



LITHOLOGIC DESCRIPTION

0 to 0.1 foot: ASPHALT

0.1 to 0.25 foot: SAND AND GRAVEL FILL, black.

0.25 to 4.5 feet: SILTY SAND (SM), gray to brown, fine, few silt, damp.

4.5 to 7.0 feet: SILT WITH SAND (ML), gray, iron-stained, little fine sand, low to medium plasticity, root debris, wet.

7.0 to 8.0 feet: SILTY SAND (SM), dark gray, fine, some silt, wet.

8.0 to 10.0 feet: SILT (ML), gray to pinkish green, medium plasticity, trace sand, scattered wood debris, wet.

10.0 to 16.0 feet: SAND (SP), gray, fine to medium, trace silt, wet.

16.0 to 16.5 feet: SILTY SAND (SM), gray, fine sand, some silt, wet.

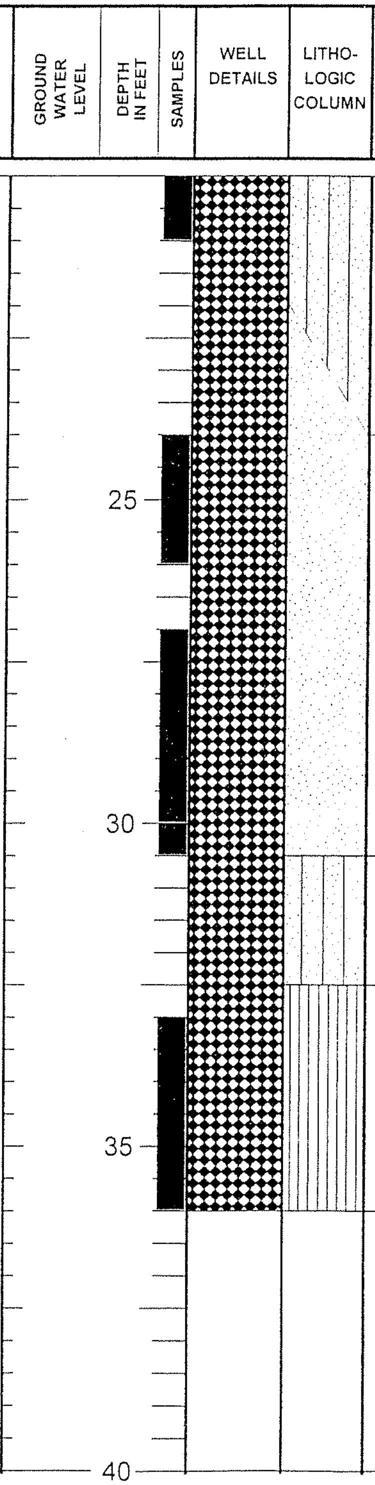
16.5 to 19.5 feet: SAND (SP), gray, fine to medium, trace silt, wet.

REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

IT CORPORATION

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-10
LOCATION	Kent	PAGE	2 of 2
DRILLED BY	TEG	GROUND ELEV.	21.69'
DRILL METHOD	Strataprobe	TOTAL DEPTH	36.0'
LOGGED BY	Erin McQuillan	DATE COMPLETED	12/1/00



SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	LITHOLOGIC DESCRIPTION
19.5 (SS)	21-24	--	**19.5 to 24.0 feet: SILTY SAND (SM)**, gray, fine, some silt, moist to wet. @ 21.0 to 24.0 feet: no recovery.
SP-10-24 (SS)	24-27	190	**24.0 to 30.5 feet: SAND (SP)**, gray, medium, trace silt, wet.
SP-10-30 (SS)	27-30	42	
(SS)	30-33	3892	**30.5 to 32.5 feet: SILTY SAND (SM)**, gray to pinkish green, fine, some silt, wet, noticeable odor.
SP-10-33 (SS)	33-36	7490	**32.5 to 36.0 feet: SILT (ML)**, gray, medium plasticity, trace sand, wet.
SP-10-36			Total depth drilled = 36.0 feet. Total depth sampled = 36.0 feet. Boring abandoned with bentonite grout and an asphalt patch.

IT CORPORATION

REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Russell Thompson

BORING NO. SP-11
PAGE 1 of 2
GROUND ELEV. 24.74'
TOTAL DEPTH 35.0'
DATE COMPLETED 11/29/00

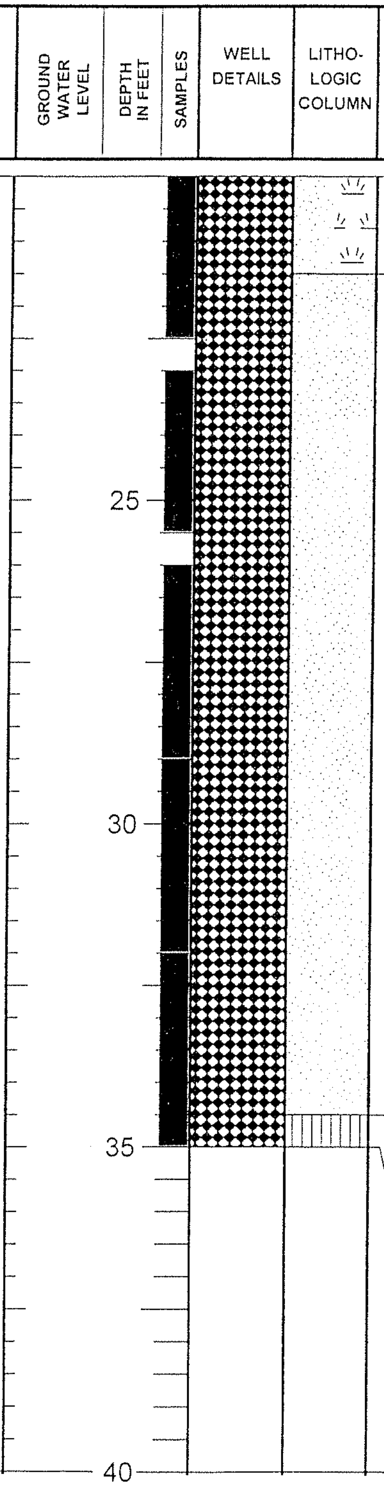
SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
(SP)	0-4	0						0 to 0.2 foot: **ASPHALT** 0.2 to 0.3 foot: **CRUSHED ROCK** 0.3 to 1.1 feet: **SILTY SAND (SM)**, tan, fine to medium, few fine to medium gravel, few fines, damp. 1.1 to 6.0 feet: **SAND (SP)**, tan, fine, trace silt, damp.
(SP)	4-8	0		5				
SP-11-6			∇					6.0 to 8.0 feet: **SANDY SILT (ML)**, brownish gray, low plasticity.
(SS)	8-11	0						8.0 to 12.3 feet: **SILT (ML)**, gray to olive green, medium plasticity, moist to wet.
SP-11-10				10				@ 9.6 to 10.0 feet: SAND (SP), gray, fine, trace silt, wet.
(SS)	11-14	0						
								12.3 to 19.7 feet: **SAND (SP)**, dark gray, fine to medium, trace silt, wet. @ 13.1 feet: silt layer <1-inch thick.
SP-11-14 (SS)	14-17	0		15				
(SS)	17-20	0						
SP-11-18								@ 18.1 to 1.3 feet: finely laminated fine to medium SAND (SP) and SILT (ML).
				20				

IT CORPORATION

REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-11
LOCATION	Kent	PAGE	2 of 2
DRILLED BY	TEG	GROUND ELEV.	24.74'
DRILL METHOD	Strataprobe	TOTAL DEPTH	35.0'
LOGGED BY	Russell Thompson	DATE COMPLETED	11/29/00



SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	LITHOLOGIC DESCRIPTION
(SS)	20-23	0	**19.7 to 21.5 feet: SAND INTERBEDDED WITH PEAT** (SP/PT), gray, fine sand, peat layers range from 0.4- to 1-cm thick. **21.5 to 34.5 feet: SAND (SP)**, gray, fine to coarse, trace silt, scattered wood debris.
(SS)	23-26	0	
(SS)	26-29	0	
(SS)	29-32	0	@ 29.0 to 31.0 feet: sand (SP), fine, trace fine gravel.
SP-11-32 (SS)	32-35	3500	@ 31.0 to 31.1 feet: SILT (ML), layer, brown, medium plasticity, wet. @ 32.0 to 34.5 feet: visible sheen throughout sample, uncharacteristic sweet odor.
SP-11-34			
		6000	**34.5 to 35.0 feet: SANDY SILT (ML)**, brownish gray, low plasticity, few fine sand, visible sheen, uncharacteristic sweet odor. Total depth drilled = 35.0 feet. Total depth sampled = 35.0 feet. Boring abandoned with bentonite grout and an asphalt patch.

IT CORPORATION

REMARKS

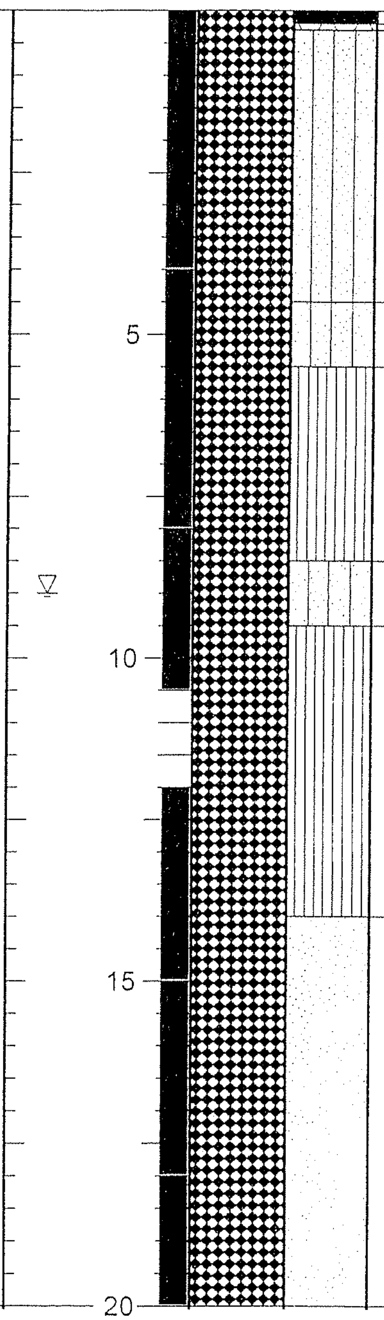
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.

(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-12
LOCATION	Kent	PAGE	1 of 3
DRILLED BY	TEG	GROUND ELEV.	24.00'
DRILL METHOD	Strataprobe	TOTAL DEPTH	41.0'
LOGGED BY	Erin McQuillan	DATE COMPLETED	11/30/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	2
(SP)	4-8	2
(SP)	8-12	15
SP-12-10		
SP-12-12 (SS)	12-15	20.6
		20
SB-12-14		
(SS)	15-18	30
(SS)	18-21	15



LITHOLOGIC DESCRIPTION

0 to 0.2 foot: ASPHALT

0.2 to 0.3 foot: CRUSHED ROCK

0.3 to 4.5 feet: SILTY SAND WITH GRAVEL (SM)

4.5 to 5.5 feet: SILTY SAND (SM), gray, fine, some silt, moist.

5.5 to 8.5 feet: SILT (ML), gray mottled orange, medium plasticity, trace fine sand, moist.

8.5 to 9.5 feet: SILTY SAND (SM), grayish pinkish green, some silt, moist.

9.5 to 14.0 feet: SILT (ML), gray, low to medium plasticity, scattered root fragments.

14.0 to 23.7 feet: SAND (SP), gray, fine to medium, trace silt, moist to wet.

REMARKS

(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.

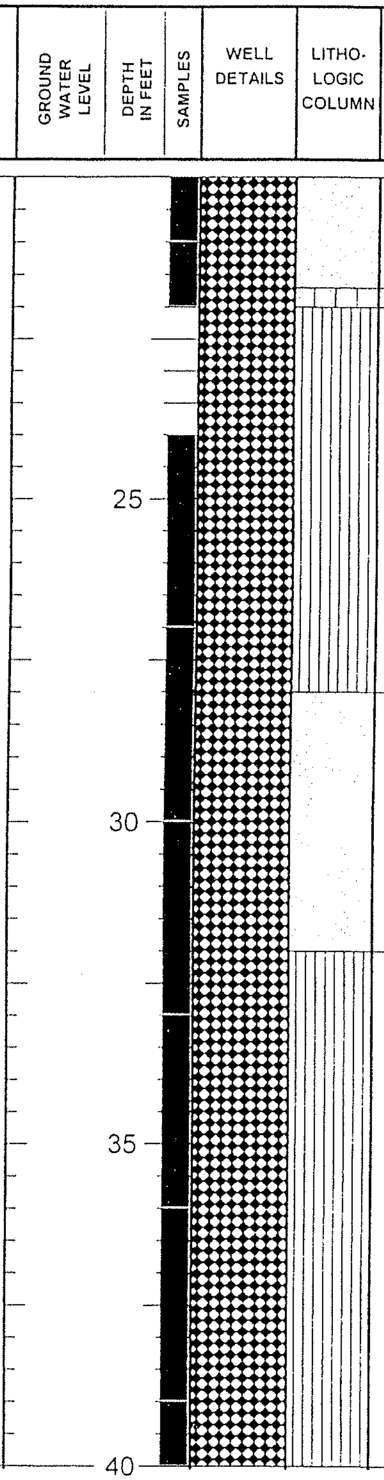
(2) SS = 2-inch O.D. split spoon sampler.

IT CORPORATION

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-12
LOCATION	Kent	PAGE	2 of 3
DRILLED BY	TEG	GROUND ELEV.	24.00'
DRILL METHOD	Strataprobe	TOTAL DEPTH	41.0'
LOGGED BY	Erin McQuillan	DATE COMPLETED	11/30/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SS)	21-24	0
SB-12-24 (SS)	24-27	0
(SS)	27-30	0
SB-12-30 (SS)	30-33	27
SB-12-33 (SS)	33-36	15
(SS)	36-39	
(SS)	39-42	0



LITHOLOGIC DESCRIPTION

14.0 to 23.7 feet: SAND (SP), continued.
@ 20.0 feet: fine sand, few silt.

21.7 to 22.0 feet: SILTY SAND (SM), gray, fine, few silt, wet.

22.0 to 28.0 feet: SILT (ML), gray, low to medium plasticity, scattered wood debris, moist.

28.0 to 32.0 feet: SAND (SP), gray, medium, wet.

32.0 to 41.0 feet: SILT (ML), gray, low to medium plasticity, scattered wood debris, wet.

@ 35.0 to 40.0 feet: trace fine sand.

IT CORPORATION

REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-12
LOCATION	Kent	PAGE	3 of 3
DRILLED BY	TEG	GROUND ELEV.	24.00'
DRILL METHOD	Strataprobe	TOTAL DEPTH	41.0'
LOGGED BY	Erin McQuillan	DATE COMPLETED	11/30/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
(SS)	40-41					▩	▥	32.0 to 41.0 feet: SILT (ML), continued.
								Total depth drilled = 41.0 feet. Total depth sampled = 41.0 feet. Boring abandoned with bentonite grout and an asphalt patch.
				45				
				50				
				55				
				60				

IT CORPORATION

REMARKS

(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.

(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Erin McQuillan

BORING NO. SP-12b
PAGE 1 of 2
GROUND ELEV. 23.95'
TOTAL DEPTH 31.0'
DATE COMPLETED 12/13/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
								See SP-12 for lithologic description.
				5				
				10				
Screen 14'-17' SP-12-14	14-17				■			Water sample collected from temporary screen set between 14.0 and 17.0 feet. Sample designated SP-12-14-121300.
				15	■			
				20				

REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

IT CORPORATION

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-12b
LOCATION	Kent	PAGE	2 of 2
DRILLED BY	TEG	GROUND ELEV.	23.95'
DRILL METHOD	Strataprobe	TOTAL DEPTH	31.0'
LOGGED BY	Erin McQuillan	DATE COMPLETED	12/13/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
				25				
Screen 28'-31' SP-12-28					■			Water sample collected from temporary screen set between 28.0 and 31.0 feet. Sample designated SP-12-28-121300.
				30				
								Total depth drilled = 31.0 feet. Total depth sampled = 31.0 feet.
				35				
				40				

REMARKS

(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

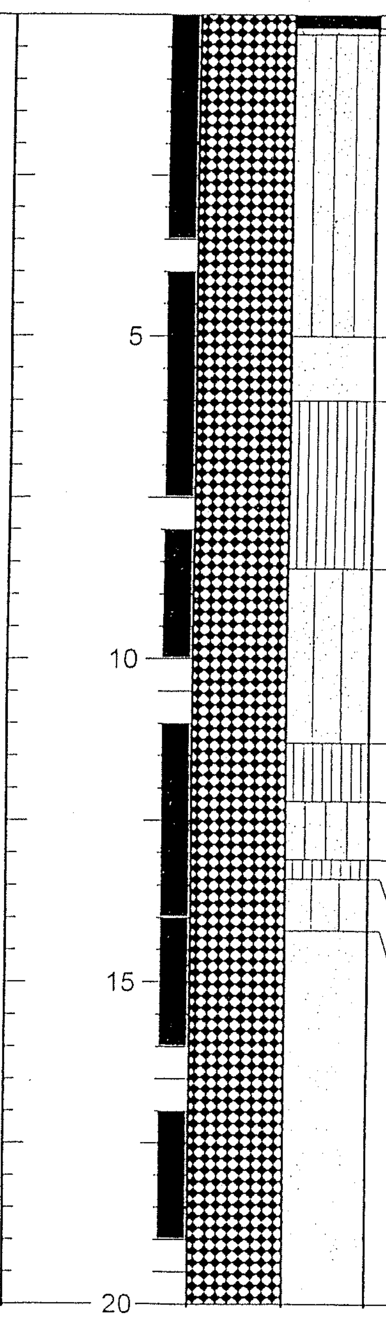
IT CORPORATION

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Russell Thompson

BORING NO. SP-13
PAGE 1 of 2
GROUND ELEV. 24.89'
TOTAL DEPTH 34.0'
DATE COMPLETED 11/30/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	0
(SP)	4-8	0
SP-13-5		
SP-13-7		
(SS)	8-11	0
SP-13-9		
SP-13-11 SP-13A-11.5 (SS)	11-14	18
SP-13-14 (SS)	14-17	0
(SS)	17-20	0



LITHOLOGIC DESCRIPTION

0 to 0.2 foot: ASPHALT

0.2 to 0.3 foot: CRUSHED ROCK

0.3 to 5.0 feet: SILTY SAND WITH GRAVEL (SM), brown, fine to medium, little silt, few fine to medium gravel, damp.

5.0 to 6.0 feet: SAND (SP), gray, fine, trace silt, damp.

6.0 to 8.6 feet: SILT (ML), grayish olive green, mottled brown, medium plasticity, trace fine sand, damp.

8.6 to 11.3 feet: SAND WITH SILT (SP-SM), gray, fine, few fines, damp.
@ 9.0 to 9.1 feet: SILT (ML) layer, brownish gray, medium plasticity, damp.

11.3 to 12.2 feet: SILT (ML), gray, low plasticity, few fine sand, wet.

12.2 to 13.1 feet: SILT SAND (SM), grayish olive green, fine, some silt, wet.

13.1 to 13.4 feet: SILT (ML), gray, medium plasticity, moist.

13.4 to 14.2 feet: SAND WITH SILT (SP-SM), dark brown, fine, few silt, wet.

14.2 to 21.5 feet: SAND (SP), brown, fine to medium, trace silt, wet.

@ 18.5 to 18.9 feet: SILTY SAND (SM), gray, fine, little fines, wet.

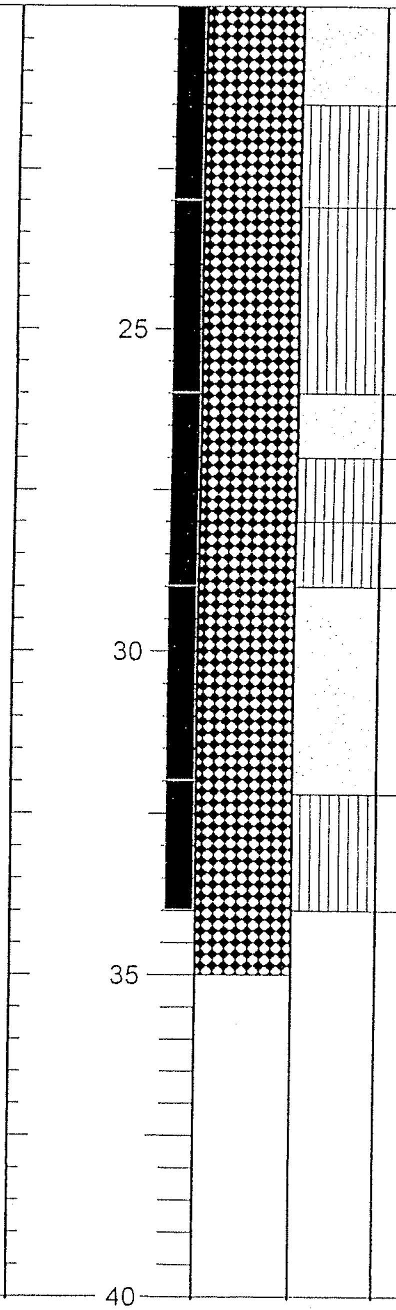
REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

IT CORPORATION

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Russell Thompson

BORING NO. SP-13
PAGE 2 of 2
GROUND ELEV. 24.89'
TOTAL DEPTH 34.0'
DATE COMPLETED 11/30/00



SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	LITHOLOGIC DESCRIPTION
(SS)	20-23	3	**14.2 to 21.5 feet:** SAND (SP), continued. **21.5 to 23.1 feet:** SILT WITH SAND (ML), gray, low plasticity, little fine sand, wet.
(SS)	23-26	2	**23.1 to 26.0 feet:** SILT (ML), gray, medium plasticity, scattered wood debris, wet.
(SS)	26-29	0	**26.0 to 27.0 feet:** SAND (SP), dark brownish black, fine to medium, trace silt, wet. **27.0 to 28.0 feet:** SILT WITH SAND (ML), gray, low plasticity, few fine sand, wet. **28.0 to 29.0 feet:** SILT (ML), gray, medium plasticity, wet.
(SS)	29-32	0	**29.0 to 32.2 feet:** SAND (SP), blackish brown, fine to medium, trace silt, scattered wood debris, wet.
(SS)	32-34	0	**32.2 to 34.0 feet:** SILT (ML), gray, medium plasticity, moist.

Total depth drilled = 34.0 feet.
Total depth sampled = 34.0 feet.

Boring abandoned with bentonite grout and an asphalt patch.

REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

IT CORPORATION

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Russell Thompson

BORING NO. SP-13b
PAGE 1 of 2
GROUND ELEV. 24.94'
TOTAL DEPTH 32.0'
DATE COMPLETED 12/12/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
								See SP-13 for lithologic description.
				5				
				10				
Screen 14'-17' SP-13-14				15	■			Water sample collected from temporary screen set between 14.0 and 17.0 feet. Sample designated SP-13-14-121200.
				20				

IT CORPORATION

REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Russell Thompson

BORING NO. SP-13b
PAGE 2 of 2
GROUND ELEV. 24.94'
TOTAL DEPTH 32.0'
DATE COMPLETED 12/12/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
				25				
Screen 29'-32' SP-13-29				30	■			Water sample collected from temporary screen set between 29.0 and 32.0 feet. Sample designated SP-13-29-121200.
								Total depth drilled = 32.0 feet. Total depth sampled = 32.0 feet.
				35				
				40				

REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

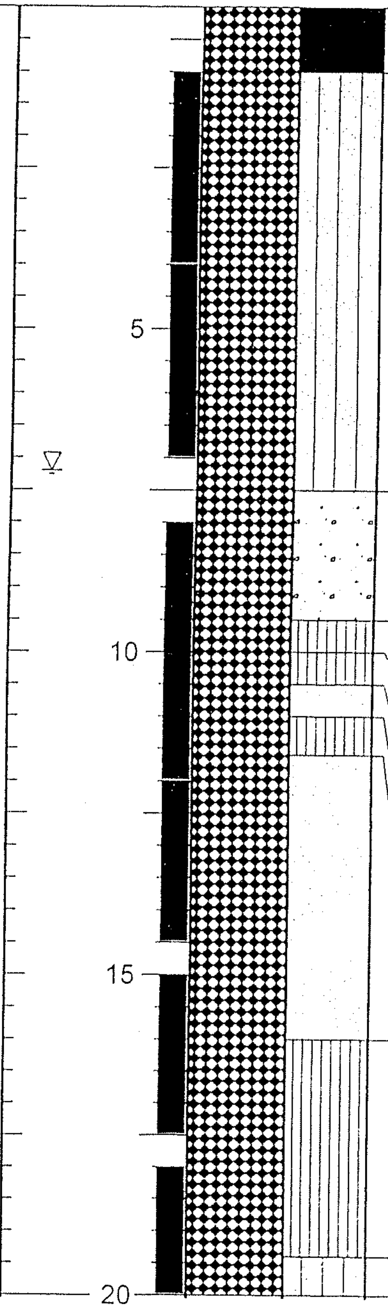
IT CORPORATION

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Russell Thompson

BORING NO. SP-14
PAGE 1 of 3
GROUND ELEV. 21.21'
TOTAL DEPTH 39.0'
DATE COMPLETED 11/29/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	0
(SP)	4-8	0
(SP)	8-12	0
(SS)	12-15	0
SP-14-15 (SS)	15-18	0
SP-14-18 (SS)	18-21	15



LITHOLOGIC DESCRIPTION

0 to 1.0 foot: ASPHALT AND CRUSHED ROCK

1.0 to 7.5 feet: SILTY SAND (SM), brownish gray, fine to medium, little silt, trace coarse gravel, damp.

7.5 to 9.5 feet: SAND WITH GRAVEL (SW), gray, few gravel, trace silt, moist.

9.5 to 10.0 feet: SILT WITH SAND (ML), grayish brown, nonplastic, little fine sand, wet.

10.0 to 10.5 feet: SILT (ML), grayish brown, medium plasticity, few fine sand, wet.

10.5 to 11.0 feet: SAND (SP), dark gray, fine to medium, trace silt, wet.

11.0 to 11.6 feet: SILT (ML), dark brown to tan, medium plasticity, trace organics, wet.

11.6 to 16.0 feet: SAND (SP), dark grayish black, fine to medium, trace silt, wet.

16.0 to 19.4 feet: SILT (ML), grayish brown, medium plasticity, wet.

19.4 to 21.5 feet: SILTY SAND (SM), gray, few silt, wet.

IT CORPORATION

REMARKS

(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.

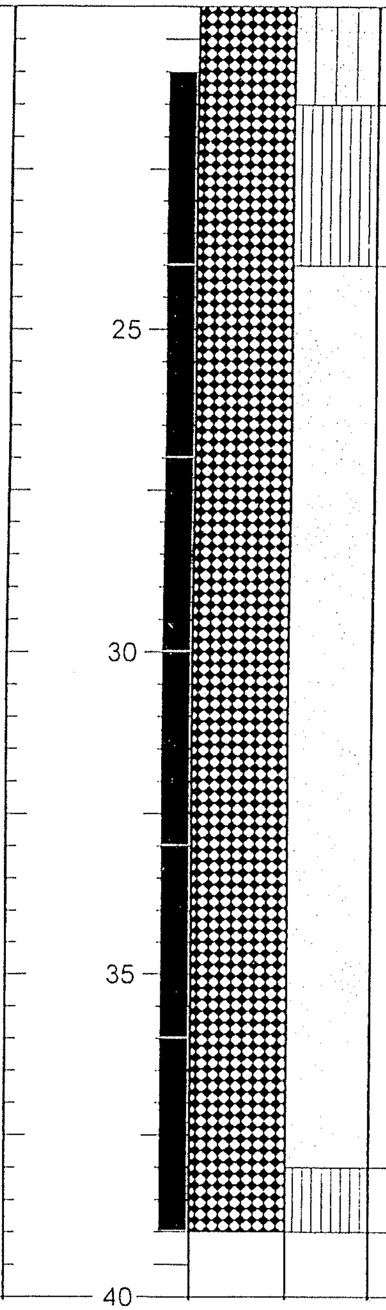
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Russell Thompson

BORING NO. SP-14
PAGE 2 of 3
GROUND ELEV. 21.21'
TOTAL DEPTH 39.0'
DATE COMPLETED 11/29/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
SP-14-21 (SS)	21-24	8
SP-14-22		
SP-14-24 (SS)	24-27	12
(SS)	27-30	0
(SS)	30-33	11
(SS)	33-36	2
(SS)	36-39	0
SP-14-39		



LITHOLOGIC DESCRIPTION

19.4 to 21.5 feet: SILTY SAND (SM), continued.

21.5 to 24.0 feet: SILT (ML), grayish brown, medium plasticity, wet.
@ 21.9 to 22.3 feet: fine sand layer.

24.0 to 38.0 feet: SAND (SP), black to dark brown, fine to medium, wet.

@ 26.2 to 26.4 feet: SILTY SAND (SM), fine, trace silt, wet.

@ 34.3 to 34.6 feet: SILT (ML), pinkish brown, medium plasticity,
@ 34.6 to 35.0 feet: finely laminated SILT (ML) and fine SAND (SP).

38.0 to 39.0 feet: SILT (ML), gray, medium plasticity, wet.

Total depth drilled = 39.0 feet.
Total depth sampled = 39.0 feet.

IT CORPORATION

REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Russell Thompson

BORING NO. SP-14
PAGE 3 of 3
GROUND ELEV. 21.21'
TOTAL DEPTH 39.0'
DATE COMPLETED 11/29/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
								Boring abandoned with bentonite grout and an asphalt patch.
				45				
				50				
				55				
				60				

IT CORPORATION

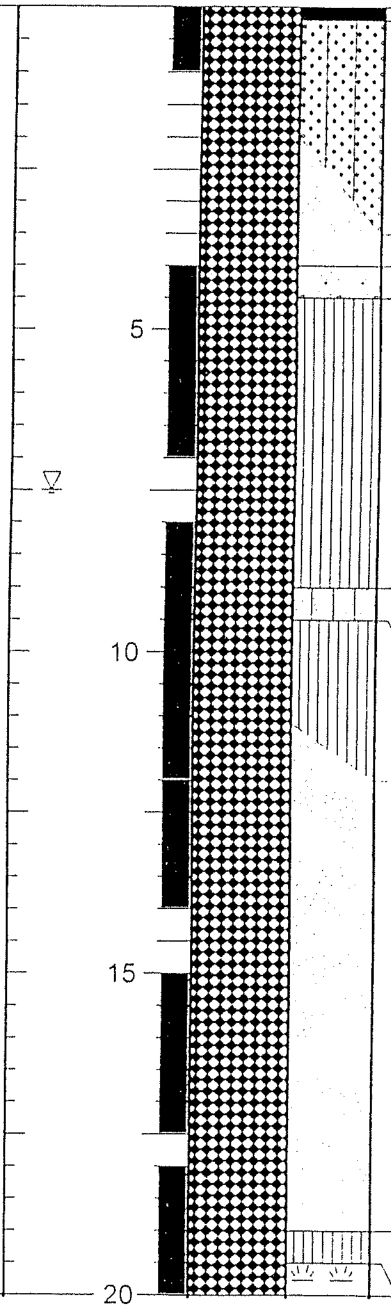
REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Erin McQuillan

BORING NO. SP-15
PAGE 1 of 3
GROUND ELEV. 23.61'
TOTAL DEPTH 42.0'
DATE COMPLETED 12/6/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	0
(SP)	4-8	0
(SP)	8-12	0
(SS)	12-15	0
Screen 15'-18' SP-15-15 (SS)	15-18	0
(SS)	18-21	0



LITHOLOGIC DESCRIPTION

0 to 0.2 foot: ASPHALT

0.2 to 3.5 feet: SAND WITH SILT (SW-SM), coarse, fine to medium gravel, few silt, dry to damp.

3.5 to 4.0 feet: SAND (SP), brown, fine to medium, moist.

4.0 to 4.5 feet: SAND WITH GRAVEL (SW), dark gray, coarse, some fine to medium gravel, moist.

4.5 to 9.0 feet: SILT (ML), gray, mottled orange, medium plasticity, few fine sand.

@ 6.0 feet: gray with no mottling.

9.0 to 9.5 feet: SILTY SAND (SM), gray, fine, some silt, wet.

9.5 to 12.0 feet: SILT (ML), gray-green and pink, medium plasticity, trace fine sand, wet.

12.0 to 19.0 feet: SAND (SP), dark gray, fine to medium, trace silt, wet.

@ 15.0 feet: fine sand.

@ 17.5 to 18.0 feet: SAND (SP) interbedded with SILT (ML) layers <0.25-inch thick, nonplastic.

19.0 to 19.5 feet: SILT (ML), gray, medium plasticity, trace fine sand.

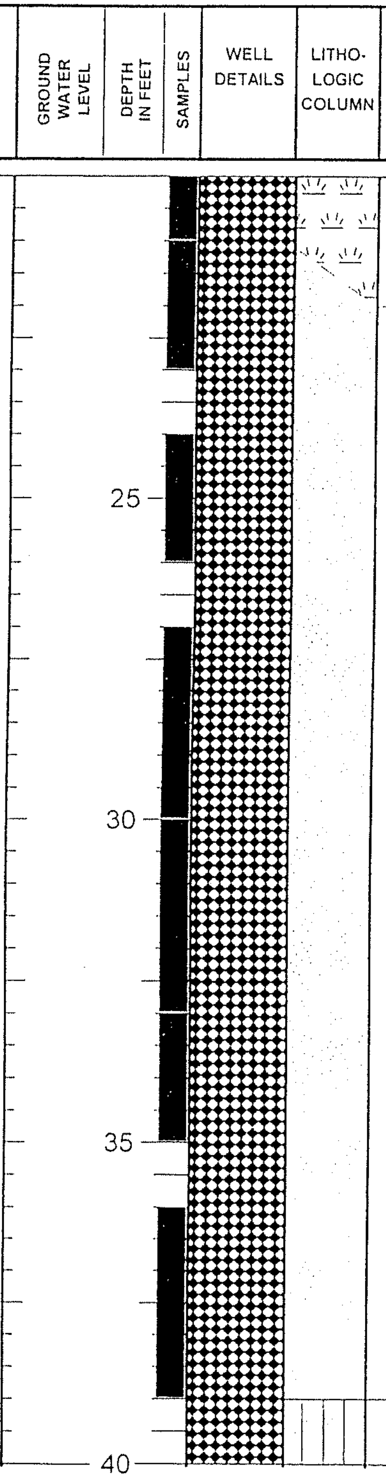
IT CORPORATION

REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-15
LOCATION	Kent	PAGE	2 of 3
DRILLED BY	TEG	GROUND ELEV.	23.61'
DRILL METHOD	Strataprobe	TOTAL DEPTH	42.0'
LOGGED BY	Erin McQuillan	DATE COMPLETED	12/6/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SS)	21-24	0
(SS)	24-37	0
Screen 27'-30' SP-15-27 (SS)	27-30	0
(SS)	30-33	0
(SS)	33-36	0
(SS)	36-39	0
		0



LITHOLOGIC DESCRIPTION

19.5 to 22.0 feet: PEAT (PT), wood debris with interbedded fine sand layers.

22.0 to 39.0 feet: SAND (SP), dark gray, fine to medium, trace silt, wet.

@ 23.5 feet: sand becomes medium to coarse.

@ 30.0 feet: fine to medium sand.

@ 34.9 feet: SILT (ML) layer, 0.04-inches thick.
@ 35.0 feet: fine to coarse sand.

39.0 to 40.0 feet: SILTY SAND (SM), gray, fine, little silt, wet.

REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

IT CORPORATION

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Erin McQuillan

BORING NO. SP-15
PAGE 3 of 3
GROUND ELEV. 23.61'
TOTAL DEPTH 42.0'
DATE COMPLETED 12/6/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
(SS)	39-42				■	▩	▥	40.0 to 42.0 feet: SILT (ML), gray, medium plasticity, trace fine sand, scattered shell debris.
								Total depth drilled = 42.0 feet. Total depth sampled = 42.0 feet. Boring abandoned with bentonite grout and an asphalt patch.
				45				
				50				
				55				
				60				

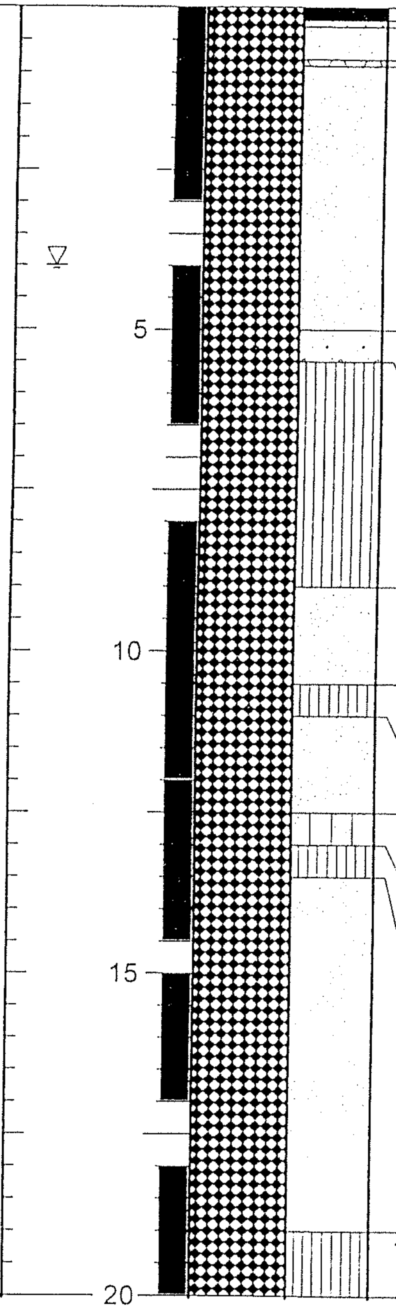
IT CORPORATION

REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-16
LOCATION	Kent	PAGE	1 of 3
DRILLED BY	TEG	GROUND ELEV.	23.09'
DRILL METHOD	Strataprobe	TOTAL DEPTH	43.0'
LOGGED BY	Erin McQuillan	DATE COMPLETED	12/5/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	0
(SP)	4-8	0
(SP)	8-12	0
(SS)	12-15	0
Screen 16'-19' SP-16-16 (SS)	15-18	0
(SS)	18-21	0



LITHOLOGIC DESCRIPTION

0 to 0.2 foot: ASPHALT

0.2 to 0.3 foot: CRUSHED ROCK

0.3 to 0.8 foot: SAND WITH GRAVEL (SP), coarse sand, pea gravel, dry/damp.

0.8 to 0.9 foot: CRUSHED ROCK, metal debris.

0.9 to 5.0 feet: SAND (SP), brown mottled orange, fine to medium, trace silt, moist to wet.

5.0 to 5.5 feet: SAND WITH GRAVEL (SW), coarse, some fine to medium gravel, wet.

5.5 to 9.0 feet: SILT (ML), gray, mottled orange, medium plasticity.

9.0 to 10.5 feet: SAND (SP), gray, fine to medium, trace silt, wet.

10.5 to 11.0 feet: SILT (ML), greenish gray, medium plasticity, trace fine sand, damp.

11.0 to 12.5 feet: SAND (SP), gray, fine to medium, trace silt, wet.

12.5 to 13.0 feet: SILTY SAND (SM), gray, fine, little silt, wet.

13.0 to 13.5 feet: SILT (ML), greenish gray, medium plasticity, trace fine sand, damp.

13.5 to 19.0 feet: SAND (SP), gray, fine to medium, trace silt.

19.0 to 20.0 feet: SILT (ML), gray, medium plasticity, trace fine sand, moist.

IT CORPORATION

REMARKS

(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.

(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Erin McQuillan

BORING NO. SP-16
PAGE 2 of 3
GROUND ELEV. 23.09'
TOTAL DEPTH 43.0'
DATE COMPLETED 12/5/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
								20.0 to 25.0 feet: SAND (SP), gray, fine to medium, trace silt, moist to wet.
(SS)	21-23	0						
(SS)	23-26	0						
				25				25.0 to 26.0 feet: SAND INTERBEDDED WITH SILTY SAND (SP/SM), gray, fine, scattered organic debris.
(SS)	26-29	0						26.0 to 34.9 feet: SAND (SP), gray, fine to medium, trace silt, wet.
Screen 29'-32' SP-16-29 (SS)	29-32	0						
				30				
(SS)	32-35	0						@ 32.0 feet: sand becomes fine.
				35				34.9 to 37.0 feet: SILT (ML), pinkish gray, low plasticity, few sand, wet. @ 35.0 to 37.0 feet: no recovery, split-spoon lost down hole.
(SS)	37-40	0						37.0 to 40.0 feet: SAND (SP), dark gray, fine to coarse, trace silt, wet.
				40				

REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

IT CORPORATION

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Erin McQuillan

BORING NO. SP-16
PAGE 3 of 3
GROUND ELEV. 23.09'
TOTAL DEPTH 43.0'
DATE COMPLETED 12/5/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
(SS)	40-43	0			■	▩	▥	**40.0 to 40.5 feet:** SILTY SAND (SM), gray, fine, some silt, moist to wet. **40.5 to 43.0 feet:** SILT (ML), gray, medium plasticity, trace fine sand, scattered shell debris.
								Total depth drilled = 43.0 feet. Total depth sampled = 43.0 feet. Boring abandoned with bentonite grout and an asphalt patch.
				45				
				50				
				55				
				60				

IT CORPORATION

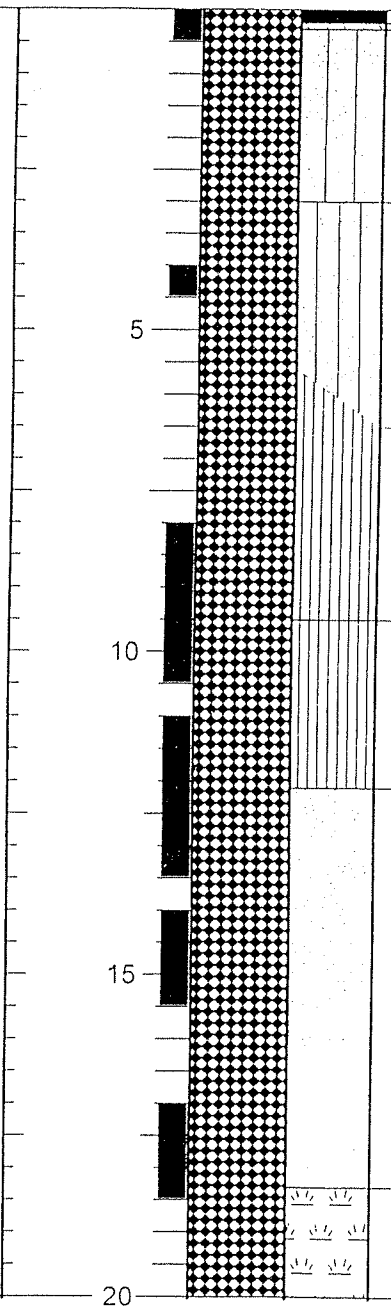
REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Russell Thompson

BORING NO. SP-17
PAGE 1 of 3
GROUND ELEV. 23.93'
TOTAL DEPTH 41.0'
DATE COMPLETED 12/6/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	0
(SP)	4-8	0
(SS)	8-11	0
(SS)	11-14	0
Screen 14'-17' SP-17-14 SP-17A (SS)	14-17	0
(SS)	17-20	0



LITHOLOGIC DESCRIPTION

0 to 0.2 foot: ASPHALT

0.2 to 0.3 foot: CRUSHED ROCK

0.3 to 3.0 feet: SAND WITH SILT (SP-SM), brownish-tan, fine to medium, few silt, few fine to medium gravel, damp.

3.0 to 6.5 feet: SILTY SAND (SM), tan, fine, little silt, damp.

6.5 to 9.5 feet: SILT (ML), gray, nonplastic, few fine sand, wet.

9.5 to 12.1 feet: SILT (ML), gray to olive green, medium plasticity, scattered organic debris.

12.1 to 18.3 feet: SAND (SP), gray, fine, trace silt, wet.

18.3 to 20.7 feet: PEAT (PT), dark brown, nonplastic, scattered wood debris, interbedded with SAND (SP) layers, 0.05- to 0.1-inch thick.

REMARKS

(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.

(2) SS = 2-inch O.D. split spoon sampler.

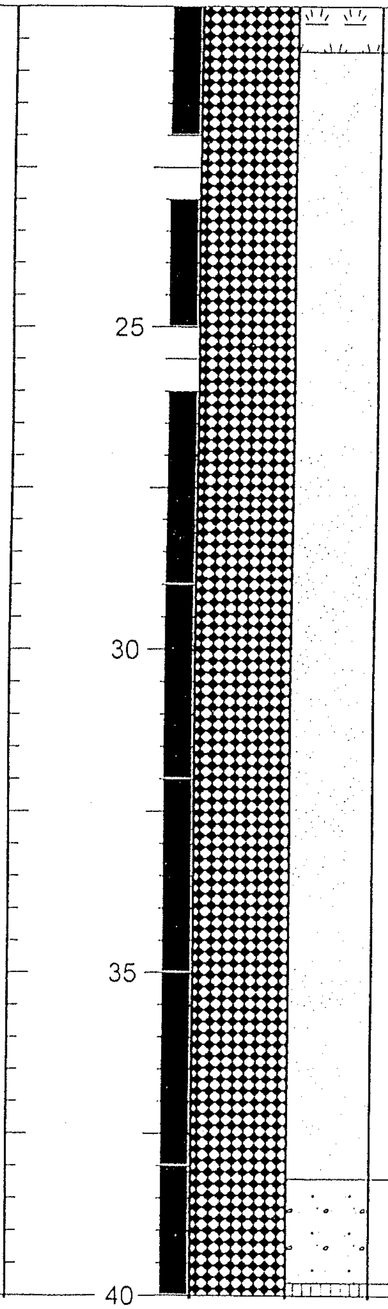
IT CORPORATION

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Russell Thompson

BORING NO. SP-17
PAGE 2 of 3
GROUND ELEV. 23.93'
TOTAL DEPTH 41.0'
DATE COMPLETED 12/6/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
	20-23	0
	23-26	0
Screen 26'-29' SP-17-26	26-29	0
	29-32	0
	32-35	0
	35-38	0
	38-41	0



LITHOLOGIC DESCRIPTION

18.3 to 20.7 feet: PEAT (PT), continued.

20.7 to 38.2 feet: SAND (SP), brownish gray, fine to medium, trace silt, wet.
@ 21.1 to 21.4 feet: PEAT (PT) layer, dark brown, nonplastic, few fine to medium sand.
@ 21.4 feet: gray.

@ 36.1 to 36.2 feet: SILT (ML).

38.2 to 39.8 feet: SAND (SW), gray, fine to coarse, trace silt, trace fine gravel, wet.

REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

IT CORPORATION

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Russell Thompson

BORING NO. SP-17
PAGE 3 of 3
GROUND ELEV. 23.93'
TOTAL DEPTH 41.0'
DATE COMPLETED 12/6/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
						▩	▥	39.8 to 41.0 feet: SILT (ML), gray, medium plasticity, trace fine sand, wet.
								Total depth drilled = 41.0 feet. Total depth sampled = 41.0 feet. Boring abandoned with bentonite grout and an asphalt patch.
				45				
				50				
				55				
				60				

IT CORPORATION

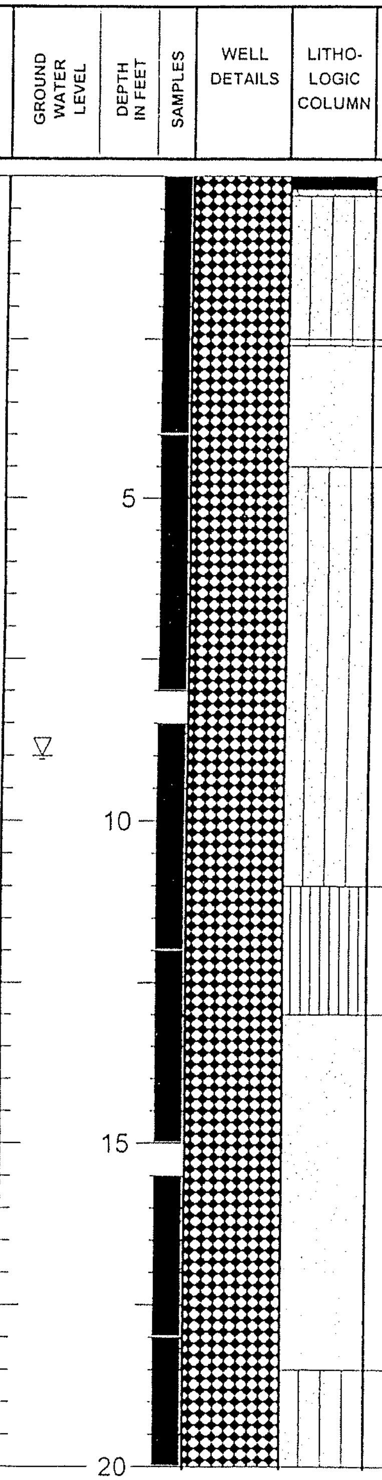
REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Erin McQuillan

BORING NO. SP-18
PAGE 1 of 3
GROUND ELEV. 24.39'
TOTAL DEPTH 44.0'
DATE COMPLETED 12/4/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	0
(SP)	4-8	0
(SP)	8-12	0
(SS) Screen 12'-15' SP-18-12	12-15	7.7
(SS)	15-18	0
(SS)	18-21	0



LITHOLOGIC DESCRIPTION

0 to 0.2 foot: ASPHALT
0.2 to 0.3 foot: CRUSHED ROCK
0.3 to 2.5 feet: SILTY SAND (SM), brown, fine to medium, little fine gravel, some fines.
2.5 to 2.6 feet: SAND (SM), white, fine.
2.6 to 4.5 feet: SAND (SP), orangish brown to gray, fine, trace silt, damp.
4.5 to 11.0 feet: SILTY SAND (SM), gray, fine, little silt, moist.
11.0 to 13.0 feet: SILT (ML), gray, low to medium plasticity, trace fine sand, wet.
13.0 to 18.5 feet: SAND (SP), gray, fine to medium, trace silt, wet.
@ 17.5 feet: fine sand, few silt.
18.5 to 20.0 feet: SILTY SAND (SM), greenish gray, fine, little silt, scattered root debris, wet.

IT CORPORATION

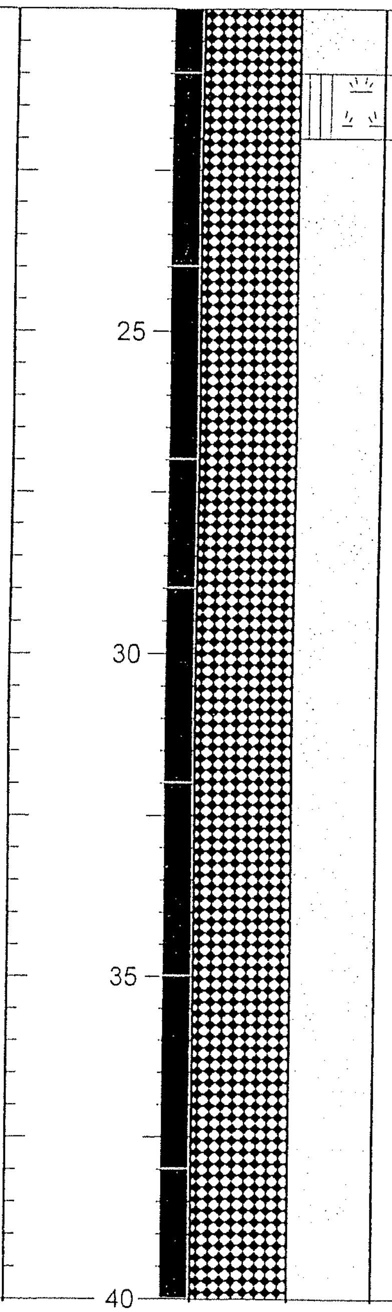
REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Erin McQuillan

BORING NO. SP-18
PAGE 2 of 3
GROUND ELEV. 24.39'
TOTAL DEPTH 44.0'
DATE COMPLETED 12/4/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SS)	21-24	0
(SS)	24-27	0
(SS)	27-29	0
(SS) Screen 29'-32' SP-18-29	29-32	0
(SS)	32-35	0
(SS)	35-38	0
(SS)	38-41	



LITHOLOGIC DESCRIPTION

20.0 to 21.0 feet: SAND (SP), dark gray to black, fine to medium, trace silt, wet.

21.0 to 22.0 feet: SILTY SAND INTERBEDDED WITH PEAT (SM/PT), fine sand, some silt, wood debris, wet.

22.0 to 42.0 feet: SAND (SP), dark gray, fine to medium, trace silt, wet.

@ 32.8 to 33.0 feet: SILTY SAND (SM), fine, little silt, wet.

REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

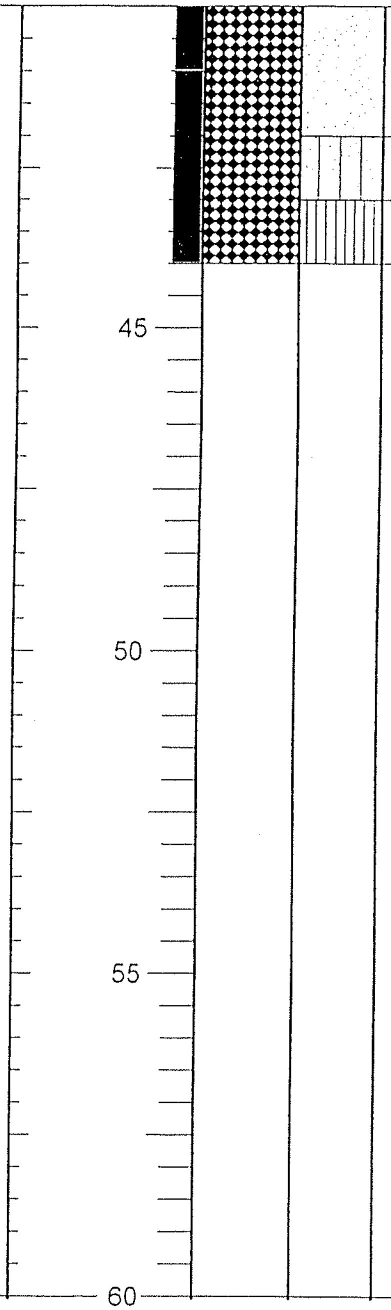
IT CORPORATION

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Erin McQuillan

BORING NO. SP-18
PAGE 3 of 3
GROUND ELEV. 24.39'
TOTAL DEPTH 44.0'
DATE COMPLETED 12/4/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	LITHOLOGIC DESCRIPTION
(SS)	41-44		22.0 to 42.0 feet: SAND (SP), continued. @ 40.7 to 40.9 feet: SANDY SILT (ML), pinkish gray, low plasticity, few sand, moist.
			42.0 to 43.0 feet: SILTY SAND (SM), gray, fine, some fines, moist to wet.
			43.0 to 44.0 feet: SILT (ML), gray, medium plasticity, trace fine sand, wet.



Total depth drilled = 44.0 feet.
Total depth sampled = 44.0 feet.

Boring abandoned wit bentonite grout and an asphalt patch.

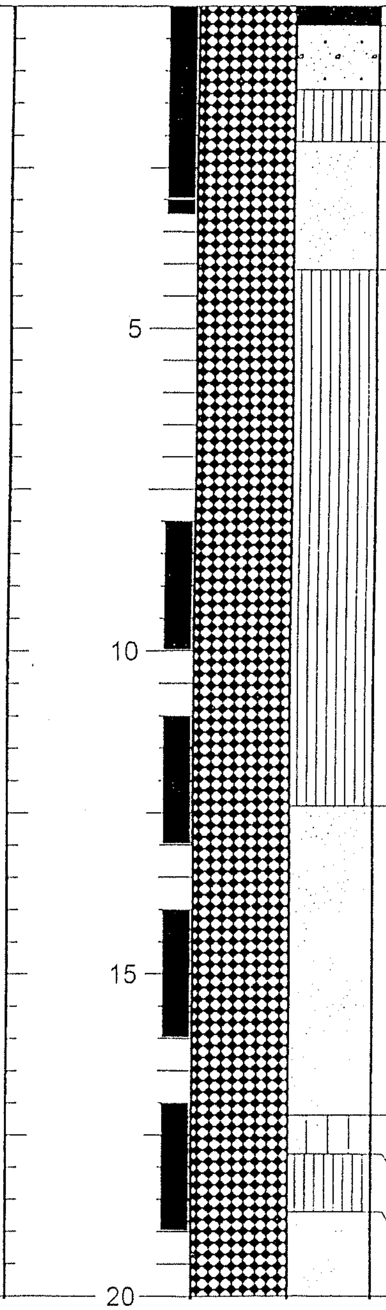
REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

IT CORPORATION

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-19
LOCATION	Kent	PAGE	1 of 2
DRILLED BY	TEG	GROUND ELEV.	24.54'
DRILL METHOD	Strataprobe	TOTAL DEPTH	36.0'
LOGGED BY	Russell Thompson	DATE COMPLETED	12/4/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	
(SP)	4-8	
(SS)	8-11	
(SS)	11-14	
Screen 13'-16' SP-19-13 (SS)	14-17	
(SS)	17-20	



LITHOLOGIC DESCRIPTION

0 to 0.3 foot: ASPHALT, CRUSHED ROCK

0.3 to 1.3 feet: SAND (SW), brown, fine to medium, trace silt, trace fine gravel.

1.3 to 2.1 feet: SANDY SILT WITH GRAVEL (ML), brownish gray, nonplastic, little fine sand, little fine gravel.

2.1 to 4.1 feet: SAND (SP), brown, fine to medium, trace silt, damp.

4.1 to 12.4 feet: SILT (ML), gray, medium plasticity, trace fine sand, wet.

@ 8.2 to 8.3 feet: wood debris.

@ 9.3 to 9.6 feet: SILTY SAND (SM), gray, fine, little silt, wet.

@ 11.8 to 12.4 feet: silt is olive greenish gray.

12.4 to 17.2 feet: SAND (SP), dark gray, fine to medium, trace silt, wet.

17.2 to 17.8 feet: SILTY SAND (SM), grayish brown, fine, little silt, wet.

17.8 to 18.7 feet: SILT (ML), gray to dark brown, medium plasticity, wood debris, wet.

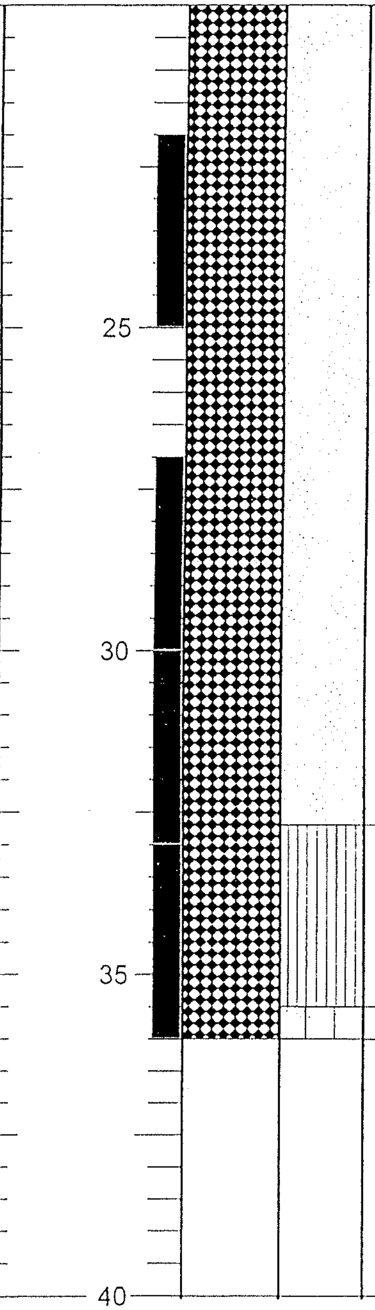
18.7 to 32.7 feet: SAND (SP), dark gray, fine to medium, trace silt, wet.

IT CORPORATION

REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-19
LOCATION	Kent	PAGE	2 of 2
DRILLED BY	TEG	GROUND ELEV.	24.54'
DRILL METHOD	Strataprobe	TOTAL DEPTH	36.0'
LOGGED BY	Russell Thompson	DATE COMPLETED	12/4/00



SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	LITHOLOGIC DESCRIPTION
(SS)	20-22		18.7 to 32.7 feet: SAND (SP), continued. @ 20.0 to 22.0 feet: no recovery.
(SS)	22-25		@ 24.2 to 24.3 feet: peat layer.
(SS)	25-27		@ 25.0 to 27.0 feet: no recovery.
(SS) Screen 27'-30' SP-19-13	27-30		@ 28.0 feet: fine to coarse sand.
(SS)	30-33		
(SS)	33-36		32.7 to 35.5 feet: SILT WITH SAND (ML), brown, low plasticity, little fine sand, wet. 35.5 to 36.0 feet: SAND WITH SILT (SP-SM), brown gray, fine, few silt, wet.

Total depth drilled = 36.0 feet.
Total depth sampled = 36.0 feet.

Boring abandoned with bentonite grout and an asphalt patch.

IT CORPORATION

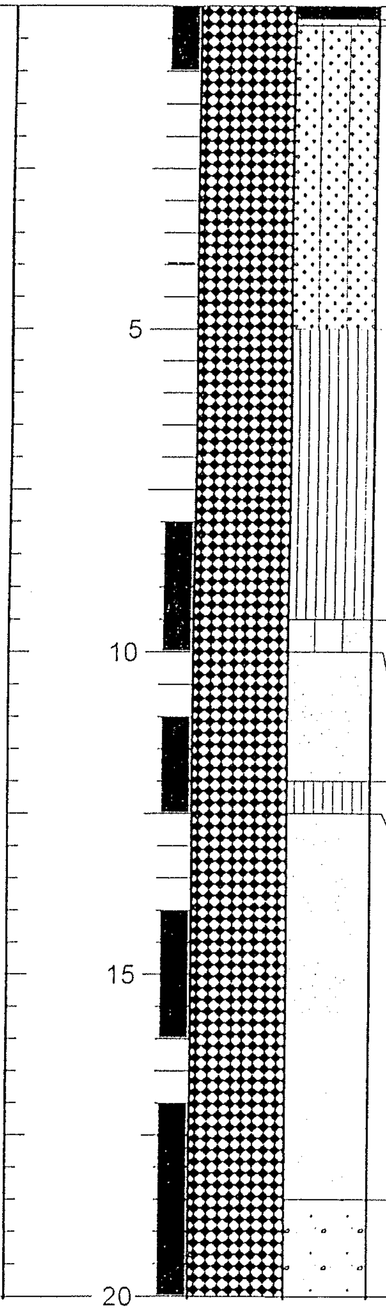
REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Russell Thompson

BORING NO. SP-20
PAGE 1 of 2
GROUND ELEV. 24.75'
TOTAL DEPTH 34.0'
DATE COMPLETED 12/4/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	0
(SP)	4-8	0
(SS)	8-11	0
(SS)	11-14	
Screen 12'-15' SP-20-12		
(SS)	14-17	0
(SS)	17-20	0



LITHOLOGIC DESCRIPTION

0 to 0.2 foot: ASPHALT

0.2 to 0.3 foot: CRUSHED ROCK

0.3 to 5.0 feet: SILTY SAND WITH GRAVEL (SW-SM), tannish brown, fine to medium, few silt, few fine gravel, damp.

@ 4.0 to 8.0 feet: no recovery.

5.0 to 9.4 feet: SILT (ML), gray, medium plasticity, moist to wet.

9.5 to 10.0 feet: SAND WITH SILT (SP-SM), gray, fine to medium, few silt, interbedded SILT (ML) layers 0.1- to 0.2-inches thick.

10.0 to 12.0 feet: SAND (SP), dark gray, fine to medium, trace silt, wet.

12.0 to 12.5 feet: SILT (ML), olive green, medium plasticity, moist.

12.5 to 18.5 feet: SAND (SP), dark gray, fine to medium, trace silt, wet.

@ 15.2 to 16.0 feet: sandy silt layers 2- to 4-mm thick.

@ 18.2 to 18.5 feet: SILT WITH SAND (ML) layer, brown, low plasticity, few fine sand.

18.5 to 22.0 feet: SAND (SW), gray, fine to coarse, trace fine gravel, wet.

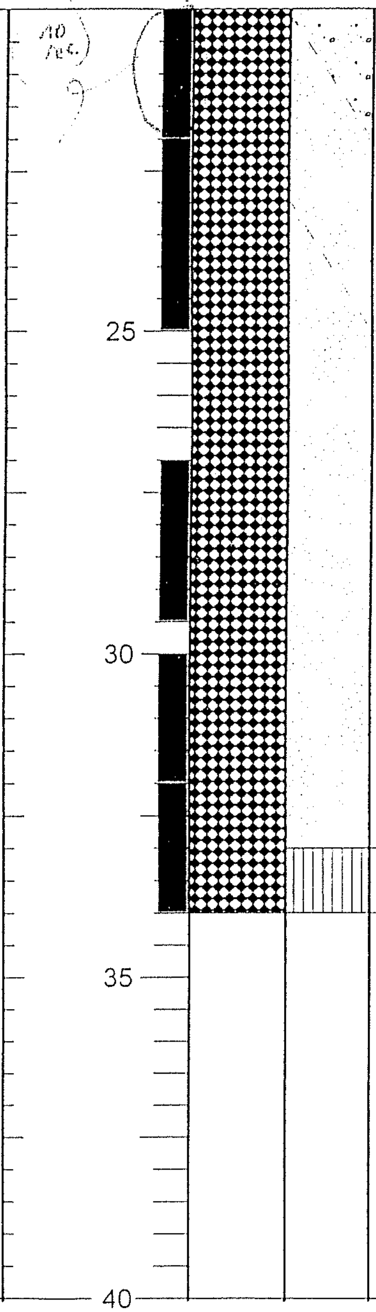
@ 19.1 to 19.3 feet: thin peat layer.

IT CORPORATION

REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-20
LOCATION	Kent	PAGE	2 of 2
DRILLED BY	TEG	GROUND ELEV.	24.75'
DRILL METHOD	Strataprobe	TOTAL DEPTH	34.0'
LOGGED BY	Russell Thompson	DATE COMPLETED	12/4/00



SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (In ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
(SS)	20-22		No rec.					18.5 to 22.0 feet: SAND (SW), continued. @ 20.0 to 22.0 feet: no recovery.
Screen 22'-25' SP-20-22 (SS)	22-25	0						22.0 to 25.0 feet: SAND (SP), gray, fine to medium, trace silt, unidentifiable odor.
				25				25.0 to 33.0 feet: SAND (SP), dark gray, fine to coarse, trace silt, wet.
(SS)	27-30	0						@ 27.5 to 27.7 feet: SILT (ML) layer, brown, medium plasticity, trace fine sand, scattered organic debris.
				30				
(SS)	30-32	0						
(SS)	32-34	0						@ 32.0 to 33.0 feet: fine to medium sand grades to a fine to coarse sand.
								33.0 to 34.0 feet: SILT (ML), brown, medium plasticity, trace sand, moist to wet.
								Total depth drilled = 34.0 feet. Total depth sampled = 34.0 feet. Boring abandoned with bentonite grout and an asphalt patch.
				35				
				40				

IT CORPORATION

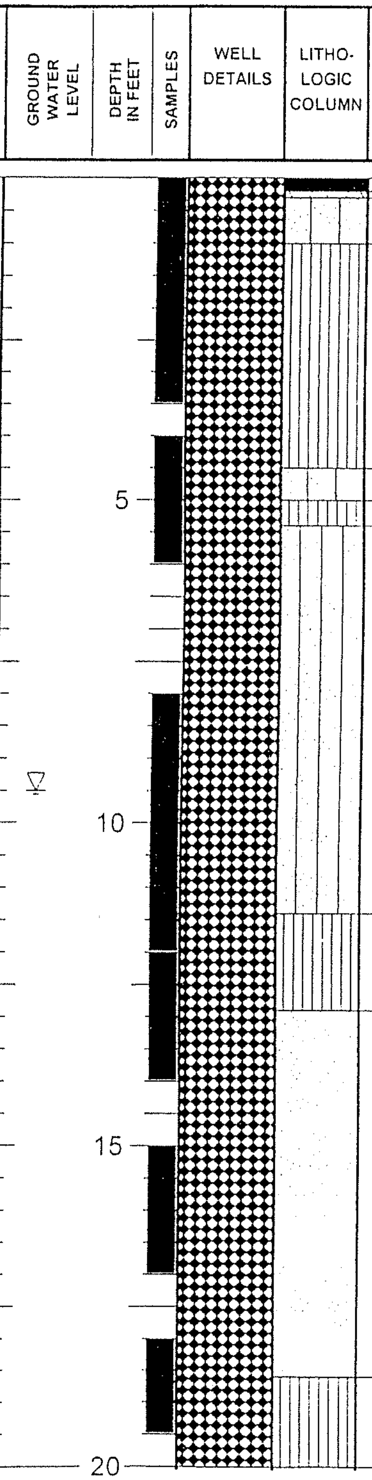
REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Russell Thompson

BORING NO. SP-21
PAGE 1 of 3
GROUND ELEV. 25.64'
TOTAL DEPTH 42.0'
DATE COMPLETED 12/9/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	0
(SP)	4-8	0
(SP)	8-12	0
(SS)	12-15	0
Screen 15'-18' SP-21-15 (SS)	15-18	0
(SS)	18-21	0



LITHOLOGIC DESCRIPTION

0 to 0.2 foot: ASPHALT
0.2 to 0.3 foot: CRUSHED ROCK
0.3 to 1.0 foot: SAND WITH SILT (SP-SM), tan, fine to medium, few silt, damp.
1.0 to 4.5 feet: SILT (ML), tan, nonplastic, few fine sand, few fine gravel, uncharacteristic odor.
4.5 to 5.0 feet: SAND WITH SILT (SP-SM), tan, fine to medium, few silt, damp.
5.0 to 5.4 feet: SILT (ML), brown, mottled orange, nonplastic, few fine sand.
5.4 to 11.4 feet: SILTY SAND (SM), gray to brown, fine, little silt, moist.
@ 8.6 feet: wet.
11.4 to 12.9 feet: SANDY SILT (ML), gray, medium plasticity, some fine sand, wet.
12.9 to 18.6 feet: SAND (SP), gray, fine to medium, trace silt, wet.
18.6 to 21.0 feet: SILT (ML), brown, medium plasticity, moist to wet.

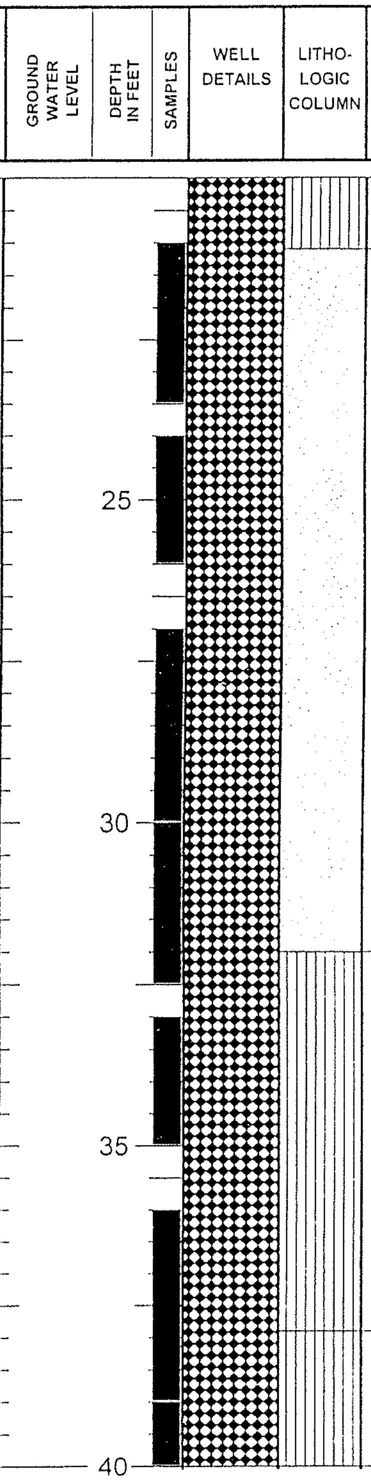
IT CORPORATION

REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-21
LOCATION	Kent	PAGE	2 of 3
DRILLED BY	TEG	GROUND ELEV.	25.64'
DRILL METHOD	Strataprobe	TOTAL DEPTH	42.0'
LOGGED BY	Russell Thompson	DATE COMPLETED	12/9/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SS)	21-24	0
(SS)	24-27	0
(SS)	27-30	0
Screen 30'-33' SP-21-30 (SS)	30-33	0
(SS)	33-36	0
(SS)	36-39	0
SP-21-39-42	39-42	0



LITHOLOGIC DESCRIPTION

18.6 to 21.0 feet: SILT (ML), continued.
@ 19.0 feet: sand layer, fine to medium, 1-cm thick.

21.1 to 32.0 feet: SAND (SP), gray, fine to medium, trace silt, wet.

32.0 to 37.9 feet: SILT WITH SAND (ML), brown to olive green, low to medium plasticity, little fine sand, wet.

@ 34.9 to 37.9 feet: interbedded fine sand layers 0.2- to 0.4-inches thick.

37.9 to 42.0 feet: SILT (ML), brownish gray to gray, low to medium plasticity, trace sand, scattered organic debris, wet.

REMARKS

(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

IT CORPORATION

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Russell Thompson

BORING NO. SP-21
PAGE 3 of 3
GROUND ELEV. 25.64'
TOTAL DEPTH 42.0'
DATE COMPLETED 12/9/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
(SS)								37.9 to 42.0 feet: SILT (ML), continued. @ 42.0 feet: sand, gray, fine.
								Total depth drilled = 42.0 feet. Total depth sampled = 42.0 feet. Boring abandoned with bentonite grout and an asphalt patch.
				45				
				50				
				55				
				60				

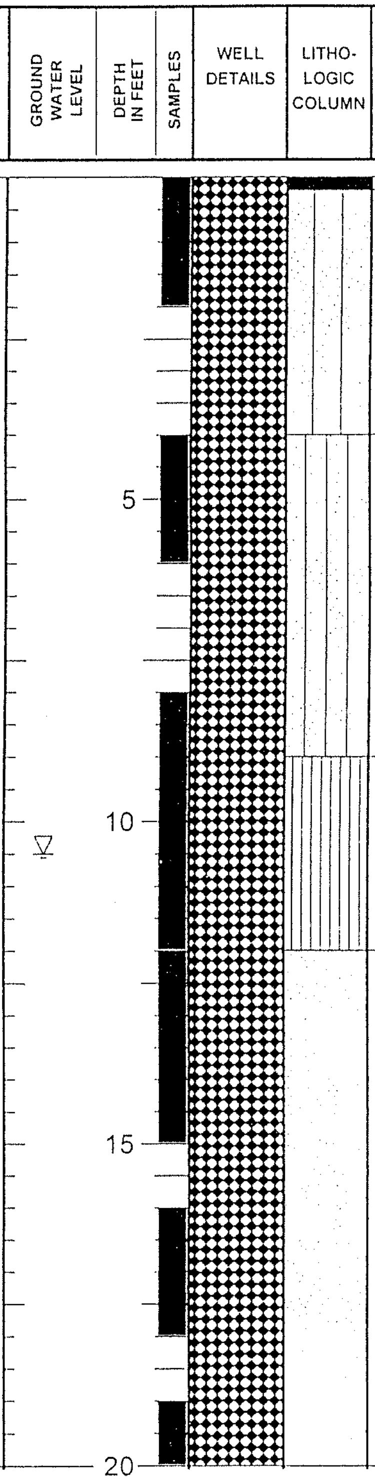
IT CORPORATION

REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-22
LOCATION	Kent	PAGE	1 of 2
DRILLED BY	TEG	GROUND ELEV.	25.20'
DRILL METHOD	Strataprobe	TOTAL DEPTH	34.0'
LOGGED BY	Erin McQuillan	DATE COMPLETED	12/4/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	0
(SP)	4-8	0
(SP)	8-12	0
(SP) Screen 13'-16' SP-22-13	12-16	0
(SS)	16-19	
(SS)	19-22	0



LITHOLOGIC DESCRIPTION

0 to 0.2 foot: ASPHALT

0.2 to 4.0 feet: SAND WITH SILT (SP-SM), tan, fine to medium, few silt, trace medium gravel, damp.

4.0 to 9.0 feet: SILTY SAND (SM), fine, little silt, damp.

9.0 to 12.0 feet: SILT (ML), gray, medium plasticity, trace fine sand, scattered root debris, wet.

@ 11.0 to 11.1 feet: fine SAND (SP) layer, wet.

12.0 to 23.0 feet: SAND (SP), grayish black, fine to medium, trace silt, wet.

@ 17.0 feet: fine sand, few silt.

@ 19.0 feet: coarsens to a medium to coarse sand, trace silt.

IT CORPORATION

REMARKS

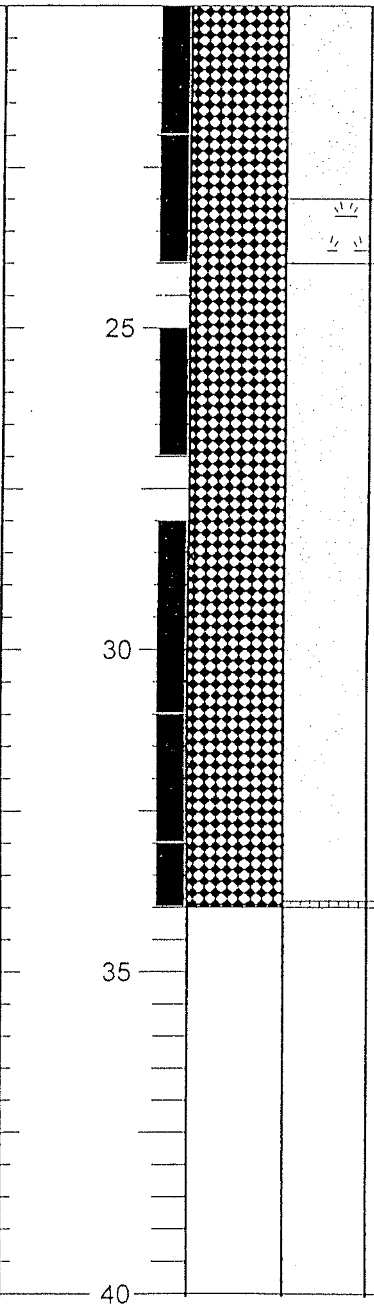
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.

(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-22
LOCATION	Kent	PAGE	2 of 2
DRILLED BY	TEG	GROUND ELEV.	25.20'
DRILL METHOD	Strataprobe	TOTAL DEPTH	34.0'
LOGGED BY	Erin McQuillan	DATE COMPLETED	12/4/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SS)	20-22	0
(SS)	22-25	0
(SS) Screen 25'-28' SP-22-25	25-28	0
(SS)	28-31	0
(SS)	31-33	0
(SS)	33-34	0



LITHOLOGIC DESCRIPTION

12.0 to 23.0 feet: SAND (SP), continued.

23.0 to 24.0 feet: SAND INTERBEDDED WITH PEAT (SP/PT), gray, medium sand, trace silt, peat layers ranging from 0.25- to 1-inch thick.

24.0 to 33.9 feet: SAND (SP), dark gray, medium, trace silt, wet.

33.9 to 34.0 feet: SILT (ML), gray, low to medium plasticity, trace sand, wet.

Total depth drilled = 34.0 feet.

Total depth sampled = 34.0 feet.

Boring abandoned with bentonite grout and an asphalt patch.

IT CORPORATION

REMARKS

(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.

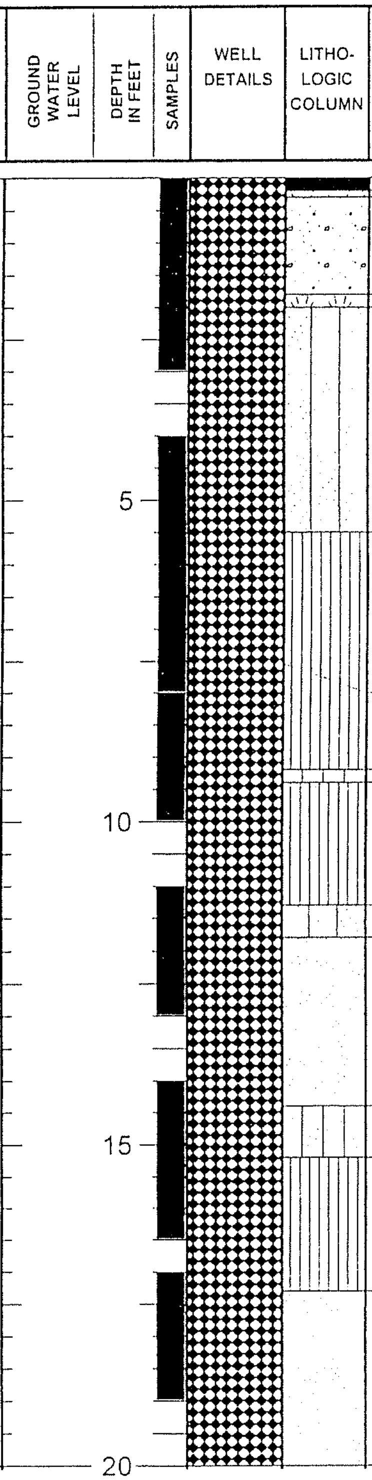
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Russell Thompson

BORING NO. SP-23
PAGE 1 of 2
GROUND ELEV. 24.65'
TOTAL DEPTH 35.0'
DATE COMPLETED 12/5/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	0
(SP)	4-8	0
(SS)	8-11	0
(SS)	11-14	0
(SS)	14-17	0
(SS)	17-20	0



LITHOLOGIC DESCRIPTION

0 to 0.2 foot: ASPHALT
0.2 to 0.3 foot: CRUSHED ROCK
0.3 to 1.8 feet: SAND WITH GRAVEL (SW), brown to tan, fine to coarse, little fine to medium gravel, trace silt, damp.
1.8 to 2.0 feet: PEAT (PT) with ash.
2.0 to 5.5 feet: SAND WITH SILT (SP-SM), gray, fine, few silt, moist.
5.5 to 8.0 feet: SANDY SILT (ML), light brownish gray, nonplastic, some fine sand, moist to wet.
8.0 to 9.2 feet: SILT (ML), grayish olive green, medium plasticity, moist.
9.2 to 9.4 feet: SILTY SAND (SM), grayish olive green, fine, little silt, wet.
9.4 to 11.3 feet: SILT WITH SAND (ML), grayish olive green, nonplastic, little fine sand, wet.
11.3 to 11.8 feet: SILT WITH SAND (SP-SM), grayish brown, fine, few silt, wet.
11.8 to 14.4 feet: SAND (SP), brownish gray, fine, trace silt, wet.
14.4 to 15.2 feet: SILTY SAND (SM), grayish brown, fine, little silt, wet.
@ 14.8 to 15.2 feet: wood debris.
15.2 to 17.3 feet: SILT (ML), brown, low plasticity, trace organics, scattered wood debris.
17.3 to 26.0 feet: SAND (SP), tan to brown, fine to medium, trace silt, moist.
@ 17.7 to 17.8 feet: wood debris.
@ 18.2 to 18.4 feet: SILT (ML), brown, medium plasticity, moist.

IT CORPORATION

REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-23
LOCATION	Kent	PAGE	2 of 2
DRILLED BY	TEG	GROUND ELEV.	24.65'
DRILL METHOD	Strataprobe	TOTAL DEPTH	35.0'
LOGGED BY	Russell Thompson	DATE COMPLETED	12/5/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
Screen 20'-23' SP-23-20 (SS)	20-23	0						**17.3 to 26.0 feet:** SAND (SP), continued. @ 20.2 to 20.3 feet: wood debris. @ 20.9 to 21.3 feet: wood debris. @ 21.3 to 21.5 feet: SILT (ML), light brown, trace fine to medium sand, trace organics, moist.
(SS)	23-26							@ 23.0 to 26.0 feet: no recovery.
				25				
(SS)	26-29	0						**26.0 to 28.2 feet:** SAND (SW), dark gray, fine to coarse, trace silt, trace fine gravel.
								28.2 to 31.6 feet: SAND (SP), dark gray, fine to medium, trace silt, wet.
Screen 29'-32' SP-23-29 (SS)	29-32			30				
(SS)	32-35							**31.6 to 32.5 feet:** SAND (SW), dark gray, fine to coarse, trace fine gravel, trace silt. **32.5 to 35.0 feet:** SILT (ML), low to medium plasticity, moist to wet. @ 33.7 to 34.5 feet: root and grass debris.
				35				Total depth drilled = 35.0 feet. Total depth sampled = 35.0 feet. Boring abandoned with bentonite grout and an asphalt patch.
				40				

IT CORPORATION

REMARKS

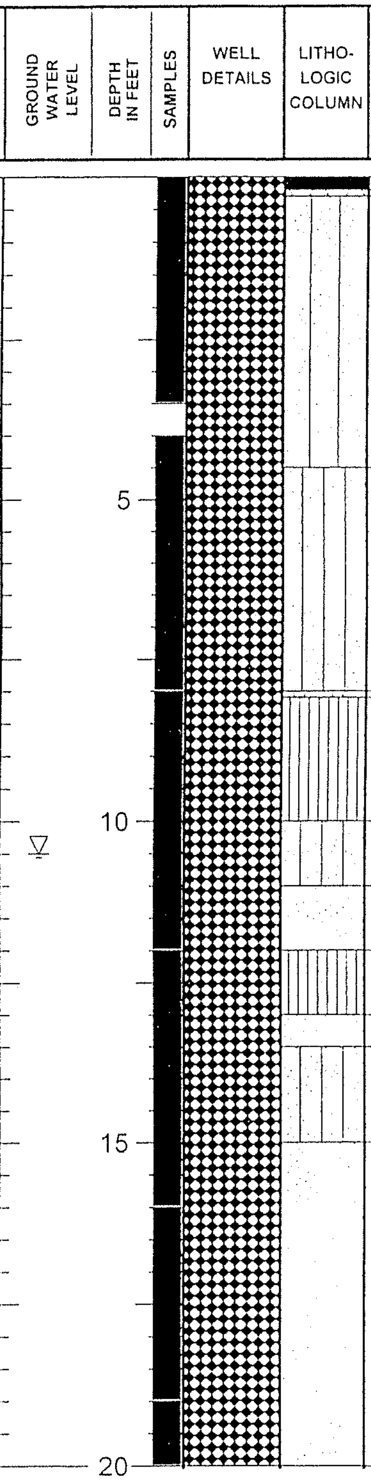
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.

(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-24
LOCATION	Kent	PAGE	1 of 2
DRILLED BY	TEG	GROUND ELEV.	24.41'
DRILL METHOD	Strataprobe	TOTAL DEPTH	36.0'
LOGGED BY	Erin McQuillan	DATE COMPLETED	12/5/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	0
(SP)	4-8	0
(SP)	8-12	0
(SS)	12-15	0
(SS)	15-18	0
Screen 19'-22'	18-21	0



LITHOLOGIC DESCRIPTION

0 to 0.2 foot: ASPHALT

0.2 to 0.3 foot: CRUSHED ROCK

0.3 to 4.5 feet: SAND WITH SILT AND GRAVEL (SP-SM), tan, fine to medium, few silt, damp.

4.5 to 8.0 feet: SILTY SAND (SM), brown, fine, some silt, damp.

@ 6.0 feet: gray with mottled orange.

8.0 to 8.1 feet: PEAT (PT), wood debris, root fragments.

8.1 to 10.0 feet: SILT (ML), gray, low to medium plasticity, few fine sand, moist.

10.0 to 11.0 feet: SILTY SAND (SM), gray, fine, little silt, wet.

11.0 to 12.0 feet: SAND (SP), gray, fine, trace silt, wet.

12.0 to 13.0 feet: SILT (ML), gray, low plasticity, few fine sand, scattered wood debris, wet.

13.0 to 13.5 feet: SAND WITH GRAVEL (SP), gray, fine to coarse, some fine to medium gravel, wet.

13.5 to 15.0 feet: SILTY SAND (SM), gray, fine to medium, little silt, wet.

15.0 to 25.0 feet: SAND (SP), gray, fine to medium, trace silt, wet.

@ 16.5 feet: fine sand.

@ 18.0 feet: fine to medium sand.

IT CORPORATION

REMARKS

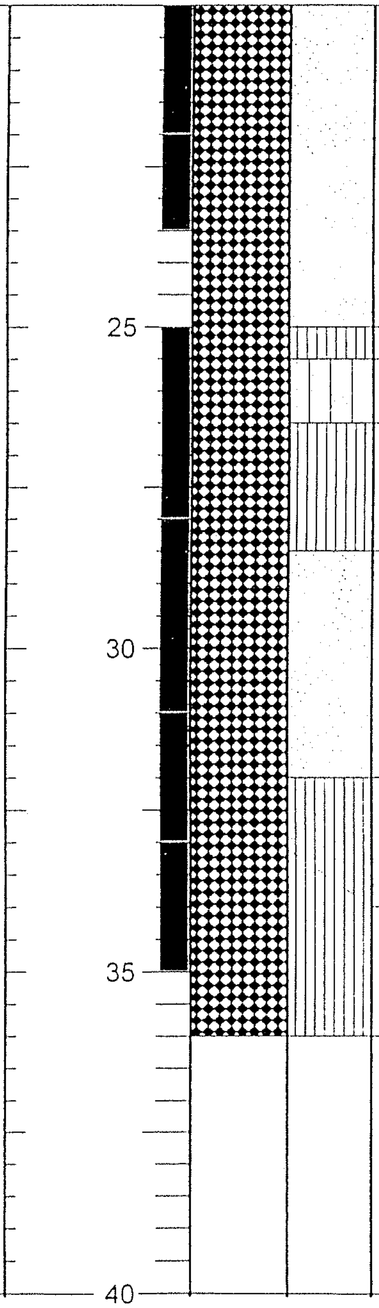
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.

(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Erin McQuillan

BORING NO. SP-24
PAGE 2 of 2
GROUND ELEV. 24.41'
TOTAL DEPTH 36.0'
DATE COMPLETED 12/5/00



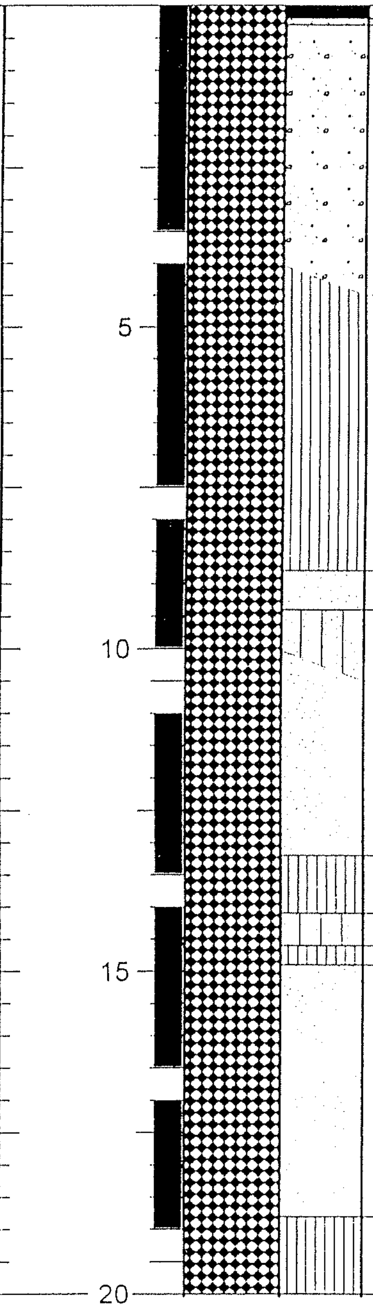
SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	DEPTH IN FEET	LITHOLOGIC DESCRIPTION
SP-24-19 (SS)				15.0 to 25.0 feet: SAND (SP), continued.
(SS)	22-25			@ 21.4 to 21.5 feet: SILT (ML), gray, low plasticity, trace fine sand, wet.
(SS)	25-28	0	25	25.0 to 25.5 feet: SILT (ML), gray, low to medium plasticity, few fine sand, wet. 25.5 to 26.5 feet: SILTY SAND (SM), gray, fine, little silt, scattered wood debris, wet. 26.5 to 28.5 feet: SILT (ML), gray, medium plasticity, trace fine sand, scattered organic and wood debris, wet.
(SS)	28-31	0		28.5 to 32.0 feet: SAND (SP), dark grayish black, fine to coarse, trace silt, wet.
			30	
Screen 30'-33' SP-24-30 (SS)	31-33	0		32.0 to 34.0 feet: SILT (ML), grayish brown, few fine sand, low plasticity, wet.
(SS)	33-36	0		34.0 to 36.0 feet: SILT (ML), gray, medium plasticity, trace fine sand, scattered organic debris, damp to moist.
			35	Total depth drilled = 36.0 feet. Total depth sampled = 36.0 feet. Boring abandoned with bentonite grout and an asphalt patch.
			40	

IT CORPORATION

REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-25
LOCATION	Kent	PAGE	1 of 3
DRILLED BY	TEG	GROUND ELEV.	25.11'
DRILL METHOD	Strataprobe	TOTAL DEPTH	41.0'
LOGGED BY	Russell Thompson	DATE COMPLETED	12/5/00



SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
(SP)	0-4	0						0 to 0.2 foot: ASPHALT
								0.2 to 0.3 foot: CRUSHED ROCK
								0.3 to 4.5 feet: SAND WITH GRAVEL (SW), brown, fine to medium, few silt, few fine gravel, damp.
(SP)	4-8	0						
				5				4.5 to 8.8 feet: SILT (ML), gray, low plasticity, few fine sand, scattered organic and wood debris.
								@ 6.2 to 6.3 feet: SILTY SAND (SM), gray, fine, little silt, damp.
(SS)	8-11	0						@ 8.0 feet: silt plasticity increases to medium.
								8.8 to 9.4 feet: SAND (SP), brown to gray, fine, trace silt, moist.
				10				9.4 to 10.5 feet: SILTY SAND (SM), gray, little silt, moist.
								10.5 to 13.2 feet: SAND (SP), gray, fine, few silt, wet.
(SS)	11-14	0						
								13.2 to 14.1 feet: SILT WITH SAND (ML), gray, low to medium plasticity, little fine sand, wet.
Screen 14'-17' SP-25-14 (SS)	14-17	2						14.1 to 14.6 feet: SILTY SAND (SM), gray, fine, little silt, wet.
				15				14.6 to 14.9 feet: SILT (ML), gray, medium plasticity, wet.
								14.9 to 18.8 feet: SAND (SP), gray, fine, trace silt, wet.
		2						
(SS)	17-20	2						
								18.8 to 24.6 feet: SILT (ML), gray, low plasticity, few fine sand, wet.
				20				

IT CORPORATION

REMARKS

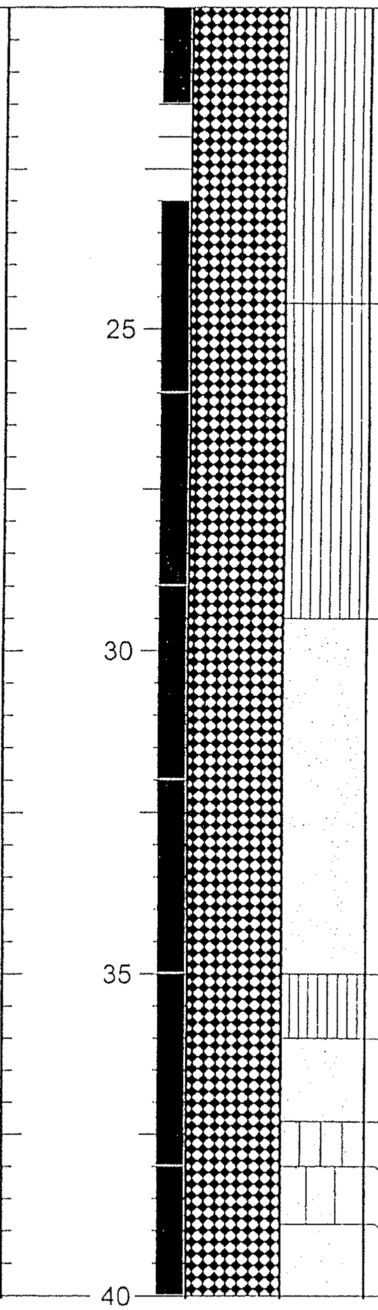
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.

(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Russell Thompson

BORING NO. SP-25
PAGE 2 of 3
GROUND ELEV. 25.11'
TOTAL DEPTH 41.0'
DATE COMPLETED 12/5/00



SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
(SS)	20-23	0						**18.8 to 24.6 feet:** SILT (ML), continued.
(SS)	23-26	0						@ 23.0 feet: SANDY SILT (ML).
				25				**24.6 to 29.5 feet:** SILT (ML), medium plasticity, trace fine sand, trace organic debris, wet.
(SS)	26-29	0						@ 27.0 to 27.3 feet: SAND (SP), gray, fine, trace silt.
Screen 29'-32' SP-25-29 (SS)	29-32	0		30				**29.5 to 35.0 feet:** SAND (SP), gray, fine, trace silt.
	32-35	0						
				35				@ 34.6 to 34.7 feet: scattered wood debris. **35.0 to 36.0 feet:** SILT (ML), pinkish gray, low to medium plasticity, few fine sand.
	35-38	0						**36 to 37.3 feet:** SAND (SP), dark brown, fine, trace silt, wet.
								37.3 to 38.0 feet: SILTY SAND (SM), dark brown, fine, some silt.
	38-41	0						**38.0 to 38.9 feet:** SAND WITH SILT (SP-SM), gray, fine to medium, few silt. **38.9 to 40.0 feet:** SAND (SP), dark brown, fine to
				40				

IT CORPORATION

REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Russell Thompson

BORING NO. SP-25
PAGE 3 of 3
GROUND ELEV. 25.11'
TOTAL DEPTH 41.0'
DATE COMPLETED 12/5/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
								medium, trace silt, wet. @ 39.9 feet: SAND WITH SILT (SP-SM). **40.0 to 40.8 feet: SILT (ML)**, dark gray, medium plasticity, moist. **40.8 to 41.0 feet: SILTY SAND (SM)**, dark gray to olive green, fine, little silt, moist to wet. Total depth drilled = 41.0 feet. Total depth sampled = 41.0 feet. Boring abandoned with bentonite grout and an asphalt patch.
				45				
				50				
				55				
				60				

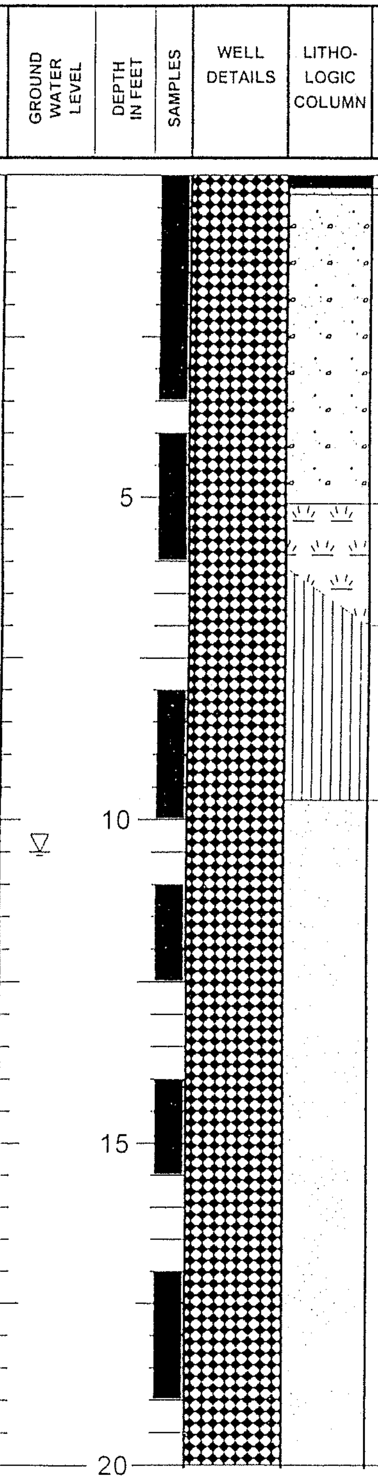
REMARKS
(1) SP = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

IT CORPORATION

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-26
LOCATION	Kent	PAGE	1 of 3
DRILLED BY	TEG	GROUND ELEV.	26.36'
DRILL METHOD	Strataprobe	TOTAL DEPTH	47.0'
LOGGED BY	Russell Thompson	DATE COMPLETED	12/11/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	0
(SP)	4-8	0
(SS)	8-11	0
(SS)	11-14	0
Screen 14'-17' SP-26-14 (SS)	14-17	0
(SS)	17-20	0



LITHOLOGIC DESCRIPTION

0 to 0.2 foot: ASPHALT

0.2 to 0.3 foot: CRUSHED ROCK

0.3 to 5.1 feet: SAND (SW), tan, fine to coarse, few silt, few fine gravel, damp.

5.1 to 7.0 feet: PEAT (PT), black, little fine sand, few silt, damp.

7.0 to 9.7 feet: SILT (ML), gray, mottled brown, low to medium plasticity, damp.

9.7 to 22.5 feet: SAND (SP), gray, fine, trace silt, wet.

@ 11.5 feet: fine to medium sand.

IT CORPORATION

REMARKS

(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.

(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-26
LOCATION	Kent	PAGE	2 of 3
DRILLED BY	TEG	GROUND ELEV.	26.36'
DRILL METHOD	Strataprobe	TOTAL DEPTH	47.0'
LOGGED BY	Russell Thompson	DATE COMPLETED	12/11/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
(SS)	20-23	0						9.7 to 22.5 feet: SAND (SP), continued. @ 20.0 feet: trace coarse sand.
(SS)	23-26	0		25				22.5 to 25.1 feet: SILT INTERBEDDED WITH SILTY SAND (ML/SM)
(SS)	26-29	0						25.1 to 28.8 feet: SILT (ML), brownish gray, medium plasticity, wet. @ 27.4 to 27.6 feet: SILTY SAND (SM) layer, brown, fine, some silt.
Screen 29'-32' SP-26-29 (SS)	29-32	0		30				28.8 to 36.0 feet: SAND (SP), dark gray, fine to medium, trace silt, wet.
(SS)	32-35	0						@ 32.0 to 35.0 feet: no recovery.
(SS)	35-38	0		35				36.0 to 38.8 feet: SILT (ML), brown, low to medium plasticity, few fine sand, wet.
(SS)	38-41	0		40				38.8 to 40.0 feet: SILTY SAND (SM), brown, fine to medium, some silt, wet.

IT CORPORATION

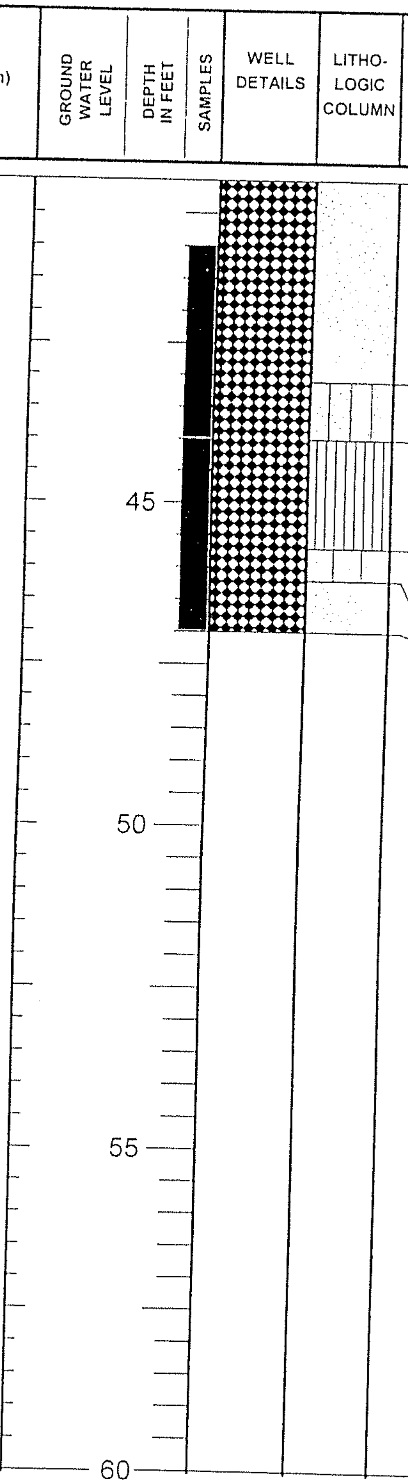
REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Russell Thompson

BORING NO. SP-26
PAGE 3 of 3
GROUND ELEV. 26.36'
TOTAL DEPTH 47.0'
DATE COMPLETED 12/11/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SS)	41-44	0
(SS)	44-47	0



LITHOLOGIC DESCRIPTION

40.0 to 43.1 feet: SAND (SP), gray, fine to medium, trace silt, wet.

43.1 to 44.0 feet: SILTY SAND (SM), brown, fine, some silt, wet.

44.0 to 45.7 feet: SILT (ML), gray, low plasticity, trace fine sand, wet.

45.7 to 46.2 feet: SAND WITH SILT (SP-SM), gray, fine, few silt, wet.

46.2 to 47.0 feet: SAND (SP), gray, fine, trace silt, wet.

Total depth drilled = 47.0 feet.
Total depth sampled = 47.0 feet.

Boring abandoned with bentonite grout and an asphalt patch.

IT CORPORATION

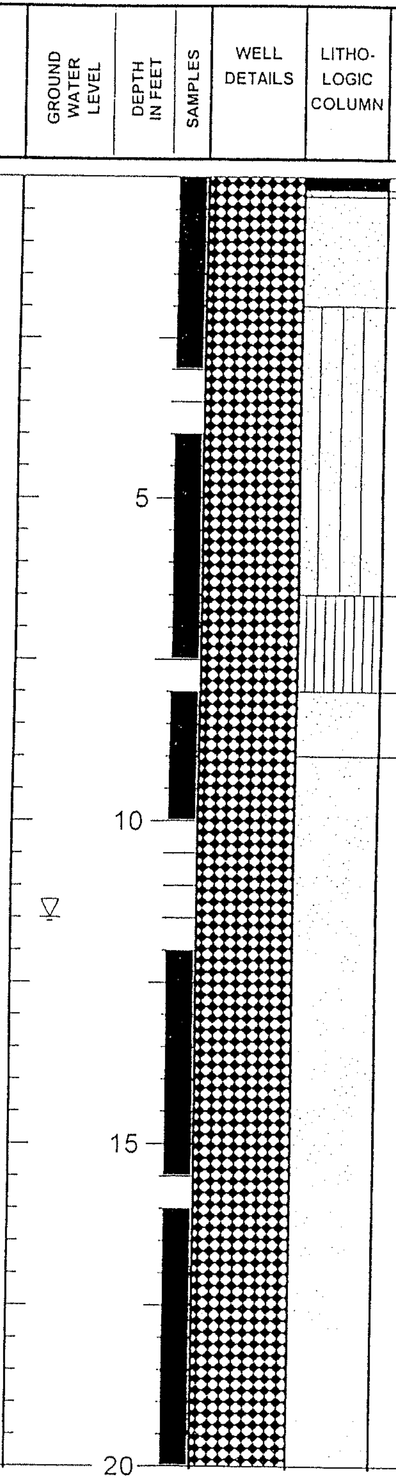
REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Erin McQuillan

BORING NO. SP-27
PAGE 1 of 3
GROUND ELEV. 27.16'
TOTAL DEPTH 44.0'
DATE COMPLETED 12/6/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	0
(SP)	4-8	0
(SP)	8-12	0
(SP)	12-16	0
Screen 17'-20' SP-27-17 (SP)	16-20	0



LITHOLOGIC DESCRIPTION

0 to 0.2 foot: ASPHALT

0.2 to 0.3 foot: CRUSHED ROCK

0.3 to 2.0 feet: SAND WITH GRAVEL (SP), tan, fine to medium, little fine to medium gravel, damp.

2.0 to 6.5 feet: SILTY SAND (SM), tan, fine, little silt, damp.

@ 5.5 feet: plastic debris.

6.5 to 8.0 feet: SILT WITH SAND (ML), brownish gray mottled orange, low to medium plasticity, little sand, moist.

8.0 to 9.0 feet: SAND WITH GRAVEL (SP), tan, medium, some fine to medium gravel.

9.0 to 20.0 feet: SAND (SP), brownish tan, fine to medium, trace silt, moist to wet.

@ 14.0 feet: medium to coarse sand.
@ 14.5 feet: fine to medium sand.

@ 16.5 to 19.0 feet: few silt.

IT CORPORATION

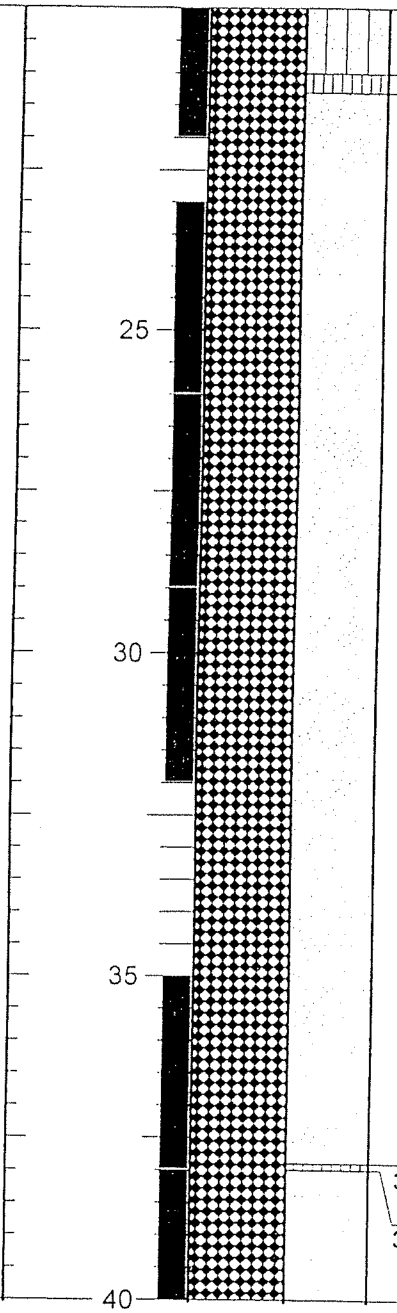
REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Erin McQuillan

BORING NO. SP-27
PAGE 2 of 3
GROUND ELEV. 27.16'
TOTAL DEPTH 44.0'
DATE COMPLETED 12/6/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SS)	20-23	0
(SS)	23-26	0
(SS)	26-29	0
(SS)	29-32	0
Screen 32'-35' SP-27-32 (SS)	32-35	0
(SS)	35-38	0
(SS)	38-41	0



LITHOLOGIC DESCRIPTION

20.0 to 21.0 feet: SILTY SAND (SM), brownish gray, fine to medium, little silt, wet.

21.0 to 21.3 feet: SILT (ML), pinkish gray, low plasticity, few fine sand, wet.

21.3 to 37.9 feet: SAND (SP), dark gray, fine to medium, trace silt, wet.

@ 24.5 feet: fine to coarse sand.

@ 28.0 feet: fine to medium sand.

@ 29.0 feet: fine to coarse sand.

@ 32.0 to 35.0 feet: no recovery.

37.9 to 38.0 feet: SILT (ML), brownish gray, few sand, wet.

38.0 to 40.0 feet: SAND (SP), dark gray, fine to medium, trace silt, wet.

IT CORPORATION

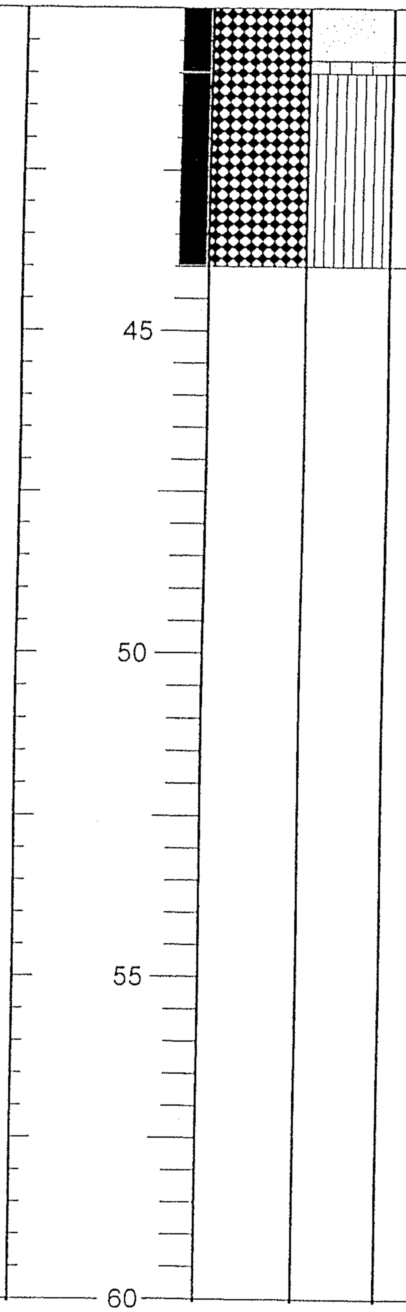
REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Erin McQuillan

BORING NO. SP-27
PAGE 3 of 3
GROUND ELEV. 27.16'
TOTAL DEPTH 44.0'
DATE COMPLETED 12/6/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SS)	41-44	0



LITHOLOGIC DESCRIPTION

38.0 to 40.0 feet: SAND (SP), continued.

40.8 to 41.0 feet: SILTY SAND (SM), grayish brown, fine, little silt, wet.

41.0 to 44.0 feet: SILT (ML), gray, low plasticity, few fine sand, moist.

@ 43.0 feet: medium plasticity, trace fine sand.

Total depth drilled = 44.0 feet.
Total depth sampled = 44.0 feet.

Boring abandoned with bentonite grout and an asphalt patch.

IT CORPORATION

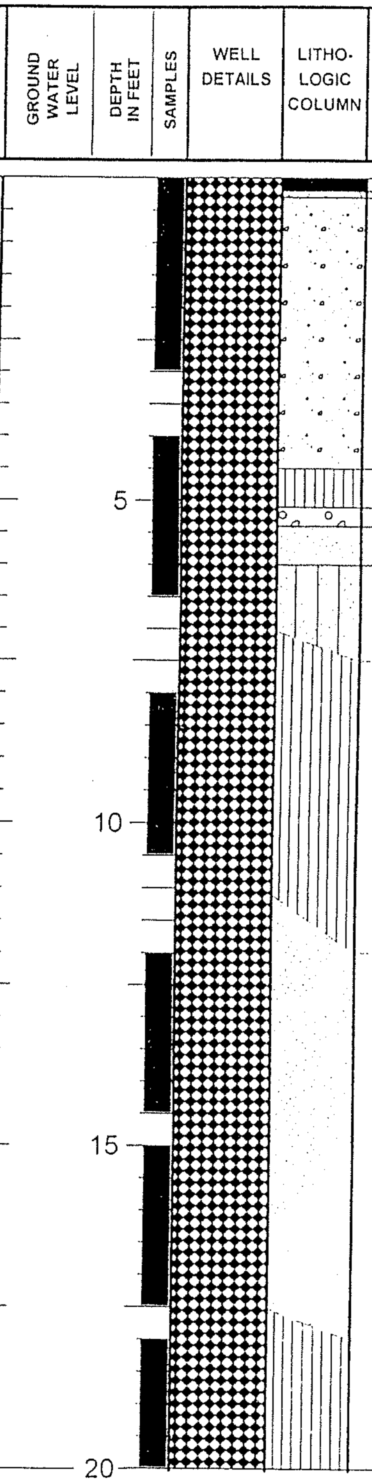
REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Russell Thompson

BORING NO. SP-28
PAGE 1 of 3
GROUND ELEV. 27.02'
TOTAL DEPTH 39.0'
DATE COMPLETED 12/9/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	0
(SP)	4-8	0
(SP)	8-12	0
(SS)	12-15	0
Screen 15'-18' SP-28-15 (SS)	15-18	0
(SS)	18-21	0



LITHOLOGIC DESCRIPTION

0 to 0.2 foot: ASPHALT

0.2 to 0.3 foot: CRUSHED ROCK

0.3 to 4.5 feet: SAND (SW), tan, fine to coarse, trace fine gravel, trace silt, damp.

4.5 to 5.1 feet: SILT WITH SAND (ML), brown, low plasticity, few fine gravel, little fine sand, damp.

5.1 to 5.4 feet: GRAVEL (GP), gray, fine to medium, trace fine to coarse sand.

5.4 to 6.0 feet: SAND (SP), tan, fine to coarse, trace fine gravel, trace silt, damp.

6.0 to 7.5 feet: SILTY SAND (SM), brown mottled gray, fine, some silt, moist.

7.5 to 12.0 feet: SILT (ML), grayish brown, medium plasticity, trace fine sand, wet.

@ 9.2 feet: becomes gray.

11.0 to 18.0 feet: SAND (SP), gray, fine, trace silt, wet.

@ 13.6 feet: fine to medium sand interbedded with fine sand layers.

18.0 to 20.2 feet: SILT (ML), gray, low plasticity, few fine sand, wet.

@ 18.2 feet: medium plasticity, trace fine sand, scattered organic material.

REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

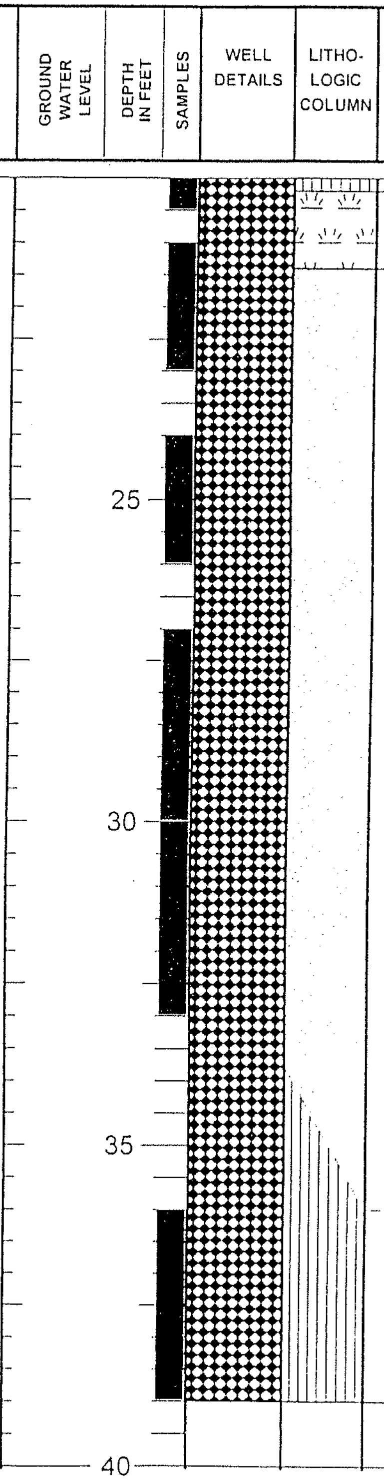
IT CORPORATION

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Russell Thompson

BORING NO. SP-28
PAGE 2 of 3
GROUND ELEV. 27.02'
TOTAL DEPTH 39.0'
DATE COMPLETED 12/9/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SS)	21-24	0
(SS)	24-27	0
(SS)	27-30	0
Screen 30'-33' SP-28-30 (SS)	30-33	0
(SS)	33-36	
(SS)	36-39	0



LITHOLOGIC DESCRIPTION

18.0 to 20.2 feet: SILT (ML), continued.

20.2 to 21.4 feet: PEAT (PT), wood debris.

21.4 to 36.0 feet: SAND (SP), gray, fine to medium, trace silt, wet.

@ 25.6 to 28.2 feet: fine to coarse sand.

@ 33.0 to 36.0 feet: no recovery.

36.0 to 39.0 feet: SILT (ML), brown, medium plasticity, organic debris, damp.
@ 36.5 feet: root fragments.
@ 36.9 feet: pink, wet.
@ 37.2 feet: grayish olive green.
@ 3.4 feet: brown.

Total depth drilled = 39.0 feet.
Total depth sampled = 39.0 feet.

IT CORPORATION

REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Russell Thompson

BORING NO. SP-28
PAGE 3 of 3
GROUND ELEV. 27.02'
TOTAL DEPTH 39.0'
DATE COMPLETED 12/9/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
								Boring abandoned with bentonite grout and an asphalt patch.
				45				
				50				
				55				
				60				

IT CORPORATION

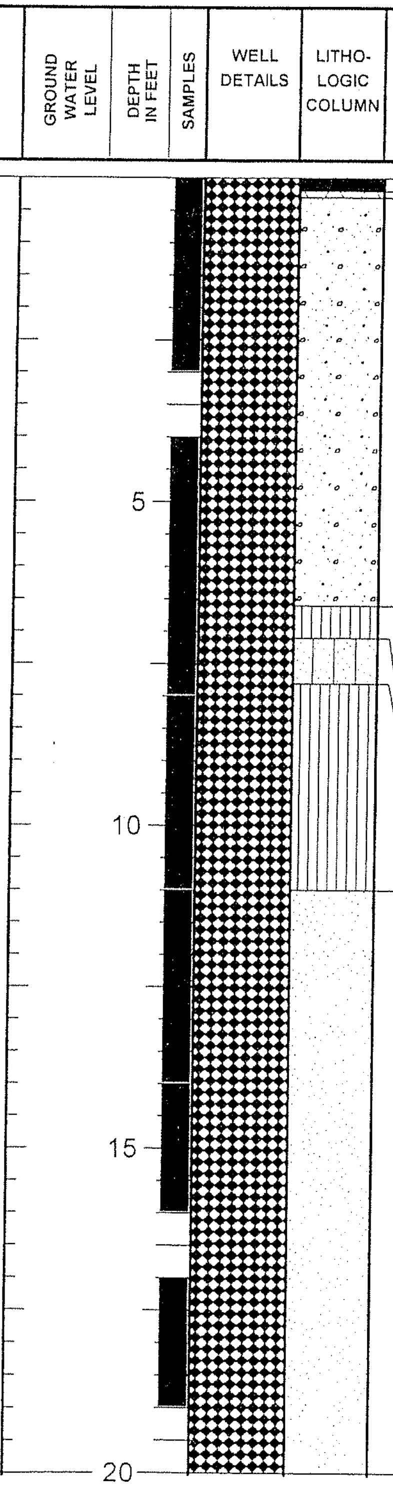
REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Russell Thompson

BORING NO. SP-29
PAGE 1 of 3
GROUND ELEV. 27.03'
TOTAL DEPTH 41.0'
DATE COMPLETED 12/6/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	0
(SP)	4-8	0
(SS)	8-11	0
(SS)	11-14	0
Screen 14'-17' SP-29-14 (SS)	14-17	0
(SS)	17-20	0



LITHOLOGIC DESCRIPTION

0 to 0.2 foot: ASPHALT

0.2 to 0.3 foot: CRUSHED ROCK

0.3 to 6.6 feet: SAND (SW), brownish tan, fine to medium, trace silt, trace fine to medium gravel, damp.

6.6 to 7.1 feet: SILT WITH SAND (ML), gray, low plasticity, little fine sand, trace fine gravel, damp.

@ 6.7 to 6.8 feet: GRAVELLY PEAT (PT) layer, dark brown, little fine gravel, few silt.

7.1 to 7.8 feet: SILTY SAND (SM), gray, fine, some silt.

7.8 to 11.0 feet: SILT (ML), grayish brown, mottled white to green, medium plasticity, trace fine sand, damp to moist.

@ 11.0 feet: fine gravel layer.

11.0 to 20.2 feet: SAND (SP), gray, fine, trace silt, wet.

@ 15.1 feet; SILT (ML) layer 0.8-inch thick, pinkish brown, medium plasticity.

@ 15.2 feet: fine to medium sand.

REMARKS

(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

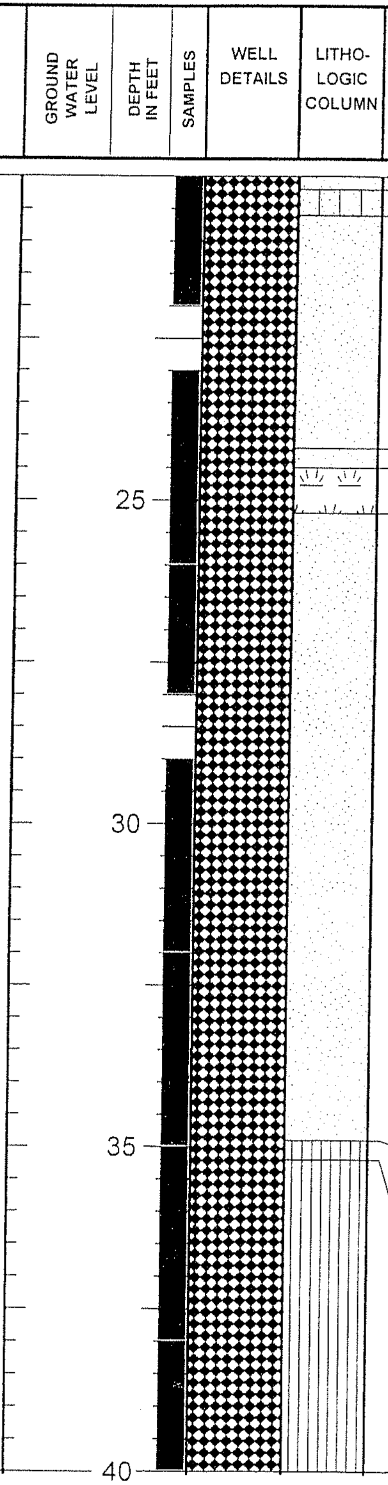
IT CORPORATION

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Russell Thompson

BORING NO. SP-29
PAGE 2 of 3
GROUND ELEV. 27.03'
TOTAL DEPTH 41.0'
DATE COMPLETED 12/6/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SS)	20-23	2
(SS)	23-26	2
(SS)	26-29	2
Screen 29'-32' SP-29-29 (SS)	29-32	0
(SS)	32-35	0
(SS)	35-38	0
(SS)	38-41	0



LITHOLOGIC DESCRIPTION

11.0 to 20.2 feet: SAND (SP), continued.

20.2 to 20.6 feet: SILTY SAND (SM), gray, fine, wet.

20.6 to 24.2 feet: SAND (SP), gray, fine, interbedded with SILT (ML), low plasticity.

24.2 to 24.5 feet: SAND (SP), gray, fine to medium, trace silt.

24.5 to 25.2 feet: PEAT (PT), dark brown, trace silt.

25.2 to 34.9 feet: SAND (SP), gray, fine to medium, trace silt, wet.

@ 30.5 to 30.8 feet: SAND WITH GRAVEL (SW), gray, fine to coarse, few fine gravel, trace silt, wet.
@ 31.3 feet: SILT (ML) layer, 0.4-inch thick.

@ 34.5 feet: SILT (ML) layer, 0.8-inch thick.

34.9 to 35.2 feet: SILT (ML), gray, nonplastic, few fine sand, scattered organic debris, wet.

35.2 to 41.0 feet: SILT (ML), gray, medium plasticity, wet.

@ 36.6 feet: scattered grass and root debris.

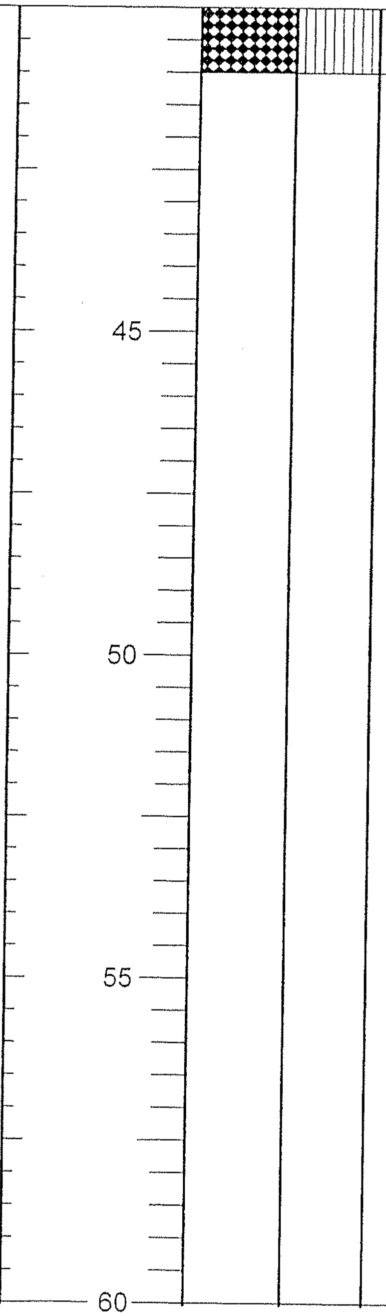
IT CORPORATION

REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-29
LOCATION	Kent	PAGE	3 of 3
DRILLED BY	TEG	GROUND ELEV.	27.03'
DRILL METHOD	Strataprobe	TOTAL DEPTH	41.0'
LOGGED BY	Russell Thompson	DATE COMPLETED	12/6/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
								35.2 to 41.0 feet: SILT (ML), continued. Total depth drilled = 41.0 feet. Total depth sampled = 41.0 feet. Boring abandoned with bentonite grout and an asphalt patch.



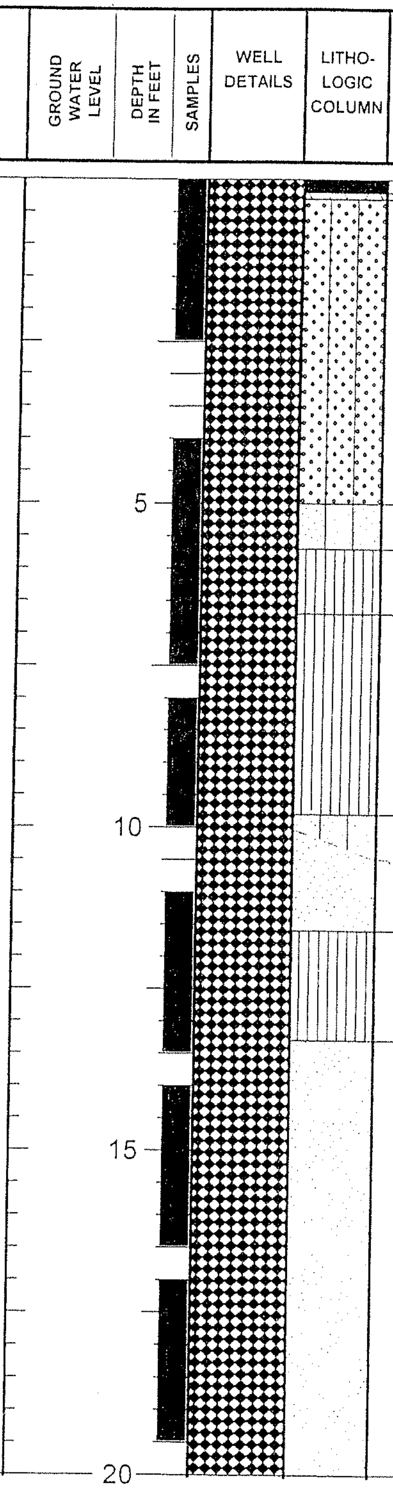
IT CORPORATION

REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-30
LOCATION	Kent	PAGE	1 of 2
DRILLED BY	TEG	GROUND ELEV.	25.16'
DRILL METHOD	Strataprobe	TOTAL DEPTH	35.0'
LOGGED BY	Russell Thompson	DATE COMPLETED	12/12/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	1
(SP)	4-8	2
(SS)	8-11	1
SP-30-11 SP-30-12 (SS)	11-14	0
SP-30-14 (SS)	14-17	0
(SS)	17-20	0



LITHOLOGIC DESCRIPTION

0 to 0.2 foot: ASPHALT

0.2 to 0.3 foot: CRUSHED ROCK

0.3 to 5.0 feet: SAND WITH SILT (SW-SM), tan, fine to coarse, few silt, few fine gravel, damp.

5.0 to 5.7 feet: SAND WITH SILT (SP-SM), brownish gray, fine, few silt, moist.

5.7 to 6.7 feet: SILT WITH SAND (ML), brownish gray, low plasticity, little fine sand, moist.

6.7 to 9.8 feet: SILT (ML), brown, medium plasticity, organic debris, damp.

9.8 to 10.5 feet: SAND WITH SILT (SP-SM), gray, fine, few fine sand, wet.

10.5 to 11.6 feet: SAND (SP), gray, fine, trace silt, wet.

11.6 to 13.3 feet: SILT (ML), pinkish olive green to gray, medium plasticity, wet.

13.3 to 32.0 feet: SAND (SP), dark gray, fine to medium, trace silt, wet.

@ 16.1 feet: SILT (ML) layer, <1-inch thick.

@ 17.7 feet: SILT (ML) layer, 4-inches thick.

@ 19.1 feet: SILT (ML) layer, 2-inches thick.

REMARKS

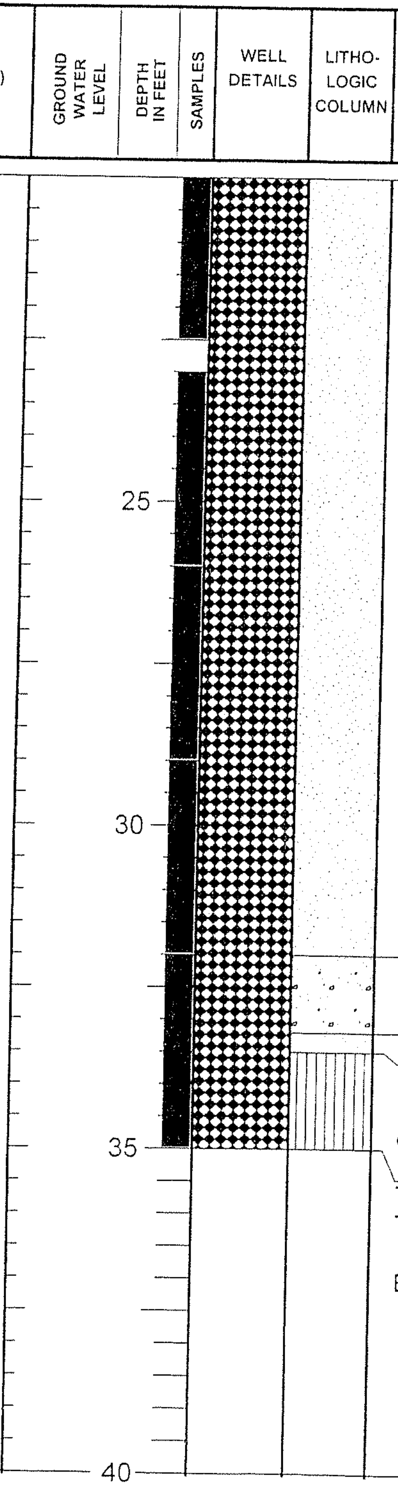
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

IT CORPORATION

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-30
LOCATION	Kent	PAGE	2 of 2
DRILLED BY	TEG	GROUND ELEV.	25.16'
DRILL METHOD	Strataprobe	TOTAL DEPTH	35.0'
LOGGED BY	Russell Thompson	DATE COMPLETED	12/12/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SS)	20-23	0
(SS)	23-26	0
(SS)	26-29	0
(SS)	29-32	0
SP-30-32 (SS) SP-30-33 (SS)	32-35	0



LITHOLOGIC DESCRIPTION

13.3 to 32.0 feet: SAND (SP), continued.
@ 20.0 feet: fine to coarse sand.
@ 20.9 feet: wood debris.

@ 27.3 feet: trace fine gravel.

32.0 to 33.2 feet: SAND (SW), gray, fine to coarse, trace fine gravel, trace silt, wet.

33.2 to 33.5 feet: SAND (SP), brown, fine, trace silt, wet.

33.5 to 35.0 feet: SILT (ML), light brown to brown, nonplastic, few fine sand, wet.
@ 34.1 feet: medium plasticity, fine sand absent, organic and root debris.

Total depth drilled = 35.0 feet.
Total depth sampled = 35.0 feet.

Boring abandoned with bentonite grout and an asphalt patch.

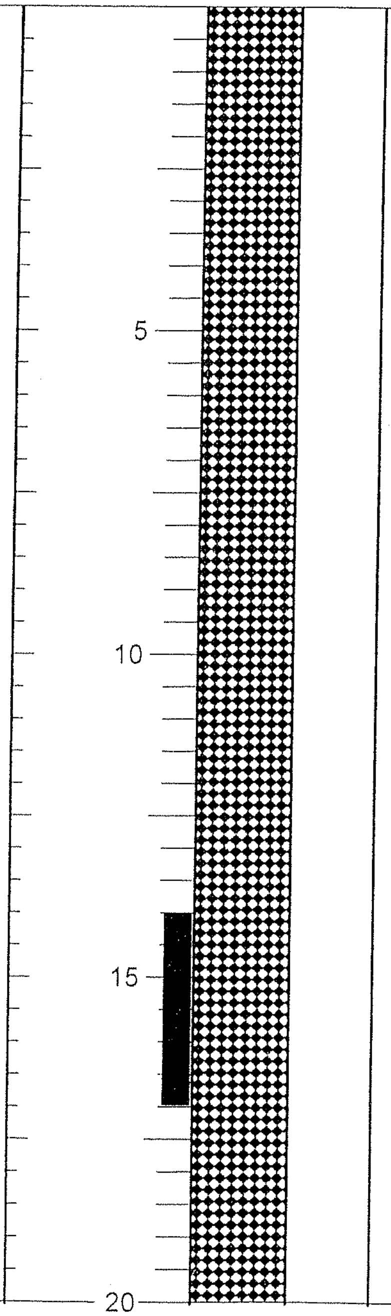
IT CORPORATION

REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-30b
LOCATION	Kent	PAGE	1 of 2
DRILLED BY	TEG	GROUND ELEV.	25.14'
DRILL METHOD	Strataprobe	TOTAL DEPTH	34.0'
LOGGED BY	Russell Thompson	DATE COMPLETED	12/12/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
								See SP-30 for lithologic description.
Screen 14'-17' SP-30-14	14-17							Water sample collected from temporary screen set between 14.0 and 17.0 feet. Sample designated SP-30-14-121200.



IT CORPORATION

REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME **Kent Facility**
LOCATION **Kent**
DRILLED BY **TEG**
DRILL METHOD **Strataprobe**
LOGGED BY **Russell Thompson**

BORING NO. **SP-30b**
PAGE **2 of 2**
GROUND ELEV. **25.14'**
TOTAL DEPTH **34.0'**
DATE COMPLETED **12/12/00**

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
Screen 22'-25' SP-30-22	22-25							Water sample collected from temporary screen set between 22.0 and 25.0 feet. Sample designated SP-30-22-121200.
				25				
				30				
Screen 31'-34' SP-30-31	31-34							Water sample collected from temporary screen set between 31.0 and 34.0 feet. Sample designated SP-30-31-121200.
								Total depth drilled = 34.0 feet. Total depth sampled = 34.0 feet.
				35				
				40				

IT CORPORATION

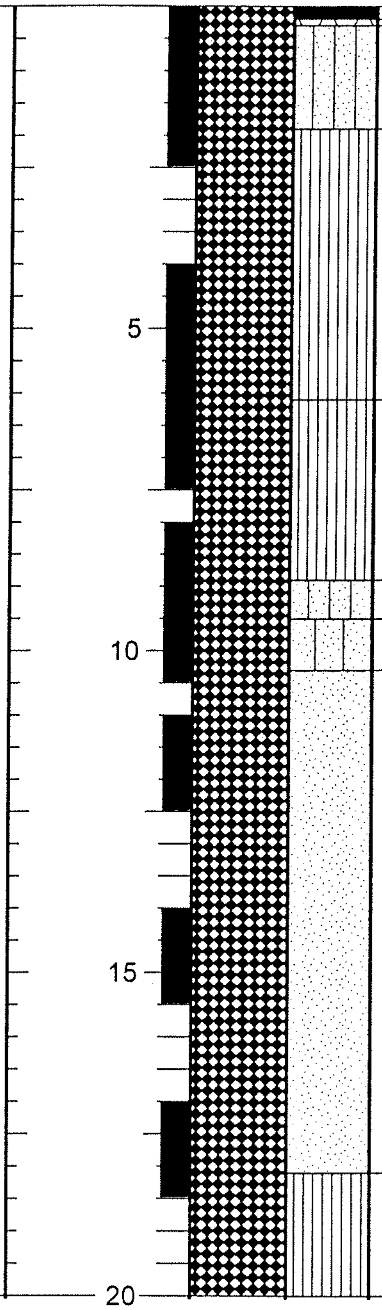
REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Russell Thompson

BORING NO. SP-31
PAGE 1 of 3
GROUND ELEV. 22.82'
TOTAL DEPTH 44.0'
DATE COMPLETED 12/11/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	0
(SP)	4-8	0
(SS)	8-11	0
(SS) SP-31-12	11-14	0
SP-31-14 (SS)	14-17	1
SP-31-17 (SS) SP-31-18	17-20	20



LITHOLOGIC DESCRIPTION

0 to 0.2 foot: ASPHALT

0.2 to 0.3 foot: CRUSHED ROCK

0.3 to 1.9 feet: SILTY SAND (SM), tan, fine, some silt, damp.

1.9 to 6.1 feet: SANDY SILT (ML), brownish gray, nonplastic, some fine sand, damp.

6.1 to 8.9 feet: SILT (ML), brownish gray, medium plasticity, damp.

@ 8.0 feet: wet.

8.9 to 9.5 feet: SILTY SAND (SM), grayish olive green, fine, some silt, wet.

9.5 to 10.3 feet: SAND WITH SILT (SP-SM), grayish olive green, fine, few silt, wet.

10.3 to 18.1 feet: SAND (SP), dark gray, fine, trace silt, wet.

@ 11.6 to 11.9 feet: SILT (ML), pinkish brown, medium plasticity, wet.

18.1 to 20.2 feet: SILT (ML), brownish gray, low plasticity, few fine sand, wet.

REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

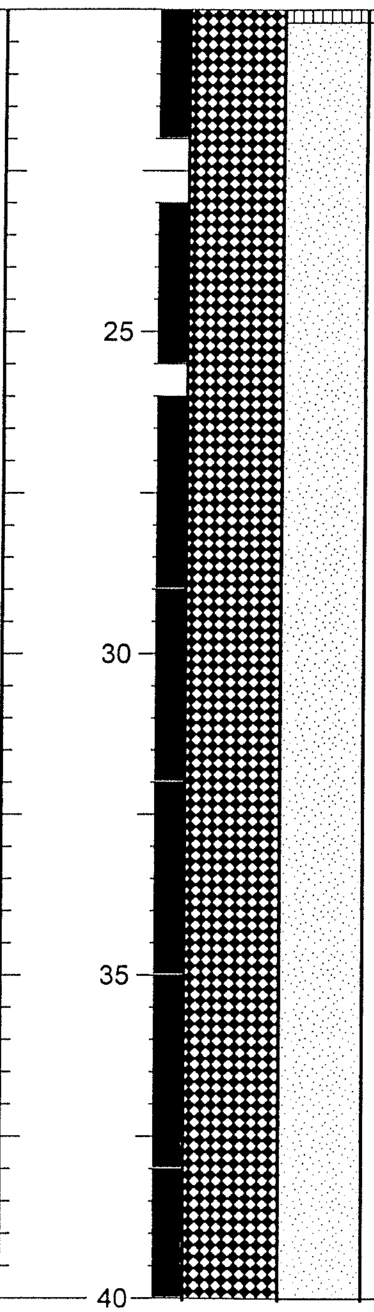
IT CORPORATION

LOG OF EXPLORATORY BORING

PROJECT NAME **Kent Facility**
LOCATION **Kent**
DRILLED BY **TEG**
DRILL METHOD **Strataprobe**
LOGGED BY **Russell Thompson**

BORING NO. **SP-31**
PAGE **2 of 3**
GROUND ELEV. **22.82'**
TOTAL DEPTH **44.0'**
DATE COMPLETED **12/11/00**

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
SP-31-20 (SS)	20-23	35
SP-31-23 (SS)	23-26	230
(SS)	26-29	3.0
(SS)	29-32	7.0
(SS)	32-35	2.0
(SS)	35-38	7.0
(SS)	38-41	0



LITHOLOGIC DESCRIPTION

18.1 to 20.2 feet: SILT (ML), continued.

20.2 to 40.2 feet: SAND (SP), dark grayish brown, fine, trace silt, interbedded with silt layers <0.2-inches thick.

@ 23.2 to 23.4 feet: SILT (ML), brown, medium plasticity, wet.

@ 25.2 to 26.0 feet: SILT (ML), brown, medium plasticity, wet.
@ 26.0 feet: fine to medium sand.

@ 37.1 to 37.6 feet: SILT (ML), pinkish brown, medium plasticity, wet.

IT CORPORATION

REMARKS

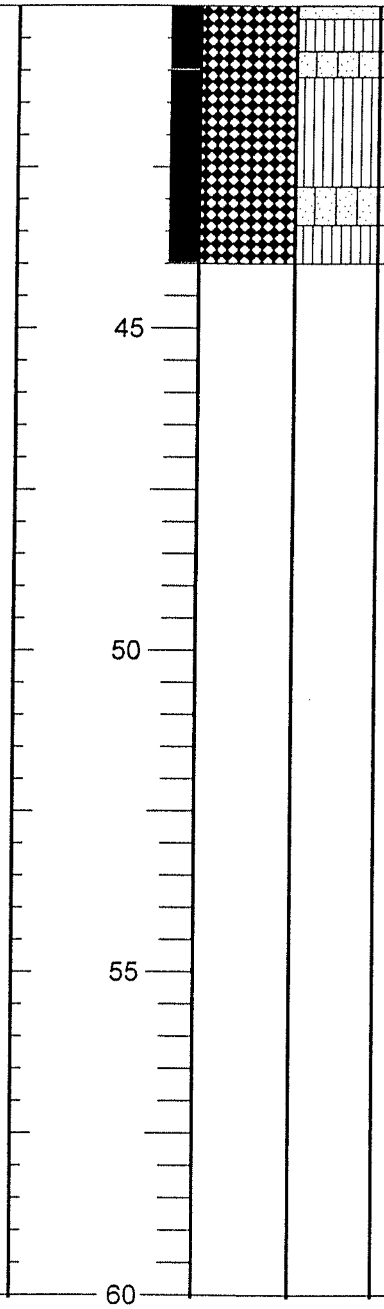
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Russell Thompson

BORING NO. SP-31
PAGE 3 of 3
GROUND ELEV. 22.82'
TOTAL DEPTH 44.0'
DATE COMPLETED 12/11/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
SP-31-41 (SS)	41-44	1.0						**20.2 to 40.2 feet: SAND (SP)**, continued. **40.2 to 40.7 feet: SILT (ML)**, brown, medium plasticity, wet. **40.7 to 41.1 feet: SILTY SAND (SM)**, grayish brown, fine, some silt, wet. **41.1 to 42.8 feet: SILT (ML)**, dark gray, medium plasticity, wet. **42.8 to 43.4 feet: SILTY SAND (SM)**, dark gray, fine, little silt, wet. **43.4 to 44.0 feet: SILT WITH SAND (ML)**, dark gray, low plasticity, little fine sand, wet. Total depth drilled = 44.0 feet. Total depth sampled = 44.0 feet. Boring abandoned with bentonite grout and an asphalt patch.



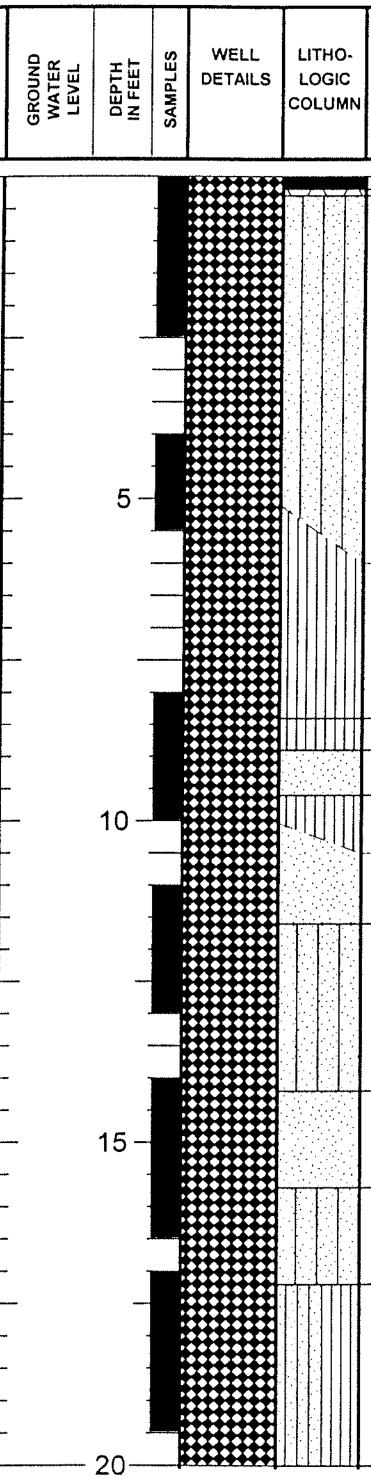
REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

IT CORPORATION

LOG OF EXPLORATORY BORING

PROJECT NAME	**Kent Facility**	BORING NO.	**SP-32**
LOCATION	**Kent**	PAGE	**1 of 2**
DRILLED BY	**TEG**	GROUND ELEV.	**23.04'**
DRILL METHOD	**Strataprobe**	TOTAL DEPTH	**32.0'**
LOGGED BY	**Russell Thompson**	DATE COMPLETED	**12/14/00**

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	0
(SP)	4-8	0
(SS)	8-11	0
SP-32-11 (SS)	11-14	46
SP-32-14 (SS)	14-17	135
SP-32-17 (SS)	17-20	431



LITHOLOGIC DESCRIPTION

0 to 0.2 foot: ASPHALT

0.2 to 0.3 foot: CRUSHED ROCK

0.3 to 6.0 feet: SILTY SAND WITH GRAVEL (SM), brown, fine to medium, some silt, little fine gravel, damp.

@ 4.6 to 4.8 feet: SILT (ML), gray, low plasticity, few fine sand, moist.

6.0 to 8.4 feet: SILT (ML), olive green, medium plasticity, wet.

8.4 to 8.9 feet: SANDY SILT (ML), olive green, some fine sand.

8.9 to 9.6 feet: SAND (SP), gray, fine, trace silt.

9.6 to 10.5 feet: SILT (ML), olive green, medium plasticity, few fine to medium sand, wet.

10.5 to 11.6 feet: SAND (SP), gray, fine, trace silt, wet.

11.6 to 14.2 feet: SILTY SAND (SM), brown, fine, little silt, wet.

14.2 to 15.7 feet: SAND (SP), dark, fine, trace silt, wet.

15.7 to 17.2 feet: SILTY SAND (SM), grayish brown, fine, some silt, wet.

17.2 to 22.5 feet: SILTY SAND INTERBEDDED WITH SANDY SILT (SM/ML), brown, fine sand, medium plasticity silt, organic debris.

IT CORPORATION

REMARKS

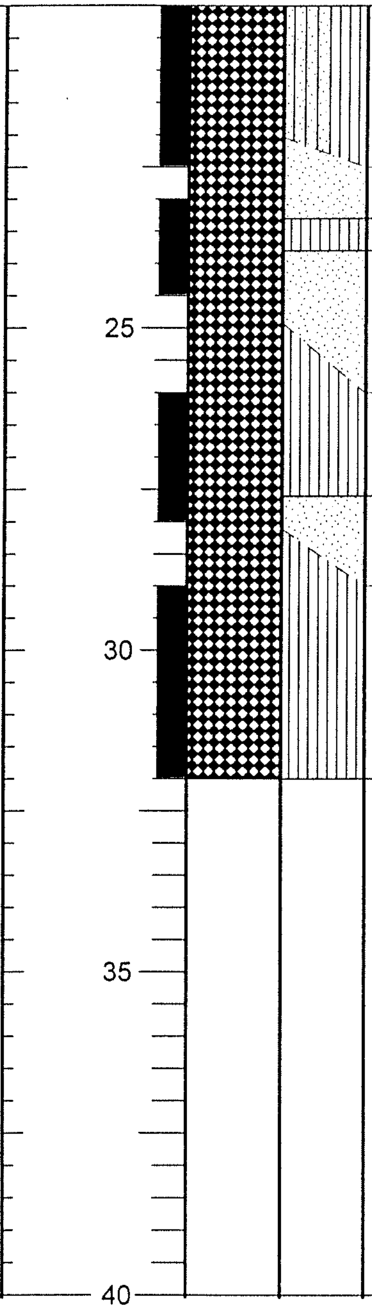
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.

(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-32
LOCATION	Kent	PAGE	2 of 2
DRILLED BY	TEG	GROUND ELEV.	23.04'
DRILL METHOD	Strataprobe	TOTAL DEPTH	32.0'
LOGGED BY	Russell Thompson	DATE COMPLETED	12/14/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
SP-32-20 (SS)	20-23	347
SP-32-23 (SS)	23-26	241
SP-32-26 (SS)	26-29	460
SP-32-28 (SS)		
SP-32-29 (SS)	29-32	219
SP-32-30 (SS)		



LITHOLOGIC DESCRIPTION

17.2 to 22.5 feet: SILTY SAND INTERBEDDED WITH SANDY SILT (SM/ML), continued.

22.5 to 23.3 feet: SAND (SP), brownish gray, fine, trace silt, wet.

23.3 to 23.8 feet: SILT WITH SAND (ML), brown, low plasticity, little fine sand, organic debris, wet.

23.8 to 26.0 feet: SAND (SP), dark gray, fine to medium, trace silt, wet.

26.0 to 27.6 feet: SILT (ML), brown, medium plasticity, organic and root debris.

27.6 to 29.0 feet: SAND (SP), dark gray, fine, trace silt, wet.

29.0 to 32.0 feet: SILT (ML), brown, medium plasticity, organic and root debris, wet.

Total depth drilled = 32.0 feet.
Total depth sampled = 32.0 feet.

Boring abandoned with bentonite grout and an asphalt patch.

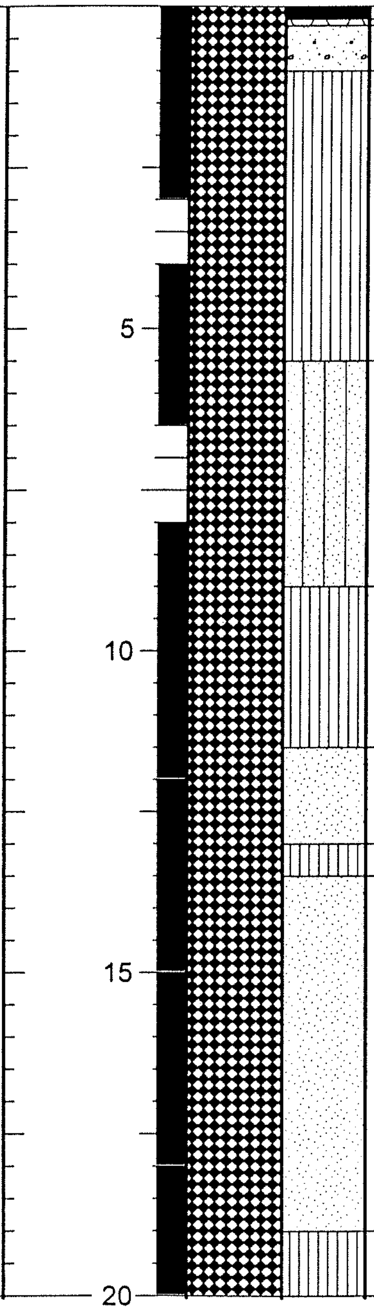
IT CORPORATION

REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Kent Facility**	BORING NO.	**SP-33**
LOCATION	**Kent**	PAGE	**1 of 2**
DRILLED BY	**TEG**	GROUND ELEV.	**21.63'**
DRILL METHOD	**Strataprobe**	TOTAL DEPTH	**36.0'**
LOGGED BY	**Erin McQuillan**	DATE COMPLETED	**12/14/00**

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	0
(SP)	4-8	0
(SP)	8-12	0
SP-33-11 (SS)		
(SS)	12-15	5.5
SP-33-13		
SP-33-14		
(SS)	15-18	0
SP-33-17		
(SS)	18-21	0



LITHOLOGIC DESCRIPTION

0 to 0.2 foot: ASPHALT

0.2 to 0.3 foot: CRUSHED ROCK AND CONCRETE

0.3 to 1.0 foot: GRAVELLY SAND (SW), brown, medium to coarse, some fine to medium gravel, damp.

1.0 to 5.5 feet: SILT (ML), dark gray, low plasticity, trace fine sand, organic material, damp.

5.5 to 9.0 feet: SILTY SAND (SM), greenish gray, fine sand, some silt, damp to moist.

@ 7.0 feet: black, moist.

9.0 to 11.5 feet: SILT (ML), pinkish gray, medium plasticity, trace fine sand, organic material, wet.

11.5 to 13.0 feet: SAND (SP), dark gray, fine to medium, wet.

13.0 to 13.5 feet: SILT (ML), pinkish gray, medium plasticity, trace fine sand, wet.

13.5 to 19.0 feet: SAND (SP), grayish brown, fine to medium, few silt, wet.

19.0 to 20.0 feet: SILT (ML), grayish brown, medium plasticity, few fine sand, wet.

IT CORPORATION

REMARKS

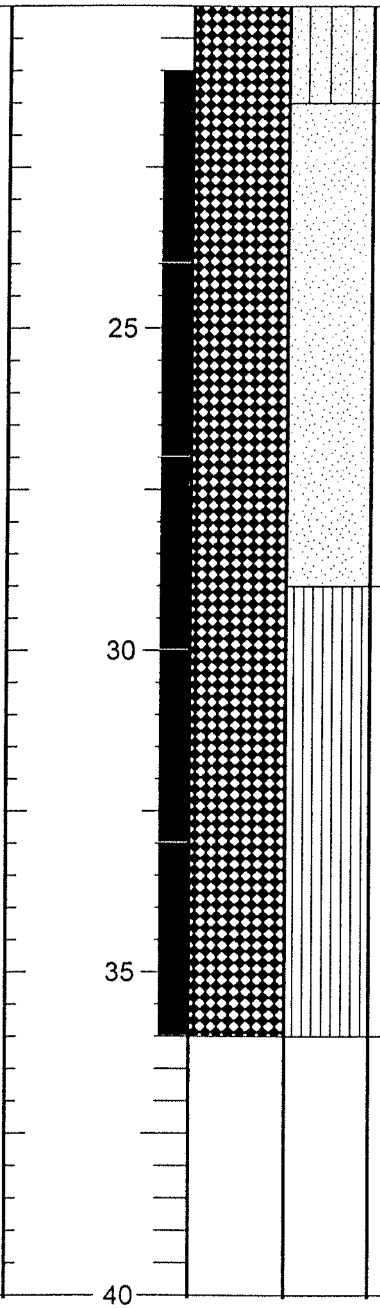
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.

(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Kent Facility**	BORING NO.	**SP-33**
LOCATION	**Kent**	PAGE	**2 of 2**
DRILLED BY	**TEG**	GROUND ELEV.	**21.63'**
DRILL METHOD	**Strataprobe**	TOTAL DEPTH	**36.0'**
LOGGED BY	**Erin McQuillan**	DATE COMPLETED	**12/14/00**

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
SP-33-20		
SP-33-21 (SS)	21-24	0
(SS)	24-27	0
SP-33-27 (SS)	27-30	0
SP-33-3 (SS)	30-33	0
(SS)	33-36	0



LITHOLOGIC DESCRIPTION

20.0 to 21.5 feet: SILTY SAND (SM), grayish brown, fine, little silt, wet.

21.5 to 29.0 feet: SAND (SP), dark gray, fine to medium, wet.

@ 2.0 to 28.0 feet: SILTY SAND (SM), brown, fine, few silt, wet.

29.0 to 36.0 feet: SILT (ML), pinkish brown to gray, low plasticity, trace fine sand, moist.

@ 32.0 feet: few fine sand.

Total depth drilled = 36.0 feet.
Total depth sampled = 36.0 feet.

Boring abandoned with bentonite grout and an asphalt patch.

IT CORPORATION

REMARKS

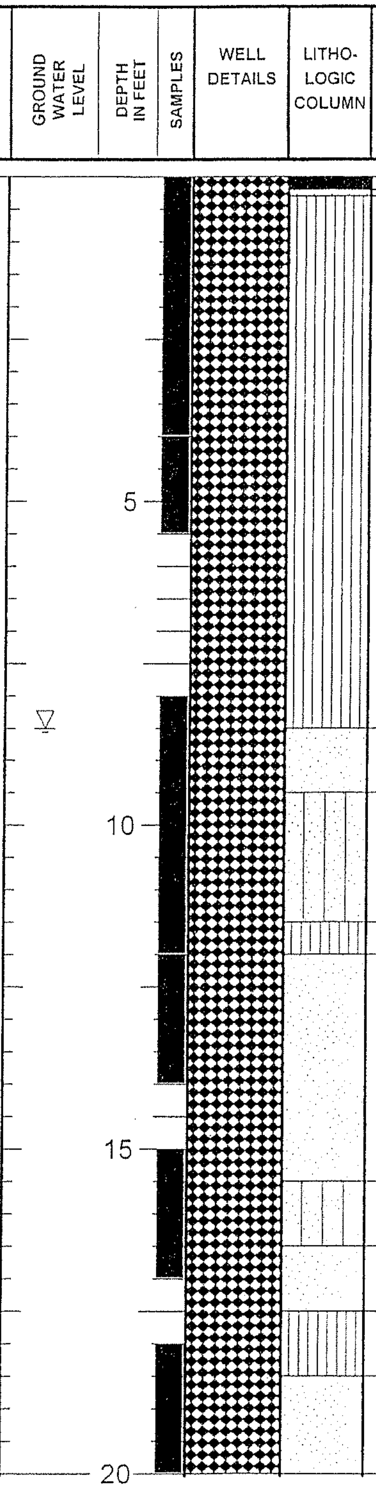
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Erin McQuillan

BORING NO. SP-34
PAGE 1 of 3
GROUND ELEV. 21.31'
TOTAL DEPTH 42.0'
DATE COMPLETED 12/14/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	0
(SP)	4-8	0
(SP)	8-12	0
(SS)	12-15	0
(SS) SP-34-16	15-18	0
SP-34-18 (SS)	18-21	0



LITHOLOGIC DESCRIPTION

0 to 0.2 foot: ASPHALT

0.2 to 0.3 foot: CRUSHED ROCK AND GRAVELLY SAND

0.3 to 8.5 feet: SILT WITH SAND (ML), gray, low plasticity, little fine sand, organic material, damp.

@ 3.0 feet: medium plasticity, trace sand.

8.5 to 9.5 feet: SAND (SP), gray, fine, trace silt, wet.

9.5 to 11.5 feet: SILTY SAND (SM), gray, fine, some silt, wet.

11.5 to 12.0 feet: SILT (ML), pinkish greenish brown, medium plasticity, few fine sand, wet.

12.0 to 15.5 feet: SAND (SP), brown, fine to medium, wet.

15.5 to 16.5 feet: SILTY SAND (SM), brown, fine, some silt, wet.

16.5 to 17.5 feet: SAND (SP), brown, fine to medium, wet.

17.5 to 18.5 feet: SILT (ML), gray, medium plasticity, trace fine sand, wet.

18.5 to 30.5 feet: SAND (SP), gray, fine to medium, wet.

IT CORPORATION

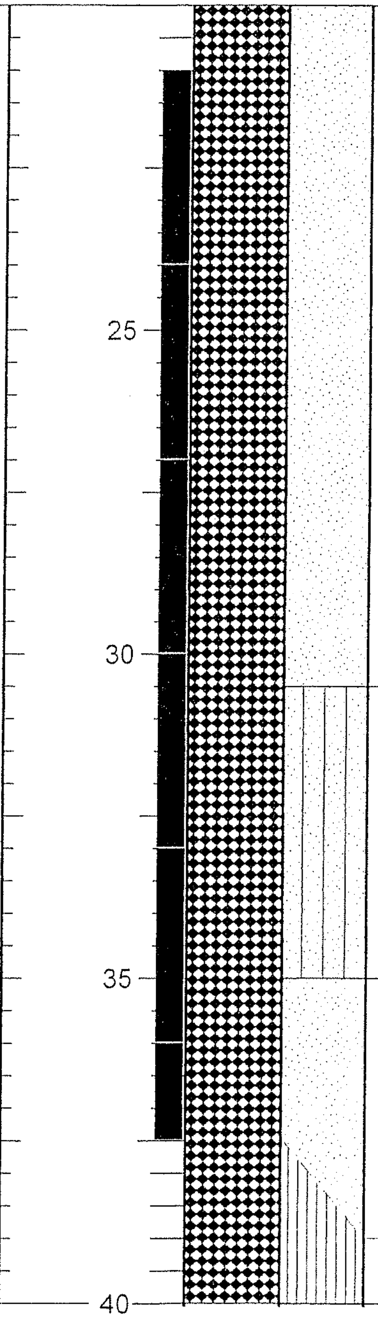
REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Erin McQuillan

BORING NO. SP-34
PAGE 2 of 3
GROUND ELEV. 21.31'
TOTAL DEPTH 42.0'
DATE COMPLETED 12/14/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
SP-34-20 (SS)	21-24	0
SP-34-23 (SS)	24-27	0
(SS)	27-30	0
SP-34-30 (SS)	30-33	87
(SS)	33-36	48
SP-34-36 SP-34-A (dup.) (SS)	36-39	



LITHOLOGIC DESCRIPTION

18.5 to 30.5 feet: SAND (SP), continued.

@ 21.5 to 22.0 feet: SILTY SAND (SM), brown, fine, some silt.

@ 22.5 to 23.0 feet: SILTY SAND (SM), brown, fine, some silt.

30.5 to 35.0 feet: SILTY SAND (SM), brown to gray, fine to medium, little silt, organic debris, wet.

@ 31.5 to 32.0 feet: SILT (ML), pink, medium plasticity, wet.

@ 34.3 to 34.5 feet: wood debris.

35.0 to 39.0 feet: SAND (SP), dark gray, fine to medium, wet.

39.0 to 42.0 feet: SILT (ML), gray, medium plasticity, trace fine sand, moist.

IT CORPORATION

REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	**Kent Facility**	BORING NO.	**SP-34**
LOCATION	**Kent**	PAGE	**3 of 3**
DRILLED BY	**TEG**	GROUND ELEV.	**21.31'**
DRILL METHOD	**Strataprobe**	TOTAL DEPTH	**42.0'**
LOGGED BY	**Erin McQuillan**	DATE COMPLETED	**12/14/00**

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
(SS)	39-42	0			■	▦	▥	**39.0 to 42.0 feet: SILT (ML)**, continued. @ 41.0 feet: low plasticity, few fine sand.
								Total depth drilled = 42.0 feet. Total depth sampled = 42.0 feet. Boring abandoned with bentonite grout and an asphalt patch.
				45				
				50				
				55				
				60				

IT CORPORATION

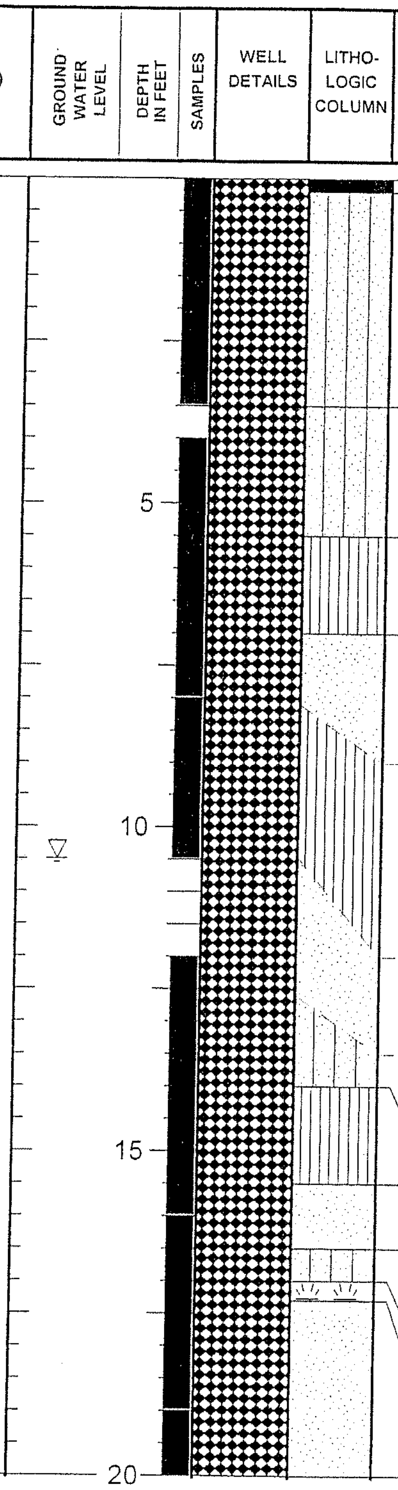
REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Erin McQuillan

BORING NO. SP-35
PAGE 1 of 2
GROUND ELEV. 24.22'
TOTAL DEPTH 37.0'
DATE COMPLETED 12/13/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	0
(SP)	4-8	0
(SP)	8-12	0
SP-35-12 (SP)	12-16	0
SP-35-14		
SP-35-16 (SS)	16-19	0
(SS)	19-22	0



LITHOLOGIC DESCRIPTION

0 to 0.2 foot: ASPHALT

0.2 to 3.5 feet: SILTY SAND WITH GRAVEL (SM)

3.5 to 5.5 feet: SILTY SAND (SM), dark brown, fine, little silt, damp.

@ 5.0 feet: becomes gray mottled orange.

5.5 to 7.0 feet: SANDY SILT (ML), gray, low plasticity, some fine sand, moist.

7.0 to 9.0 feet: SAND (SP), gray, fine, trace silt, moist.

9.0 to 12.0 feet: SILT (ML), gray, medium plasticity, trace fine sand, wood debris, moist.

12.0 to 13.5 feet: SAND (SP), gray, fine, trace silt, wet.

13.5 to 14.0 feet: SILTY SAND (SM), gray, fine, little silt, wet.

14.0 to 15.5 feet: SILT (ML), greenish pinkish gray, medium plasticity, scattered root debris, moist.

15.5 to 16.5 feet: SAND (SP), dark gray, fine to medium, wet.

16.5 to 17.0 feet: SILTY SAND (SM), light brown, fine, little silt, wet.

17.0 to 17.3 feet: PEAT (PT)

17.3 to 33.0 feet: SAND (SP), dark gray, fine to medium, wet.

@ 18.0 to 18.3 feet: SILTY SAND (SM), light brown, fine, little silt.

IT CORPORATION

REMARKS

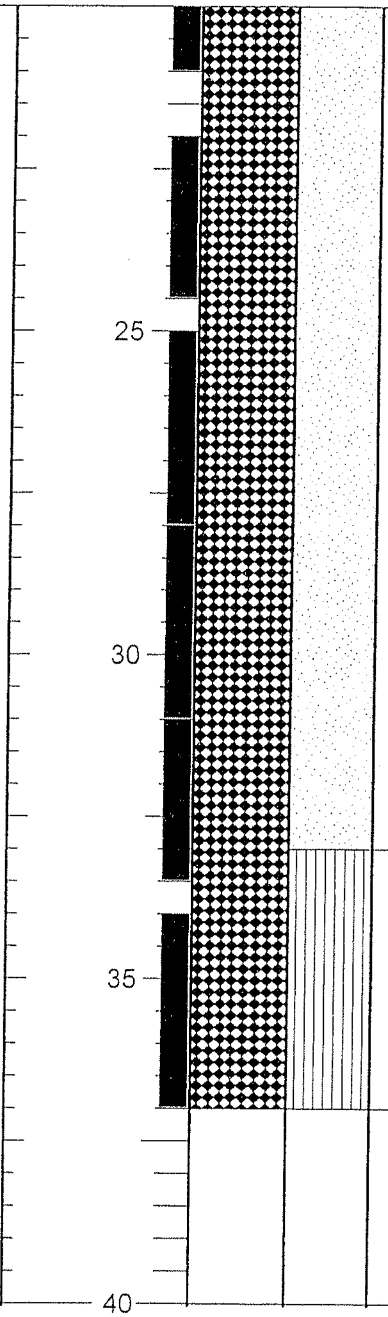
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Erin McQuillan

BORING NO. SP-35
PAGE 2 of 2
GROUND ELEV. 24.22'
TOTAL DEPTH 37.0'
DATE COMPLETED 12/13/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SS)	22-25	0
(SS)	25-28	0
(SS)	28-31	0
SP-35-31 (SS)	31-34	139
SP-35-33		
SP-35-34 (SS)	34-37	



LITHOLOGIC DESCRIPTION

17.3 to 33.0 feet: SAND (SP), continued.
@ 19.7 feet: PEAT (PT), 0.1-inches thick.

@ 21.5 feet: PEAT (PT) 0.1-inches thick.

@ 23.0 to 23.5 feet: PEAT (PT), yellowish brown, wet.

@ 27.0 feet: medium to coarse sand.

@ 30.0 feet: fine to medium sand.

33.0 to 37.0 feet: SILT (ML), brownish gray, low plasticity, few fine sand, moist.

Total depth drilled = 37.0 feet.
Total depth sampled = 37.0 feet.

Boring abandoned with bentonite grout and an asphalt patch.

REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

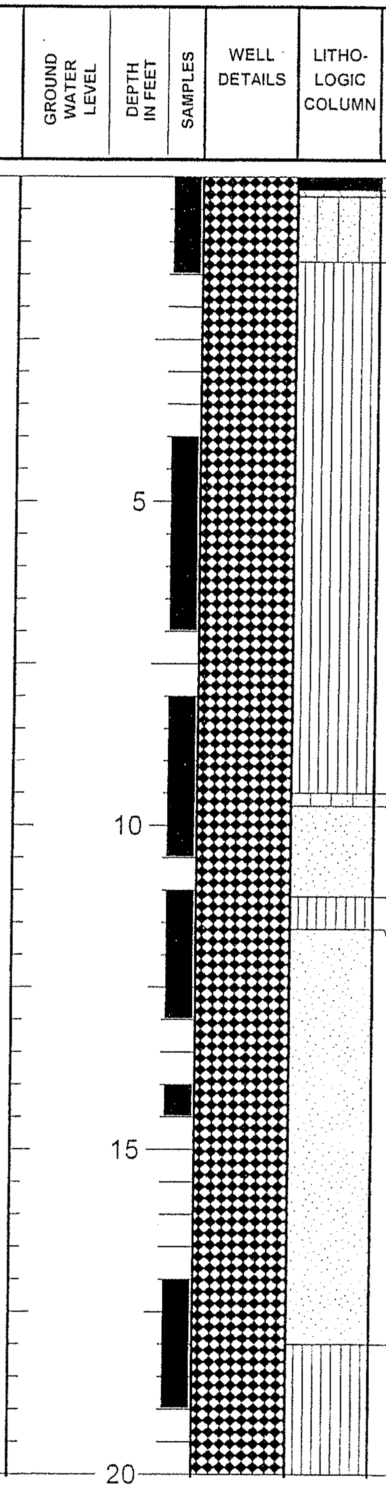
IT CORPORATION

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Russell Thompson

BORING NO. SP-36
PAGE 1 of 3
GROUND ELEV. 22.68'
TOTAL DEPTH 44.0'
DATE COMPLETED 12/14/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	0
(SP)	4-8	0
(SS)	8-11	0
SP-36-11 (SS) SP-36-12	11-14	0
(SS)	14-17	0
SP-36-17 (SS) SP-36-18	17-20	10



LITHOLOGIC DESCRIPTION

0 to 0.2 foot: ASPHALT

0.2 to 0.3 foot: CRUSHED ROCK

0.3 to 1.3 feet: SILTY SAND WITH GRAVEL (SM), brown, fine to medium, little silt, few fine to medium gravel, damp.

1.3 to 9.5 feet: SILT (ML), brownish gray, mottled orange, low plasticity, damp.

@ 1.5 feet: medium plasticity, trace sand.

@ 8.8 feet: grayish olive green in color.

9.5 to 9.7 feet: SILTY SAND (SM), dark gray, fine, little silt, wet.

9.7 to 11.1 feet: SAND (SP), dark gray, fine, trace silt, wet.

11.1 to 11.6 feet: SILT (ML), pinkish olive gray, medium plasticity, organic debris, wet.

11.6 to 18.0 feet: SAND (SP), dark gray, fine, trace silt, wet.

@ 17.0 to 17.3 feet: SILT (ML), gray, low plasticity, few fine sand.

18.0 to 23.1 feet: SILT (ML), gray, medium plasticity, few fine sand, interbedded with SILTY SAND (SM), fine.

IT CORPORATION

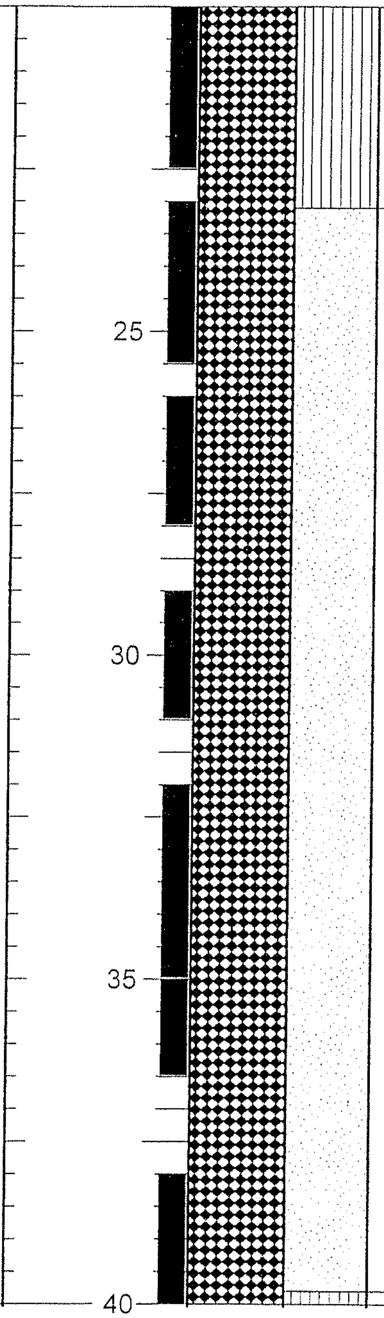
REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Russell Thompson

BORING NO. SP-36
PAGE 2 of 3
GROUND ELEV. 22.68'
TOTAL DEPTH 44.0'
DATE COMPLETED 12/14/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
SP-36-20 SP-36A (dup.) (SS)	20-23	254
SP-36-23 (SS)	23-26	329
(SS)	26-29	52
(SS)	29-32	2
(SS)	32-35	0
(SS)	35-38	42
SP-36-38 (SS)	38-41	0



LITHOLOGIC DESCRIPTION

18.0 to 23.1 feet: **SILT (ML)**, continued.

23.1 to 39.8 feet: **SAND (SP)**, dark, fine, trace silt, wet.

@ 24.3 to 24.5 feet: SILT (ML) layer, brown, medium plasticity, wet.

@ 35.9 to 36.1 feet: SILT (ML), brownish pink, low to medium plasticity, trace fine sand.

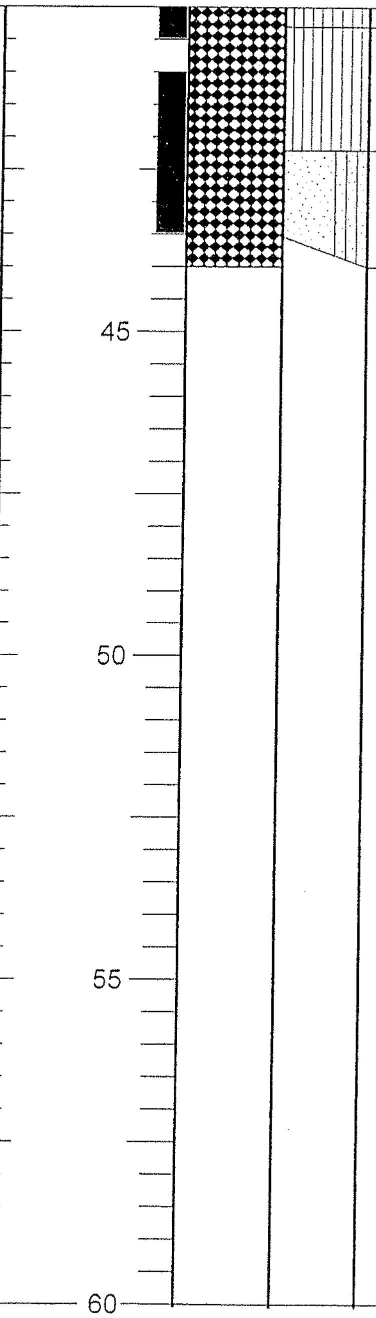
IT CORPORATION

REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-36
LOCATION	Kent	PAGE	3 of 3
DRILLED BY	TEG	GROUND ELEV.	22.68'
DRILL METHOD	Strataprobe	TOTAL DEPTH	44.0'
LOGGED BY	Russell Thompson	DATE COMPLETED	12/14/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
SP-36-40		
SP-36-41 (SS)	41-44	0



LITHOLOGIC DESCRIPTION

39.8 to 40.3 feet: SILT (ML), gray, medium plasticity, few fine sand, interbedded with SILTY SAND (SM), wet.

40.3 to 42.2 feet: SILT (ML), gray, medium plasticity, wet.

42.2 to 44.0 feet: SILTY SAND INTERBEDDED WITH SAND (SP/SM), fine, gray, wet.

Total depth drilled = 44.0 feet.
Total depth sampled = 44.0 feet.

Boring abandoned with bentonite grout and an asphalt patch.

IT CORPORATION

REMARKS

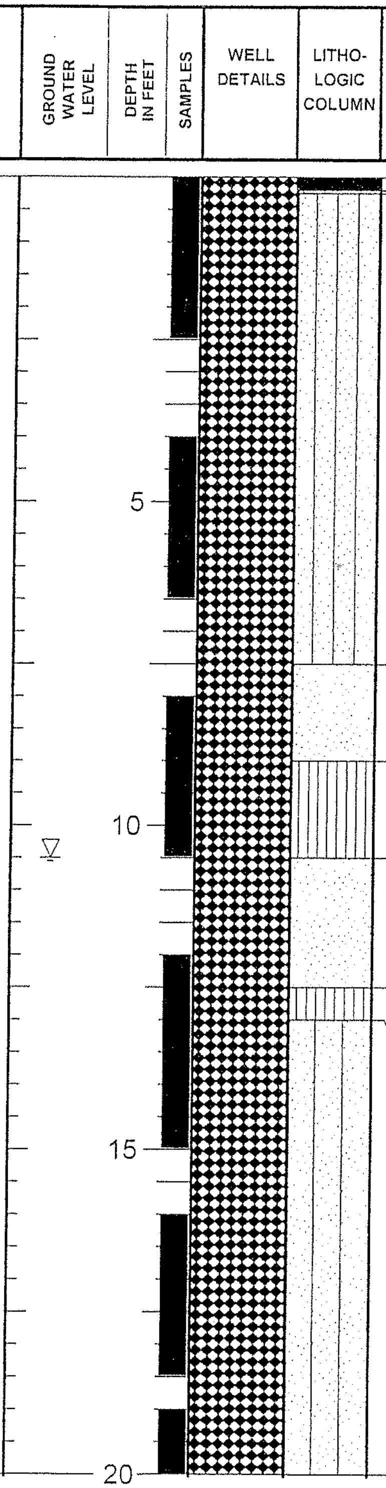
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Erin McQuillan

BORING NO. SP-37
PAGE 1 of 2
GROUND ELEV. 23.65'
TOTAL DEPTH 35.0'
DATE COMPLETED 12/18/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	0
(SP)	4-8	62
SP-37-8 SP-37-9 (SP)	8-12	105
SP-37-11		
SP-37-12 (SP)	12-16	280
SP-37-14		
(SS)	16-19	104
(SS)	19-22	0



LITHOLOGIC DESCRIPTION

0 to 0.2 foot: ASPHALT

0.2 to 0.25 foot: CRUSHED ROCK

0.25 to 7.5 feet: SAND WITH SILT AND GRAVEL (SM), tan, fine to medium, few silt, few fine to medium gravel, damp.

@ 3.5 to 5.5 feet: SAND (SP), tan, fine to medium, damp.

7.5 to 9.0 feet: SAND (SP), gray mottled orange, fine to medium, damp.

9.0 to 10.5 feet: SILT (ML), gray, medium plasticity, moist.

10.5 to 12.5 feet: SAND (SP), dark gray, fine to medium, trace silt, wet, slight odor.

12.5 to 13.0 feet: SILT (ML), greenish gray, medium plasticity, trace fine sand, scattered shell debris, wet.

13.0 to 32.0 feet: SAND WITH SILT (SP-SM), gray, fine to medium, few silt, wet.

@ 18.5 to 18.8 feet: wood debris.

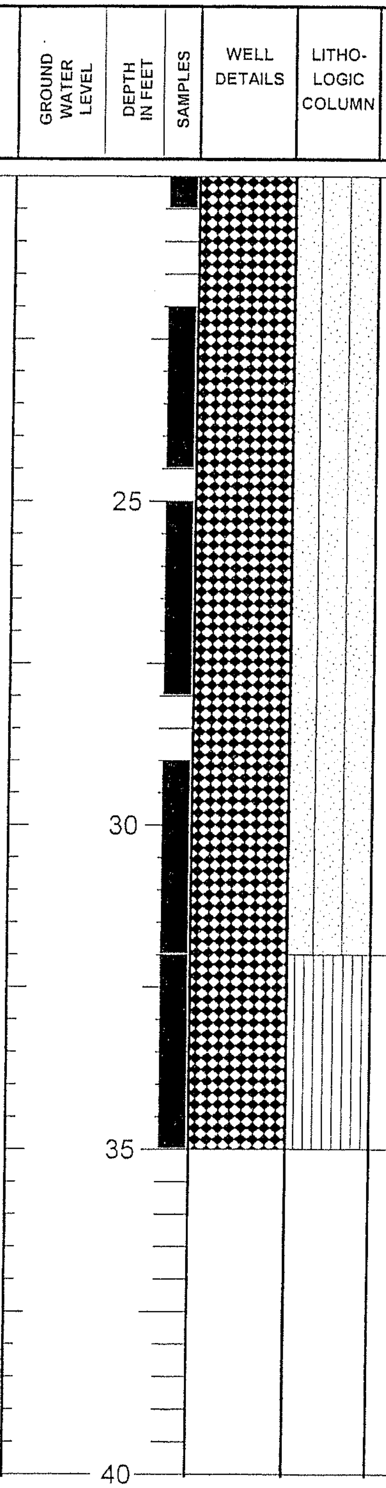
IT CORPORATION

REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-37
LOCATION	Kent	PAGE	2 of 2
DRILLED BY	TEG	GROUND ELEV.	23.65'
DRILL METHOD	Strataprobe	TOTAL DEPTH	35.0'
LOGGED BY	Erin McQuillan	DATE COMPLETED	12/18/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SS)	22-25	0
(SS)	25-28	0
(SS) SP-37-30	29-32	109
SP-37-32 (SS)	32-35	0



LITHOLOGIC DESCRIPTION

13.0 to 32.0 feet: SAND WITH SILT (SP-SM), continued.
@ 20.0 to 22.0 feet: wood debris.

@ 22.5 feet: fine to coarse sand.

@ 23.5 to 24.0 feet: PEAT (PT), brown, wood debris, wet.

@ 29.0 to 29.5 feet: SILT (ML), brown, medium plasticity, trace fine sand, wet.
@ 30.0 feet: slight visible sheen, uncharacteristic sweet odor.

32.0 to 35.0 feet: SILT (ML), brownish gray, medium plasticity, wet.

@ 33.5 feet: damp, scattered organic material.

Total depth drilled = 35.0 feet.
Total depth sampled = 35.0 feet.

Boring abandoned with bentonite grout and an asphalt patch.

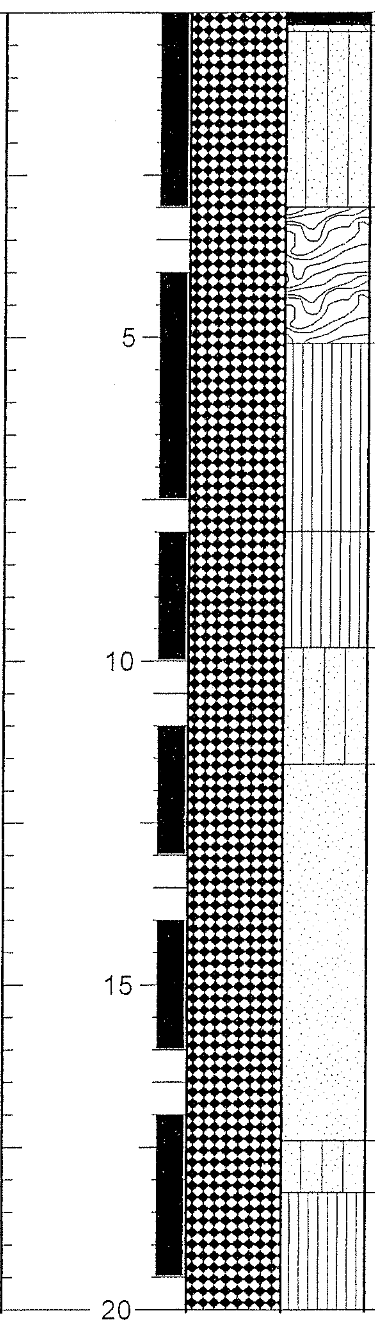
IT CORPORATION

REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-38
LOCATION	Kent	PAGE	1 of 2
DRILLED BY	TEG	GROUND ELEV.	25.02'
DRILL METHOD	Strataprobe	TOTAL DEPTH	37.0'
LOGGED BY	Russell Thompson	DATE COMPLETED	12/13/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SP)	0-4	0
SP-38-4 (SP)	4-8	0
SP-38-8 (SS)	8-11	0
(SS)	11-14	0
SP-38-12		
(SS)	14-17	0
SP-38-17 (SS)	17-20	0



LITHOLOGIC DESCRIPTION

0 to 0.2 foot: ASPHALT

0.2 to 0.3 foot: CRUSHED ROCK

0.3 to 3.0 feet: SAND WITH SILT (SM-SW), tan, fine to coarse, few silt, few fine to medium gravel, damp.

3.0 to 5.1 feet: SETTLING POND SLUDGE, ranging from purple, white, blue, to pink.

5.1 to 8.0 feet: SILT WITH SAND (ML), grayish brown, mottled, nonplastic, little fine sand, moist.

@ 6.4 to 6.6 feet: SILTY SAND (SM), brownish gray, fine, little silt, wet.

8.0 to 9.8 feet: SILT (ML), gray, medium plasticity, organic debris.

9.8 to 11.6 feet: SILTY SAND (SM), gray, fine, some silt, wet.

11.6 to 17.4 feet: SAND (SP), dark gray, fine, trace silt, wet.

@ 15.4 feet: SILT (ML) layer, 0.1-inch thick.

17.4 to 18.2 feet: SILTY SAND (SM), grayish brown, fine, some silt, interbedded with SILT (ML), <0.1-inch thick.

18.2 to 20.7 feet: SILT (ML), brown, nonplastic, few fine sand, wet.

IT CORPORATION

REMARKS

(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.

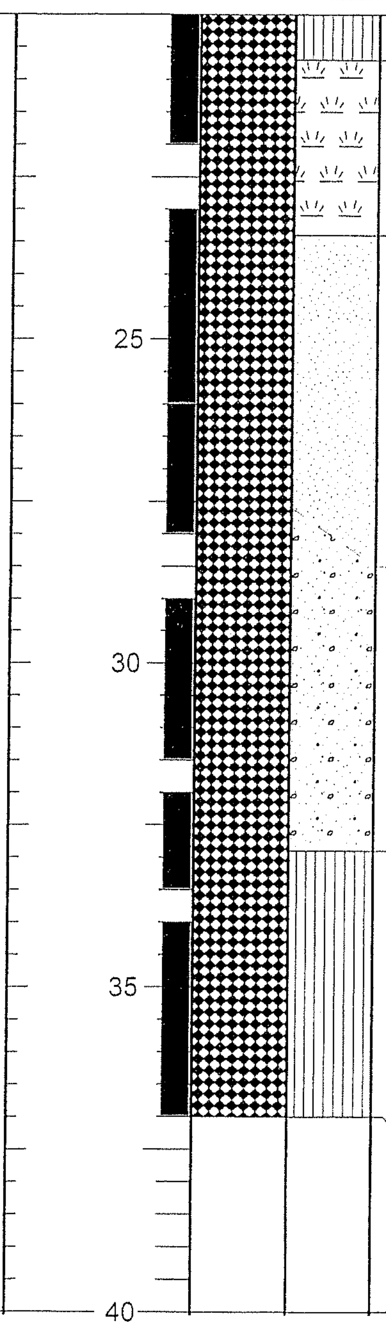
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME Kent Facility
LOCATION Kent
DRILLED BY TEG
DRILL METHOD Strataprobe
LOGGED BY Russell Thompson

BORING NO. SP-38
PAGE 2 of 2
GROUND ELEV. 25.02'
TOTAL DEPTH 37.0'
DATE COMPLETED 12/13/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)
(SS)	20-23	0
SP-38-23 (SS)	23-26	0
(SS)	26-29	0
(SS)	29-32	0
SP-38-30		
SP-38-32 (SS)	32-34	0
(SS)	34-37	0



LITHOLOGIC DESCRIPTION

18.2 to 20.7 feet: SILT (ML), continued.
@ 18.7 feet: medium plastic, root debris.

20.7 to 23.4 feet: PEAT (PT) interbedded with wood debris, few fine sand.

23.4 to 28.5 feet: SAND (SP), dark gray, fine to medium, trace coarse sand, trace silt, wet.

28.5 to 32.9 feet: SAND (SW), fine to coarse, trace fine gravel, trace silt, wet.

32.9 to 37.0 feet: SILT (ML), brown, medium plasticity, trace sand, wet.
@ 33.5 feet: scattered organic and root debris.

@ 36.8 feet: gray, few fine sand.
Total depth drilled = 37.0 feet.
Total depth sampled = 37.0 feet.

Boring abandoned with bentonite grout and an asphalt patch.

IT CORPORATION

REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-38b
LOCATION	Kent	PAGE	1 of 2
DRILLED BY	TEG	GROUND ELEV.	24.97'
DRILL METHOD	Strataprobe	TOTAL DEPTH	27.0'
LOGGED BY	Russell Thompson	DATE COMPLETED	12/13/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
								See SP-38 for lithologic description.
				5				
				10				
Screen 12'-15' SP-38-12	12-15				■			Water sample collected from temporary screen set between 12.0 and 15.0 feet. Sample designated SP-38-12-121300.
				15				
				20				

IT CORPORATION

REMARKS

(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.

(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-38b
LOCATION	Kent	PAGE	2 of 2
DRILLED BY	TEG	GROUND ELEV.	24.97'
DRILL METHOD	Strataprobe	TOTAL DEPTH	27.0'
LOGGED BY	Russell Thompson	DATE COMPLETED	12/13/00

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
Screen 24'-27' SP-38-24	24-27			25	■			Water sample collected from temporary screen set between 24.0 and 27.0 feet. Sample designated SP-38-24-121300.
								Total depth drilled = 27.0 feet. Total depth sampled = 27.0 feet.
				30				
				35				
				40				

IT CORPORATION

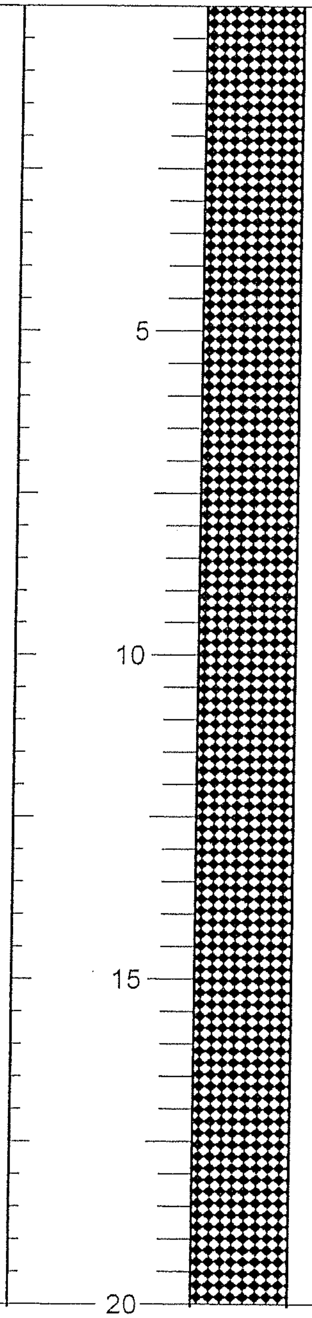
REMARKS

(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.

(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME	Kent Facility	BORING NO.	SP-39
LOCATION	Kent	PAGE	1 of 2
DRILLED BY	TEG	GROUND ELEV.	22.05'
DRILL METHOD	Strataprobe	TOTAL DEPTH	35.0'
LOGGED BY	Erin McQuillan	DATE COMPLETED	12/14/00



SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
								See SP-06 log for lithology. Soil sample not collected until 32.0 feet.

IT CORPORATION

REMARKS

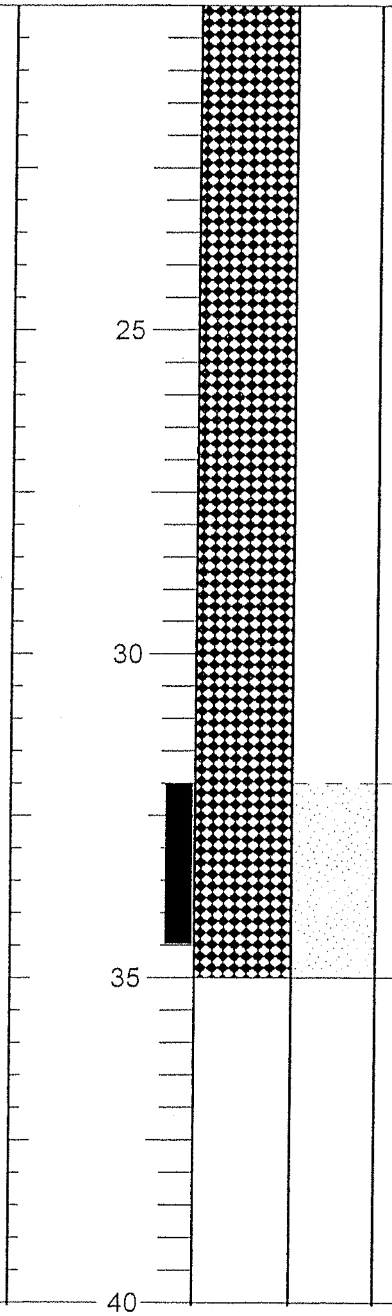
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NAME **Kent Facility**
LOCATION **Kent**
DRILLED BY **TEG**
DRILL METHOD **Strataprobe**
LOGGED BY **Erin McQuillan**

BORING NO. **SP-39**
PAGE **2 of 2**
GROUND ELEV. **22.05'**
TOTAL DEPTH **35.0'**
DATE COMPLETED **12/14/00**

SAMPLE NUMBER (SAMPLE TYPE)	SAMPLE INTERVAL	PID (in ppm)	GROUND-WATER LEVEL	DEPTH IN FEET	SAMPLES	WELL DETAILS	LITHO-LOGIC COLUMN	LITHOLOGIC DESCRIPTION
SP-33 (SS)	32-35	N/A						32.0 to 35.0 feet: SAND (SP), gray, fine to medium, trace silt, wet.
								@ 35.0 feet: SILT (ML), gray. Total depth drilled = 35.0 feet. Total depth sampled = 35.0 feet.



IT CORPORATION

REMARKS
(1) (SP) = 2¼-inch O.D. strataprobe sampler with acetate liner.
(2) SS = 2-inch O.D. split spoon sampler.

LOG OF EXPLORATORY BORING

PROJECT NUMBER S150106

PROJECT NAME HYTEK Soil Contamination

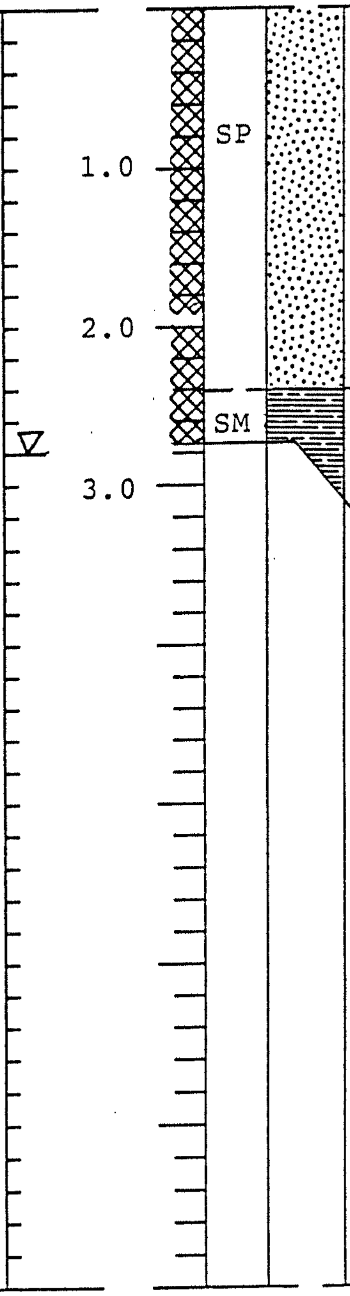
BY JSB DATE 04/11/88

BORING NO. TH-1

PAGE 1 OF 1

SURFACE ELEV.

TOTAL [1] CONCENTRATION OF ORGANICS (PPM) EPA 601/602	PENETRATION (Blows/ Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
0.819					SP	**SANDY FILL** Yellowish gray, sand, fine, dry to moist
7.157		▽			SM	**SANDY SILT** Yellowish gray to olive black and grayish blue green (mottled) sand, very fine, moist to saturated.



REMARKS

1. Field Laboratory Results

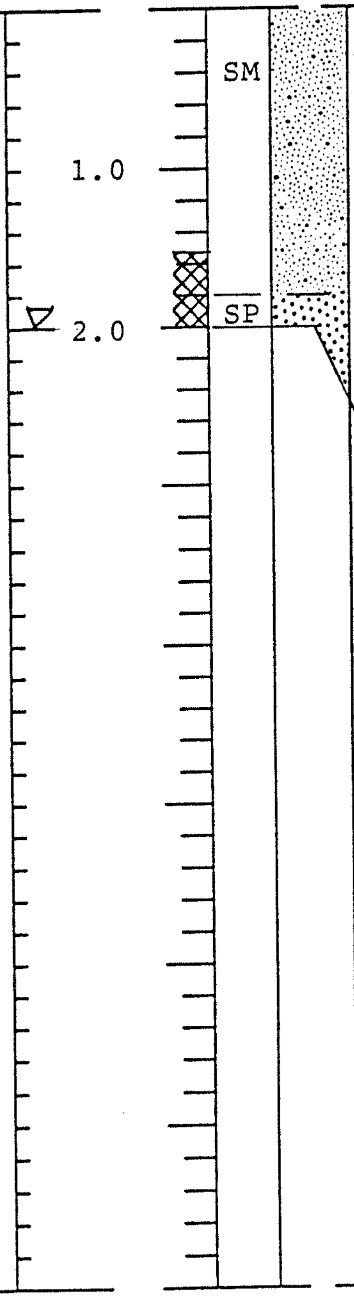
Sweet-Edwards EMCON

PLATE

LOG OF EXPLORATORY BORING

PROJECT NUMBER S150106
PROJECT NAME HYTEK Soil Contamination
BY JSB DATE 04/11/88

BORING NO. TH-2
PAGE 1 OF 1
SURFACE ELEV.



TOTAL[1] CONCENTRATION OF ORGANICS (PPM) EPA 601/602	PENETRATION (Blows/Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
					SM	SILTY SAND Dark yellow brown, sand very fine to fine, numerous organic fragments, dry to moist.
78.694		▽	2.0	☒	SP	SAND Moderate yellow green, fine to very fine, trace to some silt, moist to saturated.

REMARKS
1. Field laboratory results

Sweet-Edwards
EMCON

PLATE

LOG OF EXPLORATORY BORING

PROJECT NUMBER S150106

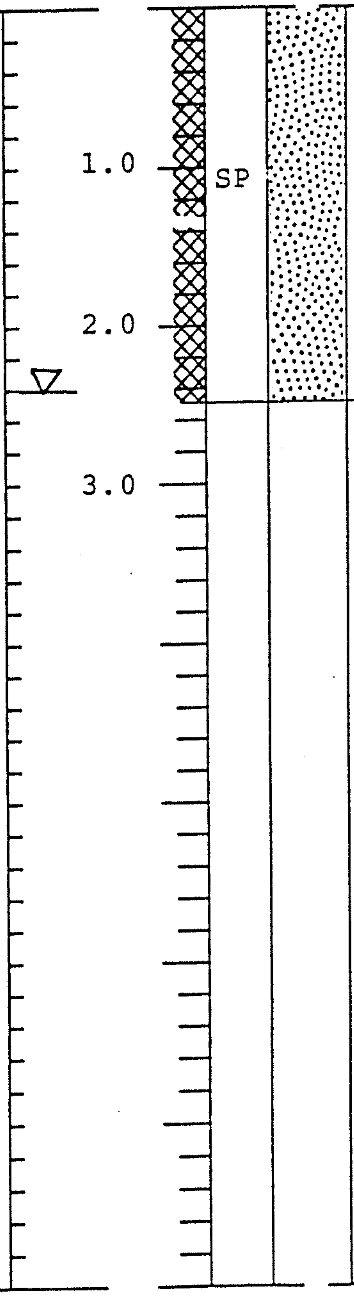
BORING NO. TH-3

PROJECT NAME HYTEK Soil Contamination

PAGE 1 OF 1

BY JSB DATE 04/11/88

SURFACE ELEV.



TOTAL [1] CONCENTRATION OF ORGANICS (PPM) EPA 601/602	PENETRATION (Blows/ Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
4.32 111.744		▽	1.0 2.0 3.0		SP	<u>SAND</u> Dark yellow brown, fine, trace medium, moist to saturated, color change (moderate blue) near base of boring.

REMARKS

1. Field laboratory results

Sweet-Edwards
EMCON

PLATE

LOG OF EXPLORATORY BORING

PROJECT NUMBER S150106

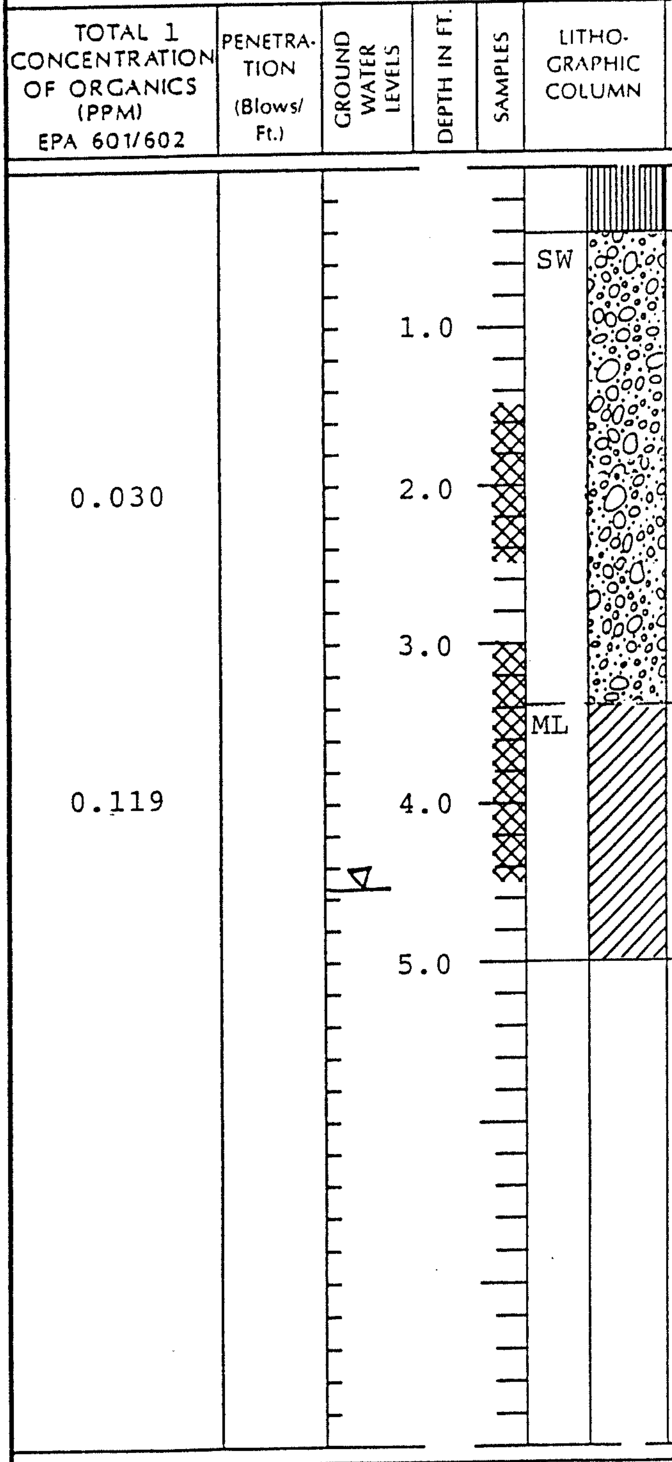
PROJECT NAME HYTEK Soil Contamination

BY JSB DATE 04/12/88

BORING NO. TH-7

PAGE 1 OF 1

SURFACE ELEV.



DESCRIPTION

ASPHALT

GRAVELLY SAND
Light olive brown, sand fine to coarse, gravel, fine to coarse, dry

SILT
Olive gray, organic fragments moist to saturated

REMARKS

1. Field laboratory results

Sweet-Edwards
EMCON

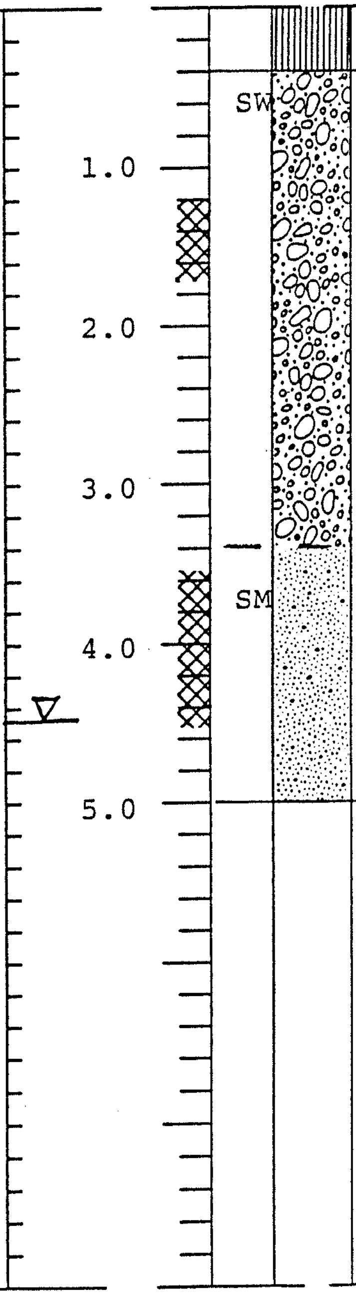
PLATE

LOG OF EXPLORATORY BORING

PROJECT NUMBER S150106
PROJECT NAME HYTEK Soil Contamination
BY JSB DATE 04/12/88

BORING NO. TH-8
PAGE1 OF 1
SURFACE ELEV.

TOTAL CONCENTRATION OF ORGANICS (PPM) EPA 601/602 [1]	PENETRATION (Blows/Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
						ASPHALT
					SW	**GRAVELLY SAND** light olive brown, sand fine to coarse, gravel fine to coarse. Dry.
0.670						
					SM	**SILTY SAND** light olive brown, to olive gray, sand, very fine, interbedded thin silt layers. Moist to saturated.
2.811						



REMARKS

1. Field laboratory results

Sweet-Edwards
EMCON

PLATE

LOG OF EXPLORATORY BORING

PROJECT NUMBER S150106

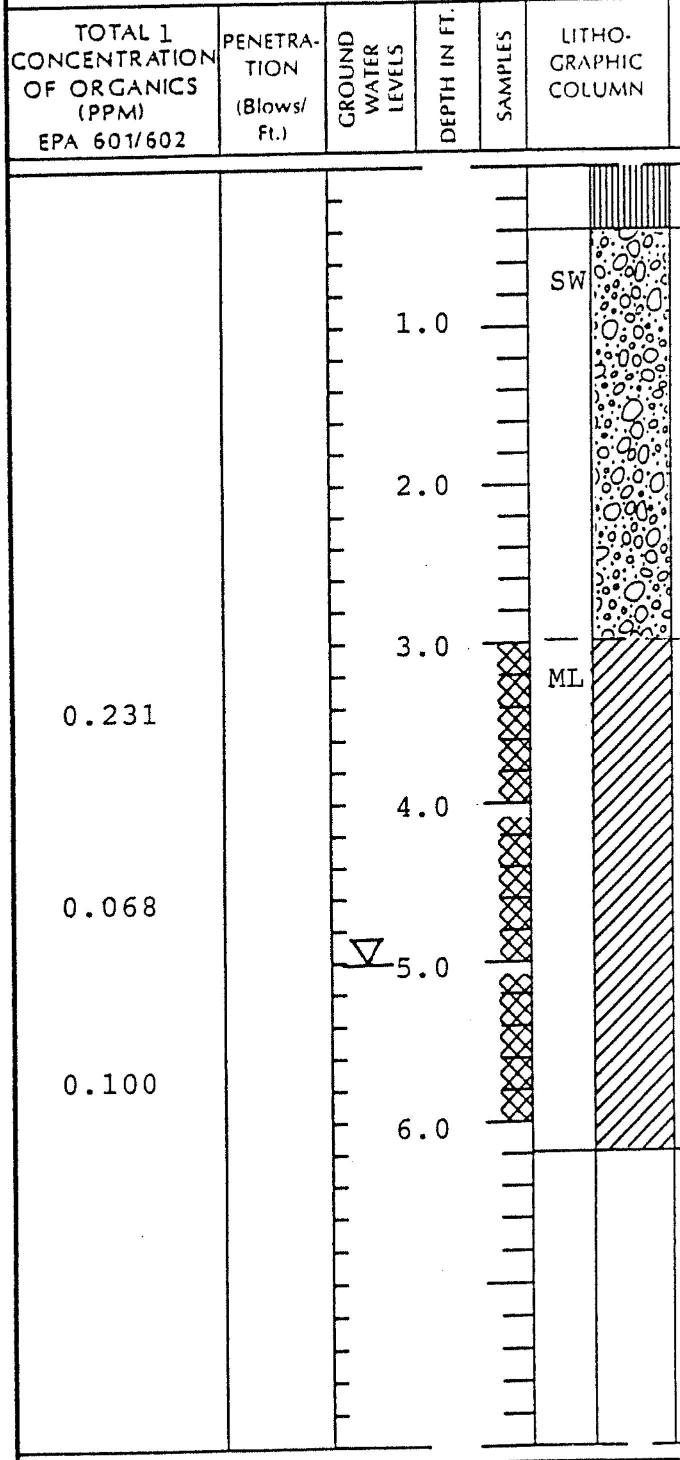
PROJECT NAME HYTEK Soil Contamination

BY JSB DATE 04/13/88

BORING NO. TH-9

PAGE 1 OF 1

SURFACE ELEV.



DESCRIPTION

ASPHALT

GRAVELLY SAND
Light olive brown, sand fine to coarse, gravel fine to coarse. Dry.

SILT
Light olive gray, mottled, numerous organic fragments, moist to saturated.

REMARKS

1. Field laboratory results

Sweet-Edwards
EMCON

PLATE

LOG OF EXPLORATORY BORING

PROJECT NUMBER S150106

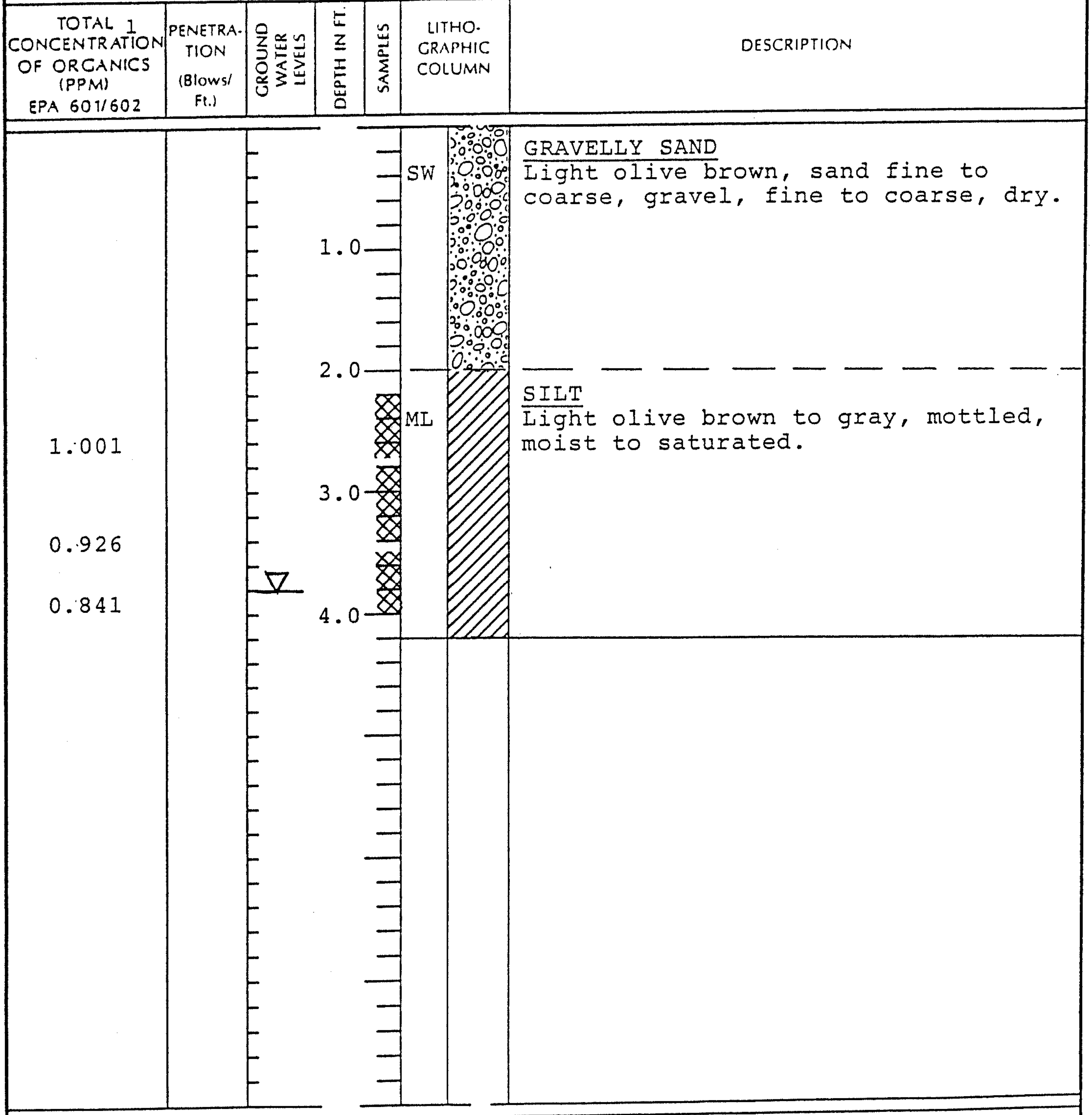
PROJECT NAME HYTEK Soil Contamination

BY JSB DATE 04/12/88

BORING NO.TH-10

PAGE 1OF 1

SURFACE ELEV.



GRAVELLY SAND
Light olive brown, sand fine to coarse, gravel, fine to coarse, dry.

SILT
Light olive brown to gray, mottled, moist to saturated.

REMARKS

1. Field laboratory results

Sweet-Edwards
EMCON

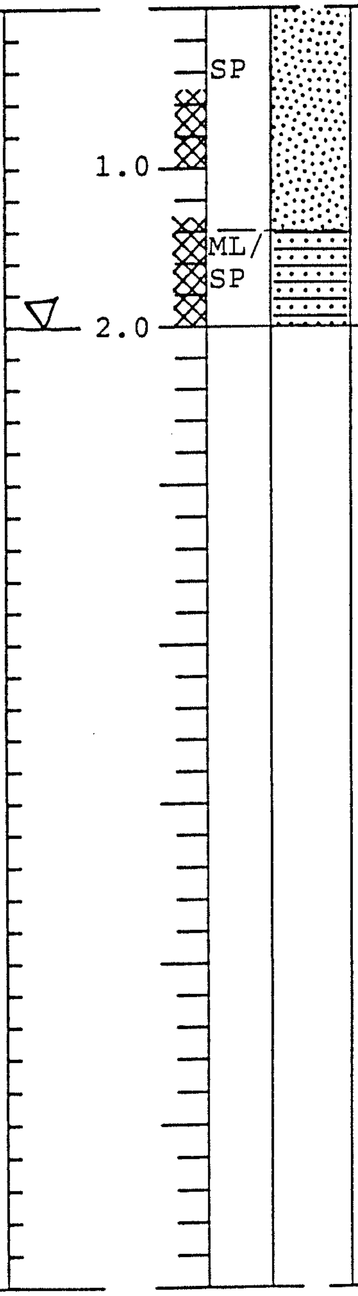
PLATE

LOG OF EXPLORATORY BORING

PROJECT NUMBER S150106
PROJECT NAME HYTEK Soil Contamination
BY JSB DATE 04/13/88

BORING NO. TH-11
PAGE 1OF 1
SURFACE ELEV.

TOTAL 1 CONCENTRATION OF ORGANICS (PPM) EPA 601/602	PENETRATION (Blows/ Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
					SP	SANDY FILL Yellowish gray, sand, fine, numerous organic fragments, dry.
0.100			1.0			
					ML/SP	SILT AND SAND Green to dusky green, sand, fine, moist to saturated.
0.611		▽	2.0			



REMARKS

1. Field laboratory results

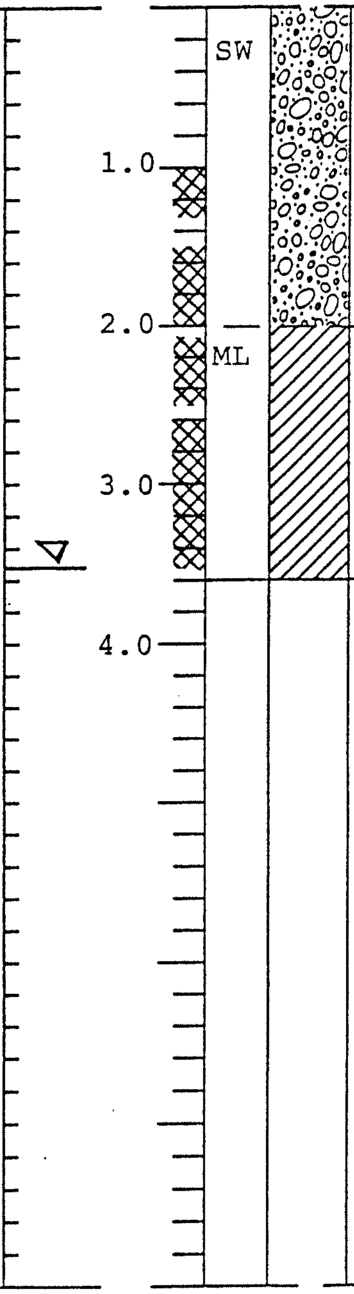
Sweet-Edwards
EMCON

PLATE

LOG OF EXPLORATORY BORING

PROJECT NUMBER S150106 BORING NO. TH-12
PROJECT NAME HYTEK Soil Contamination PAGE1 OF 1
BY JSB DATE 04/13/88 SURFACE ELEV.

TOTAL 1 CONCENTRATION OF ORGANICS (PPM) EPA 601/602	PENETRATION (Blows/Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
					SW	GRAVELLY SAND Light olive brown, sand fine to coarse, gravel fine to coarse, trace silt, dry.
			1.0			
0.217						
0.081			2.0		ML	SILT Light olive brown to gray, moist to saturated.
0.029						
0.041			3.0			
		▽				
			4.0			



REMARKS

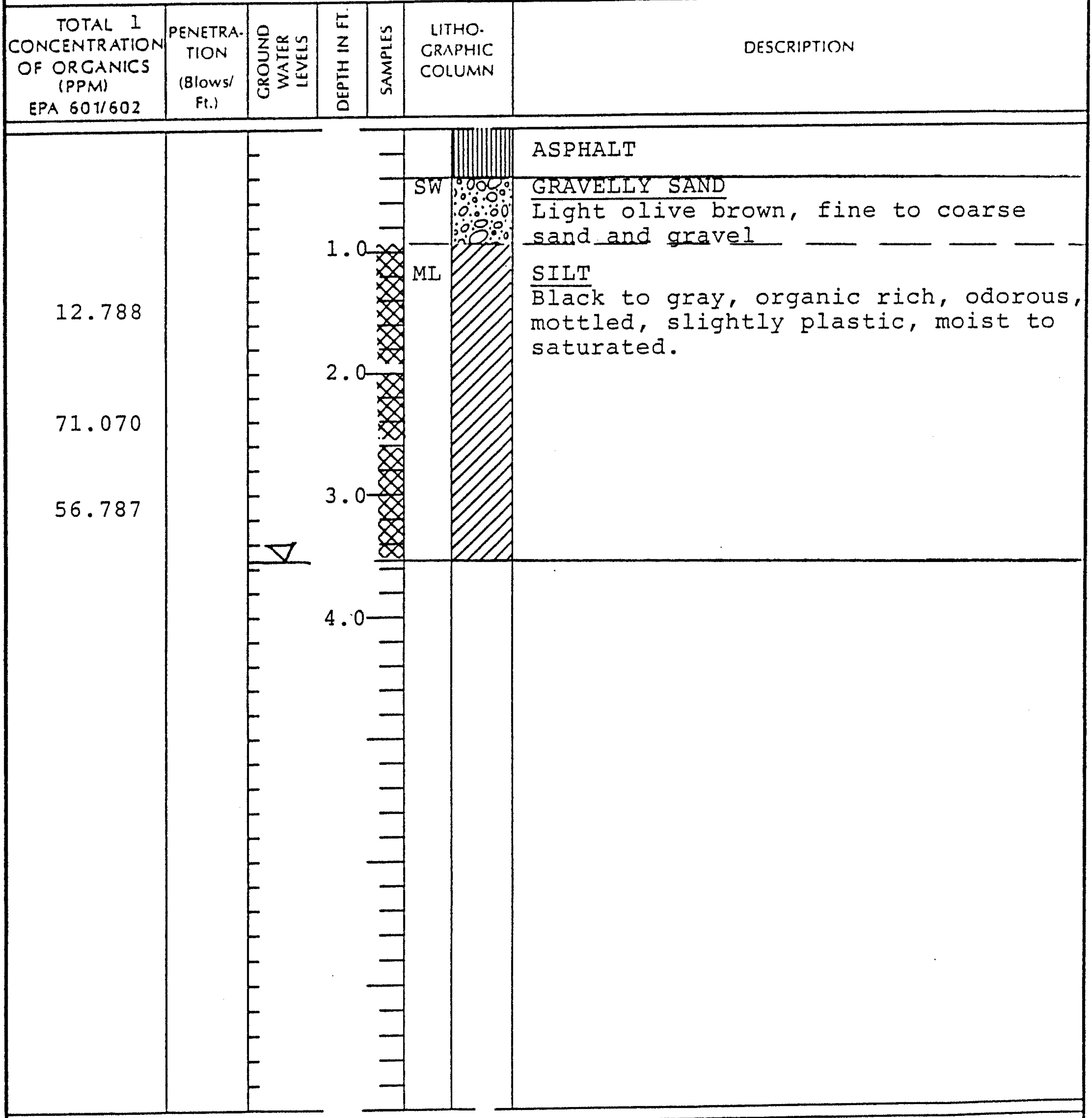
1. Field laboratory results

Sweet-Edwards
EMCON

PLATE

LOG OF EXPLORATORY BORING

PROJECT NUMBER S150106
PROJECT NAME HYTEK Soil Contamination
BY JSB DATE 04/13/88
BORING NO. TH-13
PAGE 1 OF 1
SURFACE ELEV.



ASPHALT

GRAVELLY SAND
Light olive brown, fine to coarse sand and gravel

SILT
Black to gray, organic rich, odorous, mottled, slightly plastic, moist to saturated.

REMARKS

1. Field laboratory results

Sweet-Edwards
EMCON

PLATE

LOG OF EXPLORATORY BORING

PROJECT NUMBER S150106

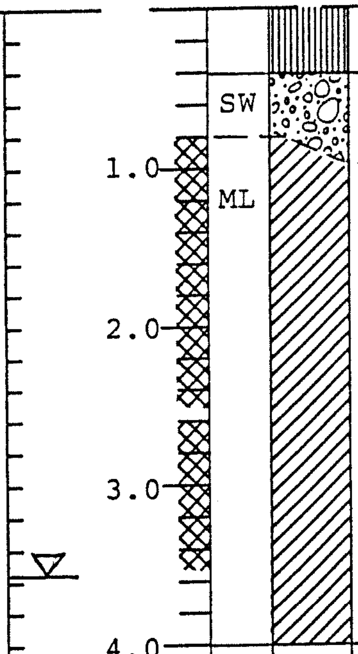
PROJECT NAME HYTEK Soil Contamination

BY JSB DATE 04/13/88

BORING NO. TH-14

PAGE 1 OF 1

SURFACE ELEV.



TOTAL 1 CONCENTRATION OF ORGANICS (PPM) EPA 601/602	PENETRATION (Blows/Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
						ASPHALT
					SW	GRAVELLY SAND Light olive brown, fine to coarse sand and gravel, moist.
			1.0		ML	SILT Dark greenish gray, organic rich, moist to saturated.
0.332						
			2.0			
			3.0			
0.138						
		▽				
			4.0			

REMARKS

1. Field laboratory results

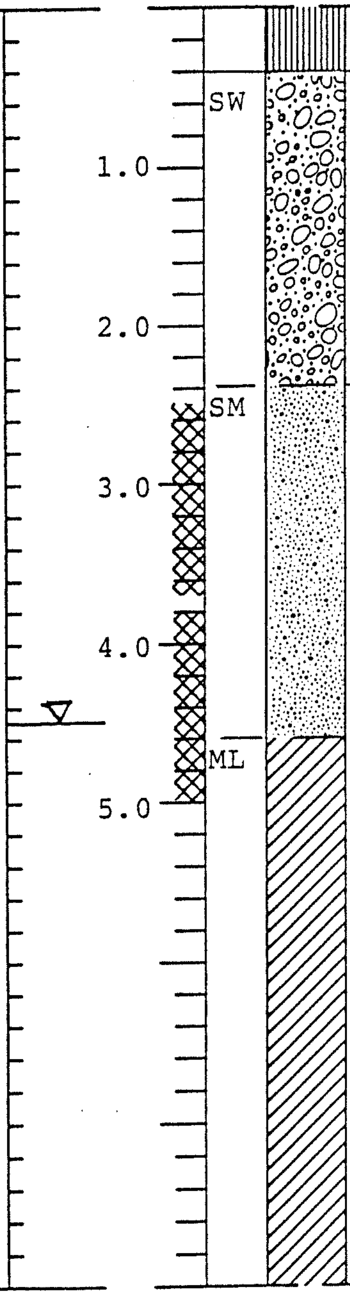
Sweet-Edwards
EMCON

PLATE

LOG OF EXPLORATORY BORING

PROJECT NUMBER S150106
PROJECT NAME HYTEK Soil Contamination
BY JSB DATE 04/13/88

BORING NO. TH-15
PAGE 1 OF 1
SURFACE ELEV.



TOTAL 1 CONCENTRATION OF ORGANICS (PPM) EPA 601/602	PENETRATION (Blows/ Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
						ASPHALT
			1.0 2.0		SW	GRAVELLY SAND Light olive brown, fine to coarse sand and gravel, dry.
1.130 3.233		▽	3.0 4.0		SM	SILTY SAND Light olive brown to gray, very fine, to fine sand, moist to saturated.
			5.0		ML	SILT Light olive gray, mottled, saturated.

REMARKS

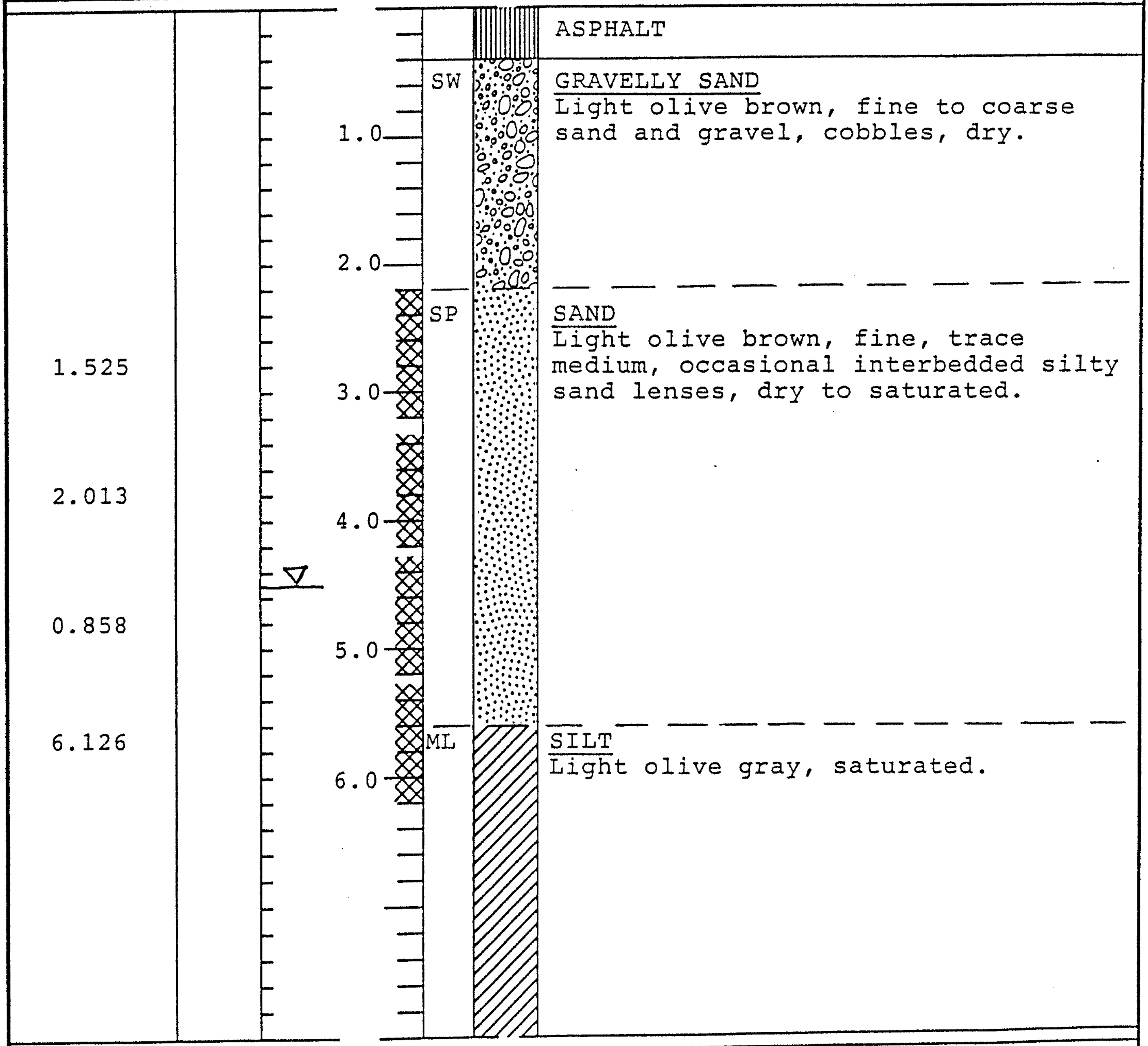
1. Field laboratory results

Sweet-Edwards
EMCON

PLATE

LOG OF EXPLORATORY BORING

PROJECT NUMBER S150106
PROJECT NAME HYTEK Soil Contamination
BY JSB DATE 04/14/88
BORING NO. TH-16
PAGE 1 OF 1
SURFACE ELEV.



TOTAL [1] CONCENTRATION OF ORGANICS (PPM) EPA 601/602	PENETRATION (Blows/ Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
						ASPHALT
					SW	**GRAVELLY SAND** Light olive brown, fine to coarse sand and gravel, cobbles, dry.
			1.0			
			2.0			
				☒	SP	**SAND** Light olive brown, fine, trace medium, occasional interbedded silty sand lenses, dry to saturated.
1.525				☒		
			3.0	☒		
2.013				☒		
			4.0	☒		
		▽		☒		
0.858				☒		
			5.0	☒		
6.126				☒	ML	**SILT** Light olive gray, saturated.
			6.0	☒		

REMARKS

1. Field laboratory results

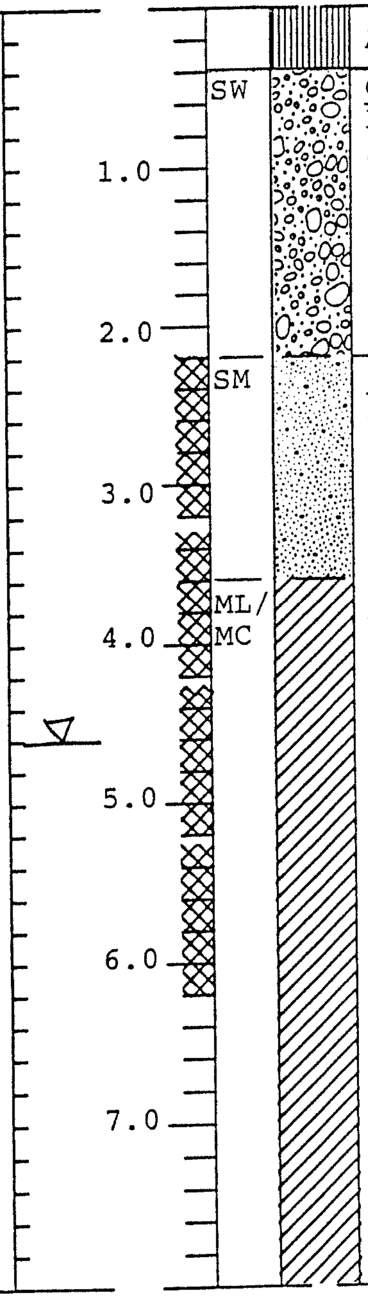
Sweet-Edwards
EMCON

PLATE

LOG OF EXPLORATORY BORING

PROJECT NUMBER S150106
PROJECT NAME HYTEK Soil Contamination
BY JSB DATE 04/14/88

BORING NO. TH-17
PAGE 1 OF 1
SURFACE ELEV.



TOTAL 1 CONCENTRATION OF ORGANICS (PPM) EPA 601/602	PENETRATION (Blows/Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
						ASPHALT
					SW	GRAVELLY SAND Light olive brown, fine to coarse sand and gravel, cobbles, dry.
2.799					SM	SILTY SAND AND SILT Light olive brown to gray, sand. Fine to very fine, moist.
1.736					ML/ MC	SILT/CLAYEY SILT Light olive gray, moist to saturated.
4.525						
8.178						

REMARKS

1. Field laboratory report

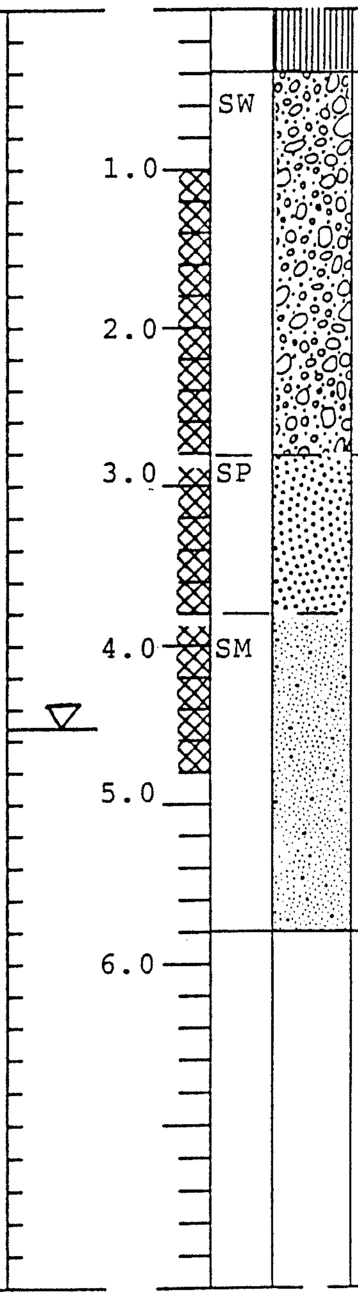
Sweet-Edwards
EMCON

PLATE

LOG OF EXPLORATORY BORING

PROJECT NUMBER S150106
PROJECT NAME HYTEK Soil Contamination
BY JSB DATE 04/14/88

BORING NO. TH-18
PAGE 1OF 1
SURFACE ELEV.



TOTAL 1 CONCENTRATION OF ORGANICS (PPM) EPA 601/602	PENETRATION (Blows/ Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
						ASPHALT
0.850			1.0 2.0		SW	GRAVELLY SAND Light olive brown, fine to coarse sand and gravel, occasional cobbles.
2.625			3.0		SP	SAND Dark gray, fine, dry.
2.549		▽	4.0 5.0		SM	SILTY SAND Light olive gray, sand, fine to very fine, occasional thin silt interbeds. Moist to saturated.
			6.0			

REMARKS

1. Field laboratory results

Sweet-Edwards
EMCON

PLATE

LOG OF EXPLORATORY BORING

PROJECT NUMBER S150106
PROJECT NAME HYTEK Soil Contamination
BY JSB DATE 04/14/88

BORING NO. TH-19
PAGE 1 OF 1
SURFACE ELEV.

TOTAL 1 CONCENTRATION OF ORGANICS (PPM) EPA 601/602	PENETRATION (Blows/ Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
						ASPHALT
					SW	GRAVELLY SAND Light olive brown, fine to coarse sand and gravel, moist.
			1.0			
0.029				☒		
					MU	SILT Light olive gray, moist to saturated.
			2.0			
0.139				☒		
			3.0			
0.141				☒		
		▽				
0.441			4.0	☒		

REMARKS

1. Field laboratory results

Sweet-Edwards
EMCON

PLATE

LOG OF EXPLORATORY BORING

PROJECT NUMBER S150106
PROJECT NAME HYTEK Soil Contamination
BY JSB DATE 04/14/88
BORING NO. TH-20
PAGE OF
SURFACE ELEV.

TOTAL 1 CONCENTRATION OF ORGANICS (PPM) EPA 601/602	PENETRATION (Blows/ Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
						ASPHALT
					SW	GRAVELLY SAND Light olive brown, fine to coarse sand and gravel, dry.
			1.0	☒		
0.378				☒		
				☒	ML	SILT Brown to gray, mottled, moist to saturated.
			2.0	☒		
1.587				☒		
			3.0	☒		
1.130				☒		
		▽	4.0			

REMARKS

1. Field laboratory results

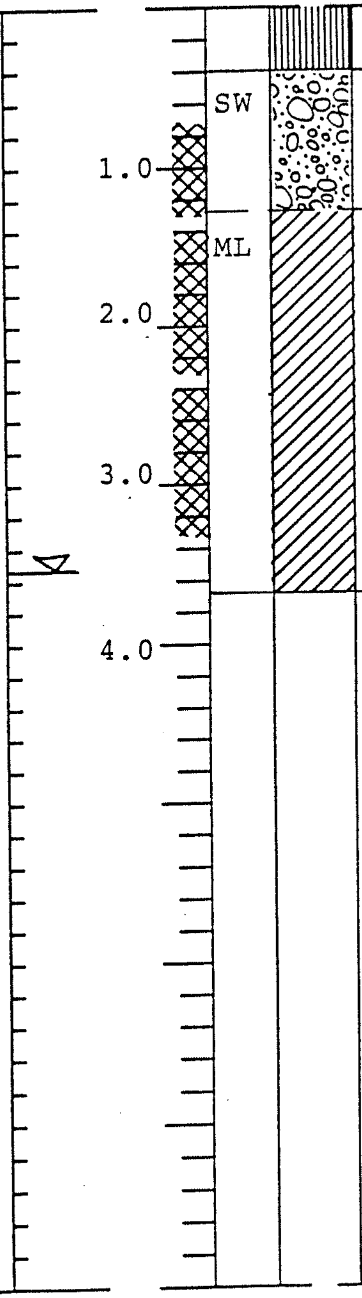
Sweet-Edwards
EMCON

PLATE

LOG OF EXPLORATORY BORING

PROJECT NUMBER S150106
PROJECT NAME HYTEK Soil Contamination
BY JSB DATE 04/14/88

BORING NO. TH-21
PAGE 1 OF 1
SURFACE ELEV.



TOTAL [1] CONCENTRATION OF ORGANICS (PPM) EPA 601/602	PENETRATION (Blows/Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
						ASPHALT
					SW	GRAVELLY SAND Light olive gray, fine to coarse sand and gravel, dry.
			1.0			
1.130					ML	SILT Gray, mottled, moist to saturated.
1.374			2.0			
0.995			3.0			
			4.0			

REMARKS

1. Field laboratory results

Sweet-Edwards
EMCON

PLATE

LOG OF EXPLORATORY BORING

PROJECT NUMBER S150106

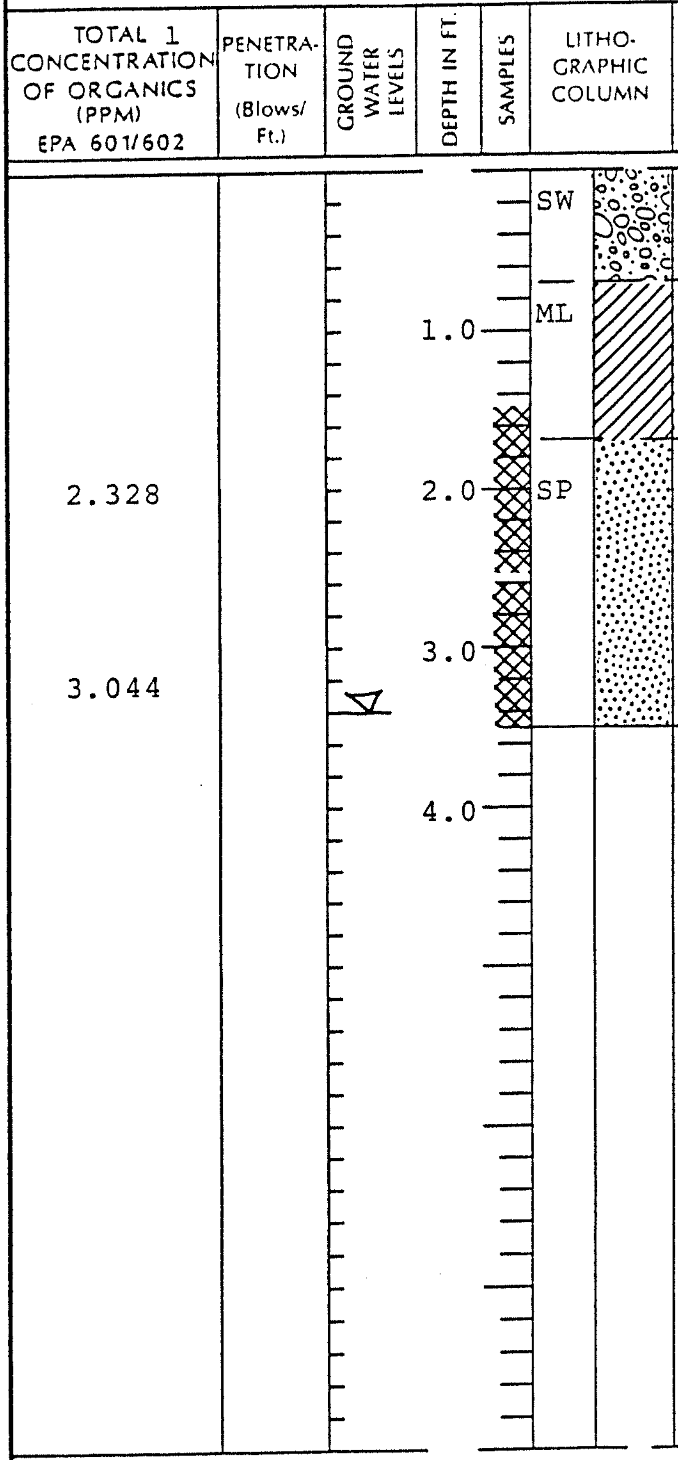
BORING NO.TH-22

PROJECT NAME HYTEK Soil Contamination

PAGE 1OF 1

BY JSB DATE 04/15/88

SURFACE ELEV.



DESCRIPTION

GRAVELLY SAND
Light olive brown, fine to coarse sand and gravel, dry.

SILT
Light olive brown, moist

SAND
Light olive brown to gray, fine to very fine. Moist to saturated.

REMARKS

1. Field laboratory results

Sweet-Edwards
EMCON

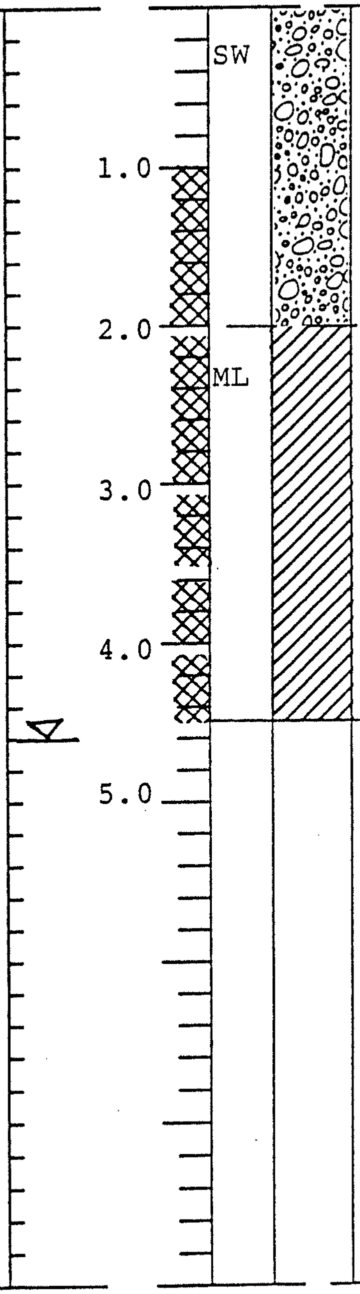
PLATE

LOG OF EXPLORATORY BORING

PROJECT NUMBER S150106
PROJECT NAME HYTEK Soil Contamination
BY JSB DATE 04/15/88

BORING NO. TH-23
PAGE 1OF 1
SURFACE ELEV.

TOTAL 1 CONCENTRATION OF ORGANICS (PPM) EPA 601/602	PENETRATION (Blows/ Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
0.152 6.249 7.559 6.740 4.441					SW ML	GRAVELLY SAND Light olive brown, fine to coarse sand and gravel, some silt, dry. SILT Light olive gray, mottled, trace to some organic fragments.



REMARKS

1. Field laboratory results

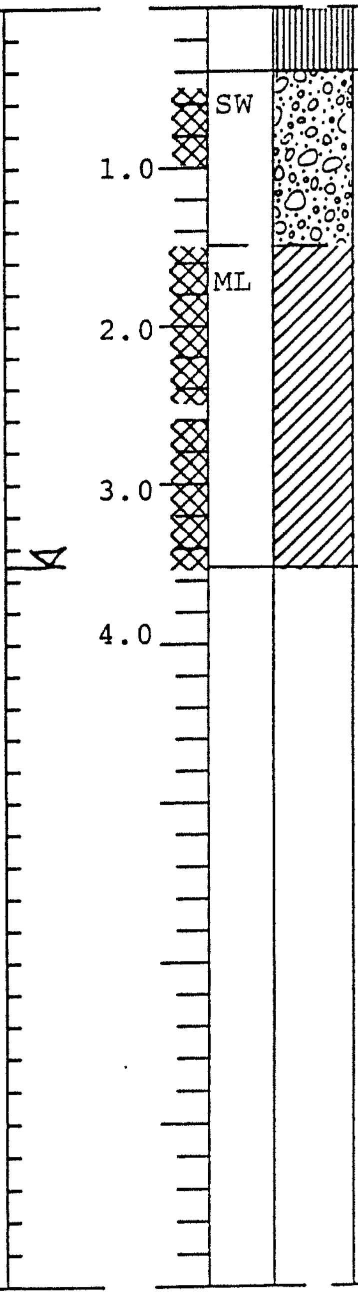
Sweet-Edwards
EMCON

PLATE

LOG OF EXPLORATORY BORING

PROJECT NUMBER S150106
PROJECT NAME HYTEK Soil Contamination
BY JSB DATE 04/15/88

BORING NO. TH-24
PAGE 1 OF 1
SURFACE ELEV.



TOTAL[1] CONCENTRATION OF ORGANICS (PPM) EPA 601/602	PENETRATION (Blows/ Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
						ASPHALT
0.423						GRAVELLY SAND Light olive brown, fine to coarse sand and gravel, moist to wet (seepage under asphalt)
0.314 0.419						SILT Dark gray, mottled interbedded fine sand layers, organic fragments. Moist to saturated.

REMARKS

1. Field laboratory results

Sweet-Edwards
EMCON

PLATE

LOG OF EXPLORATORY BORING

PROJECT NUMBER S150106

PROJECT NAME HYTEK Soil Contamination

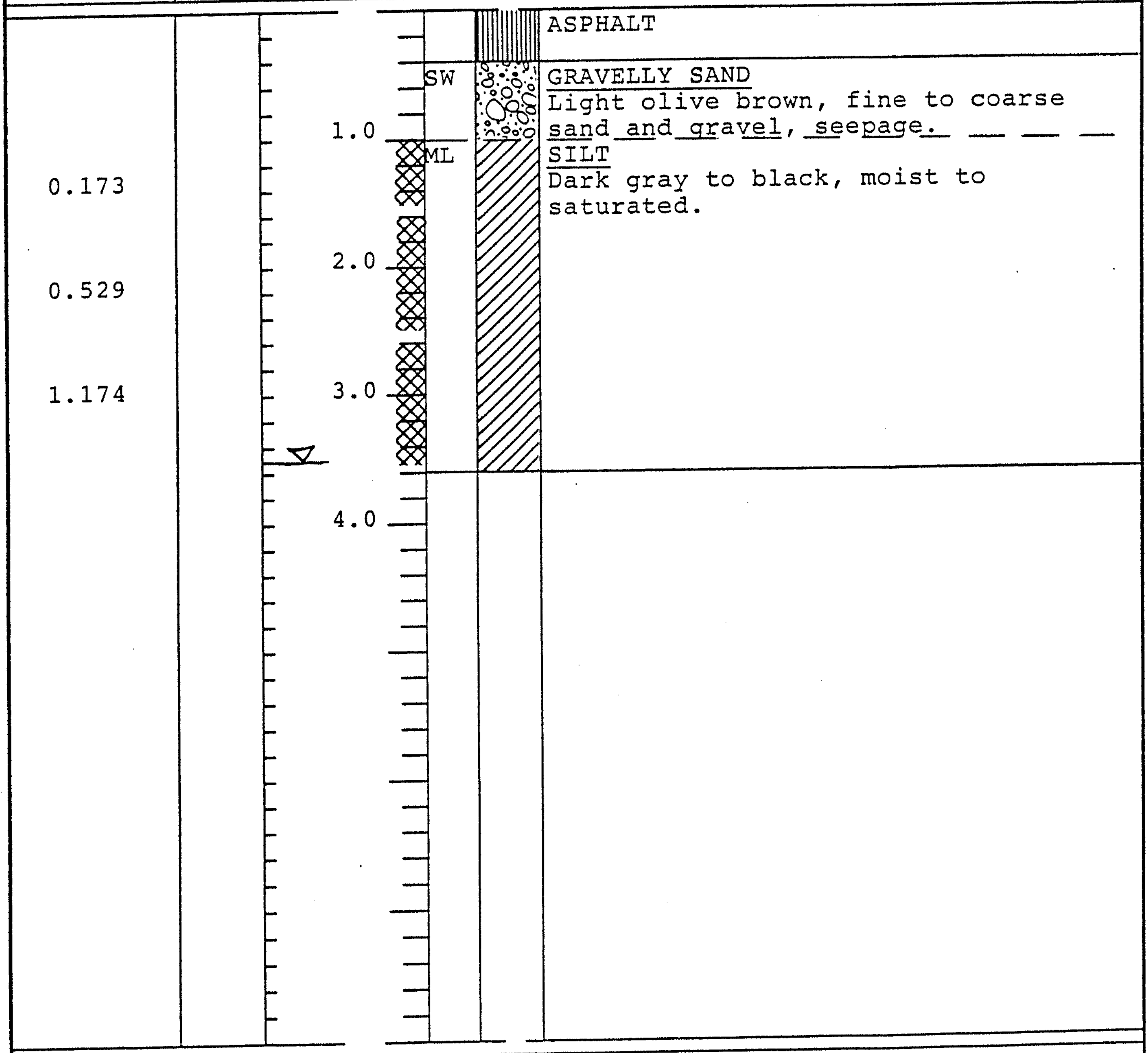
BY JSB DATE 04/15/88

BORING NO. TH-25

PAGE 1 OF 1

SURFACE ELEV.

TOTAL 1 CONCENTRATION OF ORGANICS (PPM) EPA 601/602	PENETRATION (Blows/ Ft.)	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHOGRAPHIC COLUMN	DESCRIPTION
0.173 0.529 1.174						



ASPHALT

GRAVELLY SAND
Light olive brown, fine to coarse sand and gravel, seepage.

SILT
Dark gray to black, moist to saturated.

REMARKS

1. Field laboratory results

Sweet-Edwards
EMCON

PLATE

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK Finishes

Page 1 **of** 2

Location S side 200th Approx. 410' W; Intersection S 200th and 84th Ave.

Boring No. G-Deep

Surface Elevation Approx. 21.04 feet

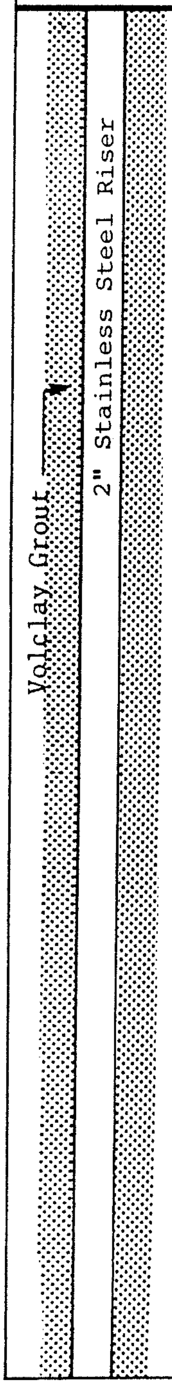
Drilling Method Hollow Stem Auger

Total Depth 73.5'

Drilled By Geotech Exploration

Date Completed 7/9/87

Logged By J. Bailey



WELL DETAILS	PENETRATION TIME/ RATE	DEPTH (FEET)	SAMPLE NO.	SAMPLE TYPE	PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
							0-0.5' concrete	
						SW	0.5-3.5' Gravelly Sand, reddish brown, fine to coarse sand, some silt. subangular gravel.	
						SM	3.5-16' Silty Sand, reddish brown to olive black, very fine-fine sand, trace carbonaceous material, saturated below 7'.	▽
		5	1	SSP				
		10	2	SSP				
		15	3	SSP				
						SP	16-27' Sand, grayish black, medium to coarse sand, abundant red sand grains, occasional shell fragments.	
		20	4	SSP				
		25	5	SSP				
						SM	27-37' Silty Sand, dark gray, very fine to fine sand, abundant wood fragments, trace to some clay.	
		30	6	SSP				
		35	7	SSP				

Sweet, Edwards & Associates, Inc.

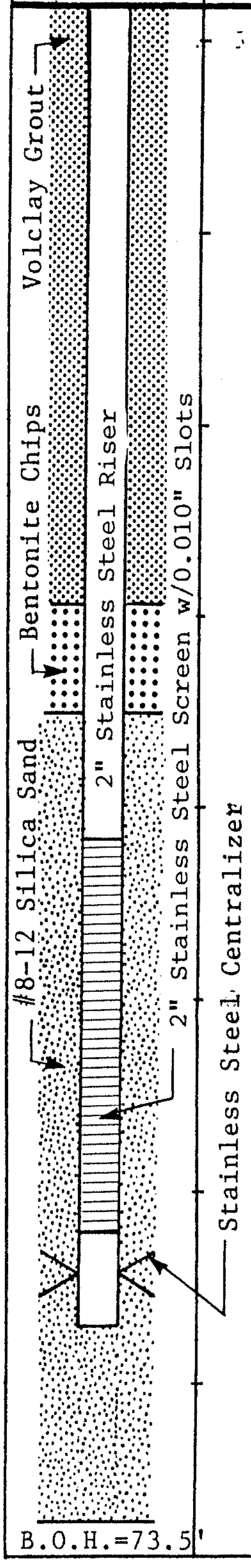
BORING LOG

PROJECT HYTEK Finishes

Page 2 **of** 2

Boring No. G-Deep

WELL DETAILS



PENETRATION TIME/ RATE	DEPTH (FEET)	SAMPLE		PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
		NO.	TYPE				
	35	7	SSP		SM	Silty Sand, - (cont.)	
					ML	37-42' Silt, dark greenish gray, trace to some very fine sand, occasional shell fragments, slightly plastic.	
	40	8	SSP				
					SP	42-67' Sand, grayish black, interbedded fine to medium and medium to coarse sand lenses, trace to some silt, numerous red sand grains, occasional shell and wood fragments.	
	45	9	SSP				
	50	10	SSP				
	55	11	SSP				
	60	12	SSP				
	65	13	SSP				
					SM	67-71' Silty Sand, dark gray, fine to very fine sand, trace to some clay, slightly plastic.	
	70	14	SSP				
					ML	71-73.5' Clayey Silt, dark gray, massive to finely laminated moderately plastic.	

See Figure 7 for details of other nested wells.

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK Finishes

Page 1 **of** 2

Location Approx. 170' S & 400' W intersection S200th & 84 Ave.

Boring No. H-Deep

Surface Elevation Approx. 22.79 feet

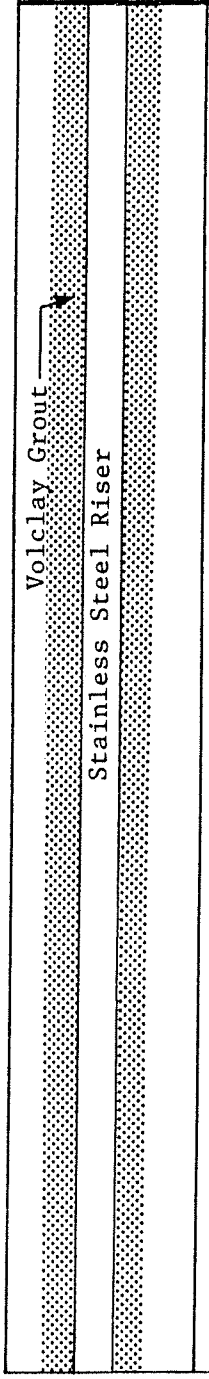
Drilling Method Hollow Stem Auger

Total Depth 71.0 feet

Drilled By GeoTech Exploration

Date Completed 7/6/87

Logged By J. S. Bailey



WELL DETAILS	PENETRATION TIME/ RATE	DEPTH (FEET)	SAMPLE NO.	SAMPLE TYPE	PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
							0-0.5' ASPHALT	
						SW	0.5-3' Gravelly SAND, brown fine - coarse, some silt.	
		5	1	SS		ML	3.0-5.5' SILT, olive gray, mottled, iron stained, wood fragments.	▽
		10	2	SS		SP	5.5-28' SAND, olive black to grayish black, fine to medium, numerous red sand grains, shell fragments, saturated below 6'.	
		15	3	SS				
		20	4	SS				
		25	5	SS				
		30	6	SS		ML	28-32' SILT, medium gray to olive gray, slightly plastic, abundant wood fragments.	
		35	7	SS		SP	32-38' SAND, dark gray, very fine to fine, some silt.	

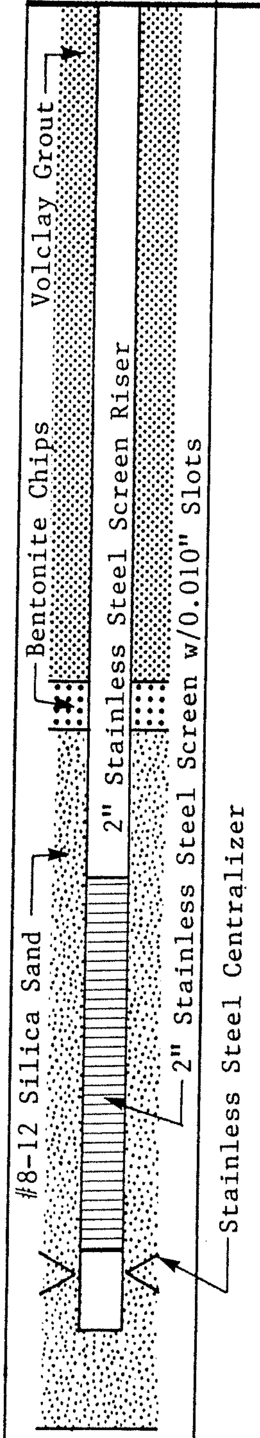
Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK Finishes

Page 2 **of** 2

Boring No. H -Deep



WELL DETAILS	PENETRATION TIME/RATE	DEPTH (FEET)	SAMPLE NO.	SAMPLE TYPE	PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
		35	7	SS		SP	SAND,- (cont.)	
		40	8	SS			38-48' SILT/Silty SAND, olive gray, very fine sand, numerous shell fragments.	
		45	9	SS				
		50	10	SS			48-63' SAND, grayish black, medium to coarse, abundant shell fragments and red sand grains.	
		55	11	SS				
		60	12	SS				
		65	13	SS			63-68' Silty SAND, Grayish black, fine to very fine sand, occasional wood fragments.	
		70	14	SS		CL	68-71' SILTY CLAY, dark gray, moderately plastic/massive.	
							B.O.H.=71.0 feet See Figure 7 for details of other nested wells.	

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK

Page 1 **of** 1

Location N.W. Corner of Parking Lot

Boring No. HY-1

Surface Elevation Top PVC . 102.09 ft.

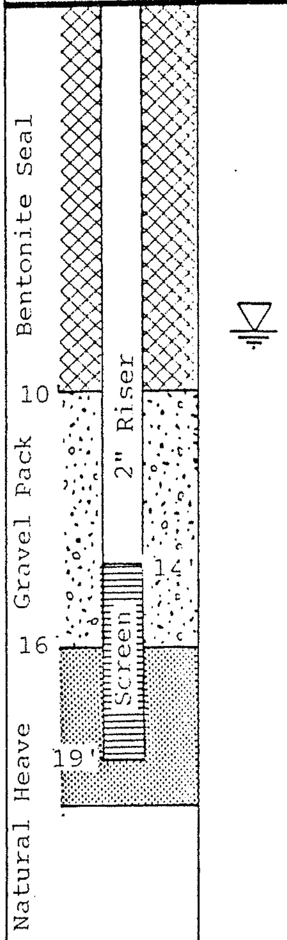
Drilling Method Hollow Auger

Total Depth 20.5'

Drilled By Sweet, Edwards & Assoc., Inc.

Date Completed 6/25/82

Logged By J.E. Edwards



WELL DETAILS	PENETRATION TIME/RATE	DEPTH (FEET)	SAMPLE NO.	SAMPLE TYPE	PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
		5	1	SS		ML-SM	3.5-5.0' Silty-Fine Sand to Fine Sandy Silt, brownish gray with gray mottling, soft, moist.	
		10	2	SS		ML	8.5-10.0' Silt, gray, some very fine sand, very soft, saturated.	
		15	3	SS		SP	13.5-15.0' Sand, gray to black, clean, loose, medium grained, poorly graded, saturated.	
							16.8-18.0' Silty-Clay, logged off auger tip.	
		20	4	SS		SP	19.0-20.5' Sand, as above.	
		25						

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK IV

Page 1 **of** 1

Location

Boring No. HYCP-2

Surface Elevation

Drilling Method Hollow Stem Auger

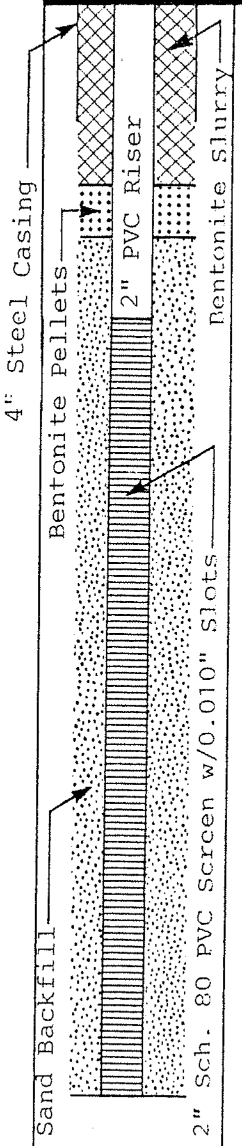
Total Depth 28 feet

Drilled By Kring Drilling

Date Completed 12/3/84

Logged By D.R. Dykes

WELL DETAILS



PENETRATION TIME/RATE	DEPTH (FEET)	SAMPLE NO.	SAMPLE TYPE	PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
					GM	0-1.5' Fill, silty gravel, brown.	
		5	SS		ML SM ML	3.0-3.5' Silt, brown, mottled orange. 3.5-4.0' Silty Sand, gray, fine. 4.0-4.5' Silt, gray, moist.	
	5						
		10	SS		SP ML	8.0-9.0' Sand, gray fine, some silt, roots. 9.0-9.5' Silt, gray.	
	10						
		15	SS		SM ML	13.0-14.5' Silty Sand and Silt, layered, gray, sand is very fine to fine, moist to saturated.	
	15						
		20	SS		SP/ML	18.0-19.5' Sand and Silt, gray, sand is fine to very fine, silt layers from 18.5 to 19 feet.	
	20						
		25	SS		SW	23.0-24.5 Sand, gray, very fine to medium, saturated.	
	25						
		30	SS		SW	28.0-29.5' Sand, same as above. Bottom of boring 28.0 ft. Note: SS=Split Spoon Sample.	
	30						

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK IV

Page 1 of 1

Location

Boring No. HYCP-4

Surface Elevation

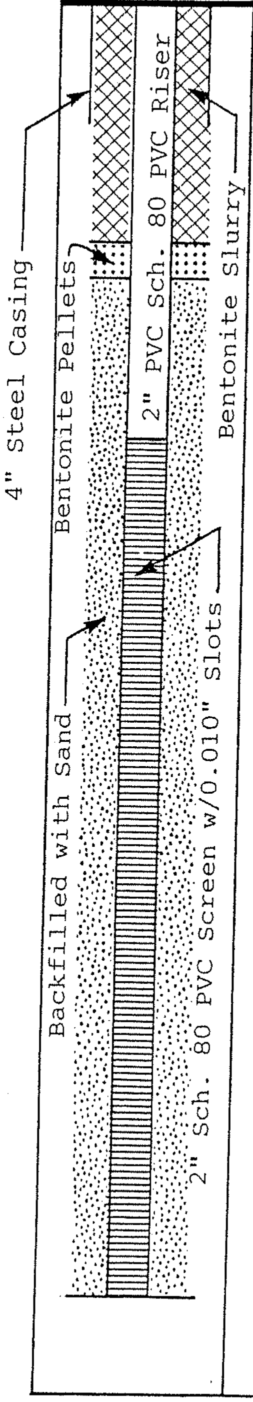
Drilling Method Hollow Stem Auger

Total Depth 33 ft.

Drilled By Kring Drilling

Date Completed 12/3/84

Logged By D.R. Dykes



WELL DETAILS	PENETRATION TIME/RATE	DEPTH (FEET)	SAMPLE NO.	SAMPLE TYPE	PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
							Asphalt	
						GM	0.5-1.5' Fill, silty gravel, brown.	
		5	5	SS		ML	3.0-4.5' Silt, light gray, mottled orange.	
		10	10	SS		ML	8.0-9.5' Silt, gray, some fine sand, clayey at bottom, moist to saturated	
		15	15	SS		SP	13.0-14.5' Sand, gray, fine to medium.	
		20	20	SS		SP	18.0-19.5' Sand, as above, partial recovery.	
		25	25	SS		SP	23.0-24.5' Sand, gray, medium, wood chips.	
		30	30	SS		SP	28.0-29.5' Sand, as above.	
		35	35	SS		SP	33.0-34.5' Sand, as above. Bottom of boring 33 ft.	

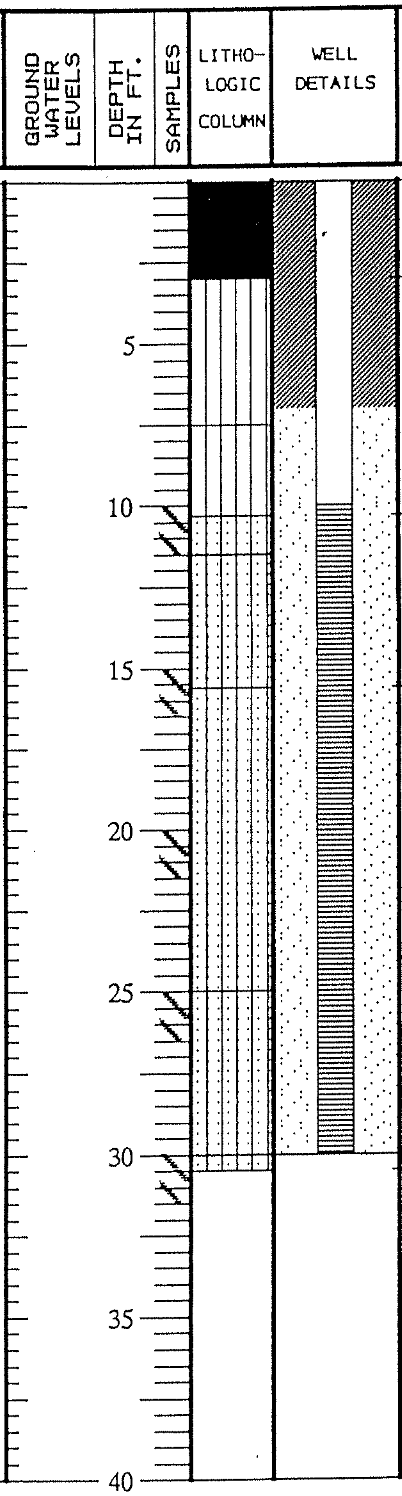
Note: SS=Split Spoon Samples.

LOG OF EXPLORATORY BORING

PROJECT NAME Hytek Finishes, Inc.
LOCATION Kent, WA.
DRILLED BY Tacoma Pump & Drill.
DRILL METHOD H.S. Auger
LOGGED BY J. North

BORING NO. HYCP- 5
PAGE 1 OF 1
REFERENCE ELEV.
TOTAL DEPTH 31.50'
DATE COMPLETED 3/15/89

SAMPLE ID NUMBER	SAMPLE TYPE	BLOW COUNTS
1	SS	3-8-10
2	SS	7-11-17
3	SS	5-10-16
4	SS	8-10-16
5	SS	24-28 -50



LITHOLOGIC DESCRIPTION

0 - 3.0 feet: Asphalt and fill gravels.

3 - 10.3 feet: SILT; with fine sand, tan, scattered medium sand, moist. (ML)

10.3 - 15.6 feet: SAND; gray to black, fine to medium, saturated, scattered fine gravel and cobbles. (SM)

15.6 - 30.0 feet: SAND and SILTY SAND; thinly interbedded, gray, scattered organic fragments, saturated. (SM)

SAND; gray, with gravel to 1/2", scattered cobbles and silt, saturated. (SM)

SAND; dark gray, fine to medium, scattered gravels to (1/2") and cobbles, saturated. (SM)

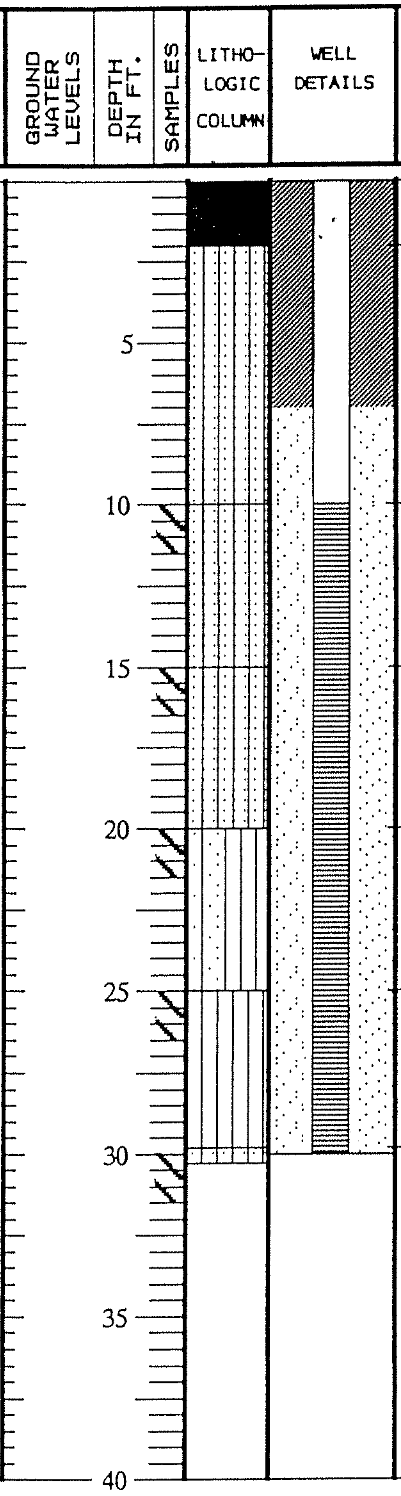
Bottom of hole at 30 feet.

REMARKS
1) Well constructed with 2" stainless steel. 2) Screen .010" factory slotted. 3) Stainless steel centralizers placed at top and bottom of screened interval. 4) SS = split spoon.

SWEET-EDWARDS/EMCON

LOG OF EXPLORATORY BORING

PROJECT NAME	Hytek Finishes, Inc.	BORING NO.	HYCP- 6
LOCATION	Kent, WA.	PAGE	1 OF 1
DRILLED BY	Tacoma Pump & Drill.	REFERENCE ELEV.	
DRILL METHOD	H.S. Auger	TOTAL DEPTH	31.50'
LOGGED BY	J. North	DATE COMPLETED	3/14/89



SAMPLE ID NUMBER	SAMPLE TYPE	BLOW COUNTS	DEPTH IN FT.	LITHOLOGIC DESCRIPTION
			0	0 - 2.0 feet: Asphalt and fill gravel.
				2.0 -10.0 feet: SANDY SILT; tan, sand fine to coarse, with gravel, saturated. (SM)
1	SS	5-7-11	10	10.0 - 15.0 feet: SILTY FINE SAND; dark gray, scattered medium sand, saturated. (SM)
2	SS	17-100 /7"	15	15.0 - 20.0 feet: SAND; black, fine, scattered coarse sand, saturated. (SM)
3	SS	3-8-13	20	20.0 - 30.0 feet: SILT and FINE SANDY SILT; dark gray, thinly bedded, scattered wood fragments, saturated. (SM/ML)
4	SS	8-18-25	25	
5	SS	10-16-20	30	30.0 feet: SILT; as above, thinly bedded, scattered wood fragments, saturated. (SM) Bottom of hole at 30 feet.

REMARKS

1) Well constructed with 2" stainless steel. 2) Screen .010" factory slotted. 3) Stainless steel centralizers placed at top and bottom of screened interval. 4) SS = split spoon.

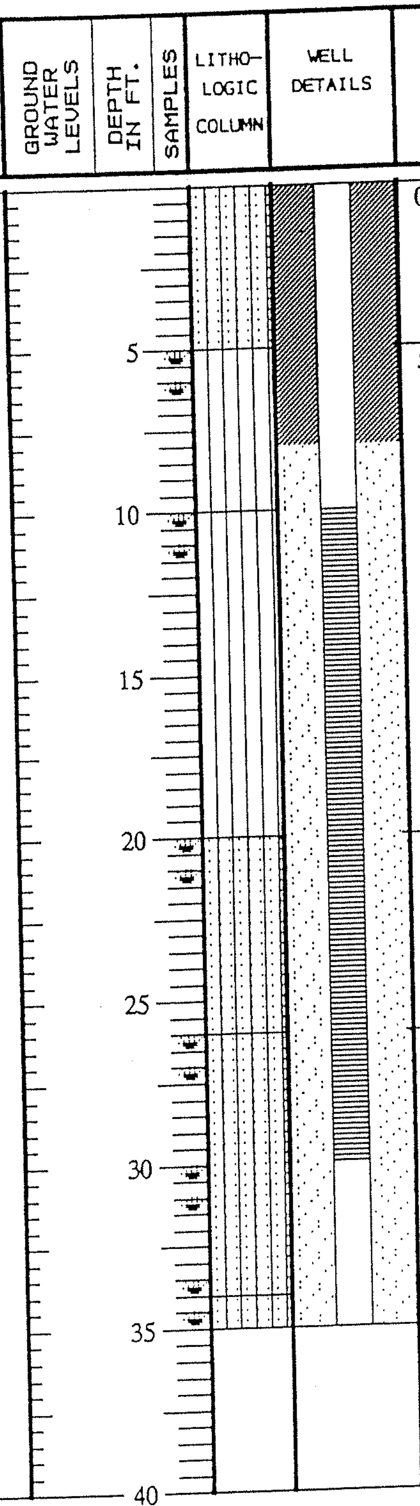
SWEET-EDWARDS/EMCON

LOG OF EXPLORATORY BORING

PROJECT NAME Hytek Finishes, Inc.
LOCATION Kent, WA.
DRILLED BY Tacoma Pump & Drill.
DRILL METHOD Cable Tool
LOGGED BY J. North

BORING NO. HYR- 1
PAGE 1 OF 2
REFERENCE ELEV.
TOTAL DEPTH 35.00'
DATE COMPLETED 3/28/89

SAMPLE ID NUMBER	SAMPLE TYPE	BLOW COUNTS
1	GRAB	
2	GRAB	
3	GRAB	
4	GRAB	
5	GRAB	
6	GRAB	



LITHOLOGIC DESCRIPTION

0 - 5.0 feet: SANDY SILT; tan, fine to medium, scattered gravel and cobbles, moist. (SM)

5.0 - 10.0 feet: CLAYEY SILT; gray brown, scattered medium to coarse sands, gravels, saturated. (ML)

10.0 -20.0 feet: CLAYEY SILT; as above, decreasing sands and gravels. (ML)

20.0 - 26.0 feet: FINE SANDY SILT; dark gray, scattered medium sand, saturated. (SM)

26.0 - 34.0 feet: SILTY SAND; dark gray to black, scattered gravels and wood fragments. (SM)

---As above

34.0 - 35.0 feet: SILTY SAND; dark gray, sands fine to medium, with wood fragments, thin (2") clayey silt stringers interbedded, highly plastic, saturated. (SM)

Bottom of hole @ 35 feet.

REMARKS
1) Well constructed of 6" stainless steel. 2) Well screen .010" continuous slot wire wrap. 3) Stainless steel centralizers placed at top and bottom of screen. See ADDITIONAL REMARKS in Lithologic Description Column.

SWEET-EDWARDS/EMCON

T15-01.14.HYTEK.13a/me:3.01/30/9

LOG OF EXPLORATORY BORING

PROJECT NAME Hytek Finishes, Inc.
LOCATION Kent, WA.
DRILLED BY Tacoma Pump & Drill.
DRILL METHOD Cable Tool
LOGGED BY J. North

BORING NO. HYR- 1
PAGE 2 OF 2
REFERENCE ELEV.
TOTAL DEPTH 35.00'
DATE COMPLETED 3/28/89

SAMPLE ID NUMBER	SAMPLE TYPE	BLOW COUNTS	GROUND WATER LEVELS	DEPTH IN FT.	SAMPLES	LITHO-LOGIC COLUMN	WELL DETAILS	LITHOLOGIC DESCRIPTION
				45 50 55 60 65 70 75 80				ADDITIONAL REMARKS: Well construction details: 0-10', 10" diameter PVC riser pipe; 10-30', 10" diameter PVC screen with .010" slots; 30-35 ', 5' tailpipe; 0-8' Enviroplug, medium Bentonite Chips; 8-35', Colorado Silica Sand 20-40.

REMARKS
1) Well constructed of 6" stainless steel. 2) Well screen .010" continuous slot wire wrap. 3) Stainless steel centralizers placed at top and bottom of screen. See ADDITIONAL REMARKS in Lithologic Description Column.

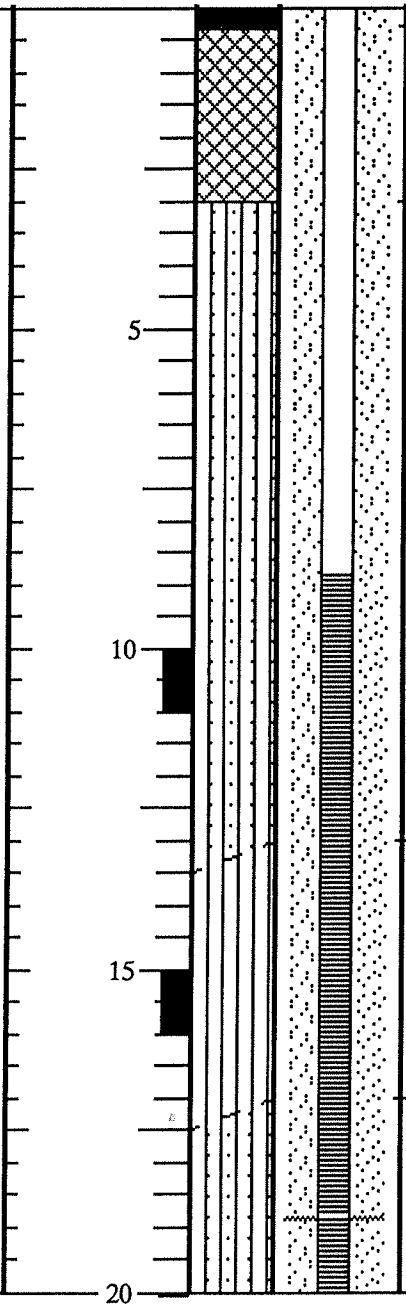
SWEET-EDWARDS/EMCON

T15-01.14.HYTEK.13a/me:3.01/30/90

LOG OF EXPLORATORY BORING

PROJECT NAME	**Hytek**	BORING NO.	**HYR- 2**
LOCATION		PAGE	**1 OF 2**
DRILLED BY	**Ramlo Drilling**	REFERENCE ELEV.	
DRILL METHOD	**Cable Tool**	TOTAL DEPTH	**35.00'**
LOGGED BY	**John North**	DATE COMPLETED	**2/27/90**

SAMPLE NUMBER	SAMPLING METHOD	DEPTH IN FT.
S-2	SS	10
S-3	SS	15



LITHOLOGIC DESCRIPTION

0 - 3 inches: ASPHALT.

3 inches - 3 feet: FILL.

3 - 13 feet: SAND; dark grey, fine, scattered medium, 10 to 25 percent silt.

13 - 17 feet: SILT; dark grey; with 20 to 30 percent fine sand.

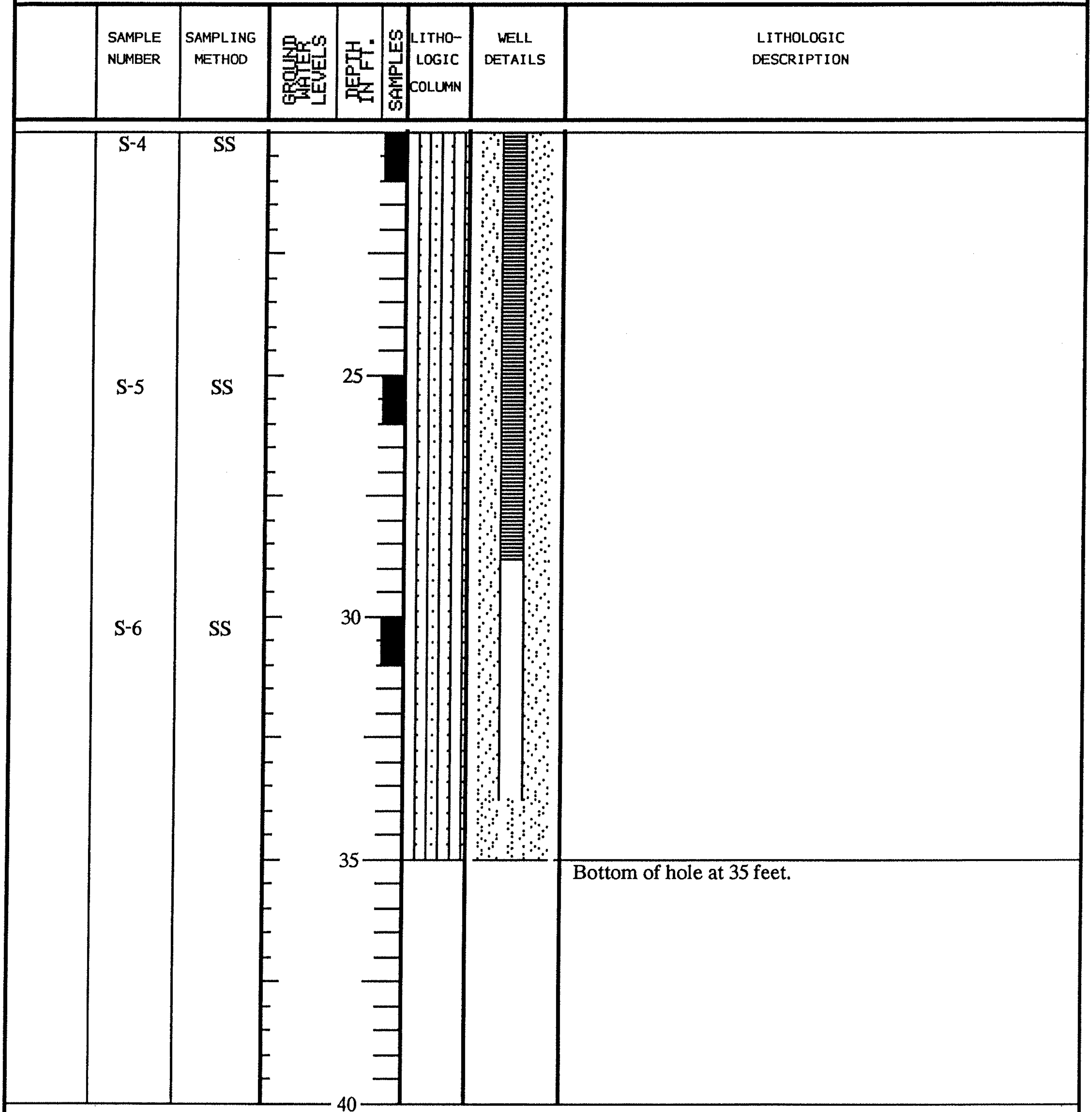
17 - 35 feet: SAND; dark grey; 10 to 15 percent silt.

REMARKS
Two-stage screen: 0.15", 28.85'-18.85'; 0.010", 18.85'-8.85'. Six-inch stainless steel pipe and screen. Samples collected with split barrel driven with drive jars.

LOG OF EXPLORATORY BORING

PROJECT NAME **Hytek**
LOCATION
DRILLED BY **Ramlo Drilling**
DRILL METHOD **Cable Tool**
LOGGED BY **John North**

BORING NO. **HYR- 2**
PAGE **2 OF 2**
REFERENCE ELEV.
TOTAL DEPTH **35.00'**
DATE COMPLETED **2/27/90**



Bottom of hole at 35 feet.

REMARKS
Two-stage screen: 0.15", 28.85'-18.85'; 0.010", 18.85'-8.85'. Six-inch stainless steel pipe and screen. Samples collected with split barrel driven with drive jars.

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK IV

Page 1 **of** 4

Location

Boring No. HYO-1

Surface Elevation

Drilling Method Hollow Stem Auger

Total Depth 84.5 feet

Drilled By Kring Drilling

Date Completed 11/29/84

Logged By D.R. Dykes

WELL DETAILS	PENETRATION TIME/RATE	DEPTH (FEET)	SAMPLE NO.	SAMPLE TYPE	PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
For well details, see Well Completion Details - sheet 1							0-2.0' Fill, silty gravel, brown.	
		5	5	SS		ML	3.0-4.5' Silt, brown, orange gray mottling, roots.	
		10	10	SS		ML/SP	8.0-9.5' Silt & Sand, gray, layered, sand is fine, moist to saturated.	
		15	15	SS		SW	13.0-14.5' Sand, gray, fine to coarse, saturated.	
		20	20	SS		SM	18.0-19.5' Silty Sand, gray, fine, some silt layers, saturated.	
		25	25	SS		SW	23.0-24.5' Sand, fine to coarse, some grading, vertical brown silt in spoon.	
		30	30	SS		SP	28.0-29.5' Sand, gray, fine to medium, saturated.	
		35	35	SS		SP GP	33.0-34.0' Sand, as above. 34.0-34.5' Gravel, gray & green w/fine sand.	

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK IV

Page 2 **of** 4

Boring No. HYO-1

WELL DETAILS	PENETRATION TIME/RATE	DEPTH (FEET)	SAMPLE NO.	SAMPLE TYPE	PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
		35						
			40	SS		SP	38.0-39.5' Sand, gray, fine to medium, saturated, some layering.	
		40						
			45	SS		SP	43.0-44.5' Sand, as above, with shell fragments.	
		45						
			50	SS		SP	48.0-49.5' Sand, as above.	
		50						
			55	SS		SP	53.0-54.5' Sand, as above.	
		55						
			60	SS		SP	58.0-59.5' Sand, as above.	
		60						
			65	SS		SP/SM	63.0-64.5' Sand, gray, very fine to medium, layered, silt in finer layers.	
		65						
			70	SS		SP/SM	68.0-69.5' Sand, gray, medium, silty portions.	
		70						

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK IV

Page 3 **of** 4

Boring No. HYO-1

WELL DETAILS	PENE-TRATION TIME/RATE	DEPTH (FEET)	SAMPLE		PERME-ABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
			NO.	TYPE				
		70						
			75	SS		SP/SM ML	73.0-74.0' Sand, as above. 74.0-74.5' Silt, dark gray, moist.	
		75						
			80	NR			78.0-79.5' Sampler pushed through material, clay, gray, soft, ? .	
		80						
			85	SS		CL/ML	83.0-84.5' Clay and Silt, gray, layered, saturated, clay is sticky and soft.	
		85						
							Bottom of boring at 83 feet.	
							Note: SS=Split Spoon NR=No Recovery	

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK IV

Page 1 **of** 4

Location

Boring No. HYO-3

Surface Elevation

Drilling Method Hollow Stem Auger

Total Depth 89.5 feet

Drilled By Kring Drilling

Date Completed 11/30/84

Logged By D.R. Dykes

WELL DETAILS	PENETRATION TIME/ RATE	DEPTH (FEET)	SAMPLE		PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
			NO.	TYPE				
For well details, see Well Completion Details - sheet 2							Asphalt	
							Fill, brown, silty gravel.	
			5	SS		SM	3.0-4.5' Silty Sand, brown with orange spots, very fine, odoriferous.	
		5						
							Sand, gray, fine.	
			10	SS		CL	8.0-9.5' Clay, gray, with fine gray sand layers, odoriferous.	
		10						
			15	SS		ML	13.0-14.5' Clayey Silt, brown upper portion, gray sandy lower, odoriferous.	
		15						
			20	SS		SP/SM	18.0-19.5' Sand, gray fine to medium, silty portions, vegetal material.	
		20						
			25	SS		SW/ML	23.0-24.5' Sand and Silt, interbedded, both are brown and gray, sand is fine to coarse, wood chips	
		25						
			30	SS		SP	28.0-29.5' Sand, black, medium to coarse.	
		30						
			35	SS		ML	33.0-34.5' Silt, gray, fiberous, vegetal material odoriferious.	
		35						

SEA-300-02a

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK IV

Page 2 **of** 4

Boring No. HYO-3

WELL DETAILS	PENETRATION TIME/RATE	DEPTH (FEET)	SAMPLE		PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
			NO.	TYPE				
		35						
		40	40	SS		ML/SP	38.0-39.5' <u>Silt</u>, gray, with thin very fine sand interbeds, some sand in the silt.	
		45	45	SS		SP/ML/ SM	43.0-44.5' <u>Sand, Silt and Silty Sand/Sandy Silt</u>, gray, sand is fine to very fine.	
		50	50	SS		SP/SM	48.0-49.5' <u>Sand and Silty Sand</u>, gray to black, sand is medium to coarse, silty sand is fine, shell fragments.	
		55	55	SS		SP/ML	53.0-54.0' <u>Sand</u>, dark gray to black, medium, shell fragments. 54.0-54.5' <u>Sandy Silt</u>, gray, vegetal material.	
		60	60	SS		SP/SM	58.0-59.5' <u>Sand and Silty Sand</u>, gray, fine to medium shell fragments.	
		65	65	SS		SP/SM	63.0-64.5' <u>Sand</u>, as above, finer grain size, silt, no shell fragments.	
		70	70	SS		SP/SM	68.0-69.5' <u>Sand</u>, as above, some medium.	

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK IV

Page 3 **of** 4

Boring No. HYO-3

WELL DETAILS	PENETRATION TIME/RATE	DEPTH (FEET)	SAMPLE		PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
			NO.	TYPE				
		70						
			75	SS		ML/SP	73.0-74.5' Sand, gray, very fine to medium, layered.	
		75						
			80	SS		SP/ML/CL	78.0-78.2' Sand, as above. 78.2-79.5' Silt and Clay, greenish gray.	
		80	81	SS		SP-CL ML	79.5-79.7' Sand, gray, fine to medium. 79.7-80.7' Clay, gray, soft, sticky. 80.7-80.9' Sand, gray, fine to medium. 80.9-81.0' Silt, gray.	
		85	85	SS		ML SP	84.5-85.2' Clayey Silt, gray. 85.2-86.0' Sand, gray, very fine to fine.	
		90	91	SS			89.5-91.0' Clay, Silt and Sand, layers, gray, sand is silty and very fine.	
							Bottom of Boring 89.5 ft. Note: SS=Split Spoon	
		95						

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK Finishes

Page 1 **of** 3

Location S side 200th at intersection with 81 st Ave. S

Boring No. I-Deep

Surface Elevation Approx. 25.21 feet

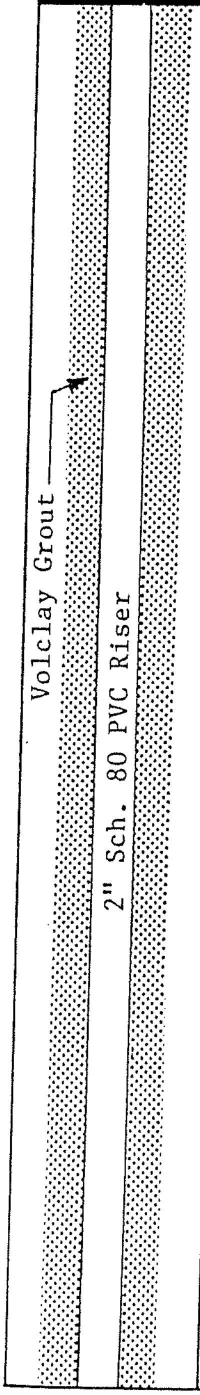
Drilling Method Hollow Stem Auger

Total Depth 86'

Drilled By Geotech Exploration

Date Completed 7/13/87

Logged By P. Dunn

WELL DETAILS	PENETRATION TIME/RATE	DEPTH (FEET)	SAMPLE NO.	SAMPLE TYPE	PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
							0-0.5' concrete	
						SW	0-6' GRAVELLY SAND, dark yellowish brown, Fine to coarse sand, some silt, dry to moist.	
		5						
			1	PB		ML	6-12.5' Silt, light gray to grayish green, some very fine sand, trace clay, organic fragments, iron stained, saturated.	▽
		10	2	PB				
		15	3	PB		SP	12.5-20' SAND, grayish green to dark gray, fine to medium sand, some silt interbeds (1-3"), occasional wood fragments.	
		20	4	PB		ML/SM	20-23' Silt/Silty Sand, light gray, very fine sand, trace clay.	
		25	5	PB		SP	23-40' SAND, dark gray, fine to medium, abundant red sand grains, trace to some silt.	
		30						
		35	6	SS				

SEA-300-02a

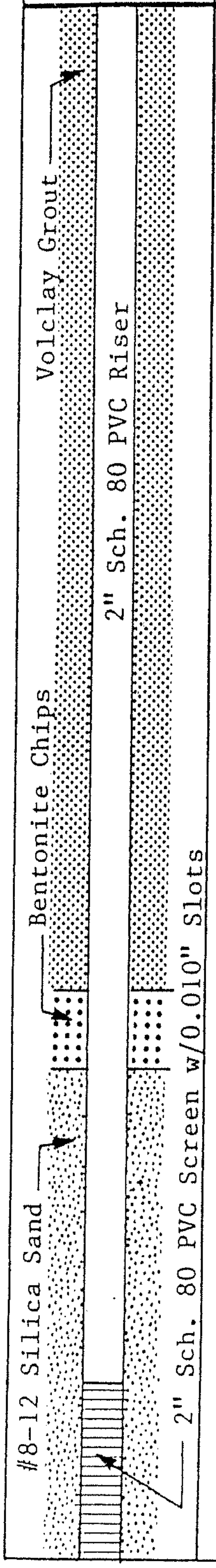
Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK Finishes

Page 2 of 3

Boring No. I-Deep

WELL DETAILS	PENETRATION TIME/ RATE	DEPTH (FEET)	SAMPLE NO.	SAMPLE TYPE	PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
		40				SP	SAND, - (cont.)	
			7	SS		ML	40-47' Sandy Silt, dark gray, very fine to fine sand, trace medium, occasional shell fragments.	
		45	8	SS				
						SP/SM	47-83' Sand/Silty Sand, dark gray, fine to medium, some very fine sand, interbedded layers of silty sand up to 2 feet, occasional carbonaceous material.	
		50	9	SS				
		55	10	SS				
		60	11	SS				
		65	12	SS				
		70	13	SS				
		75	14	SS				

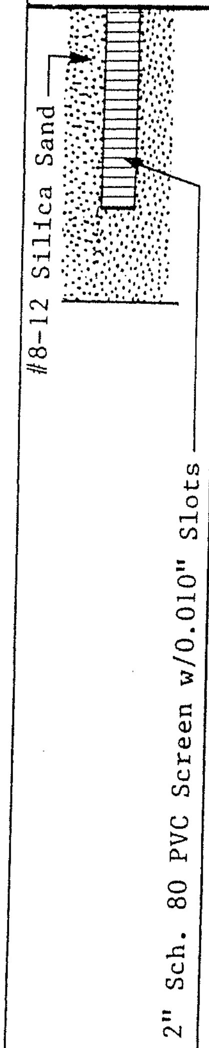
Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK Finishes

Page 3 **of** 3

Boring No. I-Deep

WELL DETAILS	PENETRATION TIME/RATE	DEPTH (FEET)	SAMPLE NO.	SAMPLE TYPE	PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
		80	15	SS		SP/SM	Sand/Silty Sand, -(cont.)	
						ML	83-86' SILTY CLAY, dark gray moderately plastic, trace woody material.	
		85	16	SS				
							B.O.H.=86.0 feet	
		90						

Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK Finishes

Page 1 **of** 3

Location Approx. 175' east

Boring No. L-Deep

Surface Elevation Approx. 25.24 feet

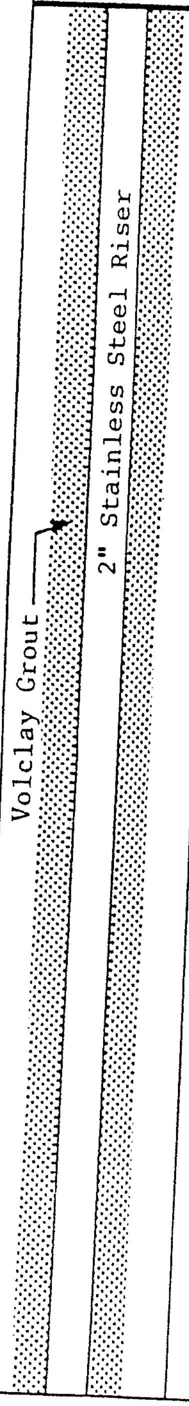
Drilling Method Hollow Stem Auger

Total Depth 82.5'

Drilled By Geotech Exploration

Date Completed 7/15/87

Logged By P. Dunn



WELL DETAILS	PENETRATION TIME/RATE	DEPTH (FEET)	SAMPLE NO.	SAMPLE TYPE	PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
						SW	0-4.5' FILL, GRAVELLY SAND 5-10% fines; fine to medium sand; 10-15% coarse sand to fine gravel; dry.	
		5	1	SS		ML	4.5-10.5' CLAYEY SILT, olive gray, low to medium plasticity, trace fine sand; soft.	▽
		10	2	SS				
						SP	10.5-28.0' SAND, very dark gray, trace low plasticity fines; fine to medium grained; loose, saturated.	
		15	3	SS				
		20	4	SS				
		25	5	SS				
						SM	28-33' SILTY SAND, dark gray to black, very fine to fine sand some medium, trace coarse, trace to some organic fragments, interbedded silt layers.	
		30	6	SS				
		35	7	SS		ML	33-48' See following page for description.	

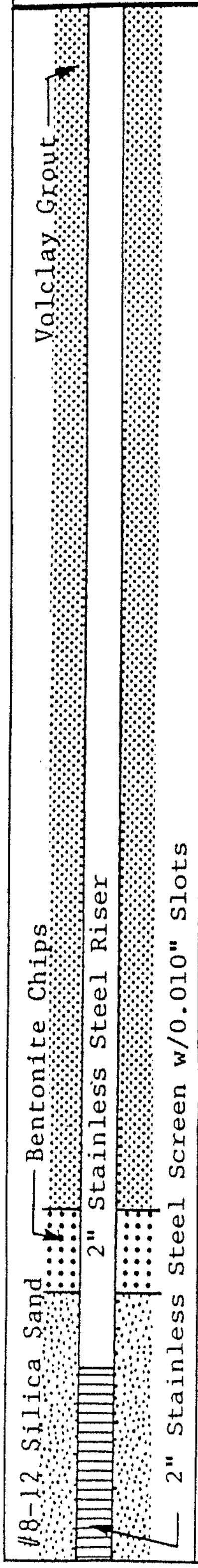
Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK Finishes

Page 2 **of** 3

Boring No. L-Deep

WELL DETAILS	PENETRATION TIME/ RATE	DEPTH (FEET)	SAMPLE NO.	SAMPLE TYPE	PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
		35	7	SS		ML	33-48' SILT, dark gray, trace to some fine sand, slightly plastic, trace organic fragments.	
		40	8	SS				
		45	9	SS				
		50	10	SS		SP	48-68' SAND, black (5Y,2.5/1); fine to medium grained; trace coarse sand; trace silt as 1" lenses; medium dense.	
		55	11	SS				
		60	12	SS				
		65	13	SS				
		70	14	SS		SP/ML	68-78' SAND with SILT lenses, dark gray, SAND: Same as above. SILT: Low plasticity ½" thick lenses every 1½'; gray.	

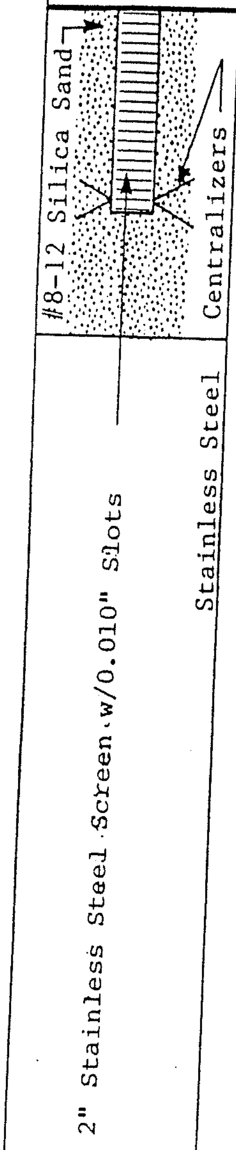
Sweet, Edwards & Associates, Inc.

BORING LOG

PROJECT HYTEK Finishes

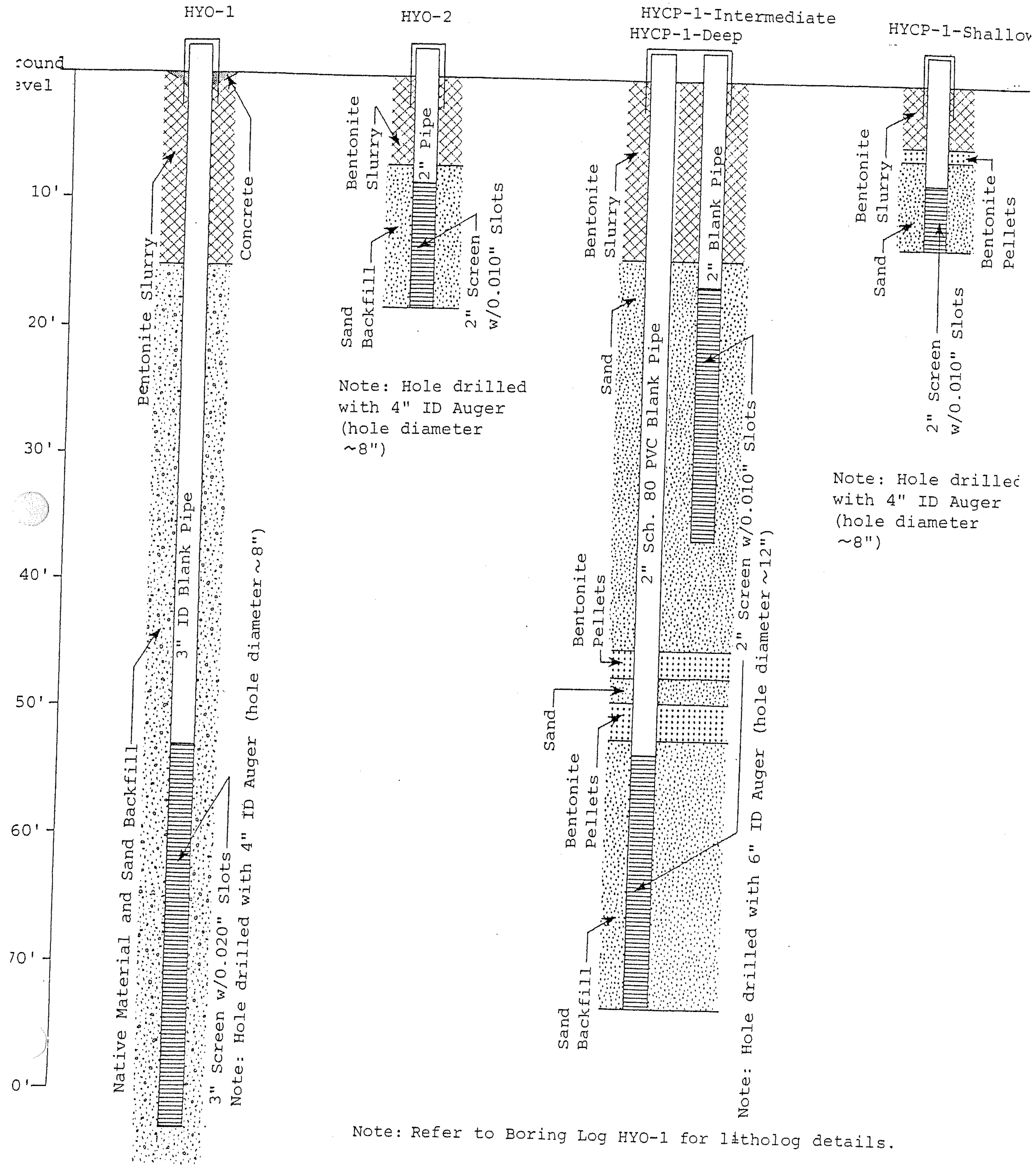
Page 3 **of** 3

Boring No. L-Deep

WELL DETAILS	PENETRATION TIME/ RATE	DEPTH (FEET)	SAMPLE NO.	SAMPLE TYPE	PERMEABILITY TESTING	SYMBOL	LITHOLOGIC DESCRIPTION	WATER QUALITY
		75	15	SS		SP/ML	SAND with SILT lenses, - (cont.)	
		80	16	SS			78-82.5' SILTY CLAY, very dark gray, low to medium plasticity, trace fine sand and stringers.	
		85					B.O.H.=82.5 feet	
							See figure 7 for details of other nested wells.	

HYTEK

WELL COMPLETION DETAIls - SHEET 4 of 4



Note: Hole drilled with 4" ID Auger (hole diameter ~8")

Note: Hole drilled with 4" ID Auger (hole diameter ~8")

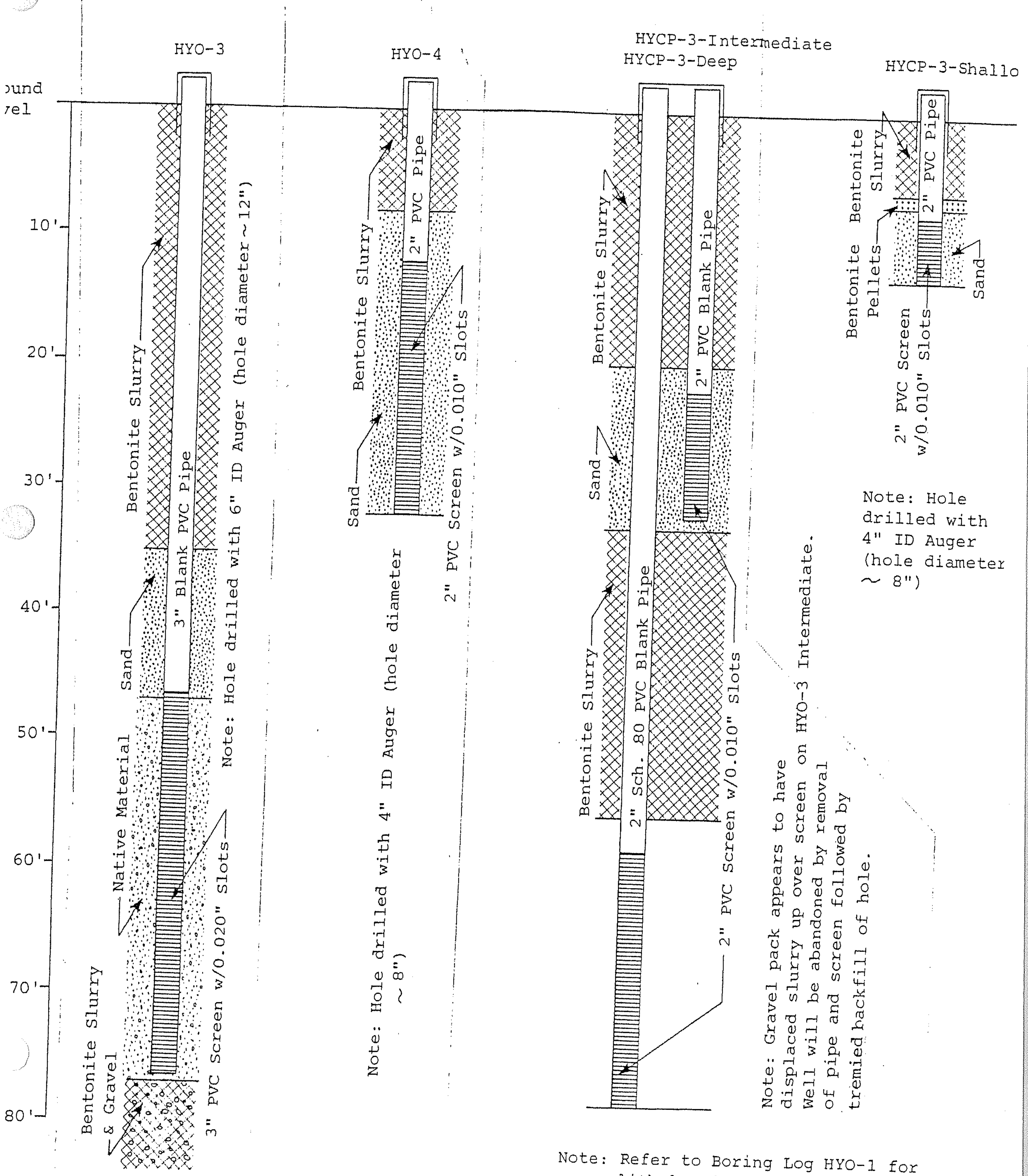
Note: Hole drilled with 6" ID Auger (hole diameter ~12")

Note: Hole drilled with 4" ID Auger (hole diameter ~8")

Note: Refer to Boring Log HYO-1 for litholog details.

HYTEK

WELL COMPLETION DETAILS - SHEET 4 of 4



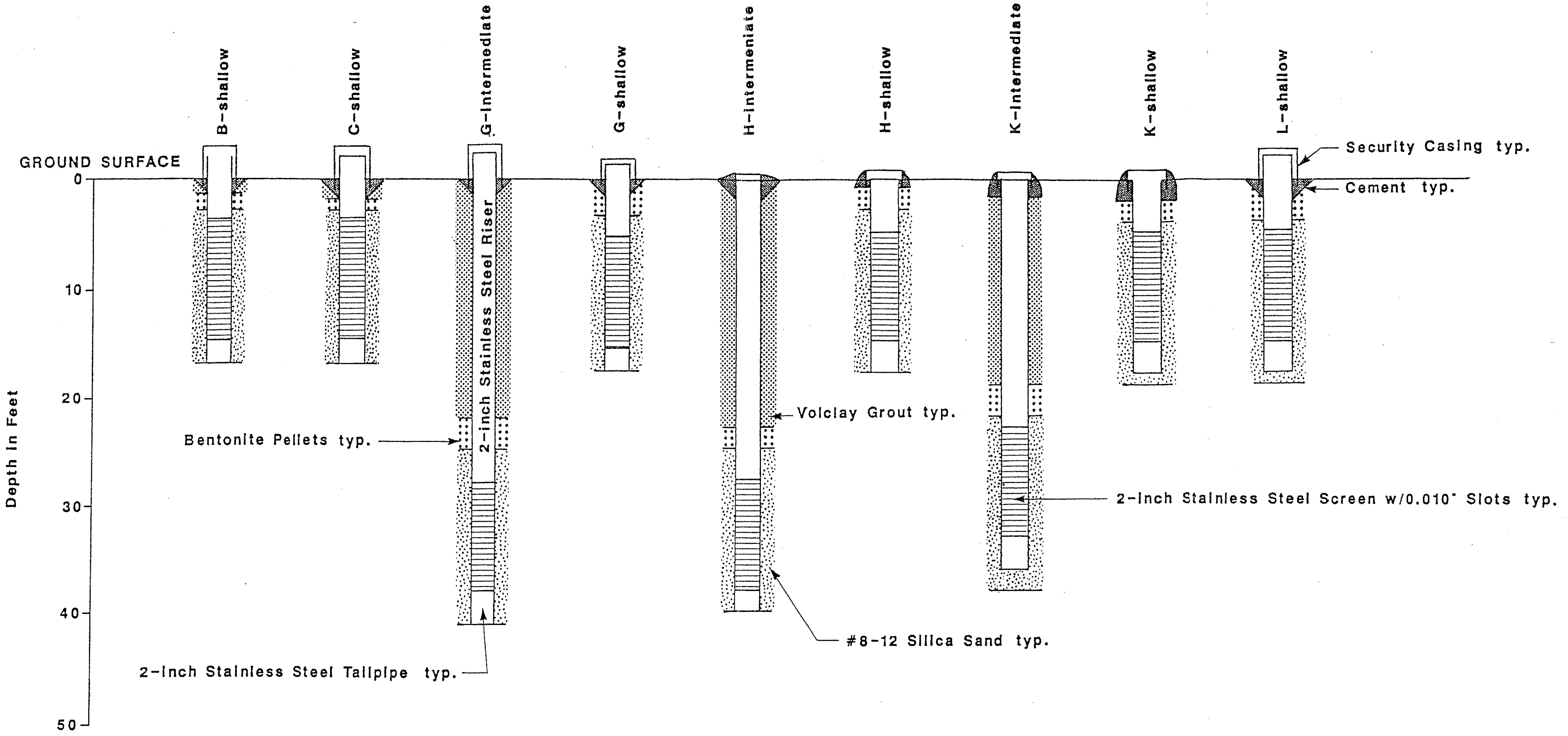
Note: Hole drilled with 6" ID Auger (hole diameter ~ 12")

Note: Hole drilled with 4" ID Auger (hole diameter ~ 8")

Note: Gravel pack appears to have displaced slurry up over screen on HYO-3 Intermediate. Well will be abandoned by removal of pipe and screen followed by tremied backfill of hole.

Note: Hole drilled with 4" ID Auger (hole diameter ~ 8")

Note: Refer to Boring Log HYO-1 for litholog details.



NOTE: Refer to deep boring log for lithologic details
and construction of deep screens.

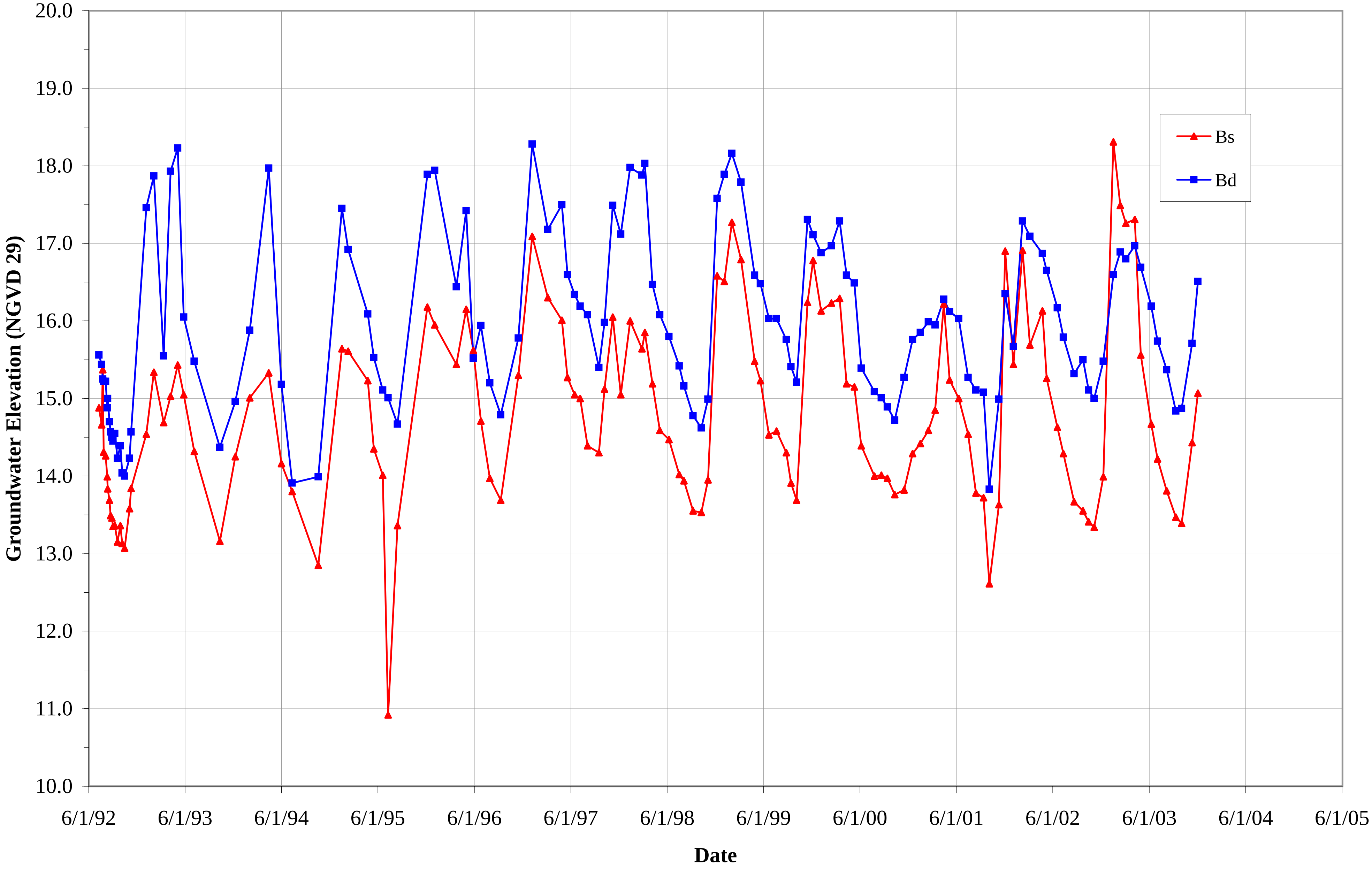
HYTEK -Finishes

Well Completion Details
For Shallow and Intermediate Wells

Sweet, Edwards & Associates

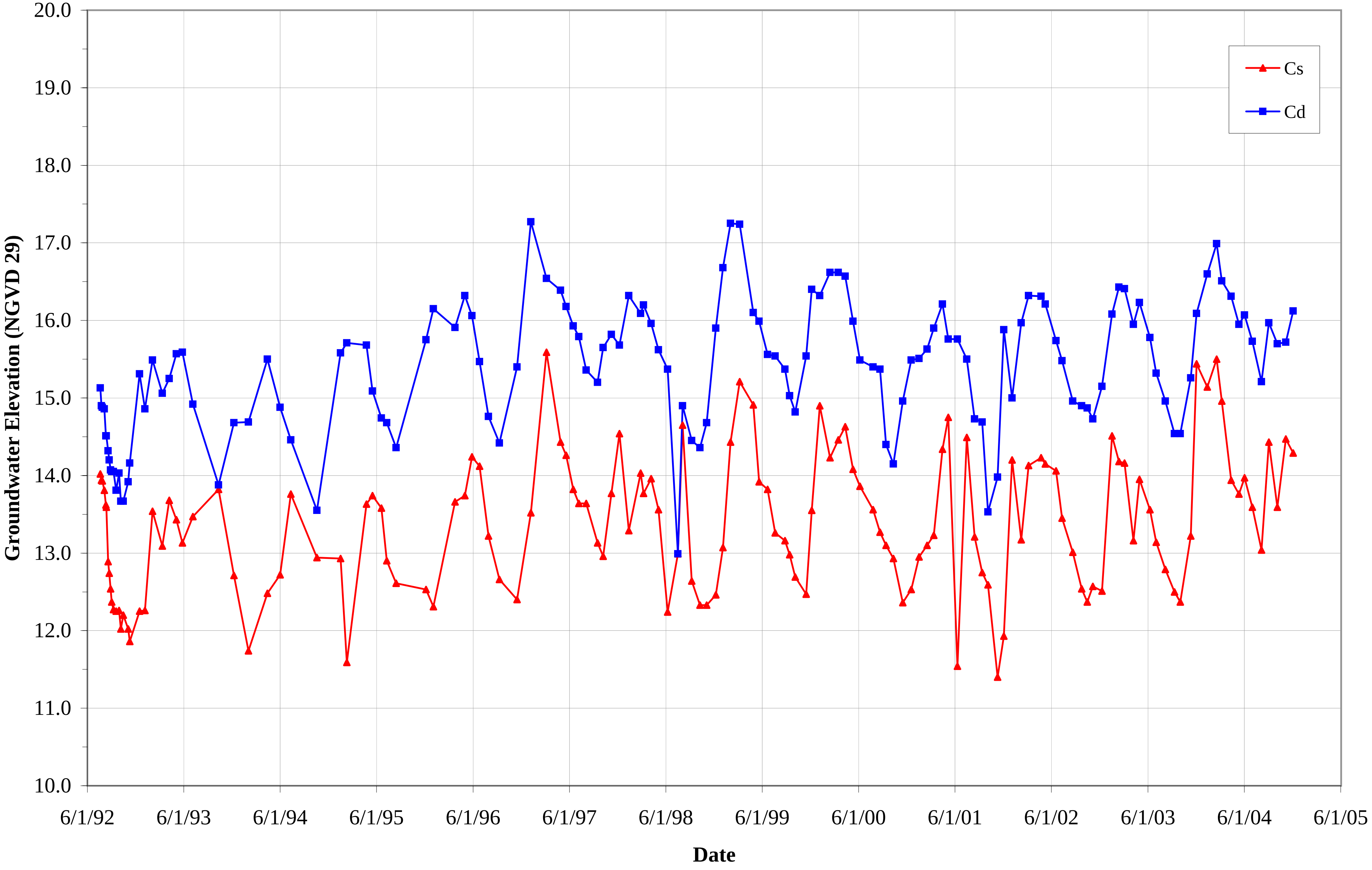
	INITIALS	DATE
DRAWN BY	jlg	1/6/88
CHECKED BY	jlg	
REVISED		

Hydrographs, B Wells
Carr Property, Kent, Washington



B82700106R_477_AppC11,C12,C13,C14.C15.xls

Hydrographs, C Wells
Hexcel Property, Kent, Washington



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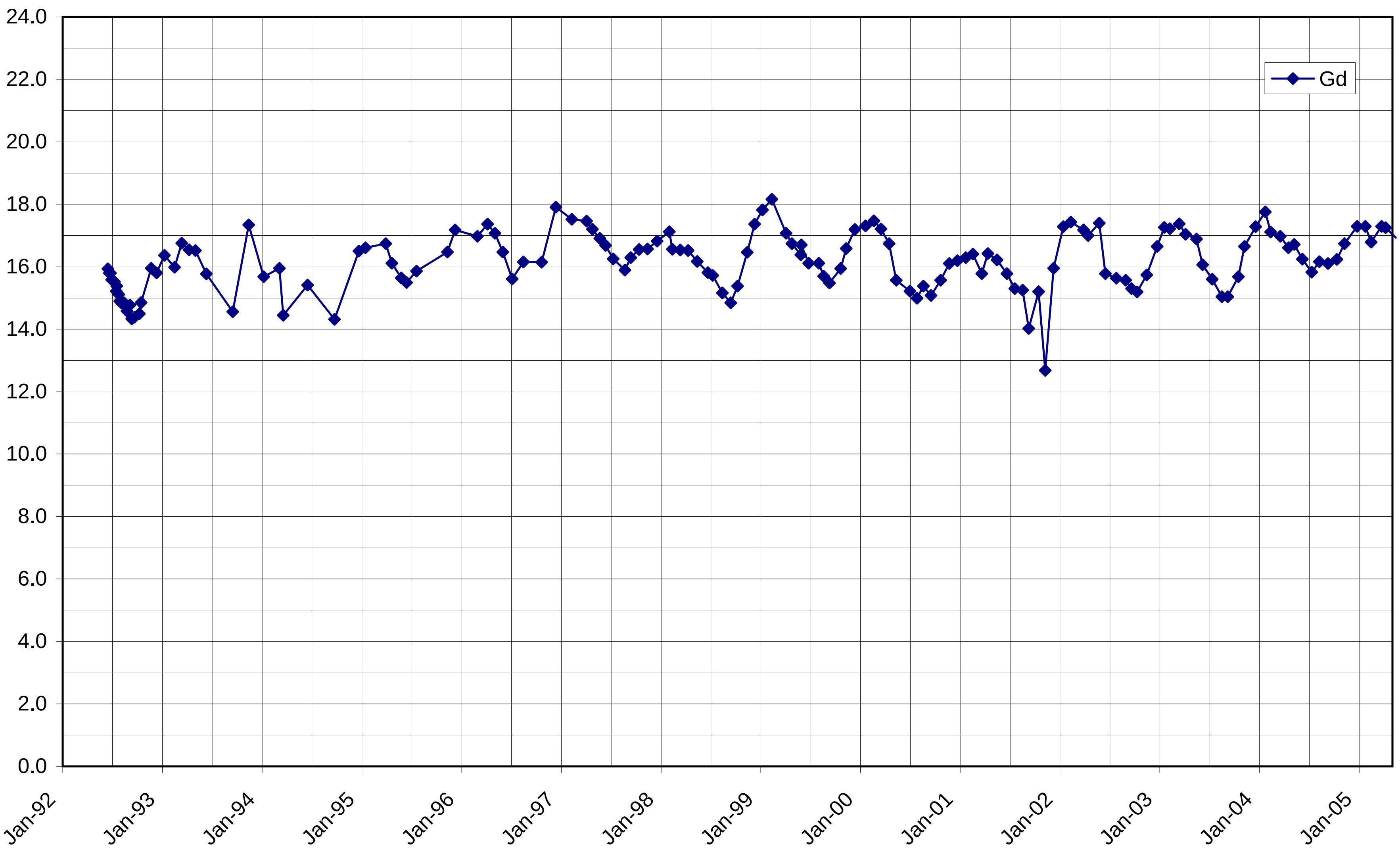
Hydrograph



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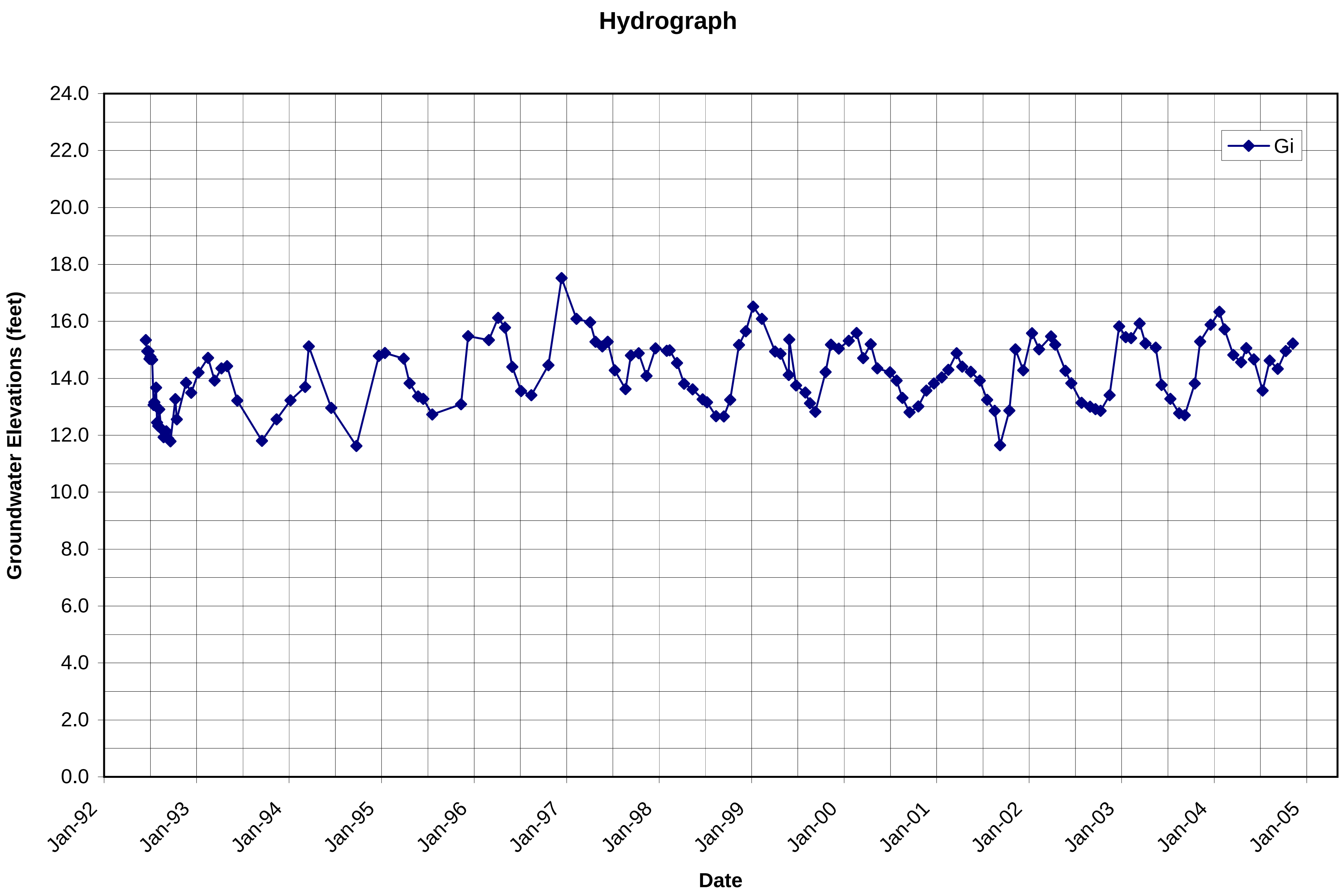
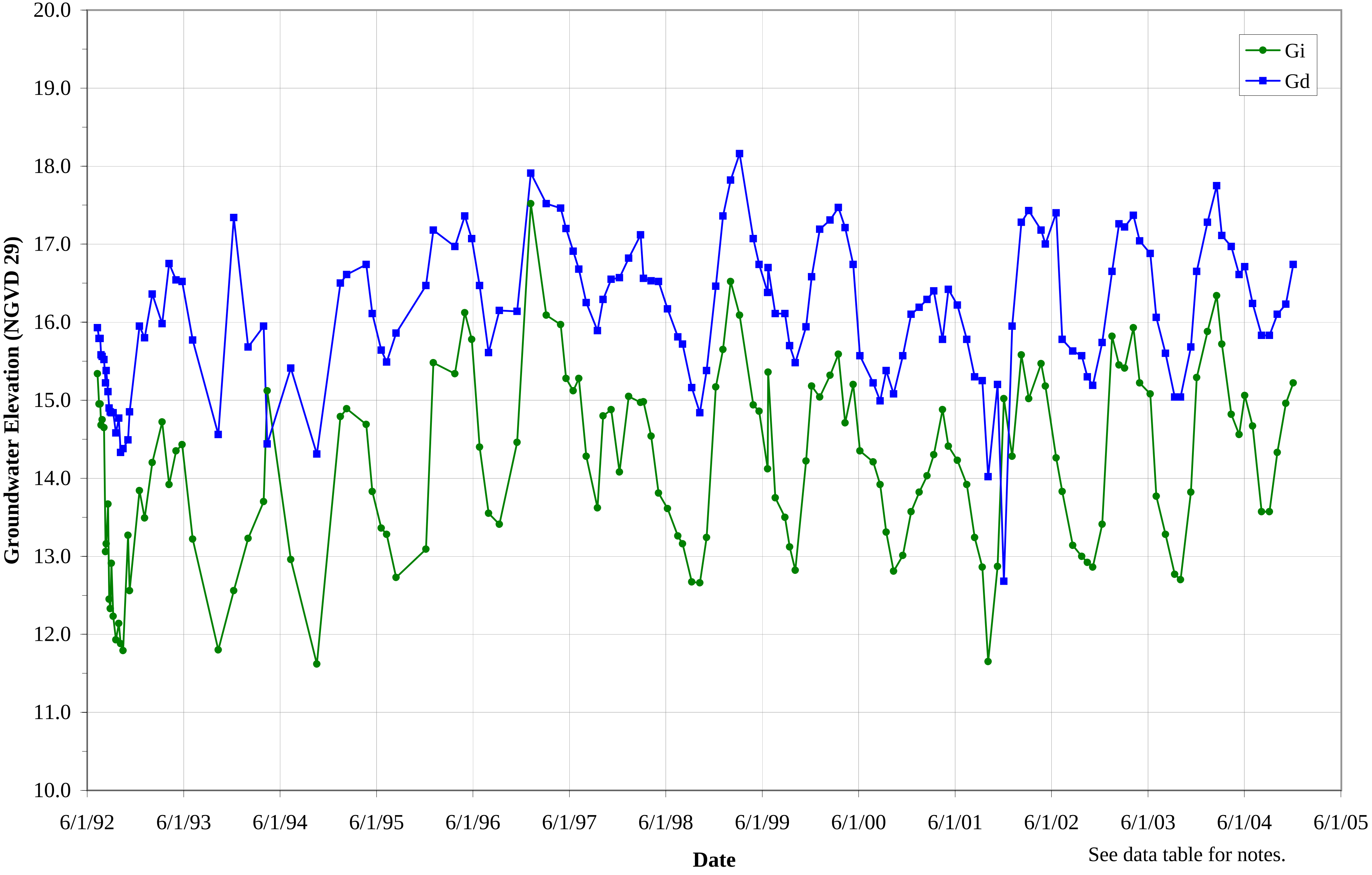
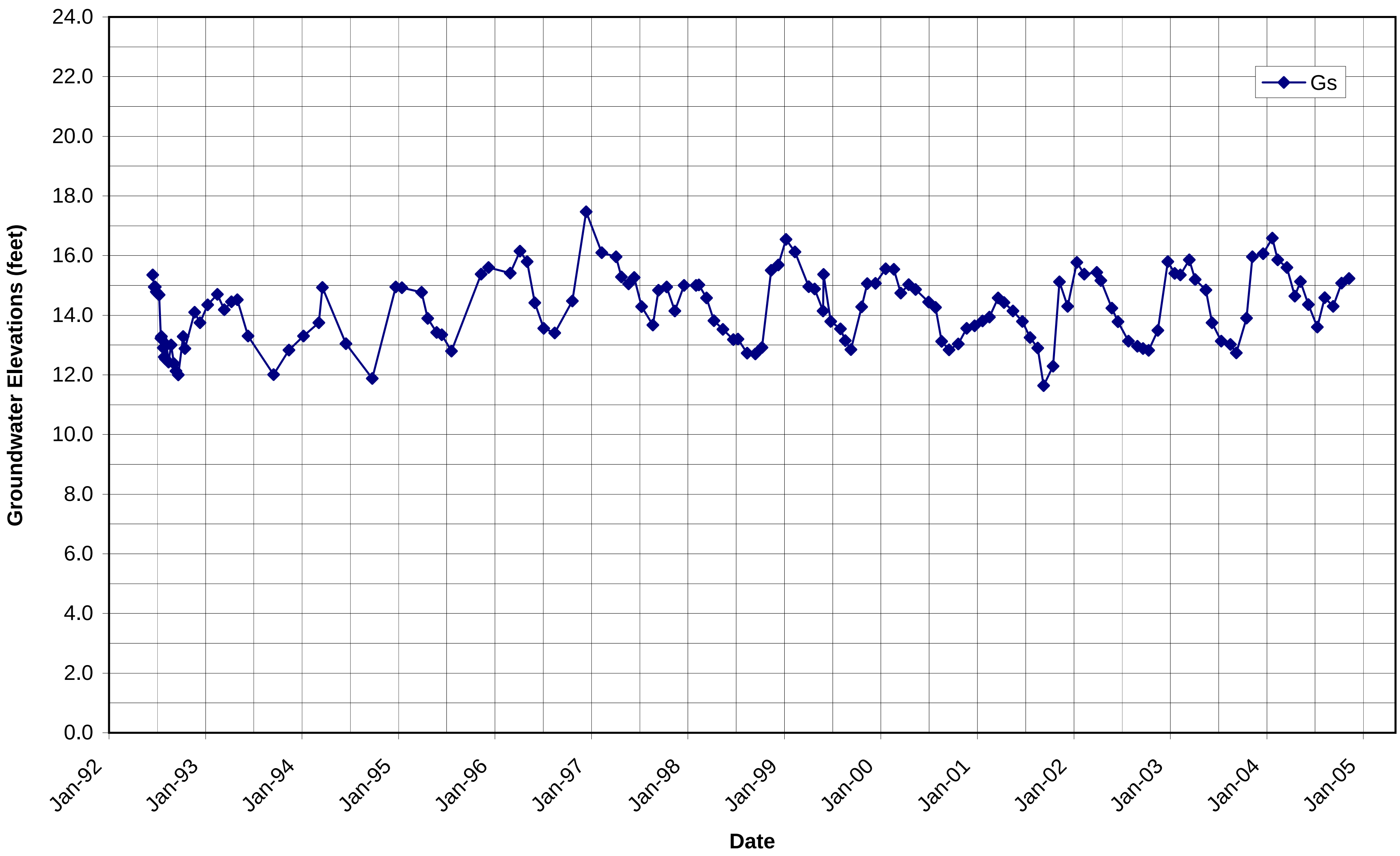

Hydrograph
Groundwater Elevations (feet)
24.0
22.0
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Gi
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Date

Hydrographs, G Wells
BSB Property, Kent, Washington



See data table for notes.

Hydrograph



Groundwater Elevations (feet)
24.0
22.0
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
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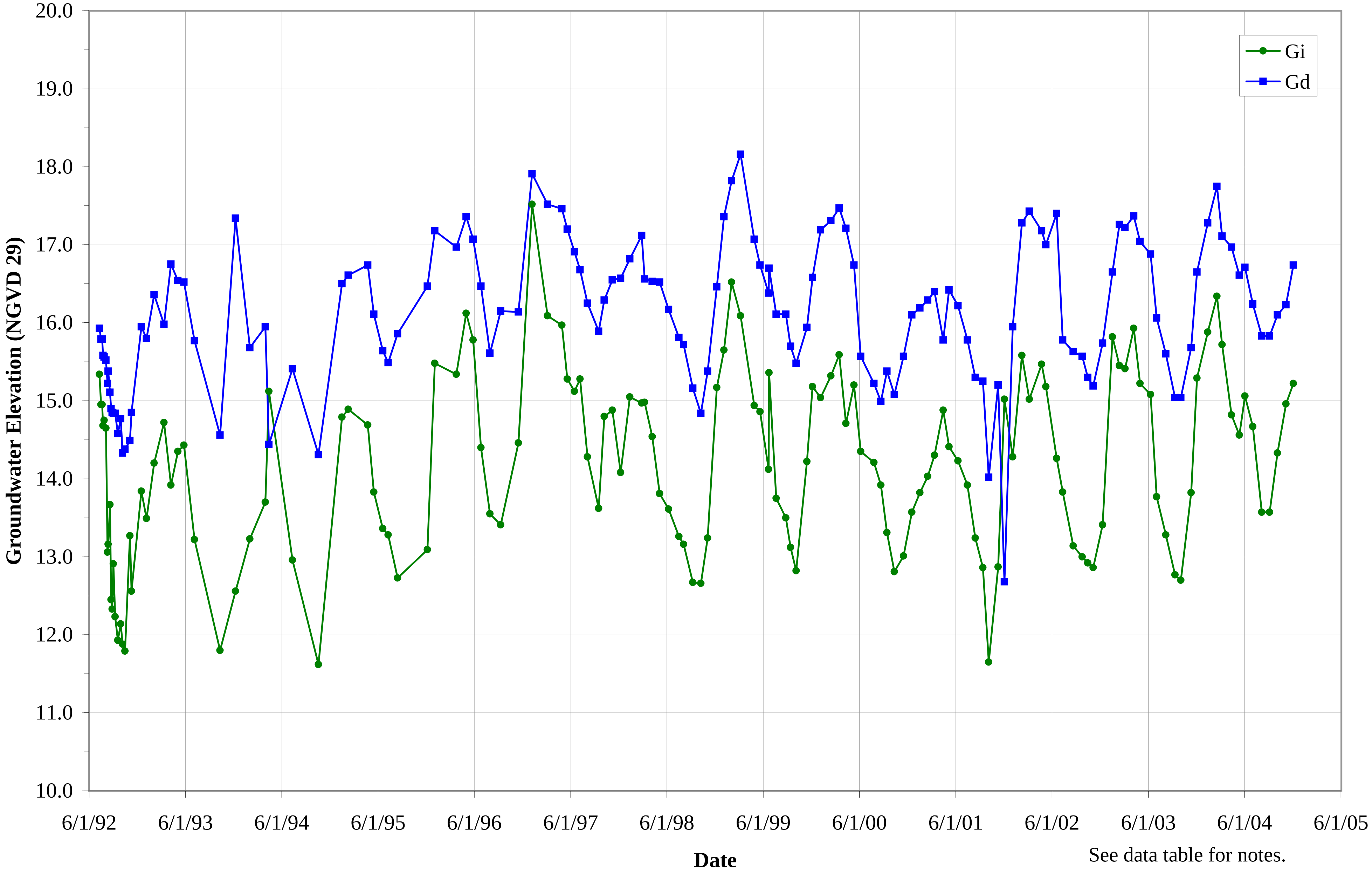
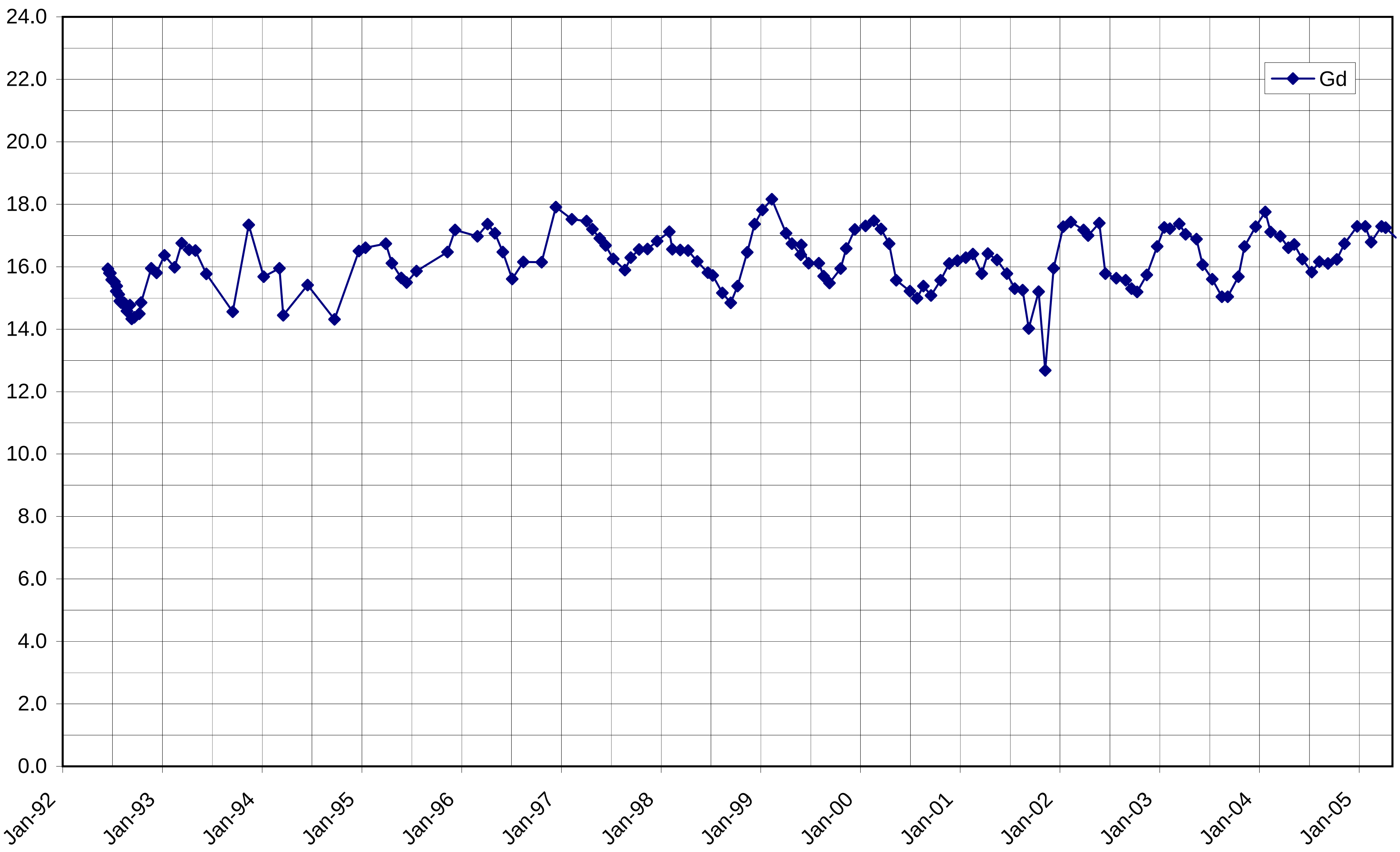
Jan-03
Jan-04
Jan-05
Date
Gs

Hydrographs, G Wells
BSB Property, Kent, Washington



See data table for notes.

Hydrograph



Gd
24.0
22.0
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16.0
14.0
12.0
10.0
8.0
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Jan-97
Jan-98
Jan-99
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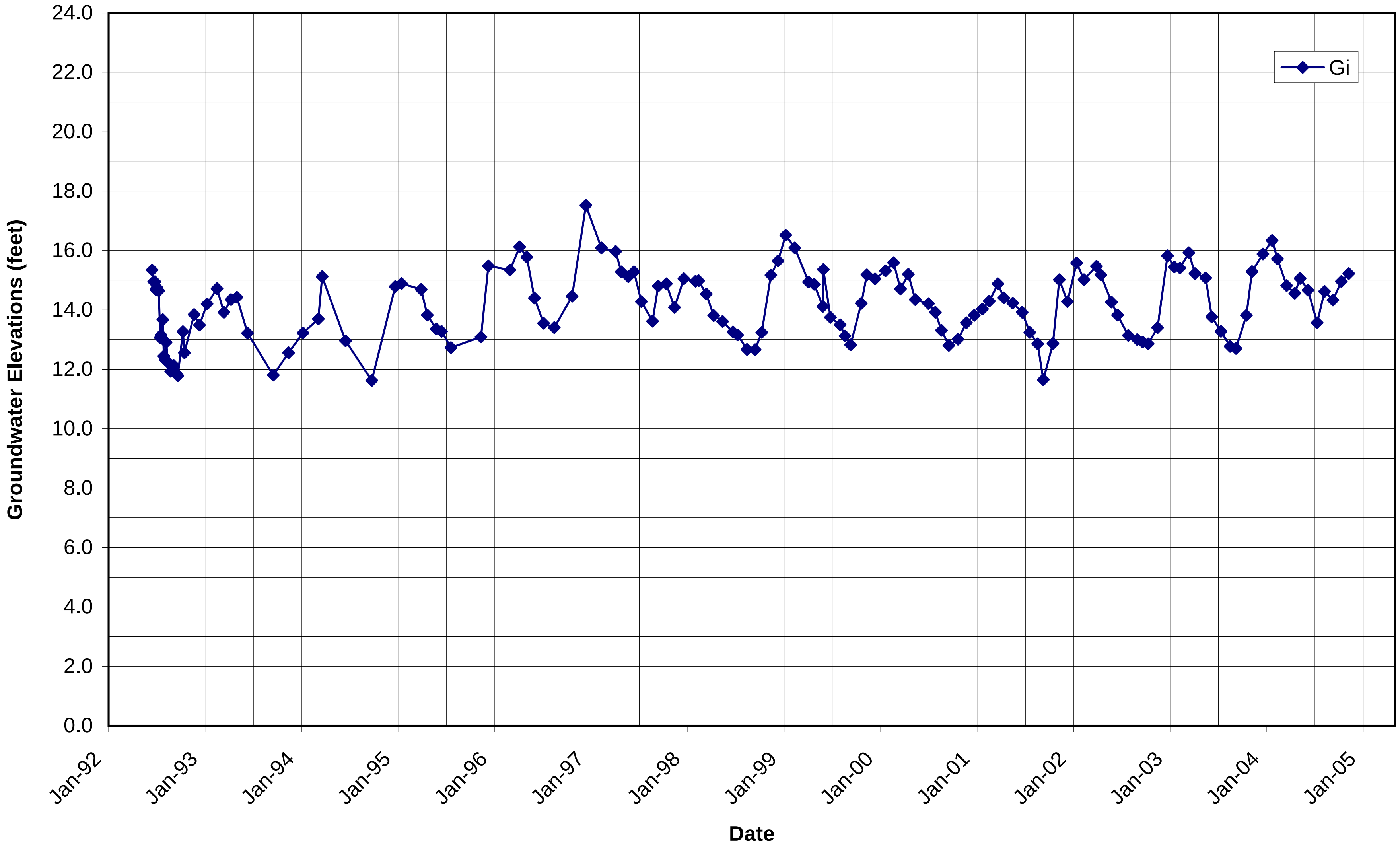
Hydrograph



Groundwater Elevations (feet)
24.0
22.0
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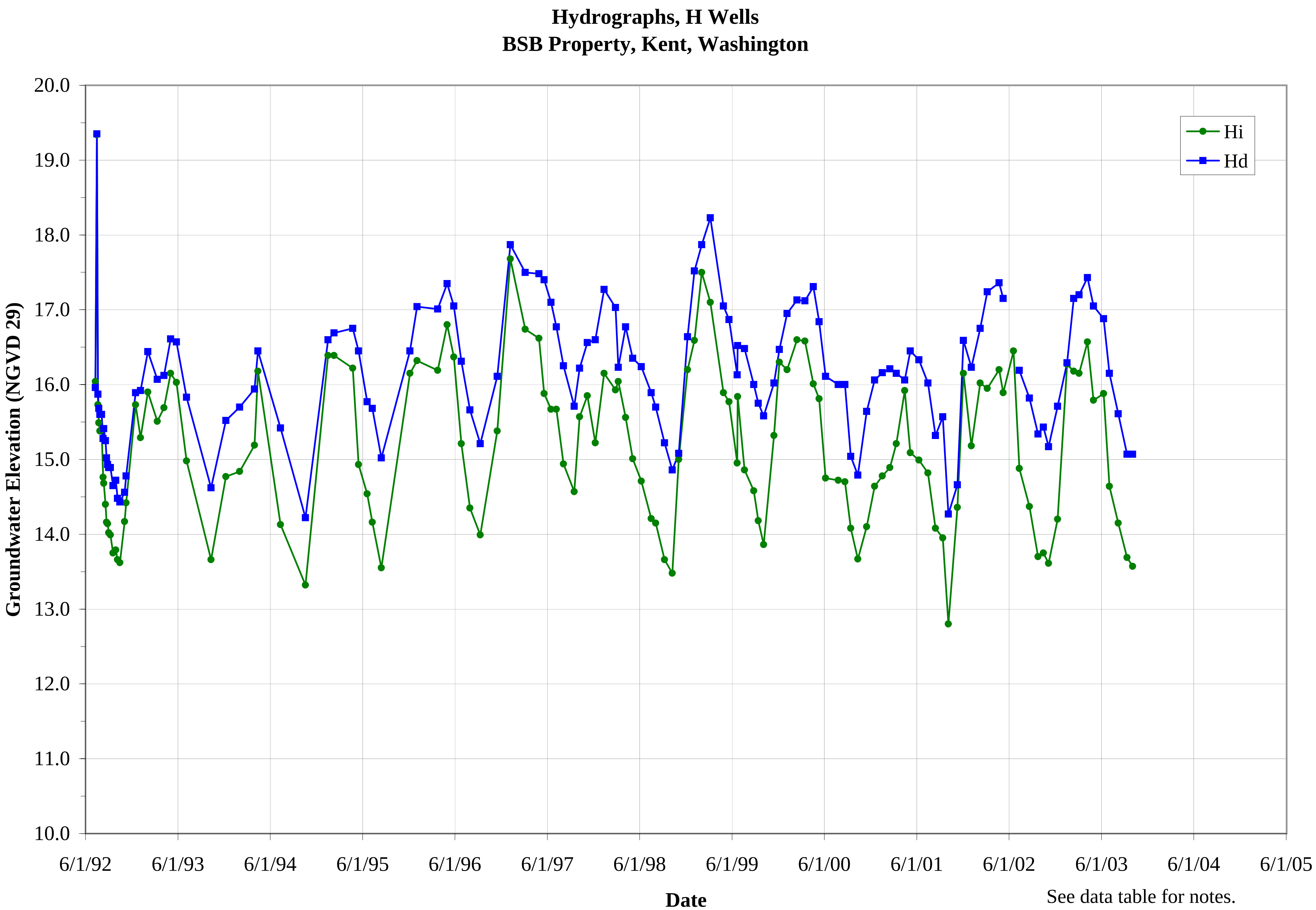
Date
Gi


Hydrographs, H Wells
BSB Property, Kent, Washington
Groundwater Elevation (NGVD 29)
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19.0
18.0
17.0
16.0
15.0
14.0
13.0
12.0
11.0
10.0
6/1/92
6/1/93
6/1/94
6/1/95
6/1/96
6/1/97
6/1/98
6/1/99
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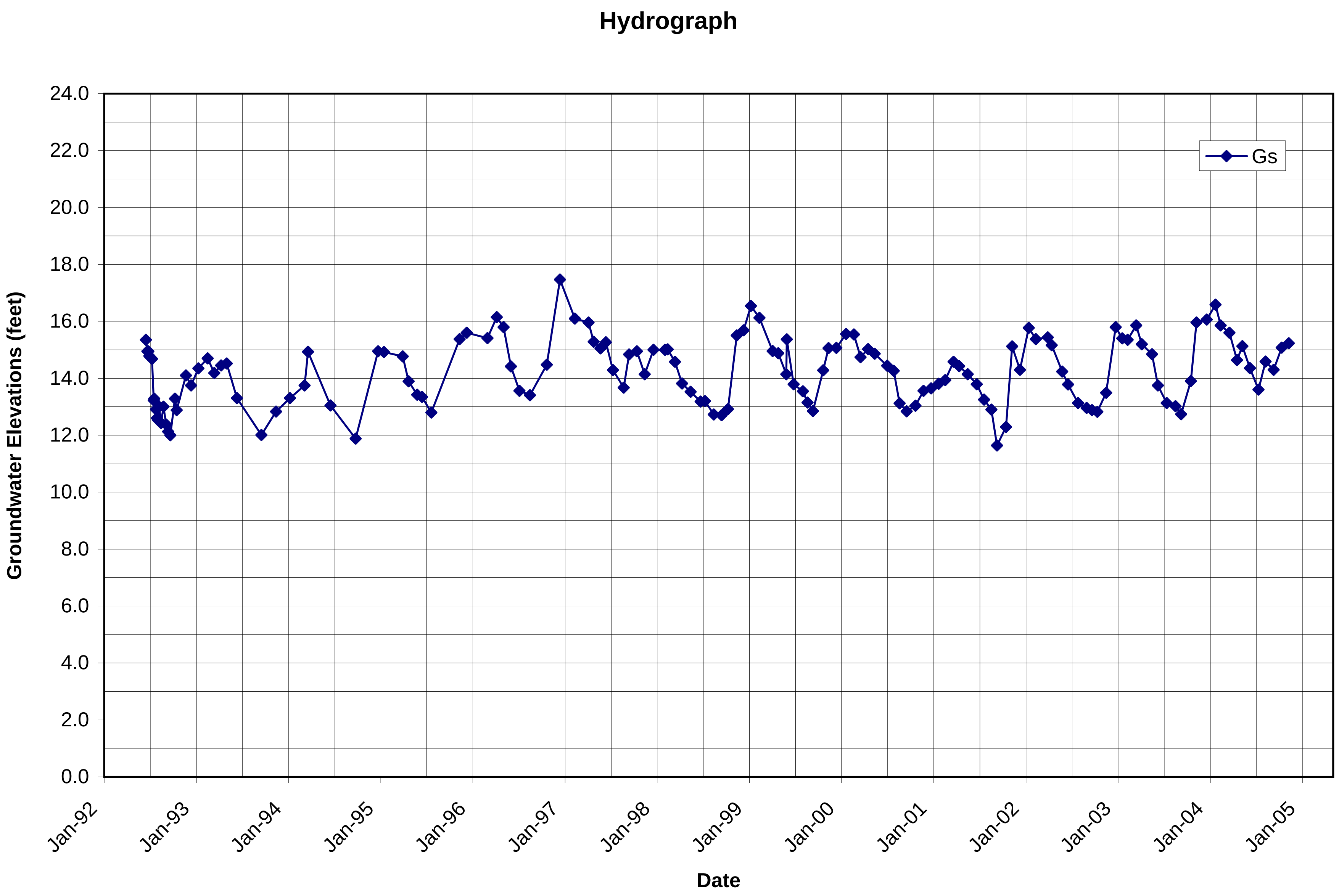
See data table for notes.


Hydrograph
Gs
Groundwater Elevations (feet)
24.0
22.0
20.0
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16.0
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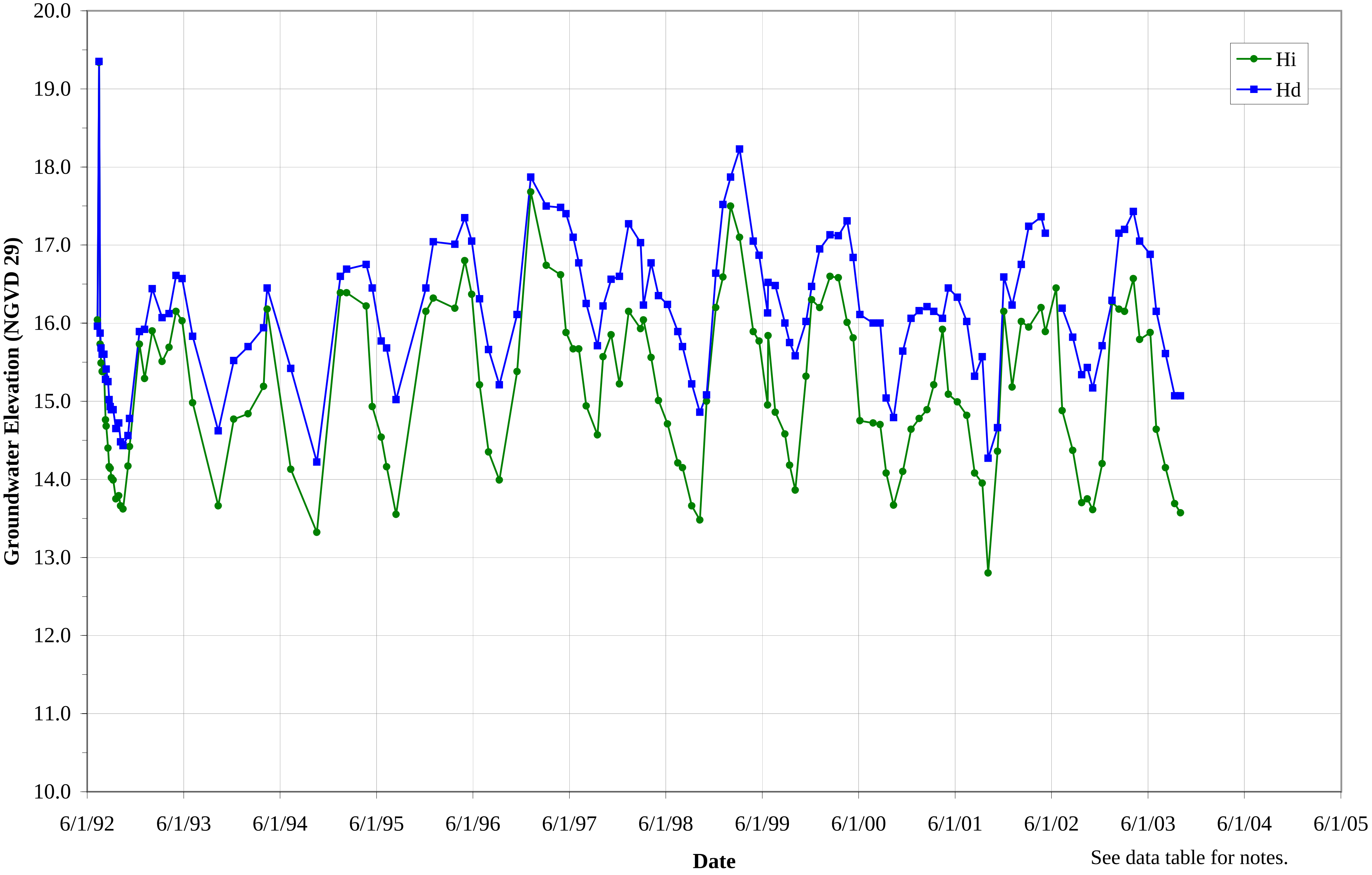
Jan-03
Jan-04
Jan-05
Date

Hydrographs, H Wells
BSB Property, Kent, Washington



See data table for notes.

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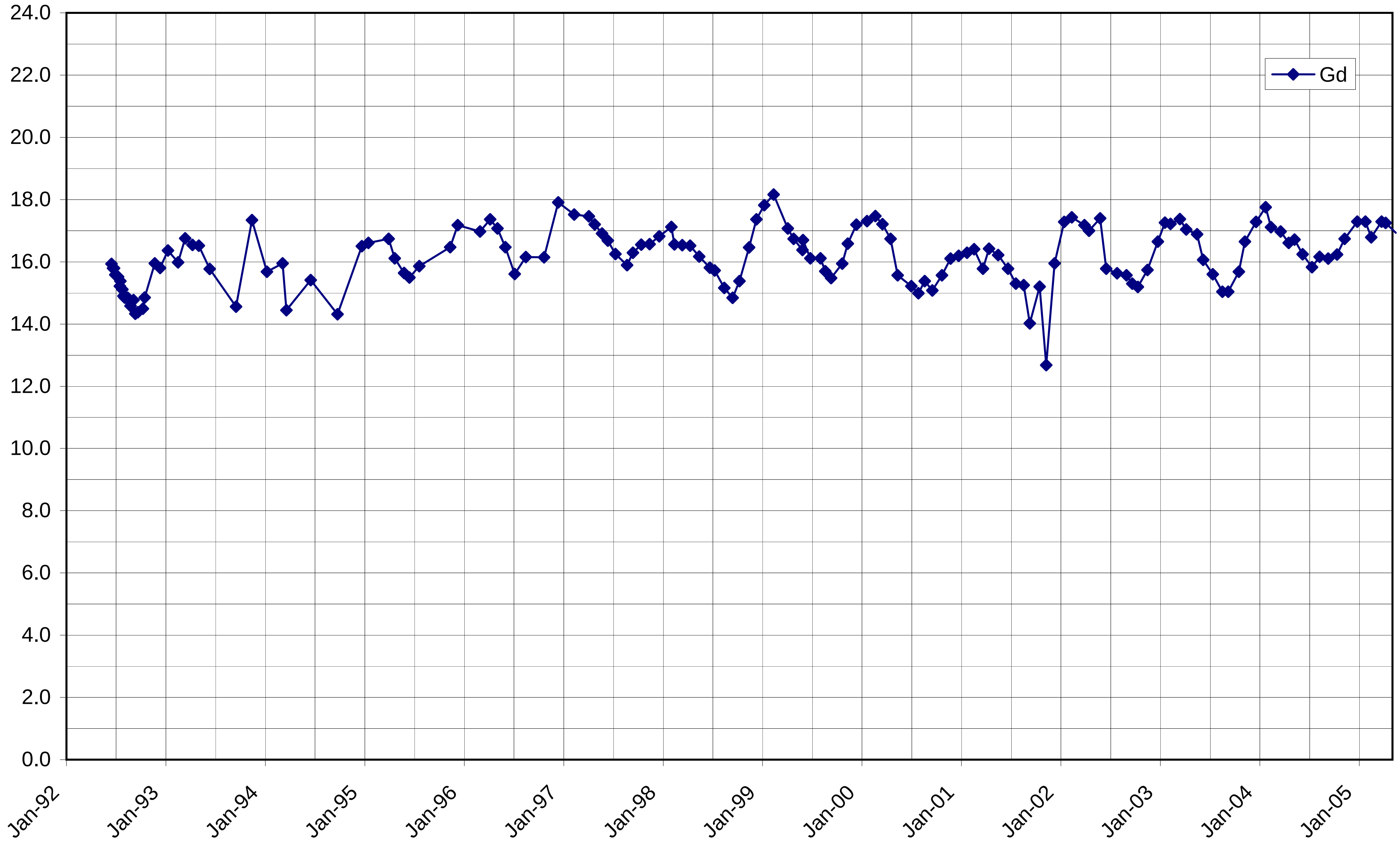

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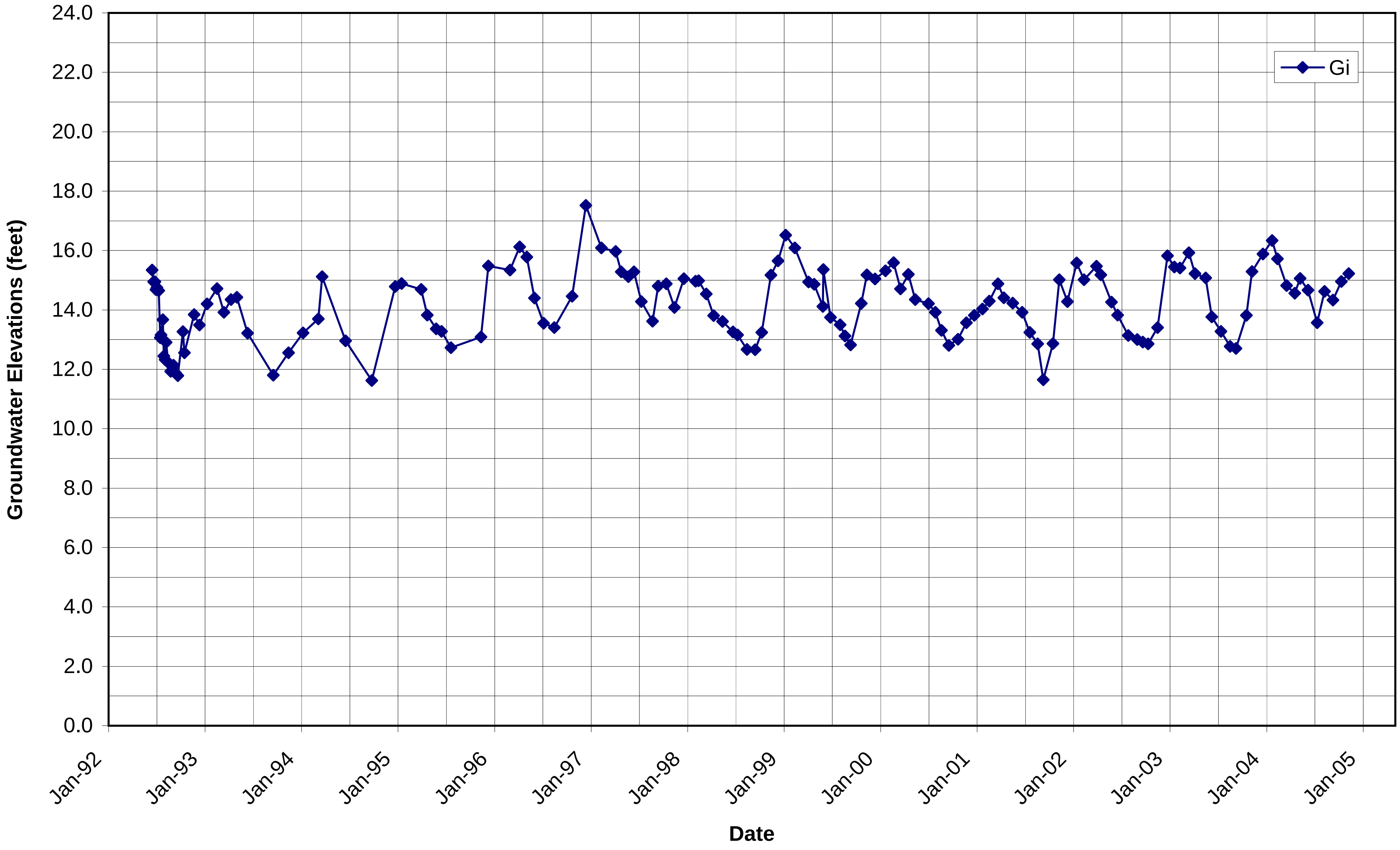
Hydrograph


Gi
Groundwater Elevations (feet)
24.0
22.0
20.0
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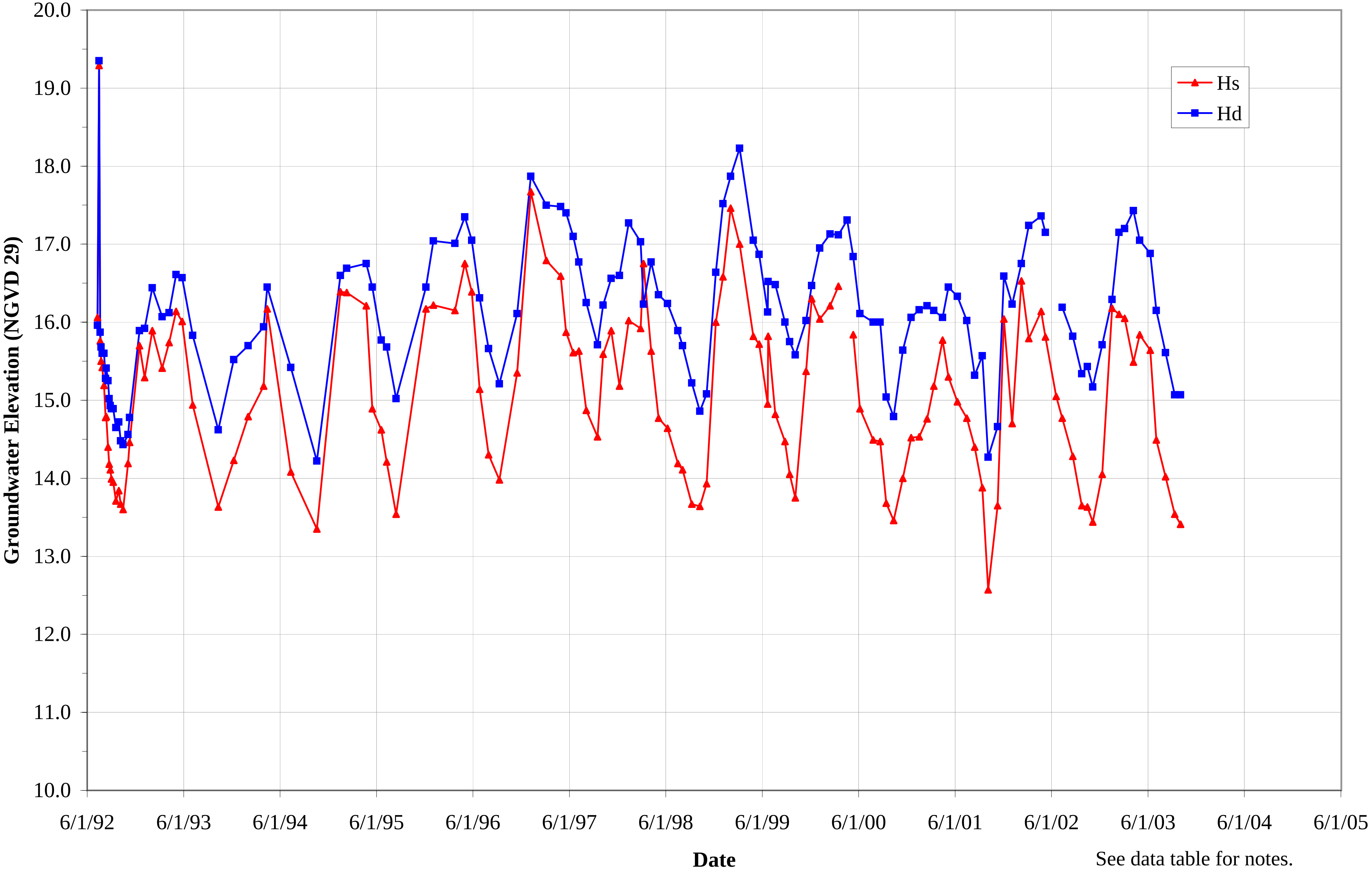
Jan-04
Jan-05
Date

Hydrographs, H Wells
BSB Property, Kent, Washington



See data table for notes.

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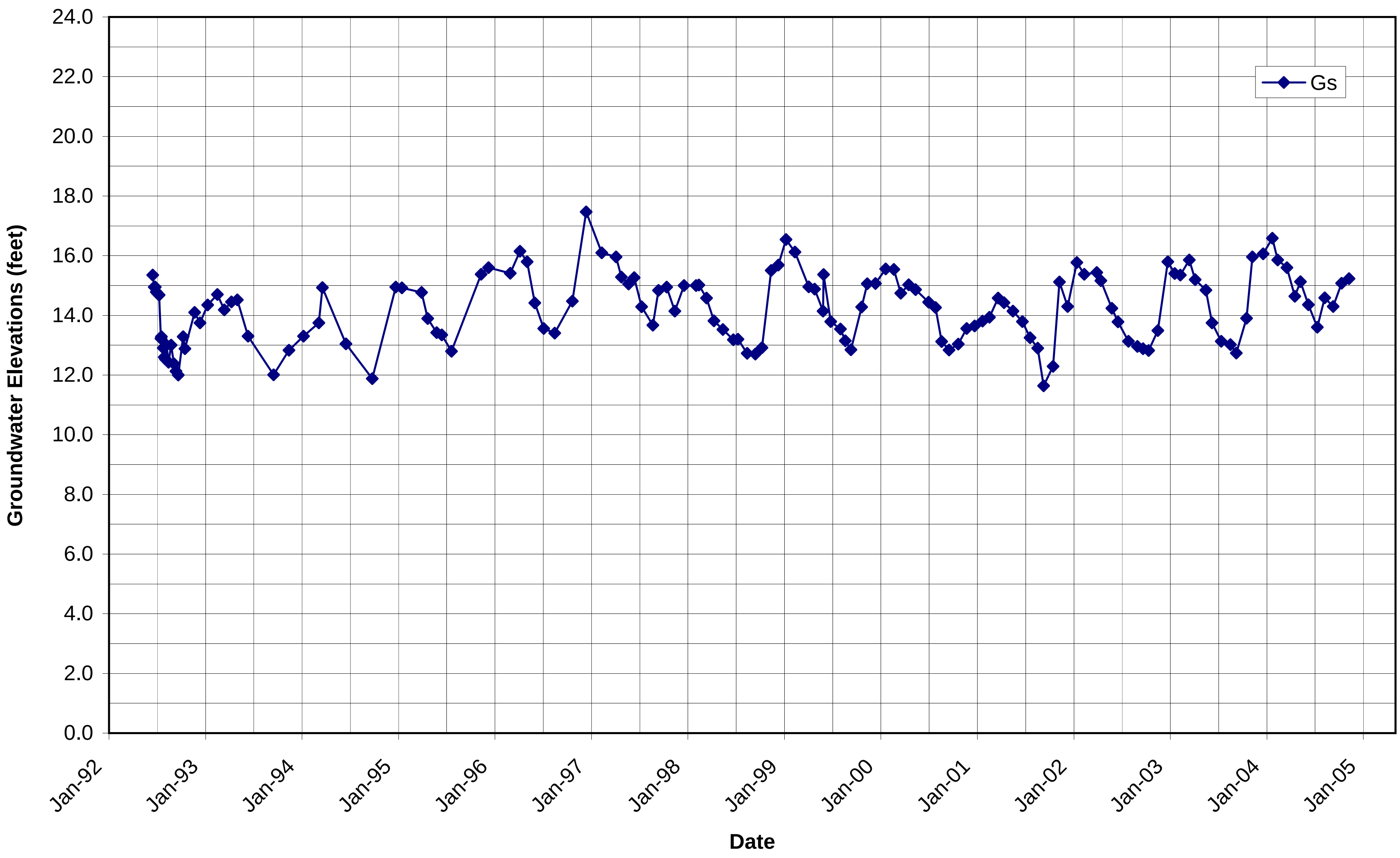

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Groundwater Elevations (feet)
Jan-92
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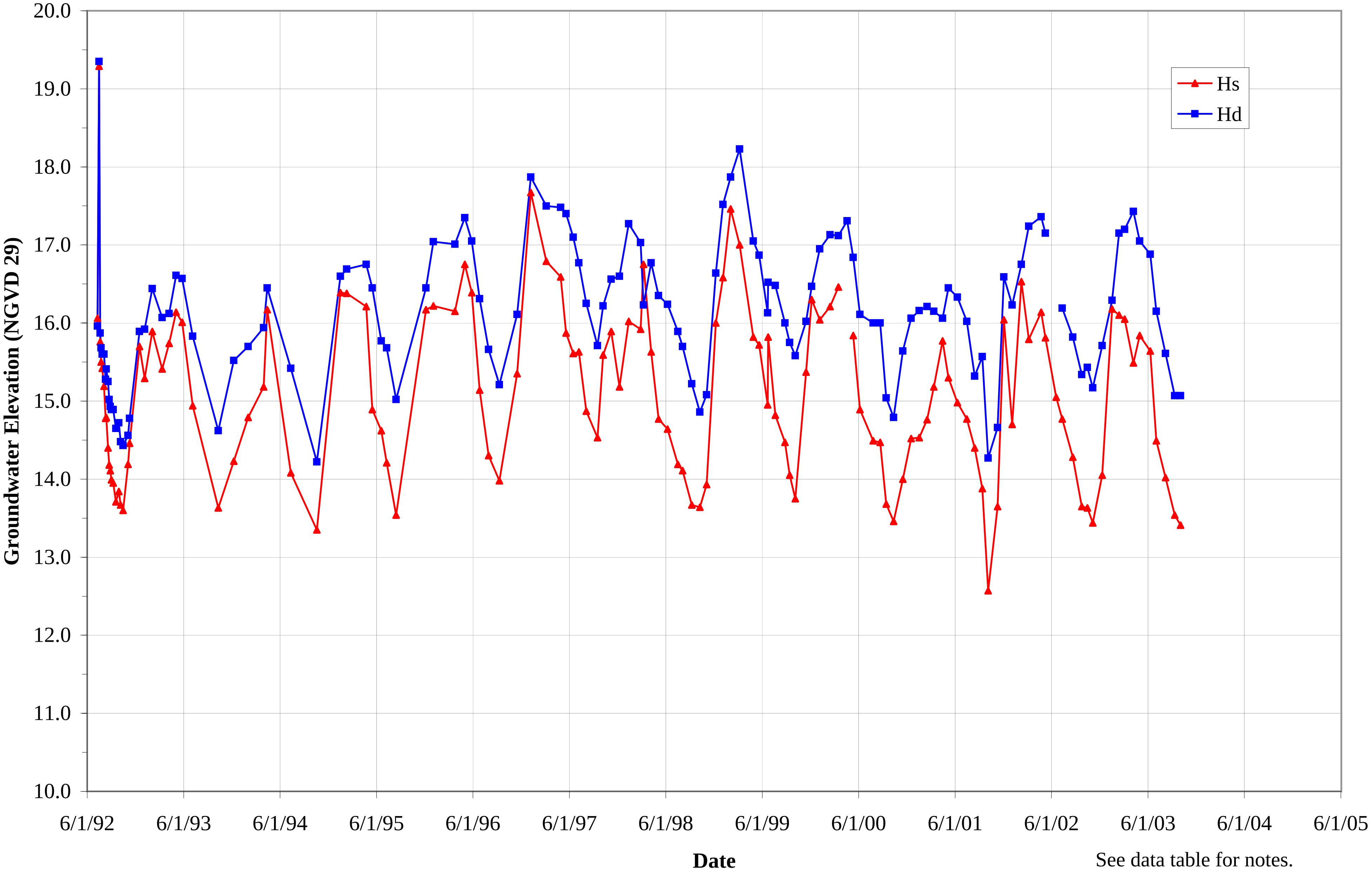
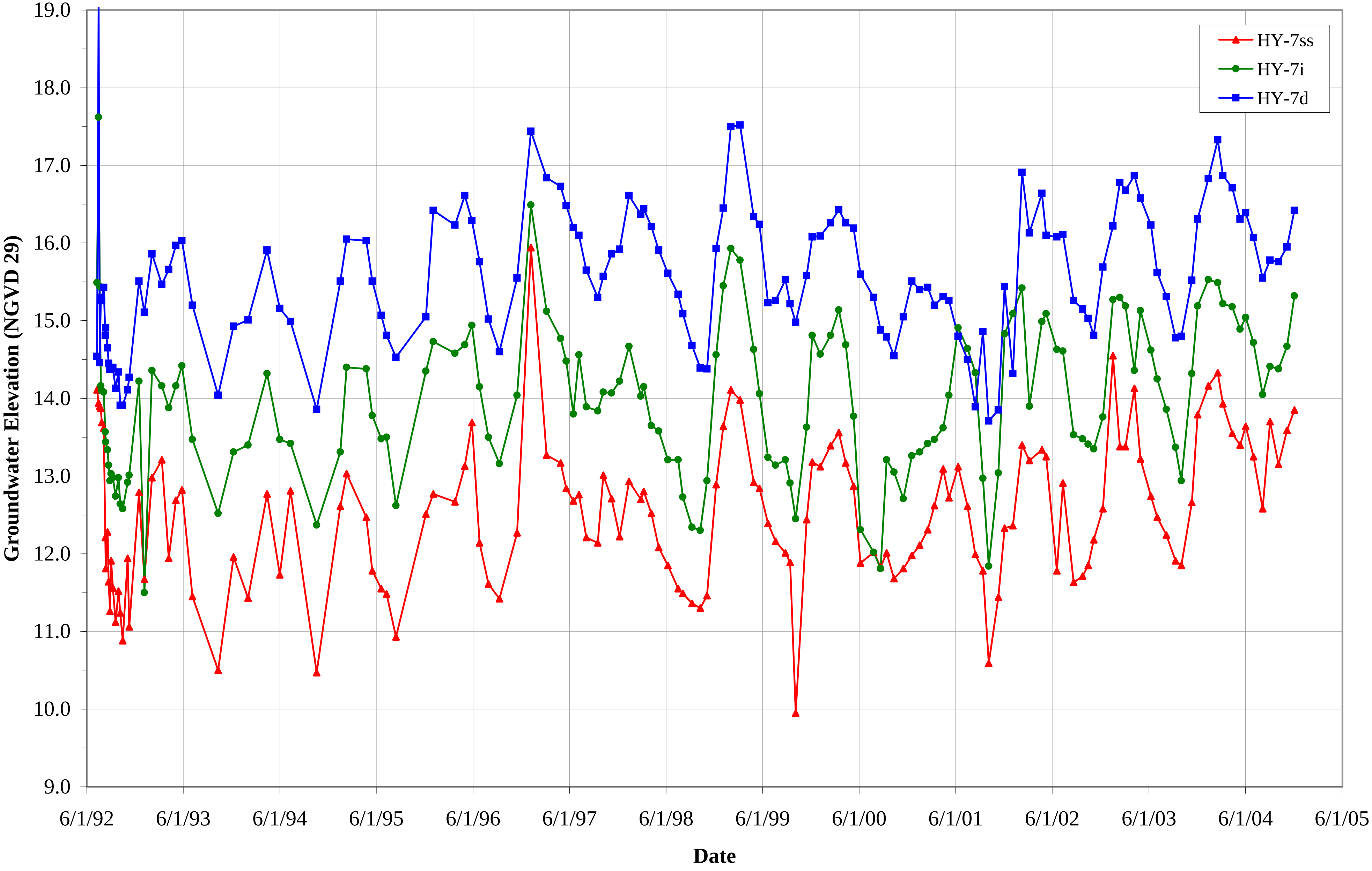
Jan-03
Jan-04
Jan-05
Date

Hydrographs, H Wells
BSB Property, Kent, Washington



See data table for notes.

Hydrographs, HY-7 Wells
Hexcel Property, Kent, Washington



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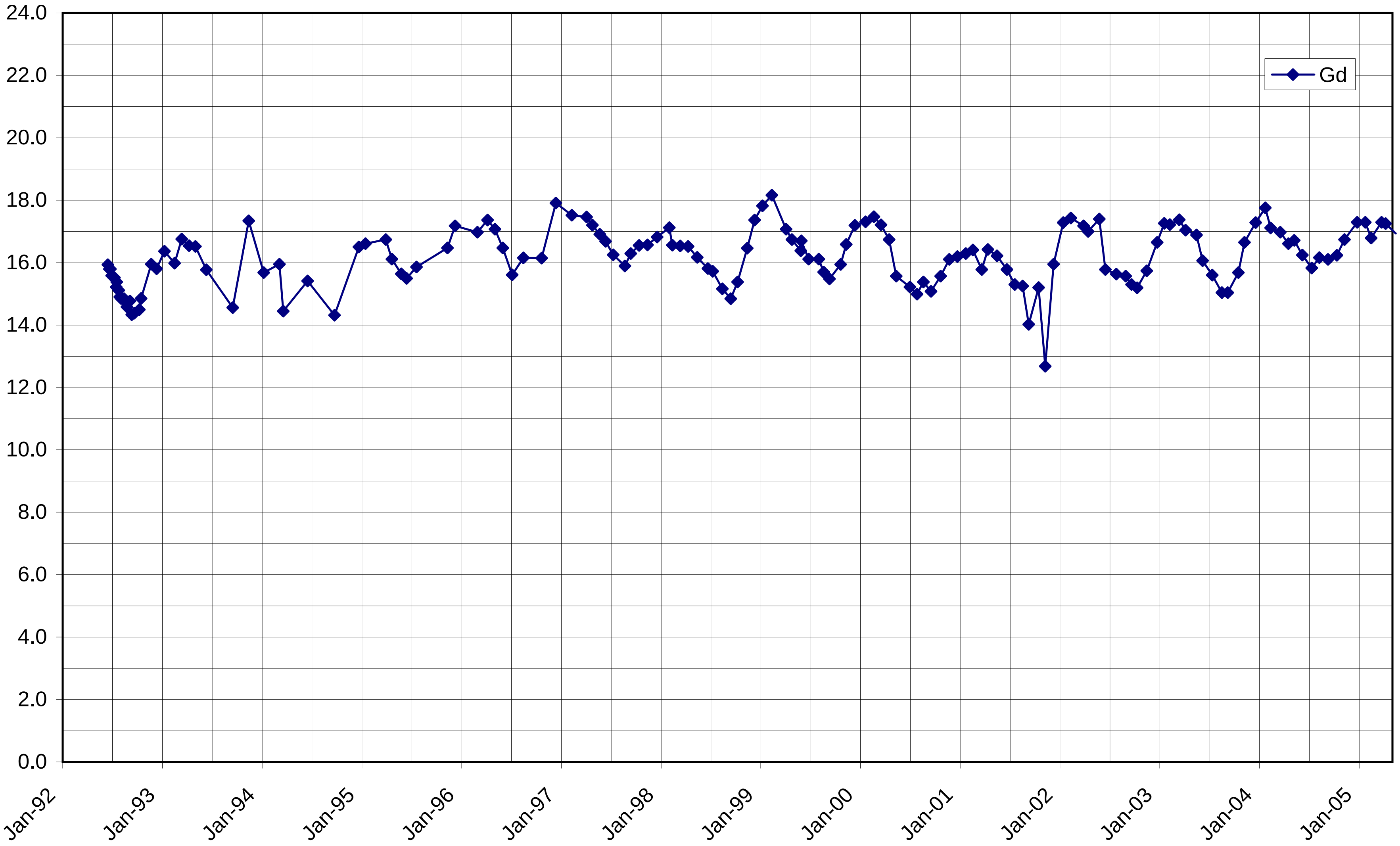
Hydrograph



24.0
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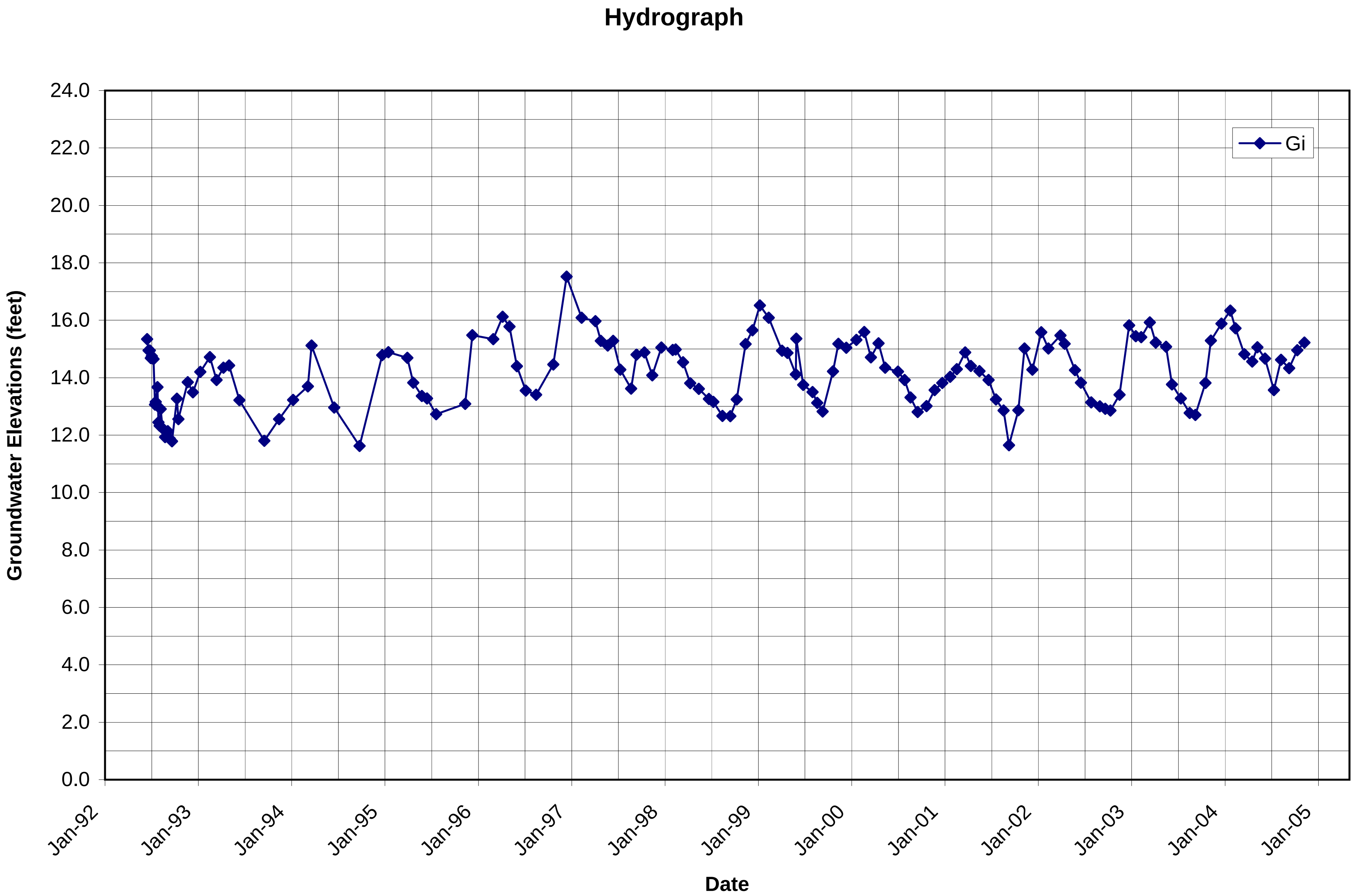
Jan-05


Hydrograph
Groundwater Elevations (feet)
24.0
22.0
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Gi
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Jan-95
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Jan-97
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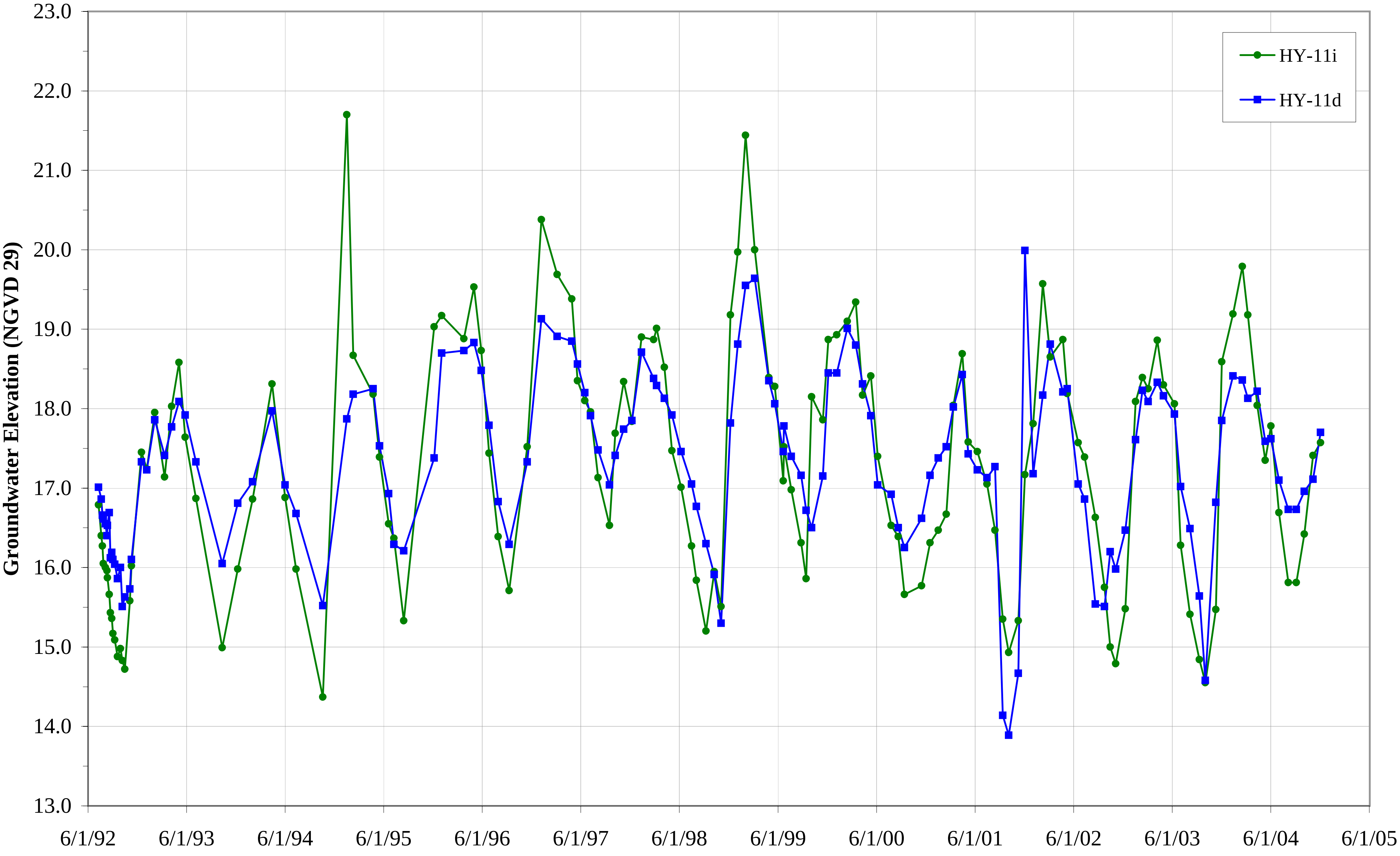
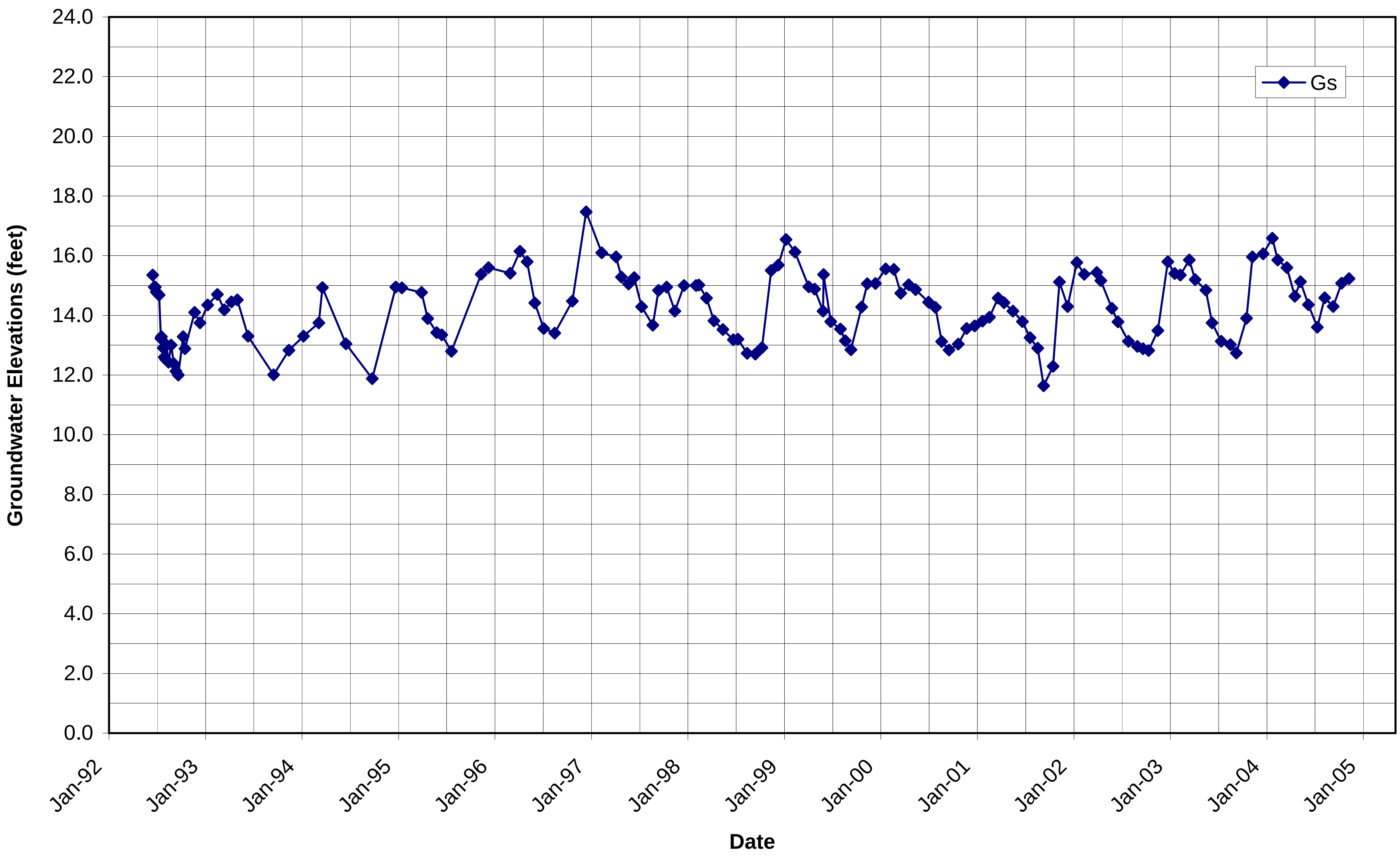
Jan-03
Jan-04
Jan-05
Date

Hydrographs, HY-11 Wells
BSB Property, Kent, Washington



See data table for notes.

Hydrograph



Groundwater Elevations (feet)
24.0
22.0
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Jan-92
Jan-93
Jan-94
Jan-95
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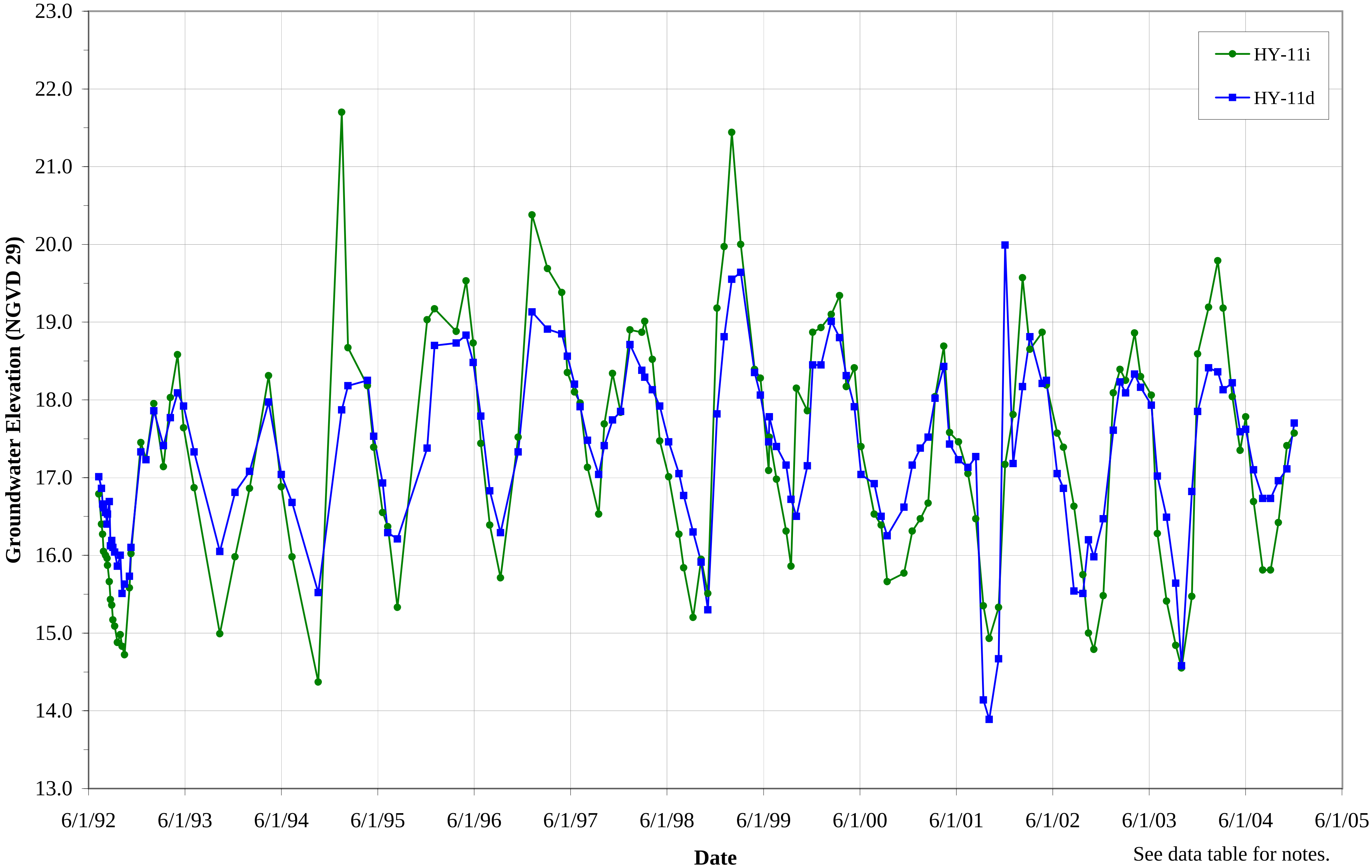
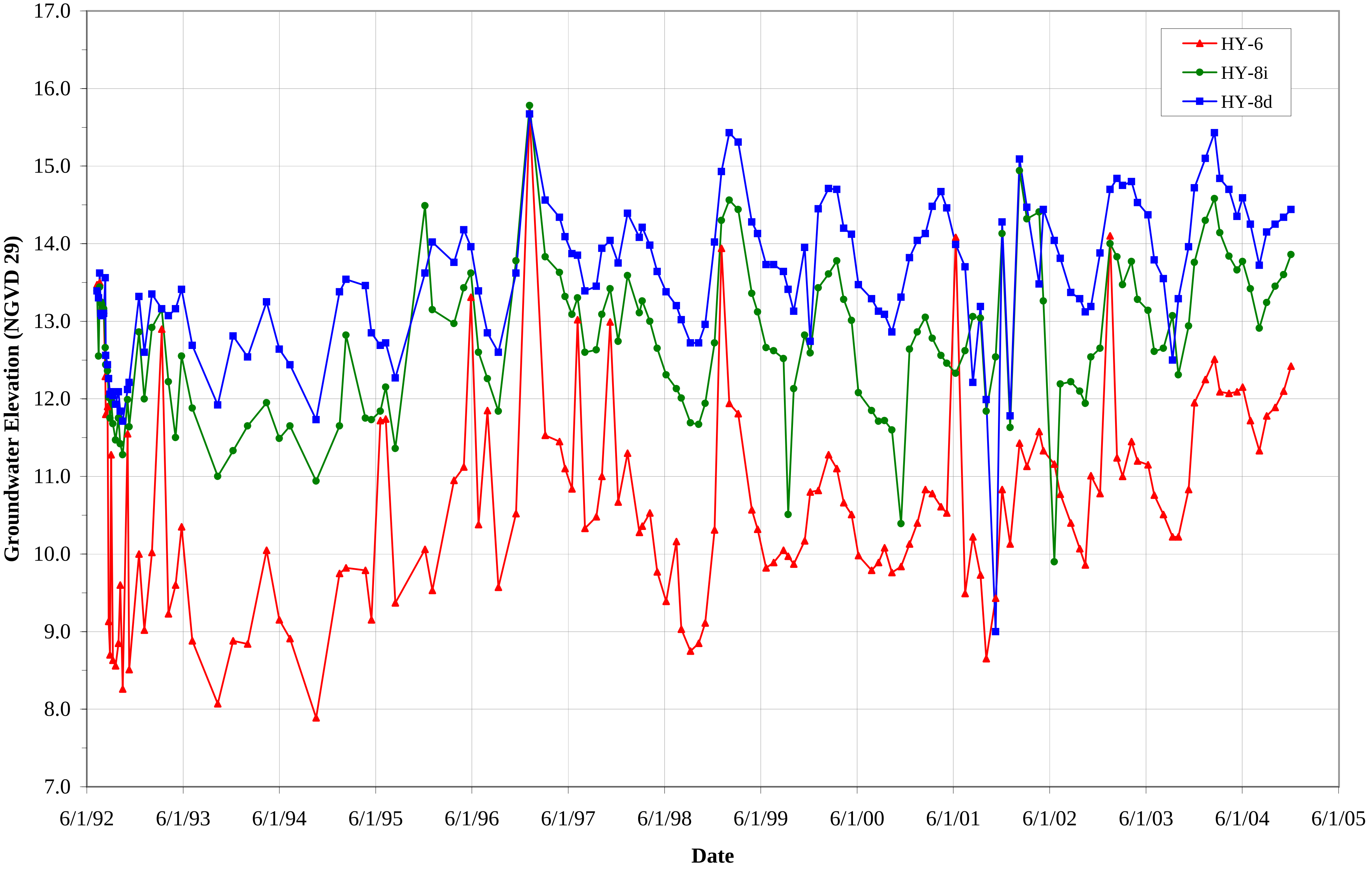
Jan-03
Jan-04
Jan-05
Date
Gs

Hydrographs, HY-11 Wells
BSB Property, Kent, Washington



See data table for notes.

Hydrographs, HY-8 Wells
Hexcel Property, Kent, Washington



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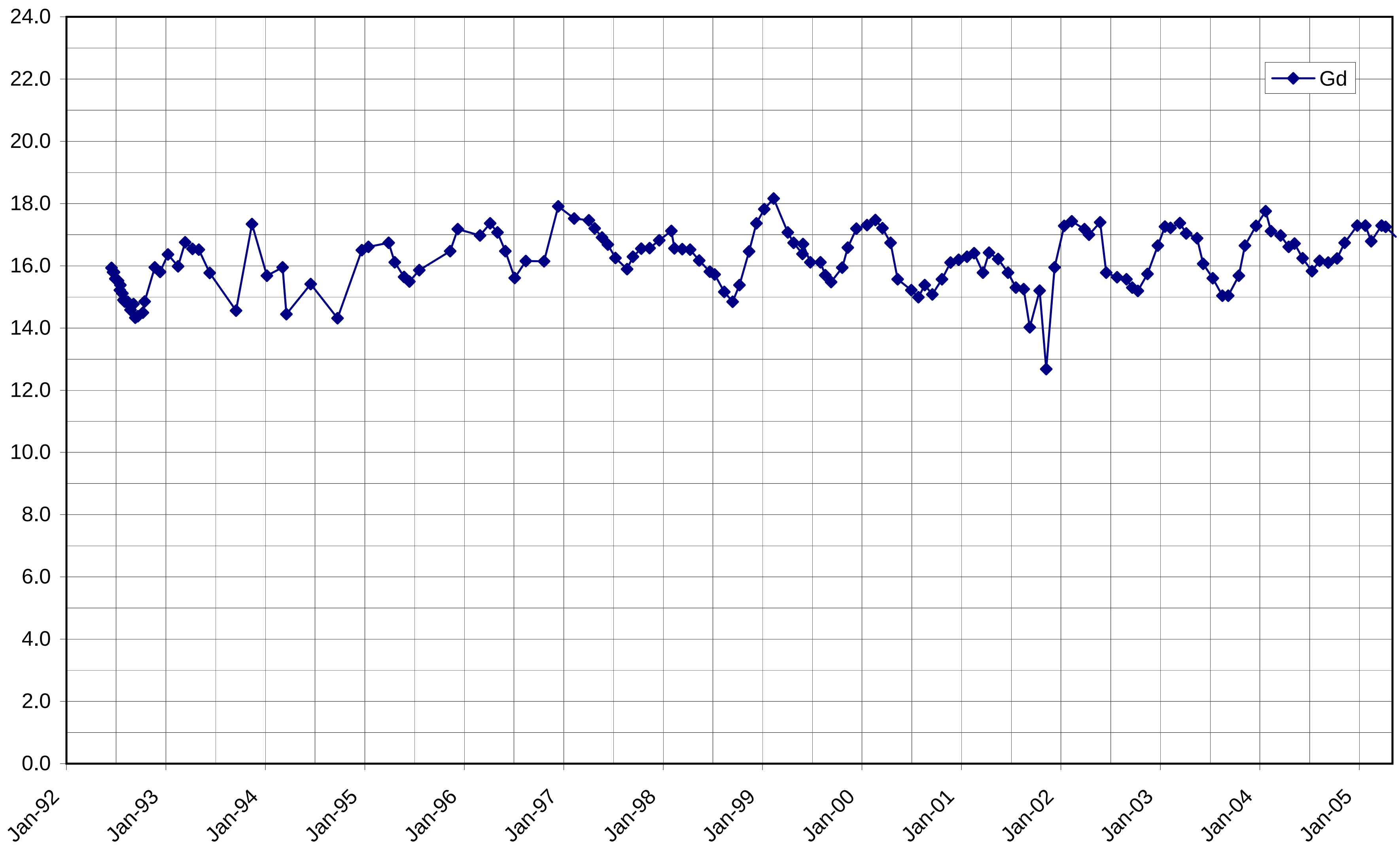
Hydrograph


24.0
22.0
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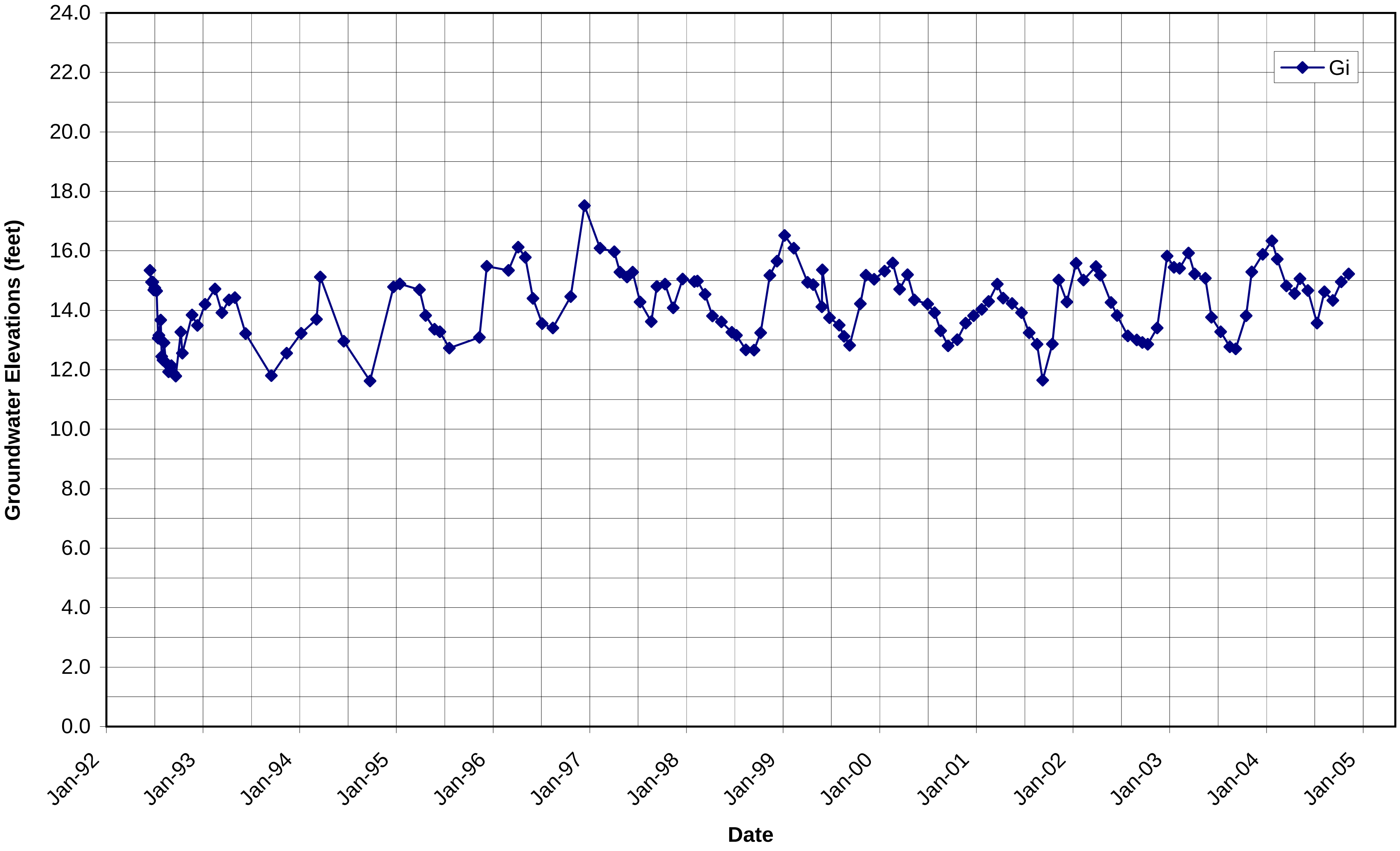
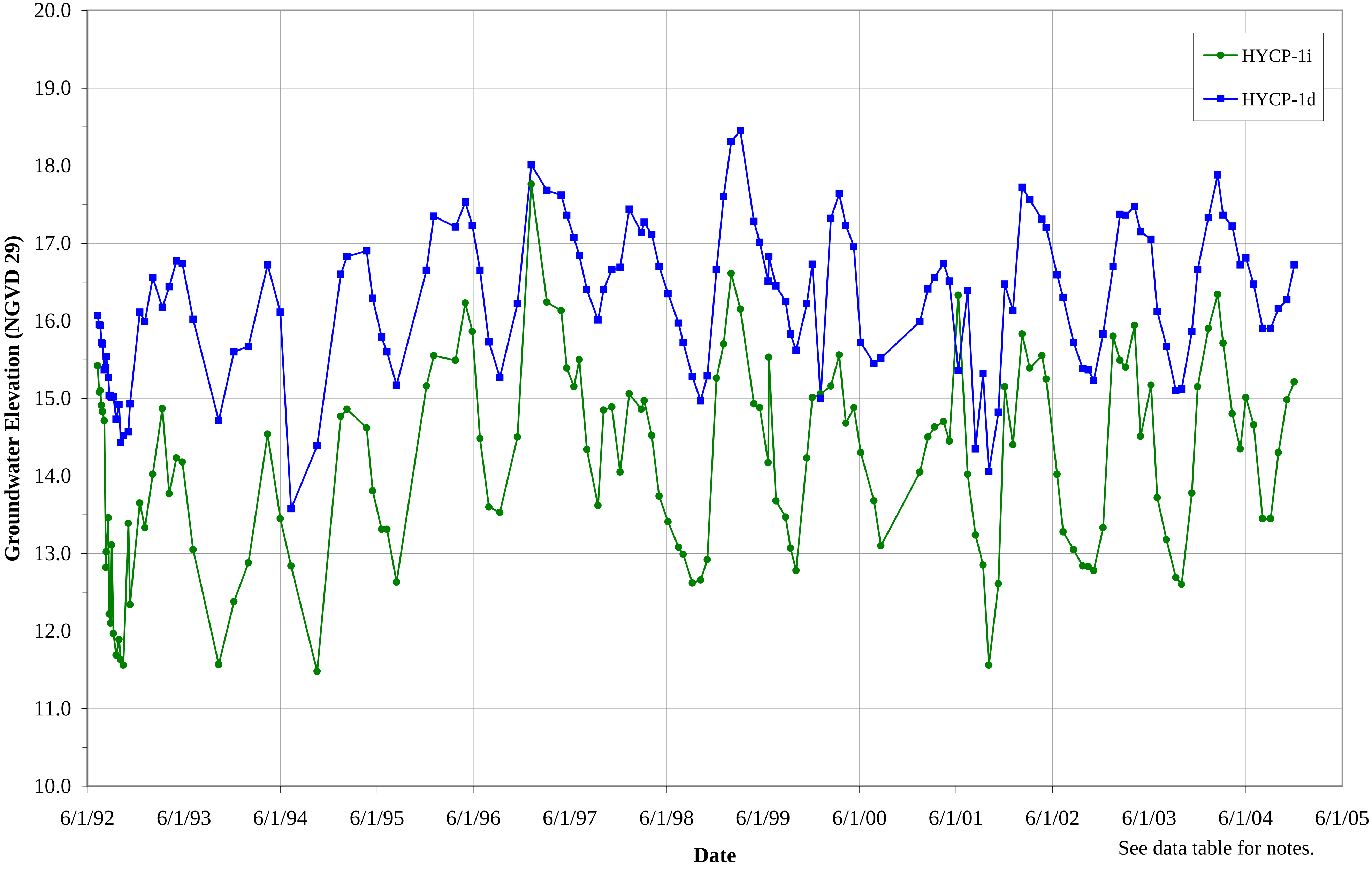
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Gd
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05

Hydrograph



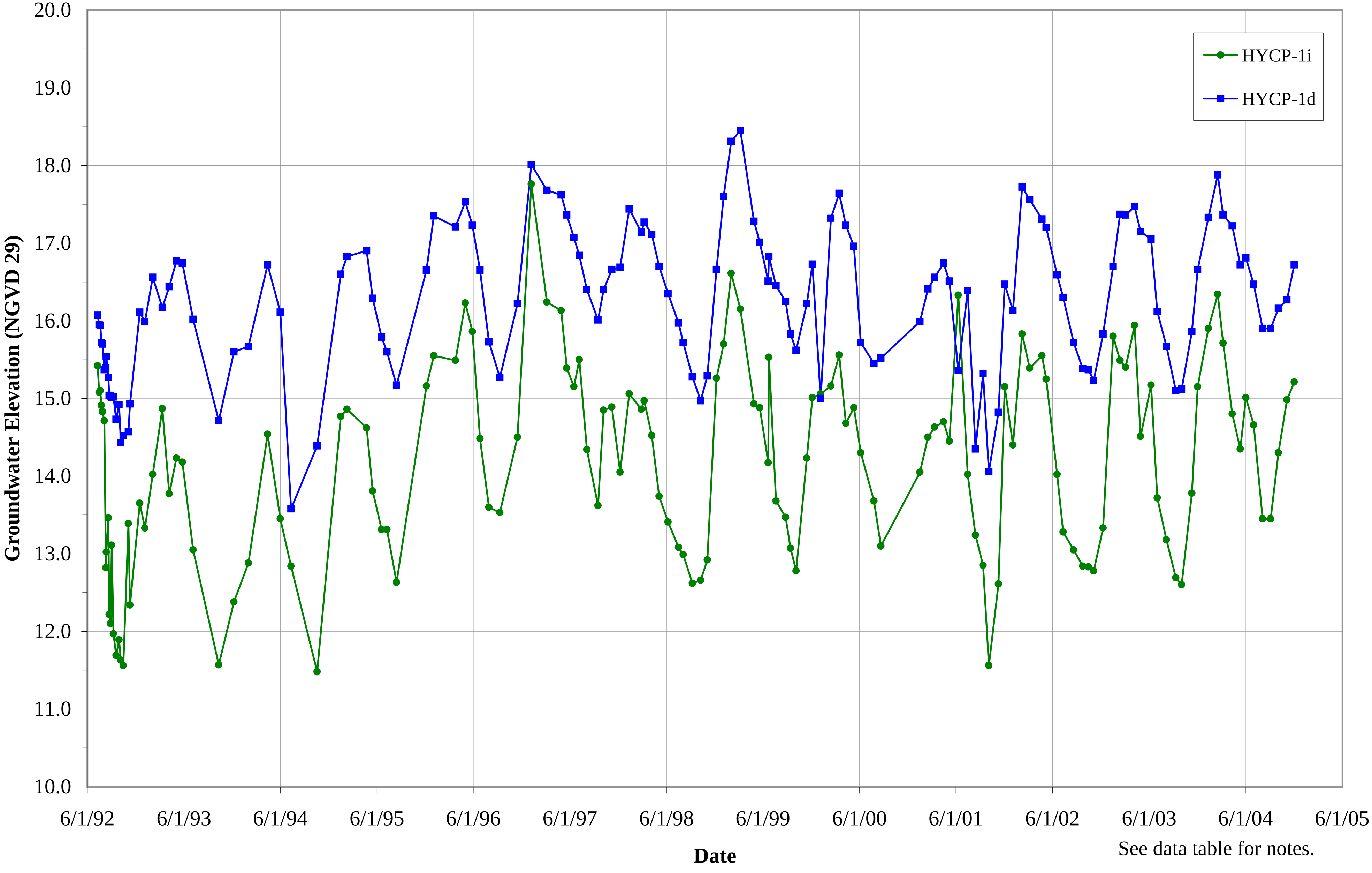
Gi
24.0
22.0
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Groundwater Elevations (feet)
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Date

Hydrographs, HYCP-1 Wells
BSB Property, Kent, Washington



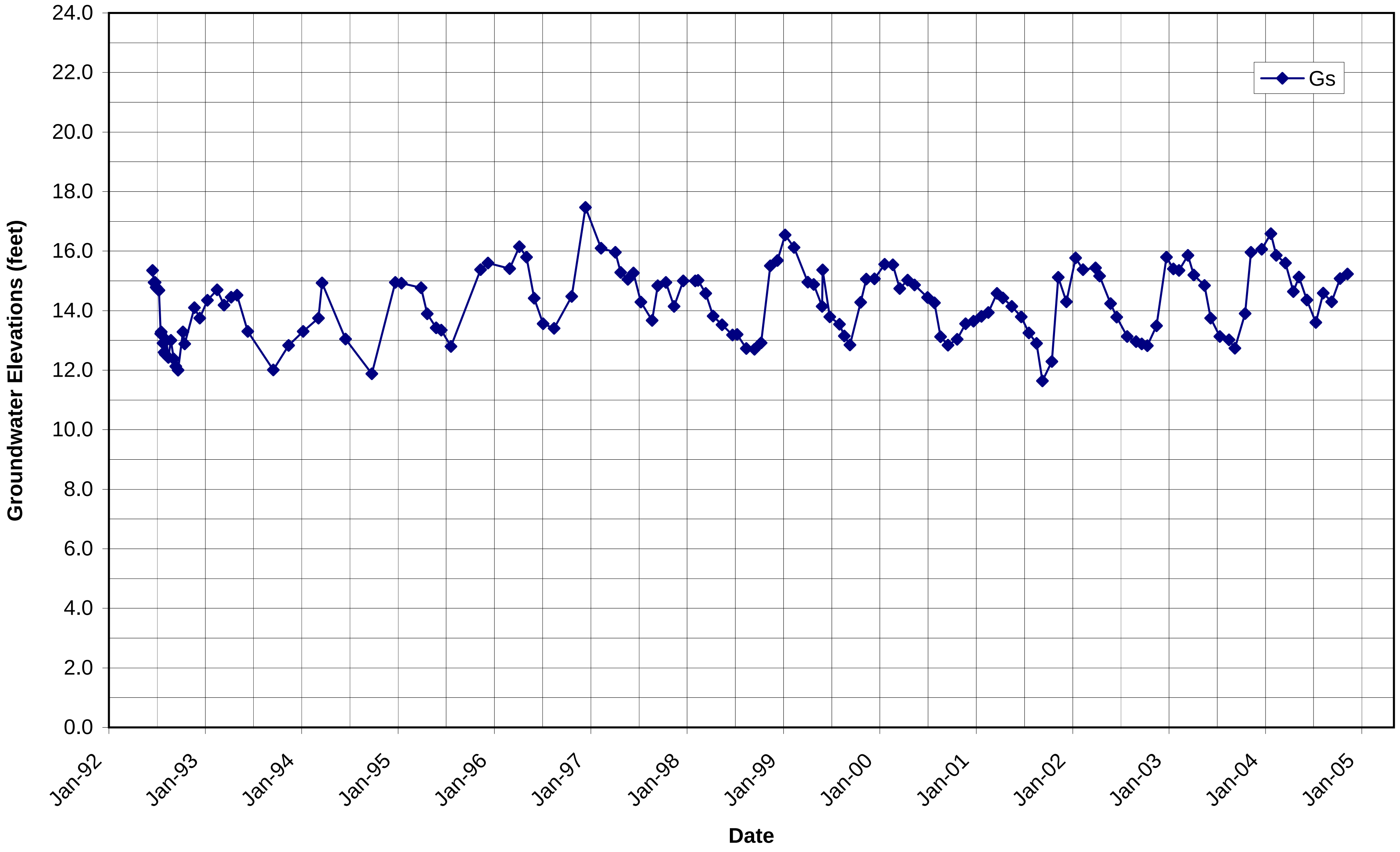
See data table for notes.

Hydrographs, HYCP-1 Wells
BSB Property, Kent, Washington

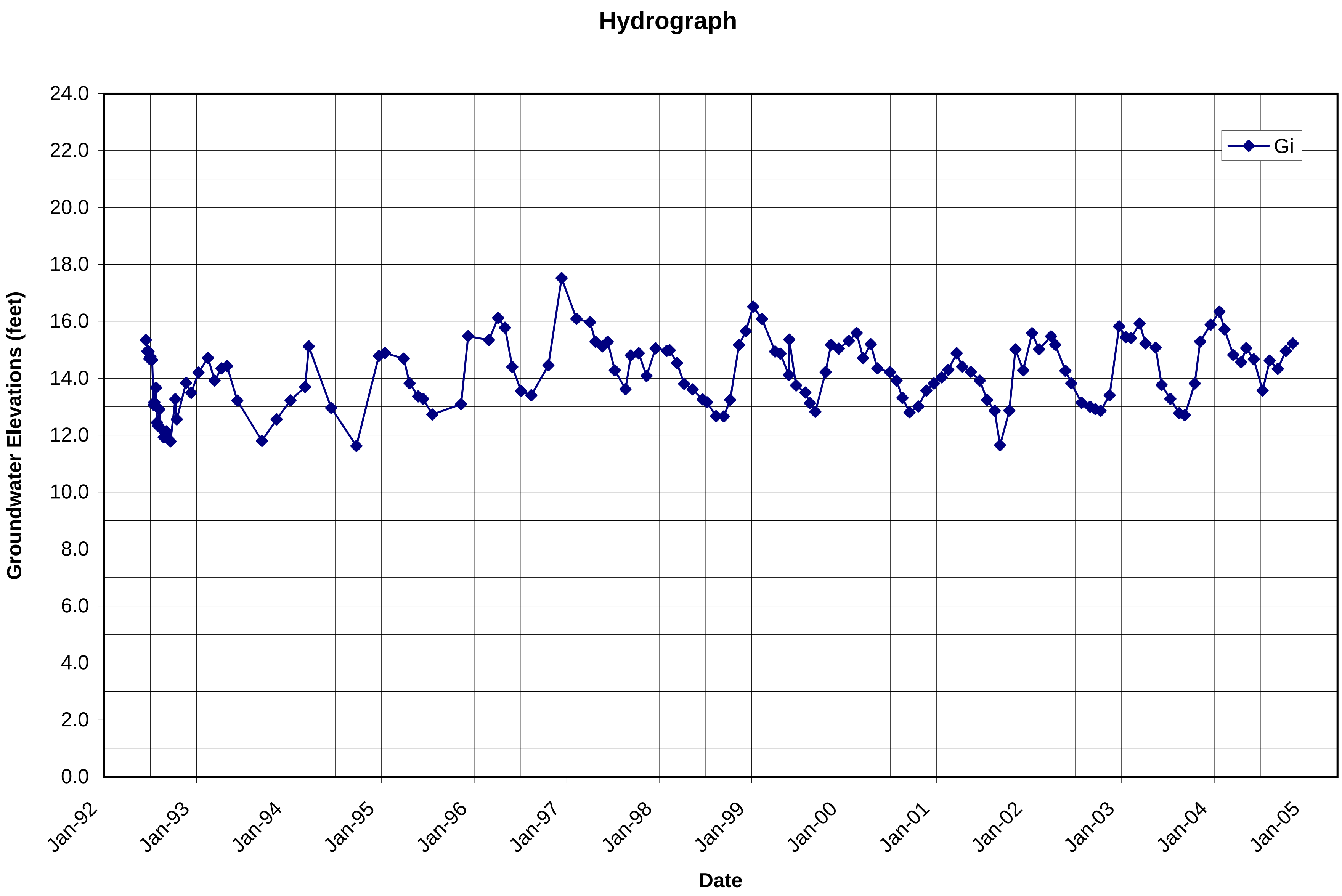


See data table for notes.

Hydrograph



Groundwater Elevations (feet)
24.0
22.0
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
Gs
Jan-92
Jan-93
Jan-94
Jan-95
Jan-96
Jan-97
Jan-98
Jan-99
Jan-00
Jan-01
Jan-02
Jan-03
Jan-04
Jan-05
Date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Groundwater Elevations (feet)
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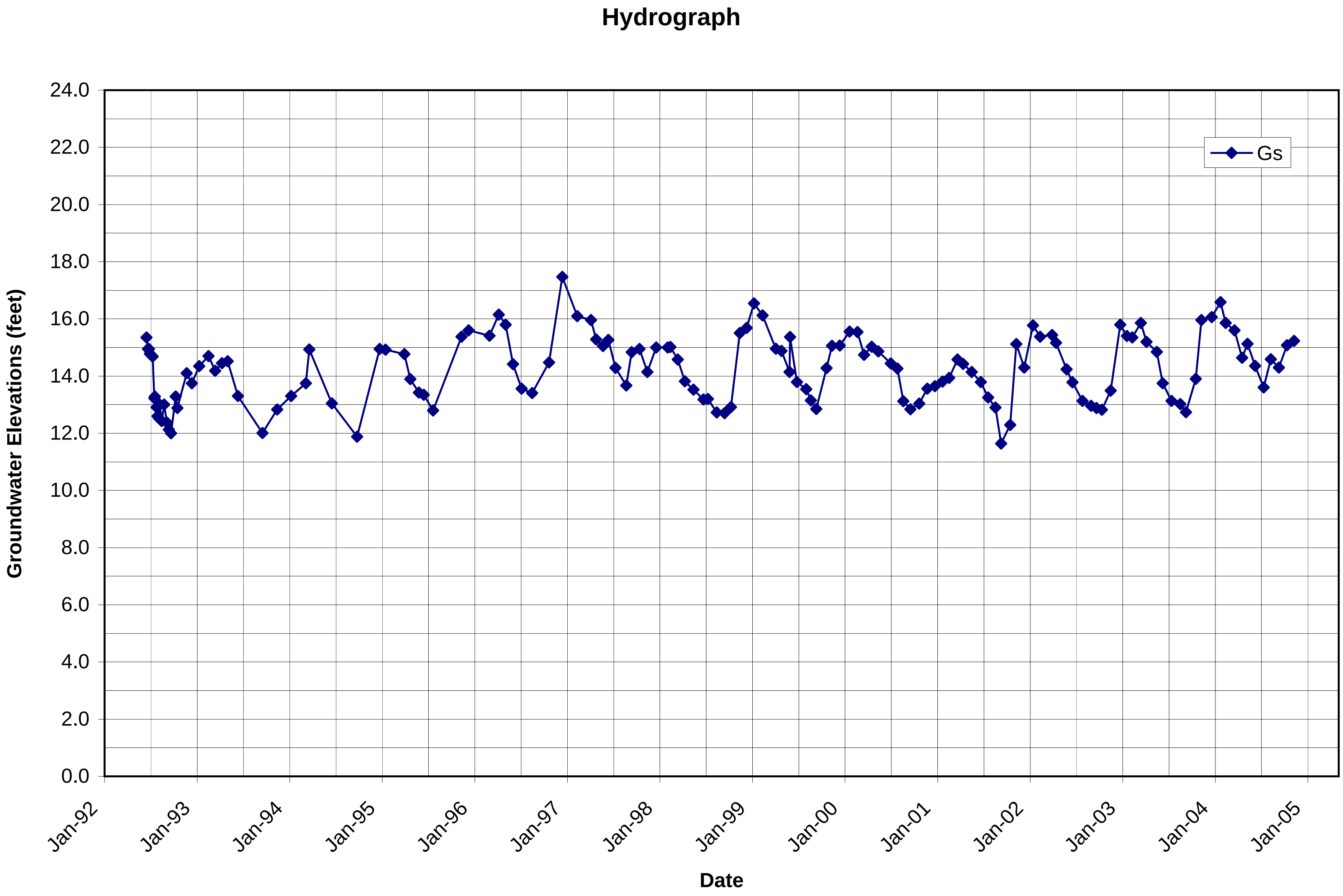
Gi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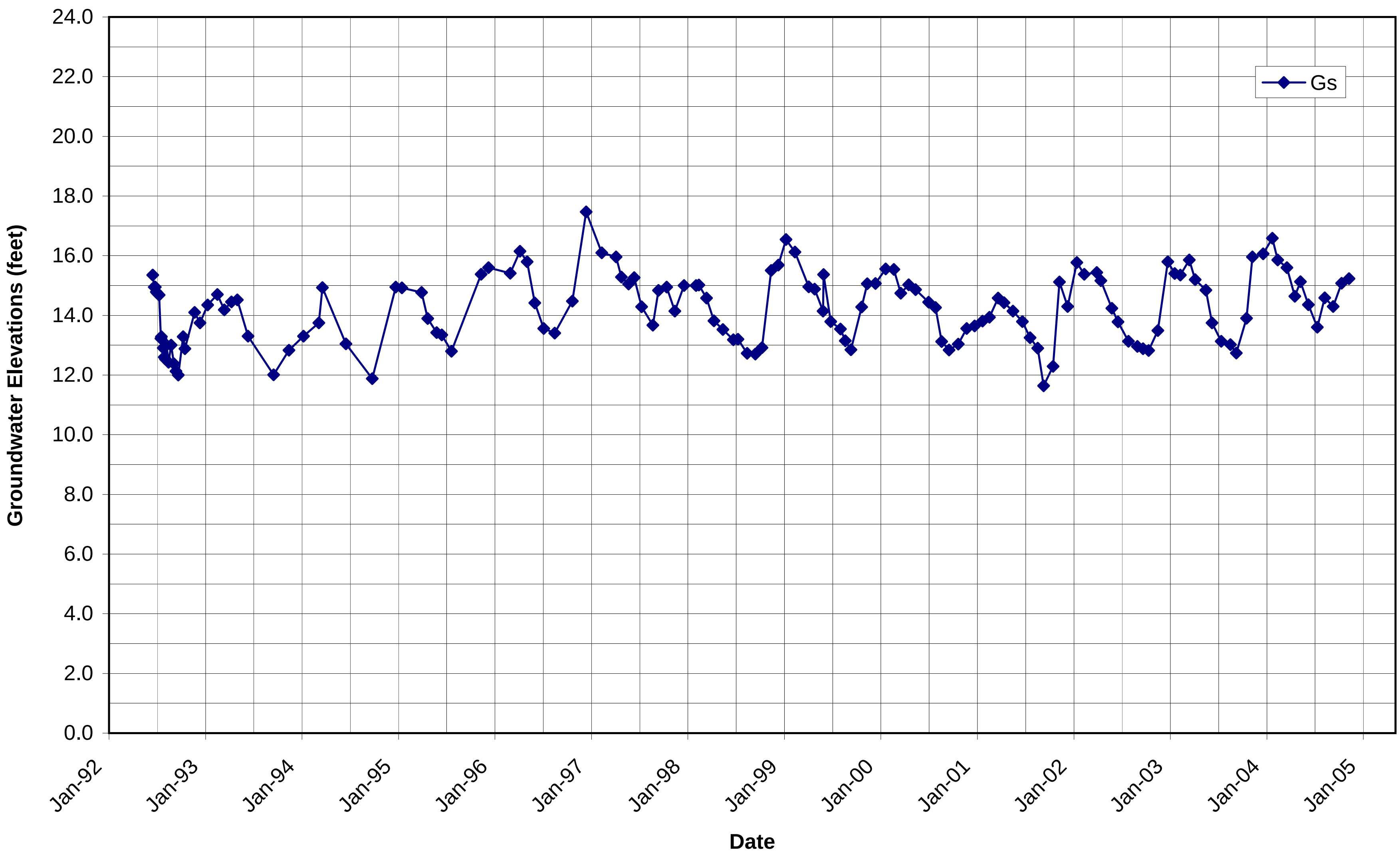
Date

Hydrograph



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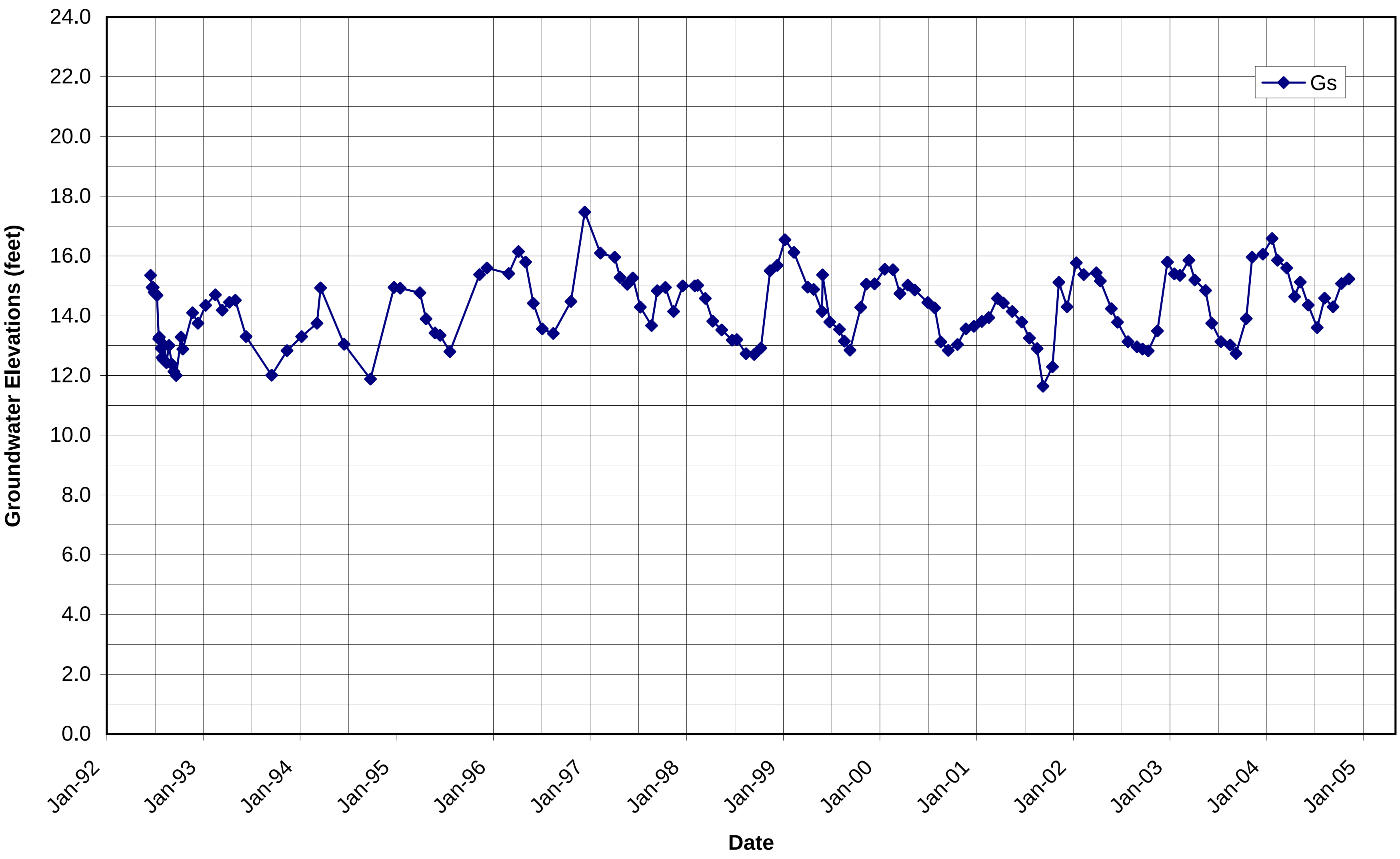
Date
Gs

Hydrograph



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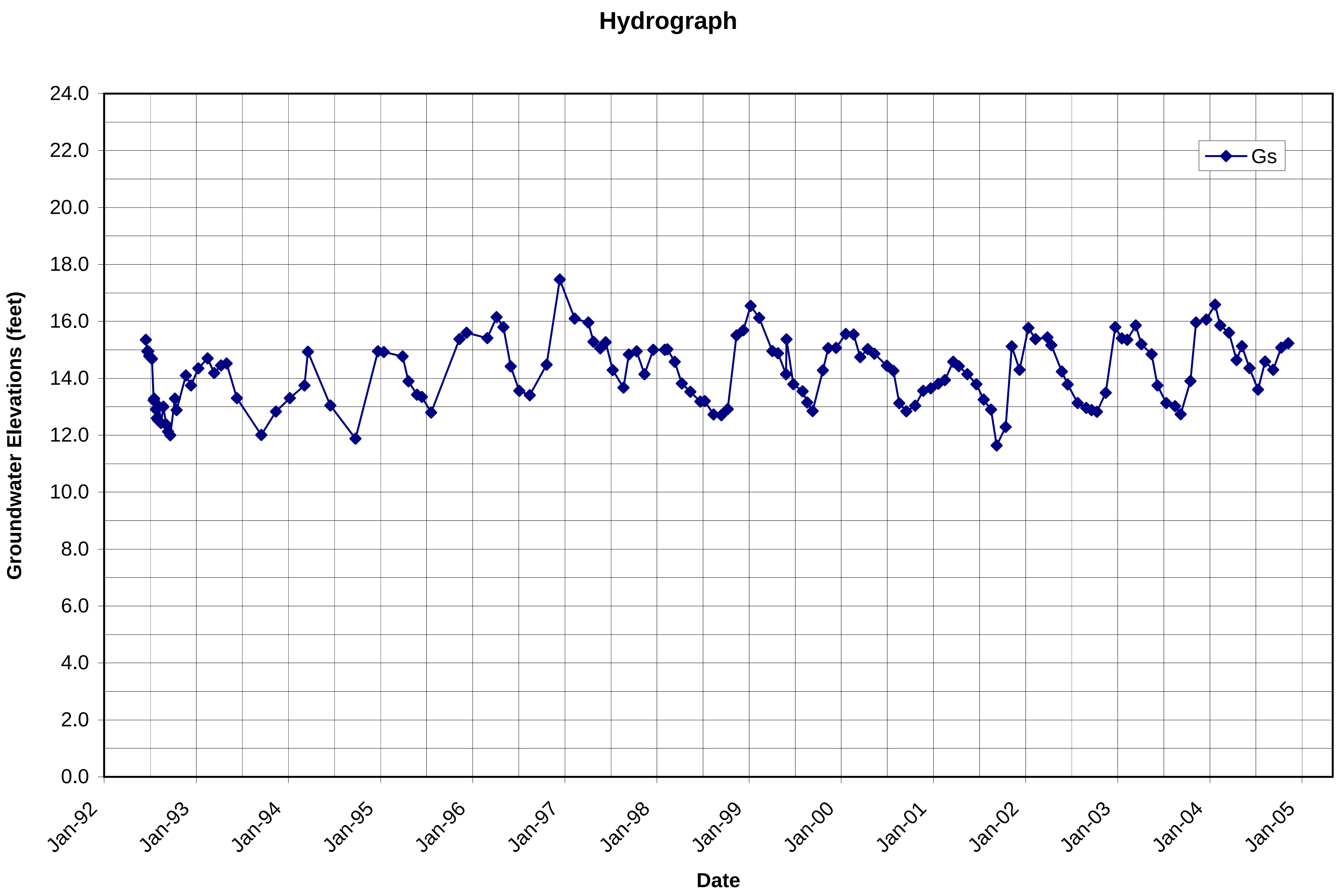
Date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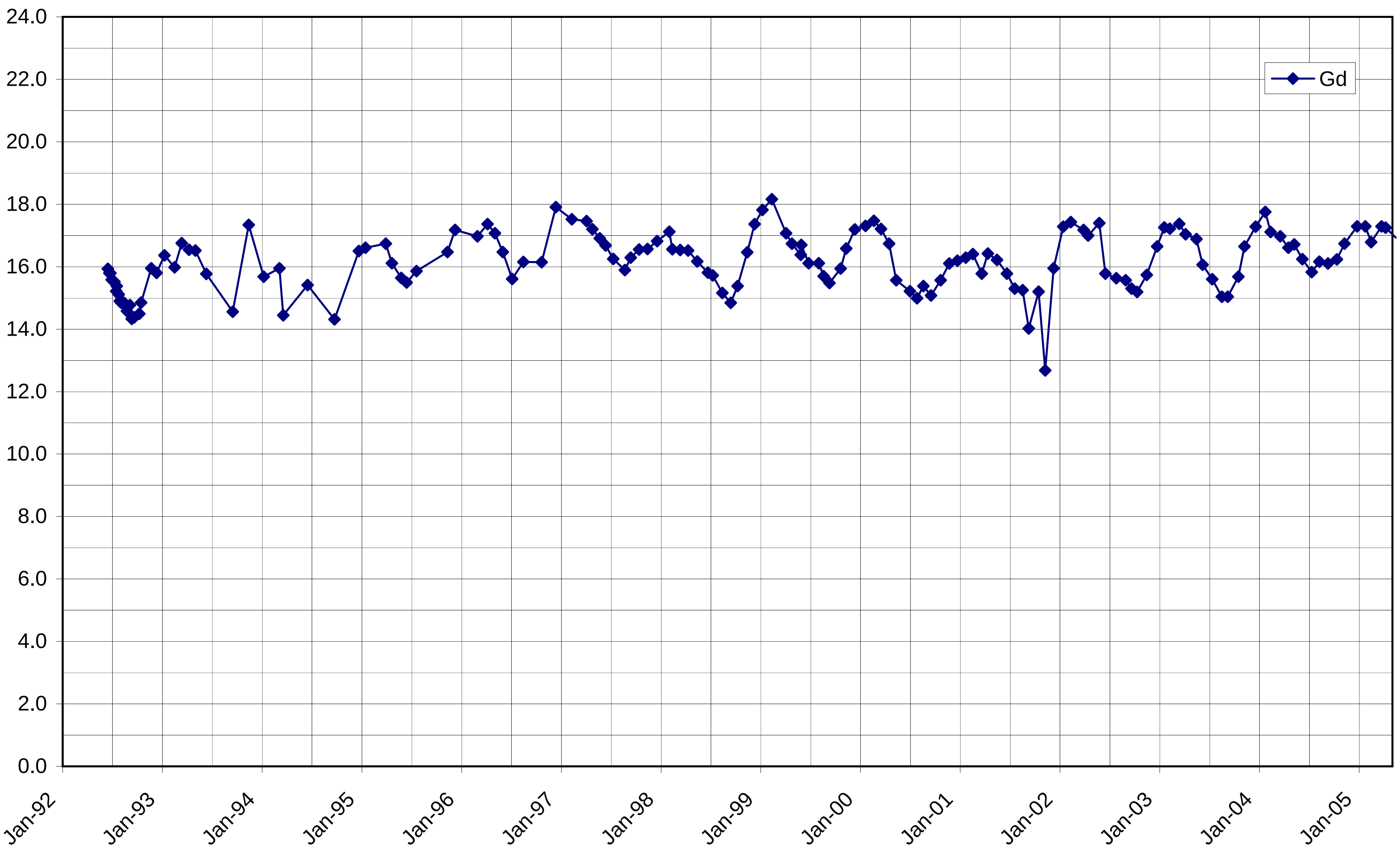
Date

Hydrograph



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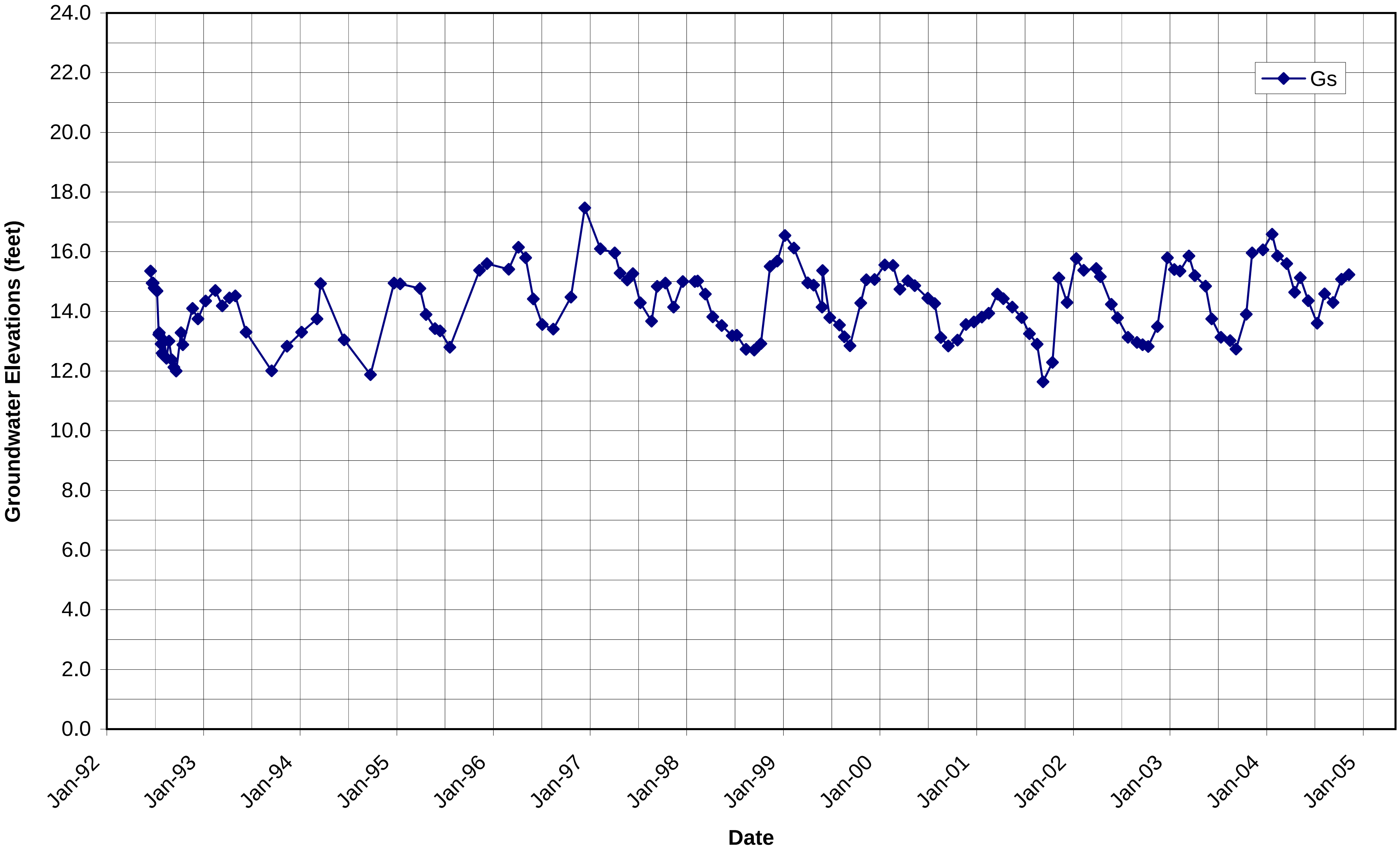

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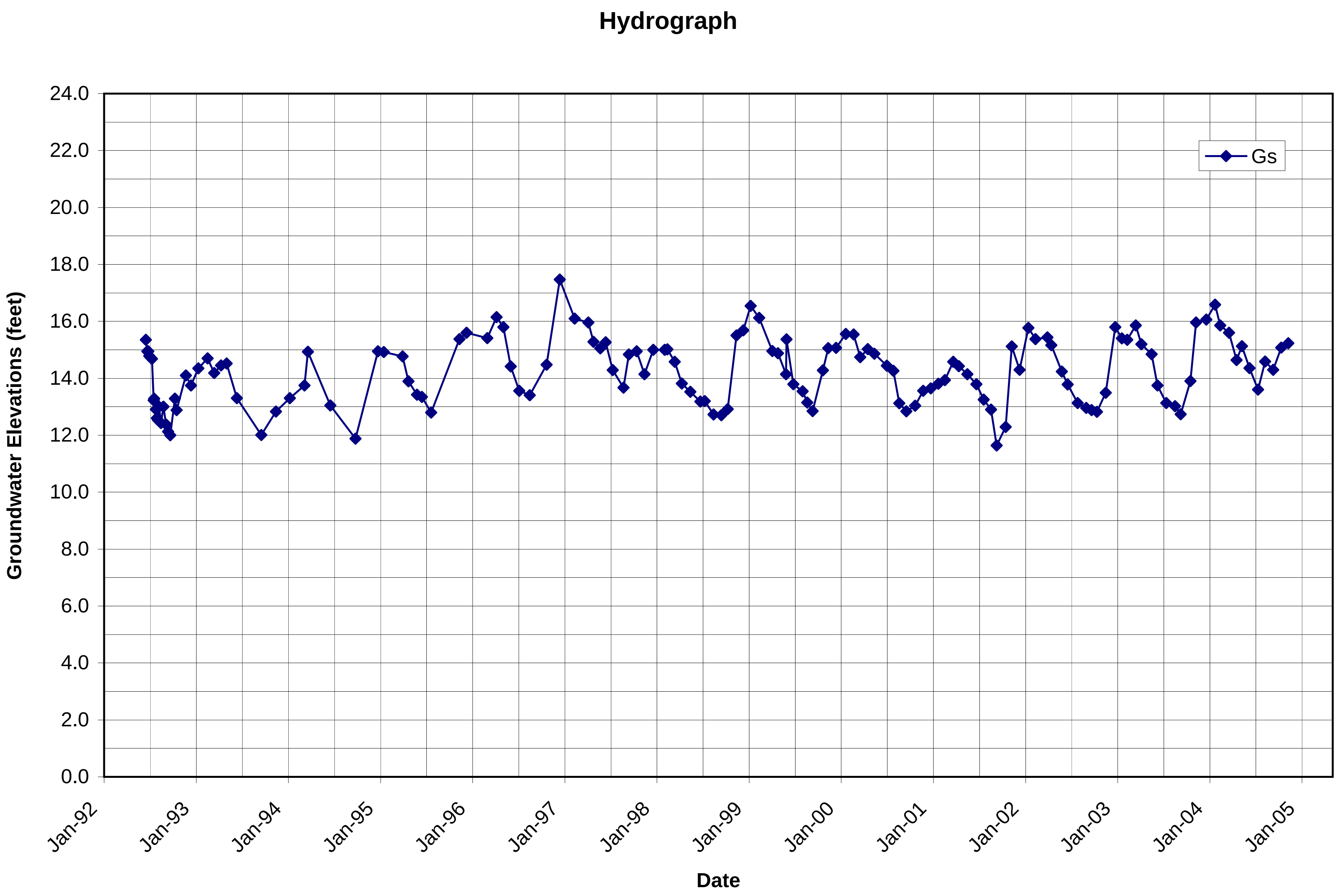
Date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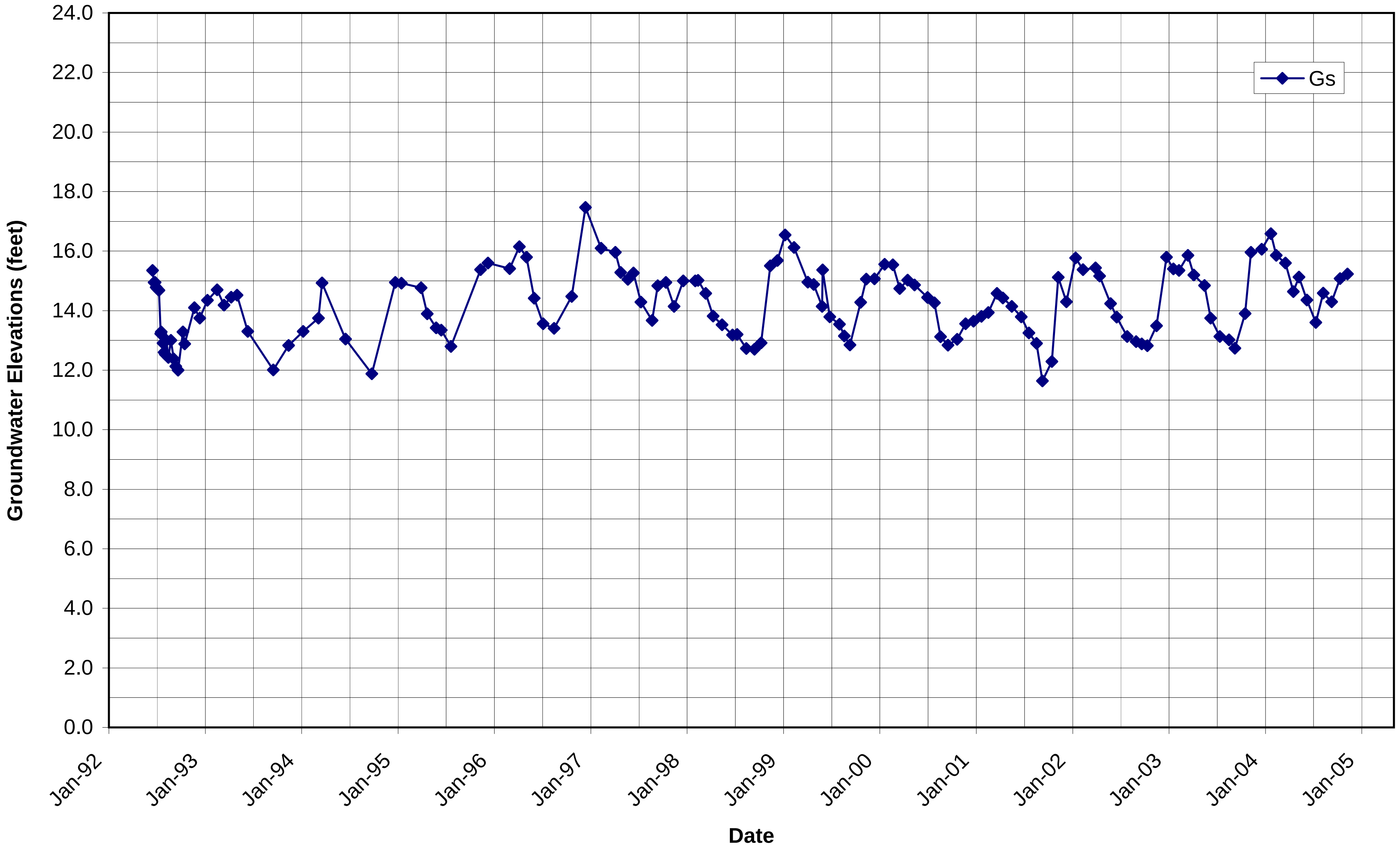
Hydrograph



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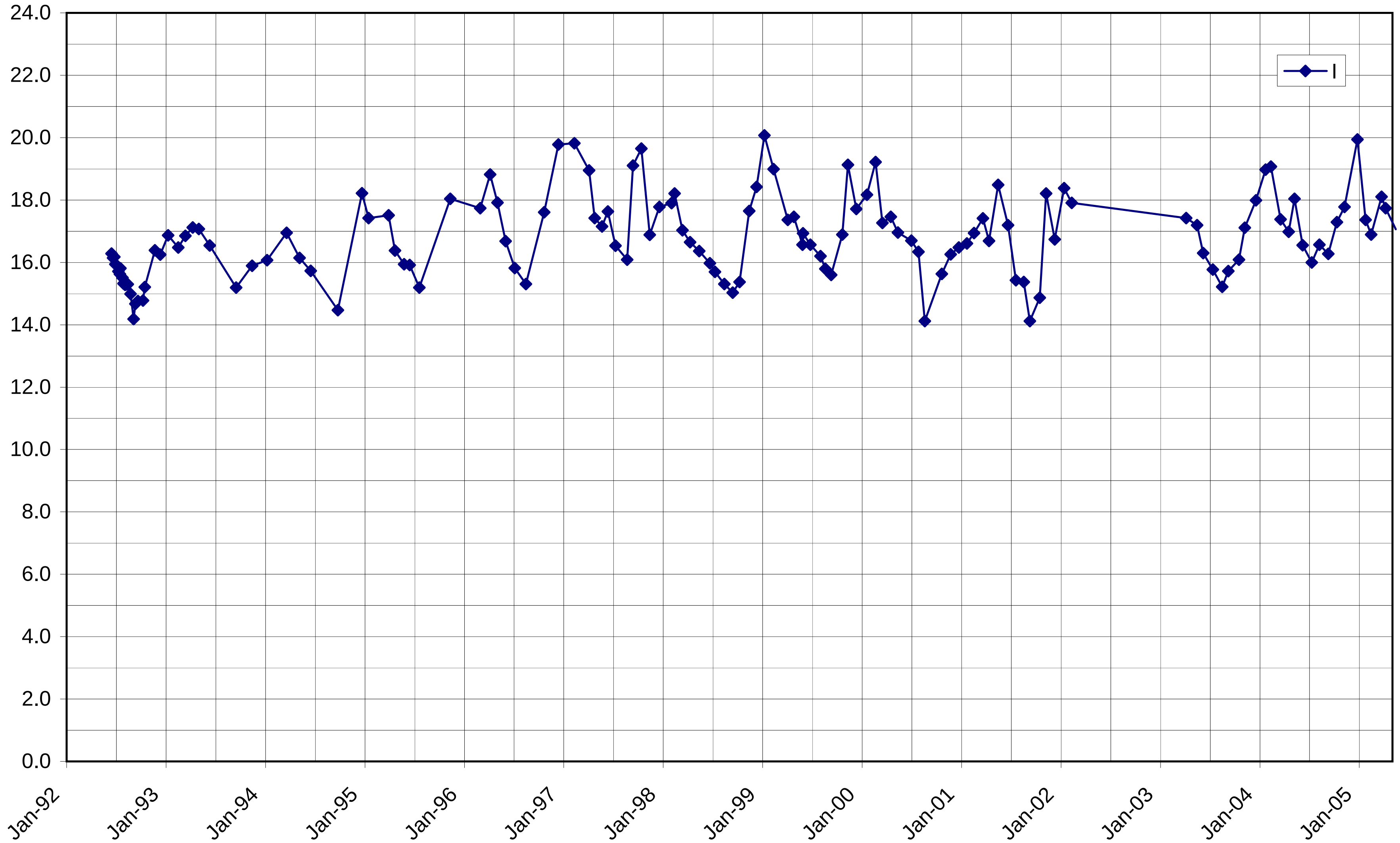
Date

Hydrograph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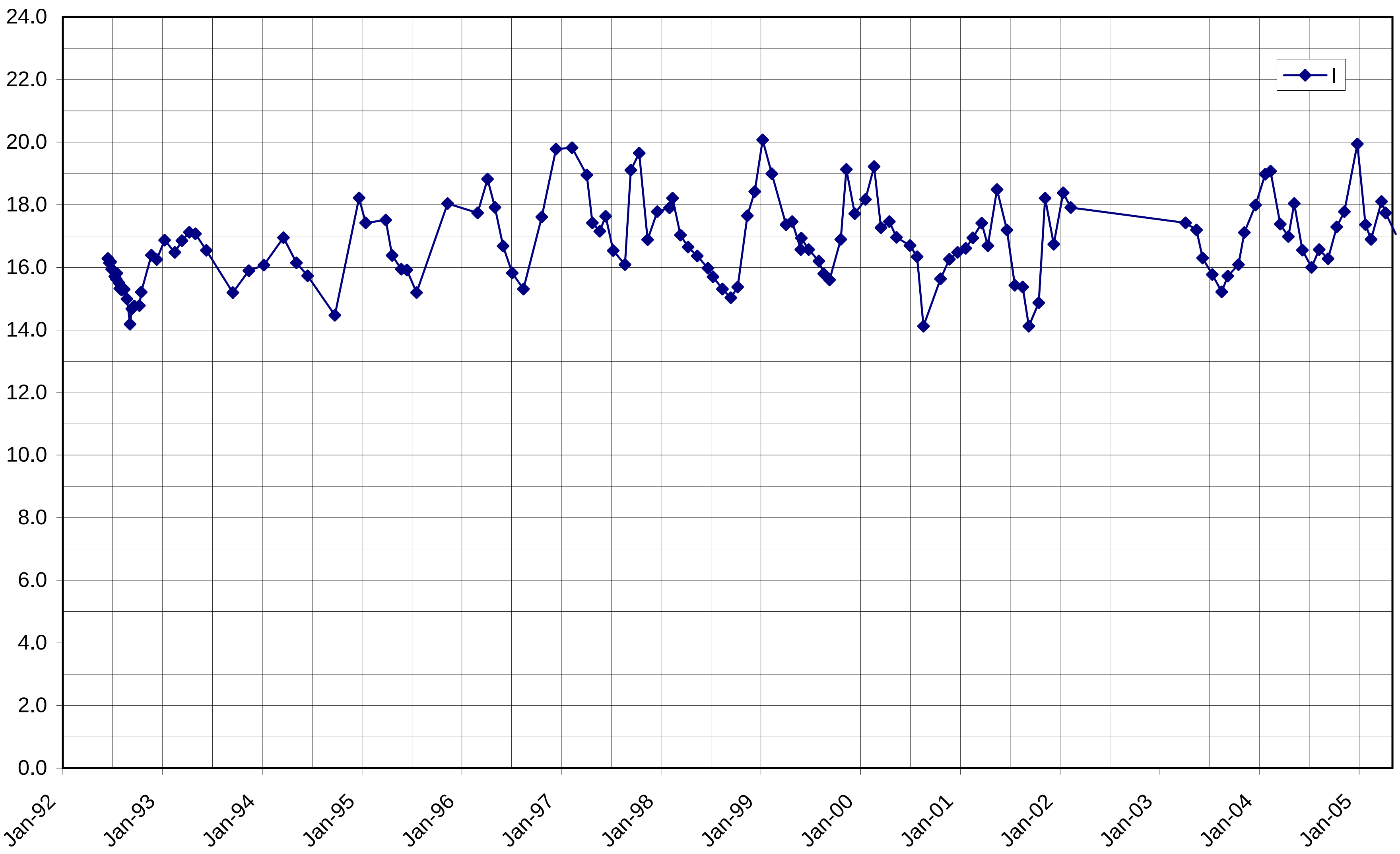
Hydrograph



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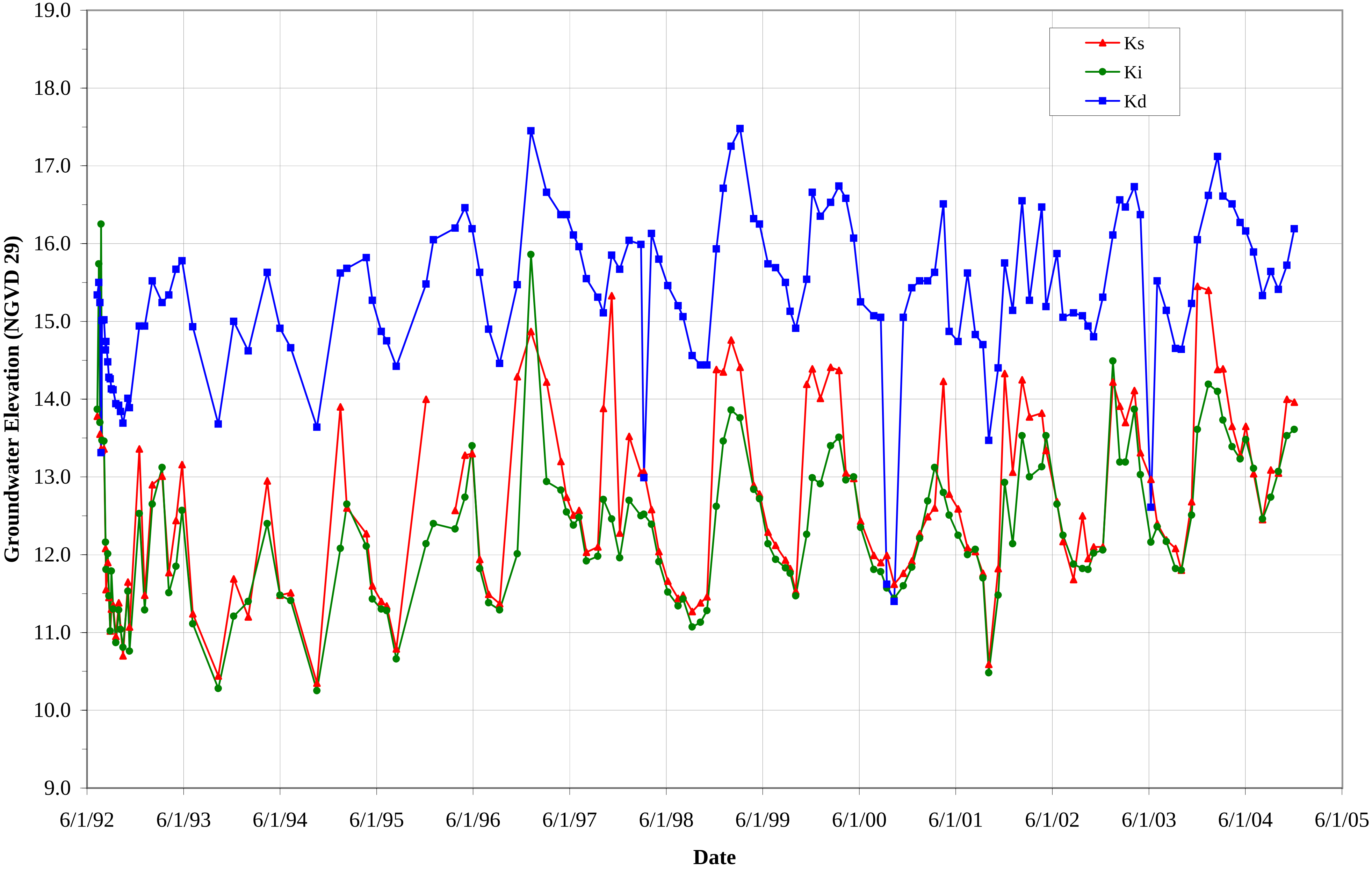
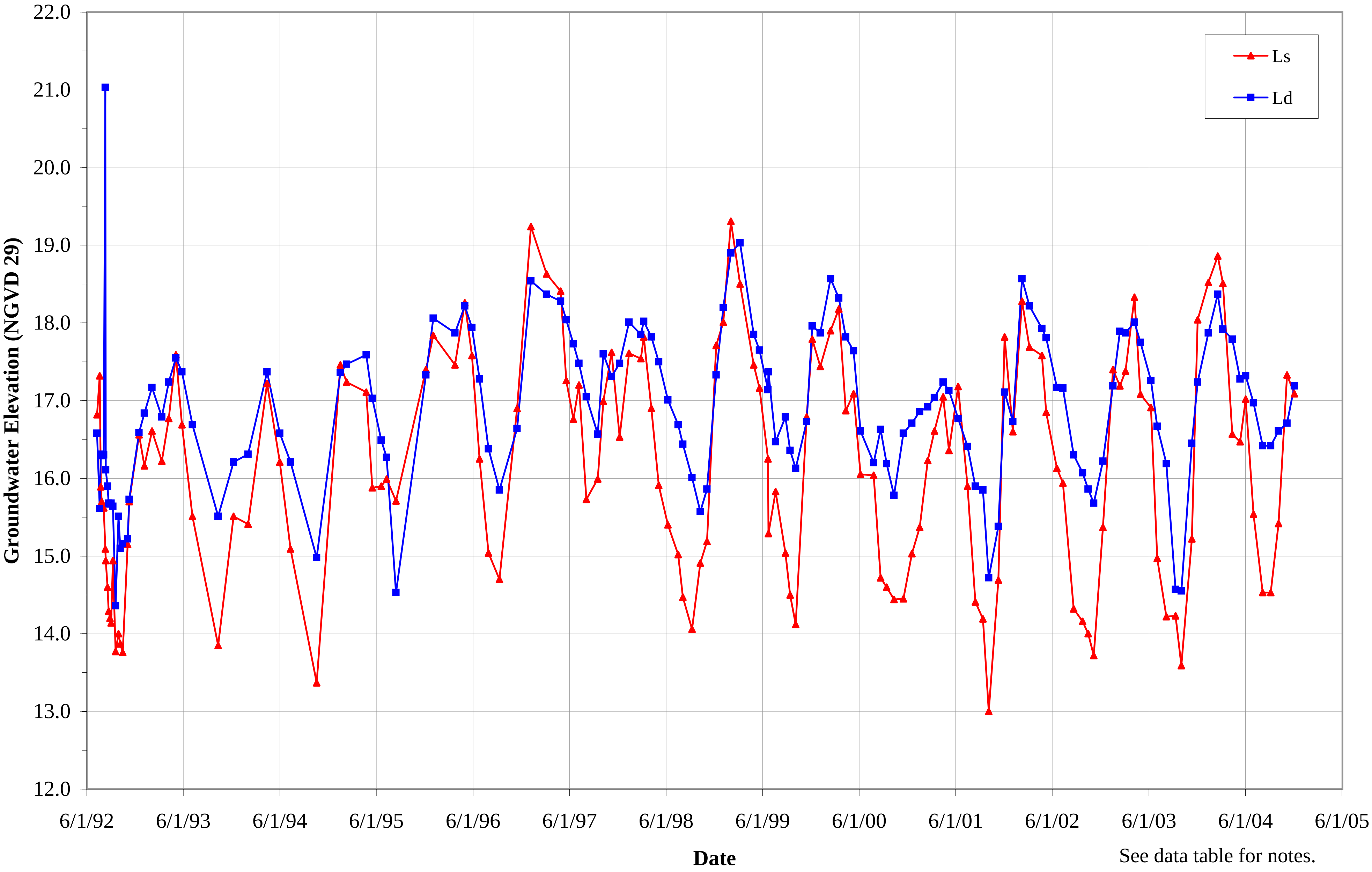
Hydrographs, K Wells
Hexcel Property, Kent, Washington



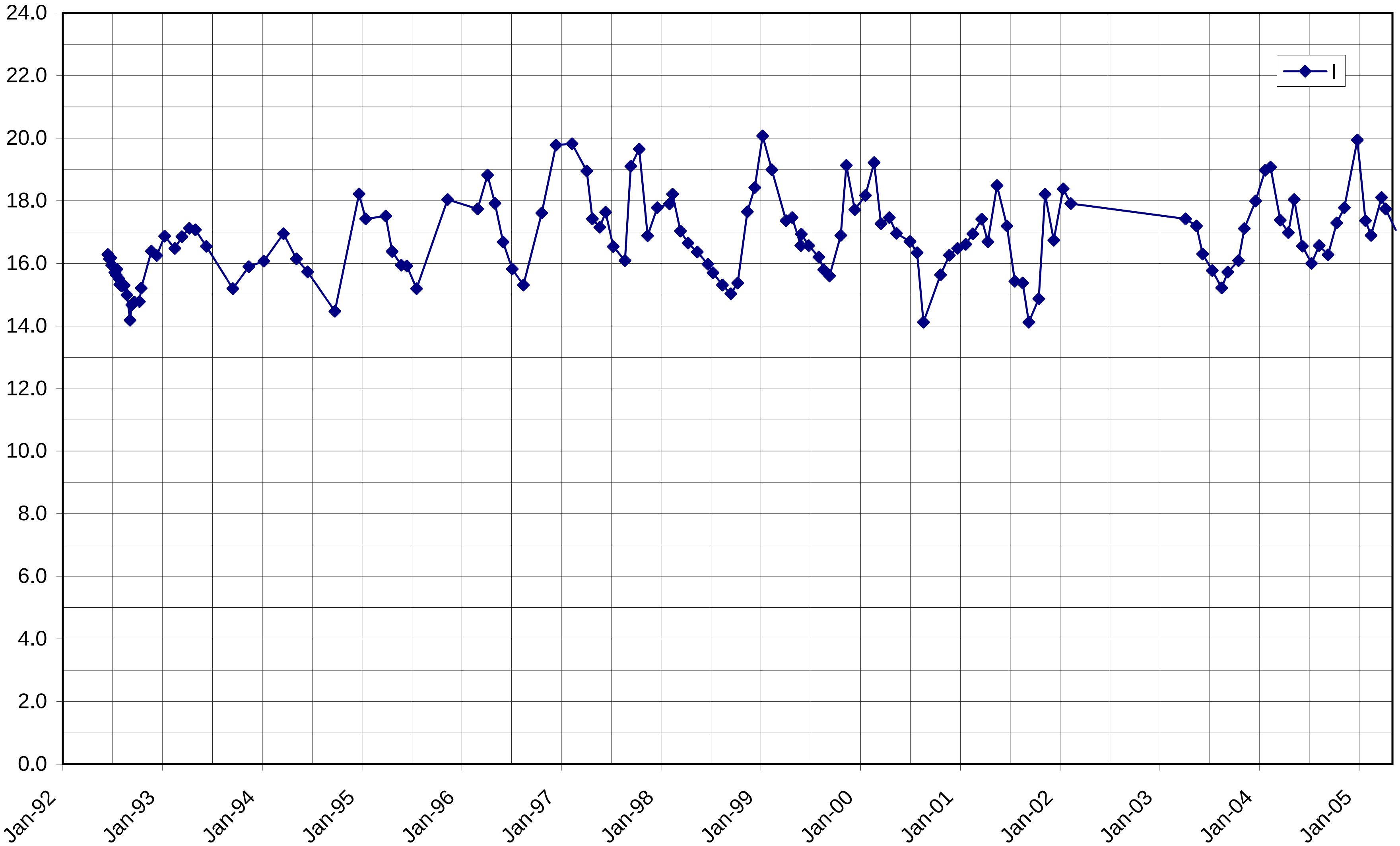
B82700106R_477_AppC11,C12,C13,C14.C15.xls

Hydrographs, L Wells
BSB Property, Kent, Washington



See data table for notes.

Hydrograph



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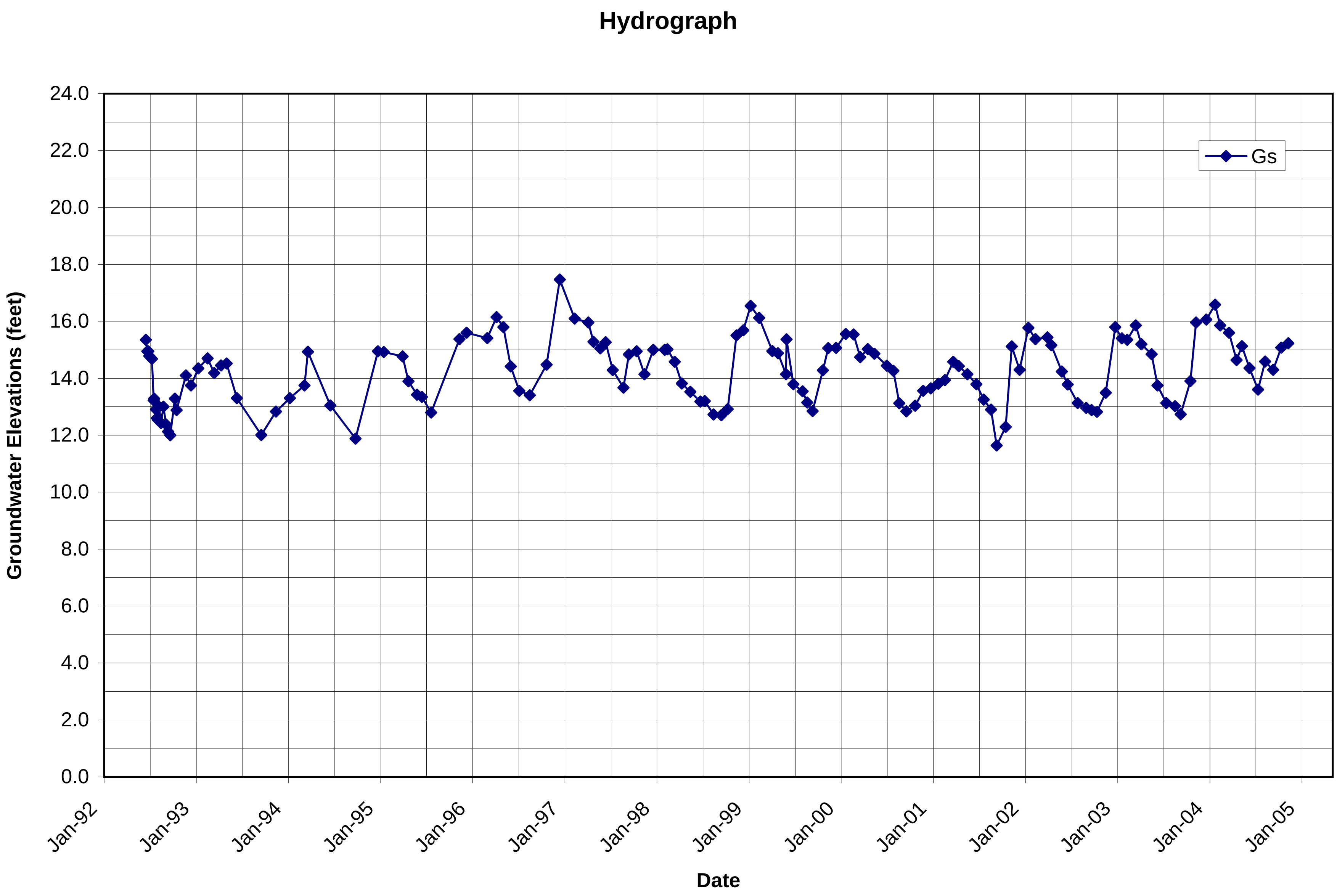
Hydrograph
Groundwater Elevations (feet)
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16.0
14.0
12.0
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8.0
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Date

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
Gs	7/10/92		5.60	20.95	15.35	
Gs	7/16/92	12:35	6.00	20.95	14.95	
Gs	7/20/92	12:35	6.00	20.95	14.95	
Gs	7/24/92	07:56	6.16	20.95	14.79	
Gs	7/28/92	08:21	6.21	20.95	14.74	
Gs	8/4/92	11:22	6.27	20.95	14.68	
Gs	8/10/92	09:47	7.72	20.95	13.23	
Gs	8/12/92	13:55	7.66	20.95	13.29	
Gs	8/19/92	10:17	8.04	20.95	12.91	
Gs	8/23/92	10:13	8.35	20.95	12.60	
Gs	8/28/92	10:22	8.42	20.95	12.53	
Gs	9/1/92	10:12	7.95	20.95	13.00	
Gs	9/8/92	10:09	8.52	20.95	12.43	
Gs	9/18/92	10:15	7.95	20.95	13.00	
Gs	9/29/92	12:56	8.57	20.95	12.38	
Gs	10/6/92	09:57	8.82	20.95	12.13	
Gs	10/15/92	08:54	8.95	20.95	12.00	
Gs	11/3/92	09:24	7.66	20.95	13.29	
Gs	11/9/92	10:26	8.07	20.95	12.88	
Gs	12/16/92	10:41	6.85	20.95	14.10	
Gs	1/5/93	09:41	7.20	20.95	13.75	
Gs	2/3/93	10:12	6.60	20.95	14.35	
Gs	3/12/93		6.25	20.95	14.70	
Gs	4/7/93		6.76	20.95	14.19	
Gs	5/4/93	10:05	6.50	20.95	14.45	
Gs	5/27/93	12:00	6.43	20.95	14.52	
Gs	7/6/93		7.65	20.95	13.30	
Gs	10/11/93		8.94	20.95	12.01	
Gs	12/8/93	11:20	8.12	20.95	12.83	
Gs	2/1/94	09:37	7.65	20.95	13.30	
Gs	3/31/94		7.20	20.95	13.75	
Gs	4/14/94	07:50	6.02	20.95	14.93	
Gs	7/12/94		7.90	20.95	13.05	
Gs	10/19/94	13:45	9.07	20.95	11.88	
Gs	1/16/95	14:59	6.00	20.95	14.95	
Gs	2/9/95	13:32	6.03	20.95	14.92	
Gs	4/24/95	10:53	6.18	20.95	14.77	
Gs	5/17/95	07:42	7.06	20.95	13.89	
Gs	6/20/95	12:16	7.53	20.95	13.42	
Gs	7/10/95	11:56	7.60	20.95	13.35	
Gs	8/15/95	11:02	8.15	20.95	12.80	
Gs	12/6/95	08:18	5.57	20.95	15.38	
Gs	1/3/96	12:10	5.35	20.95	15.60	
Gs	3/25/96	12:12	5.54	20.95	15.41	
Gs	5/1/96	10:47	4.80	20.95	16.15	
Gs	5/28/96	10:35	5.15	20.95	15.80	
Gs	6/26/96	10:42	6.53	20.95	14.42	
Gs	7/30/96	10:21	7.39	20.95	13.56	
Gs	9/9/96	10:52	7.54	20.95	13.41	
Gs	11/15/96	10:12	6.47	20.95	14.48	

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
Gs	1/6/97	11:17	3.48	20.95	17.47	
Gs	3/6/97	09:50	4.85	20.95	16.10	
Gs	4/29/97	15:52	4.99	20.95	15.96	
Gs	5/20/97	15:35	5.67	20.95	15.28	
Gs	6/16/97	10:58	5.90	20.95	15.05	
Gs	7/7/97	11:20	5.68	20.95	15.27	
Gs	8/4/97	10:38	6.66	20.95	14.29	
Gs	9/16/97	12:36	7.28	20.95	13.67	
Gs	10/7/97	11:51	6.11	20.95	14.84	
Gs	11/7/97	10:46	6.00	20.95	14.95	
Gs	12/8/97	11:36	6.81	20.95	14.14	
Gs	1/12/98	11:46	5.95	20.95	15.00	
Gs	2/26/98	12:52	5.95	20.95	15.00	
Gs	3/9/98	10:22	5.93	20.95	15.02	
Gs	4/7/98	13:36	6.37	20.95	14.58	
Gs	5/5/98	11:25	7.13	20.95	13.82	
Gs	6/8/98	13:18	7.42	20.95	13.53	
Gs	7/17/98	11:47	7.77	20.95	13.18	
Gs	8/4/98	14:19	7.75	20.95	13.20	
Gs	9/8/98	11:34	8.22	20.95	12.73	
Gs	10/9/98	13:42	8.25	20.95	12.70	
Gs	11/3/98	11:21	8.03	20.95	12.92	
Gs	12/8/98	10:43	5.44	20.95	15.51	
Gs	1/4/99	10:59	5.26	20.95	15.69	
Gs	2/2/99	12:05	4.41	20.95	16.54	
Gs	3/8/99	14:57	4.83	20.95	16.12	
Gs	4/29/99	17:35	5.99	20.95	14.96	
Gs	5/21/99	13:36	6.07	20.95	14.88	
Gs	6/22/99	10:31	6.81	20.95	14.14	
Gs	6/24/99	10:41	5.58	20.95	15.37	System off
Gs	7/21/99	10:11	7.16	20.95	13.79	
Gs	8/27/99	11:21	7.41	20.95	13.54	
Gs	9/14/99	11:37	7.80	20.95	13.15	
Gs	10/5/99	946	8.10	20.95	12.85	
Gs	11/15/99	14:16	6.67	20.95	14.28	
Gs	12/6/99	12:09	5.89	20.95	15.06	
Gs	1/6/00	11:07	5.88	20.95	15.07	
Gs	2/14/00	10:48	5.39	20.95	15.56	
Gs	3/16/00	1231	5.41	20.95	15.54	
Gs	4/11/00	1025	6.21	20.95	14.74	
Gs	5/11/00	1010	5.92	20.95	15.03	
Gs	6/6/00	1105	6.09	20.95	14.86	
Gs	7/26/00	1215	6.51	20.95	14.44	
Gs	8/21/00	1210	6.69	20.95	14.26	
Gs	9/13/00	1404	7.83	20.95	13.12	
Gs	10/11/00	1530	8.11	20.95	12.84	
Gs	11/15/00	1107	7.91	20.95	13.04	
Gs	12/17/00	955	7.39	20.95	13.56	
Gs	1/16/01	1041	7.30	20.95	13.65	
Gs	2/15/01	1015	7.14	20.95	13.81	

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
Gs	3/13/01	1159	7.01	20.95	13.94	
Gs	4/15/01	1350	6.37	20.95	14.58	
Gs	5/7/01	1051	6.52	20.95	14.43	
Gs	6/10/01	1200	6.81	20.95	14.14	
Gs	7/16/01	943	7.16	20.95	13.79	
Gs	8/14/01	859	7.70	20.95	13.25	
Gs	9/12/01	915	8.05	20.95	12.90	
Gs	10/4/01	816	9.31	20.95	11.64	
Gs	11/9/01	931	8.66	20.95	12.29	
Gs	12/3/01	1230	5.83	20.95	15.12	
Gs	1/3/02	1016	6.65	20.95	14.30	
Gs	2/7/02	1145	5.18	20.95	15.77	
Gs	3/7/02	1214	5.57	20.95	15.38	
Gs	4/23/02	917	5.51	20.95	15.44	
Gs	5/9/02	912	5.79	20.95	15.16	
Gs	6/19/02	933	6.71	20.95	14.24	
Gs	7/12/02	750	7.17	20.95	13.78	
Gs	8/21/02	1311	7.82	20.95	13.13	
Gs	9/24/02	1040	7.99	20.95	12.96	
Gs	10/15/02	758	8.07	20.95	12.88	
Gs	11/5/02	1136	8.13	20.95	12.82	
Gs	12/10/02	1247	7.46	20.95	13.49	
Gs	1/17/03	1343	5.15	20.95	15.80	
Gs	2/12/03	1344	5.55	20.95	15.40	
Gs	3/5/03	938	5.60	20.95	15.35	
Gs	4/8/03	1052	5.09	20.95	15.86	
Gs	5/1/03	851	5.75	20.95	15.20	
Gs	6/10/03	1220	6.10	20.95	14.85	
Gs	7/3/03	1400	7.20	20.95	13.75	
Gs	8/7/03	1312	7.82	20.95	13.13	
Gs	9/11/03	839	7.93	20.95	13.02	
Gs	10/3/03	748	8.21	20.95	12.74	
Gs	11/11/03	1212	7.05	20.95	13.90	
Gs	12/3/03	1422	4.99	20.95	15.96	
Gs	1/13/04	1112	4.89	20.95	16.06	
Gs	2/17/04	1230	4.36	20.95	16.59	
Gs	3/8/04	1145	5.09	20.95	15.86	
Gs	4/12/04	1145	5.35	20.95	15.60	
Gs	5/12/04	1458	6.31	20.95	14.64	
Gs	6/2/04	1650	5.82	20.95	15.13	
Gs	7/2/04	1650	6.59	20.95	14.36	
Gs	8/5/04	1230	7.35	20.95	13.60	
Gs	9/2/04	1030	6.36	20.95	14.59	
Gs	10/4/04	1005	6.65	20.95	14.30	
Gs	11/5/04	1300	5.87	20.95	15.08	
Gs	12/3/04	1435	5.72	20.95	15.23	
Hs	7/10/92		3.93	19.99	16.06	
Hs	7/16/92	04:50	0.70	19.99		Depth to water measurement incorrect
Hs	7/20/92	12:50	4.23	19.99	15.76	
Hs	7/24/92	08:20	4.49	19.99	15.50	

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
Hs	7/28/92	08:35	4.57	19.99	15.42	
Hs	8/4/92	10:44	4.80	19.99	15.19	
Hs	8/10/92	10:04	5.21	19.99	14.78	
Hs	8/12/92	14:55	5.20	19.99	14.79	
Hs	8/19/92	10:09	5.59	19.99	14.40	
Hs	8/23/92	10:08	5.81	19.99	14.18	
Hs	8/28/92	10:13	5.88	19.99	14.11	
Hs	9/1/92	10:20	6.00	19.99	13.99	
Hs	9/8/92	10:19	6.04	19.99	13.95	
Hs	9/18/92	10:09	6.28	19.99	13.71	
Hs	9/29/92	12:44	6.15	19.99	13.84	
Hs	10/6/92	10:09	6.32	19.99	13.67	
Hs	10/15/92	08:45	6.39	19.99	13.60	
Hs	11/3/92	09:16	5.80	19.99	14.19	Water in monument
Hs	11/9/92	10:40	5.53	19.99	14.46	Water in monument to top of well casing - cap was loose
Hs	12/16/92	11:09	4.29	19.99	15.70	H2O in monument
Hs	1/5/93	09:54	4.70	19.99	15.29	
Hs	2/3/93	10:02	4.10	19.99	15.89	H2O in monument
Hs	3/12/93		4.58	19.99	15.41	
Hs	4/7/93		4.25	19.99	15.74	
Hs	5/4/93	10:15	3.85	19.99	16.14	H2O in monument
Hs	5/27/93	12:11	3.98	19.99	16.01	H2O in monument
Hs	7/6/93		5.05	19.99	14.94	
Hs	10/11/93		6.36	19.99	13.63	
Hs	12/8/93	11:01	5.76	19.99	14.23	H2O above casing
Hs	2/1/94	09:50	5.20	19.99	14.79	
Hs	3/31/94		4.81	19.99	15.18	
Hs	4/14/94	07:40	3.82	19.99	16.17	
Hs	7/12/94		5.91	19.99	14.08	
Hs	10/19/94	13:52	6.64	19.99	13.35	
Hs	1/16/95	15:07	3.60	19.99	16.39	
Hs	2/9/95	13:46	3.61	19.99	16.38	
Hs	4/24/95	09:51	3.78	19.99	16.21	
Hs	5/17/95	07:35	5.10	19.99	14.89	
Hs	6/20/95	12:38	5.37	19.99	14.62	
Hs	7/10/95	12:01	5.78	19.99	14.21	
Hs	8/15/95	11:10	6.45	19.99	13.54	
Hs	12/6/95	08:23	3.82	19.99	16.17	
Hs	1/3/96	12:30	3.77	19.99	16.22	
Hs	3/25/96	14:42	3.84	19.99	16.15	
Hs	5/1/96	10:37	3.24	19.99	16.75	
Hs	5/28/96	10:48	3.60	19.99	16.39	
Hs	6/26/96	10:31	4.85	19.99	15.14	
Hs	7/30/96	10:13	5.69	19.99	14.30	
Hs	9/9/96	10:45	6.01	19.99	13.98	
Hs	11/15/96	10:06	4.64	19.99	15.35	
Hs	1/6/97	11:09	2.32	19.99	17.67	
Hs	3/6/97	09:56	3.20	19.99	16.79	
Hs	4/29/97	15:48	3.40	19.99	16.59	
Hs	5/20/97	15:19	4.12	19.99	15.87	

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
Hs	6/16/97	10:37	4.38	19.99	15.61	Mislabeled Hd on field sheet due to poor map
Hs	7/7/97	10:01	4.36	19.99	15.63	
Hs	8/4/97	10:10	5.12	19.99	14.87	
Hs	9/16/97	12:40	5.46	19.99	14.53	
Hs	10/7/97	11:32	4.40	19.99	15.59	
Hs	11/7/97	10:25	4.10	19.99	15.89	
Hs	12/8/97	11:07	4.81	19.99	15.18	
Hs	1/12/98	11:31	3.97	19.99	16.02	
Hs	2/26/98	13:06	4.07	19.99	15.92	
Hs	3/9/98	10:30	3.24	19.99	16.75	
Hs	4/7/98	13:33	4.36	19.99	15.63	
Hs	5/5/98	12:26	5.22	19.99	14.77	
Hs	6/8/98	13:28	5.35	19.99	14.64	
Hs	7/17/98	11:52	5.80	19.99	14.19	
Hs	8/4/98	14:26	5.88	19.99	14.11	
Hs	9/8/98	11:43	6.32	19.99	13.67	
Hs	10/9/98	13:55	6.35	19.99	13.64	
Hs	11/3/98	11:30	6.06	19.99	13.93	
Hs	12/8/98	10:49	3.99	19.99	16.00	
Hs	1/4/99	11:10	3.41	19.99	16.58	
Hs	2/2/99	12:12	2.53	19.99	17.46	
Hs	3/8/99	14:53	2.99	19.99	17.00	
Hs	4/29/99	12:12	4.17	19.99	15.82	
Hs	5/21/99	13:25	4.27	19.99	15.72	
Hs	6/22/99	10:23	5.04	19.99	14.95	
Hs	6/24/99	10:35	4.17	19.99	15.82	System off
Hs	7/21/99	10:17	5.17	19.99	14.82	
Hs	8/27/99	11:27	5.52	19.99	14.47	
Hs	9/14/99	11:42	5.94	19.99	14.05	
Hs	10/5/99	950	6.24	19.99	13.75	
Hs	11/15/99	14:26	4.62	19.99	15.37	
Hs	12/6/99	12:04	3.69	19.99	16.30	
Hs	1/6/00	11:03	3.95	19.99	16.04	
Hs	2/14/00	10:43	3.78	19.99	16.21	
Hs	3/16/00	1249	3.53	19.99	16.46	
Hs	5/11/00	1000	4.15	19.99	15.84	
Hs	6/6/00	1440	5.10	19.99	14.89	
Hs	7/26/00	1212	5.50	19.99	14.49	
Hs	8/21/00	1204	5.52	19.99	14.47	
Hs	9/13/00	1401	6.31	19.99	13.68	
Hs	10/11/00	1534	6.53	19.99	13.46	
Hs	11/15/00	1105	5.99	19.99	14.00	
Hs	12/17/00	953	5.47	19.99	14.52	
Hs	1/16/01	1054	5.46	19.99	14.53	
Hs	2/15/01	1013	5.23	19.99	14.76	
Hs	3/13/01	1214	4.81	19.99	15.18	
Hs	4/15/01	1407	4.22	19.99	15.77	
Hs	5/7/01	1051	4.69	19.99	15.30	
Hs	6/10/01	1157	5.01	19.99	14.98	
Hs	7/16/01	949	5.22	19.99	14.77	

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
Hs	8/14/01	855	5.59	19.99	14.40	
Hs	9/12/01	856	6.11	19.99	13.88	
Hs	10/4/01	809	7.42	19.99	12.57	
Hs	11/9/01	926	6.34	19.99	13.65	
Hs	12/3/01	1226	3.95	19.99	16.04	
Hs	1/3/02	1011	5.29	19.99	14.70	
Hs	2/7/02	1142	3.46	19.99	16.53	
Hs	3/7/02	1210	4.20	19.99	15.79	
Hs	4/23/02	1539	3.85	19.99	16.14	
Hs	5/9/02	900	4.18	19.99	15.81	
Hs	6/19/02	945	4.94	19.99	15.05	
Hs	7/12/02	755	5.22	19.99	14.77	
Hs	8/21/02	1313	5.71	19.99	14.28	
Hs	9/24/02	1135	6.34	19.99	13.65	
Hs	10/15/02	810	6.36	19.99	13.63	
Hs	11/5/02	1140	6.55	19.99	13.44	
Hs	12/10/02	1240	5.94	19.99	14.05	
Hs	1/17/03	1349	3.81	19.99	16.18	
Hs	2/12/03	1401	3.89	19.99	16.10	
Hs	3/5/03	934	3.94	19.99	16.05	
Hs	4/8/03	1210	4.50	19.99	15.49	
Hs	5/1/03	855	4.15	19.99	15.84	
Hs	6/10/03	1227	4.35	19.99	15.64	
Hs	7/3/03	1408	5.50	19.99	14.49	
Hs	8/7/03	1305	5.97	19.99	14.02	
Hs	9/11/03	1027	6.45	19.99	13.54	
Hs	10/3/03	753	6.58	19.99	13.41	
HY-11s	7/10/92		8.36	25.17	16.81	
HY-11s	7/20/92	11:50	8.39	25.17	16.78	
HY-11s	7/24/92	10:57	8.89	25.17	16.28	
HY-11s	7/28/92	10:44	8.97	25.17	16.20	
HY-11s	8/4/92	12:45	9.16	25.17	16.01	
HY-11s	8/10/92	12:17	9.19	25.17	15.98	
HY-11s	8/12/92	14:37	9.26	25.17	15.91	
HY-11s	8/19/92	12:40	9.47	25.17	15.70	
HY-11s	8/23/92	12:31	9.77	25.17	15.40	
HY-11s	8/28/92	12:47	9.82	25.17	15.35	
HY-11s	9/1/92	12:14	9.96	25.17	15.21	
HY-11s	9/8/92	11:45	10.04	25.17	15.13	
HY-11s	9/18/92	12:00	10.30	25.17	14.87	
HY-11s	9/29/92	12:21	10.18	25.17	14.99	
HY-11s	10/6/92	11:56	10.34	25.17	14.83	
HY-11s	10/15/92	10:30	10.35	25.17	14.82	
HY-11s	11/3/92	10:08	9.56	25.17	15.61	
HY-11s	11/9/92	14:00	9.19	25.17	15.98	
HY-11s	12/16/92	09:52	7.72	25.17	17.45	
HY-11s	1/5/93	11:18	8.91	25.17	16.26	
HY-11s	2/3/93	11:46	7.18	25.17	17.99	
HY-11s	3/12/93		8.03	25.17	17.14	
HY-11s	4/7/93		7.11	25.17	18.06	

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HY-11s	5/4/93	11:33	6.58	25.17	18.59	
HY-11s	5/27/93	10:28	7.50	25.17	17.67	
HY-11s	7/6/93		8.27	25.17	16.90	
HY-11s	10/11/93		10.15	25.17	15.02	
HY-11s	12/8/93	13:40	9.17	25.17	16.00	
HY-11s	2/1/94	13:15	8.30	25.17	16.87	
HY-11s	4/14/94	09:01	6.84	25.17	18.33	
HY-11s	7/12/94		9.16	25.17	16.01	
HY-11s	10/19/94	14:34	10.80	25.17	14.37	
HY-11s	1/16/95	16:00	6.43	25.17	18.74	
HY-11s	2/9/95	15:34	6.50	25.17	18.67	
HY-11s	4/24/95	12:53	6.96	25.17	18.21	
HY-11s	5/17/95	09:45	7.72	25.17	17.45	
HY-11s	6/20/95	11:28	8.61	25.17	16.56	
HY-11s	7/10/95	14:33	8.84	25.17	16.33	
HY-11s	8/15/95	14:00	9.85	25.17	15.32	
HY-11s	12/6/95	09:11	6.11	25.17	19.06	
HY-11s	1/3/96	16:18	6.00	25.17	19.17	
HY-11s	3/25/96	13:44	6.24	25.17	18.93	
HY-11s	5/1/96	11:29	5.60	25.17	19.57	
HY-11s	5/28/96	12:40	6.41	25.17	18.76	
HY-11s	6/26/96	11:29	7.72	25.17	17.45	
HY-11s	7/30/96	11:58	8.74	25.17	16.43	
HY-11s	9/9/96	12:54	9.44	25.17	15.73	
HY-11s	11/15/96	12:23	7.66	25.17	17.51	
HY-11s	1/6/97	13:28	4.73	25.17	20.44	
HY-11s	3/6/97	12:25	5.51	25.17	19.66	
HY-11s	4/29/97	17:15	5.73	25.17	19.44	
HY-11s	5/20/97	14:49	6.70	25.17	18.47	
HY-11s	6/16/97	12:43	7.03	25.17	18.14	
HY-11s	7/7/97	12:27	7.19	25.17	17.98	
HY-11s	8/4/97	11:45	8.03	25.17	17.14	
HY-11s	9/16/97	14:11	8.66	25.17	16.51	
HY-11s	10/7/97	11:15	7.50	25.17	17.67	
HY-11s	12/8/97	12:43	7.25	25.17	17.92	
HY-11s	1/12/98	13:02	8.24	25.17	16.93	
HY-11s	2/26/98	15:00	6.27	25.17	18.90	
HY-11s	3/9/98	09:03	6.16	25.17	19.01	
HY-11s	4/7/98	14:04	6.61	25.17	18.56	
HY-11s	5/5/98	10:38	7.64	25.17	17.53	
HY-11s	6/8/98	11:30	8.17	25.17	17.00	
HY-11s	7/17/98	10:53	8.91	25.17	16.26	
HY-11s	8/4/98	13:17	9.33	25.17	15.84	
HY-11s	9/8/98	10:25	9.98	25.17	15.19	
HY-11s	10/9/98	12:05	10.50	25.17	14.67	
HY-11s	11/3/98	09:52	9.65	25.17	15.52	
HY-11s	12/8/98	09:46	5.83	25.17	19.34	
HY-11s	1/4/99	09:55	5.11	25.17	20.06	
HY-11s	2/2/99	11:06	3.70	25.17	21.47	
HY-11s	3/8/99	13:45	5.13	25.17	20.04	

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HY-11s	4/29/99	16:59	6.73	25.17	18.44	
HY-11s	5/21/99	12:12	6.86	25.17	18.31	
HY-11s	6/22/99	09:24	8.06	25.17	17.11	
HY-11s	6/24/99	09:52	7.71	25.17	17.46	System off
HY-11s	7/21/99	09:41	8.15	25.17	17.02	
HY-11s	8/27/99	10:43	8.83	25.17	16.34	
HY-11s	9/14/99	10:35	9.29	25.17	15.88	
HY-11s	10/5/99	914	9.71	25.17	15.46	
HY-11s	11/15/99	13:30	7.29	25.17	17.88	
HY-11s	12/6/99	11:17	6.21	25.17	18.96	
HY-11s	1/6/00	09:53	6.20	25.17	18.97	
HY-11s	2/14/00	959	2.97	25.17	22.20	
HY-11s	3/16/00	1131	5.77	25.17	19.40	
HY-11s	4/11/00	950	6.92	25.17	18.25	
HY-11s	5/11/00	910	6.75	25.17	18.42	
HY-11s	6/6/00	1121	7.78	25.17	17.39	
HY-11s	7/26/00	1130	8.61	25.17	16.56	
HY-11s	8/21/00	1100	9.56	25.17	15.61	
HY-11s	9/13/00	1310	9.88	25.17	15.29	
HY-11s	11/15/00	1006	9.41	25.17	15.76	
HY-11s	12/17/00	904	8.83	25.17	16.34	
HY-11s	1/16/01	1012	8.59	25.17	16.58	
HY-11s	2/15/01	944	8.44	25.17	16.73	
HY-11s	3/13/01	1131	8.25	25.17	16.92	
HY-11s	4/15/01	1328	6.19	25.17	18.98	
HY-11s	5/7/01	1120	7.58	25.17	17.59	
HY-11s	6/10/01	1144	7.71	25.17	17.46	
HY-11s	7/16/01	912	8.21	25.17	16.96	
HY-11s	8/14/01	1017	8.77	25.17	16.40	
HY-11s	9/12/01	1635	10.78	25.17	14.39	
HY-11s	10/4/01	1100	11.25	25.17	13.92	
HY-11s	11/9/01	1109	10.15	25.17	15.02	
HY-11s	12/3/01	1430	7.75	25.17	17.42	
HY-11s	1/3/02	1143	7.30	25.17	17.87	
HY-11s	2/7/02	1321	5.87	25.17	19.30	
HY-11s	3/7/02	1344	6.78	25.17	18.39	
HY-11s	4/23/02	804	6.25	25.17	18.92	
HY-11s	5/9/02	759	6.91	25.17	18.26	
HY-11s	6/19/02	800	8.03	25.17	17.14	
HY-11s	7/12/02	1440	8.24	25.17	16.93	
HY-11s	7/12/02	700	8.24	25.17	16.93	
HY-11s	8/21/02	1220	9.03	25.17	16.14	
HY-11s	9/24/02	1034	9.45	25.17	15.72	
HY-11s	10/15/02	700	10.16	25.17	15.01	
HY-11s	11/5/02	1035	10.39	25.17	14.78	
HY-11s	12/10/02	1138	9.68	25.17	15.49	
HY-11s	1/17/03	1505	7.04	25.17	18.13	
HY-11s	2/12/03	1503	6.70	25.17	18.47	
HY-11s	3/5/03	1207	6.89	25.17	18.28	
HY-11s	4/8/03	1004	6.27	25.17	18.90	

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HY-11s	5/1/03	1013	6.82	25.17	18.35	
HY-11s	6/10/03	1345	6.99	25.17	18.18	
HY-11s	7/3/03	1240	8.89	25.17	16.28	
HY-11s	8/7/03	1342	9.72	25.17	15.45	
HY-11s	9/11/03	945	10.32	25.17	14.85	
HY-11s	10/3/03	945	9.12	25.17	16.05	
HY-11s	11/11/03	1056	8.68	25.17	16.49	
HY-11s	12/3/03	1404	6.54	25.17	18.63	
HY-11s	1/13/04	1240	5.95	25.17	19.22	
HY-11s	2/17/04	1133	5.37	25.17	19.80	
HY-11s	3/8/04	1206	5.90	25.17	19.27	
HY-11s	4/12/04	1117	7.10	25.17	18.07	
HY-11s	5/12/04	1344	7.78	25.17	17.39	
HY-11s	6/2/04	945	7.36	25.17	17.81	
HY-11s	7/2/04	708	8.47	25.17	16.70	
HY-11s	8/5/04	810	9.36	25.17	15.81	
HY-11s	9/2/04	904	8.49	25.17	16.68	
HY-11s	10/4/04	705	8.73	25.17	16.44	
HY-11s	11/5/04	807	7.74	25.17	17.43	
HY-11s	12/3/04	1303	7.46	25.17	17.71	
HY-1s	7/10/92		8.18	24.19	16.01	
HY-1s	7/16/92	12:12	1.50	24.19	22.69	
HY-1s	7/20/92	11:40	8.46	24.19	15.73	
HY-1s	7/24/92	08:47	8.64	24.19	15.55	
HY-1s	7/28/92	08:52	8.80	24.19	15.39	
HY-1s	8/4/92	11:45	8.76	24.19	15.43	
HY-1s	8/10/92	10:24	9.19	24.19	15.00	
HY-1s	8/12/92	14:17	9.38	24.19	14.81	
HY-1s	8/19/92	09:34	9.50	24.19	14.69	
HY-1s	8/23/92	10:47	9.77	24.19	14.42	
HY-1s	8/28/92	09:20	9.83	24.19	14.36	
HY-1s	9/1/92	09:42	9.94	24.19	14.25	
HY-1s	9/8/92	10:42	9.90	24.19	14.29	
HY-1s	9/18/92	11:09	10.31	24.19	13.88	
HY-1s	9/29/92	13:33	10.23	24.19	13.96	
HY-1s	10/6/92	09:16	10.37	24.19	13.82	
HY-1s	10/15/92	07:47	10.49	24.19	13.70	
HY-1s	11/3/92	10:08	9.72	24.19	14.47	
HY-1s	11/9/92	11:26	9.36	24.19	14.83	
HY-1s	12/16/92	12:57	8.00	24.19	16.19	
HY-1s	1/5/93	08:45	8.05	24.19	16.14	
HY-1s	2/3/93	10:56	7.40	24.19	16.79	
HY-1s	3/12/93		8.03	24.19	16.16	
HY-1s	4/7/93		7.27	24.19	16.92	
HY-1s	5/4/93	10:50	6.75	24.19	17.44	
HY-1s	5/27/93	14:02	7.48	24.19	16.71	Need to cut grass
HY-1s	7/6/93		8.25	24.19	15.94	
HY-1s	10/11/93		10.25	24.19	13.94	
HY-1s	12/8/93	12:35	9.20	24.19	14.99	
HY-1s	2/1/94	10:23	8.48	24.19	15.71	

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HY-1s	4/14/94	10:07	6.74	24.19	17.45	
HY-1s	6/1/94	12:05	8.27	24.19	15.92	
HY-1s	7/12/94		9.04	24.19	15.15	
HY-1s	10/19/94	13:12	10.80	24.19	13.39	
HY-1s	1/16/95	15:31	6.52	24.19	17.67	
HY-1s	2/9/95	14:40	6.55	24.19	17.64	
HY-1s	4/24/95	13:55	6.90	24.19	17.29	
HY-1s	5/17/95	08:10	7.75	24.19	16.44	
HY-1s	6/20/95	11:08	8.59	24.19	15.60	
HY-1s	7/10/95	12:17	8.87	24.19	15.32	
HY-1s	8/15/95	11:44	9.80	24.19	14.39	
HY-1s	12/6/95	08:41	6.41	24.19	17.78	
HY-1s	1/3/96	16:18	6.00	24.19	18.19	
HY-1s	3/25/96	12:03	6.15	24.19	18.04	
HY-1s	5/1/96	10:05	5.43	24.19	18.76	
HY-1s	5/28/96	11:21	6.28	24.19	17.91	
HY-1s	6/26/96	10:05	7.63	24.19	16.56	
HY-1s	7/30/96	12:27	8.69	24.19	15.50	
HY-1s	9/9/96	11:22	9.36	24.19	14.83	
HY-1s	11/15/96	10:58	7.75	24.19	16.44	
HY-1s	1/6/97	11:57	4.26	24.19	19.93	
HY-1s	3/6/97	09:28	5.18	24.19	19.01	
HY-1s	4/29/97	16:25	6.57	24.19	17.62	
HY-1s	5/20/97	16:17	6.49	24.19	17.70	
HY-1s	6/16/97	11:13	6.87	24.19	17.32	
HY-1s	7/7/97	10:48	7.01	24.19	17.18	
HY-1s	8/4/97	11:00	7.88	24.19	16.31	
HY-1s	9/16/97	13:04	8.68	24.19	15.51	
HY-1s	10/7/97	12:20	7.38	24.19	16.81	
HY-1s	11/7/97	11:07	6.64	24.19	17.55	
HY-1s	12/8/97	12:00	7.39	24.19	16.80	
HY-1s	1/12/98	12:20	6.30	24.19	17.89	
HY-1s	2/26/98	13:35	6.26	24.19	17.93	
HY-1s	3/9/98	10:44	6.01	24.19	18.18	
HY-1s	4/7/98	13:53	6.64	24.19	17.55	
HY-1s	5/5/98	13:11	7.67	24.19	16.52	
HY-1s	6/8/98	13:06	8.18	24.19	16.01	
HY-1s	7/17/98	12:37	8.88	24.19	15.31	
HY-1s	8/4/98	14:06	9.28	24.19	14.91	
HY-1s	9/8/98	11:21	9.90	24.19	14.29	
HY-1s	10/9/98	13:13	9.91	24.19	14.28	
HY-1s	11/3/98	10:56	9.54	24.19	14.65	
HY-1s	12/8/98	11:02	6.16	24.19	18.03	
HY-1s	1/4/99	11:22	5.28	24.19	18.91	
HY-1s	2/2/99	12:19	3.79	24.19	20.40	
HY-1s	3/8/99	14:36	4.99	24.19	19.20	
HY-1s	4/29/99	17:25	6.57	24.19	17.62	
HY-1s	5/21/99	11:40	6.72	24.19	17.47	
HY-1s	6/22/99	10:38	7.86	24.19	16.33	
HY-1s	6/24/99	10:15	7.13	24.19	17.06	System off

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HY-1s	7/21/99	10:25	8.10	24.19	16.09	
HY-1s	8/27/99	11:34	8.74	24.19	15.45	
HY-1s	9/14/99	11:22	9.23	24.19	14.96	
HY-1s	10/5/99	955	9.67	24.19	14.52	
HY-1s	11/15/99	13:56	7.63	24.19	16.56	
HY-1s	12/6/99	11:42	6.19	24.19	18.00	
HY-1s	1/6/00	10:29	6.29	24.19	17.90	
HY-1s	2/14/00	10:42	5.79	24.19	18.40	
HY-1s	3/16/00	1216	5.63	24.19	18.56	
HY-1s	4/11/00	1030	6.87	24.19	17.32	
HY-1s	5/11/00	844	6.71	24.19	17.48	
HY-1s	6/6/00	1141	7.12	24.19	17.07	
HY-1s	7/26/00	1148	8.14	24.19	16.05	
HY-1s	8/21/00	1135	8.55	24.19	15.64	
HY-1s	9/13/00	1339	8.94	24.19	15.25	
HY-1s	10/11/00	1419	10.21	24.19	13.98	
HY-1s	11/15/00	1038	9.44	24.19	14.75	
HY-1s	12/17/00	938	8.69	24.19	15.50	
HY-1s	1/16/01	1007	8.51	24.19	15.68	
HY-1s	2/15/01	908	7.99	24.19	16.20	
HY-1s	3/13/01	1122	7.68	24.19	16.51	
HY-1s	4/15/01	1317	7.42	24.19	16.77	
HY-1s	5/7/01	1113	7.64	24.19	16.55	
HY-1s	6/10/01	1043	7.74	24.19	16.45	
HY-1s	7/16/01	908	8.66	24.19	15.53	
HY-1s	8/14/01	837	9.56	24.19	14.63	
HY-1s	9/12/01	836	9.87	24.19	14.32	
HY-1s	10/4/01	719	11.23	24.19	12.96	
HY-1s	11/9/01	856	9.60	24.19	14.59	
HY-1s	12/3/01	1204	6.45	24.19	17.74	
HY-1s	4/23/02	825	6.21	24.19	17.98	
HY-1s	5/9/02	828	6.81	24.19	17.38	
HY-1s	6/19/02	827	7.90	24.19	16.29	
HY-1s	7/12/02	706	8.10	24.19	16.09	
HY-1s	8/21/02	1234	9.40	24.19	14.79	
HY-1s	9/24/02	1045	9.87	24.19	14.32	
HY-1s	10/15/02	708	10.04	24.19	14.15	
HY-1s	11/5/02	1047	10.29	24.19	13.90	
HY-1s	12/10/02	1154	9.55	24.19	14.64	
HY-1s	1/17/03	1419	6.98	24.19	17.21	
HY-1s	2/12/03	1449	6.62	24.19	17.57	
HY-1s	3/5/03	1018	6.73	24.19	17.46	
HY-1s	4/8/03	1014	6.00	24.19	18.19	
HY-1s	5/1/03	804	7.69	24.19	16.50	
HY-1s	6/10/03	1302	7.89	24.19	16.30	
HY-1s	7/3/03	1250	8.75	24.19	15.44	
HY-1s	8/7/03	1228	9.61	24.19	14.58	
HY-1s	9/11/03	1049	10.20	24.19	13.99	
HY-1s	10/3/03	819	10.41	24.19	13.78	
HY-1s	11/11/03	1133	8.62	24.19	15.57	

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HY-1s	12/3/03	837	6.50	24.19	17.69	
HY-1s	1/13/04	1042	5.69	24.19	18.50	
HY-1s	2/17/04	1144	5.26	24.19	18.93	
HY-1s	3/8/04	1125	5.65	24.19	18.54	
HY-1s	4/12/04	1355	7.00	24.19	17.19	
HY-1s	5/12/04	1426	7.62	24.19	16.57	
HY-1s	6/2/04	1610	7.25	24.19	16.94	
HY-1s	7/2/04	720	8.28	24.19	15.91	
HY-1s	8/5/04	1106	9.21	24.19	14.98	
HY-1s	9/2/04	910	8.75	24.19	15.44	
HY-1s	10/4/04	1120	8.53	24.19	15.66	
HY-1s	11/5/04	1329	7.50	24.19	16.69	
HY-1s	12/3/04	1405	6.41	24.19	17.78	
HYCP-2	7/9/92	12:04	4.85	20.47	15.62	
HYCP-2	7/10/92		4.77	20.47	15.70	
HYCP-2	7/16/92	11:57	5.15	20.47	15.32	
HYCP-2	7/20/92	12:30	5.13	20.47	15.34	
HYCP-2	7/24/92	07:42	5.35	20.47	15.12	
HYCP-2	7/28/92	08:14	5.50	20.47	14.97	
HYCP-2	8/4/92	11:33	5.66	20.47	14.81	
HYCP-2	8/10/92	09:35	7.03	20.47	13.44	
HYCP-2	8/12/92	14:00	7.00	20.47	13.47	
HYCP-2	8/19/92	10:29	6.93	20.47	13.54	
HYCP-2	8/23/92	09:53	7.64	20.47	12.83	
HYCP-2	8/28/92	10:06	7.75	20.47	12.72	
HYCP-2	9/1/92	09:59	7.47	20.47	13.00	
HYCP-2	9/8/92	09:52	7.74	20.47	12.73	
HYCP-2	9/18/92	10:30	8.19	20.47	12.28	
HYCP-2	9/29/92	13:09	8.04	20.47	12.43	
HYCP-2	10/6/92	09:46	8.25	20.47	12.22	
HYCP-2	10/15/92	08:21	8.35	20.47	12.12	
HYCP-2	11/3/92	10:48	7.18	20.47	13.29	
HYCP-2	11/9/92	09:46	7.45	20.47	13.02	
HYCP-2	12/16/92	11:00	6.12	20.47	14.35	
HYCP-2	1/5/93	09:29	6.34	20.47	14.13	
HYCP-2	2/3/93	10:23	5.66	20.47	14.81	
HYCP-2	3/12/93		5.40	20.47	15.07	
HYCP-2	4/7/93		5.76	20.47	14.71	
HYCP-2	5/4/93	09:42	5.23	20.47	15.24	
HYCP-2	5/27/93	13:37	5.53	20.47	14.94	
HYCP-2	7/6/93		7.76	20.47	12.71	
HYCP-2	10/11/93		8.24	20.47	12.23	
HYCP-2	12/8/93	11:42	7.01	20.47	13.46	
HYCP-2	2/1/94	09:31	7.01	20.47	13.46	
HYCP-2	4/14/94	09:14	5.10	20.47	15.37	
HYCP-2	6/1/94	12:45	6.40	20.47	14.07	
HYCP-2	7/12/94		7.07	20.47	13.40	
HYCP-2	10/19/94	13:38	8.64	20.47	11.83	
HYCP-2	1/16/95	14:53	5.01	20.47	15.46	
HYCP-2	2/9/95	14:01	5.11	20.47	15.36	

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HYCP-2	4/24/95	09:45	5.25	20.47	15.22	
HYCP-2	5/17/95	08:45	6.20	20.47	14.27	
HYCP-2	6/20/95	11:46	6.63	20.47	13.84	
HYCP-2	7/10/95	12:05	6.55	20.47	13.92	
HYCP-2	8/15/95	10:51	7.44	20.47	13.03	
HYCP-2	12/6/95	08:07	4.56	20.47	15.91	
HYCP-2	1/3/96	11:20	4.29	20.47	16.18	
HYCP-2	3/25/96	14:25	4.42	20.47	16.05	
HYCP-2	5/1/96	10:15	3.70	20.47	16.77	
HYCP-2	5/28/96	11:33	4.24	20.47	16.23	
HYCP-2	6/26/96	10:22	5.65	20.47	14.82	
HYCP-2	7/30/96	10:38	6.60	20.47	13.87	
HYCP-2	9/9/96	11:07	6.71	20.47	13.76	
HYCP-2	11/15/96	10:28	5.15	20.47	15.32	
HYCP-2	1/6/97	11:31	2.33	20.47	18.14	
HYCP-2	3/6/97	09:37	3.62	20.47	16.85	
HYCP-2	4/29/97	16:09	3.72	20.47	16.75	
HYCP-2	5/20/97	15:47	4.80	20.47	15.67	
HYCP-2	6/16/97	11:00	5.03	20.47	15.44	
HYCP-2	7/7/97	11:13	4.63	20.47	15.84	
HYCP-2	8/4/97	10:28	5.90	20.47	14.57	
HYCP-2	9/16/97	12:26	6.26	20.47	14.21	
HYCP-2	10/7/97	11:42	5.02	20.47	15.45	
HYCP-2	11/7/97	10:37	4.94	20.47	15.53	
HYCP-2	12/8/97	11:44	5.96	20.47	14.51	
HYCP-2	1/12/98	11:37	4.97	20.47	15.50	
HYCP-2	2/26/98	13:14	5.00	20.47	15.47	
HYCP-2	3/9/98	10:35	4.89	20.47	15.58	
HYCP-2	4/7/98	13:20	5.56	20.47	14.91	
HYCP-2	5/5/98	12:37	6.30	20.47	14.17	
HYCP-2	6/8/98	12:25	6.77	20.47	13.70	
HYCP-2	7/17/98	12:17	7.10	20.47	13.37	
HYCP-2	8/4/98	13:52	7.13	20.47	13.34	
HYCP-2	9/8/98	11:03	7.51	20.47	12.96	
HYCP-2	10/9/98	13:08	7.31	20.47	13.16	
HYCP-2	11/3/98	10:51	7.09	20.47	13.38	
HYCP-2	12/8/98	12:20	4.57	20.47	15.90	
HYCP-2	1/4/99	11:17	4.22	20.47	16.25	
HYCP-2	3/8/99	14:25	3.69	20.47	16.78	
HYCP-2	4/29/99	17:11	4.93	20.47	15.54	
HYCP-2	5/21/99	11:10	4.94	20.47	15.53	
HYCP-2	6/22/99	10:34	5.94	20.47	14.53	
HYCP-2	6/24/99	10:10	4.63	20.47	15.84	System off
HYCP-2	7/21/99	10:21	6.41	20.47	14.06	
HYCP-2	8/27/99	11:31	6.73	20.47	13.74	
HYCP-2	9/14/99	11:15	7.20	20.47	13.27	
HYCP-2	10/5/99	952	7.51	20.47	12.96	
HYCP-2	11/15/99	1405	5.58	20.47	14.89	
HYCP-2	12/6/99	11:50	4.97	20.47	15.50	
HYCP-2	1/6/00	10:53	4.91	20.47	15.56	

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HYCP-2	2/14/00	10:24	4.49	20.47	15.98	
HYCP-2	3/16/00	12:12	4.34	20.47	16.13	
HYCP-2	4/11/00	1028	5.40	20.47	15.07	
HYCP-2	5/11/00	810	5.11	20.47	15.36	
HYCP-2	6/6/00	1150	5.95	20.47	14.52	
HYCP-2	7/26/00	1200	7.22	20.47	13.25	
HYCP-2	8/21/00	1153	6.81	20.47	13.66	
HYCP-2	9/13/00	1347	7.33	20.47	13.14	
HYCP-2	10/11/00	1529	7.81	20.47	12.66	
HYCP-2	11/15/00	1022	7.30	20.47	13.17	
HYCP-2	12/17/00	923	6.75	20.47	13.72	
HYCP-2	1/16/01	1018	6.48	20.47	13.99	
HYCP-2	2/15/01	924	6.30	20.47	14.17	
HYCP-2	3/13/01	1124	6.24	20.47	14.23	
HYCP-2	4/15/01	1322	6.10	20.47	14.37	
HYCP-2	5/7/01	1107	5.70	20.47	14.77	
HYCP-2	6/10/01	1124	4.99	20.47	15.48	
HYCP-2	7/16/01	833	6.17	20.47	14.30	
HYCP-2	8/14/01	844	7.07	20.47	13.40	
HYCP-2	9/12/01	850	7.38	20.47	13.09	
HYCP-2	10/4/01	726	8.64	20.47	11.83	
HYCP-2	11/9/01	909	7.29	20.47	13.18	
HYCP-2	12/3/01	1210	6.95	20.47	13.52	
HYCP-2	1/3/02	955	5.68	20.47	14.79	
HYCP-2	2/7/02	1124	4.02	20.47	16.45	
HYCP-2	3/7/02	1153	4.73	20.47	15.74	
HYCP-2	4/23/02	854	4.48	20.47	15.99	
HYCP-2	5/9/02	842	4.94	20.47	15.53	
HYCP-2	6/19/02	922	6.01	20.47	14.46	
HYCP-2	7/12/02	728	6.55	20.47	13.92	
HYCP-2	8/21/02	1308	7.24	20.47	13.23	
HYCP-2	9/24/02	1120	7.55	20.47	12.92	
HYCP-2	10/15/02	730	7.60	20.47	12.87	
HYCP-2	11/5/02	1125	7.62	20.47	12.85	
HYCP-2	12/10/02	1230	6.82	20.47	13.65	
HYCP-2	1/17/03	1402	4.14	20.47	16.33	
HYCP-2	2/12/03	1415	4.64	20.47	15.83	
HYCP-2	3/5/03	954	4.64	20.47	15.83	
HYCP-2	4/8/03	1030	3.69	20.47	16.78	
HYCP-2	5/1/03	811	4.81	20.47	15.66	
HYCP-2	6/10/03	1243	5.03	20.47	15.44	
HYCP-2	7/3/03	1320	6.54	20.47	13.93	
HYCP-2	8/7/03	1242	7.11	20.47	13.36	
HYCP-2	9/11/03	1034	7.69	20.47	12.78	
HYCP-2	10/3/03	805	7.85	20.47	12.62	
HYCP-2	11/11/03	1148	6.46	20.47	14.01	
HYCP-2	12/3/03	845	4.54	20.47	15.93	
HYCP-2	1/13/04	1055	3.88	20.47	16.59	
HYCP-2	2/17/04	1210	3.70	20.47	16.77	
HYCP-2	3/8/04	1137	4.00	20.47	16.47	

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HYCP-2	4/12/04	1330	5.40	20.47	15.07	
HYCP-2	6/2/04	1720	5.04	20.47	15.43	
HYCP-2	7/2/04	1330	5.78	20.47	14.69	
HYCP-2	8/5/04	1135	6.98	20.47	13.49	
HYCP-2	9/2/04	942	6.31	20.47	14.16	
HYCP-2	10/4/04	1035	6.10	20.47	14.37	
HYCP-2	11/5/04	1130	5.00	20.47	15.47	
HYCP-2	12/3/04	1320	4.79	20.47	15.68	
HYCP-3s	7/10/92		7.59	24.03	16.44	
HYCP-3s	7/20/92	11:40	7.60	24.03	16.43	
HYCP-3s	7/24/92	08:36	8.22	24.03	15.81	
HYCP-3s	7/28/92	08:47	8.34	24.03	15.69	
HYCP-3s	8/4/92	11:57	8.55	24.03	15.48	
HYCP-3s	8/10/92	10:14	8.91	24.03	15.12	
HYCP-3s	8/12/92	14:32	9.06	24.03	14.97	
HYCP-3s	8/19/92	09:45	9.33	24.03	14.70	
HYCP-3s	8/23/92	10:37	9.58	24.03	14.45	
HYCP-3s	8/28/92	09:39	9.67	24.03	14.36	
HYCP-3s	9/1/92	09:52	9.98	24.03	14.05	
HYCP-3s	9/8/92	10:52	9.87	24.03	14.16	
HYCP-3s	9/18/92	11:19	10.17	24.03	13.86	
HYCP-3s	9/29/92	13:42	10.03	24.03	14.00	
HYCP-3s	10/6/92	09:15	10.20	24.03	13.83	
HYCP-3s	10/15/92	07:59	10.30	24.03	13.73	
HYCP-3s	11/3/92	10:16	9.42	24.03	14.61	
HYCP-3s	11/9/92	11:15	9.08	24.03	14.95	
HYCP-3s	12/16/92	13:07	7.34	24.03	16.69	
HYCP-3s	1/5/93	08:57	7.63	24.03	16.40	
HYCP-3s	2/3/93	11:09	6.64	24.03	17.39	
HYCP-3s	3/12/93		7.58	24.03	16.45	
HYCP-3s	4/7/93		5.95	24.03	18.08	
HYCP-3s	5/4/93	11:05	4.48	24.03	19.55	
HYCP-3s	5/27/93	13:53	6.65	24.03	17.38	
HYCP-3s	7/6/93		8.07	24.03	15.96	
HYCP-3s	10/11/93		10.10	24.03	13.93	
HYCP-3s	12/8/93	12:50	8.98	24.03	15.05	Readings fluctuated
HYCP-3s	2/1/94	10:06	8.20	24.03	15.83	
HYCP-3s	4/14/94	10:04	5.39	24.03	18.64	
HYCP-3s	6/1/94	12:25	6.75	24.03	17.28	
HYCP-3s	7/12/94		8.81	24.03	15.22	
HYCP-3s	10/19/94	13:04	10.62	24.03	13.41	
HYCP-3s	1/16/95	15:25	4.85	24.03	19.18	
HYCP-3s	2/9/95	14:29	5.52	24.03	18.51	
HYCP-3s	4/24/95	13:45	5.61	24.03	18.42	
HYCP-3s	5/17/95	08:25	7.32	24.03	16.71	
HYCP-3s	6/20/95	10:56	8.40	24.03	15.63	
HYCP-3s	7/10/95	12:10	8.96	24.03	15.07	
HYCP-3s	8/15/95	11:32	9.48	24.03	14.55	
HYCP-3s	12/6/95	08:34	5.05	24.03	18.98	
HYCP-3s	1/3/96	10:40	4.83	24.03	19.20	

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HYCP-3s	3/25/96	11:45	4.74	24.03	19.29	
HYCP-3s	5/1/96	09:55	4.02	24.03	20.01	
HYCP-3s	5/28/96	11:12	5.02	24.03	19.01	
HYCP-3s	6/26/96	09:53	7.34	24.03	16.69	
HYCP-3s	7/30/96	12:17	8.56	24.03	15.47	
HYCP-3s	9/9/96	11:14	9.14	24.03	14.89	
HYCP-3s	11/15/96	10:50	6.65	24.03	17.38	
HYCP-3s	1/6/97	11:48	3.26	24.03	20.77	
HYCP-3s	3/6/97	09:20	3.66	24.03	20.37	
HYCP-3s	4/29/97	16:17	3.44	24.03	20.59	
HYCP-3s	5/20/97	16:10	5.48	24.03	18.55	
HYCP-3s	6/16/97	11:07	5.74	24.03	18.29	
HYCP-3s	7/7/97	10:36	6.05	24.03	17.98	
HYCP-3s	8/4/97	10:52	7.56	24.03	16.47	
HYCP-3s	9/16/97	12:56	6.21	24.03	17.82	
HYCP-3s	10/7/97	12:09	5.56	24.03	18.47	
HYCP-3s	11/7/97	10:58	5.15	24.03	18.88	
HYCP-3s	12/8/97	11:51	6.29	24.03	17.74	
HYCP-3s	1/12/98	12:10	4.88	24.03	19.15	
HYCP-3s	2/26/98	13:24	4.53	24.03	19.50	
HYCP-3s	3/9/98	10:40	4.45	24.03	19.58	
HYCP-3s	4/7/98	13:47	5.32	24.03	18.71	
HYCP-3s	5/5/98	12:43	7.21	24.03	16.82	
HYCP-3s	6/8/98	12:57	7.81	24.03	16.22	
HYCP-3s	7/17/98	12:26	8.63	24.03	15.40	
HYCP-3s	8/4/98	14:00	9.02	24.03	15.01	
HYCP-3s	9/8/98	11:10	9.62	24.03	14.41	
HYCP-3s	10/9/98	13:24	9.55	24.03	14.48	
HYCP-3s	11/3/98	11:07	8.94	24.03	15.09	
HYCP-3s	12/8/98	11:10	4.69	24.03	19.34	
HYCP-3s	1/4/99	11:32	4.55	24.03	19.48	
HYCP-3s	2/2/99	12:26	3.21	24.03	20.82	
HYCP-3s	3/8/99	14:30	4.13	24.03	19.90	
HYCP-3s	4/29/99	17:20	5.12	24.03	18.91	
HYCP-3s	5/21/99	11:22	5.26	24.03	18.77	
HYCP-3s	6/22/99	10:45	7.60	24.03	16.43	
HYCP-3s	6/24/99	10:20	7.04	24.03	16.99	System off
HYCP-3s	7/21/99	10:30	7.61	24.03	16.42	
HYCP-3s	8/27/99	11:39	8.44	24.03	15.59	
HYCP-3s	9/14/99	11:27	9.07	24.03	14.96	
HYCP-3s	10/5/99	1000	9.54	24.03	14.49	
HYCP-3s	11/15/99	1401	5.31	24.03	18.72	
HYCP-3s	12/6/99	11:46	4.25	24.03	19.78	
HYCP-3s	1/6/00	10:35	6.97	24.03	17.06	
HYCP-3s	2/14/00	10:48	6.80	24.03	17.23	
HYCP-3s	3/16/00	1221	4.33	24.03	19.70	
HYCP-3s	4/11/00	1033	5.97	24.03	18.06	
HYCP-3s	5/11/00	823	5.31	24.03	18.72	
HYCP-3s	6/6/00	1144	5.69	24.03	18.34	
HYCP-3s	7/26/00	1154	6.82	24.03	17.21	

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HYCP-3s	8/21/00	1143	8.61	24.03	15.42	
HYCP-3s	9/13/00	1350	9.66	24.03	14.37	
HYCP-3s	10/11/00	1425	9.78	24.03	14.25	
HYCP-3s	11/15/00	1028	9.11	24.03	14.92	
HYCP-3s	12/17/00	929	8.49	24.03	15.54	
HYCP-3s	1/16/01	1022	8.01	24.03	16.02	
HYCP-3s	2/15/01	930	6.84	24.03	17.19	
HYCP-3s	3/13/01	1132	6.01	24.03	18.02	
HYCP-3s	4/15/01	1310	5.23	24.03	18.80	
HYCP-3s	5/7/01	1111	6.62	24.03	17.41	
HYCP-3s	6/10/01	1130	6.88	24.03	17.15	
HYCP-3s	7/16/01	839	8.57	24.03	15.46	
HYCP-3s	8/14/01	833	9.31	24.03	14.72	
HYCP-3s	9/12/01	746	9.51	24.03	14.52	
HYCP-3s	10/4/01	709	10.86	24.03	13.17	
HYCP-3s	11/9/01	845	8.56	24.03	15.47	
HYCP-3s	12/3/01	1155	5.07	24.03	18.96	
HYCP-3s	1/3/02	938	5.95	24.03	18.08	
HYCP-3s	2/7/02	1108	4.25	24.03	19.78	
HYCP-3s	3/7/02	1139	5.52	24.03	18.51	
HYCP-3s	4/23/02	1440	5.15	24.03	18.88	
HYCP-3s	5/9/02	815	5.93	24.03	18.10	
HYCP-3s	6/19/02	840	7.50	24.03	16.53	
HYCP-3s	7/12/02	717	8.01	24.03	16.02	
HYCP-3s	8/21/02	1242	9.33	24.03	14.70	
HYCP-3s	9/24/02	1058	9.66	24.03	14.37	
HYCP-3s	10/15/02	720	9.83	24.03	14.20	
HYCP-3s	11/5/02	1102	10.13	24.03	13.90	
HYCP-3s	12/10/02	1204	9.35	24.03	14.68	
HYCP-3s	1/17/03	1410	5.20	24.03	18.83	
HYCP-3s	2/12/03	1435	5.55	24.03	18.48	
HYCP-3s	3/5/03	1008	5.29	24.03	18.74	
HYCP-3s	4/8/03	1024	3.74	24.03	20.29	
HYCP-3s	5/1/03	756	5.42	24.03	18.61	
HYCP-3s	6/10/03	1256	5.94	24.03	18.09	
HYCP-3s	7/3/03	1330	8.59	24.03	15.44	
HYCP-3s	8/7/03	1216	9.50	24.03	14.53	
HYCP-3s	9/11/03	1043	10.05	24.03	13.98	
HYCP-3s	10/3/03	813	10.23	24.03	13.80	
HYCP-3s	11/11/03	1113	8.21	24.03	15.82	
HYCP-3s	12/3/03	822	4.64	24.03	19.39	
HYCP-3s	1/13/04	1026	4.21	24.03	19.82	
HYCP-3s	2/17/04	1157	3.90	24.03	20.13	
HYCP-3s	3/8/04	1113	4.06	24.03	19.97	
HYCP-3s	4/12/04	1340	6.22	24.03	17.81	
HYCP-3s	5/12/04	1408	7.12	24.03	16.91	
HYCP-3s	6/2/04	1800	5.96	24.03	18.07	
HYCP-3s	7/2/04	736	7.93	24.03	16.10	
HYCP-3s	8/5/04	1121	9.07	24.03	14.96	
HYCP-3s	9/2/04	930	7.90	24.03	16.13	

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HYCP-3s	10/4/04	1105	7.96	24.03	16.07	
HYCP-3s	11/5/04	1310	6.21	24.03	17.82	
HYCP-3s	12/3/04	1351	5.72	24.03	18.31	
HYCP-4	7/10/92		7.70	23.9	16.20	
HYCP-4	7/16/92	12:30	8.03	23.9	15.87	
HYCP-4	7/20/92	11:45	8.07	23.9	15.83	
HYCP-4	7/24/92	08:41	8.15	23.9	15.75	
HYCP-4	7/28/92	08:49	8.31	23.9	15.59	
HYCP-4	8/4/92	11:50	8.46	23.9	15.44	
HYCP-4	8/10/92	10:18	8.90	23.9	15.00	
HYCP-4	8/12/92	14:45	9.00	23.9	14.90	
HYCP-4	8/19/92	09:40	9.12	23.9	14.78	
HYCP-4	8/23/92	10:42	9.42	23.9	14.48	
HYCP-4	8/28/92	09:27	9.53	23.9	14.37	
HYCP-4	9/1/92	09:47	9.51	23.9	14.39	
HYCP-4	9/8/92	10:47	9.74	23.9	14.16	
HYCP-4	9/18/92	11:13	10.00	23.9	13.90	
HYCP-4	9/29/92	13:37	9.87	23.9	14.03	
HYCP-4	10/6/92	09:21	10.04	23.9	13.86	
HYCP-4	10/15/92	07:54	10.15	23.9	13.75	
HYCP-4	11/3/92	10:13	9.25	23.9	14.65	
HYCP-4	11/9/92	11:20	9.22	23.9	14.68	
HYCP-4	12/16/92	13:03	7.69	23.9	16.21	
HYCP-4	1/5/93	08:54	7.82	23.9	16.08	
HYCP-4	2/3/93	11:01	7.12	23.9	16.78	
HYCP-4	3/12/93		7.58	23.9	16.32	
HYCP-4	4/7/93		7.13	23.9	16.77	
HYCP-4	5/4/93	11:00	6.60	23.9	17.30	
HYCP-4	5/27/93	13:59	7.26	23.9	16.64	
HYCP-4	7/6/93		8.03	23.9	15.87	
HYCP-4	10/11/93		9.87	23.9	14.03	
HYCP-4	12/8/93	12:45	9.00	23.9	14.90	
HYCP-4	2/1/94	10:14	8.22	23.9	15.68	
HYCP-4	4/14/94		6.56	23.9	17.34	
HYCP-4	6/1/94	12:10	8.05	23.9	15.85	
HYCP-4	7/12/94		8.60	23.9	15.30	
HYCP-4	10/19/94	13:07	10.43	23.9	13.47	
HYCP-4	1/16/95	15:27	6.30	23.9	17.60	
HYCP-4	2/9/95	14:31	6.30	23.9	17.60	
HYCP-4	4/24/95	13:50	6.69	23.9	17.21	
HYCP-4	5/17/95	08:35	7.50	23.9	16.40	
HYCP-4	6/20/95	11:25	8.32	23.9	15.58	
HYCP-4	7/10/95	12:12	8.55	23.9	15.35	
HYCP-4	8/15/95	11:37	9.45	23.9	14.45	
HYCP-4	12/6/95	08:36	6.09	23.9	17.81	
HYCP-4	1/3/96	11:00	5.81	23.9	18.09	
HYCP-4	3/25/96	12:00	5.88	23.9	18.02	
HYCP-4	5/1/96	09:58	5.24	23.9	18.66	
HYCP-4	5/28/96	11:15	5.99	23.9	17.91	
HYCP-4	6/26/96	09:57	7.36	23.9	16.54	

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HYCP-4	7/30/96	12:20	8.37	23.9	15.53	
HYCP-4	9/9/96	11:18	8.98	23.9	14.92	
HYCP-4	11/15/96	10:54	7.47	23.9	16.43	
HYCP-4	1/6/97	11:53	3.78	23.9	20.12	
HYCP-4	3/6/97	09:23	4.76	23.9	19.14	
HYCP-4	4/29/97	16:19	5.09	23.9	18.81	
HYCP-4	5/20/97	16:12	6.11	23.9	17.79	
HYCP-4	6/16/97	11:08	6.44	23.9	17.46	
HYCP-4	7/7/97	10:40	6.54	23.9	17.36	
HYCP-4	8/4/97	10:54	7.47	23.9	16.43	
HYCP-4	9/16/97	12:59	8.33	23.9	15.57	
HYCP-4	10/7/97	12:15	7.05	23.9	16.85	
HYCP-4	11/7/97	11:01	6.52	23.9	17.38	
HYCP-4	12/8/97	11:55	7.18	23.9	16.72	
HYCP-4	1/12/98	12:14	6.13	23.9	17.77	
HYCP-4	2/26/98	13:29	6.17	23.9	17.73	
HYCP-4	3/9/98	10:47	6.05	23.9	17.85	
HYCP-4	4/7/98	13:51	6.50	23.9	17.40	
HYCP-4	5/5/98	12:58	7.49	23.9	16.41	
HYCP-4	6/8/98	13:04	7.93	23.9	15.97	
HYCP-4	7/17/98	12:33	8.59	23.9	15.31	
HYCP-4	8/4/98	14:02	8.92	23.9	14.98	
HYCP-4	9/8/98	11:14	9.50	23.9	14.40	
HYCP-4	10/9/98	13:18	9.57	23.9	14.33	
HYCP-4	11/3/98	11:02	9.22	23.9	14.68	
HYCP-4	12/8/98	11:07	5.93	23.9	17.97	
HYCP-4	1/4/99	11:27	5.11	23.9	18.79	
HYCP-4	2/2/99	12:23	3.89	23.9	20.01	
HYCP-4	3/8/99	14:33	4.54	23.9	19.36	
HYCP-4	4/29/99	17:22	6.07	23.9	17.83	
HYCP-4	5/21/99	11:31	6.34	23.9	17.56	
HYCP-4	6/22/99	10:43	7.51	23.9	16.39	
HYCP-4	6/24/99	10:18	6.90	23.9	17.00	System off
HYCP-4	7/21/99	10:29	7.79	23.9	16.11	
HYCP-4	8/27/99	11:37	8.14	23.9	15.76	
HYCP-4	9/14/99	11:24	8.88	23.9	15.02	
HYCP-4	10/5/99	958	9.32	23.9	14.58	
HYCP-4	11/15/99	13:59	7.35	23.9	16.55	
HYCP-4	12/6/99	11:44	6.14	23.9	17.76	
HYCP-4	1/6/00	10:33	6.13	23.9	17.77	
HYCP-4	2/14/00	10:46	5.72	23.9	18.18	
HYCP-4	3/16/00	1219	5.65	23.9	18.25	
HYCP-4	4/11/00	1032	6.70	23.9	17.20	
HYCP-4	5/11/00	830	6.17	23.9	17.73	
HYCP-4	6/6/00	1155	5.34	23.9	18.56	
HYCP-4	7/26/00	1152	7.51	23.9	16.39	
HYCP-4	8/21/00	1139	7.66	23.9	16.24	
HYCP-4	9/13/00	1352	8.98	23.9	14.92	
HYCP-4	10/11/00	1421	9.79	23.9	14.11	
HYCP-4	11/15/00	1034	8.92	23.9	14.98	

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HYCP-4	12/17/00	933	8.09	23.9	15.81	
HYCP-4	1/16/01	1025	7.69	23.9	16.21	
HYCP-4	2/15/01	934	7.40	23.9	16.50	
HYCP-4	3/13/01	1135	7.21	23.9	16.69	
HYCP-4	4/15/01	1312	6.98	23.9	16.92	
HYCP-4	5/7/01		7.80	23.9	16.10	
HYCP-4	6/10/01	1136	7.91	23.9	15.99	
HYCP-4	7/16/01	915	7.61	23.9	16.29	
HYCP-4	7/16/01	916	7.56	23.9	16.34	
HYCP-4	8/14/01	1022	8.22	23.9	15.68	
HYCP-4	9/12/01	1830	10.47	23.9	13.43	
HYCP-4	10/4/01	714	10.88	23.9	13.02	
HYCP-4	12/3/01	1158	6.46	23.9	17.44	
HYCP-4	1/3/02	942	7.25	23.9	16.65	
HYCP-4	2/7/02	1112	5.61	23.9	18.29	
HYCP-4	3/7/02	1142	6.08	23.9	17.82	
HYCP-4	5/9/02	821	6.56	23.9	17.34	
HYCP-4	6/19/02	836	8.12	23.9	15.78	
HYCP-4	7/12/02	715	7.78	23.9	16.12	
HYCP-4	8/21/02	1239	9.06	23.9	14.84	
HYCP-4	9/24/02	1055	11.13	23.9	12.77	
HYCP-4	10/15/02	715	9.64	23.9	14.26	
HYCP-4	11/5/02	1055	9.85	23.9	14.05	
HYCP-4	12/10/02	1158	9.21	23.9	14.69	
HYCP-4	1/17/03	1415	6.59	23.9	17.31	
HYCP-4	2/12/03	1439	6.39	23.9	17.51	
HYCP-4	3/5/03	1013	6.52	23.9	17.38	
HYCP-4	4/8/03	1020	5.94	23.9	17.96	
HYCP-4	5/1/03	759	6.50	23.9	17.40	
HYCP-4	6/10/03	1258	6.66	23.9	17.24	
HYCP-4	7/3/03	1335	8.40	23.9	15.50	
HYCP-4	8/7/03	1222	9.21	23.9	14.69	
HYCP-4	9/11/03	1046	9.80	23.9	14.10	
HYCP-4	10/3/03	815	9.95	23.9	13.95	
HYCP-4	11/11/03	1117	8.15	23.9	15.75	
HYCP-4	12/3/03	828	6.40	23.9	17.50	
HYCP-4	1/13/04	1032	5.12	23.9	18.78	
HYCP-4	2/17/04	1155	4.72	23.9	19.18	
HYCP-4	3/8/04	1118	5.03	23.9	18.87	
HYCP-4	4/12/04	1345	6.55	23.9	17.35	
HYCP-4	5/12/04	1415	7.11	23.9	16.79	
HYCP-4	6/2/04	1620	6.61	23.9	17.29	
HYCP-4	7/2/04	732	7.78	23.9	16.12	
HYCP-4	8/5/04	1115	8.75	23.9	15.15	
HYCP-4	9/2/04	922	7.72	23.9	16.18	
HYCP-4	10/4/04	1115	8.01	23.9	15.89	
HYCP-4	11/5/04	1318	6.93	23.9	16.97	
HYCP-4	12/3/04	1357	6.89	23.9	17.01	
HYCP-5	7/16/92	11:20	7.23	22.31	15.08	
HYCP-5	7/20/92	12:20	7.34	22.31	14.97	

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HYCP-5	7/24/92	08:26	7.44	22.31	14.87	
HYCP-5	7/28/92	08:38	7.54	22.31	14.77	
HYCP-5	8/4/92	10:58	7.62	22.31	14.69	
HYCP-5	8/10/92	10:30	9.62	22.31	12.69	
HYCP-5	8/12/92	10:30	9.50	22.31	12.81	
HYCP-5	8/19/92	09:56	9.09	22.31	13.22	
HYCP-5	8/23/92	10:25	10.27	22.31	12.04	
HYCP-5	8/28/92	09:45	10.38	22.31	11.93	
HYCP-5	9/1/92	09:25	9.78	22.31	12.53	
HYCP-5	9/8/92	09:35	10.52	22.31	11.79	
HYCP-5	9/18/92	10:33	10.82	22.31	11.49	
HYCP-5	9/29/92	10:58	10.64	22.31	11.67	
HYCP-5	10/6/92	09:38	10.84	22.31	11.47	
HYCP-5	10/15/92	08:12	10.92	22.31	11.39	
HYCP-5	11/3/92	09:51	9.93	22.31	12.38	
HYCP-5	11/9/92	10:03	10.13	22.31	12.18	Elect. transducer was moved aside
HYCP-5	12/16/92	09:25	8.82	22.31	13.49	
HYCP-5	1/5/93	09:05	9.13	22.31	13.18	
HYCP-5	2/3/93	09:45	8.45	22.31	13.86	
HYCP-5	3/12/93		7.46	22.31	14.85	
HYCP-5	4/7/93		7.60	22.31	14.71	
HYCP-5	5/4/93	09:33	8.23	22.31	14.08	
HYCP-5	5/27/93	13:30	8.60	22.31	13.71	
HYCP-5	7/6/93		9.45	22.31	12.86	
HYCP-5	10/11/93		10.90	22.31	11.41	
HYCP-5	12/8/93	12:00	10.11	22.31	12.20	
HYCP-5	2/1/94	09:16	9.59	22.31	12.72	
HYCP-5	4/14/94	09:21	7.79	22.31	14.52	
HYCP-5	7/12/94		9.61	22.31	12.70	
HYCP-5	10/19/94	13:25	11.00	22.31	11.31	
HYCP-5	1/16/95	15:14	7.69	22.31	14.62	
HYCP-5	2/9/95	14:09	7.59	22.31	14.72	
HYCP-5	4/24/95	09:36	7.82	22.31	14.49	
HYCP-5	5/17/95	07:08	8.64	22.31	13.67	
HYCP-5	6/20/95	11:41	9.13	22.31	13.18	
HYCP-5	7/10/95	11:45	9.14	22.31	13.17	
HYCP-5	8/15/95	10:44	9.72	22.31	12.59	
HYCP-5	12/6/95	08:10	7.25	22.31	15.06	
HYCP-5	1/3/96	11:45	6.87	22.31	15.44	
HYCP-5	3/25/96	14:48	6.94	22.31	15.37	
HYCP-5	5/1/96	10:18	6.19	22.31	16.12	
HYCP-5	5/28/96	11:00	6.54	22.31	15.77	
HYCP-5	6/26/96	10:56	7.92	22.31	14.39	
HYCP-5	7/30/96	10:30	8.84	22.31	13.47	
HYCP-5	9/9/96	11:01	8.82	22.31	13.49	
HYCP-5	11/15/96	10:20	7.90	22.31	14.41	
HYCP-5	1/6/97	11:25	4.60	22.31	17.71	
HYCP-5	3/6/97	09:39	6.26	22.31	16.05	
HYCP-5	4/29/97	16:01	6.29	22.31	16.02	
HYCP-5	5/20/97	15:49	7.04	22.31	15.27	

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HYCP-5	6/16/97	10:44	7.23	22.31	15.08	
HYCP-5	7/7/97	10:17	7.13	22.31	15.18	
HYCP-5	8/4/97	10:22	8.10	22.31	14.21	
HYCP-5	9/16/97	12:22	8.80	22.31	13.51	
HYCP-5	10/7/97	11:38	7.59	22.31	14.72	
HYCP-5	11/7/97	10:35	7.57	22.31	14.74	
HYCP-5	12/8/97	11:19	8.41	22.31	13.90	
HYCP-5	1/12/98	11:54	7.38	22.31	14.93	
HYCP-5	2/26/98	12:39	6.95	22.31	15.36	
HYCP-5	3/9/98	10:15	7.47	22.31	14.84	
HYCP-5	4/7/98	13:15	7.81	22.31	14.50	
HYCP-5	5/5/98	12:07	8.59	22.31	13.72	
HYCP-5	6/8/98	12:15	8.87	22.31	13.44	
HYCP-5	7/17/98	11:31	9.23	22.31	13.08	
HYCP-5	8/4/98	13:40	9.27	22.31	13.04	
HYCP-5	9/8/98	10:52	9.49	22.31	12.82	
HYCP-5	10/9/98	12:58	9.55	22.31	12.76	
HYCP-5	11/3/98	10:45	9.51	22.31	12.80	
HYCP-5	12/8/98	10:31	7.21	22.31	15.10	
HYCP-5	1/4/99	10:39	6.78	22.31	15.53	
HYCP-5	2/2/99	11:57	7.86	22.31	14.45	
HYCP-5	3/8/99	14:13	6.18	22.31	16.13	
HYCP-5	4/29/99	17:05	7.47	22.31	14.84	
HYCP-5	5/21/99	11:00	7.42	22.31	14.89	
HYCP-5	6/22/99	10:12	8.28	22.31	14.03	
HYCP-5	6/24/99	10:08	6.83	22.31	15.48	System off
HYCP-5	7/21/99	10:01	8.81	22.31	13.50	
HYCP-5	8/27/99	11:15	8.97	22.31	13.34	
HYCP-5	9/14/99	11:09	9.37	22.31	12.94	
HYCP-5	10/5/99	941	9.65	22.31	12.66	
HYCP-5	11/15/99	1406	8.25	22.31	14.06	
HYCP-5	12/6/99	11:55	7.26	22.31	15.05	
HYCP-5	1/6/00	10:52	7.31	22.31	15.00	
HYCP-5	2/14/00	10:23	6.92	22.31	15.39	
HYCP-5	3/16/00	12:11	6.90	22.31	15.41	
HYCP-5	4/11/00	1020	7.70	22.31	14.61	
HYCP-5	5/12/00	800	7.52	22.31	14.79	
HYCP-5	6/6/00	1149	7.77	22.31	14.54	
HYCP-5	7/26/00	1204	8.55	22.31	13.76	
HYCP-5	8/21/00	1157	9.30	22.31	13.01	
HYCP-5	9/13/00	1342	9.22	22.31	13.09	
HYCP-5	10/11/00	1520	9.64	22.31	12.67	
HYCP-5	11/15/00	1019	9.40	22.31	12.91	
HYCP-5	12/17/00	920	8.94	22.31	13.37	
HYCP-5	1/16/01	1016	8.65	22.31	13.66	
HYCP-5	2/15/01	918	8.44	22.31	13.87	
HYCP-5	3/13/01	1123	8.24	22.31	14.07	
HYCP-5	4/15/01	1320	7.75	22.31	14.56	
HYCP-5	5/7/01	1108	7.99	22.31	14.32	
HYCP-5	6/10/01	1030	6.93	22.31	15.38	

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HYCP-5	7/16/01	830	8.62	22.31	13.69	
HYCP-5	8/14/01	829	9.18	22.31	13.13	
HYCP-5	8/14/01	829	9.18	22.31	13.13	
HYCP-5	9/12/01	740	9.59	22.31	12.72	
HYCP-5	10/4/01	658	10.79	22.31	11.52	
HYCP-5	11/9/01	835	9.83	22.31	12.48	
HYCP-5	12/3/01	1147	7.32	22.31	14.99	
HYCP-5	1/3/02	930	8.10	22.31	14.21	
HYCP-5	2/7/02	1100	6.02	22.31	16.29	
HYCP-5	3/7/02	1131	6.98	22.31	15.33	
HYCP-5	4/23/02	1456	6.90	22.31	15.41	
HYCP-5	5/9/02	837	7.18	22.31	15.13	
HYCP-5	6/19/02	900	8.16	22.31	14.15	
HYCP-5	7/12/02	744	8.08	22.31	14.23	
HYCP-5	8/21/02	1256	9.37	22.31	12.94	
HYCP-5	9/24/02	1117	9.59	22.31	12.72	
HYCP-5	10/15/02	750	9.58	22.31	12.73	
HYCP-5	11/5/02	1113	9.66	22.31	12.65	
HYCP-5	12/10/02	1212	9.08	22.31	13.23	
HYCP-5	1/17/03	1405	6.38	22.31	15.93	
HYCP-5	2/12/03	1421	6.97	22.31	15.34	
HYCP-5	3/5/03	956	7.04	22.31	15.27	
HYCP-5	4/8/03	1034	6.51	22.31	15.80	
HYCP-5	5/1/03	810	7.14	22.31	15.17	
HYCP-5	7/3/03	1346	8.70	22.31	13.61	
HYCP-5	8/7/03	1200	9.21	22.31	13.10	
HYCP-5	9/11/03	1037	9.76	22.31	12.55	
HYCP-5	10/3/03	807	9.82	22.31	12.49	
HYCP-5	11/11/03	1142	8.63	22.31	13.68	
HYCP-5	12/3/03	813	7.28	22.31	15.03	
HYCP-5	1/13/04	1010	6.59	22.31	15.72	
HYCP-5	2/17/04	1100	5.74	23.31	17.57	
HYCP-5	3/8/04	1100	6.79	23.31	16.52	
HYCP-5	4/12/04	1300	7.70	23.31	15.61	
HYCP-5	5/12/04	1350	8.02	23.31	15.29	
HYCP-5	6/2/04	1700	7.43	23.31	15.88	
HYCP-5	7/2/04	1336	7.77	23.31	15.54	
HYCP-5	8/5/04	1208	9.00	23.31	14.31	
HYCP-5	9/2/04	1022	8.30	23.31	15.01	
HYCP-5	10/4/04	1045	8.13	23.31	15.18	
HYCP-5	11/5/04	1030	7.44	23.31	15.87	
HYCP-5	12/3/04	1335	7.22	23.31	16.09	
HYCP-6	7/10/92		7.85	23.52	15.67	
HYCP-6	7/16/92	11:28	8.23	23.52	15.29	
HYCP-6	7/20/92	12:20	8.08	23.52	15.44	
HYCP-6	7/24/92	08:28	8.40	23.52	15.12	
HYCP-6	7/28/92	08:37	8.50	23.52	15.02	
HYCP-6	8/4/92	11:03	8.60	23.52	14.92	
HYCP-6	8/10/92	10:34	9.95	23.52	13.57	
HYCP-6	8/12/92	10:15	9.42	23.52	14.10	

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HYCP-6	8/19/92	09:58	9.95	23.52	13.57	
HYCP-6	8/23/92	10:27	10.53	23.52	12.99	
HYCP-6	8/28/92	09:44	10.63	23.52	12.89	
HYCP-6	9/1/92	09:28	10.52	23.52	13.00	
HYCP-6	9/8/92	09:30	10.78	23.52	12.74	
HYCP-6	9/18/92	10:35	11.05	23.52	12.47	
HYCP-6	9/29/92	11:05	10.88	23.52	12.64	
HYCP-6	10/6/92	09:44	11.08	23.52	12.44	
HYCP-6	10/15/92	08:14	11.15	23.52	12.37	
HYCP-6	11/3/92	09:55	9.81	23.52	13.71	
HYCP-6	11/9/92	10:05	10.37	23.52	13.15	
HYCP-6	12/16/92	09:32	9.05	23.52	14.47	
HYCP-6	1/5/93	09:06	9.38	23.52	14.14	
HYCP-6	2/3/93	09:47	8.73	23.52	14.79	
HYCP-6	3/12/93		8.38	23.52	15.14	
HYCP-6	4/7/93		8.85	23.52	14.67	
HYCP-6	5/4/93	09:30	8.51	23.52	15.01	
HYCP-6	5/27/93	13:33	8.28	23.52	15.24	
HYCP-6	7/6/93		9.76	23.52	13.76	
HYCP-6	10/11/93		11.13	23.52	12.39	
HYCP-6	12/8/93	12:05	10.22	23.52	13.30	
HYCP-6	2/1/94	09:18	9.81	23.52	13.71	
HYCP-6	4/14/94	09:20	8.41	23.52	15.11	
HYCP-6	6/1/94		9.26	23.52	14.26	
HYCP-6	7/12/94		10.14	23.52	13.38	
HYCP-6	10/19/94	13:26	11.28	23.52	12.24	
HYCP-6	1/16/95	15:17	8.02	23.52	15.50	
HYCP-6	2/9/95	14:07	8.01	23.52	15.51	
HYCP-6	4/24/95	09:35	8.20	23.52	15.32	
HYCP-6	5/17/95	07:05	9.23	23.52	14.29	
HYCP-6	6/20/95	11:38	9.62	23.52	13.90	
HYCP-6	7/10/95	11:46	9.82	23.52	13.70	
HYCP-6	8/15/95	10:46	10.02	23.52	13.50	
HYCP-6	12/6/95	08:12	7.87	23.52	15.65	
HYCP-6	1/3/96	11:50	7.58	23.52	15.94	
HYCP-6	3/25/96	14:50	7.72	23.52	15.80	
HYCP-6	5/1/96	10:20	7.02	23.52	16.50	
HYCP-6	5/28/96	11:02	7.42	23.52	16.10	
HYCP-6	6/26/96	10:57	8.75	23.52	14.77	
HYCP-6	7/30/96	10:32	9.62	23.52	13.90	
HYCP-6	9/9/96	11:03	10.80	23.52	12.72	
HYCP-6	11/15/96	10:22	8.65	23.52	14.87	
HYCP-6	1/6/97	11:26	5.78	23.52	17.74	
HYCP-6	3/6/97	09:41	7.01	23.52	16.51	
HYCP-6	4/29/97	16:03	7.16	23.52	16.36	
HYCP-6	5/20/97	15:50	7.92	23.52	15.60	
HYCP-6	6/16/97	10:45	8.12	23.52	15.40	
HYCP-6	7/7/97	10:15	8.07	23.52	15.45	
HYCP-6	8/4/97	10:20	8.95	23.52	14.57	
HYCP-6	9/16/97	12:25	9.51	23.52	14.01	

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HYCP-6	10/7/97	11:39	8.33	23.52	15.19	
HYCP-6	11/7/97	10:34	8.16	23.52	15.36	
HYCP-6	12/8/97	11:17	8.97	23.52	14.55	
HYCP-6	1/12/98	11:55	7.92	23.52	15.60	
HYCP-6	2/26/98	12:38	8.17	23.52	15.35	
HYCP-6	3/9/98	10:14	8.03	23.52	15.49	
HYCP-6	4/7/98	13:13	8.46	23.52	15.06	
HYCP-6	5/5/98	12:06	9.14	23.52	14.38	
HYCP-6	6/8/98	12:19	9.47	23.52	14.05	
HYCP-6	7/17/98	11:34	9.81	23.52	13.71	
HYCP-6	8/4/98	13:42	9.98	23.52	13.54	
HYCP-6	9/8/98	10:54	10.36	23.52	13.16	
HYCP-6	10/9/98	12:54	10.37	23.52	13.15	
HYCP-6	11/3/98	10:41	10.14	23.52	13.38	
HYCP-6	12/8/98	10:29	7.87	23.52	15.65	
HYCP-6	1/4/99	10:38	7.38	23.52	16.14	
HYCP-6	2/2/99	11:55	6.46	23.52	17.06	
HYCP-6	3/8/99	14:17	6.94	23.52	16.58	
HYCP-6	4/29/99	17:04	8.17	23.52	15.35	
HYCP-6	5/21/99	11:06	8.24	23.52	15.28	
HYCP-6	6/22/99	10:11	9.01	23.52	14.51	
HYCP-6	6/24/99	10:09	7.88	23.52	15.64	System off
HYCP-6	7/21/99	10:00	9.31	23.52	14.21	
HYCP-6	8/27/99	11:14	9.61	23.52	13.91	
HYCP-6	9/14/99	11:08	10.02	23.52	13.50	
HYCP-6	10/5/99	940	10.33	23.52	13.19	
HYCP-6	11/15/99	1407	8.77	23.52	14.75	
HYCP-6	12/6/99	11:56	7.80	23.52	15.72	
HYCP-6	1/6/00	10:51	8.00	23.52	15.52	
HYCP-6	2/14/00	10:22	7.58	23.52	15.94	
HYCP-6	3/16/00	12:10	7.47	23.52	16.05	
HYCP-6	4/11/00	1019	8.35	23.52	15.17	
HYCP-6	5/11/00	806	8.31	23.52	15.21	
HYCP-6	6/6/00	1150	8.63	23.52	14.89	
HYCP-6	7/26/00	1203	9.15	23.52	14.37	
HYCP-6	8/21/00	1156	9.41	23.52	14.11	
HYCP-6	9/13/00	1345	9.91	23.52	13.61	
HYCP-6	10/11/00	1522	10.56	23.52	12.96	
HYCP-6	11/15/00	1021	10.11	23.52	13.41	
HYCP-6	12/17/00	921	9.60	23.52	13.92	
HYCP-6	1/16/01	1017	9.25	23.52	14.27	
HYCP-6	2/15/01	920	9.15	23.52	14.37	
HYCP-6	3/13/01	1124	9.04	23.52	14.48	
HYCP-6	4/15/01	1321	8.39	23.52	15.13	
HYCP-6	5/7/01	1109	8.72	23.52	14.80	
HYCP-6	6/10/01	1031	7.98	23.52	15.54	
HYCP-6	7/16/01	831	9.37	23.52	14.15	
HYCP-6	8/14/01	830	9.97	23.52	13.55	
HYCP-6	9/12/01	800	10.24	23.52	13.28	
HYCP-6	10/4/01	702	11.52	23.52	12.00	

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HYCP-6	11/9/01	840	10.82	23.52	12.70	
HYCP-6	12/3/01	1150	8.06	23.52	15.46	
HYCP-6	1/3/02	932	8.82	23.52	14.70	
HYCP-6	2/7/02	1102	7.37	23.52	16.15	
HYCP-6	3/7/02	1134	7.78	23.52	15.74	
HYCP-6	4/23/02	1452	7.70	23.52	15.82	
HYCP-6	5/9/02	835	8.02	23.52	15.50	
HYCP-6	6/19/02	854	8.96	23.52	14.56	
HYCP-6	7/12/02	745	8.85	23.52	14.67	
HYCP-6	8/21/02	1259	10.09	23.52	13.43	
HYCP-6	9/24/02	1115	10.35	23.52	13.17	
HYCP-6	10/15/02	755	10.31	23.52	13.21	
HYCP-6	11/5/02	1111	10.48	23.52	13.04	
HYCP-6	12/10/02	1210	9.88	23.52	13.64	
HYCP-6	1/17/03	1407	7.45	23.52	16.07	
HYCP-6	2/12/03	1423	7.76	23.52	15.76	
HYCP-6	3/5/03	958	7.85	23.52	15.67	
HYCP-6	4/8/03	1032	7.31	23.52	16.21	
HYCP-6	5/1/03	808	7.97	23.52	15.55	
HYCP-6	7/3/03	1343	9.48	23.52	14.04	
HYCP-6	8/7/03	1203	10.00	23.52	13.52	
HYCP-6	9/11/03	1038	10.46	23.52	13.06	
HYCP-6	10/3/03	808	10.57	23.52	12.95	
HYCP-6	11/11/03	1139	9.39	23.52	14.13	
HYCP-6	12/3/03	815	7.86	23.52	15.66	
HYCP-6	1/13/04	1012	7.24	23.52	16.28	
HYCP-6	2/17/04	1105	6.79	23.52	16.73	
HYCP-6	3/8/04	1103	7.42	23.52	16.10	
HYCP-6	4/12/04	1305	8.35	23.52	15.17	
HYCP-6	5/12/04	1354	8.68	23.52	14.84	
HYCP-6	6/2/04	1710	8.19	23.52	15.33	
HYCP-6	7/2/04	1342	8.72	23.52	14.80	
HYCP-6	8/5/04	1212	9.72	23.52	13.80	
HYCP-6	9/2/04	1024	8.87	23.52	14.65	
HYCP-6	10/4/04	1050	9.01	23.52	14.51	
HYCP-6	11/5/04	1035	8.21	23.52	15.31	
HYCP-6	12/3/04	1338	8.03	23.52	15.49	
HYO-2	7/10/92		4.86	20.27	15.41	
HYO-2	7/16/92	11:44	5.17	20.27	15.10	
HYO-2	7/20/92	12:47	5.32	20.27	14.95	
HYO-2	7/24/92	08:10	5.40	20.27	14.87	
HYO-2	7/28/92	08:18	5.50	20.27	14.77	
HYO-2	8/4/92	11:14	5.60	20.27	14.67	
HYO-2	8/10/92	09:44	7.27	20.27	13.00	
HYO-2	8/12/92	12:14	7.23	20.27	13.04	
HYO-2	8/19/92	10:38	8.84	20.27	11.43	
HYO-2	8/23/92	10:00	7.92	20.27	12.35	
HYO-2	8/28/92	10:01	8.02	20.27	12.25	
HYO-2	9/1/92	10:27	7.23	20.27	13.04	
HYO-2	9/8/92	09:46	8.15	20.27	12.12	

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HYO-2	9/18/92	10:24	8.45	20.27	11.82	
HYO-2	9/29/92	13:02	8.23	20.27	12.04	
HYO-2	10/6/92	09:54	8.48	20.27	11.79	
HYO-2	10/15/92	08:27	8.56	20.27	11.71	
HYO-2	11/3/92	09:40	6.86	20.27	13.41	
HYO-2	11/9/92	10:19	7.72	20.27	12.55	
HYO-2	12/16/92	10:50	6.41	20.27	13.86	
HYO-2	1/5/93	09:23	6.76	20.27	13.51	
HYO-2	2/3/93	10:18	6.08	20.27	14.19	
HYO-2	3/12/93		5.45	20.27	14.82	
HYO-2	4/7/93		6.23	20.27	14.04	
HYO-2	5/4/93	09:56	5.86	20.27	14.41	
HYO-2	5/27/93	13:43	7.93	20.27	12.34	Need to Cut Grass
HYO-2	7/6/93		7.08	20.27	13.19	
HYO-2	10/11/93		8.54	20.27	11.73	
HYO-2	12/8/93	11:33	7.70	20.27	12.57	
HYO-2	2/1/94	09:25	7.27	20.27	13.00	
HYO-2	4/14/94	09:13	5.55	20.27	14.72	
HYO-2	6/1/94		6.59	20.27	13.68	
HYO-2	7/12/94		7.33	20.27	12.94	
HYO-2	10/19/94	13:36	8.66	20.27	11.61	
HYO-2	1/16/95	14:57	5.22	20.27	15.05	
HYO-2	2/9/95	13:55	5.34	20.27	14.93	
HYO-2	4/24/95	09:39	5.50	20.27	14.77	
HYO-2	5/17/95	07:25	6.35	20.27	13.92	
HYO-2	6/20/95	12:10	6.84	20.27	13.43	
HYO-2	7/10/95	11:53	6.83	20.27	13.44	
HYO-2	8/15/95	10:57	7.58	20.27	12.69	
HYO-2	12/6/95	08:04	4.98	20.27	15.29	
HYO-2	1/3/96	16:43	4.61	20.27	15.66	
HYO-2	3/25/96	14:33	4.67	20.27	15.60	
HYO-2	5/1/96	10:28	3.94	20.27	16.33	
HYO-2	5/28/96	10:55	4.33	20.27	15.94	
HYO-2	6/26/96	10:51	5.77	20.27	14.50	
HYO-2	7/30/96	10:25	6.65	20.27	13.62	
HYO-2	9/9/96	10:56	6.76	20.27	13.51	
HYO-2	11/15/96	10:18	5.66	20.27	14.61	
HYO-2	1/6/97	11:22	2.57	20.27	17.70	
HYO-2	3/6/97	09:47	3.98	20.27	16.29	
HYO-2	4/29/97	15:59	4.09	20.27	16.18	
HYO-2	5/20/97	15:45	8.93	20.27	11.34	
HYO-2	6/16/97	11:52	5.10	20.27	15.17	
HYO-2	7/7/97	11:07	4.82	20.27	15.45	
HYO-2	8/4/97	10:35	5.91	20.27	14.36	
HYO-2	9/16/97	12:33	6.56	20.27	13.71	
HYO-2	10/7/97	11:47	5.34	20.27	14.93	
HYO-2	11/7/97	10:43	5.27	20.27	15.00	
HYO-2	12/8/97	11:34	6.11	20.27	14.16	
HYO-2	1/12/98	11:42	5.11	20.27	15.16	
HYO-2	2/26/98	12:49	5.29	20.27	14.98	

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HYO-2	3/9/98	10:20	5.20	20.27	15.07	
HYO-2	4/7/98	13:23	5.66	20.27	14.61	
HYO-2	5/5/98	12:11	6.43	20.27	13.84	
HYO-2	6/8/98	12:36	6.77	20.27	13.50	
HYO-2	7/17/98	11:40	7.10	20.27	13.17	
HYO-2	8/4/98	13:48	7.20	20.27	13.07	
HYO-2	9/8/98	11:01	7.67	20.27	12.60	
HYO-2	10/9/98	13:04	7.54	20.27	12.73	
HYO-2	11/3/98	11:38	7.26	20.27	13.01	
HYO-2	12/8/98	10:40	4.90	20.27	15.37	
HYO-2	1/4/99	10:52	4.51	20.27	15.76	
HYO-2	2/2/99	12:02	3.59	20.27	16.68	
HYO-2	3/8/99	14:20	4.03	20.27	16.24	
HYO-2	4/29/99	17:10	5.26	20.27	15.01	
HYO-2	5/21/99	13:07	5.29	20.27	14.98	
HYO-2	6/22/99	10:18	6.05	20.27	14.22	
HYO-2	6/24/99	10:28	4.80	20.27	15.47	System off
HYO-2	7/21/99	10:07	6.49	20.27	13.78	
HYO-2	8/27/99	11:18	6.75	20.27	13.52	
HYO-2	9/14/99	11:13	7.16	20.27	13.11	
HYO-2	10/5/99	943	7.46	20.27	12.81	
HYO-2	11/15/99	14:11	5.92	20.27	14.35	
HYO-2	12/6/99	11:52	5.11	20.27	15.16	
HYO-2	1/6/00	10:56	5.13	20.27	15.14	
HYO-2	2/14/00	10:37	4.79	20.27	15.48	
HYO-2	3/16/00	1227	4.62	20.27	15.65	
HYO-2	4/11/00	1024	5.55	20.27	14.72	
HYO-2	5/11/00	948	4.32	20.27	15.95	
HYO-2	6/6/00	1430	5.01	20.27	15.26	
HYO-2	10/11/00	1540	7.60	20.27	12.67	
HYO-2	11/15/00	1057	7.31	20.27	12.96	
HYO-2	12/17/00	947	6.68	20.27	13.59	
HYO-2	1/16/01	1037	6.23	20.27	14.04	
HYO-2	2/15/01	942	6.11	20.27	14.16	
HYO-2	3/13/01	1210	5.77	20.27	14.50	
HYO-2	4/15/01	1402	5.39	20.27	14.88	
HYO-2	5/7/01	1102	5.78	20.27	14.49	
HYO-2	6/10/01	1218	5.99	20.27	14.28	
HYO-2	7/16/01	853	6.24	20.27	14.03	
HYO-2	8/14/01	847	7.01	20.27	13.26	
HYO-2	9/12/01	823	7.37	20.27	12.90	
HYO-2	10/4/01	735	8.64	20.27	11.63	
HYO-2	11/9/01	916	7.64	20.27	12.63	
HYO-2	12/3/01	1216	6.98	20.27	13.29	
HYO-2	1/3/02	1000	6.08	20.27	14.19	
HYO-2	2/7/02	1134	4.53	20.27	15.74	
HYO-2	3/7/02	1200	4.94	20.27	15.33	
HYO-2	4/23/02	903	5.78	20.27	14.49	
HYO-2	5/9/02	852	5.07	20.27	15.20	
HYO-2	6/19/02	917	6.04	20.27	14.23	

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HYO-2	7/12/02	740	6.60	20.27	13.67	
HYO-2	8/21/02	1303	7.19	20.27	13.08	
HYO-2	9/24/02	1131	7.43	20.27	12.84	
HYO-2	10/15/02	742	7.42	20.27	12.85	
HYO-2	11/5/02	1122	7.49	20.27	12.78	
HYO-2	12/10/02	1223	6.90	20.27	13.37	
HYO-2	1/17/03	1353	4.30	20.27	15.97	
HYO-2	2/12/03	1409	4.80	20.27	15.47	
HYO-2	3/5/03	950	4.86	20.27	15.41	
HYO-2	4/8/03	1042	4.33	20.27	15.94	
HYO-2	5/1/03	816	4.95	20.27	15.32	
HYO-2	6/10/03	1239	5.11	20.27	15.16	
HYO-2	7/3/03	1308	6.50	20.27	13.77	
HYO-2	8/7/03	1252	7.03	20.27	13.24	
HYO-2	9/11/03	1030	7.52	20.27	12.75	
HYO-2	10/3/03	803	7.42	20.27	12.85	Mislabeled HYO-1 in field book
HYO-2	11/11/03	1204	6.46	20.27	13.81	
HYO-2	12/3/03	850	4.95	20.27	15.32	
HYO-2	1/13/04	1104	4.28	20.27	15.99	
HYO-2	2/17/04	1223	3.83	20.27	16.44	
HYO-2	3/8/04	1140	4.44	20.27	15.83	
HYO-2	4/12/04	1315	5.42	20.27	14.85	
HYO-2	5/12/04	1448	5.76	20.27	14.51	
HYO-2	6/2/04	1730	5.19	20.27	15.08	
HYO-2	7/2/04	1324	5.66	20.27	14.61	
HYO-2	8/5/04	1155	6.80	20.27	13.47	
HYO-2	9/2/04	1012	6.02	20.27	14.25	
HYO-2	10/4/04	1030	6.00	20.27	14.27	
HYO-2	11/5/04	1142	5.22	20.27	15.05	
HYO-2	12/3/04	1425	5.02	20.27	15.25	
HYR-1	7/20/92	12:25	3.95	18.69	14.74	Top of pipe above well cover broke PVC connection
HYR-1	7/24/92	11:30	4.21	18.69	14.48	
HYR-1	7/28/92	08:40	3.89	18.69	14.80	
HYR-1	8/4/92	11:06	3.96	18.69	14.73	
HYR-1	8/10/92	10:40	9.15	18.69	9.54	
HYR-1	8/12/92	10:40	14.20	18.69	4.49	(casing) 11:25
HYR-1	8/19/92	09:53	5.30	18.69	13.39	Top of Well Cap
HYR-1	8/23/92	10:30	14.48	18.69	4.21	
HYR-1	8/28/92	09:48	14.30	18.69	4.39	
HYR-1	9/1/92	09:34	5.11	18.69	13.58	
HYR-1	9/8/92	09:37	14.18	18.69	4.51	
HYR-1	9/18/92	10:37	14.75	18.69	3.94	
HYR-1	9/29/92	11:00	14.38	18.69	4.31	
HYR-1	10/6/92	09:36	14.78	18.69	3.91	Removed casing cover - no access to stand tube
HYR-1	10/15/92	08:10	14.54	18.69	4.15	M.P. Top of casing
HYR-1	11/3/92	09:58	5.19	18.69	13.50	
HYR-1	11/9/92	09:54	13.03	18.69	5.66	Pump on
HYR-1	12/16/92	09:27	11.02	18.69	7.67	TOC
HYR-1	1/5/93	09:08	10.82	18.69	7.87	MP TOC.
HYR-1	2/3/93	09:50	10.26	18.69	8.43	M.P. TOC

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HYR-1	3/12/93		3.78	18.69	14.91	
HYR-1	5/4/93	09:36	10.41	18.69	8.28	M.P. TOC
HYR-1	5/27/93	13:35	10.04	18.69	8.65	
HYR-1	7/6/93		12.05	18.69	6.64	
HYR-1	10/11/93		14.67	18.69	4.02	
HYR-1	12/8/93	12:10	14.41	18.69	4.28	
HYR-1	2/1/94	08:44	14.17	18.69	4.52	
HYR-1	7/12/94		13.46	18.69	5.23	
HYR-1	10/19/94	13:23	16.58	18.69	2.11	
HYR-1	1/16/95	15:16	15.77	18.69	2.92	
HYR-1	2/9/95	14:11	14.65	18.69	4.04	
HYR-1	12/6/95	08:15	15.17	18.69	3.52	
HYR-1	3/25/96	10:11	15.65	18.69	3.04	
HYR-1	5/1/96	10:23	15.22	18.69	3.47	
HYR-1	6/26/96	11:00	18.43	18.69	0.26	
HYR-1	7/30/96	10:35	15.40	18.69	3.29	
HYR-1	9/9/96	11:05	5.10	18.69	13.59	
HYR-1	11/15/96	10:25	11.56	18.69	7.13	
HYR-1	3/6/97	09:42	12.11	18.69	6.58	
HYR-1	4/29/97	16:06	15.64	18.69	3.05	
HYR-1	5/20/97	15:59	14.40	18.69	4.29	
HYR-1	6/16/97	10:49	16.83	18.69	1.86	
HYR-1	6/19/02	905	21.31	18.69	-2.62	
HYR-1	9/24/02	1150	19.28	18.69	-0.59	
HYR-1	1/17/03	-	-	18.69	-	
HYR-1	2/12/03	-	-	18.69	-	
HYR-1	3/5/03	-	-	18.69	-	
HYR-1	4/8/03	-	-	18.69	-	
HYR-1	5/1/03	1050	14.63	18.69	4.06	
HYR-1	6/10/03	1312	15.01	18.69	3.68	
HYR-1	7/3/03	-	-	18.69	-	
HYR-1	8/7/03	-	-	18.69	-	
HYR-1	9/11/03	-	-	18.69	-	
HYR-1	10/3/03	-	-	18.69	-	
HYR-1	11/11/03	-	-	18.69	-	
HYR-1	12/3/03	-	-	18.69	-	
HYR-1	1/13/04	-	-	18.69	-	
HYR-1	2/17/04	1000	2.71	18.69	15.98	
HYR-1	3/8/04	-	-	18.69	-	
HYR-1	4/12/04	-	13.25	18.69	5.44	
HYR-1	5/12/04	-	-	18.69	-	
HYR-1	6/2/04	830	16.54	18.69	2.15	
HYR-1	7/2/04	-	-	18.69	-	
HYR-1	8/5/04	-	-	18.69	-	
HYR-1	9/2/04	1020	16.21	18.69	2.48	
HYR-1	10/4/04	-	-	18.69	-	
HYR-1	11/5/04	-	-	18.69	-	
HYR-1	12/3/04	-	-	18.69	-	
HYR-2	7/10/92		3.80	19.49	15.69	
HYR-2	7/24/92	11:15	4.45	19.49	15.04	

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HYR-2	7/28/92	09:01	4.45	19.49	15.04	
HYR-2	8/4/92	11:43	4.55	19.49	14.94	
HYR-2	8/10/92	10:28	7.56	19.49	11.93	
HYR-2	8/12/92	14:09	7.50	19.49	11.99	
HYR-2	8/19/92	09:30	6.00	19.49	13.49	Top of Well Cap
HYR-2	8/23/92	10:49	8.23	19.49	11.26	
HYR-2	8/28/92	09:17	8.38	19.49	11.11	
HYR-2	9/1/92	09:38	6.06	19.49	13.43	
HYR-2	9/8/92	10:38	8.30	19.49	11.19	
HYR-2	9/18/92	11:03	9.19	19.49	10.30	
HYR-2	9/29/92	13:28	8.68	19.49	10.81	
HYR-2	10/6/92	09:10	8.80	19.49	10.69	Well open - no casing cover
HYR-2	10/15/92	07:44	8.95	19.49	10.54	M.P. Top of casing
HYR-2	11/3/92	10:05	5.63	19.49	13.86	
HYR-2	11/9/92	11:36	7.83	19.49	11.66	Water in box leaking in casing - pump on
HYR-2	12/16/92	12:54	6.38	19.49	13.11	TOC
HYR-2	1/5/93	08:42	6.60	19.49	12.89	MP TOC.
HYR-2	2/3/93	10:50	5.87	19.49	13.62	M.P. TOC
HYR-2	3/12/93		4.03	19.49	15.46	
HYR-2	5/4/93	10:40	5.48	19.49	14.01	M.P. TOC, Vault is full of H2O(NG")
HYR-2	5/27/93	14:10	5.97	19.49	13.52	
HYR-2	7/6/93		6.85	19.49	12.64	
HYR-2	10/11/93		9.13	19.49	10.36	
HYR-2	12/8/93	12:25	5.62	19.49	13.87	H2O in vault is seeping through hole near T.O.C.
HYR-2	2/1/94	08:47	8.23	19.49	11.26	
HYR-2	7/12/94		8.81	19.49	10.68	
HYR-2	10/19/94	13:16	11.10	19.49	8.39	
HYR-2	1/16/95	15:33	5.58	19.49	13.91	
HYR-2	2/9/95	14:50	4.61	19.49	14.88	
HYR-2	4/24/95	13:57	6.19	19.49	13.30	
HYR-2	5/17/95	08:05	7.30	19.49	12.19	
HYR-2	6/20/95	11:32	8.45	19.49	11.04	
HYR-2	7/10/95	12:20	9.14	19.49	10.35	
HYR-2	8/15/95	11:52	11.65	19.49	7.84	
HYR-2	12/6/95	08:44	8.16	19.49	11.33	
HYR-2	1/3/96	11:15	7.99	19.49	11.50	
HYR-2	3/25/96	12:07	8.12	19.49	11.37	
HYR-2	5/1/96	10:09	1.84	19.49	17.65	
HYR-2	6/26/96	10:09	8.68	19.49	10.81	
HYR-2	7/30/96	12:31	9.84	19.49	9.65	
HYR-2	9/9/96	11:26	11.32	19.49	8.17	
HYR-2	11/15/96	11:02	11.58	19.49	7.91	Water flowing into casing
HYR-2	3/6/97	09:31	7.43	19.49	12.06	
HYR-2	4/29/97	16:31	7.58	19.49	11.91	
HYR-2	5/20/97	16:21	9.82	19.49	9.67	
HYR-2	6/16/97	10:18	10.36	19.49	9.13	
HYR-2	7/7/97	10:56	3.07	19.49	16.42	
HYR-2	8/4/97	11:06	4.13	19.49	15.36	
HYR-2	4/23/02	820	12.04	19.49	7.45	
HYR-2	5/9/02	832	12.11	19.49	7.38	

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HYR-2	6/19/02	833	19.05	19.49	0.44	
HYR-2	7/12/02	711	12.05	19.49	7.44	
HYR-2	8/21/02	1250	11.02	19.49	8.47	
HYR-2	9/24/02	1050	12.25	19.49	7.24	
HYR-2	10/15/02	1302	15.52	19.49	3.97	
HYR-2	11/5/02	1110	15.47	19.49	4.02	
HYR-2	12/10/02	1145	15.06	19.49	4.43	
HYR-2	1/17/03	1423	2.88	19.49	16.61	
HYR-2	2/12/03	1455	9.06	19.49	10.43	
HYR-2	3/5/03	1022	10.02	19.49	9.47	
HYR-2	4/8/03	1015	11.78	19.49	7.71	
HYR-2	5/1/03	1055	13.96	19.49	5.53	
HYR-2	6/10/03	1308	14.14	19.49	5.35	
HYR-2	7/3/03	1340	18.70	19.49	0.79	
HYR-2	8/7/03	-	-	19.49	-	
HYR-2	9/11/03	-	-	19.49	-	
HYR-2	10/3/03	823	20.98	19.49	-1.49	
HYR-2	11/11/03	1120	20.79	19.49	-1.30	
HYR-2	12/3/03	840	17.50	19.49	1.99	
HYR-2	1/13/04	-	-	19.49	-	
HYR-2	2/17/04	1149	11.55	19.49	7.94	
HYR-2	3/8/04	-	-	19.49	-	
HYR-2	4/12/04	-	17.16	19.49	2.33	
HYR-2	5/12/04	1434	18.99	19.49	0.50	
HYR-2	6/2/04	825	16.67	19.49	2.82	
HYR-2	7/2/04	725	17.9	19.49	1.59	
HYR-2	8/5/04	1110	18.7	19.49	0.79	
HYR-2	9/2/04	914	18.4	19.49	1.09	
HYR-2	10/4/04	1200	16.4	19.49	3.09	
HYR-2	11/5/04	1340	17	19.49	2.49	
HYR-2	12/3/04	1415	19.23	19.49	0.26	
Ls	7/9/92	12:49	7.08	24.02	16.94	
Ls	7/10/92		7.20	24.02	16.82	
Ls	7/20/92	11:48	6.70	24.02	17.32	
Ls	7/24/92	08:33	8.13	24.02	15.89	
Ls	7/28/92	08:42	8.32	24.02	15.70	
Ls	8/4/92	12:00	8.40	24.02	15.62	
Ls	8/10/92	10:10	8.93	24.02	15.09	
Ls	8/12/92	14:42	9.08	24.02	14.94	
Ls	8/19/92	09:49	9.42	24.02	14.60	
Ls	8/23/92	10:34	9.73	24.02	14.29	
Ls	8/28/92	09:34	9.82	24.02	14.20	
Ls	9/1/92	10:55	9.88	24.02	14.14	
Ls	9/8/92	10:55	9.08	24.02	14.94	
Ls	9/18/92	11:22	10.25	24.02	13.77	
Ls	9/29/92	13:49	10.02	24.02	14.00	
Ls	10/6/92	09:28	10.15	24.02	13.87	
Ls	10/15/92	08:03	10.26	24.02	13.76	
Ls	11/3/92	10:20	8.87	24.02	15.15	
Ls	11/9/92	11:04	8.32	24.02	15.70	

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
Ls	12/16/92	13:10	7.46	24.02	16.56	
Ls	1/5/93	09:01	7.86	24.02	16.16	
Ls	2/3/93	11:11	7.41	24.02	16.61	
Ls	3/12/93		7.80	24.02	16.22	
Ls	4/7/93		7.25	24.02	16.77	
Ls	5/4/93	11:13	6.43	24.02	17.59	
Ls	5/27/93	13:51	7.33	24.02	16.69	
Ls	7/6/93		8.51	24.02	15.51	
Ls	10/11/93		10.17	24.02	13.85	
Ls	12/8/93	12:58	8.51	24.02	15.51	
Ls	2/1/94	10:09	8.61	24.02	15.41	
Ls	4/14/94	10:00	6.80	24.02	17.22	
Ls	6/1/94	12:30	7.81	24.02	16.21	
Ls	7/12/94		8.93	24.02	15.09	
Ls	10/19/94	13:00	10.65	24.02	13.37	
Ls	1/16/95	15:23	6.56	24.02	17.46	
Ls	2/9/95	14:25	6.78	24.02	17.24	
Ls	4/24/95	13:42	6.91	24.02	17.11	
Ls	5/17/95	08:32	8.14	24.02	15.88	
Ls	6/20/95	10:51	8.12	24.02	15.90	
Ls	7/10/95	12:09	8.03	24.02	15.99	
Ls	8/15/95	11:26	8.31	24.02	15.71	
Ls	12/6/95	08:30	6.62	24.02	17.40	
Ls	1/3/96	10:30	6.18	24.02	17.84	
Ls	3/25/96	11:54	6.56	24.02	17.46	
Ls	5/1/96	09:51	5.76	24.02	18.26	
Ls	5/28/96	11:10	6.44	24.02	17.58	
Ls	6/26/96	09:50	7.77	24.02	16.25	
Ls	7/30/96	12:14	8.98	24.02	15.04	
Ls	9/9/96	11:11	9.32	24.02	14.70	
Ls	11/15/96	10:46	7.12	24.02	16.90	
Ls	1/6/97	11:43	4.78	24.02	19.24	
Ls	3/6/97	09:18	5.39	24.02	18.63	
Ls	4/29/97	16:13	5.61	24.02	18.41	
Ls	5/20/97	16:06	6.76	24.02	17.26	
Ls	6/16/97	11:05	7.26	24.02	16.76	
Ls	7/7/97	10:32	6.82	24.02	17.20	
Ls	8/4/97	10:47	8.29	24.02	15.73	
Ls	9/16/97	12:55	8.03	24.02	15.99	
Ls	10/7/97	12:06	7.03	24.02	16.99	
Ls	11/7/97	10:56	6.40	24.02	17.62	
Ls	12/8/97	11:48	7.49	24.02	16.53	
Ls	1/12/98	12:08	6.41	24.02	17.61	
Ls	2/26/98	13:20	6.48	24.02	17.54	
Ls	3/9/98	10:39	6.20	24.02	17.82	
Ls	4/7/98	13:45	7.12	24.02	16.90	
Ls	5/5/98	12:44	8.11	24.02	15.91	
Ls	6/8/98	12:54	8.62	24.02	15.40	
Ls	7/17/98	12:23	9.00	24.02	15.02	
Ls	8/4/98	13:57	9.55	24.02	14.47	

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
Ls	9/8/98	11:09	9.96	24.02	14.06	
Ls	10/9/98	13:28	9.11	24.02	14.91	
Ls	11/3/98	11:10	8.83	24.02	15.19	
Ls	12/8/98	11:12	6.31	24.02	17.71	
Ls	1/4/99	11:34	6.01	24.02	18.01	
Ls	2/2/99	12:28	4.71	24.02	19.31	
Ls	3/8/99	14:28	5.52	24.02	18.50	
Ls	4/29/99	17:18	6.56	24.02	17.46	
Ls	5/21/99	11:14	6.86	24.02	17.16	
Ls	6/22/99	10:47	7.77	24.02	16.25	
Ls	6/24/99	10:22	8.73	24.02	15.29	System off
Ls	7/21/99	10:22	8.19	24.02	15.83	
Ls	8/27/99	11:41	8.98	24.02	15.04	
Ls	9/14/99	11:29	9.52	24.02	14.50	
Ls	10/5/99	1002	9.90	24.02	14.12	
Ls	11/15/99	1403	7.23	24.02	16.79	
Ls	12/6/99	11:48	6.23	24.02	17.79	
Ls	1/6/00	10:37	6.58	24.02	17.44	
Ls	2/14/00	10:50	6.12	24.02	17.90	
Ls	3/16/00	12:23	5.84	24.02	18.18	
Ls	4/11/00	1035	7.15	24.02	16.87	
Ls	5/11/00	815	6.93	24.02	17.09	
Ls	6/6/00	1145	7.97	24.02	16.05	
Ls	7/26/00	1158	7.98	24.02	16.04	
Ls	8/21/00	1151	9.30	24.02	14.72	
Ls	9/13/00	1357	9.42	24.02	14.60	
Ls	10/11/00	1427	9.58	24.02	14.44	
Ls	11/15/00	1025	9.57	24.02	14.45	
Ls	12/17/00	927	8.99	24.02	15.03	
Ls	1/16/01	1020	8.65	24.02	15.37	
Ls	2/15/01	927	7.79	24.02	16.23	
Ls	3/13/01	1125	7.41	24.02	16.61	
Ls	4/15/01	1324	6.97	24.02	17.05	
Ls	5/7/01	1110	7.66	24.02	16.36	
Ls	6/10/01	1036	6.84	24.02	17.18	
Ls	7/16/01	842	8.12	24.02	15.90	
Ls	8/14/01	831	9.61	24.02	14.41	
Ls	9/12/01	745	9.83	24.02	14.19	
Ls	10/4/01	705	11.02	24.02	13.00	
Ls	11/9/01	843	9.33	24.02	14.69	
Ls	12/3/01	1152	6.20	24.02	17.82	
Ls	1/3/02	935	7.42	24.02	16.60	
Ls	2/7/02	1105	5.74	24.02	18.28	
Ls	3/7/02	1136	6.33	24.02	17.69	
Ls	4/23/02	1410	6.44	24.02	17.58	
Ls	5/9/02	810	7.17	24.02	16.85	
Ls	6/19/02	846	7.89	24.02	16.13	
Ls	7/12/02	722	8.08	24.02	15.94	
Ls	8/21/02	1245	9.70	24.02	14.32	
Ls	9/24/02	1105	9.86	24.02	14.16	

Table C-1

Groundwater Elevations in Shallow Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
Ls	10/15/02	725	10.02	24.02	14.00	
Ls	11/5/02	1107	10.30	24.02	13.72	
Ls	12/10/02	1207	8.65	24.02	15.37	
Ls	1/17/03	1407	6.62	24.02	17.40	
Ls	2/12/03	1432	6.83	24.02	17.19	
Ls	3/5/03	1002	6.64	24.02	17.38	
Ls	4/8/03	1029	5.69	24.02	18.33	
Ls	5/1/03	755	6.94	24.02	17.08	
Ls	6/10/03	1251	7.11	24.02	16.91	
Ls	7/3/03	1326	9.05	24.02	14.97	
Ls	8/7/03	1210	9.80	24.02	14.22	
Ls	9/11/03	1041	9.79	24.02	14.23	
Ls	10/3/03	810	10.43	24.02	13.59	
Ls	11/11/03	1112	8.80	24.02	15.22	
Ls	12/3/03	820	5.98	24.02	18.04	
Ls	1/13/04	1020	5.50	24.02	18.52	
Ls	2/17/04	1200	5.16	24.02	18.86	
Ls	3/8/04	1108	5.51	24.02	18.51	
Ls	4/12/04	1334	7.45	24.02	16.57	
Ls	5/12/04	1400	7.55	24.02	16.47	
Ls	6/2/04	1630	7.00	24.02	17.02	
Ls	7/2/04	745	8.48	24.02	15.54	
Ls	8/5/04	1128	9.49	24.02	14.53	
Ls	9/2/04	936	8.25	24.02	15.77	
Ls	10/4/04	1055	8.60	24.02	15.42	
Ls	11/5/04	1305	6.69	24.02	17.33	
Ls	12/3/04	1345	6.93	24.02	17.09	

Notes: 1. Depth to water relative to monitoring point (top of PVC casing).
2. MP = monitoring point.
3. GW = groundwater.
4. All elevations in feet relative to the National Geodetic Vertical Datum (NGVD 29).

Table C-2

Groundwater Elevations in Intermediate Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
Gi	7/10/92		5.99	21.33	15.34	
Gi	7/16/92	12:40	6.38	21.33	14.95	
Gi	7/20/92	12:40	6.38	21.33	14.95	
Gi	7/24/92	07:55	6.65	21.33	14.68	
Gi	7/28/92	08:20	6.58	21.33	14.75	
Gi	8/4/92	11:19	6.68	21.33	14.65	
Gi	8/10/92	09:46	8.27	21.33	13.06	
Gi	8/12/92	12:15	8.17	21.33	13.16	
Gi	8/19/92	10:16	7.66	21.33	13.67	
Gi	8/23/92	10:12	8.88	21.33	12.45	
Gi	8/28/92	10:23	9.00	21.33	12.33	
Gi	9/1/92	10:13	8.42	21.33	12.91	
Gi	9/8/92	10:10	9.10	21.33	12.23	
Gi	9/18/92	10:13	9.40	21.33	11.93	
Gi	9/29/92	12:55	9.19	21.33	12.14	
Gi	10/6/92	09:56	9.45	21.33	11.88	
Gi	10/15/92	08:55	9.54	21.33	11.79	
Gi	11/3/92	09:23	8.06	21.33	13.27	
Gi	11/9/92	10:24	8.77	21.33	12.56	
Gi	12/16/92	10:42	7.49	21.33	13.84	
Gi	1/5/93	09:39	7.84	21.33	13.49	
Gi	2/3/93	10:11	7.13	21.33	14.20	
Gi	3/12/93		6.61	21.33	14.72	
Gi	4/7/93		7.41	21.33	13.92	
Gi	5/4/93	10:07	6.98	21.33	14.35	
Gi	5/27/93	11:59	6.90	21.33	14.43	
Gi	7/6/93		8.11	21.33	13.22	
Gi	10/11/93		9.53	21.33	11.80	
Gi	12/8/93	11:22	8.77	21.33	12.56	
Gi	2/1/94	09:35	8.10	21.33	13.23	
Gi	3/31/94		7.63	21.33	13.70	
Gi	4/14/94	07:52	6.21	21.33	15.12	
Gi	7/12/94		8.37	21.33	12.96	
Gi	10/19/94	13:50	9.71	21.33	11.62	
Gi	1/16/95	14:58	6.54	21.33	14.79	
Gi	2/9/95	13:33	6.44	21.33	14.89	
Gi	4/24/95	10:52	6.64	21.33	14.69	
Gi	5/17/95	07:40	7.50	21.33	13.83	
Gi	6/20/95	12:17	7.97	21.33	13.36	
Gi	7/10/95	11:55	8.05	21.33	13.28	
Gi	8/15/95	11:01	8.60	21.33	12.73	
Gi	12/6/95	08:19	8.24	21.33	13.09	
Gi	1/3/96	12:05	5.85	21.33	15.48	
Gi	3/25/96	12:10	5.99	21.33	15.34	
Gi	5/1/96	10:46	5.21	21.33	16.12	
Gi	5/28/96	10:37	5.55	21.33	15.78	
Gi	6/26/96	10:41	6.93	21.33	14.40	
Gi	7/30/96	10:19	7.78	21.33	13.55	
Gi	9/9/96	10:51	7.92	21.33	13.41	
Gi	11/15/96	10:11	6.87	21.33	14.46	
Gi	1/6/97	11:16	3.81	21.33	17.52	

Table C-2

Groundwater Elevations in Intermediate Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
Gi	3/6/97	09:49	5.24	21.33	16.09	
Gi	4/29/97	15:51	5.36	21.33	15.97	
Gi	5/20/97	15:34	6.05	21.33	15.28	
Gi	6/16/97	10:56	6.21	21.33	15.12	
Gi	7/7/97	11:18	6.05	21.33	15.28	
Gi	8/4/97	10:37	7.05	21.33	14.28	
Gi	9/16/97	12:37	7.71	21.33	13.62	
Gi	10/7/97	11:50	6.53	21.33	14.80	
Gi	11/7/97	10:45	6.45	21.33	14.88	
Gi	12/8/97	11:35	7.25	21.33	14.08	
Gi	1/12/98	11:44	6.28	21.33	15.05	
Gi	2/26/98	12:57	6.36	21.33	14.97	
Gi	3/9/98	10:33	6.35	21.33	14.98	
Gi	4/7/98	13:35	6.79	21.33	14.54	
Gi	5/5/98	15:14	7.52	21.33	13.81	
Gi	6/8/98	13:21	7.72	21.33	13.61	
Gi	7/17/98	11:45	8.07	21.33	13.26	
Gi	8/4/98	14:21	8.17	21.33	13.16	
Gi	9/8/98	11:37	8.66	21.33	12.67	
Gi	10/9/98	13:43	8.67	21.33	12.66	
Gi	11/3/98	11:23	8.09	21.33	13.24	
Gi	12/8/98	10:42	6.16	21.33	15.17	
Gi	1/4/99	10:58	5.68	21.33	15.65	
Gi	2/2/99	12:04	4.81	21.33	16.52	
Gi	3/8/99	14:55	5.24	21.33	16.09	
Gi	4/29/99	17:36	6.39	21.33	14.94	
Gi	5/21/99	13:33	6.47	21.33	14.86	
Gi	6/22/99	10:30	7.21	21.33	14.12	
Gi	6/24/99	10:40	5.97	21.33	15.36	System off
Gi	7/21/99	10:10	7.58	21.33	13.75	
Gi	8/27/99	11:21	7.83	21.33	13.50	
Gi	9/14/99	11:36	8.21	21.33	13.12	
Gi	10/5/99	945	8.51	21.33	12.82	
Gi	11/15/99	14:17	7.11	21.33	14.22	
Gi	12/6/99	12:08	6.15	21.33	15.18	
Gi	1/6/00	11:06	6.29	21.33	15.04	
Gi	2/14/00	10:47	6.01	21.33	15.32	
Gi	3/16/00	1230	5.74	21.33	15.59	
Gi	4/11/00	1025	6.62	21.33	14.71	
Gi	5/11/00	1003	6.13	21.33	15.20	
Gi	6/6/00	1100	6.98	21.33	14.35	
Gi	7/26/00	1215	7.12	21.33	14.21	
Gi	8/21/00	1207	7.41	21.33	13.92	
Gi	9/13/00	1402	8.02	21.33	13.31	
Gi	10/11/00	1532	8.52	21.33	12.81	
Gi	11/15/00	1106	8.32	21.33	13.01	
Gi	12/17/00	954	7.76	21.33	13.57	
Gi	1/16/01	1040	7.51	21.33	13.82	
Gi	2/15/01	1014	7.30	21.33	14.03	
Gi	3/13/01	1151	7.03	21.33	14.30	
Gi	4/15/01	1349	6.45	21.33	14.88	

Table C-2

Groundwater Elevations in Intermediate Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
Gi	5/7/01	1054	6.92	21.33	14.41	
Gi	6/10/01	1159	7.10	21.33	14.23	
Gi	7/16/01	946	7.41	21.33	13.92	
Gi	8/14/01	858	8.09	21.33	13.24	
Gi	9/12/01	911	8.47	21.33	12.86	
Gi	10/4/01	814	9.68	21.33	11.65	
Gi	11/9/01	936	8.46	21.33	12.87	
Gi	12/3/01	1229	6.31	21.33	15.02	
Gi	1/3/02	1015	7.05	21.33	14.28	
Gi	2/7/02	1144	5.75	21.33	15.58	
Gi	3/7/02	1213	6.31	21.33	15.02	
Gi	4/23/02	909	5.86	21.33	15.47	
Gi	5/9/02	910	6.15	21.33	15.18	
Gi	6/19/02	936	7.07	21.33	14.26	
Gi	7/12/02	751	7.50	21.33	13.83	
Gi	8/21/02	1310	8.19	21.33	13.14	
Gi	9/24/02	1141	8.33	21.33	13.00	
Gi	10/15/02	802	8.41	21.33	12.92	
Gi	11/5/02	1134	8.47	21.33	12.86	
Gi	12/10/02	1245	7.92	21.33	13.41	
Gi	1/17/03	1344	5.51	21.33	15.82	
Gi	2/12/03	1345	5.88	21.33	15.45	
Gi	3/5/03	936	5.92	21.33	15.41	
Gi	4/8/03	1050	5.40	21.33	15.93	
Gi	5/1/03	850	6.11	21.33	15.22	
Gi	6/10/03	1221	6.25	21.33	15.08	
Gi	7/3/03	1402	7.56	21.33	13.77	
Gi	8/7/03	1310	8.05	21.33	13.28	
Gi	9/11/03	840	8.56	21.33	12.77	
Gi	10/3/03	749	8.63	21.33	12.70	
Gi	11/11/03	1210	7.51	21.33	13.82	
Gi	12/3/03	1424	6.04	21.33	15.29	
Gi	1/13/04	1110	5.45	21.33	15.88	
Gi	2/17/04	1229	4.99	21.33	16.34	
Gi	3/8/04	1143	5.61	21.33	15.72	
Gi	4/12/04	1310	6.51	21.33	14.82	
Gi	5/12/04	1455	6.77	21.33	14.56	
Gi	6/2/04	1640	6.27	21.33	15.06	
Gi	7/2/04	1640	6.66	21.33	14.67	
Gi	8/5/04	1233	7.76	21.33	13.57	
Gi	9/2/04	1029	6.71	21.33	14.62	
Gi	10/4/04	1000	7.00	21.33	14.33	
Gi	11/5/04	1150	6.37	21.33	14.96	
Gi	12/3/04	1433	6.11	21.33	15.22	
Hi	7/10/92		4.05	20.09	16.04	
Hi	7/16/92	04:55	0.75	20.09		Depth to water measurement incorrect
Hi	7/20/92	12:50	4.36	20.09	15.73	
Hi	7/24/92	08:18	4.60	20.09	15.49	
Hi	7/28/92	08:33	4.71	20.09	15.38	
Hi	8/4/92	10:42	4.70	20.09	15.39	
Hi	8/10/92	10:03	5.33	20.09	14.76	

Table C-2

Groundwater Elevations in Intermediate Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
Hi	8/12/92	14:51	5.41	20.09	14.68	
Hi	8/19/92	10:08	5.69	20.09	14.40	
Hi	8/23/92	10:07	5.93	20.09	14.16	
Hi	8/28/92	10:14	5.95	20.09	14.14	
Hi	9/1/92	10:19	6.07	20.09	14.02	
Hi	9/8/92	10:18	6.10	20.09	13.99	
Hi	9/18/92	10:07	6.34	20.09	13.75	
Hi	9/29/92	12:42	6.30	20.09	13.79	
Hi	10/6/92	10:08	6.43	20.09	13.66	
Hi	10/15/92	08:46	6.47	20.09	13.62	
Hi	11/3/92	09:15	5.92	20.09	14.17	Water in monument
Hi	11/9/92	10:46	5.67	20.09	14.42	Water in monument to top of well casing
Hi	12/16/92	11:08	4.36	20.09	15.73	
Hi	1/5/93	09:52	4.80	20.09	15.29	
Hi	2/3/93	10:01	4.19	20.09	15.90	
Hi	3/12/93		4.58	20.09	15.51	
Hi	4/7/93		4.40	20.09	15.69	
Hi	5/4/93	10:17	3.94	20.09	16.15	H2O in Monuments
Hi	5/27/93	12:10	4.06	20.09	16.03	H2O in Monument
Hi	7/6/93		5.11	20.09	14.98	
Hi	10/11/93		6.43	20.09	13.66	
Hi	12/8/93	11:03	5.32	20.09	14.77	H2O in monument
Hi	2/1/94	09:49	5.25	20.09	14.84	
Hi	3/31/94		4.90	20.09	15.19	
Hi	4/14/94	07:42	3.91	20.09	16.18	
Hi	7/12/94		5.96	20.09	14.13	
Hi	10/19/94	13:50	6.77	20.09	13.32	
Hi	1/16/95	15:06	3.70	20.09	16.39	
Hi	2/9/95	13:45	3.70	20.09	16.39	
Hi	4/24/95	09:52	3.87	20.09	16.22	
Hi	5/17/95	07:32	5.16	20.09	14.93	
Hi	6/20/95	12:36	5.55	20.09	14.54	DtoW decreasing .09ft/2min
Hi	7/10/95	12:00	5.93	20.09	14.16	
Hi	8/15/95	11:14	6.54	20.09	13.55	
Hi	12/6/95	08:22	3.94	20.09	16.15	
Hi	1/3/96	12:24	3.77	20.09	16.32	
Hi	3/25/96	14:41	3.90	20.09	16.19	
Hi	5/1/96	10:36	3.29	20.09	16.80	
Hi	5/28/96	10:46	3.72	20.09	16.37	
Hi	6/26/96	10:30	4.88	20.09	15.21	
Hi	7/30/96	10:14	5.74	20.09	14.35	
Hi	9/9/96	10:45	6.10	20.09	13.99	
Hi	11/15/96	10:05	4.71	20.09	15.38	
Hi	1/6/97	11:08	2.41	20.09	17.68	
Hi	3/6/97	09:55	3.35	20.09	16.74	
Hi	4/29/97	15:47	3.47	20.09	16.62	
Hi	5/20/97	15:20	4.21	20.09	15.88	
Hi	6/16/97	10:38	4.42	20.09	15.67	
Hi	7/7/97	10:05	4.42	20.09	15.67	
Hi	8/4/97	10:11	5.15	20.09	14.94	
Hi	9/16/97	12:39	5.52	20.09	14.57	Mislabeled Hd on field sheet due to poor map

Table C-2

Groundwater Elevations in Intermediate Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
Hi	10/7/97	11:31	4.52	20.09	15.57	Mislabeled Hd on field sheet due to poor map
Hi	11/7/97	10:26	4.24	20.09	15.85	Mislabeled Hd on field sheet due to poor map
Hi	12/8/97	11:08	4.87	20.09	15.22	Mislabeled Hd on field sheet due to poor map
Hi	1/12/98	11:32	3.94	20.09	16.15	Mislabeled Hd on field sheet due to poor map
Hi	2/26/98	13:07	4.16	20.09	15.93	Mislabeled Hd on field sheet due to poor map
Hi	3/9/98	10:30	4.05	20.09	16.04	Mislabeled Hd on field sheet due to poor map
Hi	4/7/98	13:32	4.53	20.09	15.56	Mislabeled Hd on field sheet due to poor map
Hi	5/5/98	12:22	5.08	20.09	15.01	Mislabeled Hd on field sheet due to poor map
Hi	6/8/98	13:25	5.38	20.09	14.71	Mislabeled Hd on field sheet due to poor map
Hi	7/17/98	11:55	5.88	20.09	14.21	Mislabeled Hd on field sheet due to poor map
Hi	8/4/98	14:25	5.94	20.09	14.15	Mislabeled Hd on field sheet due to poor map
Hi	9/8/98	11:41	6.43	20.09	13.66	Mislabeled Hd on field sheet due to poor map
Hi	10/9/98	13:52	6.61	20.09	13.48	Mislabeled Hd on field sheet due to poor map
Hi	11/3/98	11:34	5.09	20.09	15.00	Mislabeled Hd on field sheet due to poor map
Hi	12/8/98	10:51	3.89	20.09	16.20	Mislabeled Hd on field sheet due to poor map
Hi	1/4/99	11:07	3.50	20.09	16.59	Mislabeled Hd on field sheet due to poor map
Hi	2/2/99	12:11	2.59	20.09	17.50	Mislabeled Hd on field sheet due to poor map
Hi	3/8/99	14:52	2.99	20.09	17.10	Mislabeled Hd on field sheet due to poor map
Hi	4/29/99	12:10	4.20	20.09	15.89	
Hi	5/21/99	13:22	4.32	20.09	15.77	Mislabeled Hd on field sheet due to poor map
Hi	6/22/99	10:22	5.14	20.09	14.95	Mislabeled Hd on field sheet due to poor map
Hi	6/24/99	10:34	4.25	20.09	15.84	Mislabeled Hd on field sheet due to poor map
Hi	7/21/99	10:16	5.23	20.09	14.86	Mislabeled Hd on field sheet due to poor map
Hi	8/27/99	11:26	5.51	20.09	14.58	Mislabeled Hd on field sheet due to poor map
Hi	9/14/99	11:42	5.91	20.09	14.18	Mislabeled Hd on field sheet due to poor map
Hi	10/5/99	949	6.23	20.09	13.86	Mislabeled Hd on field sheet due to poor map
Hi	11/15/99	14:23	4.77	20.09	15.32	Mislabeled Hd on field sheet due to poor map
Hi	12/6/99	12:03	3.79	20.09	16.30	Mislabeled Hd on field sheet due to poor map
Hi	1/6/00	11:02	3.89	20.09	16.20	Mislabeled Hd on field sheet due to poor map
Hi	2/14/00	10:42	3.49	20.09	16.60	Mislabeled Hd on field sheet due to poor map
Hi	3/16/00	1248	3.51	20.09	16.58	Mislabeled Hd on field sheet due to poor map
Hi	4/18/00	820	4.08	20.09	16.01	Mislabeled Hd on field sheet due to poor map
Hi	5/11/00	955	4.28	20.09	15.81	Mislabeled Hd on field sheet due to poor map
Hi	6/6/00	1432	5.34	20.09	14.75	Mislabeled Hd on field sheet due to poor map
Hi	7/26/00	1211	5.37	20.09	14.72	Mislabeled Hd on field sheet due to poor map
Hi	8/21/00	1203	5.39	20.09	14.70	Mislabeled Hd on field sheet due to poor map
Hi	9/13/00	1400	6.01	20.09	14.08	Mislabeled Hd on field sheet due to poor map
Hi	10/11/00	1536	6.42	20.09	13.67	Mislabeled Hd on field sheet due to poor map
Hi	11/15/00	1103	5.99	20.09	14.10	Mislabeled Hd on field sheet due to poor map
Hi	12/17/00	951	5.45	20.09	14.64	Mislabeled Hd on field sheet due to poor map
Hi	1/16/01	1052	5.31	20.09	14.78	Mislabeled Hd on field sheet due to poor map
Hi	2/15/01	1012	5.20	20.09	14.89	Mislabeled Hd on field sheet due to poor map
Hi	3/13/01	1212	4.88	20.09	15.21	Mislabeled Hd on field sheet due to poor map
Hi	4/15/01	1405	4.17	20.09	15.92	Mislabeled Hd on field sheet due to poor map
Hi	5/7/01	1053	5.00	20.09	15.09	Mislabeled Hd on field sheet due to poor map
Hi	6/10/01	1155	5.10	20.09	14.99	Mislabeled Hd on field sheet due to poor map
Hi	7/16/01	952	5.27	20.09	14.82	Mislabeled Hd on field sheet due to poor map
Hi	8/14/01	852	6.01	20.09	14.08	Mislabeled Hd on field sheet due to poor map
Hi	9/12/01	900	6.14	20.09	13.95	Mislabeled Hd on field sheet due to poor map
Hi	10/4/01	808	7.29	20.09	12.80	Mislabeled Hd on field sheet due to poor map
Hi	11/9/01	922	5.73	20.09	14.36	Mislabeled Hd on field sheet due to poor map

Table C-2

Groundwater Elevations in Intermediate Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
Hi	12/3/01	1224	3.94	20.09	16.15	Mislabeled Hd on field sheet due to poor map
Hi	1/3/02	1009	4.91	20.09	15.18	Mislabeled Hd on field sheet due to poor map
Hi	2/7/02	1140	3.34	20.09	16.02	
Hi	3/7/02	1207	4.14	20.09	15.95	Mislabeled Hd on field sheet due to poor map
Hi	4/23/02	1537	3.89	20.09	16.20	Mislabeled Hd on field sheet due to poor map
Hi	5/9/02	902	4.20	20.09	15.89	
Hi	6/19/02	951	3.64	20.09	16.45	
Hi	7/12/02	758	5.21	20.09	14.88	
Hi	8/21/02	1314	5.72	20.09	14.37	
Hi	9/24/02	1136	6.39	20.09	13.70	
Hi	10/15/02	815	6.34	20.09	13.75	
Hi	11/5/02	1142	6.48	20.09	13.61	
Hi	12/10/02	1241	5.89	20.09	14.20	
Hi	1/17/03	1348	3.82	20.09	16.27	
Hi	2/12/03	1358	3.91	20.09	16.18	
Hi	3/5/03	932	3.94	20.09	16.15	
Hi	4/8/03	1212	3.52	20.09	16.57	
Hi	5/1/03	854	4.30	20.09	15.79	
Hi	6/10/03	1226	4.21	20.09	15.88	
Hi	7/3/03	1410	5.45	20.09	14.64	
Hi	8/7/03	1303	5.94	20.09	14.15	
Hi	9/11/03	1026	6.40	20.09	13.69	Mislabeled Hd on field sheet due to poor map
Hi	10/3/03	752	6.52	20.09	13.57	Mislabeled Hd on field sheet due to poor map
HY-11i	7/20/92	11:50	8.68	25.08	16.40	
HY-11i	7/24/92	10:54	8.81	25.08	16.27	
HY-11i	7/28/92	10:46	9.03	25.08	16.05	
HY-11i	8/4/92	12:47	9.08	25.08	16.00	
HY-11i	8/10/92	12:16	9.12	25.08	15.96	
HY-11i	8/12/92	14:25	9.21	25.08	15.87	
HY-11i	8/19/92	12:41	9.42	25.08	15.66	
HY-11i	8/23/92	12:32	9.65	25.08	15.43	
HY-11i	8/28/92	12:48	9.72	25.08	15.36	
HY-11i	9/1/92	12:13	9.91	25.08	15.17	
HY-11i	9/8/92	11:46	9.99	25.08	15.09	
HY-11i	9/18/92	12:01	10.20	25.08	14.88	
HY-11i	9/29/92	12:23	10.10	25.08	14.98	
HY-11i	10/6/92	11:54	10.25	25.08	14.83	
HY-11i	10/15/92	10:29	10.36	25.08	14.72	
HY-11i	11/3/92	10:10	9.50	25.08	15.58	
HY-11i	11/9/92	14:04	9.06	25.08	16.02	
HY-11i	12/16/92	14:12	7.63	25.08	17.45	
HY-11i	1/5/93	11:16	7.84	25.08	17.24	
HY-11i	2/3/93	11:45	7.13	25.08	17.95	
HY-11i	3/12/93		7.94	25.08	17.14	
HY-11i	4/7/93		7.05	25.08	18.03	
HY-11i	5/4/93	11:36	6.50	25.08	18.58	
HY-11i	5/27/93	10:29	7.44	25.08	17.64	
HY-11i	7/6/93		8.21	25.08	16.87	
HY-11i	10/11/93		10.09	25.08	14.99	
HY-11i	12/8/93	13:42	9.10	25.08	15.98	
HY-11i	2/1/94	13:13	8.22	25.08	16.86	

Table C-2

Groundwater Elevations in Intermediate Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HY-11i	4/14/94	09:03	6.77	25.08	18.31	
HY-11i	6/1/94	12:50	8.20	25.08	16.88	
HY-11i	7/12/94		9.10	25.08	15.98	
HY-11i	10/19/94	14:32	10.71	25.08	14.37	
HY-11i	1/16/95	15:59	3.38	25.08	21.70	
HY-11i	2/9/95	15:31	6.41	25.08	18.67	
HY-11i	4/24/95	12:51	6.90	25.08	18.18	
HY-11i	5/17/95	09:50	7.69	25.08	17.39	
HY-11i	6/20/95	11:29	8.53	25.08	16.55	
HY-11i	7/10/95	14:35	8.71	25.08	16.37	
HY-11i	8/15/95	13:59	9.75	25.08	15.33	
HY-11i	12/6/95	09:12	6.05	25.08	19.03	
HY-11i	1/3/96	16:20	5.91	25.08	19.17	
HY-11i	3/25/96	13:46	6.20	25.08	18.88	
HY-11i	5/1/96	11:30	5.55	25.08	19.53	
HY-11i	5/28/96	12:43	6.35	25.08	18.73	
HY-11i	6/26/96	11:32	7.64	25.08	17.44	
HY-11i	7/30/96	12:00	8.69	25.08	16.39	
HY-11i	9/9/96	12:56	9.37	25.08	15.71	
HY-11i	11/15/96	12:25	7.56	25.08	17.52	
HY-11i	1/6/97	13:29	4.70	25.08	20.38	
HY-11i	3/6/97	12:24	5.39	25.08	19.69	
HY-11i	4/29/97	17:16	5.70	25.08	19.38	
HY-11i	5/20/97	14:50	6.73	25.08	18.35	
HY-11i	6/16/97	12:45	6.98	25.08	18.10	
HY-11i	7/7/97	12:29	7.12	25.08	17.96	
HY-11i	8/4/97	11:44	7.95	25.08	17.13	
HY-11i	9/16/97	14:12	8.55	25.08	16.53	
HY-11i	10/7/97	11:16	7.39	25.08	17.69	
HY-11i	11/7/97	11:43	6.74	25.08	18.34	
HY-11i	12/8/97	12:42	7.24	25.08	17.84	
HY-11i	1/12/98	13:01	6.18	25.08	18.90	
HY-11i	2/26/98	15:05	6.21	25.08	18.87	
HY-11i	3/9/98	09:04	6.07	25.08	19.01	
HY-11i	4/7/98	14:05	6.56	25.08	18.52	
HY-11i	5/5/98	10:41	7.61	25.08	17.47	
HY-11i	6/8/98	11:38	8.07	25.08	17.01	
HY-11i	7/17/98	10:56	8.81	25.08	16.27	
HY-11i	8/4/98	13:19	9.24	25.08	15.84	
HY-11i	9/8/98	10:27	9.88	25.08	15.20	
HY-11i	10/9/98	12:07	9.13	25.08	15.95	
HY-11i	11/3/98	09:57	9.57	25.08	15.51	
HY-11i	12/8/98	09:55	5.90	25.08	19.18	
HY-11i	1/4/99	09:57	5.11	25.08	19.97	
HY-11i	2/2/99	11:04	3.64	25.08	21.44	
HY-11i	3/8/99	13:41	5.08	25.08	20.00	
HY-11i	4/29/99	16:58	6.69	25.08	18.39	
HY-11i	5/21/99	12:10	6.80	25.08	18.28	
HY-11i	6/22/99	09:26	7.99	25.08	17.09	
HY-11i	6/24/99	09:54	7.56	25.08	17.52	System off
HY-11i	7/21/99	09:40	8.10	25.08	16.98	

Table C-2

Groundwater Elevations in Intermediate Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HY-11i	8/27/99	10:44	8.77	25.08	16.31	
HY-11i	9/14/99	10:37	9.22	25.08	15.86	
HY-11i	10/5/99	913	6.93	25.08	18.15	
HY-11i	11/15/99	13:31	7.22	25.08	17.86	
HY-11i	12/6/99	11:17	6.21	25.08	18.87	
HY-11i	1/6/00	09:55	6.15	25.08	18.93	
HY-11i	2/14/00	09:58	5.98	25.08	19.10	
HY-11i	3/16/00	1132	5.74	25.08	19.34	
HY-11i	4/11/00	951	6.91	25.08	18.17	
HY-11i	5/11/00	900	6.67	25.08	18.41	
HY-11i	6/6/00	1120	7.68	25.08	17.40	
HY-11i	7/26/00	1130	8.55	25.08	16.53	
HY-11i	8/21/00	1101	8.69	25.08	16.39	
HY-11i	9/13/00	1311	9.42	25.08	15.66	
HY-11i	11/15/00	1005	9.31	25.08	15.77	
HY-11i	12/17/00	903	8.77	25.08	16.31	
HY-11i	1/16/01	1010	8.61	25.08	16.47	
HY-11i	2/15/01	943	8.41	25.08	16.67	
HY-11i	3/13/01	1130	7.04	25.08	18.04	
HY-11i	4/15/01	1327	6.39	25.08	18.69	
HY-11i	5/7/01	1119	7.50	25.08	17.58	
HY-11i	6/10/01	1143	7.62	25.08	17.46	
HY-11i	7/16/01	905	8.03	25.08	17.05	
HY-11i	8/14/01	1012	8.61	25.08	16.47	
HY-11i	9/12/01	1625	9.73	25.08	15.35	
HY-11i	10/4/01	1055	10.15	25.08	14.93	
HY-11i	11/9/01	1108	9.75	25.08	15.33	
HY-11i	12/3/01	1420	7.91	25.08	17.17	
HY-11i	1/3/02	1144	7.27	25.08	17.81	
HY-11i	2/7/02	1322	5.51	25.08	19.57	
HY-11i	3/7/02	1345	6.43	25.08	18.65	
HY-11i	4/23/02	802	6.21	25.08	18.87	
HY-11i	5/9/02	758	6.89	25.08	18.19	
HY-11i	6/19/02	805	7.51	25.08	17.57	
HY-11i	7/12/02	702	7.69	25.08	17.39	
HY-11i	8/21/02	1218	8.45	25.08	16.63	
HY-11i	9/24/02	1035	9.33	25.08	15.75	
HY-11i	10/15/02	702	10.08	25.08	15.00	
HY-11i	11/5/02	1037	10.29	25.08	14.79	
HY-11i	12/10/02	1137	9.60	25.08	15.48	
HY-11i	1/17/03	1504	6.99	25.08	18.09	
HY-11i	2/12/03	1502	6.69	25.08	18.39	
HY-11i	3/5/03	1206	6.83	25.08	18.25	
HY-11i	4/8/03	1002	6.22	25.08	18.86	
HY-11i	5/1/03	1012	6.78	25.08	18.30	
HY-11i	6/10/03	1346	7.02	25.08	18.06	
HY-11i	7/3/03	1242	8.80	25.08	16.28	
HY-11i	8/7/03	1343	9.67	25.08	15.41	
HY-11i	9/11/03	944	10.24	25.08	14.84	
HY-11i	10/3/03	944	10.53	25.08	14.55	
HY-11i	11/11/03	1054	9.61	25.08	15.47	

Table C-2

Groundwater Elevations in Intermediate Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HY-11i	12/3/03	1402	6.49	25.08	18.59	
HY-11i	1/13/04	1238	5.89	25.08	19.19	
HY-11i	2/17/04	1132	5.29	25.08	19.79	
HY-11i	3/8/04	1204	5.90	25.08	19.18	
HY-11i	4/12/04	1118	7.04	25.08	18.04	
HY-11i	5/12/04	1342	7.73	25.08	17.35	
HY-11i	6/2/04	935	7.30	25.08	17.78	
HY-11i	7/2/04	705	8.39	25.08	16.69	
HY-11i	8/5/04	805	9.27	25.08	15.81	
HY-11i	9/2/04	903	8.42	25.08	16.66	
HY-11i	10/4/04	710	8.66	25.08	16.42	
HY-11i	11/5/04	805	7.67	25.08	17.41	
HY-11i	12/3/04	1301	7.51	25.08	17.57	
HY-1i	7/10/92		8.90	24.89	15.99	
HY-1i	7/16/92	12:10	0.73	24.89		Depth to water measurement likely incorrect
HY-1i	7/20/92	11:40	9.29	24.89	15.60	
HY-1i	7/24/92	08:46	9.43	24.89	15.46	
HY-1i	7/28/92	08:55	9.54	24.89	15.35	
HY-1i	8/4/92	11:48	9.68	24.89	15.21	
HY-1i	8/10/92	10:22	10.22	24.89	14.67	
HY-1i	8/12/92	14:22	10.27	24.89	14.62	
HY-1i	8/19/92	09:35	10.48	24.89	14.41	
HY-1i	8/23/92	10:46	10.79	24.89	14.10	
HY-1i	8/28/92	09:21	10.86	24.89	14.03	
HY-1i	9/1/92	09:43	10.82	24.89	14.07	
HY-1i	9/8/92	10:43	11.08	24.89	13.81	
HY-1i	9/18/92	11:10	11.34	24.89	13.55	
HY-1i	9/29/92	13:34	11.21	24.89	13.68	
HY-1i	10/6/92	09:16	11.39	24.89	13.50	
HY-1i	10/15/92	07:48	11.42	24.89	13.47	
HY-1i	11/3/92	10:09	10.54	24.89	14.35	
HY-1i	11/9/92	11:27	10.47	24.89	14.42	
HY-1i	12/16/92	12:58	9.10	24.89	15.79	
HY-1i	1/5/93	08:48	9.19	24.89	15.70	
HY-1i	2/3/93	10:57	8.46	24.89	16.43	
HY-1i	3/12/93		8.91	24.89	15.98	
HY-1i	4/7/93		8.56	24.89	16.33	
HY-1i	5/4/93	10:52	7.87	24.89	17.02	
HY-1i	5/27/93	14:04	8.60	24.89	16.29	Need to Cut Grass
HY-1i	7/6/93		9.40	24.89	15.49	
HY-1i	10/11/93		11.27	24.89	13.62	
HY-1i	12/8/93	12:37	10.38	24.89	14.51	
HY-1i	2/1/94	10:22	9.54	24.89	15.35	
HY-1i	4/14/94	10:08	7.62	24.89	17.27	
HY-1i	6/1/94	12:05	9.36	24.89	15.53	
HY-1i	7/12/94		9.85	24.89	15.04	
HY-1i	10/19/94	13:11	11.76	24.89	13.13	
HY-1i	1/16/95	15:30	7.71	24.89	17.18	
HY-1i	2/9/95	14:37	7.64	24.89	17.25	
HY-1i	4/24/95	13:54	8.05	24.89	16.84	
HY-1i	5/17/95	08:12	8.78	24.89	16.11	

Table C-2

Groundwater Elevations in Intermediate Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HY-1i	6/20/95	11:06	9.23	24.89	15.66	
HY-1i	7/10/95	12:16	9.89	24.89	15.00	
HY-1i	8/15/95	11:42	10.74	24.89	14.15	
HY-1i	12/6/95	08:40	7.50	24.89	17.39	
HY-1i	1/3/96	10:50	7.14	24.89	17.75	
HY-1i	3/25/96	12:02	7.35	24.89	17.54	
HY-1i	5/1/96	10:03	6.57	24.89	18.32	
HY-1i	5/28/96	11:19	7.32	24.89	17.57	
HY-1i	6/26/96	10:03	8.68	24.89	16.21	
HY-1i	7/30/96	12:26	9.70	24.89	15.19	
HY-1i	9/9/96	11:21	10.30	24.89	14.59	
HY-1i	11/15/96	10:57	8.84	24.89	16.05	
HY-1i	1/6/97	11:56	5.52	24.89	19.37	
HY-1i	3/6/97	09:26	6.50	24.89	18.39	
HY-1i	4/29/97	16:24	6.82	24.89	18.07	
HY-1i	5/20/97	16:16	7.65	24.89	17.24	
HY-1i	6/16/97	11:12	7.98	24.89	16.91	
HY-1i	7/7/97	10:46	7.96	24.89	16.93	
HY-1i	8/4/97	10:59	8.82	24.89	16.07	
HY-1i	9/16/97	13:03	9.75	24.89	15.14	
HY-1i	10/7/97	12:19	8.42	24.89	16.47	
HY-1i	11/7/97	11:06	7.92	24.89	16.97	
HY-1i	12/8/97	11:59	8.67	24.89	16.22	
HY-1i	1/12/98	12:18	7.56	24.89	17.33	
HY-1i	2/26/98	13:33	7.62	24.89	17.27	
HY-1i	3/9/98	10:44	7.50	24.89	17.39	
HY-1i	4/7/98	13:52	7.87	24.89	17.02	
HY-1i	5/5/98	13:13	8.92	24.89	15.97	
HY-1i	6/8/98	13:08	9.40	24.89	15.49	
HY-1i	7/17/98	12:39	9.95	24.89	14.94	
HY-1i	8/4/98	14:08	10.25	24.89	14.64	
HY-1i	9/8/98	11:19	10.88	24.89	14.01	
HY-1i	10/9/98	13:14	10.89	24.89	14.00	
HY-1i	11/3/98	10:58	10.58	24.89	14.31	
HY-1i	12/8/98	11:04	7.42	24.89	17.47	
HY-1i	1/4/99	11:23	6.60	24.89	18.29	
HY-1i	2/2/99	12:20	5.38	24.89	19.51	
HY-1i	3/8/99	14:35	6.43	24.89	18.46	
HY-1i	4/29/99	17:24	7.81	24.89	17.08	
HY-1i	5/21/99	11:38	7.99	24.89	16.90	
HY-1i	6/22/99	10:39	9.00	24.89	15.89	
HY-1i	6/24/99	10:15	8.28	24.89	16.61	System off
HY-1i	7/21/99	10:26	9.29	24.89	15.60	
HY-1i	8/27/99	11:35	9.83	24.89	15.06	
HY-1i	9/14/99	11:22	10.29	24.89	14.60	
HY-1i	10/5/99	956	9.61	24.89	15.28	
HY-1i	11/15/99	13:57	8.85	24.89	16.04	
HY-1i	12/6/99	11:42	7.55	24.89	17.34	
HY-1i	1/6/00	10:30	7.60	24.89	17.29	
HY-1i	2/14/00	10:43	7.15	24.89	17.74	
HY-1i	3/16/00	1217	7.13	24.89	17.76	

Table C-2

Groundwater Elevations in Intermediate Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HY-1i	4/11/00	1030	8.12	24.89	16.77	
HY-1i	5/11/00	840	8.14	24.89	16.75	
HY-1i	6/6/00	1142	8.45	24.89	16.44	
HY-1i	7/26/00	1149	9.21	24.89	15.68	
HY-1i	8/21/00	1136	9.22	24.89	15.67	
HY-1i	9/13/00	1341	9.99	24.89	14.90	
HY-1i	10/11/00	1417	10.99	24.89	13.90	
HY-1i	11/15/00	1036	10.37	24.89	14.52	
HY-1i	12/17/00	937	9.79	24.89	15.10	
HY-1i	1/16/01	1006	9.23	24.89	15.66	
HY-1i	2/15/01	907	9.09	24.89	15.80	
HY-1i	3/13/01	1121	8.89	24.89	16.00	
HY-1i	4/15/01	1315	8.71	24.89	16.18	
HY-1i	5/7/01	1112	8.82	24.89	16.07	
HY-1i	6/10/01	1040	8.79	24.89	16.10	
HY-1i	7/16/01	910	9.79	24.89	15.10	
HY-1i	8/14/01	845	10.54	24.89	14.35	
HY-1i	9/12/01	841	10.88	24.89	14.01	
HY-1i	10/4/01	718	12.22	24.89	12.67	
HY-1i	11/9/01	855	10.58	24.89	14.31	
HY-1i	12/3/01	1202	7.93	24.89	16.96	
HY-1i	4/23/02	827	7.45	24.89	17.44	
HY-1i	5/9/02	827	7.96	24.89	16.93	
HY-1i	6/19/02	830	9.05	24.89	15.84	
HY-1i	7/12/02	708	9.11	24.89	15.78	
HY-1i	8/21/02	1235	10.44	24.89	14.45	
HY-1i	9/24/02	1046	10.77	24.89	14.12	
HY-1i	10/15/02	709	10.98	24.89	13.91	
HY-1i	11/5/02	1045	11.14	24.89	13.75	
HY-1i	12/10/02	1152	10.54	24.89	14.35	
HY-1i	1/17/03	1418	7.99	24.89	16.90	
HY-1i	2/12/03	1447	7.77	24.89	17.12	
HY-1i	3/5/03	1017	7.91	24.89	16.98	
HY-1i	4/8/03	1012	7.36	24.89	17.53	
HY-1i	5/1/03	803	7.86	24.89	17.03	
HY-1i	6/10/03	1303	8.01	24.89	16.88	
HY-1i	7/3/03	1252	9.76	24.89	15.13	
HY-1i	8/7/03	1227	10.54	24.89	14.35	
HY-1i	9/11/03	1048	11.11	24.89	13.78	
HY-1i	10/3/03	818	11.23	24.89	13.66	
HY-1i	11/11/03	1131	9.65	24.89	15.24	
HY-1i	12/3/03	835	7.85	24.89	17.04	
HY-1i	1/13/04	1040	7.04	24.89	17.85	
HY-1i	2/17/04	1142	6.64	24.89	18.25	
HY-1i	3/8/04	1124	7.09	24.89	17.80	
HY-1i	4/12/04	1357	8.20	24.89	16.69	
HY-1i	5/12/04	1423	8.65	24.89	16.24	
HY-1i	6/2/04	1600	8.31	24.89	16.58	
HY-1i	7/2/04	717	9.18	24.89	15.71	
HY-1i	8/5/04	1103	10.13	24.89	14.76	
HY-1i	9/2/04	908	9.33	24.89	15.56	

Table C-2

Groundwater Elevations in Intermediate Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HY-1i	10/4/04	1103	9.51	24.89	15.38	
HY-1i	11/5/04	1326	8.61	24.89	16.28	
HY-1i	12/3/04	1403	8.45	24.89	16.44	
HYCP-1i	7/10/92		5.91	21.33	15.42	
HYCP-1i	7/16/92	11:37	6.25	21.33	15.08	
HYCP-1i	7/20/92	12:35	6.23	21.33	15.10	
HYCP-1i	7/24/92	07:47	6.42	21.33	14.91	
HYCP-1i	7/28/92	08:15	6.50	21.33	14.83	
HYCP-1i	8/4/92	11:11	6.62	21.33	14.71	
HYCP-1i	8/10/92	09:41	8.51	21.33	12.82	
HYCP-1i	8/12/92	11:07	8.31	21.33	13.02	
HYCP-1i	8/19/92	10:32	7.87	21.33	13.46	
HYCP-1i	8/23/92	09:55	9.11	21.33	12.22	
HYCP-1i	8/28/92	09:58	9.23	21.33	12.10	
HYCP-1i	9/1/92	10:31	8.22	21.33	13.11	
HYCP-1i	9/8/92	09:42	9.36	21.33	11.97	
HYCP-1i	9/18/92	10:25	9.64	21.33	11.69	
HYCP-1i	9/29/92	13:05	9.44	21.33	11.89	
HYCP-1i	10/6/92	09:51	9.70	21.33	11.63	Replaced lock
HYCP-1i	10/15/92	08:25	9.77	21.33	11.56	
HYCP-1i	11/3/92	09:44	7.94	21.33	13.39	
HYCP-1i	11/9/92	09:49	8.99	21.33	12.34	
HYCP-1i	12/16/92	10:56	7.68	21.33	13.65	
HYCP-1i	1/5/93	09:16	8.00	21.33	13.33	
HYCP-1i	2/3/93	10:19	7.31	21.33	14.02	
HYCP-1i	3/12/93		6.46	21.33	14.87	
HYCP-1i	4/7/93		7.56	21.33	13.77	
HYCP-1i	5/4/93	09:45	7.10	21.33	14.23	
HYCP-1i	5/27/93	13:41	7.15	21.33	14.18	Need to Cut Grass
HYCP-1i	7/6/93		8.28	21.33	13.05	
HYCP-1i	10/11/93		9.76	21.33	11.57	
HYCP-1i	12/8/93	11:25	8.95	21.33	12.38	
HYCP-1i	2/1/94	09:21	8.45	21.33	12.88	
HYCP-1i	4/14/94	09:16	6.79	21.33	14.54	
HYCP-1i	6/1/94		7.88	21.33	13.45	
HYCP-1i	7/12/94		8.49	21.33	12.84	
HYCP-1i	10/19/94	13:28	9.85	21.33	11.48	
HYCP-1i	1/16/95	14:55	6.56	21.33	14.77	
HYCP-1i	2/9/95	13:58	6.47	21.33	14.86	
HYCP-1i	4/24/95	09:42	6.71	21.33	14.62	
HYCP-1i	5/17/95	07:22	7.52	21.33	13.81	
HYCP-1i	6/20/95	11:50	8.02	21.33	13.31	
HYCP-1i	7/10/95	11:50	8.02	21.33	13.31	
HYCP-1i	8/15/95	10:54	8.70	21.33	12.63	
HYCP-1i	12/6/95	08:00	6.17	21.33	15.16	
HYCP-1i	1/3/96	11:30	5.78	21.33	15.55	
HYCP-1i	3/25/96	14:28	5.84	21.33	15.49	
HYCP-1i	5/1/96	10:25	5.10	21.33	16.23	
HYCP-1i	5/28/96	10:58	5.47	21.33	15.86	
HYCP-1i	6/26/96	10:52	6.85	21.33	14.48	
HYCP-1i	7/30/96	10:27	7.73	21.33	13.60	

Table C-2

Groundwater Elevations in Intermediate Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HYCP-1i	9/9/96	10:58	7.80	21.33	13.53	
HYCP-1i	11/15/96	10:17	6.83	21.33	14.50	
HYCP-1i	1/6/97	11:21	3.57	21.33	17.76	
HYCP-1i	3/6/97	09:46	5.09	21.33	16.24	
HYCP-1i	4/29/97	15:57	5.20	21.33	16.13	
HYCP-1i	5/20/97	15:22	5.94	21.33	15.39	
HYCP-1i	6/16/97	10:52	6.18	21.33	15.15	
HYCP-1i	7/7/97	11:11	5.83	21.33	15.50	
HYCP-1i	8/4/97	10:30	6.99	21.33	14.34	
HYCP-1i	9/16/97	12:32	7.71	21.33	13.62	
HYCP-1i	10/7/97	11:45	6.48	21.33	14.85	
HYCP-1i	11/7/97	10:39	6.44	21.33	14.89	
HYCP-1i	12/8/97	11:21	7.28	21.33	14.05	
HYCP-1i	1/12/98	11:40	6.27	21.33	15.06	
HYCP-1i	2/26/98	12:43	6.47	21.33	14.86	
HYCP-1i	3/9/98	10:19	6.36	21.33	14.97	
HYCP-1i	4/7/98	13:21	6.81	21.33	14.52	
HYCP-1i	5/5/98	12:09	7.59	21.33	13.74	
HYCP-1i	6/8/98	12:32	7.92	21.33	13.41	
HYCP-1i	7/17/98	11:35	8.25	21.33	13.08	
HYCP-1i	8/4/98	13:46	8.34	21.33	12.99	
HYCP-1i	9/8/98	10:57	8.71	21.33	12.62	
HYCP-1i	10/9/98	13:47	8.67	21.33	12.66	HYCP-1i/1d DtoW levels corrected for field switch
HYCP-1i	11/3/98	11:42	8.41	21.33	12.92	
HYCP-1i	12/8/98	10:34	6.07	21.33	15.26	
HYCP-1i	1/4/99	10:48	5.63	21.33	15.70	
HYCP-1i	2/2/99	12:00	4.72	21.33	16.61	
HYCP-1i	3/8/99	14:22	5.18	21.33	16.15	
HYCP-1i	4/29/99	17:07	6.40	21.33	14.93	
HYCP-1i	5/21/99	12:57	6.45	21.33	14.88	
HYCP-1i	6/22/99	10:14	7.16	21.33	14.17	
HYCP-1i	6/24/99	10:24	5.80	21.33	15.53	System off
HYCP-1i	7/21/99	10:04	7.65	21.33	13.68	
HYCP-1i	8/27/99	11:17	7.86	21.33	13.47	
HYCP-1i	9/14/99	11:11	8.26	21.33	13.07	
HYCP-1i	10/5/99	942	8.55	21.33	12.78	
HYCP-1i	11/15/99	14:10	7.10	21.33	14.23	
HYCP-1i	12/6/99	11:52	6.32	21.33	15.01	
HYCP-1i	1/6/00	10:56	6.27	21.33	15.06	
HYCP-1i	2/14/00	10:34	6.17	21.33	15.16	
HYCP-1i	3/16/00	1227	5.77	21.33	15.56	
HYCP-1i	4/11/00	1023	6.65	21.33	14.68	
HYCP-1i	5/11/00	937	6.45	21.33	14.88	
HYCP-1i	6/6/00	1152	7.03	21.33	14.30	
HYCP-1i	7/26/00	1205	7.65	21.33	13.68	
HYCP-1i	8/21/00	1122	8.23	21.33	13.10	
HYCP-1i	1/16/01	1135	7.28	21.33	14.05	
HYCP-1i	2/15/01	952	6.83	21.33	14.50	
HYCP-1i	3/13/01	1150	6.70	21.33	14.63	
HYCP-1i	4/15/01	1340	6.63	21.33	14.70	
HYCP-1i	5/7/01	1100	6.88	21.33	14.45	

Table C-2

Groundwater Elevations in Intermediate Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HYCP-1i	6/10/01	1120	5.00	21.33	16.33	
HYCP-1i	7/16/01	857	7.31	21.33	14.02	
HYCP-1i	8/14/01	845	8.09	21.33	13.24	
HYCP-1i	9/12/01	809	8.48	21.33	12.85	
HYCP-1i	10/4/01	729	9.77	21.33	11.56	
HYCP-1i	11/9/01	913	8.72	21.33	12.61	
HYCP-1i	12/3/01	1212	6.18	21.33	15.15	
HYCP-1i	1/3/02	956	6.93	21.33	14.40	
HYCP-1i	2/7/02	1125	5.50	21.33	15.83	
HYCP-1i	3/7/02	1155	5.94	21.33	15.39	
HYCP-1i	4/23/02	858	5.78	21.33	15.55	
HYCP-1i	5/9/02	848	6.08	21.33	15.25	
HYCP-1i	6/19/02	907	7.31	21.33	14.02	
HYCP-1i	7/12/02	732	8.05	21.33	13.28	
HYCP-1i	8/21/02	1300	8.28	21.33	13.05	
HYCP-1i	9/24/02	1123	8.49	21.33	12.84	
HYCP-1i	10/15/02	735	8.50	21.33	12.83	
HYCP-1i	11/5/02	1117	8.55	21.33	12.78	
HYCP-1i	12/10/02	1215	8.00	21.33	13.33	
HYCP-1i	1/17/03	1354	5.53	21.33	15.80	
HYCP-1i	2/12/03	1412	5.84	21.33	15.49	
HYCP-1i	3/5/03	951	5.93	21.33	15.40	
HYCP-1i	4/8/03	1038	5.39	21.33	15.94	
HYCP-1i	5/1/03	1013	6.82	21.33	14.51	
HYCP-1i	6/10/03	1237	6.16	21.33	15.17	
HYCP-1i	7/3/03	1313	7.61	21.33	13.72	
HYCP-1i	8/7/03	1248	8.15	21.33	13.18	
HYCP-1i	9/11/03	1031	8.64	21.33	12.69	
HYCP-1i	10/3/03	800	8.73	21.33	12.60	
HYCP-1i	11/11/03	1153	7.55	21.33	13.78	
HYCP-1i	12/3/03	848	6.18	21.33	15.15	
HYCP-1i	1/13/04	1100	5.43	21.33	15.90	
HYCP-1i	2/17/04	1215	4.99	21.33	16.34	
HYCP-1i	3/8/04	1135	5.62	21.33	15.71	
HYCP-1i	4/12/04	1320	6.53	21.33	14.80	
HYCP-1i	5/12/04	1445	6.98	21.33	14.35	
HYCP-1i	6/2/04	1740	6.32	21.33	15.01	
HYCP-1i	7/2/04	1312	6.67	21.33	14.66	
HYCP-1i	8/5/04	1147	7.88	21.33	13.45	
HYCP-1i	9/2/04	1000	6.62	21.33	14.71	
HYCP-1i	10/4/04	1015	7.03	21.33	14.30	
HYCP-1i	11/5/04	1138	6.35	21.33	14.98	
HYCP-1i	12/3/04	1420	6.12	21.33	15.21	
HYCP-3i	7/10/92		7.51	23.45	15.94	
HYCP-3i	7/20/92	11:43	7.93	23.45	15.52	
HYCP-3i	7/24/92	08:38	8.04	23.45	15.41	
HYCP-3i	7/28/92	08:48	8.16	23.45	15.29	
HYCP-3i	8/4/92	11:55	8.25	23.45	15.20	
HYCP-3i	8/10/92	10:15	9.22	23.45	14.23	
HYCP-3i	8/12/92	14:30	9.33	23.45	14.12	
HYCP-3i	8/19/92	09:46	9.26	23.45	14.19	

Table C-2

Groundwater Elevations in Intermediate Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HYCP-3i	8/23/92	10:39	9.79	23.45	13.66	
HYCP-3i	8/28/92	09:38	9.90	23.45	13.55	
HYCP-3i	9/1/92	09:50	9.55	23.45	13.90	
HYCP-3i	9/8/92	10:53	10.08	23.45	13.37	
HYCP-3i	9/18/92	11:17	10.35	23.45	13.10	
HYCP-3i	9/29/92	13:44	10.18	23.45	13.27	
HYCP-3i	10/6/92	09:25	10.42	23.45	13.03	
HYCP-3i	10/15/92	08:00	10.49	23.45	12.96	
HYCP-3i	11/3/92	10:17	9.30	23.45	14.15	
HYCP-3i	11/9/92	11:16	9.51	23.45	13.94	
HYCP-3i	12/16/92	13:08	8.06	23.45	15.39	
HYCP-3i	1/5/93	08:56	8.31	23.45	15.14	
HYCP-3i	2/3/93	11:08	7.61	23.45	15.84	
HYCP-3i	3/12/93		7.63	23.45	15.82	
HYCP-3i	4/7/93		6.80	23.45	16.65	
HYCP-3i	5/4/93	11:07	7.17	23.45	16.28	
HYCP-3i	5/27/93	13:57	7.64	23.45	15.81	
HYCP-3i	7/6/93		8.57	23.45	14.88	
HYCP-3i	10/11/93		10.27	23.45	13.18	
HYCP-3i	12/8/93	12:52	8.78	23.45	14.67	Readings fluctuated
HYCP-3i	2/1/94	10:05	8.72	23.45	14.73	
HYCP-3i	4/14/94	10:05	7.15	23.45	16.30	
HYCP-3i	6/1/94	12:25	6.88	23.45	16.57	
HYCP-3i	7/12/94		8.53	23.45	14.92	
HYCP-3i	10/19/94	13:05	10.77	23.45	12.68	
HYCP-3i	1/16/95	15:26	6.77	23.45	16.68	
HYCP-3i	2/9/95	14:30	6.92	23.45	16.53	
HYCP-3i	4/24/95	13:47	7.12	23.45	16.33	
HYCP-3i	5/17/95	08:22	7.97	23.45	15.48	
HYCP-3i	6/20/95	10:55	8.70	23.45	14.75	
HYCP-3i	7/10/95	12:11	8.88	23.45	14.57	
HYCP-3i	8/15/95	11:34	9.46	23.45	13.99	
HYCP-3i	12/6/95	08:33	6.58	23.45	16.87	
HYCP-3i	1/3/96	10:45	6.27	23.45	17.18	
HYCP-3i	3/25/96	11:48	6.45	23.45	17.00	
HYCP-3i	5/1/96	09:56	5.54	23.45	17.91	
HYCP-3i	5/28/96	11:14	6.21	23.45	17.24	
HYCP-3i	6/26/96	09:55	6.74	23.45	16.71	
HYCP-3i	7/30/96	12:18	8.72	23.45	14.73	
HYCP-3i	9/9/96	11:16	9.19	23.45	14.26	
HYCP-3i	11/15/96	10:57	7.76	23.45	15.69	
HYCP-3i	1/6/97	11:49	4.42	23.45	19.03	
HYCP-3i	3/6/97	09:21	5.62	23.45	17.83	
HYCP-3i	4/29/97	16:18	5.82	23.45	17.63	
HYCP-3i	5/20/97	16:10	6.67	23.45	16.78	
HYCP-3i	6/16/97	11:08	6.94	23.45	16.51	
HYCP-3i	7/7/97	10:35	6.84	23.45	16.61	
HYCP-3i	8/4/97	10:51	7.72	23.45	15.73	
HYCP-3i	9/16/97	12:57	8.77	23.45	14.68	
HYCP-3i	10/7/97	12:11	7.22	23.45	16.23	
HYCP-3i	11/7/97	10:59	6.83	23.45	16.62	

Table C-2

Groundwater Elevations in Intermediate Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HYCP-3i	12/8/97	11:52	7.84	23.45	15.61	
HYCP-3i	1/12/98	12:11	6.82	23.45	16.63	
HYCP-3i	2/26/98	13:25	6.87	23.45	16.58	
HYCP-3i	3/9/98	10:40	6.74	23.45	16.71	
HYCP-3i	4/7/98	13:48	7.18	23.45	16.27	
HYCP-3i	5/5/98	12:50	7.99	23.45	15.46	
HYCP-3i	6/8/98	12:59	8.42	23.45	15.03	
HYCP-3i	7/17/98	12:29	8.93	23.45	14.52	
HYCP-3i	8/4/98	13:59	9.16	23.45	14.29	
HYCP-3i	9/8/98	11:12	9.63	23.45	13.82	
HYCP-3i	10/9/98	13:22	9.66	23.45	13.79	
HYCP-3i	11/3/98	11:04	9.41	23.45	14.04	
HYCP-3i	12/8/98	11:09	6.54	23.45	16.91	
HYCP-3i	1/4/99	11:30	5.82	23.45	17.63	
HYCP-3i	2/2/99	12:25	4.69	23.45	18.76	
HYCP-3i	3/8/99	14:31	5.56	23.45	17.89	
HYCP-3i	4/29/99	17:21	6.86	23.45	16.59	
HYCP-3i	5/21/99	11:25	7.08	23.45	16.37	
HYCP-3i	6/22/99	10:44	7.99	23.45	15.46	
HYCP-3i	6/24/99	10:19	7.03	23.45	16.42	System off
HYCP-3i	7/21/99	10:30	8.38	23.45	15.07	
HYCP-3i	8/27/99	11:39	8.87	23.45	14.58	
HYCP-3i	9/14/99	11:26	9.32	23.45	14.13	
HYCP-3i	10/5/99	959	9.72	23.45	13.73	
HYCP-3i	11/15/99	1400	7.96	23.45	15.49	
HYCP-3i	12/6/99	11:45	6.66	23.45	16.79	
HYCP-3i	1/6/00	10:34	6.79	23.45	16.66	
HYCP-3i	2/14/00	10:47	6.28	23.45	17.17	
HYCP-3i	3/16/00	1220	6.08	23.45	17.37	
HYCP-3i	4/11/00	1033	7.22	23.45	16.23	
HYCP-3i	5/11/00	827	7.21	23.45	16.24	
HYCP-3i	6/6/00	1144	7.42	23.45	16.03	
HYCP-3i	7/26/00	1153	8.02	23.45	15.43	
HYCP-3i	8/21/00	1141	8.41	23.45	15.04	
HYCP-3i	9/13/00	1351	9.03	23.45	14.42	
HYCP-3i	10/11/00	1423	9.96	23.45	13.49	
HYCP-3i	11/15/00	1031	9.43	23.45	14.02	
HYCP-3i	12/17/00	931	8.62	23.45	14.83	
HYCP-3i	1/16/01	1024	8.11	23.45	15.34	
HYCP-3i	2/15/01	933	7.81	23.45	15.64	
HYCP-3i	3/13/01	1133	7.41	23.45	16.04	
HYCP-3i	4/15/01	1311	7.10	23.45	16.35	
HYCP-3i	5/7/01	1111	7.93	23.45	15.52	
HYCP-3i	6/10/01	1135	8.03	23.45	15.42	
HYCP-3i	7/16/01	838	8.77	23.45	14.68	
HYCP-3i	8/14/01	834	9.45	23.45	14.00	
HYCP-3i	9/12/01	755	9.91	23.45	13.54	
HYCP-3i	10/4/01	710	11.16	23.45	12.29	
HYCP-3i	11/9/01	850	9.33	23.45	14.12	
HYCP-3i	12/3/01	1156	7.15	23.45	16.30	
HYCP-3i	1/3/02	940	7.26	23.45	16.19	

Table C-2

Groundwater Elevations in Intermediate Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HYCP-3i	2/7/02	1110	6.24	23.45	17.21	
HYCP-3i	3/7/02	1140	6.75	23.45	16.70	
HYCP-3i	4/23/02	1439	6.47	23.45	16.98	
HYCP-3i	5/9/02	817	7.04	23.45	16.41	
HYCP-3i	6/19/02	837	8.07	23.45	15.38	
HYCP-3i	7/12/02	720	8.10	23.45	15.35	
HYCP-3i	8/21/02	1243	9.45	23.45	14.00	
HYCP-3i	9/24/02	1100	9.67	23.45	13.78	
HYCP-3i	10/15/02	722	9.83	23.45	13.62	
HYCP-3i	11/5/02	1059	10.05	23.45	13.40	
HYCP-3i	12/10/02	1203	9.39	23.45	14.06	
HYCP-3i	1/17/03	1411	6.61	23.45	16.84	
HYCP-3i	2/12/03	1437	6.78	23.45	16.67	
HYCP-3i	3/5/03	1010	6.89	23.45	16.56	
HYCP-3i	4/8/03	1022	6.31	23.45	17.14	
HYCP-3i	5/1/03	757	6.90	23.45	16.55	
HYCP-3i	6/10/03	1255	7.17	23.45	16.28	
HYCP-3i	7/3/03	1331	8.72	23.45	14.73	
HYCP-3i	8/7/03	1218	9.49	23.45	13.96	
HYCP-3i	9/11/03	1044	10.95	23.45	12.50	
HYCP-3i	10/3/03	814	10.10	23.45	13.35	
HYCP-3i	11/11/03	1115	8.59	23.45	14.86	
HYCP-3i	12/3/03	824	6.68	23.45	16.77	
HYCP-3i	1/13/04	1028	5.94	23.45	17.51	
HYCP-3i	2/17/04	1158	5.55	23.45	17.90	
HYCP-3i	3/8/04	1115	6.11	23.45	17.34	
HYCP-3i	4/12/04	1341	7.22	23.45	16.23	
HYCP-3i	5/12/04	1411	7.71	23.45	15.74	
HYCP-3i	6/2/04	1750	7.24	23.45	16.21	
HYCP-3i	7/2/04	740	7.97	23.45	15.48	
HYCP-3i	8/5/04	1123	9.05	23.45	14.40	
HYCP-3i	9/2/04	932	8.02	23.45	15.43	
HYCP-3i	10/4/04	1110	8.28	23.45	15.17	
HYCP-3i	11/5/04	1314	7.40	23.45	16.05	
HYCP-3i	12/3/04	1353	7.25	23.45	16.20	

Notes: 1. Depth to water relative to monitoring point (top of PVC casing).
2. MP = monitoring point.
3. GW = groundwater.
4. All elevations in feet relative to the National Geodetic Vertical Datum (NGVD 29).

Table C-3

Groundwater Elevations in Deep Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
Gd	7/10/92		4.86	20.79	15.93	
Gd	7/16/92	12:30	5.00	20.79	15.79	
Gd	7/20/92	12:30	5.00	20.79	15.79	
Gd	7/24/92	07:57	5.21	20.79	15.58	
Gd	7/28/92	08:22	5.23	20.79	15.56	
Gd	8/4/92	11:24	5.27	20.79	15.52	
Gd	8/10/92	09:48	5.57	20.79	15.22	
Gd	8/12/92	13:59	5.41	20.79	15.38	
Gd	8/19/92	10:15	5.68	20.79	15.11	
Gd	8/23/92	10:16	5.89	20.79	14.90	
Gd	8/28/92	10:24	5.94	20.79	14.85	
Gd	9/1/92	10:11	5.95	20.79	14.84	
Gd	9/8/92	10:11	5.95	20.79	14.84	
Gd	9/18/92	10:17	6.21	20.79	14.58	
Gd	9/29/92	12:54	6.02	20.79	14.77	
Gd	10/6/92	09:58	6.46	20.79	14.33	
Gd	10/15/92	08:56	6.41	20.79	14.38	
Gd	11/3/92	09:22	6.30	20.79	14.49	
Gd	11/9/92	10:27	5.94	20.79	14.85	
Gd	12/16/92	10:43	4.84	20.79	15.95	
Gd	1/5/93	09:43	4.99	20.79	15.80	
Gd	2/3/93	10:10	4.43	20.79	16.36	
Gd	3/12/93		4.81	20.79	15.98	
Gd	4/7/93		4.04	20.79	16.75	
Gd	5/4/93	10:09	4.25	20.79	16.54	
Gd	5/27/93	12:01	4.27	20.79	16.52	
Gd	7/6/93		5.02	20.79	15.77	
Gd	10/11/93		6.23	20.79	14.56	
Gd	12/8/93	11:24	3.45	20.79	17.34	
Gd	2/1/94	09:38	5.11	20.79	15.68	
Gd	3/31/94		4.84	20.79	15.95	
Gd	4/14/94	07:54	6.35	20.79	14.44	
Gd	7/12/94		5.38	20.79	15.41	
Gd	10/19/94	13:44	6.48	20.79	14.31	
Gd	1/16/95	15:00	4.29	20.79	16.50	
Gd	2/9/95	13:31	4.18	20.79	16.61	
Gd	4/24/95	10:54	4.05	20.79	16.74	
Gd	5/17/95	07:45	4.68	20.79	16.11	
Gd	6/20/95	12:15	5.15	20.79	15.64	
Gd	7/10/95	11:53	5.30	20.79	15.49	
Gd	8/15/95	11:03	4.93	20.79	15.86	
Gd	12/6/95	08:17	4.32	20.79	16.47	
Gd	1/3/96	12:12	3.61	20.79	17.18	
Gd	3/25/96	12:08	3.82	20.79	16.97	
Gd	5/1/96	10:48	3.43	20.79	17.36	
Gd	5/28/96	10:34	3.72	20.79	17.07	
Gd	6/26/96	10:43	4.32	20.79	16.47	
Gd	7/30/96	10:22	5.18	20.79	15.61	
Gd	9/9/96	10:53	4.64	20.79	16.15	
Gd	11/15/96	10:13	4.65	20.79	16.14	

Table C-3

Groundwater Elevations in Deep Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
Gd	1/6/97	11:17	2.88	20.79	17.91	
Gd	3/6/97	09:51	3.27	20.79	17.52	
Gd	4/29/97	15:53	3.33	20.79	17.46	
Gd	5/20/97	15:36	3.59	20.79	17.20	
Gd	6/16/97	10:59	3.88	20.79	16.91	
Gd	7/7/97	11:21	4.11	20.79	16.68	
Gd	8/4/97	10:39	4.54	20.79	16.25	
Gd	9/16/97	12:36	4.90	20.79	15.89	
Gd	10/7/97	11:52	4.50	20.79	16.29	
Gd	11/7/97	10:48	4.24	20.79	16.55	
Gd	12/8/97	11:37	4.22	20.79	16.57	
Gd	1/12/98	11:47	3.97	20.79	16.82	
Gd	2/26/98	12:53	3.67	20.79	17.12	
Gd	3/9/98	10:22	4.23	20.79	16.56	
Gd	4/7/98	13:37	4.26	20.79	16.53	
Gd	5/5/98	11:24	4.27	20.79	16.52	
Gd	6/8/98	13:15	4.62	20.79	16.17	
Gd	7/17/98	11:50	4.98	20.79	15.81	
Gd	8/4/98	14:18	5.07	20.79	15.72	
Gd	9/8/98	11:32	5.63	20.79	15.16	
Gd	10/9/98	13:39	5.95	20.79	14.84	
Gd	11/3/98	11:19	5.41	20.79	15.38	
Gd	12/8/98	10:44	4.33	20.79	16.46	
Gd	1/4/99	11:00	3.43	20.79	17.36	
Gd	2/2/99	12:06	2.97	20.79	17.82	
Gd	3/8/99	14:59	2.63	20.79	18.16	
Gd	4/29/99	17:34	3.72	20.79	17.07	
Gd	5/21/99	13:39	4.05	20.79	16.74	
Gd	6/22/99	10:31	4.41	20.79	16.38	
Gd	6/24/99	10:42	4.09	20.79	16.70	System off
Gd	7/21/99	10:12	4.68	20.79	16.11	
Gd	8/27/99	11:22	4.68	20.79	16.11	
Gd	9/14/99	11:38	5.09	20.79	15.70	
Gd	10/5/99	946	5.31	20.79	15.48	
Gd	11/15/99	14:15	4.85	20.79	15.94	
Gd	12/6/99	12:10	4.21	20.79	16.58	
Gd	1/6/00	11:08	3.60	20.79	17.19	
Gd	2/14/00	10:49	3.48	20.79	17.31	
Gd	3/16/00	1232	3.32	20.79	17.47	
Gd	4/11/00	1026	3.58	20.79	17.21	
Gd	5/11/00	1012	4.05	20.79	16.74	
Gd	6/6/00	1106	5.22	20.79	15.57	
Gd	7/26/00	1216	5.57	20.79	15.22	
Gd	8/21/00	1211	5.80	20.79	14.99	
Gd	9/13/00	1405	5.41	20.79	15.38	
Gd	10/11/00	1528	5.71	20.79	15.08	
Gd	11/15/00	1108	5.22	20.79	15.57	
Gd	12/17/00	957	4.69	20.79	16.10	
Gd	1/16/01	1043	4.60	20.79	16.19	
Gd	2/15/01	1018	4.50	20.79	16.29	

Table C-3

Groundwater Elevations in Deep Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
Gd	3/13/01	1158	4.39	20.79	16.40	
Gd	4/15/01	1351	5.01	20.79	15.78	
Gd	5/7/01	1052	4.37	20.79	16.42	
Gd	6/10/01	1207	4.57	20.79	16.22	
Gd	7/16/01	945	5.01	20.79	15.78	
Gd	8/14/01	900	5.49	20.79	15.30	
Gd	9/12/01	917	5.54	20.79	15.25	
Gd	10/4/01	817	6.77	20.79	14.02	
Gd	11/9/01	934	5.59	20.79	15.20	
Gd	12/3/01	1233	8.11	20.79	12.68	
Gd	1/3/02	1018	4.84	20.79	15.95	
Gd	2/7/02	1147	3.51	20.79	17.28	
Gd	3/7/02	1215	3.36	20.79	17.43	
Gd	4/23/02	920	3.61	20.79	17.18	
Gd	5/9/02	914	3.79	20.79	17.00	
Gd	6/19/02	930	3.39	20.79	17.40	
Gd	7/12/02	753	5.01	20.79	15.78	
Gd	8/21/02	1312	5.16	20.79	15.63	
Gd	9/24/02	1143	5.22	20.79	15.57	
Gd	10/15/02	804	5.49	20.79	15.30	
Gd	11/5/02	1132	5.60	20.79	15.19	
Gd	12/10/02	1249	5.05	20.79	15.74	
Gd	1/17/03	1342	4.14	20.79	16.65	
Gd	2/12/03	1343	3.53	20.79	17.26	
Gd	3/5/03	940	3.57	20.79	17.22	
Gd	4/8/03	1054	3.42	20.79	17.37	
Gd	5/1/03	852	3.75	20.79	17.04	
Gd	6/10/03	1222	3.91	20.79	16.88	
Gd	7/3/03	1404	4.73	20.79	16.06	
Gd	8/7/03	1313	5.19	20.79	15.60	
Gd	9/11/03	838	5.75	20.79	15.04	
Gd	10/3/03	747	5.75	20.79	15.04	
Gd	11/11/03	1214	5.11	20.79	15.68	
Gd	12/3/03	1420	4.14	20.79	16.65	
Gd	1/13/04	1114	3.51	20.79	17.28	
Gd	2/17/04	1233	3.04	20.79	17.75	
Gd	3/8/04	1147	3.68	20.79	17.11	
Gd	4/12/04	1311	3.82	20.79	16.97	
Gd	5/12/04	1500	4.18	20.79	16.61	
Gd	6/2/04	1530	4.08	20.79	16.71	
Gd	7/2/04	1530	4.55	20.79	16.24	
Gd	8/5/04	1235	4.96	20.79	15.83	
Gd	9/2/04	1033	4.63	20.79	16.16	
Gd	10/4/04	1010	4.69	20.79	16.10	
Gd	11/5/04	1155	4.56	20.79	16.23	
Gd	12/3/04	1438	4.05	20.79	16.74	
Gd	1/19/05	934	3.50	20.79	17.29	
Gd	2/18/05	1250	3.50	20.79	17.29	
Gd	3/11/05	1230	4.00	20.79	16.79	
Gd	4/18/05	1349	3.50	20.79	17.29	

Table C-3

Groundwater Elevations in Deep Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
Gd	5/3/05	1520	3.54	20.79	17.25	
Gd	6/9/05	1015	3.86	20.79	16.93	
Hd	7/10/92		4.19	20.15	15.96	
Hd	7/16/92	04:45	0.80	20.15		Depth to water measurement likely incorrect
Hd	7/20/92	12:50	4.28	20.15	15.87	
Hd	7/24/92	08:15	4.47	20.15	15.68	
Hd	7/28/92	08:30	4.55	20.15	15.60	
Hd	8/4/92	10:40	4.55	20.15	15.60	
Hd	8/10/92	10:01	4.87	20.15	15.28	
Hd	8/12/92	14:44	4.74	20.15	15.41	
Hd	8/19/92	10:07	4.90	20.15	15.25	
Hd	8/23/92	10:06	5.13	20.15	15.02	
Hd	8/28/92	10:15	5.22	20.15	14.93	
Hd	9/1/92	10:18	5.26	20.15	14.89	
Hd	9/8/92	10:17	5.26	20.15	14.89	
Hd	9/18/92	10:05	5.50	20.15	14.65	
Hd	9/29/92	12:40	5.43	20.15	14.72	
Hd	10/6/92	10:07	5.67	20.15	14.48	
Hd	10/15/92	08:47	5.72	20.15	14.43	
Hd	11/3/92	09:14	5.59	20.15	14.56	Water in monument
Hd	11/9/92	10:49	5.37	20.15	14.78	
Hd	12/16/92	10:33	4.26	20.15	15.89	H2O in monument
Hd	1/5/93	09:50	4.23	20.15	15.92	
Hd	2/3/93	10:00	3.71	20.15	16.44	
Hd	3/12/93		4.08	20.15	16.07	
Hd	4/7/93		4.03	20.15	16.12	
Hd	5/4/93	10:19	3.54	20.15	16.61	H2O in Monuments
Hd	5/27/93	12:12	3.58	20.15	16.57	H2O in Monument
Hd	7/6/93		4.32	20.15	15.83	
Hd	10/11/93		5.53	20.15	14.62	
Hd	12/8/93	11:05	4.63	20.15	15.52	H2O above casing
Hd	2/1/94	09:48	4.45	20.15	15.70	
Hd	3/31/94		4.21	20.15	15.94	
Hd	4/14/94	07:44	3.70	20.15	16.45	
Hd	7/12/94		4.73	20.15	15.42	
Hd	10/19/94	13:48	5.93	20.15	14.22	
Hd	1/16/95	15:05	3.55	20.15	16.60	
Hd	2/9/95	13:44	3.46	20.15	16.69	
Hd	4/24/95	09:53	3.40	20.15	16.75	
Hd	5/17/95	07:30	3.70	20.15	16.45	
Hd	6/20/95	13:35	4.38	20.15	15.77	DtoW increasing
Hd	7/10/95	11:59	4.47	20.15	15.68	
Hd	8/15/95	11:17	5.13	20.15	15.02	
Hd	12/6/95	08:21	3.70	20.15	16.45	
Hd	1/3/96	12:20	3.11	20.15	17.04	
Hd	3/25/96	14:40	3.14	20.15	17.01	
Hd	5/1/96	10:35	2.80	20.15	17.35	
Hd	5/28/96	10:44	3.10	20.15	17.05	
Hd	6/26/96	10:25	3.84	20.15	16.31	
Hd	7/30/96	10:10	4.49	20.15	15.66	

Table C-3

Groundwater Elevations in Deep Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
Hd	9/9/96	10:44	4.94	20.15	15.21	
Hd	11/15/96	10:04	4.04	20.15	16.11	
Hd	1/6/97	11:07	2.28	20.15	17.87	
Hd	3/6/97	09:54	2.65	20.15	17.50	
Hd	4/29/97	15:46	2.67	20.15	17.48	
Hd	5/20/97	15:21	2.75	20.15	17.40	
Hd	6/16/97	10:38	3.05	20.15	17.10	Mislabeled Hs on field sheet due to poor map
Hd	7/7/97	10:04	3.38	20.15	16.77	
Hd	8/4/97	10:12	3.90	20.15	16.25	
Hd	9/16/97	12:38	4.44	20.15	15.71	Mislabeled Hi on field sheet due to poor map
Hd	10/7/97	11:30	3.93	20.15	16.22	Mislabeled Hi on field sheet due to poor map
Hd	11/7/97	10:27	3.59	20.15	16.56	Mislabeled Hi on field sheet due to poor map
Hd	12/8/97	11:09	3.55	20.15	16.60	Mislabeled Hi on field sheet due to poor map
Hd	1/12/98	11:33	2.88	20.15	17.27	Mislabeled Hi on field sheet due to poor map
Hd	2/26/98	13:08	3.12	20.15	17.03	Mislabeled Hi on field sheet due to poor map
Hd	3/9/98	10:30	3.92	20.15	16.23	Mislabeled Hi on field sheet due to poor map
Hd	4/7/98	13:30	3.38	20.15	16.77	Mislabeled Hi on field sheet due to poor map
Hd	5/5/98	12:24	3.80	20.15	16.35	Mislabeled Hi on field sheet due to poor map
Hd	6/8/98	13:23	3.91	20.15	16.24	Mislabeled Hi on field sheet due to poor map
Hd	7/17/98	11:59	4.26	20.15	15.89	Mislabeled Hi on field sheet due to poor map
Hd	8/4/98	14:24	4.45	20.15	15.70	Mislabeled Hi on field sheet due to poor map
Hd	9/8/98	11:40	4.93	20.15	15.22	Mislabeled Hi on field sheet due to poor map
Hd	10/9/98	13:49	5.29	20.15	14.86	Mislabeled Hi on field sheet due to poor map
Hd	11/3/98	11:27	5.07	20.15	15.08	Mislabeled Hi on field sheet due to poor map
Hd	12/8/98	10:47	3.51	20.15	16.64	Mislabeled Hi on field sheet due to poor map
Hd	1/4/99	11:03	2.63	20.15	17.52	Mislabeled Hi on field sheet due to poor map
Hd	2/2/99	12:10	2.28	20.15	17.87	Mislabeled Hi on field sheet due to poor map
Hd	3/8/99	14:51	1.92	20.15	18.23	Mislabeled Hi on field sheet due to poor map
Hd	4/29/99	12:09	3.10	20.15	17.05	
Hd	5/21/99	13:19	3.28	20.15	16.87	Mislabeled Hi on field sheet due to poor map
Hd	6/22/99	10:22	4.02	20.15	16.13	Mislabeled Hi on field sheet due to poor map
Hd	6/24/99	10:33	3.63	20.15	16.52	Mislabeled Hi on field sheet due to poor map
Hd	7/21/99	10:15	3.67	20.15	16.48	Mislabeled Hi on field sheet due to poor map
Hd	8/27/99	11:26	4.15	20.15	16.00	Mislabeled Hi on field sheet due to poor map
Hd	9/14/99	11:41	4.40	20.15	15.75	Mislabeled Hi on field sheet due to poor map
Hd	10/5/99	948	4.57	20.15	15.58	Mislabeled Hi on field sheet due to poor map
Hd	11/15/99	14:20	4.13	20.15	16.02	Mislabeled Hi on field sheet due to poor map
Hd	12/6/99	12:02	3.68	20.15	16.47	Mislabeled Hi on field sheet due to poor map
Hd	1/6/00	11:01	3.20	20.15	16.95	Mislabeled Hi on field sheet due to poor map
Hd	2/14/00	10:41	3.02	20.15	17.13	Mislabeled Hi on field sheet due to poor map
Hd	3/16/00	1247	3.03	20.15	17.12	Mislabeled Hi on field sheet due to poor map
Hd	4/18/00	820	2.84	20.15	17.31	Mislabeled Hi on field sheet due to poor map
Hd	5/11/00	951	3.31	20.15	16.84	Mislabeled Hi on field sheet due to poor map
Hd	6/6/00	1430	4.04	20.15	16.11	Mislabeled Hi on field sheet due to poor map
Hd	7/26/00	1210	4.15	20.15	16.00	Mislabeled Hi on field sheet due to poor map
Hd	8/21/00	1202	4.15	20.15	16.00	Mislabeled Hi on field sheet due to poor map
Hd	9/13/00	1358	5.11	20.15	15.04	Mislabeled Hi on field sheet due to poor map
Hd	10/11/00	1538	5.36	20.15	14.79	Mislabeled Hi on field sheet due to poor map
Hd	11/15/00	1100	4.51	20.15	15.64	Mislabeled Hi on field sheet due to poor map
Hd	12/17/00	948	4.09	20.15	16.06	Mislabeled Hi on field sheet due to poor map

Table C-3

Groundwater Elevations in Deep Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
Hd	1/16/01	1038	3.99	20.15	16.16	Mislabeled Hi on field sheet due to poor map
Hd	2/15/01	954	3.94	20.15	16.21	Mislabeled Hi on field sheet due to poor map
Hd	3/13/01	1211	4.00	20.15	16.15	Mislabeled Hi on field sheet due to poor map
Hd	4/15/01	1403	4.09	20.15	16.06	Mislabeled Hi on field sheet due to poor map
Hd	5/7/01	1051	3.70	20.15	16.45	Mislabeled Hi on field sheet due to poor map
Hd	6/10/01	1154	3.82	20.15	16.33	Mislabeled Hi on field sheet due to poor map
Hd	7/16/01	954	4.13	20.15	16.02	Mislabeled Hi on field sheet due to poor map
Hd	8/14/01	856	4.83	20.15	15.32	Mislabeled Hi on field sheet due to poor map
Hd	9/12/01	905	4.58	20.15	15.57	Mislabeled Hi on field sheet due to poor map
Hd	10/4/01	755	5.88	20.15	14.27	Mislabeled Hi on field sheet due to poor map
Hd	11/9/01	920	5.49	20.15	14.66	Mislabeled Hi on field sheet due to poor map
Hd	12/3/01	1221	3.56	20.15	16.59	Mislabeled Hi on field sheet due to poor map
Hd	1/3/02	1005	3.92	20.15	16.23	Mislabeled Hi on field sheet due to poor map
Hd	2/7/02	1136	4.13	20.15	16.75	
Hd	3/7/02	1205	2.91	20.15	17.24	Mislabeled Hi on field sheet due to poor map
Hd	4/23/02	1533	2.79	20.15	17.36	Mislabeled Hi on field sheet due to poor map
Hd	5/9/02	904	3.00	20.15	17.15	
Hd	7/12/02	800	3.96	20.15	16.19	
Hd	8/21/02	1314	4.33	20.15	15.82	
Hd	9/24/02	1138	4.81	20.15	15.34	
Hd	10/15/02	817	4.72	20.15	15.43	
Hd	11/5/02	1144	4.98	20.15	15.17	
Hd	12/10/02	1242	4.44	20.15	15.71	
Hd	1/17/03	1347	3.86	20.15	16.29	
Hd	2/12/03	1355	3.00	20.15	17.15	
Hd	3/5/03	930	2.95	20.15	17.20	
Hd	4/8/03	1214	2.72	20.15	17.43	
Hd	5/1/03	853	3.10	20.15	17.05	
Hd	6/10/03	1228	3.27	20.15	16.88	
Hd	7/3/03	1412	4.00	20.15	16.15	dropped pencil into well
Hd	8/7/03	1300	4.54	20.15	15.61	
Hd	9/11/03	1025	5.08	20.15	15.07	Mislabeled Hi on field sheet due to poor map
Hd	10/3/03	751	5.08	20.15	15.07	Mislabeled Hi on field sheet due to poor map
HY-11d	7/10/92		8.02	25.03	17.01	
HY-11d	7/20/92	11:50	8.17	25.03	16.86	
HY-11d	7/24/92	11:00	8.37	25.03	16.66	
HY-11d	7/28/92	10:43	8.42	25.03	16.61	
HY-11d	8/4/92	12:49	8.48	25.03	16.55	
HY-11d	8/10/92	12:15	8.63	25.03	16.40	
HY-11d	8/12/92	14:36	8.50	25.03	16.53	
HY-11d	8/19/92	12:42	8.34	25.03	16.69	
HY-11d	8/23/92	11:30	8.91	25.03	16.12	
HY-11d	8/28/92	12:49	8.84	25.03	16.19	
HY-11d	9/1/92	12:17	8.93	25.03	16.10	
HY-11d	9/8/92	11:47	8.99	25.03	16.04	
HY-11d	9/18/92	12:02	9.17	25.03	15.86	
HY-11d	9/29/92	12:25	9.03	25.03	16.00	
HY-11d	10/6/92	11:52	9.52	25.03	15.51	
HY-11d	10/15/92	10:28	9.40	25.03	15.63	
HY-11d	11/3/92	10:09	9.30	25.03	15.73	

Table C-3

Groundwater Elevations in Deep Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HY-11d	11/9/92	14:08	8.93	25.03	16.10	
HY-11d	12/16/92	09:51	7.70	25.03	17.33	
HY-11d	1/5/93	11:14	7.80	25.03	17.23	
HY-11d	2/3/93	11:44	7.17	25.03	17.86	
HY-11d	3/12/93		7.62	25.03	17.41	Needs Expansion Cap.
HY-11d	4/7/93		7.26	25.03	17.77	
HY-11d	5/4/93	11:39	6.94	25.03	18.09	
HY-11d	5/27/93	10:27	7.11	25.03	17.92	
HY-11d	7/6/93		7.70	25.03	17.33	
HY-11d	10/11/93		8.98	25.03	16.05	
HY-11d	12/8/93	13:45	8.22	25.03	16.81	
HY-11d	2/1/94	13:11	7.95	25.03	17.08	
HY-11d	4/14/94	09:04	7.06	25.03	17.97	
HY-11d	6/1/94	12:50	7.99	25.03	17.04	
HY-11d	7/12/94		8.35	25.03	16.68	
HY-11d	10/19/94	14:29	9.51	25.03	15.52	
HY-11d	1/16/95	16:02	7.16	25.03	17.87	
HY-11d	2/9/95	15:28	6.85	25.03	18.18	
HY-11d	4/24/95	12:52	6.78	25.03	18.25	
HY-11d	5/17/95	09:47	7.50	25.03	17.53	
HY-11d	6/20/95	11:27	8.10	25.03	16.93	Depth to water decreasing
HY-11d	7/10/95	14:37	8.74	25.03	16.29	
HY-11d	8/15/95	13:55	8.82	25.03	16.21	
HY-11d	12/6/95	09:10	7.65	25.03	17.38	
HY-11d	1/3/96	16:22	6.33	25.03	18.70	
HY-11d	3/25/96	10:23	6.30	25.03	18.73	
HY-11d	5/1/96	11:30	6.20	25.03	18.83	
HY-11d	5/28/96	12:38	6.55	25.03	18.48	
HY-11d	6/26/96	11:33	7.24	25.03	17.79	
HY-11d	7/30/96	12:01	8.20	25.03	16.83	
HY-11d	9/9/96	12:58	8.74	25.03	16.29	
HY-11d	11/15/96	12:29	7.70	25.03	17.33	Bugs on probe
HY-11d	1/6/97	13:27	5.90	25.03	19.13	
HY-11d	3/6/97	12:16	6.12	25.03	18.91	
HY-11d	4/29/97	17:17	6.18	25.03	18.85	
HY-11d	5/20/97	14:48	6.47	25.03	18.56	
HY-11d	6/16/97	12:41	6.83	25.03	18.20	
HY-11d	7/7/97	12:25	7.12	25.03	17.91	
HY-11d	8/4/97	11:43	7.55	25.03	17.48	
HY-11d	9/16/97	14:13	7.99	25.03	17.04	
HY-11d	10/7/97	11:17	7.62	25.03	17.41	
HY-11d	11/7/97	11:42	7.29	25.03	17.74	
HY-11d	12/8/97	12:40	7.18	25.03	17.85	
HY-11d	1/12/98	13:00	6.32	25.03	18.71	
HY-11d	2/26/98	15:07	6.65	25.03	18.38	
HY-11d	3/9/98	09:07	6.74	25.03	18.29	
HY-11d	4/7/98	14:04	6.90	25.03	18.13	
HY-11d	5/5/98	10:43	7.11	25.03	17.92	
HY-11d	6/8/98	11:34	7.57	25.03	17.46	
HY-11d	7/17/98	10:50	7.98	25.03	17.05	

Table C-3

Groundwater Elevations in Deep Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HY-11d	8/4/98	13:14	8.26	25.03	16.77	
HY-11d	9/8/98	10:22	8.73	25.03	16.30	
HY-11d	10/9/98	12:15	9.12	25.03	15.91	
HY-11d	11/3/98	09:54	9.73	25.03	15.30	
HY-11d	12/8/98	09:42	7.21	25.03	17.82	
HY-11d	1/4/99	10:00	6.22	25.03	18.81	
HY-11d	2/2/99	11:03	5.48	25.03	19.55	
HY-11d	3/8/99	13:43	5.39	25.03	19.64	
HY-11d	4/29/99	16:57	6.68	25.03	18.35	
HY-11d	5/21/99	12:08	6.97	25.03	18.06	
HY-11d	6/22/99	09:29	7.57	25.03	17.46	
HY-11d	6/24/99	09:57	7.25	25.03	17.78	System off
HY-11d	7/21/99	09:42	7.63	25.03	17.40	
HY-11d	8/27/99	10:46	7.87	25.03	17.16	
HY-11d	9/14/99	10:39	8.31	25.03	16.72	
HY-11d	10/5/99	916	8.53	25.03	16.50	
HY-11d	11/15/99	13:33	7.88	25.03	17.15	
HY-11d	12/6/99	11:18	6.58	25.03	18.45	
HY-11d	1/6/00	09:57	6.58	25.03	18.45	
HY-11d	2/14/00	09:57	6.02	25.03	19.01	
HY-11d	3/16/00	1133	6.23	25.03	18.80	
HY-11d	4/11/00	952	6.72	25.03	18.31	
HY-11d	5/11/00	855	7.12	25.03	17.91	
HY-11d	6/6/00	1118	7.99	25.03	17.04	
HY-11d	7/26/00	1132	8.11	25.03	16.92	
HY-11d	8/21/00	1102	8.53	25.03	16.50	
HY-11d	9/13/00	1313	8.78	25.03	16.25	
HY-11d	11/15/00	1004	8.41	25.03	16.62	
HY-11d	12/17/00	900	7.87	25.03	17.16	
HY-11d	1/16/01	1009	7.65	25.03	17.38	
HY-11d	2/15/01	917	7.51	25.03	17.52	
HY-11d	3/13/01	1128	7.01	25.03	18.02	
HY-11d	4/15/01	1326	6.60	25.03	18.43	
HY-11d	5/7/01	1118	7.60	25.03	17.43	
HY-11d	6/10/01	1141	7.80	25.03	17.23	
HY-11d	7/16/01	904	7.90	25.03	17.13	
HY-11d	8/14/01	1014	7.76	25.03	17.27	
HY-11d	9/12/01	1631	10.89	25.03	14.14	
HY-11d	10/4/01	1058	11.14	25.03	13.89	
HY-11d	11/9/01	1110	10.36	25.03	14.67	
HY-11d	12/3/01	1425	5.04	25.03	19.99	
HY-11d	1/3/02	1145	7.85	25.03	17.18	
HY-11d	2/7/02	1320	6.86	25.03	18.17	
HY-11d	3/7/02	1342	6.22	25.03	18.81	
HY-11d	4/23/02	800	6.82	25.03	18.21	
HY-11d	5/9/02	757	6.78	25.03	18.25	
HY-11d	6/19/02	810	7.98	25.03	17.05	
HY-11d	7/12/02	704	8.17	25.03	16.86	
HY-11d	8/21/02	1219	9.49	25.03	15.54	
HY-11d	9/24/02	1036	9.52	25.03	15.51	

Table C-3

Groundwater Elevations in Deep Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HY-11d	10/15/02	704	8.83	25.03	16.20	
HY-11d	11/5/02	1039	9.05	25.03	15.98	
HY-11d	12/10/02	1135	8.56	25.03	16.47	
HY-11d	1/17/03	1503	7.42	25.03	17.61	
HY-11d	2/12/03	1500	6.80	25.03	18.23	
HY-11d	3/5/03	1205	6.94	25.03	18.09	
HY-11d	4/8/03	1000	6.70	25.03	18.33	
HY-11d	5/1/03	1011	6.87	25.03	18.16	
HY-11d	6/10/03	1347	7.10	25.03	17.93	
HY-11d	7/3/03	1244	8.01	25.03	17.02	
HY-11d	8/7/03	1340	8.54	25.03	16.49	
HY-11d	9/11/03	943	9.39	25.03	15.64	
HY-11d	10/3/03	845	10.45	25.03	14.58	
HY-11d	11/11/03	1052	8.21	25.03	16.82	
HY-11d	12/3/03	1400	7.18	25.03	17.85	
HY-11d	1/13/04	1236	6.62	25.03	18.41	
HY-11d	2/17/04	1130	6.67	25.03	18.36	Field book read "67"
HY-11d	3/8/04	1202	6.90	25.03	18.13	
HY-11d	4/12/04	1115	6.81	25.03	18.22	
HY-11d	5/12/04	1340	7.44	25.03	17.59	
HY-11d	6/2/04	925	7.41	25.03	17.62	
HY-11d	7/2/04	700	7.93	25.03	17.10	
HY-11d	8/5/04	800	8.30	25.03	16.73	
HY-11d	9/2/04	900	8.10	25.03	16.93	
HY-11d	10/4/04	715	8.07	25.03	16.96	
HY-11d	11/5/04	800	7.92	25.03	17.11	
HY-11d	12/3/04	1300	7.33	25.03	17.70	
HY-11d	1/19/05	800	6.80	25.03	18.23	
HY-11d	2/18/05	1112	6.56	25.03	18.47	
HY-11d	3/11/05	1239	7.21	25.03	17.82	
HY-11d	4/18/05	1428	6.10	25.03	18.93	
HY-11d	5/3/05	1650	6.70	25.03	18.33	
HY-11d	6/9/05	810	7.10	25.03	17.93	
HY-1d	7/10/92		8.08	25.6	17.52	
HY-1d	7/16/92	12:13	0.75	25.6		Depth to water measurement likely incorrect
HY-1d	7/20/92	11:40	9.10	25.6	16.50	
HY-1d	7/24/92	08:44	9.45	25.6	16.15	
HY-1d	7/28/92	08:54	9.52	25.6	16.08	
HY-1d	8/4/92	11:51	9.50	25.6	16.10	
HY-1d	8/10/92	10:21	9.71	25.6	15.89	
HY-1d	8/12/92	14:20	9.65	25.6	15.95	
HY-1d	8/19/92	09:36	9.80	25.6	15.80	
HY-1d	8/23/92	10:45	10.08	25.6	15.52	
HY-1d	8/28/92	09:22	10.08	25.6	15.52	
HY-1d	9/1/92	09:43	10.07	25.6	15.53	
HY-1d	9/8/92	10:44	10.09	25.6	15.51	
HY-1d	9/18/92	11:11	10.35	25.6	15.25	
HY-1d	9/29/92	13:35	10.16	25.6	15.44	
HY-1d	10/6/92	09:17	10.71	25.6	14.89	
HY-1d	10/15/92	07:49	10.60	25.6	15.00	

Table C-3

Groundwater Elevations in Deep Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HY-1d	11/3/92	10:10	10.59	25.6	15.01	
HY-1d	11/9/92	11:30	10.15	25.6	15.45	
HY-1d	12/16/92	12:59	8.79	25.6	16.81	Security casing is tilted
HY-1d	1/5/93	08:46	8.90	25.6	16.70	
HY-1d	2/3/93	10:58	8.45	25.6	17.15	
HY-1d	3/12/93		8.88	25.6	16.72	
HY-1d	4/7/93		8.55	25.6	17.05	
HY-1d	5/4/93	10:54	8.20	25.6	17.40	Security Casing Slanted
HY-1d	5/27/93	14:06	8.29	25.6	17.31	Need to Cut Grass
HY-1d	7/6/93		8.75	25.6	16.85	
HY-1d	10/11/93		10.18	25.6	15.42	
HY-1d	12/8/93	12:40	9.41	25.6	16.19	
HY-1d	2/1/94	10:21	9.24	25.6	16.36	
HY-1d	4/14/94	10:17	8.37	25.6	17.23	
HY-1d	6/1/94	12:05	9.17	25.6	16.43	
HY-1d	7/12/94		9.49	25.6	16.11	
HY-1d	10/19/94	13:10	10.71	25.6	14.89	
HY-1d	1/16/95	15:28	8.35	25.6	17.25	
HY-1d	2/9/95	14:35	8.12	25.6	17.48	
HY-1d	4/24/95	13:53	7.99	25.6	17.61	
HY-1d	5/17/95	08:15	8.66	25.6	16.94	
HY-1d	6/20/95	11:10	9.64	25.6	15.96	
HY-1d	7/10/95	12:14	9.46	25.6	16.14	
HY-1d	8/15/95	11:41	9.90	25.6	15.70	
HY-1d	12/6/95	08:39	8.38	25.6	17.22	
HY-1d	1/3/96	10:48	7.62	25.6	17.98	
HY-1d	3/25/96	12:01	7.78	25.6	17.82	
HY-1d	5/1/96	10:01	7.49	25.6	18.11	
HY-1d	5/28/96	11:18	7.78	25.6	17.82	
HY-1d	6/26/96	10:01	8.38	25.6	17.22	
HY-1d	7/30/96	12:24	9.36	25.6	16.24	
HY-1d	9/9/96	11:20	9.92	25.6	15.68	
HY-1d	11/15/96	10:56	8.94	25.6	16.66	
HY-1d	1/6/97	11:55	7.20	25.6	18.40	
HY-1d	3/6/97	09:24	7.35	25.6	18.25	
HY-1d	4/29/97	16:23	7.40	25.6	18.20	
HY-1d	5/20/97	16:15	7.64	25.6	17.96	
HY-1d	6/16/97	11:11	7.98	25.6	17.62	
HY-1d	7/7/97	10:44	8.26	25.6	17.34	
HY-1d	8/4/97	10:58	8.71	25.6	16.89	
HY-1d	9/16/97	13:02	9.14	25.6	16.46	
HY-1d	10/7/97	12:17	8.81	25.6	16.79	
HY-1d	11/7/97	11:05	8.52	25.6	17.08	
HY-1d	12/8/97	11:58	8.38	25.6	17.22	
HY-1d	1/12/98	12:17	7.54	25.6	18.06	
HY-1d	2/26/98	13:32	8.89	25.6	16.71	
HY-1d	3/9/98	10:43	7.79	25.6	17.81	
HY-1d	4/7/98	13:52	7.94	25.6	17.66	
HY-1d	5/5/98	13:10	8.33	25.6	17.27	
HY-1d	6/8/98	13:10	8.74	25.6	16.86	

Table C-3

Groundwater Elevations in Deep Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HY-1d	7/17/98	12:42	9.15	25.6	16.45	
HY-1d	8/4/98	14:05	9.40	25.6	16.20	
HY-1d	9/8/98	11:17	9.88	25.6	15.72	
HY-1d	10/9/98	13:16	10.26	25.6	15.34	
HY-1d	11/3/98	10:59	9.91	25.6	15.69	
HY-1d	12/8/98	11:05	8.56	25.6	17.04	
HY-1d	1/4/99	11:24	7.52	25.6	18.08	
HY-1d	2/2/99	12:21	6.80	25.6	18.80	
HY-1d	3/8/99	14:35	6.62	25.6	18.98	
HY-1d	4/29/99	17:23	7.79	25.6	17.81	
HY-1d	5/21/99	11:36	8.14	25.6	17.46	
HY-1d	6/22/99	10:40	8.65	25.6	16.95	
HY-1d	6/24/99	10:16	8.36	25.6	17.24	System off
HY-1d	7/21/99	10:27	8.75	25.6	16.85	
HY-1d	8/27/99	11:36	8.95	25.6	16.65	
HY-1d	9/14/99	11:23	9.41	25.6	16.19	
HY-1d	10/5/99	956	9.61	25.6	15.99	
HY-1d	11/15/99	13:58	9.07	25.6	16.53	
HY-1d	12/6/99	11:43	7.86	25.6	17.74	
HY-1d	1/6/00	10:31	7.85	25.6	17.75	
HY-1d	2/14/00	10:44	7.02	25.6	18.58	
HY-1d	3/16/00	1218	7.48	25.6	18.12	
HY-1d	6/6/00	1143	8.48	25.6	17.12	
HY-1d	7/26/00	1150	8.80	25.6	16.80	
HY-1d	8/21/00	1137	9.03	25.6	16.57	
HY-1d	9/13/00	1342	9.88	25.6	15.72	
HY-1d	10/11/00	1415	10.14	25.6	15.46	
HY-1d	11/15/00	1035	9.51	25.6	16.09	
HY-1d	12/17/00	934	8.89	25.6	16.71	
HY-1d	1/16/01	1005	8.59	25.6	17.01	
HY-1d	2/15/01	900	8.86	25.6	16.74	
HY-1d	3/13/01	1120	8.65	25.6	16.95	
HY-1d	4/15/01	1314	8.44	25.6	17.16	
HY-1d	5/7/01	1112	8.69	25.6	16.91	
HY-1d	6/10/01	1039	9.07	25.6	16.53	
HY-1d	7/16/01	900	9.42	25.6	16.18	
HY-1d	8/14/01	08:35	9.96	25.6	15.64	
HY-1d	9/12/01	840	9.98	25.6	15.62	
HY-1d	10/4/01	717	11.27	25.6	14.33	
HY-1d	11/9/01	853	10.21	25.6	15.39	
HY-1d	12/3/01	1200	8.74	25.6	16.86	
HY-1d	4/23/02	830	7.85	25.6	17.75	
HY-1d	5/9/02	826	7.90	25.6	17.70	
HY-1d	6/19/02	831	8.42	25.6	17.18	
HY-1d	7/12/02	710	8.55	25.6	17.05	
HY-1d	8/21/02	1236	9.47	25.6	16.13	
HY-1d	9/24/02	1047	9.75	25.6	15.85	
HY-1d	10/15/02	710	9.90	25.6	15.70	
HY-1d	11/5/02	1043	10.08	25.6	15.52	
HY-1d	12/10/02	1150	9.45	25.6	16.15	

Table C-3

Groundwater Elevations in Deep Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HY-1d	1/17/03	1417	8.57	25.6	17.03	
HY-1d	2/12/03	1445	7.78	25.6	17.82	
HY-1d	3/5/03	1015	7.82	25.6	17.78	
HY-1d	4/8/03	1010	7.69	25.6	17.91	
HY-1d	5/1/03	801	7.99	25.6	17.61	
HY-1d	6/10/03	1304	8.13	25.6	17.47	
HY-1d	7/3/03	1254	9.11	25.6	16.49	
HY-1d	8/7/03	1225	9.58	25.6	16.02	
HY-1d	9/11/03	1047	10.23	25.6	15.37	
HY-1d	10/3/03	817	10.21	25.6	15.39	
HY-1d	11/11/03	1130	9.38	25.6	16.22	
HY-1d	12/3/03	833	8.61	25.6	16.99	
HY-1d	1/13/04	1038	7.90	25.6	17.70	
HY-1d	2/17/04	1140	7.27	25.6	18.33	
HY-1d	3/8/04	1122	7.82	25.6	17.78	
HY-1d	4/12/04	1359	7.81	25.6	17.79	
HY-1d	5/12/04	1420	8.47	25.6	17.13	
HY-1d	6/2/04	1500	8.50	25.6	17.10	
HY-1d	7/2/04	715	8.79	25.6	16.81	
HY-1d	8/5/04	1100	9.34	25.6	16.26	
HY-1d	9/2/04	905	9.06	25.6	16.54	
HY-1d	10/4/04	1130	9.16	25.6	16.44	
HY-1d	11/5/04	1324	9.07	25.6	16.53	
HY-1d	12/3/04	1400	8.48	25.6	17.12	
HY-1d	1/19/05	811	7.94	25.6	17.66	
HY-1d	2/18/05	1208	7.70	25.6	17.90	
HY-1d	3/11/05	1254	8.29	25.6	17.31	
HY-1d	4/18/05	1412	7.94	25.6	17.66	
HY-1d	5/3/05	1615	7.81	25.6	17.79	
HY-1d	6/9/05	855	8.15	25.6	17.45	
HYCP-1d	7/10/92		5.20	21.27	16.07	
HYCP-1d	7/16/92	11:35	5.32	21.27	15.95	
HYCP-1d	7/20/92	12:35	5.33	21.27	15.94	
HYCP-1d	7/24/92	07:46	5.55	21.27	15.72	
HYCP-1d	7/28/92	08:16	5.57	21.27	15.70	
HYCP-1d	8/4/92	11:09	5.90	21.27	15.37	
HYCP-1d	8/10/92	09:42	5.88	21.27	15.39	
HYCP-1d	8/12/92	11:05	5.73	21.27	15.54	
HYCP-1d	8/19/92	10:31	6.00	21.27	15.27	
HYCP-1d	8/23/92	09:56	6.23	21.27	15.04	
HYCP-1d	8/28/92	09:58	6.24	21.27	15.03	
HYCP-1d	9/1/92	10:32	6.26	21.27	15.01	
HYCP-1d	9/8/92	09:40	6.25	21.27	15.02	
HYCP-1d	9/18/92	10:23	6.54	21.27	14.73	
HYCP-1d	9/29/92	13:07	6.35	21.27	14.92	
HYCP-1d	10/6/92	09:52	6.84	21.27	14.43	
HYCP-1d	10/15/92	08:26	6.75	21.27	14.52	
HYCP-1d	11/3/92	09:43	6.70	21.27	14.57	
HYCP-1d	11/9/92	09:48	6.34	21.27	14.93	
HYCP-1d	12/16/92	10:57	5.16	21.27	16.11	

Table C-3

Groundwater Elevations in Deep Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HYCP-1d	1/5/93	09:15	5.28	21.27	15.99	
HYCP-1d	2/3/93	10:20	4.71	21.27	16.56	
HYCP-1d	3/12/93		5.10	21.27	16.17	
HYCP-1d	4/7/93		4.83	21.27	16.44	
HYCP-1d	5/4/93	09:47	4.50	21.27	16.77	
HYCP-1d	5/27/93	13:39	4.53	21.27	16.74	
HYCP-1d	7/6/93		5.25	21.27	16.02	
HYCP-1d	10/11/93		6.56	21.27	14.71	
HYCP-1d	12/8/93	11:38	5.67	21.27	15.60	
HYCP-1d	2/1/94	09:22	5.60	21.27	15.67	
HYCP-1d	4/14/94	09:15	4.55	21.27	16.72	
HYCP-1d	6/1/94		5.16	21.27	16.11	
HYCP-1d	7/12/94		7.69	21.27	13.58	
HYCP-1d	10/19/94	13:27	6.88	21.27	14.39	
HYCP-1d	1/16/95	14:54	4.67	21.27	16.60	
HYCP-1d	2/9/95	13:57	4.44	21.27	16.83	
HYCP-1d	4/24/95	09:41	4.37	21.27	16.90	
HYCP-1d	5/17/95	07:20	4.98	21.27	16.29	
HYCP-1d	6/20/95	11:48	5.48	21.27	15.79	
HYCP-1d	7/10/95	11:51	5.67	21.27	15.60	
HYCP-1d	8/15/95	10:53	6.10	21.27	15.17	
HYCP-1d	12/6/95	08:01	4.62	21.27	16.65	
HYCP-1d	1/3/96	11:28	3.92	21.27	17.35	
HYCP-1d	3/25/96	14:30	4.06	21.27	17.21	
HYCP-1d	5/1/96	10:26	3.74	21.27	17.53	
HYCP-1d	5/28/96	10:57	4.04	21.27	17.23	
HYCP-1d	6/26/96	10:53	4.62	21.27	16.65	
HYCP-1d	7/30/96	10:27	5.54	21.27	15.73	
HYCP-1d	9/9/96	10:59	6.00	21.27	15.27	
HYCP-1d	11/15/96	10:16	5.05	21.27	16.22	
HYCP-1d	1/6/97	11:21	3.26	21.27	18.01	
HYCP-1d	3/6/97	09:45	3.59	21.27	17.68	
HYCP-1d	4/29/97	15:36	3.65	21.27	17.62	
HYCP-1d	5/20/97	15:22	3.91	21.27	17.36	
HYCP-1d	6/16/97	10:51	4.20	21.27	17.07	
HYCP-1d	7/7/97	11:10	4.43	21.27	16.84	
HYCP-1d	8/4/97	10:31	4.87	21.27	16.40	
HYCP-1d	9/16/97	12:31	5.26	21.27	16.01	
HYCP-1d	10/7/97	11:44	4.87	21.27	16.40	
HYCP-1d	11/7/97	10:40	4.61	21.27	16.66	
HYCP-1d	12/8/97	11:20	4.58	21.27	16.69	
HYCP-1d	1/12/98	11:39	3.83	21.27	17.44	
HYCP-1d	2/26/98	12:46	4.13	21.27	17.14	
HYCP-1d	3/9/98	10:20	4.00	21.27	17.27	
HYCP-1d	4/7/98	13:22	4.16	21.27	17.11	
HYCP-1d	5/5/98	12:10	4.57	21.27	16.70	
HYCP-1d	6/8/98	12:30	4.92	21.27	16.35	
HYCP-1d	7/17/98	11:37	5.30	21.27	15.97	
HYCP-1d	8/4/98	13:44	5.55	21.27	15.72	
HYCP-1d	9/8/98	10:55	5.99	21.27	15.28	

Table C-3

Groundwater Elevations in Deep Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HYCP-1d	10/9/98	13:46	6.30	21.27	14.97	HYCP-1i/1d DtoW levels corrected for field switch
HYCP-1d	11/3/98	11:41	5.98	21.27	15.29	
HYCP-1d	12/8/98	10:33	4.61	21.27	16.66	
HYCP-1d	1/4/99	10:49	3.67	21.27	17.60	
HYCP-1d	2/2/99	11:59	2.96	21.27	18.31	
HYCP-1d	3/8/99	14:23	2.82	21.27	18.45	
HYCP-1d	4/29/99	17:08	3.99	21.27	17.28	
HYCP-1d	5/21/99	13:00	4.26	21.27	17.01	
HYCP-1d	6/22/99	10:15	4.76	21.27	16.51	
HYCP-1d	6/24/99	10:26	4.44	21.27	16.83	System off
HYCP-1d	7/21/99	10:05	4.82	21.27	16.45	
HYCP-1d	8/27/99	11:18	5.02	21.27	16.25	
HYCP-1d	9/14/99	11:12	5.44	21.27	15.83	
HYCP-1d	10/5/99	943	5.65	21.27	15.62	
HYCP-1d	11/15/99	14:09	5.05	21.27	16.22	
HYCP-1d	12/6/99	11:52	4.54	21.27	16.73	
HYCP-1d	1/6/00	10:56	6.27	21.27	15.00	
HYCP-1d	2/14/00	10:35	3.95	21.27	17.32	
HYCP-1d	3/16/00	1226	3.63	21.27	17.64	
HYCP-1d	4/11/00	1022	4.04	21.27	17.23	
HYCP-1d	5/11/00	940	4.31	21.27	16.96	
HYCP-1d	6/6/00	1152	5.55	21.27	15.72	
HYCP-1d	7/26/00	1206	5.82	21.27	15.45	
HYCP-1d	8/21/00	1127	5.75	21.27	15.52	
HYCP-1d	1/16/01	1136	5.28	21.27	15.99	
HYCP-1d	2/15/01	953	4.86	21.27	16.41	
HYCP-1d	3/13/01	1151	4.71	21.27	16.56	
HYCP-1d	4/15/01	1341	4.53	21.27	16.74	
HYCP-1d	5/7/01	1101	4.76	21.27	16.51	
HYCP-1d	6/10/01	1123	5.91	21.27	15.36	
HYCP-1d	7/16/01	859	4.88	21.27	16.39	
HYCP-1d	8/14/01	846	6.92	21.27	14.35	
HYCP-1d	9/12/01	808	5.95	21.27	15.32	
HYCP-1d	10/4/01	730	7.21	21.27	14.06	
HYCP-1d	11/9/01	910	6.45	21.27	14.82	
HYCP-1d	12/3/01	1213	4.80	21.27	16.47	
HYCP-1d	1/3/02	957	5.14	21.27	16.13	
HYCP-1d	2/7/02	1126	3.55	21.27	17.72	
HYCP-1d	3/7/02	1156	3.71	21.27	17.56	
HYCP-1d	4/23/02	900	3.96	21.27	17.31	
HYCP-1d	5/9/02	849	4.07	21.27	17.20	
HYCP-1d	6/19/02	909	4.68	21.27	16.59	
HYCP-1d	7/12/02	735	4.97	21.27	16.30	
HYCP-1d	8/21/02	1301	5.55	21.27	15.72	
HYCP-1d	9/24/02	1125	5.89	21.27	15.38	
HYCP-1d	10/15/02	737	5.90	21.27	15.37	
HYCP-1d	11/5/02	1115	6.04	21.27	15.23	
HYCP-1d	12/10/02	1218	5.44	21.27	15.83	
HYCP-1d	1/17/03	1355	4.57	21.27	16.70	
HYCP-1d	2/12/03	1413	3.90	21.27	17.37	

Table C-3

Groundwater Elevations in Deep Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HYCP-1d	3/5/03	952	3.91	21.27	17.36	
HYCP-1d	4/8/03	1040	3.80	21.27	17.47	
HYCP-1d	5/1/03	814	4.12	21.27	17.15	
HYCP-1d	6/10/03	1238	4.22	21.27	17.05	
HYCP-1d	7/3/03	1312	5.15	21.27	16.12	
HYCP-1d	8/7/03	1245	5.60	21.27	15.67	
HYCP-1d	9/11/03	1032	6.17	21.27	15.10	
HYCP-1d	10/3/03	801	6.15	21.27	15.12	
HYCP-1d	11/11/03	1155	5.41	21.27	15.86	
HYCP-1d	12/3/03	847	4.61	21.27	16.66	
HYCP-1d	1/13/04	1102	3.94	21.27	17.33	
HYCP-1d	2/17/04	1217	3.39	21.27	17.88	
HYCP-1d	3/8/04	1133	3.91	21.27	17.36	
HYCP-1d	4/12/04	1322	4.05	21.27	17.22	
HYCP-1d	5/12/04	1442	4.55	21.27	16.72	
HYCP-1d	6/2/04	1550	4.46	21.27	16.81	
HYCP-1d	7/2/04	1316	4.80	21.27	16.47	
HYCP-1d	8/5/04	1149	5.37	21.27	15.90	
HYCP-1d	9/2/04	1005	5.15	21.27	16.12	
HYCP-1d	10/4/04	1020	5.11	21.27	16.16	
HYCP-1d	11/5/04	1135	5.00	21.27	16.27	
HYCP-1d	12/3/04	1422	4.55	21.27	16.72	
HYCP-1d	1/19/05	851	3.90	21.27	17.37	
HYCP-1d	2/18/05	1236	3.82	21.27	17.45	
HYCP-1d	3/11/05	1339	4.40	21.27	16.87	
HYCP-1d	4/18/05	1341	3.91	21.27	17.36	
HYCP-1d	5/3/05	1445	3.95	21.27	17.32	
HYCP-1d	6/9/05	1000	4.28	21.27	16.99	
HYO-1	7/10/92		5.10	21.13	16.03	
HYO-1	7/16/92	11:50	5.25	21.13	15.88	
HYO-1	7/20/92	12:45	5.30	21.13	15.83	
HYO-1	7/24/92	07:52	5.46	21.13	15.67	
HYO-1	7/28/92	08:17	5.51	21.13	15.62	
HYO-1	8/4/92	11:16	5.54	21.13	15.59	
HYO-1	8/10/92	09:45	5.91	21.13	15.22	
HYO-1	8/12/92	11:11	5.75	21.13	15.38	
HYO-1	8/19/92	10:35	5.97	21.13	15.16	
HYO-1	8/23/92	09:58	6.24	21.13	14.89	
HYO-1	8/28/92	10:00	6.22	21.13	14.91	
HYO-1	9/1/92	10:26	6.24	21.13	14.89	
HYO-1	9/8/92	09:44	6.27	21.13	14.86	
HYO-1	9/18/92	10:22	6.59	21.13	14.54	
HYO-1	9/29/92	13:00	6.35	21.13	14.78	
HYO-1	10/6/92	09:55	6.82	21.13	14.31	
HYO-1	10/15/92	08:28	6.68	21.13	14.45	
HYO-1	11/3/92	09:41	6.62	21.13	14.51	
HYO-1	11/9/92	10:21	6.22	21.13	14.91	
HYO-1	12/16/92	10:51	5.17	21.13	15.96	
HYO-1	2/3/93	10:17	4.67	21.13	16.46	
HYO-1	3/12/93		5.12	21.13	16.01	

Table C-3

Groundwater Elevations in Deep Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HYO-1	4/7/93		4.83	21.13	16.30	
HYO-1	5/4/93	09:50	4.48	21.13	16.65	
HYO-1	5/27/93	14:34	4.58	21.13	16.55	Need to Cut Grass
HYO-1	7/6/93		5.13	21.13	16.00	
HYO-1	10/11/93		6.46	21.13	14.67	
HYO-1	12/8/93	11:30	5.72	21.13	15.41	
HYO-1	2/1/94	09:23	5.52	21.13	15.61	
HYO-1	4/14/94	10:10	4.61	21.13	16.52	
HYO-1	6/1/94		5.16	21.13	15.97	
HYO-1	7/12/94		5.75	21.13	15.38	
HYO-1	10/19/94	13:30	6.12	21.13	15.01	
HYO-1	1/16/95	14:56	4.62	21.13	16.51	
HYO-1	2/9/95	13:56	4.44	21.13	16.69	
HYO-1	4/24/95	09:40	4.27	21.13	16.86	
HYO-1	5/17/95	07:27	4.86	21.13	16.27	
HYO-1	6/20/95	14:47	5.36	21.13	15.77	TWO ENTRIES IN FIELD NOTES
HYO-1	7/10/95	11:54	5.55	21.13	15.58	
HYO-1	8/15/95	10:56	6.09	21.13	15.04	
HYO-1	12/6/95	08:03	4.47	21.13	16.66	
HYO-1	1/3/96	16:40	3.81	21.13	17.32	
HYO-1	3/25/96	14:32	3.91	21.13	17.22	
HYO-1	5/1/96	10:30	3.59	21.13	17.54	
HYO-1	5/28/96	10:56	4.89	21.13	16.24	
HYO-1	6/26/96	10:50	4.49	21.13	16.64	
HYO-1	7/30/96	10:26	5.40	21.13	15.73	
HYO-1	9/9/96	10:57	5.98	21.13	15.15	
HYO-1	11/15/96	10:19	5.10	21.13	16.03	
HYO-1	1/6/97	11:23	3.18	21.13	17.95	
HYO-1	3/6/97	09:46	3.50	21.13	17.63	
HYO-1	4/29/97	16:00	3.56	21.13	17.57	
HYO-1	5/20/97	15:44	3.84	21.13	17.29	
HYO-1	6/16/97	11:53	4.11	21.13	17.02	
HYO-1	7/7/97	11:08	4.37	21.13	16.76	
HYO-1	8/4/97	10:33	4.82	21.13	16.31	
HYO-1	9/16/97	12:35	5.23	21.13	15.90	
HYO-1	10/7/97	11:46	4.80	21.13	16.33	
HYO-1	11/7/97	10:42	4.29	21.13	16.84	
HYO-1	12/8/97	11:22	4.30	21.13	16.83	
HYO-1	1/12/98	11:41	3.78	21.13	17.35	
HYO-1	2/26/98	12:48	3.95	21.13	17.18	
HYO-1	3/9/98	10:20	3.84	21.13	17.29	
HYO-1	4/7/98	13:23	3.99	21.13	17.14	
HYO-1	5/5/98	12:13	4.41	21.13	16.72	
HYO-1	6/8/98	12:38	4.78	21.13	16.35	
HYO-1	7/17/98	11:43	5.20	21.13	15.93	
HYO-1	8/4/98	13:50	5.44	21.13	15.69	
HYO-1	9/8/98	10:59	5.97	21.13	15.16	
HYO-1	10/9/98	13:45	6.27	21.13	14.86	
HYO-1	11/3/98	11:40	5.96	21.13	15.17	
HYO-1	12/8/98	10:36	4.25	21.13	16.88	

Table C-3

Groundwater Elevations in Deep Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HYO-1	1/4/99	10:54	3.52	21.13	17.61	
HYO-1	2/2/99	12:01	2.84	21.13	18.29	
HYO-1	3/8/99	14:19	2.70	21.13	18.43	
HYO-1	4/29/99	17:09	3.25	21.13	17.88	
HYO-1	5/21/99	13:03	4.12	21.13	17.01	
HYO-1	6/22/99	10:16	4.66	21.13	16.47	
HYO-1	6/24/99	10:27	4.37	21.13	16.76	System off
HYO-1	7/21/99	10:06	4.73	21.13	16.40	
HYO-1	8/27/99	11:19	5.07	21.13	16.06	
HYO-1	9/14/99	11:14	5.46	21.13	15.67	
HYO-1	10/5/99	944	5.68	21.13	15.45	
HYO-1	11/15/99	14:12	5.07	21.13	16.06	
HYO-1	12/6/99	11:53	3.96	21.13	17.17	
HYO-1	1/6/00	10:57	3.92	21.13	17.21	
HYO-1	2/14/00	10:36	3.80	21.13	17.33	
HYO-1	3/16/00	1228	3.48	21.13	17.65	
HYO-1	4/11/00	1024	3.95	21.13	17.18	
HYO-1	5/11/00	945	4.14	21.13	16.99	
HYO-1	6/6/00	1155	5.00	21.13	16.13	
HYO-1	7/26/00	1207	5.17	21.13	15.96	
HYO-1	8/21/00	1128	5.85	21.13	15.28	
HYO-1	9/13/00	1335	5.89	21.13	15.24	
HYO-1	10/11/00	1542	6.03	21.13	15.10	
HYO-1	11/15/00	1052	5.47	21.13	15.66	
HYO-1	12/17/00	945	5.01	21.13	16.12	
HYO-1	1/16/01	1034	5.20	21.13	15.93	
HYO-1	2/15/01	940	4.79	21.13	16.34	
HYO-1	3/13/01	1152	4.22	21.13	16.91	
HYO-1	4/15/01	1342	3.99	21.13	17.14	
HYO-1	5/7/01	1104	4.60	21.13	16.53	
HYO-1	6/10/01	1110	4.91	21.13	16.22	
HYO-1	7/16/01	850	5.31	21.13	15.82	
HYO-1	8/14/01	846	5.83	21.13	15.30	
HYO-1	9/12/01	811	5.86	21.13	15.27	
HYO-1	10/4/01	730	7.13	21.13	14.00	
HYO-1	11/9/01	914	6.12	21.13	15.01	
HYO-1	11/9/01	914	6.12	21.13	15.01	
HYO-1	12/3/01	1214	4.53	21.13	16.60	
HYO-1	3/7/02	1157	3.44	21.13	17.69	
HYO-1	4/23/02	905	3.81	21.13	17.32	
HYO-1	5/9/02	853	3.91	21.13	17.22	
HYO-1	6/19/02	914	4.52	21.13	16.61	
HYO-1	8/21/02	1304	5.42	21.13	15.71	
HYO-1	9/24/02	1128	5.84	21.13	15.29	
HYO-1	10/15/02	740	5.88	21.13	15.25	
HYO-1	12/10/02	1222	5.49	21.13	15.64	
HYO-1	1/17/03	1352	4.67	21.13	16.46	
HYO-1	2/12/03	1408	3.94	21.13	17.19	
HYO-1	3/5/03	948	3.80	21.13	17.33	
HYO-1	4/8/03	1044	4.67	21.13	16.46	

Table C-3

Groundwater Elevations in Deep Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
HYO-1	5/1/03	815	3.98	21.13	17.15	
HYO-1	7/3/03	1310	5.01	21.13	16.12	
HYO-1	8/7/03	1250	5.51	21.13	15.62	
HYO-1	9/11/03	1031	6.15	21.13	14.98	
HYO-1	10/3/03	802	6.12	21.13	15.01	Mislabeled HYO-2 in field book
HYO-1	11/11/03	1202	5.40	21.13	15.73	
HYO-1	12/3/03	851	4.52	21.13	16.61	
HYO-1	1/13/04	1106	3.77	21.13	17.36	
HYO-1	2/17/04	1220	3.22	21.13	17.91	
HYO-1	3/8/04	1139	3.75	21.13	17.38	
HYO-1	4/12/04	1317	3.92	21.13	17.21	
HYO-1	5/12/04	1451	4.38	21.13	16.75	
HYO-1	6/2/04	1540	4.31	21.13	16.82	
HYO-1	7/2/04	1320	4.68	21.13	16.45	
HYO-1	8/5/04	1151	5.21	21.13	15.92	
HYO-1	9/2/04	1010	5.15	21.13	15.98	
HYO-1	10/4/04	1025	5.07	21.13	16.06	
HYO-1	11/5/04	1144	4.94	21.13	16.19	
HYO-1	12/3/04	1428	4.40	21.13	16.73	
HYO-1	1/19/05	856	3.77	21.13	17.36	
HYO-1	2/18/05	1239	3.70	21.13	17.43	
HYO-1	3/11/05	1408	4.20	21.13	16.93	
HYO-1	4/18/05	1343	3.78	21.13	17.35	
HYO-1	5/3/05	1450	3.79	21.13	17.34	
HYO-1	6/9/05	1005	4.10	21.13	17.03	
I	7/10/92		7.86	24.14	16.28	
I	7/16/92	12:02	8.00	24.14	16.14	
I	7/20/92	11:35	7.96	24.14	16.18	
I	7/24/92	08:50	8.20	24.14	15.94	
I	7/28/92	08:58	8.22	24.14	15.92	
I	8/4/92	11:40	8.43	24.14	15.71	
I	8/10/92	10:26	8.52	24.14	15.62	
I	8/12/92	14:10	8.33	24.14	15.81	
I	8/19/92	09:28	8.63	24.14	15.51	
I	8/23/92	10:48	8.82	24.14	15.32	
I	8/28/92	09:15	8.86	24.14	15.28	
I	9/1/92	09:40	8.85	24.14	15.29	
I	9/8/92	10:36	8.84	24.14	15.30	
I	9/18/92	11:05	9.15	24.14	14.99	
I	9/29/92	13:30	9.96	24.14	14.18	
I	10/6/92	09:45	9.47	24.14	14.67	
I	10/15/92	07:42	9.38	24.14	14.76	
I	11/3/92	10:03	9.36	24.14	14.78	
I	11/9/92	11:37	8.93	24.14	15.21	
I	12/16/92	12:53	7.75	24.14	16.39	
I	1/5/93	08:40	7.89	24.14	16.25	
I	2/3/93	10:52	7.27	24.14	16.87	
I	3/12/93		7.66	24.14	16.48	
I	4/7/93		7.29	24.14	16.85	
I	5/4/93	10:43	7.02	24.14	17.12	

Table C-3

Groundwater Elevations in Deep Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
I	5/27/93	14:08	7.07	24.14	17.07	
I	7/6/93		7.60	24.14	16.54	
I	10/11/93		8.95	24.14	15.19	
I	12/8/93	12:28	8.25	24.14	15.89	
I	2/1/94	10:29	8.07	24.14	16.07	
I	4/14/94	10:15	7.19	24.14	16.95	
I	6/1/94	12:00	8.00	24.14	16.14	
I	7/12/94		8.41	24.14	15.73	
I	10/19/94	13:15	9.67	24.14	14.47	
I	1/16/95	15:32	5.92	24.14	18.22	
I	2/9/95	14:44	6.72	24.14	17.42	
I	4/24/95	13:56	6.63	24.14	17.51	
I	5/17/95	08:00	7.76	24.14	16.38	
I	6/20/95	11:19	8.20	24.14	15.94	
I	7/10/95	12:21	8.22	24.14	15.92	
I	8/15/95	11:47	8.95	24.14	15.19	
I	12/6/95	08:42	6.10	24.14	18.04	
I	3/25/96	12:05	6.40	24.14	17.74	
I	5/1/96	10:26	5.32	24.14	18.82	
I	5/28/96	11:23	6.22	24.14	17.92	
I	6/26/96	10:07	7.46	24.14	16.68	
I	7/30/96	12:30	8.32	24.14	15.82	
I	9/9/96	11:23	8.83	24.14	15.31	
I	11/15/96	11:01	6.53	24.14	17.61	
I	1/6/97	12:03	4.36	24.14	19.78	
I	3/6/97	09:30	4.32	24.14	19.82	
I	4/29/97	16:30	5.19	24.14	18.95	
I	5/20/97	16:19	6.72	24.14	17.42	
I	6/16/97	10:16	6.99	24.14	17.15	
I	7/7/97	10:52	6.51	24.14	17.63	
I	8/4/97	11:02	7.61	24.14	16.53	
I	9/16/97	13:05	8.05	24.14	16.09	
I	10/7/97	12:23	5.04	24.14	19.10	
I	11/7/97	11:08	4.49	24.14	19.65	
I	12/8/97	12:05	7.26	24.14	16.88	
I	1/12/98	12:22	6.36	24.14	17.78	
I	2/26/98	13:41	6.24	24.14	17.90	
I	3/9/98	10:48	5.93	24.14	18.21	
I	4/7/98	13:56	7.11	24.14	17.03	
I	5/5/98	13:02	7.49	24.14	16.65	
I	6/8/98	12:48	7.78	24.14	16.36	
I	7/17/98	12:44	8.17	24.14	15.97	
I	8/4/98	14:09	8.44	24.14	15.70	
I	9/8/98	11:22	8.83	24.14	15.31	
I	10/9/98	13:11	9.11	24.14	15.03	
I	11/3/98	10:55	8.77	24.14	15.37	
I	12/8/98	11:01	6.49	24.14	17.65	
I	1/4/99	11:19	5.72	24.14	18.42	
I	2/2/99	12:18	4.07	24.14	20.07	
I	3/8/99	14:39	5.15	24.14	18.99	

Table C-3

Groundwater Elevations in Deep Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
I	4/29/99	17:28	6.78	24.14	17.36	
I	5/21/99	11:45	6.68	24.14	17.46	
I	6/22/99	10:37	7.57	24.14	16.57	
I	6/24/99	10:13	7.21	24.14	16.93	System off
I	7/21/99	10:24	7.57	24.14	16.57	
I	8/27/99	11:33	7.94	24.14	16.20	
I	9/14/99	11:20	8.35	24.14	15.79	
I	10/5/99	954	8.54	24.14	15.60	
I	11/15/99	13:55	7.25	24.14	16.89	
I	12/6/99	11:40	5.01	24.14	19.13	
I	1/6/00	10:22	6.43	24.14	17.71	
I	2/14/00	10:41	5.97	24.14	18.17	
I	3/16/00	1214	4.92	24.14	19.22	
I	4/11/00	1029	6.87	24.14	17.27	
I	5/11/00	848	6.68	24.14	17.46	
I	6/6/00	1140	7.18	24.14	16.96	
I	7/26/00	1147	7.44	24.14	16.70	
I	8/21/00	1104	7.80	24.14	16.34	
I	9/13/00	1317	10.02	24.14	14.12	
I	11/15/00	1042	8.51	24.14	15.63	
I	12/17/00	939	7.88	24.14	16.26	
I	1/16/01	1026	7.66	24.14	16.48	
I	2/15/01	910	7.53	24.14	16.61	
I	3/13/01	1137	7.20	24.14	16.94	
I	4/15/01	1330	6.73	24.14	17.41	
I	5/7/01	1114	7.45	24.14	16.69	
I	6/10/01	1045	5.65	24.14	18.49	
I	7/16/01	1024	6.95	24.14	17.19	
I	8/14/01	838	8.71	24.14	15.43	
I	9/12/01	846	8.77	24.14	15.37	
I	10/4/01	720	10.02	24.14	14.12	
I	11/9/01	902	9.27	24.14	14.87	
I	12/3/01	1206	5.93	24.14	18.21	
I	1/3/02	949	7.40	24.14	16.74	
I	2/7/02	1119	5.76	24.14	18.38	
I	3/7/02	1149	6.23	24.14	17.91	
I	5/1/03	806	6.72	24.14	17.42	
I	6/10/03	1309	6.95	24.14	17.19	
I	7/3/03	1338	7.84	24.14	16.30	
I	8/7/03	1233	8.37	24.14	15.77	
I	9/11/03	1051	8.92	24.14	15.22	
I	10/3/03	822	8.42	24.14	15.72	
I	11/11/03	1122	8.05	24.14	16.09	
I	12/3/03	842	7.03	24.14	17.11	
I	1/13/04	1050	6.15	24.14	17.99	
I	2/17/04	1152	5.17	24.14	18.97	
I	3/8/04	1130	5.07	24.14	19.07	
I	4/12/04	1350	6.76	24.14	17.38	
I	5/12/04	1431	7.16	24.14	16.98	
I	6/2/04	1510	6.10	24.14	18.04	

Table C-3

Groundwater Elevations in Deep Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
I	7/2/04	728	7.59	24.14	16.55	
I	8/5/04	1112	8.14	24.14	16.00	
I	9/2/04	920	7.57	24.14	16.57	
I	10/4/04	1135	7.87	24.14	16.27	
I	11/5/04	1335	6.85	24.14	17.29	
I	12/3/04	1410	6.36	24.14	17.78	
I	1/19/05	819	4.20	24.14	19.94	
I	2/18/05	1215	6.78	24.14	17.36	
I	3/11/05	1424	7.25	24.14	16.89	
I	4/18/05	1415	6.04	24.14	18.10	
I	5/3/05	1630	6.40	24.14	17.74	
I	6/9/05	910	7.08	24.14	17.06	
J	7/20/92	13:20	7.88	27.06	19.18	
J	7/24/92	11:22	8.03	27.06	19.03	
J	7/28/92	10:32	8.10	27.06	18.96	
J	8/4/92	12:17	8.08	27.06	18.98	
J	8/10/92	12:10	8.26	27.06	18.80	
J	8/12/92	15:10	8.11	27.06	18.95	
J	8/19/92	10:46	8.32	27.06	18.74	
J	8/23/92	13:06	8.55	27.06	18.51	
J	8/28/92	10:40	8.58	27.06	18.48	
J	9/1/92	12:43	8.60	27.06	18.46	
J	9/8/92	11:02	8.58	27.06	18.48	
J	9/18/92	11:27	8.70	27.06	18.36	
J	9/29/92	13:55	8.69	27.06	18.37	
J	10/6/92	10:31	9.18	27.06	17.88	
J	10/15/92	09:06	9.07	27.06	17.99	
J	11/3/92	10:27	9.04	27.06	18.02	
J	11/9/92	11:43	8.64	27.06	18.42	
J	12/16/92	11:18	7.30	27.06	19.76	
J	1/5/93	10:48	7.44	27.06	19.62	
J	2/3/93	11:20	6.85	27.06	20.21	
J	3/12/93		7.28	27.06	19.78	
J	4/7/93		6.90	27.06	20.16	
J	5/4/93	11:20	6.59	27.06	20.47	
J	5/27/93	13:01	6.76	27.06	20.30	
J	7/6/93		7.19	27.06	19.87	
J	10/11/93		8.60	27.06	18.46	
J	12/8/93	13:07	7.82	27.06	19.24	
J	2/1/94	10:35	7.58	27.06	19.48	
J	4/14/94	10:40	6.79	27.06	20.27	
J	6/1/94	12:40	7.62	27.06	19.44	
J	7/12/94		8.00	27.06	19.06	
J	10/19/94	14:01	9.21	27.06	17.85	
J	1/16/95	15:38	6.70	27.06	20.36	
J	2/9/95	14:58	6.57	27.06	20.49	
J	4/24/95	13:27	6.44	27.06	20.62	
J	5/17/95	08:55	7.10	27.06	19.96	
J	6/20/95	13:08	10.64	27.06	16.42	
J	7/10/95	14:20	7.91	27.06	19.15	

Table C-3

Groundwater Elevations in Deep Monitoring Wells at and near Parcel G BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
J	8/15/95	12:08	8.47	27.06	18.59	
J	12/6/95	08:48	6.80	27.06	20.26	
J	1/3/96	16:55	5.98	27.06	21.08	
J	3/25/96	14:20	6.16	27.06	20.90	
J	5/1/96	11:13	5.96	27.06	21.10	
J	5/28/96	14:49	6.35	27.06	20.71	
J	6/26/96	11:20	6.57	27.06	20.49	
J	7/30/96	12:37	7.87	27.06	19.19	
J	9/9/96	11:38	8.44	27.06	18.62	
J	11/15/96	11:11	7.41	27.06	19.65	
J	1/6/97	12:12	5.66	27.06	21.40	
J	3/6/97	11:57	5.78	27.06	21.28	
J	4/29/97	16:55	5.88	27.06	21.18	
J	5/20/97	16:29	6.14	27.06	20.92	
J	6/16/97	11:28	6.47	27.06	20.59	
J	7/7/97	11:29	6.79	27.06	20.27	
J	8/4/97	11:13	7.21	27.06	19.85	
J	9/16/97	13:11	7.66	27.06	19.40	
J	10/7/97	12:31	7.31	27.06	19.75	
J	11/7/97	11:14	7.00	27.06	20.06	
J	12/8/97	12:10	6.85	27.06	20.21	
J	1/12/98	12:29	6.03	27.06	21.03	
J	2/26/98	14:01	6.35	27.06	20.71	
J	3/9/98	08:55	6.30	27.06	20.76	
J	4/7/98	12:48	6.43	27.06	20.63	
J	5/5/98	10:28	6.83	27.06	20.23	
J	6/8/98	11:20	7.23	27.06	19.83	
J	7/17/98	10:40	7.66	27.06	19.40	
J	8/4/98	13:00	7.75	27.06	19.31	
J	9/8/98	10:12	8.42	27.06	18.64	
J	10/9/98	12:30	8.78	27.06	18.28	
J	11/3/98	10:09	8.39	27.06	18.67	
J	12/8/98	10:02	6.63	27.06	20.43	
J	1/4/99	10:05	5.94	27.06	21.12	
J	2/2/99	10:55	5.17	27.06	21.89	
J	3/8/99	13:37	5.16	27.06	21.90	
J	4/29/99	16:50	6.39	27.06	20.67	
J	5/21/99	11:57	6.62	27.06	20.44	
J	6/22/99	09:34	7.19	27.06	19.87	
J	6/24/99	10:04	6.90	27.06	20.16	System off
J	7/21/99	09:44	7.27	27.06	19.79	
J	8/27/99	10:53	7.54	27.06	19.52	
J	9/14/99	10:45	7.99	27.06	19.07	
J	10/5/99	921	8.27	27.06	18.79	
J	11/15/99	13:40	7.67	27.06	19.39	
J	12/6/99	11:24	6.23	27.06	20.83	
J	1/6/00	10:02	6.19	27.06	20.87	
J	2/14/00	10:00	5.74	27.06	21.32	
J	3/16/00	1138	5.84	27.06	21.22	
J	4/11/00	958	6.33	27.06	20.73	

Table C-3

Groundwater Elevations in Deep Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
J	5/11/00	850	6.71	27.06	20.35	
J	6/6/00	1140	7.32	27.06	19.74	
J	7/26/00	1136	7.21	27.06	19.85	
J	8/21/00	1104	7.32	27.06	19.74	
J	9/13/00	1315	8.23	27.06	18.83	
J	11/15/00	1044	7.99	27.06	19.07	
J	12/17/00	941	7.49	27.06	19.57	
J	1/16/01	1027	7.33	27.06	19.73	
J	2/15/01	911	7.01	27.06	20.05	
J	3/13/01	1138	6.55	27.06	20.51	
J	4/15/01	1331	6.20	27.06	20.86	
J	5/7/01		7.20	27.06	19.86	
J	6/10/01	1049	5.60	27.06	21.46	
J	8/14/01	1024	7.51	27.06	19.55	
J	5/1/02	1020	8.78	27.06	18.28	
J	6/10/03	1330	9.01	27.06	18.05	
J	9/11/03	947	12.39	27.06	14.67	casing bent
Ld	7/10/92		7.61	24.19	16.58	
Ld	7/20/92	11:55	8.58	24.19	15.61	
Ld	7/24/92	08:35	7.88	24.19	16.31	
Ld	7/28/92	08:45	7.90	24.19	16.29	
Ld	8/4/92	12:02	7.89	24.19	16.30	
Ld	8/10/92	10:12	3.16	24.19	21.03	
Ld	8/12/92	14:40	8.08	24.19	16.11	
Ld	8/19/92	09:47	8.29	24.19	15.90	
Ld	8/23/92	10:36	8.51	24.19	15.68	
Ld	8/28/92	09:36	8.52	24.19	15.67	
Ld	9/1/92	09:53	8.51	24.19	15.68	
Ld	9/8/92	10:36	8.55	24.19	15.64	
Ld	9/18/92	11:20	9.83	24.19	14.36	
Ld	9/29/92	13:47	8.68	24.19	15.51	
Ld	10/6/92	09:27	9.09	24.19	15.10	
Ld	10/15/92	08:02	9.03	24.19	15.16	
Ld	11/3/92	10:19	8.97	24.19	15.22	
Ld	11/9/92	11:06	8.46	24.19	15.73	
Ld	12/16/92	13:11	7.60	24.19	16.59	
Ld	1/5/93	09:02	7.35	24.19	16.84	
Ld	2/3/93	11:13	7.02	24.19	17.17	
Ld	3/12/93		7.40	24.19	16.79	
Ld	4/7/93		6.95	24.19	17.24	
Ld	5/4/93	11:16	6.64	24.19	17.55	
Ld	5/27/93	13:53	6.82	24.19	17.37	
Ld	7/6/93		7.50	24.19	16.69	
Ld	10/11/93		8.68	24.19	15.51	
Ld	12/8/93	12:55	7.98	24.19	16.21	
Ld	2/1/94	10:08	7.88	24.19	16.31	
Ld	4/14/94	10:01	6.82	24.19	17.37	
Ld	6/1/94	12:30	7.61	24.19	16.58	
Ld	7/12/94		7.98	24.19	16.21	
Ld	10/19/94	13:02	9.21	24.19	14.98	

Table C-3

Groundwater Elevations in Deep Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
Ld	1/16/95	15:22	6.83	24.19	17.36	
Ld	2/9/95	14:26	6.72	24.19	17.47	
Ld	4/24/95	13:41	6.60	24.19	17.59	
Ld	5/17/95	08:30	7.16	24.19	17.03	
Ld	6/20/95	10:52	7.70	24.19	16.49	
Ld	7/10/95	12:08	7.92	24.19	16.27	
Ld	8/15/95	11:28	9.66	24.19	14.53	
Ld	12/6/95	08:31	6.86	24.19	17.33	
Ld	1/3/96	10:35	6.13	24.19	18.06	
Ld	3/25/96	11:55	6.32	24.19	17.87	
Ld	5/1/96	09:50	5.97	24.19	18.22	
Ld	5/28/96	11:11	6.25	24.19	17.94	
Ld	6/26/96	09:51	6.91	24.19	17.28	
Ld	7/30/96	12:13	7.81	24.19	16.38	
Ld	9/9/96	11:12	8.34	24.19	15.85	
Ld	11/15/96	10:48	7.55	24.19	16.64	
Ld	1/6/97	11:44	5.65	24.19	18.54	
Ld	3/6/97	09:19	5.82	24.19	18.37	
Ld	4/29/97	16:15	5.91	24.19	18.28	
Ld	5/20/97	16:08	6.15	24.19	18.04	
Ld	6/16/97	11:05	6.46	24.19	17.73	
Ld	7/7/97	10:31	6.71	24.19	17.48	
Ld	8/4/97	10:46	7.14	24.19	17.05	
Ld	9/16/97	12:54	7.62	24.19	16.57	
Ld	10/7/97	12:07	6.59	24.19	17.60	
Ld	11/7/97	10:55	6.88	24.19	17.31	
Ld	12/8/97	11:47	6.71	24.19	17.48	
Ld	1/12/98	12:07	6.18	24.19	18.01	
Ld	2/26/98	13:21	6.34	24.19	17.85	
Ld	3/9/98	10:39	6.17	24.19	18.02	
Ld	4/7/98	13:44	6.37	24.19	17.82	
Ld	5/5/98	12:42	6.69	24.19	17.50	
Ld	6/8/98	12:51	7.18	24.19	17.01	
Ld	7/17/98	12:21	7.50	24.19	16.69	
Ld	8/4/98	13:55	7.75	24.19	16.44	
Ld	9/8/98	11:07	8.18	24.19	16.01	
Ld	10/9/98	13:26	8.62	24.19	15.57	
Ld	11/3/98	11:09	8.33	24.19	15.86	
Ld	12/8/98	11:11	6.86	24.19	17.33	
Ld	1/4/99	11:33	5.99	24.19	18.20	
Ld	2/2/99	12:27	5.29	24.19	18.90	
Ld	3/8/99	14:27	5.16	24.19	19.03	
Ld	4/29/99	17:17	6.34	24.19	17.85	
Ld	5/21/99	11:17	6.54	24.19	17.65	
Ld	6/22/99	10:46	7.05	24.19	17.14	
Ld	6/24/99	10:21	6.82	24.19	17.37	System off
Ld	7/21/99	10:31	7.72	24.19	16.47	
Ld	8/27/99	11:40	7.40	24.19	16.79	
Ld	9/14/99	11:28	7.83	24.19	16.36	
Ld	10/5/99	1001	8.06	24.19	16.13	

Table C-3

Groundwater Elevations in Deep Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
Ld	11/15/99	1402	7.46	24.19	16.73	
Ld	12/6/99	11:47	6.23	24.19	17.96	
Ld	1/6/00	10:36	6.32	24.19	17.87	
Ld	2/14/00	10:49	5.62	24.19	18.57	
Ld	3/16/00	1222	5.87	24.19	18.32	
Ld	4/11/00	1034	6.37	24.19	17.82	
Ld	5/11/00	820	6.55	24.19	17.64	
Ld	6/6/00	1146	7.58	24.19	16.61	
Ld	7/26/00	1157	7.99	24.19	16.20	
Ld	8/21/00	1149	7.56	24.19	16.63	
Ld	9/13/00	1354	8.00	24.19	16.19	
Ld	10/11/00	1429	8.41	24.19	15.78	
Ld	11/15/00	1027	7.61	24.19	16.58	
Ld	12/17/00	928	7.48	24.19	16.71	
Ld	1/16/01	1021	7.33	24.19	16.86	
Ld	2/15/01	929	7.27	24.19	16.92	
Ld	3/13/01	1126	7.15	24.19	17.04	
Ld	4/15/01	1325	6.95	24.19	17.24	
Ld	5/7/01	1105	7.06	24.19	17.13	
Ld	6/10/01	1037	7.42	24.19	16.77	
Ld	7/16/01	844	7.78	24.19	16.41	
Ld	8/14/01	832	8.29	24.19	15.90	
Ld	9/12/01	744	8.34	24.19	15.85	
Ld	10/4/01	707	9.47	24.19	14.72	
Ld	11/9/01	844	8.81	24.19	15.38	
Ld	12/3/01	1153	7.08	24.19	17.11	
Ld	1/3/02	936	7.46	24.19	16.73	
Ld	2/7/02	1106	5.62	24.19	18.57	
Ld	3/7/02	1138	5.97	24.19	18.22	
Ld	4/23/02	1412	6.26	24.19	17.93	
Ld	5/9/02	812	6.38	24.19	17.81	
Ld	6/19/02	843	7.02	24.19	17.17	
Ld	7/12/02	725	7.03	24.19	17.16	
Ld	8/21/02	1246	7.89	24.19	16.30	
Ld	9/24/02	1107	8.12	24.19	16.07	
Ld	10/15/02	727	8.33	24.19	15.86	
Ld	11/5/02	1105	8.51	24.19	15.68	
Ld	12/10/02	1206	7.97	24.19	16.22	
Ld	1/17/03	1406	7.00	24.19	17.19	
Ld	2/12/03	1430	6.30	24.19	17.89	
Ld	3/5/03	1004	6.32	24.19	17.87	
Ld	4/8/03	1027	6.18	24.19	18.01	
Ld	5/1/03	754	6.44	24.19	17.75	
Ld	6/10/03	1252	6.93	24.19	17.26	
Ld	7/3/03	1324	7.52	24.19	16.67	
Ld	8/7/03	1213	8.00	24.19	16.19	
Ld	9/11/03	1040	9.62	24.19	14.57	
Ld	10/3/03	811	9.64	24.19	14.55	
Ld	11/11/03	1110	7.74	24.19	16.45	
Ld	12/3/03	818	6.95	24.19	17.24	

Table C-3

Groundwater Elevations in Deep Monitoring Wells at and near Parcel G
BSB Property, Kent, Washington

Well	Date	Time	Depth to Water	MP Elevation	GW Elevation	Comments
Ld	1/13/04	1022	6.32	24.19	17.87	
Ld	2/17/04	1202	5.82	24.19	18.37	
Ld	3/8/04	1110	6.27	24.19	17.92	
Ld	4/12/04	1335	6.40	24.19	17.79	
Ld	5/12/04	1403	6.91	24.19	17.28	
Ld	6/2/04	1520	6.87	24.19	17.32	
Ld	7/2/04	750	7.22	24.19	16.97	
Ld	8/5/04	1130	7.77	24.19	16.42	
Ld	9/2/04	937	7.60	24.19	16.59	
Ld	10/4/04	1100	7.58	24.19	16.61	
Ld	11/5/04	1300	7.48	24.19	16.71	
Ld	12/3/04	1348	7.00	24.19	17.19	
Ld	1/19/05	833	6.33	24.19	17.86	
Ld	2/18/05	1150	6.25	24.19	17.94	
Ld	3/11/05	1440	6.74	24.19	17.45	
Ld	4/18/05	1406	6.26	24.19	17.93	
Ld	5/3/05	1555	6.30	24.19	17.89	
Ld	6/9/05	830	6.61	24.19	17.58	

Notes: 1. Depth to water relative to monitoring point (top of PVC casing).
2. MP = monitoring point.
3. GW = groundwater.
4. All elevations in feet relative to the National Geodetic Vertical Datum (NGVD 29).

Table C-4

Monthly Rainfall
BSB Property, Kent, Washington

Month	Monthly Rainfall (inches)	Typical Monthly Rainfall (inches)	Annual Rainfall (inches)
January-92	7.82	5.70	32.78
February-92	3.09	4.13	
March-92	1.68	3.76	
April-92	4.12	2.56	
May-92	0.12	1.66	
June-92	1.14	1.47	
July-92	0.89	0.79	
August-92	0.66	1.09	
September-92	1.15	1.73	
October-92	2.45	3.41	
November-92	5.57	6.01	
December-92	4.09	5.85	
January-93	4.09	5.70	28.80
February-93	0.35	4.13	
March-93	4.80	3.76	
April-93	4.54	2.56	
May-93	2.86	1.66	
June-93	2.48	1.47	
July-93	1.27	0.79	
August-93	0.16	1.09	
September-93	0.03	1.73	
October-93	1.54	3.41	
November-93	2.20	6.01	
December-93	4.48	5.85	
January-94	2.51	5.70	34.82
February-94	4.47	4.13	
March-94	3.17	3.76	
April-94	2.27	2.56	
May-94	1.43	1.66	
June-94	1.25	1.47	
July-94	0.28	0.79	
August-94	0.30	1.09	
September-94	1.69	1.73	
October-94	3.51	3.41	
November-94	5.79	6.01	
December-94	8.15	5.85	
January-95	4.48	5.70	42.60
February-95	4.97	4.13	
March-95	4.07	3.76	
April-95	2.05	2.56	
May-95	0.81	1.66	
June-95	1.46	1.47	
July-95	1.34	0.79	
August-95	1.81	1.09	
September-95	0.91	1.73	
October-95	3.93	3.41	
November-95	10.40	6.01	
December-95	6.37	5.85	

Table C-4

Monthly Rainfall
BSB Property, Kent, Washington

Month	Monthly Rainfall (inches)	Typical Monthly Rainfall (inches)	Annual Rainfall (inches)
January-96	7.34	5.70	50.67
February-96	8.35	4.13	
March-96	2.06	3.76	
April-96	5.37	2.56	
May-96	2.07	1.66	
June-96	0.59	1.47	
July-96	0.77	0.79	
August-96	1.32	1.09	
September-96	1.85	1.73	
October-96	5.54	3.41	
November-96	5.23	6.01	
December-96	10.18	5.85	
January-97	7.02	5.70	43.26
February-97	1.99	4.13	
March-97	8.15	3.76	
April-97	4.32	2.56	
May-97	1.87	1.66	
June-97	1.64	1.47	
July-97	1.20	0.79	
August-97	1.27	1.09	
September-97	3.41	1.73	
October-97	5.83	3.41	
November-97	3.93	6.01	
December-97	2.63	5.85	
January-98	7.15	5.70	44.06
February-98	3.31	4.13	
March-98	3.96	3.76	
April-98	0.99	2.56	
May-98	1.98	1.66	
June-98	1.11	1.47	
July-98	0.41	0.79	
August-98	0.35	1.09	
September-98	0.72	1.73	
October-98	3.48	3.41	
November-98	11.62	6.01	
December-98	8.98	5.85	
January-99	6.84	5.70	42.11
February-99	6.95	4.13	
March-99	3.66	3.76	
April-99	1.49	2.56	
May-99	2.12	1.66	
June-99	1.86	1.47	
July-99	1.18	0.79	
August-99	0.92	1.09	
September-99	0.17	1.73	
October-99	2.26	3.41	
November-99	9.60	6.01	
December-99	5.06	5.85	

Table C-4

Monthly Rainfall
BSB Property, Kent, Washington

Month	Monthly Rainfall (inches)	Typical Monthly Rainfall (inches)	Annual Rainfall (inches)
January-00	3.77	5.70	28.66
February-00	5.25	4.13	
March-00	2.82	3.76	
April-00	1.48	2.56	
May-00	3.27	1.66	
June-00	1.61	1.47	
July-00	0.23	0.79	
August-00	0.33	1.09	
September-00	1.12	1.73	
October-00	3.00	3.41	
November-00	3.27	6.01	
December-00	2.51	5.85	
January-01	2.70	5.70	37.56
February-01	2.07	4.13	
March-01	2.73	3.76	
April-01	3.16	2.56	
May-01	1.39	1.66	
June-01	3.05	1.47	
July-01	1.03	0.79	
August-01	2.32	1.09	
September-01	0.83	1.73	
October-01	3.13	3.41	
November-01	9.26	6.01	
December-01	5.89	5.85	
January-02	5.98	5.70	31.36
February-02	4.17	4.13	
March-02	2.82	3.76	
April-02	4.29	2.56	
May-02	1.11	1.66	
June-02	1.73	1.47	
July-02	0.64	0.79	
August-02	0.04	1.09	
September-02	0.42	1.73	
October-02	0.67	3.41	
November-02	3.51	6.01	
December-02	5.98	5.85	
January-03	8.39	5.70	41.78
February-03	1.76	4.13	
March-03	6.34	3.76	
April-03	2.74	2.56	
May-03	1.16	1.66	
June-03	0.51	1.47	
July-03	0.06	0.79	
August-03	0.32	1.09	
September-03	0.89	1.73	
October-03	8.96	3.41	
November-03	6.77	6.01	
December-03	3.88	5.85	

Table C-4

Monthly Rainfall
BSB Property, Kent, Washington

Month	Monthly Rainfall (inches)	Typical Monthly Rainfall (inches)	Annual Rainfall (inches)
January-04	6.36	5.70	31.10
February-04	2.44	4.13	
March-04	2.14	3.76	
April-04	0.65	2.56	
May-04	2.51	1.66	
June-04	0.71	1.47	
July-04	0.16	0.79	
August-04	3.00	1.09	
September-04	2.80	1.73	
October-04	2.80	3.41	
November-04	3.16	6.01	
December-04	4.37	5.85	

Notes: Data from NOAA's Western Regional Climate Center, Seattle-Tacoma airport weather station.

Table C-5

Comparison of Layers B and D Potentiometric Heads at the HY-1 Wells
BSB Property, Kent, Washington

	HY-1s			HY-1i			HY-1d			Shallow to Intermediate				Intermediate to Deep			
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
7/10/92	8.18	24.19	16.01	8.90	24.89	15.99	8.08	25.6	17.52	-0.02	-0.16	1	19	1.53	1.23	20	0
7/16/92	1.50	24.19	22.69	0.73	24.89	24.16	0.75	25.6	24.85	1.47				0.69			
7/20/92	8.46	24.19	15.73	9.29	24.89	15.60	9.10	25.6	16.50	-0.13				0.90			
7/24/92	8.64	24.19	15.55	9.43	24.89	15.46	9.45	25.6	16.15	-0.09				0.69			
7/28/92	8.80	24.19	15.39	9.54	24.89	15.35	9.52	25.6	16.08	-0.04				0.73			
8/4/92	8.76	24.19	15.43	9.68	24.89	15.21	9.50	25.6	16.10	-0.22				0.89			
8/10/92	9.19	24.19	15.00	10.22	24.89	14.67	9.71	25.6	15.89	-0.33				1.22			
8/12/92	9.38	24.19	14.81	10.27	24.89	14.62	9.65	25.6	15.95	-0.19				1.33			
8/19/92	9.50	24.19	14.69	10.48	24.89	14.41	9.80	25.6	15.80	-0.28				1.39			
8/23/92	9.77	24.19	14.42	10.79	24.89	14.10	10.08	25.6	15.52	-0.32				1.42			
8/28/92	9.83	24.19	14.36	10.86	24.89	14.03	10.08	25.6	15.52	-0.33				1.49			
9/1/92	9.94	24.19	14.25	10.82	24.89	14.07	10.07	25.6	15.53	-0.18				1.46			
9/8/92	9.90	24.19	14.29	11.08	24.89	13.81	10.09	25.6	15.51	-0.48				1.70			
9/18/92	10.31	24.19	13.88	11.34	24.89	13.55	10.35	25.6	15.25	-0.33				1.70			
9/29/92	10.23	24.19	13.96	11.21	24.89	13.68	10.16	25.6	15.44	-0.28				1.76			
10/6/92	10.37	24.19	13.82	11.39	24.89	13.50	10.71	25.6	14.89	-0.32				1.39			
10/15/92	10.49	24.19	13.70	11.42	24.89	13.47	10.60	25.6	15.00	-0.23				1.53			
11/3/92	9.72	24.19	14.47	10.54	24.89	14.35	10.59	25.6	15.01	-0.12				0.66			
11/9/92	9.36	24.19	14.83	10.47	24.89	14.42	10.15	25.6	15.45	-0.41				1.03			
12/16/92	8.00	24.19	16.19	9.10	24.89	15.79	8.79	25.6	16.81	-0.40				1.02			
1/5/93	8.05	24.19	16.14	9.19	24.89	15.70	8.90	25.6	16.70	-0.44	-0.41	0	9	1.00	1.05	9	0
2/3/93	7.40	24.19	16.79	8.46	24.89	16.43	8.45	25.6	17.15	-0.36				0.72			
3/12/93	8.03	24.19	16.16	8.91	24.89	15.98	8.88	25.6	16.72	-0.18				0.74			
4/7/93	7.27	24.19	16.92	8.56	24.89	16.33	8.55	25.6	17.05	-0.59				0.72			
5/4/93	6.75	24.19	17.44	7.87	24.89	17.02	8.20	25.6	17.40	-0.42				0.38			
5/27/93	7.48	24.19	16.71	8.60	24.89	16.29	8.29	25.6	17.31	-0.42				1.02			
7/6/93	8.25	24.19	15.94	9.40	24.89	15.49	8.75	25.6	16.85	-0.45				1.36			
10/11/93	10.25	24.19	13.94	11.27	24.89	13.62	10.18	25.6	15.42	-0.32				1.80			
12/8/93	9.20	24.19	14.99	10.38	24.89	14.51	9.41	25.6	16.19	-0.48				1.68			
2/1/94	8.48	24.19	15.71	9.54	24.89	15.35	9.24	25.6	16.36	-0.36	-0.26	0	5	1.01	0.94	4	1
4/14/94	6.74	24.19	17.45	7.62	24.89	17.27	8.37	25.6	17.23	-0.18				-0.04			

Table C-5

Comparison of Layers B and D Potentiometric Heads at the HY-1 Wells
BSB Property, Kent, Washington

										Shallow to Intermediate				Intermediate to Deep			
	HY-1s			HY-1i			HY-1d				Yearly Mean	Number of Upward	Number of Downward		Yearly Mean	Number of Upward	Number of Downward
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	ΔH	ΔH	ΔH	ΔH	ΔH	ΔH	ΔH
6/1/94	8.27	24.19	15.92	9.36	24.89	15.53	9.17	25.6	16.43	-0.39				0.90			
7/12/94	9.04	24.19	15.15	9.85	24.89	15.04	9.49	25.6	16.11	-0.11				1.07			
10/19/94	10.80	24.19	13.39	11.76	24.89	13.13	10.71	25.6	14.89	-0.26				1.76			
1/16/95	6.52	24.19	17.67	7.71	24.89	17.18	8.35	25.6	17.25	-0.49	-0.32	1	7	0.07	0.59	7	1
2/9/95	6.55	24.19	17.64	7.64	24.89	17.25	8.12	25.6	17.48	-0.39				0.23			
4/24/95	6.90	24.19	17.29	8.05	24.89	16.84	7.99	25.6	17.61	-0.45				0.77			
5/17/95	7.75	24.19	16.44	8.78	24.89	16.11	8.66	25.6	16.94	-0.33				0.83			
6/20/95	8.59	24.19	15.60	9.23	24.89	15.66	9.64	25.6	15.96	0.06				0.30			
7/10/95	8.87	24.19	15.32	9.89	24.89	15.00	9.46	25.6	16.14	-0.32				1.14			
8/15/95	9.80	24.19	14.39	10.74	24.89	14.15	9.90	25.6	15.70	-0.24				1.55			
12/6/95	6.41	24.19	17.78	7.50	24.89	17.39	8.38	25.6	17.22	-0.39				-0.17			
1/3/96	6.00	24.19	18.19	7.14	24.89	17.75	7.62	25.6	17.98	-0.44	-0.38	0	8	0.23	0.54	7	1
3/25/96	6.15	24.19	18.04	7.35	24.89	17.54	7.78	25.6	17.82	-0.50				0.28			
5/1/96	5.43	24.19	18.76	6.57	24.89	18.32	7.49	25.6	18.11	-0.44				-0.21			
5/28/96	6.28	24.19	17.91	7.32	24.89	17.57	7.78	25.6	17.82	-0.34				0.25			
6/26/96	7.63	24.19	16.56	8.68	24.89	16.21	8.38	25.6	17.22	-0.35				1.01			
7/30/96	8.69	24.19	15.50	9.70	24.89	15.19	9.36	25.6	16.24	-0.31				1.05			
9/9/96	9.36	24.19	14.83	10.30	24.89	14.59	9.92	25.6	15.68	-0.24				1.09			
11/15/96	7.75	24.19	16.44	8.84	24.89	16.05	8.94	25.6	16.66	-0.39				0.61			
1/6/97	4.26	24.19	19.93	5.52	24.89	19.37	7.20	25.6	18.40	-0.56	-0.36	1	10	-0.97	0.40	9	2
3/6/97	5.18	24.19	19.01	6.50	24.89	18.39	7.35	25.6	18.25	-0.62				-0.14			
4/29/97	6.57	24.19	17.62	6.82	24.89	18.07	7.40	25.6	18.20	0.45				0.13			
5/20/97	6.49	24.19	17.70	7.65	24.89	17.24	7.64	25.6	17.96	-0.46				0.72			
6/16/97	6.87	24.19	17.32	7.98	24.89	16.91	7.98	25.6	17.62	-0.41				0.71			
7/7/97	7.01	24.19	17.18	7.96	24.89	16.93	8.26	25.6	17.34	-0.25				0.41			
8/4/97	7.88	24.19	16.31	8.82	24.89	16.07	8.71	25.6	16.89	-0.24				0.82			
9/16/97	8.68	24.19	15.51	9.75	24.89	15.14	9.14	25.6	16.46	-0.37				1.32			
10/7/97	7.38	24.19	16.81	8.42	24.89	16.47	8.81	25.6	16.79	-0.34				0.32			
11/7/97	6.64	24.19	17.55	7.92	24.89	16.97	8.52	25.6	17.08	-0.58				0.11			
12/8/97	7.39	24.19	16.80	8.67	24.89	16.22	8.38	25.6	17.22	-0.58				1.00			
1/12/98	6.30	24.19	17.89	7.56	24.89	17.33	7.54	25.6	18.06	-0.56	-0.48	0	12	0.73	0.91	10	2

Table C-5

Comparison of Layers B and D Potentiometric Heads at the HY-1 Wells
BSB Property, Kent, Washington

	HY-1s			HY-1i			HY-1d			Shallow to Intermediate				Intermediate to Deep			
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
2/26/98	6.26	24.19	17.93	7.62	24.89	17.27	8.89	25.6	16.71	-0.66				-0.56			
3/9/98	6.01	24.19	18.18	7.50	24.89	17.39	7.79	25.6	17.81	-0.79				0.42			
4/7/98	6.64	24.19	17.55	7.87	24.89	17.02	7.94	25.6	17.66	-0.53				0.64			
5/5/98	7.67	24.19	16.52	8.92	24.89	15.97	8.33	25.6	17.27	-0.55				1.30			
6/8/98	8.18	24.19	16.01	9.40	24.89	15.49	8.74	25.6	16.86	-0.52				1.37			
7/17/98	8.88	24.19	15.31	9.95	24.89	14.94	9.15	25.6	16.45	-0.37				1.51			
8/4/98	9.28	24.19	14.91	10.25	24.89	14.64	9.40	25.6	16.20	-0.27				1.56			
9/8/98	9.90	24.19	14.29	10.88	24.89	14.01	9.88	25.6	15.72	-0.28				1.71			
10/9/98	9.91	24.19	14.28	10.89	24.89	14.00	10.26	25.6	15.34	-0.28				1.34			
11/3/98	9.54	24.19	14.65	10.58	24.89	14.31	9.91	25.6	15.69	-0.34				1.38			
12/8/98	6.16	24.19	18.03	7.42	24.89	17.47	8.56	25.6	17.04	-0.56				-0.43			
1/4/99	5.28	24.19	18.91	6.60	24.89	18.29	7.52	25.6	18.08	-0.62	-0.45	1	12	-0.21	0.66	11	2
2/2/99	3.79	24.19	20.40	5.38	24.89	19.51	6.80	25.6	18.80	-0.89				-0.71			
3/8/99	4.99	24.19	19.20	6.43	24.89	18.46	6.62	25.6	18.98	-0.74				0.52			
4/29/99	6.57	24.19	17.62	7.81	24.89	17.08	7.79	25.6	17.81	-0.54				0.73			
5/21/99	6.72	24.19	17.47	7.99	24.89	16.90	8.14	25.6	17.46	-0.57				0.56			
6/22/99	7.86	24.19	16.33	9.00	24.89	15.89	8.65	25.6	16.95	-0.44				1.06			
6/24/99	7.13	24.19	17.06	8.28	24.89	16.61	8.36	25.6	17.24	-0.45				0.63			
7/21/99	8.10	24.19	16.09	9.29	24.89	15.60	8.75	25.6	16.85	-0.49				1.25			
8/27/99	8.74	24.19	15.45	9.83	24.89	15.06	8.95	25.6	16.65	-0.39				1.59			
9/14/99	9.23	24.19	14.96	10.29	24.89	14.60	9.41	25.6	16.19	-0.36				1.59			
10/5/99	9.67	24.19	14.52	9.61	24.89	15.28	9.61	25.6	15.99	0.76				0.71			
11/15/99	7.63	24.19	16.56	8.85	24.89	16.04	9.07	25.6	16.53	-0.52				0.49			
12/6/99	6.19	24.19	18.00	7.55	24.89	17.34	7.86	25.6	17.74	-0.66				0.40			
1/6/00	6.29	24.19	17.90	7.60	24.89	17.29	7.85	25.6	17.75	-0.61	-0.41	1	9	0.46	0.99	10	0
2/14/00	5.79	24.19	18.40	7.15	24.89	17.74	7.02	25.6	18.58	-0.66				0.84			
3/16/00	5.63	24.19	18.56	7.13	24.89	17.76	7.48	25.6	18.12	-0.80				0.36			
6/6/00	7.12	24.19	17.07	8.45	24.89	16.44	8.48	25.6	17.12	-0.63				0.68			
7/26/00	8.14	24.19	16.05	9.21	24.89	15.68	8.80	25.6	16.80	-0.37				1.12			
8/21/00	8.55	24.19	15.64	9.22	24.89	15.67	9.03	25.6	16.57	0.03				0.90			
9/13/00	8.94	24.19	15.25	9.99	24.89	14.90	9.88	25.6	15.72	-0.35				0.82			

Table C-5

Comparison of Layers B and D Potentiometric Heads at the HY-1 Wells
BSB Property, Kent, Washington

	HY-1s			HY-1i			HY-1d			Shallow to Intermediate				Intermediate to Deep			
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
10/11/00	10.21	24.19	13.98	10.99	24.89	13.90	10.14	25.6	15.46	-0.08				1.56			
11/15/00	9.44	24.19	14.75	10.37	24.89	14.52	9.51	25.6	16.09	-0.23				1.57			
12/17/00	8.69	24.19	15.50	9.79	24.89	15.10	8.89	25.6	16.71	-0.40				1.61			
1/16/01	8.51	24.19	15.68	9.23	24.89	15.66	8.59	25.6	17.01	-0.02	-0.39	0	12	1.35	1.01	10	2
2/15/01	7.99	24.19	16.20	9.09	24.89	15.80	8.86	25.6	16.74	-0.40				0.94			
3/13/01	7.68	24.19	16.51	8.89	24.89	16.00	8.65	25.6	16.95	-0.51				0.95			
4/15/01	7.42	24.19	16.77	8.71	24.89	16.18	8.44	25.6	17.16	-0.59				0.98			
5/7/01	7.64	24.19	16.55	8.82	24.89	16.07	8.69	25.6	16.91	-0.48				0.84			
6/10/01	7.74	24.19	16.45	8.79	24.89	16.10	9.07	25.6	16.53	-0.35				0.43			
7/16/01	8.66	24.19	15.53	9.79	24.89	15.10	9.42	25.6	16.18	-0.43				1.08			
8/14/01	9.56	24.19	14.63	10.54	24.89	14.35	9.96	25.6	15.64	-0.28				1.29			
9/12/01	9.87	24.19	14.32	10.88	24.89	14.01	9.98	25.6	15.62	-0.31				1.61			
10/4/01	11.23	24.19	12.96	12.22	24.89	12.67	11.27	25.6	14.33	-0.29				1.66			
11/9/01	9.60	24.19	14.59	10.58	24.89	14.31	10.21	25.6	15.39	-0.28				1.08			
12/3/01	6.45	24.19	17.74	7.93	24.89	16.96	8.74	25.6	16.86	-0.78				-0.10			
4/23/02	6.21	24.19	17.98	7.45	24.89	17.44	7.85	25.6	17.75	-0.54	-0.33	0	9	0.31	1.38	9	0
5/9/02	6.81	24.19	17.38	7.96	24.89	16.93	7.90	25.6	17.70	-0.45				0.77			
6/19/02	7.90	24.19	16.29	9.05	24.89	15.84	8.42	25.6	17.18	-0.45				1.34			
7/12/02	8.10	24.19	16.09	9.11	24.89	15.78	8.55	25.6	17.05	-0.31				1.27			
8/21/02	9.40	24.19	14.79	10.44	24.89	14.45	9.47	25.6	16.13	-0.34				1.68			
9/24/02	9.87	24.19	14.32	10.77	24.89	14.12	9.75	25.6	15.85	-0.20				1.73			
10/15/02	10.04	24.19	14.15	10.98	24.89	13.91	9.90	25.6	15.70	-0.24				1.79			
11/5/02	10.29	24.19	13.90	11.14	24.89	13.75	10.08	25.6	15.52	-0.15				1.77			
12/10/02	9.55	24.19	14.64	10.54	24.89	14.35	9.45	25.6	16.15	-0.29				1.80			
1/17/03	6.98	24.19	17.21	7.99	24.89	16.90	8.57	25.6	17.03	-0.31	-0.22	2	10	0.13	0.87	11	1
2/12/03	6.62	24.19	17.57	7.77	24.89	17.12	7.78	25.6	17.82	-0.45				0.70			
3/5/03	6.73	24.19	17.46	7.91	24.89	16.98	7.82	25.6	17.78	-0.48				0.80			
4/8/03	6.00	24.19	18.19	7.36	24.89	17.53	7.69	25.6	17.91	-0.66				0.38			
5/1/03	7.69	24.19	16.50	7.86	24.89	17.03	7.99	25.6	17.61	0.53				0.58			
6/10/03	7.89	24.19	16.30	8.01	24.89	16.88	8.13	25.6	17.47	0.58				0.59			
7/3/03	8.75	24.19	15.44	9.76	24.89	15.13	9.11	25.6	16.49	-0.31				1.36			

Table C-5

Comparison of Layers B and D Potentiometric Heads at the HY-1 Wells
BSB Property, Kent, Washington

	HY-1s			HY-1i			HY-1d			Shallow to Intermediate				Intermediate to Deep			
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
8/7/03	9.61	24.19	14.58	10.54	24.89	14.35	9.58	25.6	16.02	-0.23				1.67			
9/11/03	10.20	24.19	13.99	11.11	24.89	13.78	10.23	25.6	15.37	-0.21				1.59			
10/3/03	10.41	24.19	13.78	11.23	24.89	13.66	10.21	25.6	15.39	-0.12				1.73			
11/11/03	8.62	24.19	15.57	9.65	24.89	15.24	9.38	25.6	16.22	-0.33				0.98			
12/3/03	6.50	24.19	17.69	7.85	24.89	17.04	8.61	25.6	16.99	-0.65				-0.05			
1/13/04	5.69	24.19	18.50	7.04	24.89	17.85	7.90	25.6	17.70	-0.65	-0.49	0	12	-0.15	0.78	10	2
2/17/04	5.26	24.19	18.93	6.64	24.89	18.25	7.27	25.6	18.33	-0.68				0.08			
3/8/04	5.65	24.19	18.54	7.09	24.89	17.80	7.82	25.6	17.78	-0.74				-0.02			
4/12/04	7.00	24.19	17.19	8.20	24.89	16.69	7.81	25.6	17.79	-0.50				1.10			
5/12/04	7.62	24.19	16.57	8.65	24.89	16.24	8.47	25.6	17.13	-0.33				0.89			
6/2/04	7.25	24.19	16.94	8.31	24.89	16.58	8.50	25.6	17.10	-0.36				0.52			
7/2/04	8.28	24.19	15.91	9.18	24.89	15.71	7.93	25.6	17.67	-0.20				1.96			
8/5/04	9.21	24.19	14.98	10.13	24.89	14.76	9.34	25.6	16.26	-0.22				1.50			
9/5/04	9.21	24.19	14.98	10.13	24.89	14.76	9.34	25.6	16.26	-0.22				1.50			
10/4/04	8.53	24.19	15.66	9.51	24.89	15.38	9.16	25.6	16.44	-0.28				1.06			
11/5/04	7.50	24.19	16.69	8.61	24.89	16.28	9.07	25.6	16.53	-0.41				0.25			
12/3/04	6.41	24.19	17.78	8.45	24.89	16.44	8.48	25.6	17.12	-1.34				0.68			
									Mean:	-0.35	Sum:	7	134	0.89	Sum:	127	14

Notes:
1. All measurements in feet.
2. Monitoring point (MP, top of PVC casing) elevation in feet relative to the National Geodetic Vertical Datum (NGVD 29).
3. GW = groundwater.
4. Elev. = elevation.
5. ΔH = lower layer groundwater elevation minus higher layer groundwater elevation (positive = upward gradient).

Table C-6

Comparison of Layers B and D Potentiometric Heads at the L Wells
BSB Property, Kent, Washington

	Ls			Ld						
Date	Depth to Water	MP Elevation	Groundwater Elevation	Depth to Water	MP Elevation	Groundwater Elevation	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
7/10/92	7.20	24.02	16.82	7.61	24.19	16.58	-0.24	0.95	5	1
7/20/92	6.70	24.02	17.32	8.58	24.19	15.61	-1.71			
7/24/92	8.13	24.02	15.89	7.88	24.19	16.31	0.42			
7/28/92	8.32	24.02	15.70	7.90	24.19	16.29	0.59			
8/4/92	8.40	24.02	15.62	7.89	24.19	16.30	0.68			
8/10/92	8.93	24.02	15.09	3.16	24.19	21.03	5.94			
8/12/92	9.08	24.02	14.94	8.08	24.19	16.11	1.17			
8/19/92	9.42	24.02	14.60	8.29	24.19	15.90	1.30			
8/23/92	9.73	24.02	14.29	8.51	24.19	15.68	1.39			
8/28/92	9.82	24.02	14.20	8.52	24.19	15.67	1.47			
9/1/92	9.88	24.02	14.14	8.51	24.19	15.68	1.54			
9/8/92	9.08	24.02	14.94	8.55	24.19	15.64	0.70			
9/18/92	10.25	24.02	13.77	9.83	24.19	14.36	0.59			
9/29/92	10.02	24.02	14.00	8.68	24.19	15.51	1.51			
10/6/92	10.15	24.02	13.87	9.09	24.19	15.10	1.23			
10/15/92	10.26	24.02	13.76	9.03	24.19	15.16	1.40			
11/3/92	8.87	24.02	15.15	8.97	24.19	15.22	0.07			
11/9/92	8.32	24.02	15.70	8.46	24.19	15.73	0.03			
12/16/92	7.46	24.02	16.56	7.60	24.19	16.59	0.03			
1/5/93	7.86	24.02	16.16	7.35	24.19	16.84	0.68	0.72	8	1
2/3/93	7.41	24.02	16.61	7.02	24.19	17.17	0.56			
3/12/93	7.80	24.02	16.22	7.40	24.19	16.79	0.57			
4/7/93	7.25	24.02	16.77	6.95	24.19	17.24	0.47			
5/4/93	6.43	24.02	17.59	6.64	24.19	17.55	-0.04			
5/27/93	7.33	24.02	16.69	6.82	24.19	17.37	0.68			
7/6/93	8.51	24.02	15.51	7.50	24.19	16.69	1.18			
10/11/93	10.17	24.02	13.85	8.68	24.19	15.51	1.66			
12/8/93	8.51	24.02	15.51	7.98	24.19	16.21	0.70			
2/1/94	8.61	24.02	15.41	7.88	24.19	16.31	0.90	0.83	5	0
4/14/94	6.80	24.02	17.22	6.82	24.19	17.37	0.15			
6/1/94	7.81	24.02	16.21	7.61	24.19	16.58	0.37			
7/12/94	8.93	24.02	15.09	7.98	24.19	16.21	1.12			
10/19/94	10.65	24.02	13.37	9.21	24.19	14.98	1.61			
1/16/95	6.56	24.02	17.46	6.83	24.19	17.36	-0.10	0.17	5	3
2/9/95	6.78	24.02	17.24	6.72	24.19	17.47	0.23			
4/24/95	6.91	24.02	17.11	6.60	24.19	17.59	0.48			
5/17/95	8.14	24.02	15.88	7.16	24.19	17.03	1.15			
6/20/95	8.12	24.02	15.90	7.70	24.19	16.49	0.59			
7/10/95	8.03	24.02	15.99	7.92	24.19	16.27	0.28			
8/15/95	8.31	24.02	15.71	9.66	24.19	14.53	-1.18			
12/6/95	6.62	24.02	17.40	6.86	24.19	17.33	-0.07			
1/3/96	6.18	24.02	17.84	6.13	24.19	18.06	0.22	0.53	6	2
3/25/96	6.56	24.02	17.46	6.32	24.19	17.87	0.41			
5/1/96	5.76	24.02	18.26	5.97	24.19	18.22	-0.04			
5/28/96	6.44	24.02	17.58	6.25	24.19	17.94	0.36			
6/26/96	7.77	24.02	16.25	6.91	24.19	17.28	1.03			

Table C-6

Comparison of Layers B and D Potentiometric Heads at the L Wells
BSB Property, Kent, Washington

	Ls			Ld						
Date	Depth to Water	MP Elevation	Groundwater Elevation	Depth to Water	MP Elevation	Groundwater Elevation	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
7/30/96	8.98	24.02	15.04	7.81	24.19	16.38	1.34			
9/9/96	9.32	24.02	14.70	8.34	24.19	15.85	1.15			
11/15/96	7.12	24.02	16.90	7.55	24.19	16.64	-0.26			
1/6/97	4.78	24.02	19.24	5.65	24.19	18.54	-0.70	0.37	7	4
3/6/97	5.39	24.02	18.63	5.82	24.19	18.37	-0.26			
4/29/97	5.61	24.02	18.41	5.91	24.19	18.28	-0.13			
5/20/97	6.76	24.02	17.26	6.15	24.19	18.04	0.78			
6/16/97	7.26	24.02	16.76	6.46	24.19	17.73	0.97			
7/7/97	6.82	24.02	17.20	6.71	24.19	17.48	0.28			
8/4/97	8.29	24.02	15.73	7.14	24.19	17.05	1.32			
9/16/97	8.03	24.02	15.99	7.62	24.19	16.57	0.58			
10/7/97	7.03	24.02	16.99	6.59	24.19	17.60	0.61			
11/7/97	6.40	24.02	17.62	6.88	24.19	17.31	-0.31			
12/8/97	7.49	24.02	16.53	6.71	24.19	17.48	0.95			
1/12/98	6.41	24.02	17.61	6.18	24.19	18.01	0.40	0.96	11	1
2/26/98	6.48	24.02	17.54	6.34	24.19	17.85	0.31			
3/9/98	6.20	24.02	17.82	6.17	24.19	18.02	0.20			
4/7/98	7.12	24.02	16.90	6.37	24.19	17.82	0.92			
5/5/98	8.11	24.02	15.91	6.69	24.19	17.50	1.59			
6/8/98	8.62	24.02	15.40	7.18	24.19	17.01	1.61			
7/17/98	9.00	24.02	15.02	7.50	24.19	16.69	1.67			
8/4/98	9.55	24.02	14.47	7.75	24.19	16.44	1.97			
9/8/98	9.96	24.02	14.06	8.18	24.19	16.01	1.95			
10/9/98	9.11	24.02	14.91	8.62	24.19	15.57	0.66			
11/3/98	8.83	24.02	15.19	8.33	24.19	15.86	0.67			
12/8/98	6.31	24.02	17.71	6.86	24.19	17.33	-0.38			
1/4/99	6.01	24.02	18.01	5.99	24.19	18.20	0.19	0.81	10	2
2/2/99	4.71	24.02	19.31	5.29	24.19	18.90	-0.41			
3/8/99	5.52	24.02	18.50	5.16	24.19	19.03	0.53			
4/29/99	6.56	24.02	17.46	6.34	24.19	17.85	0.39			
5/21/99	6.86	24.02	17.16	6.54	24.19	17.65	0.49			
6/22/99	7.77	24.02	16.25	7.05	24.19	17.14	0.89			
6/24/99	8.73	24.02	15.29	6.82	24.19	17.37	2.08			
7/21/99	8.19	24.02	15.83	7.72	24.19	16.47	0.64			
8/27/99	8.98	24.02	15.04	7.40	24.19	16.79	1.75			
9/14/99	9.52	24.02	14.50	7.83	24.19	16.36	1.86			
10/5/99	9.90	24.02	14.12	8.06	24.19	16.13	2.01			
11/15/99	7.23	24.02	16.79	7.46	24.19	16.73	-0.06			
12/6/99	6.23	24.02	17.79	6.23	24.19	17.96	0.17			
1/6/00	6.58	24.02	17.44	6.32	24.19	17.87	0.43	1.01	12	0
2/14/00	6.12	24.02	17.90	5.62	24.19	18.57	0.67			
3/16/00	5.84	24.02	18.18	5.87	24.19	18.32	0.14			
4/11/00	7.15	24.02	16.87	6.37	24.19	17.82	0.95			
5/11/00	6.93	24.02	17.09	6.55	24.19	17.64	0.55			
6/6/00	7.97	24.02	16.05	7.58	24.19	16.61	0.56			
7/26/00	7.98	24.02	16.04	7.99	24.19	16.20	0.16			

Table C-6

Comparison of Layers B and D Potentiometric Heads at the L Wells
BSB Property, Kent, Washington

	Ls			Ld						
Date	Depth to Water	MP Elevation	Groundwater Elevation	Depth to Water	MP Elevation	Groundwater Elevation	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
8/21/00	9.30	24.02	14.72	7.56	24.19	16.63	1.91			
9/13/00	9.42	24.02	14.60	8.00	24.19	16.19	1.59			
10/11/00	9.58	24.02	14.44	8.41	24.19	15.78	1.34			
11/15/00	9.57	24.02	14.45	7.61	24.19	16.58	2.13			
12/17/00	8.99	24.02	15.03	7.48	24.19	16.71	1.68			
1/16/01	8.65	24.02	15.37	7.33	24.19	16.86	1.49	0.71	10	2
2/15/01	7.79	24.02	16.23	7.27	24.19	16.92	0.69			
3/13/01	7.41	24.02	16.61	7.15	24.19	17.04	0.43			
4/15/01	6.97	24.02	17.05	6.95	24.19	17.24	0.19			
5/7/01	7.66	24.02	16.36	7.06	24.19	17.13	0.77			
6/10/01	6.84	24.02	17.18	7.42	24.19	16.77	-0.41			
7/16/01	8.12	24.02	15.90	7.78	24.19	16.41	0.51			
8/14/01	9.61	24.02	14.41	8.29	24.19	15.90	1.49			
9/12/01	9.83	24.02	14.19	8.34	24.19	15.85	1.66			
10/4/01	11.02	24.02	13.00	9.47	24.19	14.72	1.72			
11/9/01	9.33	24.02	14.69	8.81	24.19	15.38	0.69			
12/3/01	6.20	24.02	17.82	7.08	24.19	17.11	-0.71			
1/3/02	7.42	24.02	16.60	7.46	24.19	16.73	0.13	1.09	12	0
2/7/02	5.74	24.02	18.28	5.62	24.19	18.57	0.29			
3/7/02	6.33	24.02	17.69	5.97	24.19	18.22	0.53			
4/23/02	6.44	24.02	17.58	6.26	24.19	17.93	0.35			
5/9/02	7.17	24.02	16.85	6.38	24.19	17.81	0.96			
6/19/02	7.89	24.02	16.13	7.02	24.19	17.17	1.04			
7/12/02	8.08	24.02	15.94	7.03	24.19	17.16	1.22			
8/21/02	9.70	24.02	14.32	7.89	24.19	16.30	1.98			
9/24/02	9.86	24.02	14.16	8.12	24.19	16.07	1.91			
10/15/02	10.02	24.02	14.00	8.33	24.19	15.86	1.86			
11/5/02	10.30	24.02	13.72	8.51	24.19	15.68	1.96			
12/10/02	8.65	24.02	15.37	7.97	24.19	16.22	0.85			
1/17/03	6.62	24.02	17.40	7.00	24.19	17.19	-0.21	0.49	9	3
2/12/03	6.83	24.02	17.19	6.30	24.19	17.89	0.70			
3/5/03	6.64	24.02	17.38	6.32	24.19	17.87	0.49			
4/8/03	5.69	24.02	18.33	6.18	24.19	18.01	-0.32			
5/1/03	6.94	24.02	17.08	6.44	24.19	17.75	0.67			
6/10/03	7.11	24.02	16.91	6.93	24.19	17.26	0.35			
7/3/03	9.05	24.02	14.97	7.52	24.19	16.67	1.70			
8/7/03	9.80	24.02	14.22	8.00	24.19	16.19	1.97			
9/11/03	9.79	24.02	14.23	9.62	24.19	14.57	0.34			
10/3/03	10.43	24.02	13.59	9.64	24.19	14.55	0.96			
11/11/03	8.80	24.02	15.22	7.74	24.19	16.45	1.23			
12/3/03	5.98	24.02	18.04	6.95	24.19	17.24	-0.80			
1/13/04	5.50	24.02	18.52	6.32	24.19	17.87	-0.65	0.54	8	4
2/17/04	5.16	24.02	18.86	5.82	24.19	18.37	-0.49			
3/8/04	5.51	24.02	18.51	6.27	24.19	17.92	-0.59			
4/12/04	7.45	24.02	16.57	6.40	24.19	17.79	1.22			
5/12/04	7.55	24.02	16.47	6.91	24.19	17.28	0.81			

Table C-6

Comparison of Layers B and D Potentiometric Heads at the L Wells
BSB Property, Kent, Washington

	Ls			Ld						
Date	Depth to Water	MP Elevation	Groundwater Elevation	Depth to Water	MP Elevation	Groundwater Elevation	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
6/2/04	7.00	24.02	17.02	6.87	24.19	17.32	0.30			
7/2/04	8.48	24.02	15.54	7.22	24.19	16.97	1.43			
8/5/04	9.49	24.02	14.53	7.77	24.19	16.42	1.89			
9/5/04	9.49	24.02	14.53	7.77	24.19	16.42	1.89			
10/4/04	8.60	24.02	15.42	7.58	24.19	16.61	1.19			
11/5/04	6.69	24.02	17.33	7.48	24.19	16.71	-0.62			
12/3/04	6.93	24.02	17.09	7.00	24.19	17.19	0.10			
						Mean:	0.74	Sum:	108	23

Notes:
1. All measurements in feet.
2. Monitoring point (MP, top of PVC casing) elevation in feet relative to the National Geodetic Vertical Datum (NGVD 29).
3. ΔH = layer D groundwater elevation minus layer B groundwater elevation (positive = upward gradient).

Table C-7

Comparison of Layers B and D Potentiometric Heads at the HYCP-1 Wells
BSB Property, Kent, Washington

	HYO-2			HYCP-1i			HYCP-1d			Shallow to Intermediate				Intermediate to Deep			
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
7/10/92	4.86	20.27	15.41	5.91	21.33	15.42	5.20	21.27	16.07	0.01	0.04	7	13	0.65	2.02	20	0
7/16/92	5.17	20.27	15.10	6.25	21.33	15.08	5.32	21.27	15.95	-0.02				0.87			
7/20/92	5.32	20.27	14.95	6.23	21.33	15.10	5.33	21.27	15.94	0.15				0.84			
7/24/92	5.40	20.27	14.87	6.42	21.33	14.91	5.55	21.27	15.72	0.04				0.81			
7/28/92	5.50	20.27	14.77	6.50	21.33	14.83	5.57	21.27	15.70	0.06				0.87			
8/4/92	5.60	20.27	14.67	6.62	21.33	14.71	5.90	21.27	15.37	0.04				0.66			
8/10/92	7.27	20.27	13.00	8.51	21.33	12.82	5.88	21.27	15.39	-0.18				2.57			
8/12/92	7.23	20.27	13.04	8.31	21.33	13.02	5.73	21.27	15.54	-0.02				2.52			
8/19/92	8.84	20.27	11.43	7.87	21.33	13.46	6.00	21.27	15.27	2.03				1.81			
8/23/92	7.92	20.27	12.35	9.11	21.33	12.22	6.23	21.27	15.04	-0.13				2.82			
8/28/92	8.02	20.27	12.25	9.23	21.33	12.10	6.24	21.27	15.03	-0.15				2.93			
9/1/92	7.23	20.27	13.04	8.22	21.33	13.11	6.26	21.27	15.01	0.07				1.90			
9/8/92	8.15	20.27	12.12	9.36	21.33	11.97	6.25	21.27	15.02	-0.15				3.05			
9/18/92	8.45	20.27	11.82	9.64	21.33	11.69	6.54	21.27	14.73	-0.13				3.04			
9/29/92	8.23	20.27	12.04	9.44	21.33	11.89	6.35	21.27	14.92	-0.15				3.03			
10/6/92	8.48	20.27	11.79	9.70	21.33	11.63	6.84	21.27	14.43	-0.16				2.80			
10/15/92	8.56	20.27	11.71	9.77	21.33	11.56	6.75	21.27	14.52	-0.15				2.96			
11/3/92	6.86	20.27	13.41	7.94	21.33	13.39	6.70	21.27	14.57	-0.02				1.18			
11/9/92	7.72	20.27	12.55	8.99	21.33	12.34	6.34	21.27	14.93	-0.21				2.59			
12/16/92	6.41	20.27	13.86	7.68	21.33	13.65	5.16	21.27	16.11	-0.21				2.46			
1/5/93	6.76	20.27	13.51	8.00	21.33	13.33	5.28	21.27	15.99	-0.18	0.07	2	7	2.66	2.62	9	0
2/3/93	6.08	20.27	14.19	7.31	21.33	14.02	4.71	21.27	16.56	-0.17				2.54			
3/12/93	5.45	20.27	14.82	6.46	21.33	14.87	5.10	21.27	16.17	0.05				1.30			
4/7/93	6.23	20.27	14.04	7.56	21.33	13.77	4.83	21.27	16.44	-0.27				2.67			
5/4/93	5.86	20.27	14.41	7.10	21.33	14.23	4.50	21.27	16.77	-0.18				2.54			
5/27/93	7.93	20.27	12.34	7.15	21.33	14.18	4.53	21.27	16.74	1.84				2.56			
7/6/93	7.08	20.27	13.19	8.28	21.33	13.05	5.25	21.27	16.02	-0.14				2.97			
10/11/93	8.54	20.27	11.73	9.76	21.33	11.57	6.56	21.27	14.71	-0.16				3.14			
12/8/93	7.70	20.27	12.57	8.95	21.33	12.38	5.67	21.27	15.60	-0.19				3.22			
2/1/94	7.27	20.27	13.00	8.45	21.33	12.88	5.60	21.27	15.67	-0.12	-0.15	0	5	2.79	2.26	5	0
4/14/94	5.55	20.27	14.72	6.79	21.33	14.54	4.55	21.27	16.72	-0.18				2.18			

Table C-7

Comparison of Layers B and D Potentiometric Heads at the HYCP-1 Wells
BSB Property, Kent, Washington

	HYO-2			HYCP-1i			HYCP-1d			Shallow to Intermediate				Intermediate to Deep			
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
6/1/94	6.59	20.27	13.68	7.88	21.33	13.45	5.16	21.27	16.11	-0.23				2.66			
7/12/94	7.33	20.27	12.94	8.49	21.33	12.84	7.69	21.27	13.58	-0.10				0.74			
10/19/94	8.66	20.27	11.61	9.85	21.33	11.48	6.88	21.27	14.39	-0.13				2.91			
1/16/95	5.22	20.27	15.05	6.56	21.33	14.77	4.67	21.27	16.60	-0.28	-0.13	0	8	1.83	2.17	8	0
2/9/95	5.34	20.27	14.93	6.47	21.33	14.86	4.44	21.27	16.83	-0.07				1.97			
4/24/95	5.50	20.27	14.77	6.71	21.33	14.62	4.37	21.27	16.90	-0.15				2.28			
5/17/95	6.35	20.27	13.92	7.52	21.33	13.81	4.98	21.27	16.29	-0.11				2.48			
6/20/95	6.84	20.27	13.43	8.02	21.33	13.31	5.48	21.27	15.79	-0.12				2.48			
7/10/95	6.83	20.27	13.44	8.02	21.33	13.31	5.67	21.27	15.60	-0.13				2.29			
8/15/95	7.58	20.27	12.69	8.70	21.33	12.63	6.10	21.27	15.17	-0.06				2.54			
12/6/95	4.98	20.27	15.29	6.17	21.33	15.16	4.62	21.27	16.65	-0.13				1.49			
1/3/96	4.61	20.27	15.66	5.78	21.33	15.55	3.92	21.27	17.35	-0.11	-0.07	1	7	1.80	1.74	8	0
3/25/96	4.67	20.27	15.60	5.84	21.33	15.49	4.06	21.27	17.21	-0.11				1.72			
5/1/96	3.94	20.27	16.33	5.10	21.33	16.23	3.74	21.27	17.53	-0.10				1.30			
5/28/96	4.33	20.27	15.94	5.47	21.33	15.86	4.04	21.27	17.23	-0.08				1.37			
6/26/96	5.77	20.27	14.50	6.85	21.33	14.48	4.62	21.27	16.65	-0.02				2.17			
7/30/96	6.65	20.27	13.62	7.73	21.33	13.60	5.54	21.27	15.73	-0.02				2.13			
9/9/96	6.76	20.27	13.51	7.80	21.33	13.53	6.00	21.27	15.27	0.02				1.74			
11/15/96	5.66	20.27	14.61	6.83	21.33	14.50	5.05	21.27	16.22	-0.11				1.72			
1/6/97	2.57	20.27	17.70	3.57	21.33	17.76	3.26	21.27	18.01	0.06	0.33	3	8	0.25	1.71	11	0
3/6/97	3.98	20.27	16.29	5.09	21.33	16.24	3.59	21.27	17.68	-0.05				1.44			
4/29/97	4.09	20.27	16.18	5.20	21.33	16.13	3.65	21.27	17.62	-0.05				1.49			
5/20/97	8.93	20.27	11.34	5.94	21.33	15.39	3.91	21.27	17.36	4.05				1.97			
6/16/97	5.10	20.27	15.17	6.18	21.33	15.15	4.20	21.27	17.07	-0.02				1.92			
7/7/97	4.82	20.27	15.45	5.83	21.33	15.50	4.43	21.27	16.84	0.05				1.34			
8/4/97	5.91	20.27	14.36	6.99	21.33	14.34	4.87	21.27	16.40	-0.02				2.06			
9/16/97	6.56	20.27	13.71	7.71	21.33	13.62	5.26	21.27	16.01	-0.09				2.39			
10/7/97	5.34	20.27	14.93	6.48	21.33	14.85	4.87	21.27	16.40	-0.08				1.55			
11/7/97	5.27	20.27	15.00	6.44	21.33	14.89	4.61	21.27	16.66	-0.11				1.77			
12/8/97	6.11	20.27	14.16	7.28	21.33	14.05	4.58	21.27	16.69	-0.11				2.64			
1/12/98	5.11	20.27	15.16	6.27	21.33	15.06	3.83	21.27	17.44	-0.10	-0.09	2	10	2.38	2.48	11	1

Table C-7

Comparison of Layers B and D Potentiometric Heads at the HYCP-1 Wells
BSB Property, Kent, Washington

										Shallow to Intermediate				Intermediate to Deep			
	HYO-2			HYCP-1i			HYCP-1d									
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
2/26/98	5.29	20.27	14.98	6.47	21.33	14.86	4.13	21.27	17.14	-0.12				2.28			
3/9/98	5.20	20.27	15.07	6.36	21.33	14.97	4.00	21.27	17.27	-0.10				2.30			
4/7/98	5.66	20.27	14.61	6.81	21.33	14.52	4.16	21.27	17.11	-0.09				2.59			
5/5/98	6.43	20.27	13.84	7.59	21.33	13.74	4.57	21.27	16.70	-0.10				2.96			
6/8/98	6.77	20.27	13.50	7.92	21.33	13.41	4.92	21.27	16.35	-0.09				2.94			
7/17/98	7.10	20.27	13.17	8.25	21.33	13.08	5.30	21.27	15.97	-0.09				2.89			
8/4/98	7.20	20.27	13.07	8.34	21.33	12.99	5.55	21.27	15.72	-0.08				2.73			
9/8/98	7.67	20.27	12.60	8.71	21.33	12.62	5.99	21.27	15.28	0.02				2.66			
10/9/98	7.54	20.27	12.73	8.67	21.33	12.66	6.30	21.27	14.97	-0.07				2.31			
11/3/98	7.26	20.27	13.01	8.41	21.33	12.92	5.98	21.27	15.29	-0.09				2.37			
12/8/98	4.90	20.27	15.37	6.07	21.33	15.26	4.61	21.27	16.66	-0.11				1.40			
1/4/99	4.51	20.27	15.76	5.63	21.33	15.70	3.67	21.27	17.60	-0.06	-0.07	1	11	1.90	2.22	12	0
2/2/99	3.59	20.27	16.68	4.72	21.33	16.61	2.96	21.27	18.31	-0.07				1.70			
3/8/99	4.03	20.27	16.24	5.18	21.33	16.15	2.82	21.27	18.45	-0.09				2.30			
4/29/99	5.26	20.27	15.01	6.40	21.33	14.93	3.99	21.27	17.28	-0.08				2.35			
5/21/99	5.29	20.27	14.98	6.45	21.33	14.88	4.26	21.27	17.01	-0.10				2.13			
6/22/99	6.05	20.27	14.22	7.16	21.33	14.17	4.76	21.27	16.51	-0.05				2.34			
6/24/99	4.80	20.27	15.47	5.80	21.33	15.53	4.44	21.27	16.83	0.06				1.30			
7/21/99	6.49	20.27	13.78	7.65	21.33	13.68	4.82	21.27	16.45	-0.10				2.77			
8/27/99	6.75	20.27	13.52	7.86	21.33	13.47	5.02	21.27	16.25	-0.05				2.78			
9/14/99	7.16	20.27	13.11	8.26	21.33	13.07	5.44	21.27	15.83	-0.04				2.76			
10/5/99	7.46	20.27	12.81	8.55	21.33	12.78	5.65	21.27	15.62	-0.03				2.84			
11/15/99	5.92	20.27	14.35	7.10	21.33	14.23	5.05	21.27	16.22	-0.12				1.99			
12/6/99	5.11	20.27	15.16	6.32	21.33	15.01	4.54	21.27	16.73	-0.15				1.72			
1/6/00	5.13	20.27	15.14	6.27	21.33	15.06	6.27	21.27	15.00	-0.08	-0.43	0	6	-0.06	1.80	7	1
2/14/00	4.79	20.27	15.48	6.17	21.33	15.16	3.95	21.27	17.32	-0.32				2.16			
3/16/00	4.62	20.27	15.65	5.77	21.33	15.56	3.63	21.27	17.64	-0.09				2.08			
4/11/00	5.55	20.27	14.72	6.65	21.33	14.68	4.04	21.27	17.23	-0.04				2.55			
5/11/00	4.32	20.27	15.95	6.45	21.33	14.88	4.31	21.27	16.96	-1.07				2.08			
6/6/00	5.01	20.27	15.26	7.03	21.33	14.30	5.55	21.27	15.72	-0.96				1.42			
7/26/00				7.65	21.33	13.68	5.82	21.27	15.45	–				1.77			

Table C-7

Comparison of Layers B and D Potentiometric Heads at the HYCP-1 Wells
BSB Property, Kent, Washington

	HYO-2			HYCP-1i			HYCP-1d			Shallow to Intermediate				Intermediate to Deep			
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
8/21/00				8.23	21.33	13.10	5.75	21.27	15.52	–				2.42			
1/16/01	6.23	20.27	14.04	7.28	21.33	14.05	5.28	21.27	15.99	0.01	0.33	5	7	1.94	1.74	11	1
2/15/01	6.11	20.27	14.16	6.83	21.33	14.50	4.86	21.27	16.41	0.34				1.91			
3/13/01	5.77	20.27	14.50	6.70	21.33	14.63	4.71	21.27	16.56	0.13				1.93			
4/15/01	5.39	20.27	14.88	6.63	21.33	14.70	4.53	21.27	16.74	-0.18				2.04			
5/7/01	5.78	20.27	14.49	6.88	21.33	14.45	4.76	21.27	16.51	-0.04				2.06			
6/10/01	5.99	20.27	14.28	5.00	21.33	16.33	5.91	21.27	15.36	2.05				-0.97			
7/16/01	6.24	20.27	14.03	7.31	21.33	14.02	4.88	21.27	16.39	-0.01				2.37			
8/14/01	7.01	20.27	13.26	8.09	21.33	13.24	6.92	21.27	14.35	-0.02				1.11			
9/12/01	7.37	20.27	12.90	8.48	21.33	12.85	5.95	21.27	15.32	-0.05				2.47			
10/4/01	8.64	20.27	11.63	9.77	21.33	11.56	7.21	21.27	14.06	-0.07				2.50			
11/9/01	7.64	20.27	12.63	8.72	21.33	12.61	6.45	21.27	14.82	-0.02				2.21			
12/3/01	6.98	20.27	13.29	6.18	21.33	15.15	4.80	21.27	16.47	1.86				1.32			
1/3/02	6.08	20.27	14.19	6.93	21.33	14.40	5.14	21.27	16.13	0.21	0.06	7	5	1.73	2.32	12	0
2/7/02	4.53	20.27	15.74	5.50	21.33	15.83	3.55	21.27	17.72	0.09				1.89			
3/7/02	4.94	20.27	15.33	5.94	21.33	15.39	3.71	21.27	17.56	0.06				2.17			
4/23/02	5.78	20.27	14.49	5.78	21.33	15.55	3.96	21.27	17.31	1.06				1.76			
5/9/02	5.07	20.27	15.20	6.08	21.33	15.25	4.07	21.27	17.20	0.05				1.95			
6/19/02	6.04	20.27	14.23	7.31	21.33	14.02	4.68	21.27	16.59	-0.21				2.57			
7/12/02	6.60	20.27	13.67	8.05	21.33	13.28	4.97	21.27	16.30	-0.39				3.02			
8/21/02	7.19	20.27	13.08	8.28	21.33	13.05	5.55	21.27	15.72	-0.03				2.67			
9/24/02	7.43	20.27	12.84	8.49	21.33	12.84	5.89	21.27	15.38	0.00				2.54			
10/15/02	7.42	20.27	12.85	8.50	21.33	12.83	5.90	21.27	15.37	-0.02				2.54			
11/5/02	7.49	20.27	12.78	8.55	21.33	12.78	6.04	21.27	15.23	0.00				2.45			
12/10/02	6.90	20.27	13.37	8.00	21.33	13.33	5.44	21.27	15.83	-0.04				2.50			
1/17/03	4.30	20.27	15.97	5.53	21.33	15.80	4.57	21.27	16.70	-0.17	-0.23	3	9	0.90	1.97	12	0
2/12/03	4.80	20.27	15.47	5.84	21.33	15.49	3.90	21.27	17.37	0.02				1.88			
3/5/03	4.86	20.27	15.41	5.93	21.33	15.40	3.91	21.27	17.36	-0.01				1.96			
4/8/03	4.33	20.27	15.94	5.39	21.33	15.94	3.80	21.27	17.47	0.00				1.53			
5/1/03	4.95	20.27	15.32	6.82	21.33	14.51	4.12	21.27	17.15	-0.81				2.64			
6/10/03	5.11	20.27	15.16	6.16	21.33	15.17	4.22	21.27	17.05	0.01				1.88			

Table C-7

Comparison of Layers B and D Potentiometric Heads at the HYCP-1 Wells
BSB Property, Kent, Washington

										Shallow to Intermediate				Intermediate to Deep			
	HYO-2			HYCP-1i			HYCP-1d										
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
7/3/03	6.50	20.27	13.77	7.61	21.33	13.72	5.15	21.27	16.12	-0.05				2.40			
8/7/03	7.03	20.27	13.24	8.15	21.33	13.18	5.60	21.27	15.67	-0.06				2.49			
9/11/03	7.52	20.27	12.75	8.64	21.33	12.69	6.17	21.27	15.10	-0.06				2.41			
10/3/03	6.12	20.27	14.15	8.73	21.33	12.60	6.15	21.27	15.12	-1.55				2.52			
11/11/03	6.46	20.27	13.81	7.55	21.33	13.78	5.41	21.27	15.86	-0.03				2.08			
12/3/03	4.95	20.27	15.32	6.18	21.33	15.15	4.61	21.27	16.66	-0.17				1.51			
1/13/04	4.28	20.27	15.99	5.43	21.33	15.90	3.94	21.27	17.33	-0.09	-0.06	2	10	1.43	1.88	12	0
2/17/04	3.83	20.27	16.44	4.99	21.33	16.34	3.39	21.27	17.88	-0.10				1.54			
3/8/04	4.44	20.27	15.83	5.62	21.33	15.71	3.91	21.27	17.36	-0.12				1.65			
4/12/04	5.42	20.27	14.85	6.53	21.33	14.80	4.05	21.27	17.22	-0.05				2.42			
5/12/04	5.76	20.27	14.51	6.98	21.33	14.35	4.55	21.27	16.72	-0.16				2.37			
6/2/04	5.19	20.27	15.08	6.32	21.33	15.01	4.46	21.27	16.81	-0.07				1.80			
7/2/04	5.66	20.27	14.61	6.67	21.33	14.66	4.80	21.27	16.47	0.05				1.81			
8/5/04	6.80	20.27	13.47	7.88	21.33	13.45	5.37	21.27	15.90	-0.02				2.45			
9/4/04	6.80	20.27	13.47	7.88	21.33	13.45	5.37	21.27	15.90	-0.02				2.45			
10/4/04	6.00	20.27	14.27	7.03	21.33	14.30	5.11	21.27	16.16	0.03				1.86			
11/5/04	5.22	20.27	15.05	6.35	21.33	14.98	5.00	21.27	16.27	-0.07				1.29			
12/3/04	5.02	20.27	15.25	6.12	21.33	15.21	4.55	21.27	16.72	-0.04				1.51			
									Mean:	0.00	Sum:	33	106	2.07	Sum:	138	3

Notes:
1. All measurements in feet.
2. Monitoring point (MP, top of PVC casing) elevation in feet relative to the National Geodetic Vertical Datum (NGVD 29).
3. GW = groundwater.
4. Elev. = elevation.
5. ΔH = lower layer groundwater elevation minus higher layer groundwater elevation (positive = upward gradient).
6. HYCP-1i and HYCP-1d data on 10/9/98 switched to correct the apparent misrecording of data in the field book.
7. The 1/6/00 groundwater elevation for HYCP-1d appears to be incorrect, possibly measured or recorded incorrectly in the field.
8. The 6/10/01 groundwater elevations for HYCP-1i and HYCP-1d appear to be incorrect, possibly measured or recorded incorrectly in the field.

Table C-8

Comparison of Layers B and D Potentiometric Heads at the HY-11 Wells
BSB Property, Kent, Washington

	HY-11s			HY-11i			HY-11d			Shallow to Intermediate				Intermediate to Deep			
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
7/10/92	8.36	25.17	16.81	8.29	25.08	16.79	8.02	25.03	17.01	-0.02	-0.04	6	13	0.22	0.60	18	1
7/20/92	8.39	25.17	16.78	8.68	25.08	16.40	8.17	25.03	16.86	-0.38				0.46			
7/24/92	8.89	25.17	16.28	8.81	25.08	16.27	8.37	25.03	16.66	-0.01				0.39			
7/28/92	8.97	25.17	16.20	9.03	25.08	16.05	8.42	25.03	16.61	-0.15				0.56			
8/4/92	9.16	25.17	16.01	9.08	25.08	16.00	8.48	25.03	16.55	-0.01				0.55			
8/10/92	9.19	25.17	15.98	9.12	25.08	15.96	8.63	25.03	16.40	-0.02				0.44			
8/12/92	9.26	25.17	15.91	9.21	25.08	15.87	8.50	25.03	16.53	-0.04				0.66			
8/19/92	9.47	25.17	15.70	9.42	25.08	15.66	8.34	25.03	16.69	-0.04				1.03			
8/23/92	9.77	25.17	15.40	9.65	25.08	15.43	8.91	25.03	16.12	0.03				0.69			
8/28/92	9.82	25.17	15.35	9.72	25.08	15.36	8.84	25.03	16.19	0.01				0.83			
9/1/92	9.96	25.17	15.21	9.91	25.08	15.17	8.93	25.03	16.10	-0.04				0.93			
9/8/92	10.04	25.17	15.13	9.99	25.08	15.09	8.99	25.03	16.04	-0.04				0.95			
9/18/92	10.30	25.17	14.87	10.20	25.08	14.88	9.17	25.03	15.86	0.01				0.98			
9/29/92	10.18	25.17	14.99	10.10	25.08	14.98	9.03	25.03	16.00	-0.01				1.02			
10/6/92	10.34	25.17	14.83	10.25	25.08	14.83	9.52	25.03	15.51	0.00				0.68			
10/15/92	10.35	25.17	14.82	10.36	25.08	14.72	9.40	25.03	15.63	-0.10				0.91			
11/3/92	9.56	25.17	15.61	9.50	25.08	15.58	9.30	25.03	15.73	-0.03				0.15			
11/9/92	9.19	25.17	15.98	9.06	25.08	16.02	8.93	25.03	16.10	0.04				0.08			
12/16/92	7.72	25.17	17.45	7.63	25.08	17.45	7.70	25.03	17.33	0.00				-0.12			
1/5/93	8.91	25.17	16.26	7.84	25.08	17.24	7.80	25.03	17.23	0.98	0.09	2	7	-0.01	0.23	5	4
2/3/93	7.18	25.17	17.99	7.13	25.08	17.95	7.17	25.03	17.86	-0.04				-0.09			
3/12/93	8.03	25.17	17.14	7.94	25.08	17.14	7.62	25.03	17.41	0.00				0.27			
4/7/93	7.11	25.17	18.06	7.05	25.08	18.03	7.26	25.03	17.77	-0.03				-0.26			
5/4/93	6.58	25.17	18.59	6.50	25.08	18.58	6.94	25.03	18.09	-0.01				-0.49			
5/27/93	7.50	25.17	17.67	7.44	25.08	17.64	7.11	25.03	17.92	-0.03				0.28			
7/6/93	8.27	25.17	16.90	8.21	25.08	16.87	7.70	25.03	17.33	-0.03				0.46			
10/11/93	10.15	25.17	15.02	10.09	25.08	14.99	8.98	25.03	16.05	-0.03				1.06			
12/8/93	9.17	25.17	16.00	9.10	25.08	15.98	8.22	25.03	16.81	-0.02				0.83			
2/1/94	8.30	25.17	16.87	8.22	25.08	16.86	7.95	25.03	17.08	-0.01	-0.02	1	3	0.22	0.38	4	1
4/14/94	6.84	25.17	18.33	6.77	25.08	18.31	7.06	25.03	17.97	-0.02				-0.34			
6/1/94	–			8.20	25.08	16.88	7.99	25.03	17.04	–				0.16			

Table C-8

Comparison of Layers B and D Potentiometric Heads at the HY-11 Wells
BSB Property, Kent, Washington

										Shallow to Intermediate				Intermediate to Deep			
	HY-11s			HY-11i			HY-11d										
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
7/12/94	9.16	25.17	16.01	9.10	25.08	15.98	8.35	25.03	16.68	-0.03				0.70			
10/19/94	10.80	25.17	14.37	10.71	25.08	14.37	9.51	25.03	15.52	0.00				1.15			
1/16/95	6.43	25.17	18.74	3.38	25.08	21.70	7.16	25.03	17.87	2.96	0.36	4	4	-3.83	-0.57	4	4
2/9/95	6.50	25.17	18.67	6.41	25.08	18.67	6.85	25.03	18.18	0.00				-0.49			
4/24/95	6.96	25.17	18.21	6.90	25.08	18.18	6.78	25.03	18.25	-0.03				0.07			
5/17/95	7.72	25.17	17.45	7.69	25.08	17.39	7.50	25.03	17.53	-0.06				0.14			
6/20/95	8.61	25.17	16.56	8.53	25.08	16.55	8.10	25.03	16.93	-0.01				0.38			
7/10/95	8.84	25.17	16.33	8.71	25.08	16.37	8.74	25.03	16.29	0.04				-0.08			
8/15/95	9.85	25.17	15.32	9.75	25.08	15.33	8.82	25.03	16.21	0.01				0.88			
12/6/95	6.11	25.17	19.06	6.05	25.08	19.03	7.65	25.03	17.38	-0.03				-1.65			
1/3/96	6.00	25.17	19.17	5.91	25.08	19.17	6.33	25.03	18.70	0.00	-0.02	2	6	-0.47	-0.05	3	5
3/25/96	6.24	25.17	18.93	6.20	25.08	18.88	6.30	25.03	18.73	-0.05				-0.15			
5/1/96	5.60	25.17	19.57	5.55	25.08	19.53	6.20	25.03	18.83	-0.04				-0.70			
5/28/96	6.41	25.17	18.76	6.35	25.08	18.73	6.55	25.03	18.48	-0.03				-0.25			
6/26/96	7.72	25.17	17.45	7.64	25.08	17.44	7.24	25.03	17.79	-0.01				0.35			
7/30/96	8.74	25.17	16.43	8.69	25.08	16.39	8.20	25.03	16.83	-0.04				0.44			
9/9/96	9.44	25.17	15.73	9.37	25.08	15.71	8.74	25.03	16.29	-0.02				0.58			
11/15/96	7.66	25.17	17.51	7.56	25.08	17.52	7.70	25.03	17.33	0.01				-0.19			
1/6/97	4.73	25.17	20.44	4.70	25.08	20.38	5.90	25.03	19.13	-0.06	0.10	5	6	-1.25	-0.21	5	6
3/6/97	5.51	25.17	19.66	5.39	25.08	19.69	6.12	25.03	18.91	0.03				-0.78			
4/29/97	5.73	25.17	19.44	5.70	25.08	19.38	6.18	25.03	18.85	-0.06				-0.53			
5/20/97	6.70	25.17	18.47	6.73	25.08	18.35	6.47	25.03	18.56	-0.12				0.21			
6/16/97	7.03	25.17	18.14	6.98	25.08	18.10	6.83	25.03	18.20	-0.04				0.10			
7/7/97	7.19	25.17	17.98	7.12	25.08	17.96	7.12	25.03	17.91	-0.02				-0.05			
8/4/97	8.03	25.17	17.14	7.95	25.08	17.13	7.55	25.03	17.48	-0.01				0.35			
9/16/97	8.66	25.17	16.51	8.55	25.08	16.53	7.99	25.03	17.04	0.02				0.51			
10/7/97	7.50	25.17	17.67	7.39	25.08	17.69	7.62	25.03	17.41	0.02				-0.28			
11/7/97	7.25	25.17	17.92	6.74	25.08	18.34	7.29	25.03	17.74	0.42				-0.60			
12/8/97	8.24	25.17	16.93	7.24	25.08	17.84	7.18	25.03	17.85	0.91				0.01			
1/12/98	6.27	25.17	18.90	6.18	25.08	18.90	6.32	25.03	18.71	0.00	-0.01	9	3	-0.19	0.03	5	7
2/26/98	6.16	25.17	19.01	6.21	25.08	18.87	6.65	25.03	18.38	-0.14				-0.49			

Table C-8

Comparison of Layers B and D Potentiometric Heads at the HY-11 Wells
BSB Property, Kent, Washington

	HY-11s			HY-11i			HY-11d			Shallow to Intermediate				Intermediate to Deep			
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
3/9/98	6.61	25.17	18.56	6.07	25.08	19.01	6.74	25.03	18.29	0.45				-0.72			
4/7/98	7.64	25.17	17.53	6.56	25.08	18.52	6.90	25.03	18.13	0.99				-0.39			
5/5/98	8.17	25.17	17.00	7.61	25.08	17.47	7.11	25.03	17.92	0.47				0.45			
6/8/98	8.91	25.17	16.26	8.07	25.08	17.01	7.57	25.03	17.46	0.75				0.45			
7/17/98	9.33	25.17	15.84	8.81	25.08	16.27	7.98	25.03	17.05	0.43				0.78			
8/4/98	9.98	25.17	15.19	9.24	25.08	15.84	8.26	25.03	16.77	0.65				0.93			
9/8/98	10.50	25.17	14.67	9.88	25.08	15.20	8.73	25.03	16.30	0.53				1.10			
10/9/98	9.65	25.17	15.52	9.13	25.08	15.95	9.12	25.03	15.91	0.43				-0.04			
11/3/98	5.83	25.17	19.34	9.57	25.08	15.51	9.73	25.03	15.30	-3.83				-0.21			
12/8/98	5.11	25.17	20.06	5.90	25.08	19.18	7.21	25.03	17.82	-0.88				-1.36			
1/4/99	3.70	25.17	21.47	5.11	25.08	19.97	6.22	25.03	18.81	-1.50	0.26	9	4	-1.16	-0.28	5	8
2/2/99	5.13	25.17	20.04	3.64	25.08	21.44	5.48	25.03	19.55	1.40				-1.89			
3/8/99	6.73	25.17	18.44	5.08	25.08	20.00	5.39	25.03	19.64	1.56				-0.36			
4/29/99	6.86	25.17	18.31	6.69	25.08	18.39	6.68	25.03	18.35	0.08				-0.04			
5/21/99	8.06	25.17	17.11	6.80	25.08	18.28	6.97	25.03	18.06	1.17				-0.22			
6/22/99	7.71	25.17	17.46	7.99	25.08	17.09	7.57	25.03	17.46	-0.37				0.37			
6/24/99	8.15	25.17	17.02	7.56	25.08	17.52	7.25	25.03	17.78	0.50				0.26			
7/21/99	8.83	25.17	16.34	8.10	25.08	16.98	7.63	25.03	17.40	0.64				0.42			
8/27/99	9.29	25.17	15.88	8.77	25.08	16.31	7.87	25.03	17.16	0.43				0.85			
9/14/99	9.71	25.17	15.46	9.22	25.08	15.86	8.31	25.03	16.72	0.40				0.86			
10/5/99	7.29	25.17	17.88	6.93	25.08	18.15	8.53	25.03	16.50	0.27				-1.65			
11/15/99	6.21	25.17	18.96	7.22	25.08	17.86	7.88	25.03	17.15	-1.10				-0.71			
12/6/99	6.20	25.17	18.97	6.21	25.08	18.87	6.58	25.03	18.45	-0.10				-0.42			
1/6/00	2.97	25.17	22.20	6.15	25.08	18.93	6.58	25.03	18.45	-3.27	0.02	5	6	-0.48	0.09	6	5
2/14/00	5.77	25.17	19.40	5.98	25.08	19.10	6.02	25.03	19.01	-0.30				-0.09			
3/16/00	6.92	25.17	18.25	5.74	25.08	19.34	6.23	25.03	18.80	1.09				-0.54			
4/11/00	6.75	25.17	18.42	6.91	25.08	18.17	6.72	25.03	18.31	-0.25				0.14			
5/11/00	7.78	25.17	17.39	6.67	25.08	18.41	7.12	25.03	17.91	1.02				-0.50			
6/6/00	8.61	25.17	16.56	7.68	25.08	17.40	7.99	25.03	17.04	0.84				-0.36			
7/26/00	9.56	25.17	15.61	8.55	25.08	16.53	8.11	25.03	16.92	0.92				0.39			
8/21/00	9.88	25.17	15.29	8.69	25.08	16.39	8.53	25.03	16.50	1.10				0.11			

Table C-8

Comparison of Layers B and D Potentiometric Heads at the HY-11 Wells
BSB Property, Kent, Washington

	HY-11s			HY-11i			HY-11d			Shallow to Intermediate				Intermediate to Deep			
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
9/13/00	9.41	25.17	15.76	9.42	25.08	15.66	8.78	25.03	16.25	-0.10				0.59			
11/15/00	8.83	25.17	16.34	9.31	25.08	15.77	8.41	25.03	16.62	-0.57				0.85			
12/17/00	8.59	25.17	16.58	8.77	25.08	16.31	7.87	25.03	17.16	-0.27				0.85			
1/16/01	8.44	25.17	16.73	8.61	25.08	16.47	7.65	25.03	17.38	-0.26	0.13	6	6	0.91	0.16	5	7
2/15/01	8.25	25.17	16.92	8.41	25.08	16.67	7.51	25.03	17.52	-0.25				0.85			
3/13/01	6.19	25.17	18.98	7.04	25.08	18.04	7.01	25.03	18.02	-0.94				-0.02			
4/15/01	7.58	25.17	17.59	6.39	25.08	18.69	6.60	25.03	18.43	1.10				-0.26			
5/7/01	7.71	25.17	17.46	7.50	25.08	17.58	7.60	25.03	17.43	0.12				-0.15			
6/10/01	8.21	25.17	16.96	7.62	25.08	17.46	7.80	25.03	17.23	0.50				-0.23			
7/16/01	8.77	25.17	16.40	8.03	25.08	17.05	7.90	25.03	17.13	0.65				0.08			
8/14/01	10.78	25.17	14.39	8.61	25.08	16.47	7.76	25.03	17.27	2.08				0.80			
9/12/01	11.25	25.17	13.92	9.73	25.08	15.35	10.89	25.03	14.14	1.43				-1.21			
10/4/01	10.15	25.17	15.02	10.15	25.08	14.93	11.14	25.03	13.89	-0.09				-1.04			
11/9/01	7.75	25.17	17.42	9.75	25.08	15.33	10.36	25.03	14.67	-2.09				-0.66			
12/3/01	7.30	25.17	17.87	7.91	25.08	17.17	5.04	25.03	19.99	-0.70				2.82			
1/3/02	5.87	25.17	19.30	7.27	25.08	17.81	7.85	25.03	17.18	-1.49	0.22	8	4	-0.63	-0.12	5	7
2/7/02	6.78	25.17	18.39	5.51	25.08	19.57	6.86	25.03	18.17	1.18				-1.40			
3/7/02	6.25	25.17	18.92	6.43	25.08	18.65	6.22	25.03	18.81	-0.27				0.16			
4/23/02	6.91	25.17	18.26	6.21	25.08	18.87	6.82	25.03	18.21	0.61				-0.66			
5/9/02	8.03	25.17	17.14	6.89	25.08	18.19	6.78	25.03	18.25	1.05				0.06			
6/19/02	8.24	25.17	16.93	7.51	25.08	17.57	7.98	25.03	17.05	0.64				-0.52			
7/12/02	8.24	25.17	16.93	7.69	25.08	17.39	8.17	25.03	16.86	0.46				-0.53			
8/21/02	9.03	25.17	16.14	8.45	25.08	16.63	9.49	25.03	15.54	0.49				-1.09			
9/24/02	9.45	25.17	15.72	9.33	25.08	15.75	9.52	25.03	15.51	0.03				-0.24			
10/15/02	10.16	25.17	15.01	10.08	25.08	15.00	8.83	25.03	16.20	-0.01				1.20			
11/5/02	10.39	25.17	14.78	10.29	25.08	14.79	9.05	25.03	15.98	0.01				1.19			
12/10/02	9.68	25.17	15.49	9.60	25.08	15.48	8.56	25.03	16.47	-0.01				0.99			
1/17/03	7.04	25.17	18.13	6.99	25.08	18.09	7.42	25.03	17.61	-0.04	-0.25	1	11	-0.48	0.14	5	7
2/12/03	6.70	25.17	18.47	6.69	25.08	18.39	6.80	25.03	18.23	-0.08				-0.16			
3/5/03	6.89	25.17	18.28	6.83	25.08	18.25	6.94	25.03	18.09	-0.03				-0.16			
4/8/03	6.27	25.17	18.90	6.22	25.08	18.86	6.70	25.03	18.33	-0.04				-0.53			

Table C-8

Comparison of Layers B and D Potentiometric Heads at the HY-11 Wells
BSB Property, Kent, Washington

										Shallow to Intermediate				Intermediate to Deep			
	HY-11s			HY-11i			HY-11d										
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
5/1/03	6.82	25.17	18.35	6.78	25.08	18.30	6.87	25.03	18.16	-0.05				-0.14			
6/10/03	6.99	25.17	18.18	7.02	25.08	18.06	7.10	25.03	17.93	-0.12				-0.13			
7/3/03	8.89	25.17	16.28	8.80	25.08	16.28	8.01	25.03	17.02	0.00				0.74			
8/7/03	9.72	25.17	15.45	9.67	25.08	15.41	8.54	25.03	16.49	-0.04				1.08			
9/11/03	10.32	25.17	14.85	10.24	25.08	14.84	9.39	25.03	15.64	-0.01				0.80			
10/3/03	9.12	25.17	16.05	10.53	25.08	14.55	10.45	25.03	14.58	-1.50				0.03			
11/11/03	8.68	25.17	16.49	9.61	25.08	15.47	8.21	25.03	16.82	-1.02				1.35			
12/3/03	6.54	25.17	18.63	6.49	25.08	18.59	7.18	25.03	17.85	-0.04				-0.74			
1/13/04	5.95	25.17	19.22	5.89	25.08	19.19	6.62	25.03	18.41	-0.03	-0.04	2	10	-0.78	-0.03	7	5
2/17/04	5.37	25.17	19.80	5.29	25.08	19.79	6.67	25.03	18.36	-0.01				-1.43			
3/8/04	5.90	25.17	19.27	5.90	25.08	19.18	6.90	25.03	18.13	-0.09				-1.05			
4/12/04	7.10	25.17	18.07	7.04	25.08	18.04	6.81	25.03	18.22	-0.03				0.18			
5/12/04	7.78	25.17	17.39	7.73	25.08	17.35	7.44	25.03	17.59	-0.04				0.24			
6/2/04	7.36	25.17	17.81	7.30	25.08	17.78	7.41	25.03	17.62	-0.03				-0.16			
7/2/04	8.47	25.17	16.70	8.39	25.08	16.69	7.93	25.03	17.10	-0.01				0.41			
8/5/04	9.36	25.17	15.81	9.27	25.08	15.81	8.30	25.03	16.73	0.00				0.92			
9/4/04	9.36	25.17	15.81	9.27	25.08	15.81	8.30	25.03	16.73	0.00				0.92			
10/4/04	8.73	25.17	16.44	8.66	25.08	16.42	8.07	25.03	16.96	-0.02				0.54			
11/5/04	7.74	25.17	17.43	7.67	25.08	17.41	7.92	25.03	17.11	-0.02				-0.30			
12/3/04	7.46	25.17	17.71	7.51	25.08	17.57	7.33	25.03	17.70	-0.14				0.13			
									Mean:	0.06	Sum:	60	83	0.05	Sum:	77	67

Notes:
1. All measurements in feet.
2. Monitoring point (MP, top of PVC casing) elevation in feet relative to the National Geodetic Vertical Datum (NGVD 29).
3. GW = groundwater.
4. Elev. = elevation.
5. ΔH = lower layer groundwater elevation minus higher layer groundwater elevation (positive = upward gradient).

Table C-9

Comparison of Layers B and D Potentiometric Heads at the G Wells
BSB Property, Kent, Washington

	Gs			Gi			Gd			Shallow to Intermediate				Intermediate to Deep			
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
7/10/92	5.60	20.95	15.35	5.99	21.33	15.34	4.86	20.79	15.93	-0.01	-0.13	4	16	0.59	1.81	20	0
7/16/92	6.00	20.95	14.95	6.38	21.33	14.95	5.00	20.79	15.79	0.00				0.84			
7/20/92	6.00	20.95	14.95	6.38	21.33	14.95	5.00	20.79	15.79	0.00				0.84			
7/24/92	6.16	20.95	14.79	6.65	21.33	14.68	5.21	20.79	15.58	-0.11				0.90			
7/28/92	6.21	20.95	14.74	6.58	21.33	14.75	5.23	20.79	15.56	0.01				0.81			
8/4/92	6.27	20.95	14.68	6.68	21.33	14.65	5.27	20.79	15.52	-0.03				0.87			
8/10/92	7.72	20.95	13.23	8.27	21.33	13.06	5.57	20.79	15.22	-0.17				2.16			
8/12/92	7.66	20.95	13.29	8.17	21.33	13.16	5.41	20.79	15.38	-0.13				2.22			
8/19/92	8.04	20.95	12.91	7.66	21.33	13.67	5.68	20.79	15.11	0.76				1.44			
8/23/92	8.35	20.95	12.60	8.88	21.33	12.45	5.89	20.79	14.90	-0.15				2.45			
8/28/92	8.42	20.95	12.53	9.00	21.33	12.33	5.94	20.79	14.85	-0.20				2.52			
9/1/92	7.95	20.95	13.00	8.42	21.33	12.91	5.95	20.79	14.84	-0.09				1.93			
9/8/92	8.52	20.95	12.43	9.10	21.33	12.23	5.95	20.79	14.84	-0.20				2.61			
9/18/92	7.95	20.95	13.00	9.40	21.33	11.93	6.21	20.79	14.58	-1.07				2.65			
9/29/92	8.57	20.95	12.38	9.19	21.33	12.14	6.02	20.79	14.77	-0.24				2.63			
10/6/92	8.82	20.95	12.13	9.45	21.33	11.88	6.46	20.79	14.33	-0.25				2.45			
10/15/92	8.95	20.95	12.00	9.54	21.33	11.79	6.41	20.79	14.38	-0.21				2.59			
11/3/92	7.66	20.95	13.29	8.06	21.33	13.27	6.30	20.79	14.49	-0.02				1.22			
11/9/92	8.07	20.95	12.88	8.77	21.33	12.56	5.94	20.79	14.85	-0.32				2.29			
12/16/92	6.85	20.95	14.10	7.49	21.33	13.84	4.84	20.79	15.95	-0.26				2.11			
1/5/93	7.20	20.95	13.75	7.84	21.33	13.49	4.99	20.79	15.80	-0.26	-0.16	1	8	2.31	2.55	9	0
2/3/93	6.60	20.95	14.35	7.13	21.33	14.20	4.43	20.79	16.36	-0.15				2.16			
3/12/93	6.25	20.95	14.70	6.61	21.33	14.72	4.81	20.79	15.98	0.02				1.26			
4/7/93	6.76	20.95	14.19	7.41	21.33	13.92	4.04	20.79	16.75	-0.27				2.83			
5/4/93	6.50	20.95	14.45	6.98	21.33	14.35	4.25	20.79	16.54	-0.10				2.19			
5/27/93	6.43	20.95	14.52	6.90	21.33	14.43	4.27	20.79	16.52	-0.09				2.09			
7/6/93	7.65	20.95	13.30	8.11	21.33	13.22	5.02	20.79	15.77	-0.08				2.55			
10/11/93	8.94	20.95	12.01	9.53	21.33	11.80	6.23	20.79	14.56	-0.21				2.76			
12/8/93	8.12	20.95	12.83	8.77	21.33	12.56	3.45	20.79	17.34	-0.27				4.78			
2/1/94	7.65	20.95	13.30	8.10	21.33	13.23	5.11	20.79	15.68	-0.07	-0.06	1	4	2.45	1.83	4	1
3/31/94	7.20	20.95	13.75	7.63	21.33	13.70	4.84	20.79	15.95	-0.05				2.25			

Table C-9

Comparison of Layers B and D Potentiometric Heads at the G Wells
BSB Property, Kent, Washington

										Shallow to Intermediate				Intermediate to Deep			
	Gs			Gi			Gd										
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
4/14/94	6.02	20.95	14.93	6.21	21.33	15.12	6.35	20.79	14.44	0.19				-0.68			
7/12/94	7.90	20.95	13.05	8.37	21.33	12.96	5.38	20.79	15.41	-0.09				2.45			
10/19/94	9.07	20.95	11.88	9.71	21.33	11.62	6.48	20.79	14.31	-0.26				2.69			
1/16/95	6.00	20.95	14.95	6.54	21.33	14.79	4.29	20.79	16.50	-0.16	-0.35	0	8	1.71	2.35	8	0
2/9/95	6.03	20.95	14.92	6.44	21.33	14.89	4.18	20.79	16.61	-0.03				1.72			
4/24/95	6.18	20.95	14.77	6.64	21.33	14.69	4.05	20.79	16.74	-0.08				2.05			
5/17/95	7.06	20.95	13.89	7.50	21.33	13.83	4.68	20.79	16.11	-0.06				2.28			
6/20/95	7.53	20.95	13.42	7.97	21.33	13.36	5.15	20.79	15.64	-0.06				2.28			
7/10/95	7.60	20.95	13.35	8.05	21.33	13.28	5.30	20.79	15.49	-0.07				2.21			
8/15/95	8.15	20.95	12.80	8.60	21.33	12.73	4.93	20.79	15.86	-0.07				3.13			
12/6/95	5.57	20.95	15.38	8.24	21.33	13.09	4.32	20.79	16.47	-2.29				3.38			
1/3/96	5.35	20.95	15.60	5.85	21.33	15.48	3.61	20.79	17.18	-0.12	-0.04	1	7	1.70	1.80	8	0
3/25/96	5.54	20.95	15.41	5.99	21.33	15.34	3.82	20.79	16.97	-0.07				1.63			
5/1/96	4.80	20.95	16.15	5.21	21.33	16.12	3.43	20.79	17.36	-0.03				1.24			
5/28/96	5.15	20.95	15.80	5.55	21.33	15.78	3.72	20.79	17.07	-0.02				1.29			
6/26/96	6.53	20.95	14.42	6.93	21.33	14.40	4.32	20.79	16.47	-0.02				2.07			
7/30/96	7.39	20.95	13.56	7.78	21.33	13.55	5.18	20.79	15.61	-0.01				2.06			
9/9/96	7.54	20.95	13.41	7.92	21.33	13.41	4.64	20.79	16.15	0.00				2.74			
11/15/96	6.47	20.95	14.48	6.87	21.33	14.46	4.65	20.79	16.14	-0.02				1.68			
1/6/97	3.48	20.95	17.47	3.81	21.33	17.52	2.88	20.79	17.91	0.05	-0.01	5	6	0.39	1.66	11	0
3/6/97	4.85	20.95	16.10	5.24	21.33	16.09	3.27	20.79	17.52	-0.01				1.43			
4/29/97	4.99	20.95	15.96	5.36	21.33	15.97	3.33	20.79	17.46	0.01				1.49			
5/20/97	5.67	20.95	15.28	6.05	21.33	15.28	3.59	20.79	17.20	0.00				1.92			
6/16/97	5.90	20.95	15.05	6.21	21.33	15.12	3.88	20.79	16.91	0.07				1.79			
7/7/97	5.68	20.95	15.27	6.05	21.33	15.28	4.11	20.79	16.68	0.01				1.40			
8/4/97	6.66	20.95	14.29	7.05	21.33	14.28	4.54	20.79	16.25	-0.01				1.97			
9/16/97	7.28	20.95	13.67	7.71	21.33	13.62	4.90	20.79	15.89	-0.05				2.27			
10/7/97	6.11	20.95	14.84	6.53	21.33	14.80	4.50	20.79	16.29	-0.04				1.49			
11/7/97	6.00	20.95	14.95	6.45	21.33	14.88	4.24	20.79	16.55	-0.07				1.67			
12/8/97	6.81	20.95	14.14	7.25	21.33	14.08	4.22	20.79	16.57	-0.06				2.49			
1/12/98	5.95	20.95	15.00	6.28	21.33	15.05	3.97	20.79	16.82	0.05	-0.01	4	8	1.77	2.16	12	0

Table C-9

Comparison of Layers B and D Potentiometric Heads at the G Wells
BSB Property, Kent, Washington

										Shallow to Intermediate				Intermediate to Deep			
	Gs			Gi			Gd										
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
2/26/98	5.95	20.95	15.00	6.36	21.33	14.97	3.67	20.79	17.12	-0.03				2.15			
3/9/98	5.93	20.95	15.02	6.35	21.33	14.98	4.23	20.79	16.56	-0.04				1.58			
4/7/98	6.37	20.95	14.58	6.79	21.33	14.54	4.26	20.79	16.53	-0.04				1.99			
5/5/98	7.13	20.95	13.82	7.52	21.33	13.81	4.27	20.79	16.52	-0.01				2.71			
6/8/98	7.42	20.95	13.53	7.72	21.33	13.61	4.62	20.79	16.17	0.08				2.56			
7/17/98	7.77	20.95	13.18	8.07	21.33	13.26	4.98	20.79	15.81	0.08				2.55			
8/4/98	7.75	20.95	13.20	8.17	21.33	13.16	5.07	20.79	15.72	-0.04				2.56			
9/8/98	8.22	20.95	12.73	8.66	21.33	12.67	5.63	20.79	15.16	-0.06				2.49			
10/9/98	8.25	20.95	12.70	8.67	21.33	12.66	5.95	20.79	14.84	-0.04				2.18			
11/3/98	8.03	20.95	12.92	8.09	21.33	13.24	5.41	20.79	15.38	0.32				2.14			
12/8/98	5.44	20.95	15.51	6.16	21.33	15.17	4.33	20.79	16.46	-0.34				1.29			
1/4/99	5.26	20.95	15.69	5.68	21.33	15.65	3.43	20.79	17.36	-0.04	-0.02	1	12	1.71	2.00	13	0
2/2/99	4.41	20.95	16.54	4.81	21.33	16.52	2.97	20.79	17.82	-0.02				1.30			
3/8/99	4.83	20.95	16.12	5.24	21.33	16.09	2.63	20.79	18.16	-0.03				2.07			
4/29/99	5.99	20.95	14.96	6.39	21.33	14.94	3.72	20.79	17.07	-0.02				2.13			
5/21/99	6.07	20.95	14.88	6.47	21.33	14.86	4.05	20.79	16.74	-0.02				1.88			
6/22/99	6.81	20.95	14.14	7.21	21.33	14.12	4.41	20.79	16.38	-0.02				2.26			
6/24/99	5.58	20.95	15.37	5.97	21.33	15.36	4.09	20.79	16.70	-0.01				1.34			
7/21/99	7.16	20.95	13.79	7.58	21.33	13.75	4.68	20.79	16.11	-0.04				2.36			
8/27/99	7.41	20.95	13.54	7.83	21.33	13.50	4.68	20.79	16.11	-0.04				2.61			
9/14/99	7.80	20.95	13.15	8.21	21.33	13.12	5.09	20.79	15.70	-0.03				2.58			
10/5/99	8.10	20.95	12.85	8.51	21.33	12.82	5.31	20.79	15.48	-0.03				2.66			
11/15/99	6.67	20.95	14.28	7.11	21.33	14.22	4.85	20.79	15.94	-0.06				1.72			
12/6/99	5.89	20.95	15.06	6.15	21.33	15.18	4.21	20.79	16.58	0.12				1.40			
1/6/00	5.88	20.95	15.07	6.29	21.33	15.04	3.60	20.79	17.19	-0.03	-0.09	4	8	2.15	1.90	12	0
2/14/00	5.39	20.95	15.56	6.01	21.33	15.32	3.48	20.79	17.31	-0.24				1.99			
3/16/00	5.41	20.95	15.54	5.74	21.33	15.59	3.32	20.79	17.47	0.05				1.88			
4/11/00	6.21	20.95	14.74	6.62	21.33	14.71	3.58	20.79	17.21	-0.03				2.50			
5/11/00	5.92	20.95	15.03	6.13	21.33	15.20	4.05	20.79	16.74	0.17				1.54			
6/6/00	6.09	20.95	14.86	6.98	21.33	14.35	5.22	20.79	15.57	-0.51				1.22			
7/26/00	6.51	20.95	14.44	7.12	21.33	14.21	5.57	20.79	15.22	-0.23				1.01			

Table C-9

Comparison of Layers B and D Potentiometric Heads at the G Wells
BSB Property, Kent, Washington

										Shallow to Intermediate				Intermediate to Deep			
	Gs			Gi			Gd										
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
8/21/00	6.69	20.95	14.26	7.41	21.33	13.92	5.80	20.79	14.99	-0.34				1.07			
9/13/00	7.83	20.95	13.12	8.02	21.33	13.31	5.41	20.79	15.38	0.19				2.07			
10/11/00	8.11	20.95	12.84	8.52	21.33	12.81	5.71	20.79	15.08	-0.03				2.27			
11/15/00	7.91	20.95	13.04	8.32	21.33	13.01	5.22	20.79	15.57	-0.03				2.56			
12/17/00	7.39	20.95	13.56	7.76	21.33	13.57	4.69	20.79	16.10	0.01				2.53			
1/16/01	7.30	20.95	13.65	7.51	21.33	13.82	4.60	20.79	16.19	0.17	0.14	8	4	2.37	1.69	11	1
2/15/01	7.14	20.95	13.81	7.30	21.33	14.03	4.50	20.79	16.29	0.22				2.26			
3/13/01	7.01	20.95	13.94	7.03	21.33	14.30	4.39	20.79	16.40	0.36				2.10			
4/15/01	6.37	20.95	14.58	6.45	21.33	14.88	5.01	20.79	15.78	0.30				0.90			
5/7/01	6.52	20.95	14.43	6.92	21.33	14.41	4.37	20.79	16.42	-0.02				2.01			
6/10/01	6.81	20.95	14.14	7.10	21.33	14.23	4.57	20.79	16.22	0.09				1.99			
7/16/01	7.16	20.95	13.79	7.41	21.33	13.92	5.01	20.79	15.78	0.13				1.86			
8/14/01	7.70	20.95	13.25	8.09	21.33	13.24	5.49	20.79	15.30	-0.01				2.06			
9/12/01	8.05	20.95	12.90	8.47	21.33	12.86	5.54	20.79	15.25	-0.04				2.39			
10/4/01	9.31	20.95	11.64	9.68	21.33	11.65	6.77	20.79	14.02	0.01				2.37			
11/9/01	8.66	20.95	12.29	8.46	21.33	12.87	5.59	20.79	15.20	0.58				2.33			
12/3/01	5.83	20.95	15.12	6.31	21.33	15.02	8.11	20.79	12.68	-0.10				-2.34			
1/3/02	6.65	20.95	14.30	7.05	21.33	14.28	4.84	20.79	15.95	-0.02	-0.03	8	4	1.67	2.21	12	0
2/7/02	5.18	20.95	15.77	5.75	21.33	15.58	3.51	20.79	17.28	-0.19				1.70			
3/7/02	5.57	20.95	15.38	6.31	21.33	15.02	3.36	20.79	17.43	-0.36				2.41			
4/23/02	5.51	20.95	15.44	5.86	21.33	15.47	3.61	20.79	17.18	0.03				1.71			
5/9/02	5.79	20.95	15.16	6.15	21.33	15.18	3.79	20.79	17.00	0.02				1.82			
6/19/02	6.71	20.95	14.24	7.07	21.33	14.26	3.39	20.79	17.40	0.02				3.14			
7/12/02	7.17	20.95	13.78	7.50	21.33	13.83	5.01	20.79	15.78	0.05				1.95			
8/21/02	7.82	20.95	13.13	8.19	21.33	13.14	5.16	20.79	15.63	0.01				2.49			
9/24/02	7.99	20.95	12.96	8.33	21.33	13.00	5.22	20.79	15.57	0.04				2.57			
10/15/02	8.07	20.95	12.88	8.41	21.33	12.92	5.49	20.79	15.30	0.04				2.38			
11/5/02	8.13	20.95	12.82	8.47	21.33	12.86	5.60	20.79	15.19	0.04				2.33			
12/10/02	7.46	20.95	13.49	7.92	21.33	13.41	5.05	20.79	15.74	-0.08				2.33			
1/17/03	5.15	20.95	15.80	5.51	21.33	15.82	4.14	20.79	16.65	0.02	-0.06	8	4	0.83	1.77	12	0
2/12/03	5.55	20.95	15.40	5.88	21.33	15.45	3.53	20.79	17.26	0.05				1.81			

Table C-9

Comparison of Layers B and D Potentiometric Heads at the G Wells
BSB Property, Kent, Washington

										Shallow to Intermediate				Intermediate to Deep			
	Gs			Gi			Gd				Yearly Mean	Number of Upward	Number of Downward		Yearly Mean	Number of Upward	Number of Downward
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	ΔH	ΔH	ΔH	ΔH	ΔH	ΔH	ΔH
3/5/03	5.60	20.95	15.35	5.92	21.33	15.41	3.57	20.79	17.22	0.06				1.81			
4/8/03	5.09	20.95	15.86	5.40	21.33	15.93	3.42	20.79	17.37	0.07				1.44			
5/1/03	5.75	20.95	15.20	6.11	21.33	15.22	3.75	20.79	17.04	0.02				1.82			
6/10/03	6.10	20.95	14.85	6.25	21.33	15.08	3.91	20.79	16.88	0.23				1.80			
7/3/03	7.20	20.95	13.75	7.56	21.33	13.77	4.73	20.79	16.06	0.02				2.29			
8/7/03	7.82	20.95	13.13	8.05	21.33	13.28	5.19	20.79	15.60	0.15				2.32			
9/11/03	7.93	20.95	13.02	8.56	21.33	12.77	5.75	20.79	15.04	-0.25				2.27			
10/3/03	8.21	20.95	12.74	8.63	21.33	12.70	5.75	20.79	15.04	-0.04				2.34			
11/11/03	7.05	20.95	13.90	7.51	21.33	13.82	5.11	20.79	15.68	-0.08				1.86			
12/3/03	4.99	20.95	15.96	6.04	21.33	15.29	4.14	20.79	16.65	-0.67				1.36			
1/13/04	4.89	20.95	16.06	5.45	21.33	15.88	3.51	20.79	17.28	-0.18	-0.11	2	10	1.40	1.73	12	0
2/17/04	4.36	20.95	16.59	4.99	21.33	16.34	3.04	20.79	17.75	-0.25				1.41			
3/8/04	5.09	20.95	15.86	5.61	21.33	15.72	3.68	20.79	17.11	-0.14				1.39			
4/12/04	5.35	20.95	15.60	6.51	21.33	14.82	3.82	20.79	16.97	-0.78				2.15			
5/12/04	6.31	20.95	14.64	6.77	21.33	14.56	4.18	20.79	16.61	-0.08				2.05			
6/2/04	5.82	20.95	15.13	6.27	21.33	15.06	4.08	20.79	16.71	-0.07				1.65			
7/2/04	6.59	20.95	14.36	6.66	21.33	14.67	4.55	20.79	16.24	0.31				1.57			
8/5/04	7.35	20.95	13.60	7.76	21.33	13.57	4.96	20.79	15.83	-0.03				2.26			
9/4/04	7.35	20.95	13.60	7.76	21.33	13.57	4.96	20.79	15.83	-0.03				2.26			
10/4/04	6.65	20.95	14.30	7.00	21.33	14.33	4.69	20.79	16.10	0.03				1.77			
11/5/04	5.87	20.95	15.08	6.37	21.33	14.96	4.56	20.79	16.23	-0.12				1.27			
12/3/04	5.72	20.95	15.23	6.11	21.33	15.22	4.05	20.79	16.74	-0.01				1.52			
									Mean:	-0.06	Sum:	47	99	1.94	Sum:	144	2

Notes:
1. All measurements in feet.
2. Monitoring point (MP, top of PVC casing) elevation in feet relative to the National Geodetic Vertical Datum (NGVD 29).
3. GW = groundwater.
4. Elev. = elevation.
5. ΔH = lower layer groundwater elevation minus higher layer groundwater elevation (positive = upward gradient).
6. The 12/3/01 groundwater elevation for Gd appears to be incorrect, possibly measured or recorded incorrectly in the field.

Table C-10

Comparison of Layers B and D Potentiometric Heads at the H Wells
BSB Property, Kent, Washington

										Shallow to Intermediate				Intermediate to Deep			
	Hs			Hi			Hd										
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
7/10/92	3.93	19.99	16.06	4.05	20.09	16.04	4.19	20.15	15.96	-0.02	0.00	9	11	-0.08	0.53	19	1
7/16/92	0.70	19.99	19.29	0.75	20.09	19.34	0.80	20.15	19.35	0.05				0.01			
7/20/92	4.23	19.99	15.76	4.36	20.09	15.73	4.28	20.15	15.87	-0.03				0.14			
7/24/92	4.49	19.99	15.50	4.60	20.09	15.49	4.47	20.15	15.68	-0.01				0.19			
7/28/92	4.57	19.99	15.42	4.71	20.09	15.38	4.55	20.15	15.60	-0.04				0.22			
8/4/92	4.80	19.99	15.19	4.70	20.09	15.39	4.55	20.15	15.60	0.20				0.21			
8/10/92	5.21	19.99	14.78	5.33	20.09	14.76	4.87	20.15	15.28	-0.02				0.52			
8/12/92	5.20	19.99	14.79	5.41	20.09	14.68	4.74	20.15	15.41	-0.11				0.73			
8/19/92	5.59	19.99	14.40	5.69	20.09	14.40	4.90	20.15	15.25	0.00				0.85			
8/23/92	5.81	19.99	14.18	5.93	20.09	14.16	5.13	20.15	15.02	-0.02				0.86			
8/28/92	5.88	19.99	14.11	5.95	20.09	14.14	5.22	20.15	14.93	0.03				0.79			
9/1/92	6.00	19.99	13.99	6.07	20.09	14.02	5.26	20.15	14.89	0.03				0.87			
9/8/92	6.04	19.99	13.95	6.10	20.09	13.99	5.26	20.15	14.89	0.04				0.90			
9/18/92	6.28	19.99	13.71	6.34	20.09	13.75	5.50	20.15	14.65	0.04				0.90			
9/29/92	6.15	19.99	13.84	6.30	20.09	13.79	5.43	20.15	14.72	-0.05				0.93			
10/6/92	6.32	19.99	13.67	6.43	20.09	13.66	5.67	20.15	14.48	-0.01				0.82			
10/15/92	6.39	19.99	13.60	6.47	20.09	13.62	5.72	20.15	14.43	0.02				0.81			
11/3/92	5.80	19.99	14.19	5.92	20.09	14.17	5.59	20.15	14.56	-0.02				0.39			
11/9/92	5.53	19.99	14.46	5.67	20.09	14.42	5.37	20.15	14.78	-0.04				0.36			
12/16/92	4.29	19.99	15.70	4.36	20.09	15.73	4.26	20.15	15.89	0.03				0.16			
1/5/93	4.70	19.99	15.29	4.80	20.09	15.29	4.23	20.15	15.92	0.00	0.08	8	1	0.63	0.64	9	0
2/3/93	4.10	19.99	15.89	4.19	20.09	15.90	3.71	20.15	16.44	0.01				0.54			
3/12/93	4.58	19.99	15.41	4.58	20.09	15.51	4.08	20.15	16.07	0.10				0.56			
4/7/93	4.25	19.99	15.74	4.40	20.09	15.69	4.03	20.15	16.12	-0.05				0.43			
5/4/93	3.85	19.99	16.14	3.94	20.09	16.15	3.54	20.15	16.61	0.01				0.46			
5/27/93	3.98	19.99	16.01	4.06	20.09	16.03	3.58	20.15	16.57	0.02				0.54			
7/6/93	5.05	19.99	14.94	5.11	20.09	14.98	4.32	20.15	15.83	0.04				0.85			
10/11/93	6.36	19.99	13.63	6.43	20.09	13.66	5.53	20.15	14.62	0.03				0.96			
12/8/93	5.76	19.99	14.23	5.32	20.09	14.77	4.63	20.15	15.52	0.54				0.75			
2/1/94	5.20	19.99	14.79	5.25	20.09	14.84	4.45	20.15	15.70	0.05	0.02	4	1	0.86	0.81	5	0
3/31/94	4.81	19.99	15.18	4.90	20.09	15.19	4.21	20.15	15.94	0.01				0.75			

Table C-10

Comparison of Layers B and D Potentiometric Heads at the H Wells
BSB Property, Kent, Washington

										Shallow to Intermediate				Intermediate to Deep			
	Hs			Hi			Hd										
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
4/14/94	3.82	19.99	16.17	3.91	20.09	16.18	3.70	20.15	16.45	0.01				0.27			
7/12/94	5.91	19.99	14.08	5.96	20.09	14.13	4.73	20.15	15.42	0.05				1.29			
10/19/94	6.64	19.99	13.35	6.77	20.09	13.32	5.93	20.15	14.22	-0.03				0.90			
1/16/95	3.60	19.99	16.39	3.70	20.09	16.39	3.55	20.15	16.60	0.00	-0.01	5	3	0.21	0.88	8	0
2/9/95	3.61	19.99	16.38	3.70	20.09	16.39	3.46	20.15	16.69	0.01				0.30			
4/24/95	3.78	19.99	16.21	3.87	20.09	16.22	3.40	20.15	16.75	0.01				0.53			
5/17/95	5.10	19.99	14.89	5.16	20.09	14.93	3.70	20.15	16.45	0.04				1.52			
6/20/95	5.37	19.99	14.62	5.55	20.09	14.54	4.38	20.15	15.77	-0.08				1.23			
7/10/95	5.78	19.99	14.21	5.93	20.09	14.16	4.47	20.15	15.68	-0.05				1.52			
8/15/95	6.45	19.99	13.54	6.54	20.09	13.55	5.13	20.15	15.02	0.01				1.47			
12/6/95	3.82	19.99	16.17	3.94	20.09	16.15	3.70	20.15	16.45	-0.02				0.30			
1/3/96	3.77	19.99	16.22	3.77	20.09	16.32	3.11	20.15	17.04	0.10	0.04	7	1	0.72	0.89	8	0
3/25/96	3.84	19.99	16.15	3.90	20.09	16.19	3.14	20.15	17.01	0.04				0.82			
5/1/96	3.24	19.99	16.75	3.29	20.09	16.80	2.80	20.15	17.35	0.05				0.55			
5/28/96	3.60	19.99	16.39	3.72	20.09	16.37	3.10	20.15	17.05	-0.02				0.68			
6/26/96	4.85	19.99	15.14	4.88	20.09	15.21	3.84	20.15	16.31	0.07				1.10			
7/30/96	5.69	19.99	14.30	5.74	20.09	14.35	4.49	20.15	15.66	0.05				1.31			
9/9/96	6.01	19.99	13.98	6.10	20.09	13.99	4.94	20.15	15.21	0.01				1.22			
11/15/96	4.64	19.99	15.35	4.71	20.09	15.38	4.04	20.15	16.11	0.03				0.73			
1/6/97	2.32	19.99	17.67	2.41	20.09	17.68	2.28	20.15	17.87	0.01	0.02	8	3	0.19	1.00	11	0
3/6/97	3.20	19.99	16.79	3.35	20.09	16.74	2.65	20.15	17.50	-0.05				0.76			
4/29/97	3.40	19.99	16.59	3.47	20.09	16.62	2.67	20.15	17.48	0.03				0.86			
5/20/97	4.12	19.99	15.87	4.21	20.09	15.88	2.75	20.15	17.40	0.01				1.52			
6/16/97	4.38	19.99	15.61	4.42	20.09	15.67	3.05	20.15	17.10	0.06				1.43			
7/7/97	4.36	19.99	15.63	4.42	20.09	15.67	3.38	20.15	16.77	0.04				1.10			
8/4/97	5.12	19.99	14.87	5.15	20.09	14.94	3.90	20.15	16.25	0.07				1.31			
9/16/97	5.46	19.99	14.53	5.52	20.09	14.57	4.44	20.15	15.71	0.04				1.14			
10/7/97	4.40	19.99	15.59	4.52	20.09	15.57	3.93	20.15	16.22	-0.02				0.65			
11/7/97	4.10	19.99	15.89	4.24	20.09	15.85	3.59	20.15	16.56	-0.04				0.71			
12/8/97	4.81	19.99	15.18	4.87	20.09	15.22	3.55	20.15	16.60	0.04				1.38			
1/12/98	3.97	19.99	16.02	3.94	20.09	16.15	2.88	20.15	17.27	0.13	0.07	8	4	1.12	1.10	12	0

Table C-10

Comparison of Layers B and D Potentiometric Heads at the H Wells
BSB Property, Kent, Washington

										Shallow to Intermediate				Intermediate to Deep			
	Hs			Hi			Hd										
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
2/26/98	4.07	19.99	15.92	4.16	20.09	15.93	3.12	20.15	17.03	0.01				1.10			
3/9/98	3.24	19.99	16.75	4.05	20.09	16.04	3.92	20.15	16.23	-0.71				0.19			
4/7/98	4.36	19.99	15.63	4.53	20.09	15.56	3.38	20.15	16.77	-0.07				1.21			
5/5/98	5.22	19.99	14.77	5.08	20.09	15.01	3.80	20.15	16.35	0.24				1.34			
6/8/98	5.35	19.99	14.64	5.38	20.09	14.71	3.91	20.15	16.24	0.07				1.53			
7/17/98	5.80	19.99	14.19	5.88	20.09	14.21	4.26	20.15	15.89	0.02				1.68			
8/4/98	5.88	19.99	14.11	5.94	20.09	14.15	4.45	20.15	15.70	0.04				1.55			
9/8/98	6.32	19.99	13.67	6.43	20.09	13.66	4.93	20.15	15.22	-0.01				1.56			
10/9/98	6.35	19.99	13.64	6.61	20.09	13.48	5.29	20.15	14.86	-0.16				1.38			
11/3/98	6.06	19.99	13.93	5.09	20.09	15.00	5.07	20.15	15.08	1.07				0.08			
12/8/98	3.99	19.99	16.00	3.89	20.09	16.20	3.51	20.15	16.64	0.20				0.44			
1/4/99	3.41	19.99	16.58	3.50	20.09	16.59	2.63	20.15	17.52	0.01	0.05	12	1	0.93	1.06	13	0
2/2/99	2.53	19.99	17.46	2.59	20.09	17.50	2.28	20.15	17.87	0.04				0.37			
3/8/99	2.99	19.99	17.00	2.99	20.09	17.10	1.92	20.15	18.23	0.10				1.13			
4/29/99	4.17	19.99	15.82	4.20	20.09	15.89	3.10	20.15	17.05	0.07				1.16			
5/21/99	4.27	19.99	15.72	4.32	20.09	15.77	3.28	20.15	16.87	0.05				1.10			
6/22/99	5.04	19.99	14.95	5.14	20.09	14.95	4.02	20.15	16.13	0.00				1.18			
6/24/99	4.17	19.99	15.82	4.25	20.09	15.84	3.63	20.15	16.52	0.02				0.68			
7/21/99	5.17	19.99	14.82	5.23	20.09	14.86	3.67	20.15	16.48	0.04				1.62			
8/27/99	5.52	19.99	14.47	5.51	20.09	14.58	4.15	20.15	16.00	0.11				1.42			
9/14/99	5.94	19.99	14.05	5.91	20.09	14.18	4.40	20.15	15.75	0.13				1.57			
10/5/99	6.24	19.99	13.75	6.23	20.09	13.86	4.57	20.15	15.58	0.11				1.72			
11/15/99	4.62	19.99	15.37	4.77	20.09	15.32	4.13	20.15	16.02	-0.05				0.70			
12/6/99	3.69	19.99	16.30	3.79	20.09	16.30	3.68	20.15	16.47	0.00				0.17			
1/6/00	3.95	19.99	16.04	3.89	20.09	16.20	3.20	20.15	16.95	0.16	0.16	9	2	0.75	1.09	12	0
2/14/00	3.78	19.99	16.21	3.49	20.09	16.60	3.02	20.15	17.13	0.39				0.53			
3/16/00	3.53	19.99	16.46	3.51	20.09	16.58	3.03	20.15	17.12	0.12				0.54			
4/18/00	–	–		4.08	20.09	16.01	2.84	20.15	17.31	–				1.30			
5/11/00	4.15	19.99	15.84	4.28	20.09	15.81	3.31	20.15	16.84	-0.03				1.03			
6/6/00	5.10	19.99	14.89	5.34	20.09	14.75	4.04	20.15	16.11	-0.14				1.36			
7/26/00	5.50	19.99	14.49	5.37	20.09	14.72	4.15	20.15	16.00	0.23				1.28			

Table C-10

Comparison of Layers B and D Potentiometric Heads at the H Wells
BSB Property, Kent, Washington

Date	Hs			Hi			Hd			Shallow to Intermediate				Intermediate to Deep			
	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
8/21/00	5.52	19.99	14.47	5.39	20.09	14.70	4.15	20.15	16.00	0.23				1.30			
9/13/00	6.31	19.99	13.68	6.01	20.09	14.08	5.11	20.15	15.04	0.40				0.96			
10/11/00	6.53	19.99	13.46	6.42	20.09	13.67	5.36	20.15	14.79	0.21				1.12			
11/15/00	5.99	19.99	14.00	5.99	20.09	14.10	4.51	20.15	15.64	0.10				1.54			
12/17/00	5.47	19.99	14.52	5.45	20.09	14.64	4.09	20.15	16.06	0.12				1.42			
1/16/01	5.46	19.99	14.53	5.31	20.09	14.78	3.99	20.15	16.16	0.25	0.10	10	2	1.38	1.06	12	0
2/15/01	5.23	19.99	14.76	5.20	20.09	14.89	3.94	20.15	16.21	0.13				1.32			
3/13/01	4.81	19.99	15.18	4.88	20.09	15.21	4.00	20.15	16.15	0.03				0.94			
4/15/01	4.22	19.99	15.77	4.17	20.09	15.92	4.09	20.15	16.06	0.15				0.14			
5/7/01	4.69	19.99	15.30	5.00	20.09	15.09	3.70	20.15	16.45	-0.21				1.36			
6/10/01	5.01	19.99	14.98	5.10	20.09	14.99	3.82	20.15	16.33	0.01				1.34			
7/16/01	5.22	19.99	14.77	5.27	20.09	14.82	4.13	20.15	16.02	0.05				1.20			
8/14/01	5.59	19.99	14.40	6.01	20.09	14.08	4.83	20.15	15.32	-0.32				1.24			
9/12/01	6.11	19.99	13.88	6.14	20.09	13.95	4.58	20.15	15.57	0.07				1.62			
10/4/01	7.42	19.99	12.57	7.29	20.09	12.80	5.88	20.15	14.27	0.23				1.47			
11/9/01	6.34	19.99	13.65	5.73	20.09	14.36	5.49	20.15	14.66	0.71				0.30			
12/3/01	3.95	19.99	16.04	3.94	20.09	16.15	3.56	20.15	16.59	0.11				0.44			
1/3/02	5.29	19.99	14.70	4.91	20.09	15.18	3.92	20.15	16.23	0.48	0.20	12	0	1.05	1.33	11	0
2/7/02	3.46	19.99	16.53	3.34	20.09	16.02	4.13	20.15	16.75	-0.51				0.73			
3/7/02	4.20	19.99	15.79	4.14	20.09	15.95	2.91	20.15	17.24	0.16				1.29			
4/23/02	3.85	19.99	16.14	3.89	20.09	16.20	2.79	20.15	17.36	0.06				1.16			
5/9/02	4.18	19.99	15.81	4.20	20.09	15.89	3.00	20.15	17.15	0.08				1.26			
6/19/02	4.94	19.99	15.05	3.64	20.09	16.45	–	–		1.40				–			
7/12/02	5.22	19.99	14.77	5.21	20.09	14.88	3.96	20.15	16.19	0.11				1.31			
8/21/02	5.71	19.99	14.28	5.72	20.09	14.37	4.33	20.15	15.82	0.09				1.45			
9/24/02	6.34	19.99	13.65	6.39	20.09	13.70	4.81	20.15	15.34	0.05				1.64			
10/15/02	6.36	19.99	13.63	6.34	20.09	13.75	4.72	20.15	15.43	0.12				1.68			
11/5/02	6.55	19.99	13.44	6.48	20.09	13.61	4.98	20.15	15.17	0.17				1.56			
12/10/02	5.94	19.99	14.05	5.89	20.09	14.20	4.44	20.15	15.71	0.15				1.51			
1/17/03	3.81	19.99	16.18	3.82	20.09	16.27	3.86	20.15	16.29	0.09	0.21	9	1	0.02	1.10	10	0
2/12/03	3.89	19.99	16.10	3.91	20.09	16.18	3.00	20.15	17.15	0.08				0.97			

Table C-10

Comparison of Layers B and D Potentiometric Heads at the H Wells
BSB Property, Kent, Washington

										Shallow to Intermediate				Intermediate to Deep			
	Hs			Hi			Hd										
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
3/5/03	3.94	19.99	16.05	3.94	20.09	16.15	2.95	20.15	17.20	0.10				1.05			
4/8/03	4.50	19.99	15.49	3.52	20.09	16.57	2.72	20.15	17.43	1.08				0.86			
5/1/03	4.15	19.99	15.84	4.30	20.09	15.79	3.10	20.15	17.05	-0.05				1.26			
6/10/03	4.35	19.99	15.64	4.21	20.09	15.88	3.27	20.15	16.88	0.24				1.00			
7/3/03	5.50	19.99	14.49	5.45	20.09	14.64	4.00	20.15	16.15	0.15				1.51			
8/7/03	5.97	19.99	14.02	5.94	20.09	14.15	4.54	20.15	15.61	0.13				1.46			
9/11/03	6.45	19.99	13.54	6.40	20.09	13.69	5.08	20.15	15.07	0.15				1.38			
10/3/03	6.58	19.99	13.41	6.52	20.09	13.57	5.08	20.15	15.07	0.16				1.50			
									Mean:	0.08	Sum:	101	30	0.95	Sum:	130	1

Notes:
1. All measurements in feet.
2. Monitoring point (MP, top of PVC casing) elevation in feet relative to the National Geodetic Vertical Datum (NGVD 29).
3. GW = groundwater.
4. Elev. = elevation.
5. ΔH = lower layer groundwater elevation minus higher layer groundwater elevation (positive = upward gradient).
6. Hi and Hd data on 6/17/97, between 9/16/97 and 3/8/99, between 5/21/99 and 1/3/02, 3/7/02, 9/11/03, and 10/3/03 switched to correct the use of an incorrect map and subsequent field recording error.

Table C-11

Comparison of Potentiometric Heads in Layers B and D at the B Wells
BSB Property, Kent, Washington

	Bs			Bd						
Date	Depth to Water	MP Elevation	Groundwater Elevation	Depth to Water	MP Elevation	Groundwater Elevation	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
7/10/92	5.93	20.81	14.88	4.94	20.5	15.56	0.68	0.89	6	0
7/20/92	6.15	20.81	14.66	5.06	20.5	15.44	0.78			
7/24/92	5.44	20.81	15.37	5.25	20.5	15.25	-0.12			
7/28/92	6.50	20.81	14.31	5.28	20.5	15.22	0.91			
8/4/92	6.55	20.81	14.26	5.28	20.5	15.22	0.96			
8/10/92	6.82	20.81	13.99	5.62	20.5	14.88	0.89			
8/12/92	6.98	20.81	13.84	5.50	20.5	15.00	1.17			
8/19/92	7.12	20.81	13.69	5.80	20.5	14.70	1.01			
8/23/92	7.32	20.81	13.49	5.93	20.5	14.57	1.08			
8/28/92	7.35	20.81	13.46	6.00	20.5	14.50	1.04			
9/1/92	7.46	20.81	13.35	6.05	20.5	14.45	1.10			
9/8/92	7.45	20.81	13.36	5.95	20.5	14.55	1.19			
9/18/92	7.66	20.81	13.15	6.27	20.5	14.23	1.08			
9/29/92	7.45	20.81	13.36	6.11	20.5	14.39	1.03			
10/6/92	7.68	20.81	13.13	6.46	20.5	14.04	0.91			
10/15/92	7.74	20.81	13.07	6.50	20.5	14.00	0.93			
11/3/92	7.23	20.81	13.58	6.27	20.5	14.23	0.65			
11/9/92	6.97	20.81	13.84	5.93	20.5	14.57	0.73			
1/5/93	6.27	20.81	14.54	3.04	20.5	17.46	2.92	1.79	9	0
2/3/93	5.47	20.81	15.34	2.63	20.5	17.87	2.53			
3/12/93	6.12	20.81	14.69	4.95	20.5	15.55	0.86			
4/7/93	5.78	20.81	15.03	2.57	20.5	17.93	2.90			
5/4/93	5.38	20.81	15.43	2.27	20.5	18.23	2.80			
5/27/93	5.76	20.81	15.05	4.45	20.5	16.05	1.00			
7/6/93	6.49	20.81	14.32	5.02	20.5	15.48	1.16			
10/11/93	7.65	20.81	13.16	6.13	20.5	14.37	1.21			
12/8/93	6.56	20.81	14.25	5.54	20.5	14.96	0.71			
2/1/94	5.80	20.81	15.01	4.62	20.5	15.88	0.87	1.16	5	0
4/14/94	5.48	20.81	15.33	2.53	20.5	17.97	2.64			
6/1/94	6.65	20.81	14.16	5.32	20.5	15.18	1.02			
7/12/94	7.01	20.81	13.80	6.59	20.5	13.91	0.11			
10/19/94	7.96	20.81	12.85	6.51	20.5	13.99	1.14			
1/16/95	5.17	20.81	15.64	3.05	20.5	17.45	1.81	1.67	8	0
2/9/95	5.20	20.81	15.61	3.58	20.5	16.92	1.31			
4/24/95	5.58	20.81	15.23	4.41	20.5	16.09	0.86			
5/17/95	6.46	20.81	14.35	4.97	20.5	15.53	1.18			
6/20/95	6.80	20.81	14.01	5.39	20.5	15.11	1.10			
7/10/95	9.89	20.81	10.92	5.49	20.5	15.01	4.09			
8/15/95	7.45	20.81	13.36	5.83	20.5	14.67	1.31			
12/6/95	4.63	20.81	16.18	2.61	20.5	17.89	1.71			
1/3/96	4.86	20.81	15.95	2.56	20.5	17.94	1.99	1.03	7	1
3/25/96	5.37	20.81	15.44	4.06	20.5	16.44	1.00			
5/1/96	4.66	20.81	16.15	3.08	20.5	17.42	1.27			
5/28/96	5.19	20.81	15.62	4.98	20.5	15.52	-0.10			
6/26/96	6.10	20.81	14.71	4.56	20.5	15.94	1.23			
7/30/96	6.84	20.81	13.97	5.30	20.5	15.20	1.23			

Table C-11

Comparison of Potentiometric Heads in Layers B and D at the B Wells
BSB Property, Kent, Washington

	Bs			Bd						
Date	Depth to Water	MP Elevation	Groundwater Elevation	Depth to Water	MP Elevation	Groundwater Elevation	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
9/9/96	7.12	20.81	13.69	5.71	20.5	14.79	1.10			
11/15/96	5.51	20.81	15.30	4.72	20.5	15.78	0.48			
1/6/97	3.72	20.81	17.09	2.22	20.5	18.28	1.19	1.32	11	0
3/6/97	4.51	20.81	16.30	3.32	20.5	17.18	0.88			
4/29/97	4.80	20.81	16.01	3.00	20.5	17.50	1.49			
5/20/97	5.54	20.81	15.27	3.90	20.5	16.60	1.33			
6/16/97	5.76	20.81	15.05	4.16	20.5	16.34	1.29			
7/7/97	5.81	20.81	15.00	4.31	20.5	16.19	1.19			
8/4/97	6.42	20.81	14.39	4.42	20.5	16.08	1.69			
9/16/97	6.51	20.81	14.30	5.10	20.5	15.40	1.10			
10/7/97	5.69	20.81	15.12	4.52	20.5	15.98	0.86			
11/7/97	4.76	20.81	16.05	3.01	20.5	17.49	1.44			
12/8/97	5.76	20.81	15.05	3.38	20.5	17.12	2.07			
1/12/98	4.81	20.81	16.00	2.52	20.5	17.98	1.98	1.46	11	1
2/26/98	5.17	20.81	15.64	2.62	20.5	17.88	2.24			
3/9/98	4.96	20.81	15.85	2.47	20.5	18.03	2.18			
4/7/98	5.62	20.81	15.19	4.03	20.5	16.47	1.28			
5/5/98	6.22	20.81	14.59	4.42	20.5	16.08	1.49			
6/8/98	6.34	20.81	14.47	4.70	20.5	15.80	1.33			
7/17/98	6.79	20.81	14.02	5.08	20.5	15.42	1.40			
8/4/98	6.87	20.81	13.94	5.34	20.5	15.16	1.22			
9/8/98	7.26	20.81	13.55	5.72	20.5	14.78	1.23			
10/9/98	7.28	20.81	13.53	5.88	20.5	14.62	1.09			
11/3/98	6.86	20.81	13.95	5.51	20.5	14.99	1.04			
12/8/98	4.23	20.81	16.58	2.92	20.5	17.58	1.00			
1/4/99	4.30	20.81	16.51	2.61	20.5	17.89	1.38	1.21	12	0
2/2/99	3.54	20.81	17.27	2.34	20.5	18.16	0.89			
3/8/99	4.02	20.81	16.79	2.71	20.5	17.79	1.00			
4/29/99	5.33	20.81	15.48	3.91	20.5	16.59	1.11			
5/21/99	5.58	20.81	15.23	4.02	20.5	16.48	1.25			
6/22/99	6.28	20.81	14.53	4.47	20.5	16.03	1.50			
7/21/99	6.23	20.81	14.58	4.47	20.5	16.03	1.45			
8/27/99	6.51	20.81	14.30	4.74	20.5	15.76	1.46			
9/14/99	6.90	20.81	13.91	5.09	20.5	15.41	1.50			
10/5/99	7.12	20.81	13.69	5.29	20.5	15.21	1.52			
11/15/99	4.57	20.81	16.24	3.19	20.5	17.31	1.07			
12/6/99	4.03	20.81	16.78	3.39	20.5	17.11	0.33			
1/6/00	4.68	20.81	16.13	3.62	20.5	16.88	0.75	1.09	12	0
2/14/00	4.58	20.81	16.23	3.53	20.5	16.97	0.74			
3/16/00	4.52	20.81	16.29	3.21	20.5	17.29	1.00			
4/11/00	5.62	20.81	15.19	3.91	20.5	16.59	1.40			
5/11/00	5.66	20.81	15.15	4.01	20.5	16.49	1.34			
6/6/00	6.42	20.81	14.39	5.11	20.5	15.39	1.00			
7/26/00	6.81	20.81	14.00	5.41	20.5	15.09	1.09			
8/21/00	6.80	20.81	14.01	5.49	20.5	15.01	1.00			
9/13/00	6.84	20.81	13.97	5.61	20.5	14.89	0.92			

Table C-11

Comparison of Potentiometric Heads in Layers B and D at the B Wells
BSB Property, Kent, Washington

	Bs			Bd						
Date	Depth to Water	MP Elevation	Groundwater Elevation	Depth to Water	MP Elevation	Groundwater Elevation	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
10/11/00	7.05	20.81	13.76	5.78	20.5	14.72	0.96			
11/15/00	6.99	20.81	13.82	5.23	20.5	15.27	1.45			
12/17/00	6.52	20.81	14.29	4.74	20.5	15.76	1.47			
1/16/01	6.39	20.81	14.42	4.65	20.5	15.85	1.43	0.95	11	1
2/15/01	6.22	20.81	14.59	4.51	20.5	15.99	1.40			
3/13/01	5.96	20.81	14.85	4.55	20.5	15.95	1.10			
4/15/01	4.59	20.81	16.22	4.22	20.5	16.28	0.06			
5/7/01	5.57	20.81	15.24	4.38	20.5	16.12	0.88			
6/10/01	5.81	20.81	15.00	4.47	20.5	16.03	1.03			
7/16/01	6.27	20.81	14.54	5.23	20.5	15.27	0.73			
8/14/01	7.03	20.81	13.78	5.39	20.5	15.11	1.33			
9/12/01	7.09	20.81	13.72	5.42	20.5	15.08	1.36			
10/4/01	8.20	20.81	12.61	6.67	20.5	13.83	1.22			
11/9/01	7.18	20.81	13.63	5.51	20.5	14.99	1.36			
12/3/01	3.91	20.81	16.90	4.15	20.5	16.35	-0.55			
1/3/02	5.37	20.81	15.44	4.83	20.5	15.67	0.23	1.30	12	0
2/7/02	3.90	20.81	16.91	3.21	20.5	17.29	0.38			
3/7/02	5.12	20.81	15.69	3.41	20.5	17.09	1.40			
4/23/02	4.68	20.81	16.13	3.63	20.5	16.87	0.74			
5/9/02	5.55	20.81	15.26	3.85	20.5	16.65	1.39			
6/19/02	6.18	20.81	14.63	4.33	20.5	16.17	1.54			
7/12/02	6.52	20.81	14.29	4.71	20.5	15.79	1.50			
8/21/02	7.14	20.81	13.67	5.18	20.5	15.32	1.65			
9/24/02	7.26	20.81	13.55	5.00	20.5	15.50	1.95			
10/15/02	7.40	20.81	13.41	5.39	20.5	15.11	1.70			
11/5/02	7.47	20.81	13.34	5.50	20.5	15.00	1.66			
12/10/02	6.82	20.81	13.99	5.02	20.5	15.48	1.49			
1/17/03	2.50	20.81	18.31	3.90	20.5	16.60	-1.71	0.68	8	4
2/12/03	3.32	20.81	17.49	3.61	20.5	16.89	-0.60			
3/5/03	3.55	20.81	17.26	3.70	20.5	16.80	-0.46			
4/8/03	3.50	20.81	17.31	3.53	20.5	16.97	-0.34			
5/1/03	5.25	20.81	15.56	3.81	20.5	16.69	1.13			
6/10/03	6.14	20.81	14.67	4.31	20.5	16.19	1.52			
7/3/03	6.59	20.81	14.22	4.76	20.5	15.74	1.52			
8/7/03	7.00	20.81	13.81	5.13	20.5	15.37	1.56			
9/11/03	7.34	20.81	13.47	5.66	20.5	14.84	1.37			
10/3/03	7.42	20.81	13.39	5.63	20.5	14.87	1.48			
11/11/03	6.38	20.81	14.43	4.79	20.5	15.71	1.28			
12/3/03	5.74	20.81	15.07	3.99	20.5	16.51	1.44			
						Mean:	1.18	Sum:	112	7

Notes: 1. All measurements in feet.
2. Monitoring point (MP, top of PVC casing) elevation in feet relative to the National Geodetic Vertical Datum (NGVD 29).
3. ΔH = layer D groundwater elevation minus layer B groundwater elevation (positive = upward gradient).

Table C-12

Comparison of Potentiometric Heads in Layers B and D at the C Wells
BSB Property, Kent, Washington

	Cs			Cd						
Date	Depth to Water	MP Elevation	Groundwater Elevation	Depth to Water	MP Elevation	Groundwater Elevation	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
7/20/92	6.12	20.14	14.02	5.38	20.51	15.13	1.11	1.53	18	0
7/24/92	6.20	20.14	13.94	5.61	20.51	14.90	0.96			
7/28/92	6.21	20.14	13.93	5.63	20.51	14.88	0.95			
8/4/92	6.33	20.14	13.81	5.65	20.51	14.86	1.05			
8/10/92	6.52	20.14	13.62	6.00	20.51	14.51	0.89			
8/12/92	6.55	20.14	13.59	6.00	20.51	14.51	0.92			
8/19/92	7.25	20.14	12.89	6.19	20.51	14.32	1.43			
8/23/92	7.40	20.14	12.74	6.31	20.51	14.20	1.46			
8/28/92	7.60	20.14	12.54	6.44	20.51	14.07	1.53			
9/1/92	7.77	20.14	12.37	6.46	20.51	14.05	1.68			
9/8/92	7.87	20.14	12.27	6.46	20.51	14.05	1.78			
9/18/92	7.89	20.14	12.25	6.70	20.51	13.81	1.56			
9/29/92	7.88	20.14	12.26	6.48	20.51	14.03	1.77			
10/6/92	8.12	20.14	12.02	6.84	20.51	13.67	1.65			
10/15/92	7.94	20.14	12.20	6.84	20.51	13.67	1.47			
11/3/92	8.12	20.14	12.02	6.59	20.51	13.92	1.90			
11/9/92	8.28	20.14	11.86	6.35	20.51	14.16	2.30			
12/16/92	7.89	20.14	12.25	5.20	20.51	15.31	3.06			
1/5/93	7.88	20.14	12.26	5.65	20.51	14.86	2.60	1.80	9	0
2/3/93	6.60	20.14	13.54	5.02	20.51	15.49	1.95			
3/12/93	7.05	20.14	13.09	5.45	20.51	15.06	1.97			
4/7/93	6.46	20.14	13.68	5.26	20.51	15.25	1.57			
5/4/93	6.71	20.14	13.43	4.94	20.51	15.57	2.14			
5/27/93	7.01	20.14	13.13	4.92	20.51	15.59	2.46			
7/6/93	6.67	20.14	13.47	5.59	20.51	14.92	1.45			
10/11/93	6.32	20.14	13.82	6.63	20.51	13.88	0.06			
12/8/93	7.43	20.14	12.71	5.83	20.51	14.68	1.97			
2/1/94	8.40	20.14	11.74	5.82	20.51	14.69	2.95	1.89	5	0
4/14/94	7.66	20.14	12.48	5.01	20.51	15.50	3.02			
6/1/94	7.42	20.14	12.72	5.63	20.51	14.88	2.16			
7/12/94	6.38	20.14	13.76	6.05	20.51	14.46	0.70			
10/19/94	7.20	20.14	12.94	6.96	20.51	13.55	0.61			
1/16/95	7.21	20.14	12.93	4.93	20.51	15.58	2.65	2.26	8	0
2/9/95	8.55	20.14	11.59	4.80	20.51	15.71	4.12			
4/24/95	6.51	20.14	13.63	4.83	20.51	15.68	2.05			
5/17/95	6.40	20.14	13.74	5.42	20.51	15.09	1.35			
6/20/95	6.56	20.14	13.58	5.77	20.51	14.74	1.16			
7/10/95	7.24	20.14	12.90	5.83	20.51	14.68	1.78			
8/15/95	7.53	20.14	12.61	6.15	20.51	14.36	1.75			
12/6/95	7.61	20.14	12.53	4.76	20.51	15.75	3.22			
1/3/96	7.83	20.14	12.31	4.36	20.51	16.15	3.84	2.27	8	0
3/25/96	6.48	20.14	13.66	4.60	20.51	15.91	2.25			
5/1/96	6.40	20.14	13.74	4.19	20.51	16.32	2.58			
5/28/96	5.90	20.14	14.24	4.45	20.51	16.06	1.82			

Table C-12

Comparison of Potentiometric Heads in Layers B and D at the C Wells
BSB Property, Kent, Washington

	Cs			Cd						
Date	Depth to Water	MP Elevation	Groundwater Elevation	Depth to Water	MP Elevation	Groundwater Elevation	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
6/26/96	6.02	20.14	14.12	5.04	20.51	15.47	1.35			
7/30/96	6.92	20.14	13.22	5.75	20.51	14.76	1.54			
9/9/96	7.48	20.14	12.66	6.09	20.51	14.42	1.76			
11/15/96	7.74	20.14	12.40	5.11	20.51	15.40	3.00			
1/6/97	6.62	20.14	13.52	3.24	20.51	17.27	3.75	2.05	11	0
3/6/97	4.55	20.14	15.59	3.97	20.51	16.54	0.95			
4/29/97	5.71	20.14	14.43	4.12	20.51	16.39	1.96			
5/20/97	5.88	20.14	14.26	4.33	20.51	16.18	1.92			
6/16/97	6.32	20.14	13.82	4.58	20.51	15.93	2.11			
7/7/97	6.50	20.14	13.64	4.72	20.51	15.79	2.15			
8/4/97	6.50	20.14	13.64	5.15	20.51	15.36	1.72			
9/16/97	7.01	20.14	13.13	5.31	20.51	15.20	2.07			
10/7/97	7.18	20.14	12.96	4.86	20.51	15.65	2.69			
11/7/97	6.37	20.14	13.77	4.69	20.51	15.82	2.05			
12/8/97	5.60	20.14	14.54	4.83	20.51	15.68	1.14			
1/12/98	6.85	20.14	13.29	4.19	20.51	16.32	3.03	2.05	12	0
2/26/98	6.11	20.14	14.03	4.42	20.51	16.09	2.06			
3/9/98	6.37	20.14	13.77	4.31	20.51	16.20	2.43			
4/7/98	6.18	20.14	13.96	4.55	20.51	15.96	2.00			
5/5/98	6.58	20.14	13.56	4.89	20.51	15.62	2.06			
6/8/98	7.90	20.14	12.24	5.14	20.51	15.37	3.13			
7/17/98	7.15	20.14	12.99	7.52	20.51	12.99	0.00			
8/4/98	5.49	20.14	14.65	5.61	20.51	14.90	0.25			
9/8/98	7.50	20.14	12.64	6.06	20.51	14.45	1.81			
10/9/98	7.81	20.14	12.33	6.15	20.51	14.36	2.03			
11/3/98	7.81	20.14	12.33	5.83	20.51	14.68	2.35			
12/8/98	7.68	20.14	12.46	4.61	20.51	15.90	3.44			
1/4/99	7.07	20.14	13.07	3.83	20.51	16.68	3.61	2.34	12	0
2/2/99	5.71	20.14	14.43	3.26	20.51	17.25	2.82			
3/8/99	4.93	20.14	15.21	3.27	20.51	17.24	2.03			
4/29/99	5.23	20.14	14.91	4.41	20.51	16.10	1.19			
5/21/99	6.22	20.14	13.92	4.52	20.51	15.99	2.07			
6/22/99	6.32	20.14	13.82	4.95	20.51	15.56	1.74			
7/21/99	6.88	20.14	13.26	4.97	20.51	15.54	2.28			
8/27/99	6.98	20.14	13.16	5.14	20.51	15.37	2.21			
9/14/99	7.16	20.14	12.98	5.48	20.51	15.03	2.05			
10/5/99	7.45	20.14	12.69	5.69	20.51	14.82	2.13			
11/15/99	7.67	20.14	12.47	4.97	20.51	15.54	3.07			
12/6/99	6.59	20.14	13.55	4.11	20.51	16.40	2.85			
1/6/00	5.24	20.14	14.90	4.19	20.51	16.32	1.42	1.96	12	0
2/14/00	5.91	20.14	14.23	3.89	20.51	16.62	2.39			
3/16/00	5.68	20.14	14.46	3.89	20.51	16.62	2.16			
4/11/00	5.51	20.14	14.63	3.94	20.51	16.57	1.94			
5/11/00	6.06	20.14	14.08	4.52	20.51	15.99	1.91			

Table C-12

Comparison of Potentiometric Heads in Layers B and D at the C Wells
BSB Property, Kent, Washington

Date	Cs			Cd			ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
	Depth to Water	MP Elevation	Groundwater Elevation	Depth to Water	MP Elevation	Groundwater Elevation				
6/6/00	6.28	20.14	13.86	5.02	20.51	15.49	1.63			
7/26/00	6.58	20.14	13.56	5.11	20.51	15.40	1.84			
8/21/00	6.87	20.14	13.27	5.14	20.51	15.37	2.10			
9/13/00	7.04	20.14	13.10	6.11	20.51	14.40	1.30			
10/11/00	7.21	20.14	12.93	6.36	20.51	14.15	1.22			
11/15/00	7.78	20.14	12.36	5.55	20.51	14.96	2.60			
12/17/00	7.61	20.14	12.53	5.02	20.51	15.49	2.96			
1/16/01	7.19	20.14	12.95	5.00	20.51	15.51	2.56	2.23	12	0
2/15/01	7.04	20.14	13.10	4.88	20.51	15.63	2.53			
3/13/01	6.91	20.14	13.23	4.61	20.51	15.90	2.67			
4/15/01	5.80	20.14	14.34	4.30	20.51	16.21	1.87			
5/7/01	5.39	20.14	14.75	4.75	20.51	15.76	1.01			
6/10/01	8.60	20.14	11.54	4.75	20.51	15.76	4.22			
7/16/01	5.65	20.14	14.49	5.01	20.51	15.50	1.01			
8/14/01	6.93	20.14	13.21	5.78	20.51	14.73	1.52			
9/12/01	7.39	20.14	12.75	5.82	20.51	14.69	1.94			
10/4/01	7.55	20.14	12.59	6.98	20.51	13.53	0.94			
11/9/01	8.74	20.14	11.40	6.53	20.51	13.98	2.58			
12/3/01	8.21	20.14	11.93	4.63	20.51	15.88	3.95			
1/3/02	5.94	20.14	14.20	5.51	20.51	15.00	0.80	2.10	12	0
2/7/02	6.97	20.14	13.17	4.54	20.51	15.97	2.80			
3/7/02	6.01	20.14	14.13	4.19	20.51	16.32	2.19			
4/23/02	5.91	20.14	14.23	4.20	20.51	16.31	2.08			
5/9/02	5.99	20.14	14.15	4.30	20.51	16.21	2.06			
6/19/02	6.08	20.14	14.06	4.77	20.51	15.74	1.68			
7/12/02	6.69	20.14	13.45	5.03	20.51	15.48	2.03			
8/21/02	7.13	20.14	13.01	5.55	20.51	14.96	1.95			
9/24/02	7.60	20.14	12.54	5.61	20.51	14.90	2.36			
10/15/02	7.77	20.14	12.37	5.64	20.51	14.87	2.50			
11/5/02	7.57	20.14	12.57	5.78	20.51	14.73	2.16			
12/10/02	7.63	20.14	12.51	5.36	20.51	15.15	2.64			
1/17/03	5.63	20.14	14.51	4.43	20.51	16.08	1.57	2.05	12	0
2/12/03	5.96	20.14	14.18	4.08	20.51	16.43	2.25			
3/5/03	5.98	20.14	14.16	4.10	20.51	16.41	2.25			
4/8/03	6.98	20.14	13.16	4.56	20.51	15.95	2.79			
5/1/03	6.19	20.14	13.95	4.28	20.51	16.23	2.28			
6/10/03	6.58	20.14	13.56	4.73	20.51	15.78	2.22			
7/3/03	7.00	20.14	13.14	5.19	20.51	15.32	2.18			
8/7/03	7.35	20.14	12.79	5.55	20.51	14.96	2.17			
9/11/03	7.64	20.14	12.50	5.97	20.51	14.54	2.04			
10/3/03	7.77	20.14	12.37	5.97	20.51	14.54	2.17			
11/11/03	6.92	20.14	13.22	5.25	20.51	15.26	2.04			
12/3/03	4.70	20.14	15.44	4.42	20.51	16.09	0.65			
1/13/04	5.00	20.14	15.14	3.91	20.51	16.60	1.46	1.85	12	0

Table C-12

Comparison of Potentiometric Heads in Layers B and D at the C Wells
BSB Property, Kent, Washington

Date	Cs			Cd			ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
	Depth to Water	MP Elevation	Groundwater Elevation	Depth to Water	MP Elevation	Groundwater Elevation				
2/17/04	4.64	20.14	15.50	3.52	20.51	16.99	1.49			
3/8/04	5.18	20.14	14.96	4.00	20.51	16.51	1.55			
4/12/04	6.20	20.14	13.94	4.20	20.51	16.31	2.37			
5/12/04	6.38	20.14	13.76	4.56	20.51	15.95	2.19			
6/2/04	6.17	20.14	13.97	4.44	20.51	16.07	2.10			
7/2/04	6.55	20.14	13.59	4.78	20.51	15.73	2.14			
8/5/04	7.10	20.14	13.04	5.30	20.51	15.21	2.17			
9/2/04	5.71	20.14	14.43	4.54	20.51	15.97	1.54			
10/4/04	6.55	20.14	13.59	4.81	20.51	15.70	2.11			
11/5/04	5.67	20.14	14.47	4.79	20.51	15.72	1.25			
12/3/04	5.85	20.14	14.29	4.39	20.51	16.12	1.83			
						Mean:	2.01	Sum:	143	0

Notes:
1. All measurements in feet.
2. Monitoring point (MP, top of PVC casing) elevation in feet relative to the National Geodetic Vertical Datum (NGVD 29).
3. ΔH = layer D groundwater elevation minus layer B groundwater elevation (positive = upward gradient).

Table C-13

Comparison of Potentiometric Heads in Layers B and D at the HY-7 Wells
BSB Property, Kent, Washington

	HY-7ss			HY-7i			HY-7d			Shallow to Intermediate				Intermediate to Deep			
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
7/10/92	5.51	19.6	14.11	3.53	19.02	15.49	4.57	19.11	14.54	1.38	1.40	20	0	-0.95	1.09	18	2
7/16/92	5.68	19.6	13.94	1.40	19.02	17.62	0.03	19.11	19.08	3.68				1.46			
7/20/92	5.72	19.6	13.90	3.58	19.02	15.44	4.65	19.11	14.46	1.54				-0.98			
7/24/92	5.75	19.6	13.87	4.86	19.02	14.16	3.81	19.11	15.30	0.29				1.14			
7/28/92	5.93	19.6	13.69	4.92	19.02	14.10	3.85	19.11	15.26	0.41				1.16			
8/4/92	6.00	19.6	13.62	4.94	19.02	14.08	3.68	19.11	15.43	0.46				1.35			
8/10/92	7.41	19.6	12.21	5.45	19.02	13.57	4.30	19.11	14.81	1.36				1.24			
8/12/92	7.81	19.6	11.81	5.58	19.02	13.44	4.20	19.11	14.91	1.63				1.47			
8/19/92	7.34	19.6	12.28	5.68	19.02	13.34	4.46	19.11	14.65	1.06				1.31			
8/23/92	7.98	19.6	11.64	5.88	19.02	13.14	4.66	19.11	14.45	1.50				1.31			
8/28/92	8.36	19.6	11.26	6.08	19.02	12.94	4.74	19.11	14.37	1.68				1.43			
9/1/92	7.71	19.6	11.91	5.99	19.02	13.03	4.71	19.11	14.40	1.12				1.37			
9/8/92	8.06	19.6	11.56	6.04	19.02	12.98	4.72	19.11	14.39	1.42				1.41			
9/18/92	8.50	19.6	11.12	6.28	19.02	12.74	4.98	19.11	14.13	1.62				1.39			
9/29/92	8.10	19.6	11.52	6.04	19.02	12.98	4.77	19.11	14.34	1.46				1.36			
10/6/92	8.38	19.6	11.24	6.38	19.02	12.64	5.20	19.11	13.91	1.40				1.27			
10/15/92	8.74	19.6	10.88	6.44	19.02	12.58	5.20	19.11	13.91	1.70				1.33			
11/3/92	7.68	19.6	11.94	6.10	19.02	12.92	5.00	19.11	14.11	0.98				1.19			
11/9/92	8.56	19.6	11.06	6.01	19.02	13.01	4.84	19.11	14.27	1.95				1.26			
12/16/92	6.83	19.6	12.79	4.80	19.02	14.22	3.60	19.11	15.51	1.43				1.29			
1/5/93	7.95	19.6	11.67	7.52	19.02	11.50	4.00	19.11	15.11	-0.17	1.40	8	1	3.61	1.83	9	0
2/3/93	6.64	19.6	12.98	4.66	19.02	14.36	3.25	19.11	15.86	1.38				1.50			
3/12/93	6.41	19.6	13.21	4.86	19.02	14.16	3.64	19.11	15.47	0.95				1.31			
4/7/93	7.68	19.6	11.94	5.14	19.02	13.88	3.45	19.11	15.66	1.94				1.78			
5/4/93	6.93	19.6	12.69	4.86	19.02	14.16	3.14	19.11	15.97	1.47				1.81			
5/27/93	6.80	19.6	12.82	4.60	19.02	14.42	3.08	19.11	16.03	1.60				1.61			
7/6/93	8.17	19.6	11.45	5.55	19.02	13.47	3.91	19.11	15.20	2.02				1.73			
10/11/93	9.12	19.6	10.50	6.50	19.02	12.52	5.07	19.11	14.04	2.02				1.52			
12/8/93	7.66	19.6	11.96	5.71	19.02	13.31	4.18	19.11	14.93	1.35				1.62			
2/1/94	8.19	19.6	11.43	5.62	19.02	13.40	4.10	19.11	15.01	1.97	1.55	5	0	1.61	1.59	5	0
4/14/94	6.85	19.6	12.77	4.70	19.02	14.32	3.20	19.11	15.91	1.55				1.59			

Table C-13

Comparison of Potentiometric Heads in Layers B and D at the HY-7 Wells
BSB Property, Kent, Washington

										Shallow to Intermediate				Intermediate to Deep			
	HY-7ss			HY-7i			HY-7d										
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
6/1/94	7.89	19.6	11.73	5.55	19.02	13.47	3.95	19.11	15.16	1.74				1.69			
7/12/94	6.81	19.6	12.81	5.60	19.02	13.42	4.12	19.11	14.99	0.61				1.57			
10/19/94	9.15	19.6	10.47	6.65	19.02	12.37	5.25	19.11	13.86	1.90				1.49			
1/16/95	7.01	19.6	12.61	5.71	19.02	13.31	3.60	19.11	15.51	0.70	1.68	8	0	2.20	1.59	8	0
2/9/95	6.59	19.6	13.03	4.62	19.02	14.40	3.06	19.11	16.05	1.37				1.65			
4/24/95	7.15	19.6	12.47	4.64	19.02	14.38	3.08	19.11	16.03	1.91				1.65			
5/17/95	7.84	19.6	11.78	5.24	19.02	13.78	3.60	19.11	15.51	2.00				1.73			
6/20/95	8.07	19.6	11.55	5.54	19.02	13.48	4.04	19.11	15.07	1.93				1.59			
7/10/95	8.14	19.6	11.48	5.52	19.02	13.50	4.30	19.11	14.81	2.02				1.31			
8/15/95	8.69	19.6	10.93	6.40	19.02	12.62	4.58	19.11	14.53	1.69				1.91			
12/6/95	7.11	19.6	12.51	4.67	19.02	14.35	4.06	19.11	15.05	1.84				0.70			
1/3/96	6.85	19.6	12.77	4.29	19.02	14.73	2.69	19.11	16.42	1.96	1.76	8	0	1.69	1.59	8	0
3/25/96	6.95	19.6	12.67	4.44	19.02	14.58	2.88	19.11	16.23	1.91				1.65			
5/1/96	6.49	19.6	13.13	4.33	19.02	14.69	2.50	19.11	16.61	1.56				1.92			
5/28/96	5.93	19.6	13.69	4.08	19.02	14.94	2.82	19.11	16.29	1.25				1.35			
6/26/96	7.48	19.6	12.14	4.87	19.02	14.15	3.35	19.11	15.76	2.01				1.61			
7/30/96	8.01	19.6	11.61	5.52	19.02	13.50	4.09	19.11	15.02	1.89				1.52			
9/9/96	8.20	19.6	11.42	5.86	19.02	13.16	4.51	19.11	14.60	1.74				1.44			
11/15/96	7.35	19.6	12.27	4.98	19.02	14.04	3.56	19.11	15.55	1.77				1.51			
1/6/97	3.68	19.6	15.94	2.53	19.02	16.49	1.67	19.11	17.44	0.55	1.49	11	0	0.95	1.71	11	0
3/6/97	6.35	19.6	13.27	3.90	19.02	15.12	2.27	19.11	16.84	1.85				1.72			
4/29/97	6.45	19.6	13.17	4.25	19.02	14.77	2.38	19.11	16.73	1.60				1.96			
5/20/97	6.78	19.6	12.84	4.54	19.02	14.48	2.63	19.11	16.48	1.64				2.00			
6/16/97	6.94	19.6	12.68	5.22	19.02	13.80	2.91	19.11	16.20	1.12				2.40			
7/7/97	6.86	19.6	12.76	4.46	19.02	14.56	3.01	19.11	16.10	1.80				1.54			
8/4/97	7.41	19.6	12.21	5.13	19.02	13.89	3.46	19.11	15.65	1.68				1.76			
9/16/97	7.48	19.6	12.14	5.18	19.02	13.84	3.81	19.11	15.30	1.70				1.46			
10/7/97	6.61	19.6	13.01	4.94	19.02	14.08	3.54	19.11	15.57	1.07				1.49			
11/7/97	6.91	19.6	12.71	4.95	19.02	14.07	3.25	19.11	15.86	1.36				1.79			
12/8/97	7.40	19.6	12.22	4.80	19.02	14.22	3.19	19.11	15.92	2.00				1.70			
1/12/98	6.69	19.6	12.93	4.35	19.02	14.67	2.50	19.11	16.61	1.74	1.37	12	0	1.94	2.13	12	0

Table C-13

Comparison of Potentiometric Heads in Layers B and D at the HY-7 Wells
BSB Property, Kent, Washington

	HY-7ss			HY-7i			HY-7d			Shallow to Intermediate				Intermediate to Deep			
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
2/26/98	6.92	19.6	12.70	4.99	19.02	14.03	2.74	19.11	16.37	1.33				2.34			
3/9/98	6.82	19.6	12.80	4.87	19.02	14.15	2.67	19.11	16.44	1.35				2.29			
4/7/98	7.10	19.6	12.52	5.37	19.02	13.65	2.90	19.11	16.21	1.13				2.56			
5/5/98	7.54	19.6	12.08	5.44	19.02	13.58	3.20	19.11	15.91	1.50				2.33			
6/8/98	7.77	19.6	11.85	5.81	19.02	13.21	3.50	19.11	15.61	1.36				2.40			
7/17/98	8.07	19.6	11.55	5.81	19.02	13.21	3.77	19.11	15.34	1.66				2.13			
8/4/98	8.13	19.6	11.49	6.29	19.02	12.73	4.02	19.11	15.09	1.24				2.36			
9/8/98	8.26	19.6	11.36	6.68	19.02	12.34	4.43	19.11	14.68	0.98				2.34			
10/9/98	8.32	19.6	11.30	6.72	19.02	12.30	4.72	19.11	14.39	1.00				2.09			
11/3/98	8.16	19.6	11.46	6.08	19.02	12.94	4.73	19.11	14.38	1.48				1.44			
12/8/98	6.73	19.6	12.89	4.46	19.02	14.56	3.18	19.11	15.93	1.67				1.37			
1/4/99	5.98	19.6	13.64	3.57	19.02	15.45	2.66	19.11	16.45	1.81	1.48	12	0	1.00	1.89	12	0
2/2/99	5.51	19.6	14.11	3.09	19.02	15.93	1.61	19.11	17.50	1.82				1.57			
3/8/99	5.64	19.6	13.98	3.24	19.02	15.78	1.59	19.11	17.52	1.80				1.74			
4/29/99	6.70	19.6	12.92	4.39	19.02	14.63	2.77	19.11	16.34	1.71				1.71			
5/21/99	6.78	19.6	12.84	4.96	19.02	14.06	2.87	19.11	16.24	1.22				2.18			
6/22/99	7.23	19.6	12.39	5.78	19.02	13.24	3.88	19.11	15.23	0.85				1.99			
7/21/99	7.46	19.6	12.16	5.88	19.02	13.14	3.85	19.11	15.26	0.98				2.12			
8/27/99	7.61	19.6	12.01	5.81	19.02	13.21	3.58	19.11	15.53	1.20				2.32			
9/14/99	7.73	19.6	11.89	6.11	19.02	12.91	3.89	19.11	15.22	1.02				2.31			
10/5/99	9.67	19.6	9.95	6.57	19.02	12.45	4.13	19.11	14.98	2.50				2.53			
11/15/99	7.18	19.6	12.44	5.39	19.02	13.63	3.53	19.11	15.58	1.19				1.95			
12/6/99	6.44	19.6	13.18	4.21	19.02	14.81	3.03	19.11	16.08	1.63				1.27			
1/6/00	6.50	19.6	13.12	4.45	19.02	14.57	3.02	19.11	16.09	1.45	1.00	11	1	1.52	2.13	12	0
2/14/00	6.23	19.6	13.39	4.21	19.02	14.81	2.85	19.11	16.26	1.42				1.45			
3/16/00	6.06	19.6	13.56	3.88	19.02	15.14	2.68	19.11	16.43	1.58				1.29			
4/11/00	6.45	19.6	13.17	4.33	19.02	14.69	2.85	19.11	16.26	1.52				1.57			
5/11/00	6.75	19.6	12.87	5.25	19.02	13.77	2.92	19.11	16.19	0.90				2.42			
6/6/00	7.74	19.6	11.88	6.71	19.02	12.31	3.51	19.11	15.60	0.43				3.29			
7/26/00	7.60	19.6	12.02	7.00	19.02	12.02	3.81	19.11	15.30	0.00				3.28			
8/21/00	7.79	19.6	11.83	7.21	19.02	11.81	4.23	19.11	14.88	-0.02				3.07			

Table C-13

Comparison of Potentiometric Heads in Layers B and D at the HY-7 Wells
BSB Property, Kent, Washington

	HY-7ss			HY-7i			HY-7d			Shallow to Intermediate				Intermediate to Deep			
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
9/13/00	7.61	19.6	12.01	5.81	19.02	13.21	4.32	19.11	14.79	1.20				1.58			
10/11/00	7.94	19.6	11.68	5.97	19.02	13.05	4.56	19.11	14.55	1.37				1.50			
11/15/00	7.81	19.6	11.81	6.31	19.02	12.71	4.06	19.11	15.05	0.90				2.34			
12/17/00	7.64	19.6	11.98	5.76	19.02	13.26	3.60	19.11	15.51	1.28				2.25			
1/16/01	7.51	19.6	12.11	5.71	19.02	13.31	3.71	19.11	15.40	1.20	1.48	12	0	2.09	1.10	9	3
2/15/01	7.31	19.6	12.31	5.60	19.02	13.42	3.68	19.11	15.43	1.11				2.01			
3/13/01	7.00	19.6	12.62	5.55	19.02	13.47	3.91	19.11	15.20	0.85				1.73			
4/15/01	6.53	19.6	13.09	5.40	19.02	13.62	3.80	19.11	15.31	0.53				1.69			
5/7/01	6.90	19.6	12.72	4.98	19.02	14.04	3.85	19.11	15.26	1.32				1.22			
6/10/01	6.50	19.6	13.12	4.11	19.02	14.91	4.31	19.11	14.80	1.79				-0.11			
7/16/01	7.01	19.6	12.61	4.38	19.02	14.64	4.61	19.11	14.50	2.03				-0.14			
8/14/01	7.63	19.6	11.99	4.69	19.02	14.33	5.22	19.11	13.89	2.34				-0.44			
9/12/01	7.84	19.6	11.78	6.05	19.02	12.97	4.25	19.11	14.86	1.19				1.89			
10/4/01	9.03	19.6	10.59	7.18	19.02	11.84	5.40	19.11	13.71	1.25				1.87			
11/9/01	8.18	19.6	11.44	5.98	19.02	13.04	5.26	19.11	13.85	1.60				0.81			
12/3/01	7.29	19.6	12.33	4.19	19.02	14.83	3.67	19.11	15.44	2.50				0.61			
1/3/02	7.26	19.6	12.36	3.93	19.02	15.09	4.79	19.11	14.32	2.73	1.76	12	0	-0.77	1.41	11	1
2/7/02	6.22	19.6	13.40	3.60	19.02	15.42	2.20	19.11	16.91	2.02				1.49			
3/7/02	6.42	19.6	13.20	5.12	19.02	13.90	2.98	19.11	16.13	0.70				2.23			
4/23/02	6.28	19.6	13.34	4.03	19.02	14.99	2.47	19.11	16.64	1.65				1.65			
5/9/02	6.37	19.6	13.25	3.93	19.02	15.09	3.01	19.11	16.10	1.84				1.01			
6/19/02	7.84	19.6	11.78	4.39	19.02	14.63	3.03	19.11	16.08	2.85				1.45			
7/12/02	6.71	19.6	12.91	4.41	19.02	14.61	3.00	19.11	16.11	1.70				1.50			
8/21/02	7.99	19.6	11.63	5.49	19.02	13.53	3.85	19.11	15.26	1.90				1.73			
9/24/02	7.91	19.6	11.71	5.54	19.02	13.48	3.96	19.11	15.15	1.77				1.67			
10/15/02	7.77	19.6	11.85	5.61	19.02	13.41	4.08	19.11	15.03	1.56				1.62			
11/5/02	7.44	19.6	12.18	5.67	19.02	13.35	4.30	19.11	14.81	1.17				1.46			
12/10/02	7.04	19.6	12.58	5.26	19.02	13.76	3.42	19.11	15.69	1.18				1.93			
1/17/03	5.07	19.6	14.55	3.75	19.02	15.27	2.89	19.11	16.22	0.72	1.46	12	0	0.95	1.49	12	0
2/12/03	6.24	19.6	13.38	3.72	19.02	15.30	2.33	19.11	16.78	1.92				1.48			
3/5/03	6.24	19.6	13.38	3.83	19.02	15.19	2.43	19.11	16.68	1.81				1.49			

Table C-13

Comparison of Potentiometric Heads in Layers B and D at the HY-7 Wells
BSB Property, Kent, Washington

										Shallow to Intermediate				Intermediate to Deep			
	HY-7ss			HY-7i			HY-7d										
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
4/8/03	5.49	19.6	14.13	4.66	19.02	14.36	2.24	19.11	16.87	0.23				2.51			
5/1/03	6.40	19.6	13.22	3.89	19.02	15.13	2.53	19.11	16.58	1.91				1.45			
6/10/03	6.88	19.6	12.74	4.40	19.02	14.62	2.88	19.11	16.23	1.88				1.61			
7/3/03	7.15	19.6	12.47	4.77	19.02	14.25	3.49	19.11	15.62	1.78				1.37			
8/7/03	7.38	19.6	12.24	5.16	19.02	13.86	3.80	19.11	15.31	1.62				1.45			
9/11/03	7.71	19.6	11.91	5.65	19.02	13.37	4.33	19.11	14.78	1.46				1.41			
10/3/03	7.77	19.6	11.85	6.08	19.02	12.94	4.31	19.11	14.80	1.09				1.86			
11/11/03	6.96	19.6	12.66	4.70	19.02	14.32	3.59	19.11	15.52	1.66				1.20			
12/3/03	5.83	19.6	13.79	3.83	19.02	15.19	2.80	19.11	16.31	1.40				1.12			
1/13/04	5.46	19.6	14.16	3.49	19.02	15.53	2.28	19.11	16.83	1.37	1.31	12	0	1.30	1.42	12	0
2/17/04	5.29	19.6	14.33	3.53	19.02	15.49	1.78	19.11	17.33	1.16				1.84			
3/8/04	5.69	19.6	13.93	3.80	19.02	15.22	2.24	19.11	16.87	1.29				1.65			
4/12/04	6.07	19.6	13.55	3.84	19.02	15.18	2.40	19.11	16.71	1.63				1.53			
5/12/04	6.22	19.6	13.40	4.13	19.02	14.89	2.80	19.11	16.31	1.49				1.42			
6/2/04	5.98	19.6	13.64	3.98	19.02	15.04	2.72	19.11	16.39	1.40				1.35			
7/2/04	6.37	19.6	13.25	4.30	19.02	14.72	3.04	19.11	16.07	1.47				1.35			
8/5/04	7.04	19.6	12.58	4.97	19.02	14.05	3.56	19.11	15.55	1.47				1.50			
9/2/04	5.92	19.6	13.70	4.61	19.02	14.41	3.33	19.11	15.78	0.71				1.37			
10/4/04	6.47	19.6	13.15	4.64	19.02	14.38	3.35	19.11	15.76	1.23				1.38			
11/5/04	6.03	19.6	13.59	4.35	19.02	14.67	3.16	19.11	15.95	1.08				1.28			
12/3/04	5.77	19.6	13.85	3.70	19.02	15.32	2.69	19.11	16.42	1.47				1.10			
									Mean:	1.45	Sum:	143	2	1.58	Sum:	139	6

Notes:
1. All measurements in feet.
2. Monitoring point (MP, top of PVC casing) elevation in feet relative to the National Geodetic Vertical Datum (NGVD 29).
3. GW = groundwater.
4. Elev. = elevation.
5. ΔH = lower layer groundwater elevation minus higher layer groundwater elevation (positive = upward gradient).

Table C-14

Comparison of Potentiometric Heads in Layers B and D at the HY-8 Wells
BSB Property, Kent, Washington

										Shallow to Intermediate				Intermediate to Deep			
	HY-6			HY-8i			HY-8d										
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
7/10/92	5.93	19.4	13.47	5.16	18.55	13.39	5.31	18.7	13.39	-0.08	1.49	20	0	0.00	0.27	18	2
7/16/92	–	19.4		6.00	18.55	12.55	5.40	18.7	13.30	–				0.75			
7/20/92	5.90	19.4	13.50	5.11	18.55	13.44	5.08	18.7	13.62	-0.06				0.18			
7/24/92	6.27	19.4	13.13	5.30	18.55	13.25	5.60	18.7	13.10	0.12				-0.15			
7/28/92	6.32	19.4	13.08	5.33	18.55	13.22	5.63	18.7	13.07	0.14				-0.15			
8/4/92	6.26	19.4	13.14	5.39	18.55	13.16	5.60	18.7	13.10	0.02				-0.06			
8/10/92	7.11	19.4	12.29	5.89	18.55	12.66	5.14	18.7	13.56	0.37				0.90			
8/12/92	7.60	19.4	11.80	6.11	18.55	12.44	6.14	18.7	12.56	0.64				0.12			
8/19/92	7.50	19.4	11.90	6.19	18.55	12.36	6.26	18.7	12.44	0.46				0.08			
8/23/92	10.27	19.4	9.13	6.53	18.55	12.02	6.44	18.7	12.26	2.89				0.24			
8/28/92	10.70	19.4	8.70	6.80	18.55	11.75	6.64	18.7	12.06	3.05				0.31			
9/1/92	8.12	19.4	11.28	6.56	18.55	11.99	6.61	18.7	12.09	0.71				0.10			
9/8/92	10.77	19.4	8.63	6.87	18.55	11.68	6.66	18.7	12.04	3.05				0.36			
9/18/92	10.84	19.4	8.56	7.08	18.55	11.47	6.77	18.7	11.93	2.91				0.46			
9/29/92	10.55	19.4	8.85	6.80	18.55	11.75	6.61	18.7	12.09	2.90				0.34			
10/6/92	9.80	19.4	9.60	7.13	18.55	11.42	6.86	18.7	11.84	1.82				0.42			
10/15/92	11.14	19.4	8.26	7.27	18.55	11.28	6.99	18.7	11.71	3.02				0.43			
11/3/92	7.85	19.4	11.55	6.56	18.55	11.99	6.58	18.7	12.12	0.44				0.13			
11/9/92	10.89	19.4	8.51	6.91	18.55	11.64	6.49	18.7	12.21	3.13				0.57			
12/16/92	9.40	19.4	10.00	5.69	18.55	12.86	5.38	18.7	13.32	2.86				0.46			
1/5/93	10.38	19.4	9.02	6.55	18.55	12.00	6.10	18.7	12.60	2.98	2.40	8	1	0.60	0.85	9	0
2/3/93	9.38	19.4	10.02	5.63	18.55	12.92	5.35	18.7	13.35	2.90				0.43			
3/12/93	6.50	19.4	12.90	5.40	18.55	13.15	5.54	18.7	13.16	0.25				0.01			
4/7/93	10.17	19.4	9.23	6.33	18.55	12.22	5.63	18.7	13.07	2.99				0.85			
5/4/93	9.80	19.4	9.60	7.05	18.55	11.50	5.54	18.7	13.16	1.90				1.66			
5/27/93	9.05	19.4	10.35	6.00	18.55	12.55	5.29	18.7	13.41	2.20				0.86			
7/6/93	10.52	19.4	8.88	6.67	18.55	11.88	6.01	18.7	12.69	3.00				0.81			
10/11/93	11.33	19.4	8.07	7.55	18.55	11.00	6.78	18.7	11.92	2.93				0.92			
12/8/93	10.52	19.4	8.88	7.22	18.55	11.33	5.89	18.7	12.81	2.45				1.48			
2/1/94	10.56	19.4	8.84	6.90	18.55	11.65	6.16	18.7	12.54	2.81	2.57	5	0	0.89	0.98	5	0
4/14/94	9.35	19.4	10.05	6.60	18.55	11.95	5.45	18.7	13.25	1.90				1.30			

Table C-14

Comparison of Potentiometric Heads in Layers B and D at the HY-8 Wells
BSB Property, Kent, Washington

										Shallow to Intermediate				Intermediate to Deep			
	HY-6			HY-8i			HY-8d										
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
6/1/94	10.25	19.4	9.15	7.06	18.55	11.49	6.06	18.7	12.64	2.34				1.15			
7/12/94	10.49	19.4	8.91	6.90	18.55	11.65	6.26	18.7	12.44	2.74				0.79			
10/19/94	11.51	19.4	7.89	7.61	18.55	10.94	6.97	18.7	11.73	3.05				0.79			
1/16/95	9.65	19.4	9.75	6.90	18.55	11.65	5.32	18.7	13.38	1.90	2.05	8	0	1.73	0.84	8	0
2/9/95	9.58	19.4	9.82	5.73	18.55	12.82	5.16	18.7	13.54	3.00				0.72			
4/24/95	9.61	19.4	9.79	6.80	18.55	11.75	5.24	18.7	13.46	1.96				1.71			
5/17/95	10.25	19.4	9.15	6.82	18.55	11.73	5.85	18.7	12.85	2.58				1.12			
6/20/95	7.68	19.4	11.72	6.71	18.55	11.84	6.01	18.7	12.69	0.12				0.85			
7/10/95	7.66	19.4	11.74	6.40	18.55	12.15	5.98	18.7	12.72	0.41				0.57			
8/15/95	10.03	19.4	9.37	7.19	18.55	11.36	6.43	18.7	12.27	1.99				0.91			
12/6/95	9.34	19.4	10.06	4.06	18.55	14.49	5.08	18.7	13.62	4.43				-0.87			
1/3/96	9.87	19.4	9.53	5.40	18.55	13.15	4.68	18.7	14.02	3.62	2.05	8	0	0.87	0.59	8	0
3/25/96	8.45	19.4	10.95	5.58	18.55	12.97	4.94	18.7	13.76	2.02				0.79			
5/1/96	8.28	19.4	11.12	5.12	18.55	13.43	4.52	18.7	14.18	2.31				0.75			
5/28/96	6.09	19.4	13.31	4.93	18.55	13.62	4.74	18.7	13.96	0.31				0.34			
6/26/96	9.02	19.4	10.38	5.95	18.55	12.60	5.31	18.7	13.39	2.22				0.79			
7/30/96	7.55	19.4	11.85	6.29	18.55	12.26	5.85	18.7	12.85	0.41				0.59			
9/9/96	9.83	19.4	9.57	6.71	18.55	11.84	6.10	18.7	12.60	2.27				0.76			
11/15/96	8.88	19.4	10.52	4.77	18.55	13.78	5.08	18.7	13.62	3.26				-0.16			
1/6/97	3.72	19.4	15.68	2.77	18.55	15.78	3.03	18.7	15.67	0.10	1.67	11	0	-0.11	0.68	11	0
3/6/97	7.87	19.4	11.53	4.72	18.55	13.83	4.14	18.7	14.56	2.30				0.73			
4/29/97	7.95	19.4	11.45	4.92	18.55	13.63	4.36	18.7	14.34	2.18				0.71			
5/20/97	8.30	19.4	11.10	5.23	18.55	13.32	4.61	18.7	14.09	2.22				0.77			
6/16/97	8.56	19.4	10.84	5.46	18.55	13.09	4.83	18.7	13.87	2.25				0.78			
7/7/97	6.38	19.4	13.02	5.25	18.55	13.30	4.85	18.7	13.85	0.28				0.55			
8/4/97	9.07	19.4	10.33	5.95	18.55	12.60	5.31	18.7	13.39	2.27				0.79			
9/16/97	8.92	19.4	10.48	5.92	18.55	12.63	5.25	18.7	13.45	2.15				0.82			
10/7/97	8.40	19.4	11.00	5.46	18.55	13.09	4.76	18.7	13.94	2.09				0.85			
11/7/97	6.41	19.4	12.99	5.13	18.55	13.42	4.66	18.7	14.04	0.43				0.62			
12/8/97	8.73	19.4	10.67	5.81	18.55	12.74	4.95	18.7	13.75	2.07				1.01			
1/12/98	8.10	19.4	11.30	4.96	18.55	13.59	4.31	18.7	14.39	2.29	2.69	12	0	0.80	1.02	12	0

Table C-14

Comparison of Potentiometric Heads in Layers B and D at the HY-8 Wells
BSB Property, Kent, Washington

	HY-6			HY-8i			HY-8d			Shallow to Intermediate				Intermediate to Deep			
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
2/26/98	9.12	19.4	10.28	5.44	18.55	13.11	4.62	18.7	14.08	2.83				0.97			
3/9/98	9.04	19.4	10.36	5.29	18.55	13.26	4.49	18.7	14.21	2.90				0.95			
4/7/98	8.87	19.4	10.53	5.55	18.55	13.00	4.72	18.7	13.98	2.47				0.98			
5/5/98	9.63	19.4	9.77	5.90	18.55	12.65	5.06	18.7	13.64	2.88				0.99			
6/8/98	10.01	19.4	9.39	6.24	18.55	12.31	5.32	18.7	13.38	2.92				1.07			
7/17/98	9.24	19.4	10.16	6.42	18.55	12.13	5.50	18.7	13.20	1.97				1.07			
8/4/98	10.37	19.4	9.03	6.54	18.55	12.01	5.68	18.7	13.02	2.98				1.01			
9/8/98	10.65	19.4	8.75	6.86	18.55	11.69	5.98	18.7	12.72	2.94				1.03			
10/9/98	10.55	19.4	8.85	6.88	18.55	11.67	5.98	18.7	12.72	2.82				1.05			
11/3/98	10.29	19.4	9.11	6.61	18.55	11.94	5.74	18.7	12.96	2.83				1.02			
12/8/98	9.09	19.4	10.31	5.83	18.55	12.72	4.68	18.7	14.02	2.41				1.30			
1/4/99	5.46	19.4	13.94	4.25	18.55	14.30	3.77	18.7	14.93	0.36	2.21	12	0	0.63	1.07	12	0
2/2/99	7.46	19.4	11.94	3.99	18.55	14.56	3.27	18.7	15.43	2.62				0.87			
3/8/99	7.59	19.4	11.81	4.11	18.55	14.44	3.39	18.7	15.31	2.63				0.87			
4/29/99	8.83	19.4	10.57	5.19	18.55	13.36	4.42	18.7	14.28	2.79				0.92			
5/21/99	9.08	19.4	10.32	5.43	18.55	13.12	4.57	18.7	14.13	2.80				1.01			
6/22/99	9.58	19.4	9.82	5.89	18.55	12.66	4.97	18.7	13.73	2.84				1.07			
7/21/99	9.51	19.4	9.89	5.93	18.55	12.62	4.97	18.7	13.73	2.73				1.11			
8/27/99	9.35	19.4	10.05	6.03	18.55	12.52	5.06	18.7	13.64	2.47				1.12			
9/14/99	9.43	19.4	9.97	8.04	18.55	10.51	5.29	18.7	13.41	0.54				2.90			
10/5/99	9.53	19.4	9.87	6.42	18.55	12.13	5.57	18.7	13.13	2.26				1.00			
11/15/99	9.23	19.4	10.17	5.73	18.55	12.82	4.75	18.7	13.95	2.65				1.13			
12/6/99	8.60	19.4	10.80	5.96	18.55	12.59	5.96	18.7	12.74	1.79				0.15			
1/6/00	8.58	19.4	10.82	5.12	18.55	13.43	4.25	18.7	14.45	2.61	2.11	11	1	1.02	1.34	12	0
2/14/00	8.12	19.4	11.28	4.94	18.55	13.61	3.99	18.7	14.71	2.33				1.10			
3/16/00	8.30	19.4	11.10	4.77	18.55	13.78	4.00	18.7	14.70	2.68				0.92			
4/11/00	8.74	19.4	10.66	5.27	18.55	13.28	4.50	18.7	14.20	2.62				0.92			
5/11/00	8.89	19.4	10.51	5.54	18.55	13.01	4.58	18.7	14.12	2.50				1.11			
6/6/00	9.42	19.4	9.98	6.47	18.55	12.08	5.23	18.7	13.47	2.10				1.39			
7/26/00	9.61	19.4	9.79	6.70	18.55	11.85	5.41	18.7	13.29	2.06				1.44			
8/21/00	9.51	19.4	9.89	6.84	18.55	11.71	5.57	18.7	13.13	1.82				1.42			

Table C-14

Comparison of Potentiometric Heads in Layers B and D at the HY-8 Wells
BSB Property, Kent, Washington

	HY-6			HY-8i			HY-8d			Shallow to Intermediate				Intermediate to Deep			
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
9/13/00	9.32	19.4	10.08	6.83	18.55	11.72	5.61	18.7	13.09	1.64				1.37			
10/11/00	9.64	19.4	9.76	6.95	18.55	11.60	5.84	18.7	12.86	1.84				1.26			
11/15/00	9.56	19.4	9.84	8.16	18.55	10.39	5.39	18.7	13.31	0.55				2.92			
12/17/00	9.27	19.4	10.13	5.91	18.55	12.64	4.88	18.7	13.82	2.51				1.18			
1/16/01	9.00	19.4	10.40	5.69	18.55	12.86	4.66	18.7	14.04	2.46	2.31	11	1	1.18	0.57	10	2
2/15/01	8.57	19.4	10.83	5.50	18.55	13.05	4.57	18.7	14.13	2.22				1.08			
3/13/01	8.62	19.4	10.78	5.77	18.55	12.78	4.22	18.7	14.48	2.00				1.70			
4/15/01	8.79	19.4	10.61	5.99	18.55	12.56	4.03	18.7	14.67	1.95				2.11			
5/7/01	8.87	19.4	10.53	6.09	18.55	12.46	4.24	18.7	14.46	1.93				2.00			
6/10/01	5.32	19.4	14.08	6.22	18.55	12.33	4.71	18.7	13.99	-1.75				1.66			
7/16/01	9.91	19.4	9.49	5.93	18.55	12.62	5.00	18.7	13.70	3.13				1.08			
8/14/01	9.18	19.4	10.22	5.49	18.55	13.06	6.49	18.7	12.21	2.84				-0.85			
9/12/01	9.67	19.4	9.73	5.51	18.55	13.04	5.51	18.7	13.19	3.31				0.15			
10/4/01	10.75	19.4	8.65	6.71	18.55	11.84	6.71	18.7	11.99	3.19				0.15			
11/9/01	9.97	19.4	9.43	6.01	18.55	12.54	9.70	18.7	9.00	3.11				-3.54			
12/3/01	8.57	19.4	10.83	4.42	18.55	14.13	4.42	18.7	14.28	3.30				0.15			
1/3/02	9.27	19.4	10.13	6.92	18.55	11.63	6.92	18.7	11.78	1.50	1.87	11	1	0.15	0.99	11	1
2/7/02	7.97	19.4	11.43	3.61	18.55	14.94	3.61	18.7	15.09	3.51				0.15			
3/7/02	8.27	19.4	11.13	4.23	18.55	14.32	4.23	18.7	14.47	3.19				0.15			
4/23/02	7.82	19.4	11.58	4.14	18.55	14.41	5.22	18.7	13.48	2.83				-0.93			
5/9/02	8.07	19.4	11.33	5.29	18.55	13.26	4.26	18.7	14.44	1.93				1.18			
6/19/02	8.24	19.4	11.16	8.65	18.55	9.90	4.66	18.7	14.04	-1.26				4.14			
7/12/02	8.63	19.4	10.77	6.36	18.55	12.19	4.89	18.7	13.81	1.42				1.62			
8/21/02	9.00	19.4	10.40	6.33	18.55	12.22	5.33	18.7	13.37	1.82				1.15			
9/24/02	9.33	19.4	10.07	6.45	18.55	12.10	5.41	18.7	13.29	2.03				1.19			
10/15/02	9.54	19.4	9.86	6.61	18.55	11.94	5.58	18.7	13.12	2.08				1.18			
11/5/02	8.39	19.4	11.01	6.01	18.55	12.54	5.51	18.7	13.19	1.53				0.65			
12/10/02	8.62	19.4	10.78	5.90	18.55	12.65	4.82	18.7	13.88	1.87				1.23			
1/17/03	5.30	19.4	14.10	4.55	18.55	14.00	4.00	18.7	14.70	-0.10	2.02	11	1	0.70	0.91	11	1
2/12/03	8.16	19.4	11.24	4.72	18.55	13.83	3.86	18.7	14.84	2.59				1.01			
3/5/03	8.40	19.4	11.00	5.08	18.55	13.47	3.95	18.7	14.75	2.47				1.28			

Table C-14

Comparison of Potentiometric Heads in Layers B and D at the HY-8 Wells
BSB Property, Kent, Washington

										Shallow to Intermediate				Intermediate to Deep			
	HY-6			HY-8i			HY-8d										
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
4/8/03	7.95	19.4	11.45	4.78	18.55	13.77	3.90	18.7	14.80	2.32				1.03			
5/1/03	8.20	19.4	11.20	5.27	18.55	13.28	4.17	18.7	14.53	2.08				1.25			
6/10/03	8.25	19.4	11.15	5.41	18.55	13.14	4.33	18.7	14.37	1.99				1.23			
7/3/03	8.64	19.4	10.76	5.94	18.55	12.61	4.91	18.7	13.79	1.85				1.18			
8/7/03	8.89	19.4	10.51	5.90	18.55	12.65	5.15	18.7	13.55	2.14				0.90			
9/11/03	9.18	19.4	10.22	5.48	18.55	13.07	6.20	18.7	12.50	2.85				-0.57			
10/3/03	9.18	19.4	10.22	6.24	18.55	12.31	5.41	18.7	13.29	2.09				0.98			
11/11/03	8.57	19.4	10.83	5.61	18.55	12.94	4.74	18.7	13.96	2.11				1.02			
12/3/03	7.45	19.4	11.95	4.79	18.55	13.76	3.98	18.7	14.72	1.81				0.96			
1/13/04	7.15	19.4	12.25	4.25	18.55	14.30	3.60	18.7	15.10	2.05	1.70	12	0	0.80	0.78	12	0
2/17/04	6.89	19.4	12.51	3.97	18.55	14.58	3.27	18.7	15.43	2.07				0.85			
3/8/04	7.31	19.4	12.09	4.41	18.55	14.14	3.86	18.7	14.84	2.05				0.70			
4/12/04	7.33	19.4	12.07	4.71	18.55	13.84	4.00	18.7	14.70	1.77				0.86			
5/12/04	7.31	19.4	12.09	4.89	18.55	13.66	4.35	18.7	14.35	1.57				0.69			
6/2/04	7.25	19.4	12.15	4.78	18.55	13.77	4.11	18.7	14.59	1.62				0.82			
7/2/04	7.68	19.4	11.72	5.13	18.55	13.42	4.45	18.7	14.25	1.70				0.83			
8/5/04	8.07	19.4	11.33	5.64	18.55	12.91	4.98	18.7	13.72	1.58				0.81			
9/2/04	7.62	19.4	11.78	5.31	18.55	13.24	4.55	18.7	14.15	1.46				0.91			
10/4/04	7.51	19.4	11.89	5.10	18.55	13.45	4.45	18.7	14.25	1.56				0.80			
11/5/04	7.30	19.4	12.10	4.95	18.55	13.60	4.36	18.7	14.34	1.50				0.74			
12/3/04	6.98	19.4	12.42	4.69	18.55	13.86	4.26	18.7	14.44	1.44				0.58			
									Mean:	2.03	Sum:	140	5	0.81	Sum:	139	6

Notes:
1. All measurements in feet.
2. Monitoring point (MP, top of PVC casing) elevation in feet relative to the National Geodetic Vertical Datum (NGVD 29).
3. GW = groundwater.
4. Elev. = elevation.
5. ΔH = lower layer groundwater elevation minus higher layer groundwater elevation (positive = upward gradient).

Table C-15

Comparison of Potentiometric Heads in Layers B and D at the K Wells
BSB Property, Kent, Washington

										Shallow to Intermediate				Intermediate to Deep			
	Ks			Ki			Kd				Yearly Mean	Number of Upward	Number of Downward		Yearly Mean	Number of Upward	Number of Downward
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	ΔH	ΔH	ΔH	ΔH	ΔH	ΔH	ΔH
7/10/92	6.72	20.5	13.78	6.94	20.81	13.87	5.28	20.62	15.34	0.09	0.15	12	7	1.47	2.07	18	2
7/16/92	–	20.5		5.07	20.81	15.74	5.12	20.62	15.50	–				-0.24			
7/20/92	6.95	20.5	13.55	7.11	20.81	13.70	5.38	20.62	15.24	0.15				1.54			
7/24/92	7.14	20.5	13.36	4.56	20.81	16.25	7.31	20.62	13.31	2.89				-2.94			
7/28/92	7.16	20.5	13.34	7.34	20.81	13.47	5.61	20.62	15.01	0.13				1.54			
8/4/92	7.14	20.5	13.36	7.35	20.81	13.46	5.60	20.62	15.02	0.10				1.56			
8/10/92	8.42	20.5	12.08	8.65	20.81	12.16	5.99	20.62	14.63	0.08				2.47			
8/12/92	8.95	20.5	11.55	9.00	20.81	11.81	5.88	20.62	14.74	0.26				2.93			
8/19/92	8.60	20.5	11.90	8.80	20.81	12.01	6.14	20.62	14.48	0.11				2.47			
8/23/92	9.05	20.5	11.45	9.34	20.81	11.47	6.34	20.62	14.28	0.02				2.81			
8/28/92	9.48	20.5	11.02	9.79	20.81	11.02	6.36	20.62	14.26	0.00				3.24			
9/1/92	9.20	20.5	11.30	9.02	20.81	11.79	6.49	20.62	14.13	0.49				2.34			
9/8/92	9.15	20.5	11.35	9.51	20.81	11.30	6.50	20.62	14.12	-0.05				2.82			
9/18/92	9.55	20.5	10.95	9.94	20.81	10.87	6.68	20.62	13.94	-0.08				3.07			
9/29/92	9.12	20.5	11.38	9.52	20.81	11.29	6.70	20.62	13.92	-0.09				2.63			
10/6/92	9.44	20.5	11.06	9.77	20.81	11.04	6.78	20.62	13.84	-0.02				2.80			
10/15/92	9.80	20.5	10.70	10.00	20.81	10.81	6.93	20.62	13.69	0.11				2.88			
11/3/92	8.85	20.5	11.65	9.28	20.81	11.53	6.61	20.62	14.01	-0.12				2.48			
11/9/92	9.43	20.5	11.07	10.05	20.81	10.76	6.73	20.62	13.89	-0.31				3.13			
12/16/92	7.14	20.5	13.36	8.28	20.81	12.53	5.68	20.62	14.94	-0.83				2.41			
1/5/93	9.02	20.5	11.48	9.52	20.81	11.29	5.68	20.62	14.94	-0.19	-0.28	1	8	3.65	3.39	9	0
2/3/93	7.60	20.5	12.90	8.16	20.81	12.65	5.10	20.62	15.52	-0.25				2.87			
3/12/93	7.49	20.5	13.01	7.69	20.81	13.12	5.38	20.62	15.24	0.11				2.12			
4/7/93	8.73	20.5	11.77	9.30	20.81	11.51	5.28	20.62	15.34	-0.26				3.83			
5/4/93	8.06	20.5	12.44	8.96	20.81	11.85	4.95	20.62	15.67	-0.59				3.82			
5/27/93	7.34	20.5	13.16	8.24	20.81	12.57	4.84	20.62	15.78	-0.59				3.21			
7/6/93	9.26	20.5	11.24	9.70	20.81	11.11	5.69	20.62	14.93	-0.13				3.82			
10/11/93	10.06	20.5	10.44	10.53	20.81	10.28	6.94	20.62	13.68	-0.16				3.40			
12/8/93	8.81	20.5	11.69	9.60	20.81	11.21	5.62	20.62	15.00	-0.48				3.79			
2/1/94	9.30	20.5	11.20	9.41	20.81	11.40	6.00	20.62	14.62	0.20	-0.11	1	4	3.22	3.30	5	0
4/14/94	7.55	20.5	12.95	8.41	20.81	12.40	4.99	20.62	15.63	-0.55				3.23			

Table C-15

Comparison of Potentiometric Heads in Layers B and D at the K Wells
BSB Property, Kent, Washington

	Ks			Ki			Kd			Shallow to Intermediate				Intermediate to Deep			
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
6/1/94	9.02	20.5	11.48	9.33	20.81	11.48	5.71	20.62	14.91	0.00				3.43			
7/12/94	8.99	20.5	11.51	9.40	20.81	11.41	5.96	20.62	14.66	-0.10				3.25			
10/19/94	10.15	20.5	10.35	10.56	20.81	10.25	6.98	20.62	13.64	-0.10				3.39			
1/16/95	6.60	20.5	13.90	8.73	20.81	12.08	5.00	20.62	15.62	-1.82	-0.53	1	7	3.54	3.53	8	0
2/9/95	7.90	20.5	12.60	8.16	20.81	12.65	4.94	20.62	15.68	0.05				3.03			
4/24/95	8.23	20.5	12.27	8.70	20.81	12.11	4.80	20.62	15.82	-0.16				3.71			
5/17/95	8.90	20.5	11.60	9.38	20.81	11.43	5.35	20.62	15.27	-0.17				3.84			
6/20/95	9.10	20.5	11.40	9.51	20.81	11.30	5.75	20.62	14.87	-0.10				3.57			
7/10/95	9.16	20.5	11.34	9.53	20.81	11.28	5.87	20.62	14.75	-0.06				3.47			
8/15/95	9.71	20.5	10.79	10.15	20.81	10.66	6.20	20.62	14.42	-0.13				3.76			
12/6/95	6.50	20.5	14.00	8.67	20.81	12.14	5.14	20.62	15.48	-1.86				3.34			
1/3/96	–	20.5		8.41	20.81	12.40	4.57	20.62	16.05	–	-0.47	1	6	3.65	3.50	8	0
3/25/96	7.93	20.5	12.57	8.48	20.81	12.33	4.42	20.62	16.20	-0.24				3.87			
5/1/96	7.22	20.5	13.28	8.07	20.81	12.74	4.16	20.62	16.46	-0.54				3.72			
5/28/96	7.20	20.5	13.30	7.41	20.81	13.40	4.43	20.62	16.19	0.10				2.79			
6/26/96	8.56	20.5	11.94	8.99	20.81	11.82	4.99	20.62	15.63	-0.12				3.81			
7/30/96	9.01	20.5	11.49	9.43	20.81	11.38	5.72	20.62	14.90	-0.11				3.52			
9/9/96	9.13	20.5	11.37	9.52	20.81	11.29	6.16	20.62	14.46	-0.08				3.17			
11/15/96	6.21	20.5	14.29	8.80	20.81	12.01	5.15	20.62	15.47	-2.28				3.46			
1/6/97	5.63	20.5	14.87	4.95	20.81	15.86	3.17	20.62	17.45	0.99	-0.51	1	10	1.59	3.30	11	0
3/6/97	6.28	20.5	14.22	7.87	20.81	12.94	3.96	20.62	16.66	-1.28				3.72			
4/29/97	7.30	20.5	13.20	7.98	20.81	12.83	4.25	20.62	16.37	-0.37				3.54			
5/20/97	7.76	20.5	12.74	8.26	20.81	12.55	4.25	20.62	16.37	-0.19				3.82			
6/16/97	7.99	20.5	12.51	8.43	20.81	12.38	4.51	20.62	16.11	-0.13				3.73			
7/7/97	7.93	20.5	12.57	8.33	20.81	12.48	4.66	20.62	15.96	-0.09				3.48			
8/4/97	8.47	20.5	12.03	8.89	20.81	11.92	5.07	20.62	15.55	-0.11				3.63			
9/16/97	8.40	20.5	12.10	8.83	20.81	11.98	5.31	20.62	15.31	-0.12				3.33			
10/7/97	6.62	20.5	13.88	8.10	20.81	12.71	5.51	20.62	15.11	-1.17				2.40			
11/7/97	5.17	20.5	15.33	8.35	20.81	12.46	4.77	20.62	15.85	-2.87				3.39			
12/8/97	8.22	20.5	12.28	8.85	20.81	11.96	4.95	20.62	15.67	-0.32				3.71			
1/12/98	6.98	20.5	13.52	8.11	20.81	12.70	4.58	20.62	16.04	-0.82	-0.41	0	12	3.34	3.30	12	0

Table C-15

Comparison of Potentiometric Heads in Layers B and D at the K Wells
BSB Property, Kent, Washington

										Shallow to Intermediate				Intermediate to Deep			
	Ks			Ki			Kd										
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
2/26/98	7.45	20.5	13.05	8.31	20.81	12.50	4.63	20.62	15.99	-0.55				3.49			
3/9/98	7.43	20.5	13.07	8.29	20.81	12.52	7.63	20.62	12.99	-0.55				0.47			
4/7/98	7.92	20.5	12.58	8.42	20.81	12.39	4.49	20.62	16.13	-0.19				3.74			
5/5/98	8.46	20.5	12.04	8.90	20.81	11.91	4.82	20.62	15.80	-0.13				3.89			
6/8/98	8.84	20.5	11.66	9.29	20.81	11.52	5.16	20.62	15.46	-0.14				3.94			
7/17/98	9.06	20.5	11.44	9.47	20.81	11.34	5.42	20.62	15.20	-0.10				3.86			
8/4/98	9.02	20.5	11.48	9.38	20.81	11.43	5.56	20.62	15.06	-0.05				3.63			
9/8/98	9.23	20.5	11.27	9.74	20.81	11.07	6.06	20.62	14.56	-0.20				3.49			
10/9/98	9.12	20.5	11.38	9.68	20.81	11.13	6.18	20.62	14.44	-0.25				3.31			
11/3/98	9.04	20.5	11.46	9.53	20.81	11.28	6.18	20.62	14.44	-0.18				3.16			
12/8/98	6.12	20.5	14.38	8.19	20.81	12.62	4.69	20.62	15.93	-1.76				3.31			
1/4/99	6.15	20.5	14.35	7.35	20.81	13.46	3.91	20.62	16.71	-0.89	-0.54	0	12	3.25	3.51	12	0
2/2/99	5.74	20.5	14.76	6.95	20.81	13.86	3.37	20.62	17.25	-0.90				3.39			
3/8/99	6.09	20.5	14.41	7.05	20.81	13.76	3.14	20.62	17.48	-0.65				3.72			
4/29/99	7.61	20.5	12.89	7.97	20.81	12.84	4.30	20.62	16.32	-0.05				3.48			
5/21/99	7.72	20.5	12.78	8.09	20.81	12.72	4.37	20.62	16.25	-0.06				3.53			
6/22/99	8.21	20.5	12.29	8.67	20.81	12.14	4.88	20.62	15.74	-0.15				3.60			
7/21/99	8.38	20.5	12.12	8.87	20.81	11.94	4.93	20.62	15.69	-0.18				3.75			
8/27/99	8.57	20.5	11.93	8.98	20.81	11.83	5.12	20.62	15.50	-0.10				3.67			
9/14/99	8.68	20.5	11.82	9.05	20.81	11.76	5.49	20.62	15.13	-0.06				3.37			
10/5/99	8.97	20.5	11.53	9.34	20.81	11.47	5.71	20.62	14.91	-0.06				3.44			
11/15/99	6.31	20.5	14.19	8.55	20.81	12.26	5.08	20.62	15.54	-1.93				3.28			
12/6/99	6.11	20.5	14.39	7.82	20.81	12.99	3.96	20.62	16.66	-1.40				3.67			
1/6/00	6.49	20.5	14.01	7.90	20.81	12.91	4.27	20.62	16.35	-1.10	-0.36	1	11	3.44	2.75	11	1
2/14/00	6.09	20.5	14.41	7.41	20.81	13.40	4.09	20.62	16.53	-1.01				3.13			
3/16/00	6.13	20.5	14.37	7.30	20.81	13.51	3.88	20.62	16.74	-0.86				3.23			
4/11/00	7.45	20.5	13.05	7.85	20.81	12.96	4.04	20.62	16.58	-0.09				3.62			
5/11/00	7.52	20.5	12.98	7.81	20.81	13.00	4.55	20.62	16.07	0.02				3.07			
6/6/00	8.07	20.5	12.43	8.46	20.81	12.35	5.37	20.62	15.25	-0.08				2.90			
7/26/00	8.51	20.5	11.99	9.00	20.81	11.81	5.55	20.62	15.07	-0.18				3.26			
8/21/00	8.60	20.5	11.90	9.03	20.81	11.78	5.57	20.62	15.05	-0.12				3.27			

Table C-15

Comparison of Potentiometric Heads in Layers B and D at the K Wells
BSB Property, Kent, Washington

										Shallow to Intermediate				Intermediate to Deep			
	Ks			Ki			Kd										
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
9/13/00	8.51	20.5	11.99	9.24	20.81	11.57	9.00	20.62	11.62	-0.42				0.05			
10/11/00	8.88	20.5	11.62	9.37	20.81	11.44	9.22	20.62	11.40	-0.18				-0.04			
11/15/00	8.74	20.5	11.76	9.21	20.81	11.60	5.57	20.62	15.05	-0.16				3.45			
12/17/00	8.58	20.5	11.92	8.97	20.81	11.84	5.19	20.62	15.43	-0.08				3.59			
1/16/01	8.23	20.5	12.27	8.60	20.81	12.21	5.10	20.62	15.52	-0.06	-0.28	3	9	3.31	2.94	12	0
2/15/01	8.01	20.5	12.49	8.12	20.81	12.69	5.10	20.62	15.52	0.20				2.83			
3/13/01	7.90	20.5	12.60	7.69	20.81	13.12	4.99	20.62	15.63	0.52				2.51			
4/15/01	6.27	20.5	14.23	8.01	20.81	12.80	4.11	20.62	16.51	-1.43				3.71			
5/7/01	7.72	20.5	12.78	8.30	20.81	12.51	5.75	20.62	14.87	-0.27				2.36			
6/10/01	7.91	20.5	12.59	8.56	20.81	12.25	5.88	20.62	14.74	-0.34				2.49			
7/16/01	8.41	20.5	12.09	8.81	20.81	12.00	5.00	20.62	15.62	-0.09				3.62			
8/14/01	8.46	20.5	12.04	8.74	20.81	12.07	5.79	20.62	14.83	0.03				2.76			
9/12/01	8.74	20.5	11.76	9.11	20.81	11.70	5.92	20.62	14.70	-0.06				3.00			
10/4/01	9.91	20.5	10.59	10.33	20.81	10.48	7.15	20.62	13.47	-0.11				2.99			
11/9/01	8.68	20.5	11.82	9.33	20.81	11.48	6.22	20.62	14.40	-0.34				2.92			
12/3/01	6.17	20.5	14.33	7.88	20.81	12.93	4.87	20.62	15.75	-1.40				2.82			
1/3/02	7.44	20.5	13.06	8.67	20.81	12.14	5.48	20.62	15.14	-0.92	-0.30	4	8	3.00	2.91	11	1
2/7/02	6.25	20.5	14.25	7.28	20.81	13.53	4.07	20.62	16.55	-0.72				3.02			
3/7/02	6.73	20.5	13.77	7.81	20.81	13.00	5.35	20.62	15.27	-0.77				2.27			
4/23/02	6.68	20.5	13.82	7.68	20.81	13.13	4.15	20.62	16.47	-0.69				3.34			
5/9/02	7.16	20.5	13.34	7.28	20.81	13.53	5.43	20.62	15.19	0.19				1.66			
6/19/02	7.82	20.5	12.68	8.16	20.81	12.65	4.75	20.62	15.87	-0.03				3.22			
7/12/02	8.33	20.5	12.17	8.56	20.81	12.25	5.57	20.62	15.05	0.08				2.80			
8/21/02	8.82	20.5	11.68	8.93	20.81	11.88	5.51	20.62	15.11	0.20				3.23			
9/24/02	8.00	20.5	12.50	8.99	20.81	11.82	5.55	20.62	15.07	-0.68				3.25			
10/15/02	8.55	20.5	11.95	9.00	20.81	11.81	5.68	20.62	14.94	-0.14				3.13			
11/5/02	8.40	20.5	12.10	8.79	20.81	12.02	5.82	20.62	14.80	-0.08				2.78			
12/10/02	8.40	20.5	12.10	8.75	20.81	12.06	5.31	20.62	15.31	-0.04				3.25			
1/17/03	6.28	20.5	14.22	6.32	20.81	14.49	4.51	20.62	16.11	0.27	-0.39	2	10	1.62	2.66	12	0
2/12/03	6.59	20.5	13.91	7.62	20.81	13.19	4.06	20.62	16.56	-0.72				3.37			
3/5/03	6.80	20.5	13.70	7.62	20.81	13.19	4.15	20.62	16.47	-0.51				3.28			

Table C-15

Comparison of Potentiometric Heads in Layers B and D at the K Wells
BSB Property, Kent, Washington

	Ks			Ki			Kd			Shallow to Intermediate				Intermediate to Deep			
Date	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	Depth to Water	MP Elev.	GW Elev.	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH	ΔH	Yearly Mean ΔH	Number of Upward ΔH	Number of Downward ΔH
4/8/03	6.39	20.5	14.11	6.94	20.81	13.87	3.89	20.62	16.73	-0.24				2.86			
5/1/03	7.19	20.5	13.31	7.78	20.81	13.03	4.25	20.62	16.37	-0.28				3.34			
6/10/03	7.53	20.5	12.97	8.65	20.81	12.16	8.01	20.62	12.61	-0.81				0.45			
7/3/03	8.10	20.5	12.40	8.45	20.81	12.36	5.10	20.62	15.52	-0.04				3.16			
8/7/03	8.31	20.5	12.19	8.64	20.81	12.17	5.48	20.62	15.14	-0.02				2.97			
9/11/03	8.42	20.5	12.08	8.99	20.81	11.82	5.97	20.62	14.65	-0.26				2.83			
10/3/03	8.70	20.5	11.80	9.01	20.81	11.80	5.98	20.62	14.64	0.00				2.84			
11/11/03	7.82	20.5	12.68	8.30	20.81	12.51	5.39	20.62	15.23	-0.17				2.72			
12/3/03	5.05	20.5	15.45	7.20	20.81	13.61	4.57	20.62	16.05	-1.84				2.44			
1/13/04	5.10	20.5	15.40	6.62	20.81	14.19	4.00	20.62	16.62	-1.21	-0.31	3	9	2.43	2.74	12	0
2/17/04	6.12	20.5	14.38	6.71	20.81	14.10	3.50	20.62	17.12	-0.28				3.02			
3/8/04	6.11	20.5	14.39	7.08	20.81	13.73	4.01	20.62	16.61	-0.66				2.88			
4/12/04	6.85	20.5	13.65	7.42	20.81	13.39	4.11	20.62	16.51	-0.26				3.12			
5/12/04	7.22	20.5	13.28	7.58	20.81	13.23	4.35	20.62	16.27	-0.05				3.04			
6/2/04	6.85	20.5	13.65	7.33	20.81	13.48	4.46	20.62	16.16	-0.17				2.68			
7/2/04	7.46	20.5	13.04	7.70	20.81	13.11	4.73	20.62	15.89	0.07				2.78			
8/5/04	8.05	20.5	12.45	8.35	20.81	12.46	5.29	20.62	15.33	0.01				2.87			
9/5/04	7.41	20.5	13.09	8.07	20.81	12.74	4.98	20.62	15.64	-0.35				2.90			
10/4/04	7.45	20.5	13.05	7.74	20.81	13.07	5.21	20.62	15.41	0.02				2.34			
11/5/04	6.50	20.5	14.00	7.28	20.81	13.53	4.90	20.62	15.72	-0.47				2.19			
12/3/04	6.54	20.5	13.96	7.20	20.81	13.61	4.43	20.62	16.19	-0.35				2.58			
									Mean:		Sum:	30	113	2.97	Sum:	141	4

Notes: 1. All measurements in feet.
2. Monitoring point (MP, top of PVC casing) elevation in feet relative to the National Geodetic Vertical Datum (NGVD 29).
3. GW = groundwater.
4. Elev. = elevation.
5. ΔH = lower layer groundwater elevation minus higher layer groundwater elevation (positive = upward gradient).

Table D-1

Equalizing Basin and Drying Bed Metals and Cyanide Results
BSB Property, Kent, Washington

Constituent	Equalizing Basin Effluent (µg/L)	Equalizing Basin Soil (µg/kg)	SW Drying Bed Sludge (µg/kg)
Antimony	**420**	< 300	**8,500**
Arsenic	**32**	**3,200**	**9,700**
Beryllium	< 2	**680**	**300**
Cadmium	**960**	**130,000**	**1,900,000**
Chromium	**300,000**	**300,000**	**80,000,000**
Copper	**3,800**	**15,000**	**36,000,000**
Lead	**1,000**	**6,100**	**2,200,000**
Mercury	**2.2**	**60**	**1,000**
Nickel	**8,200**	**190,000**	**9,100,000**
Selenium	< 5	**600**	< 1,000
Silver	**24**	**250**	**8,500**
Zinc	**2,200**	**51,000**	**930,000**
Total Cyanide	**88**	**14,000**	**1,000,000**

Notes: 1. Detections shown in bold.

Table D-2

Equalizing Basin and Drying Bed VOC and SVOC Results
BSB Property, Kent, Washington

Constituent	Equalizing Basin Effluent (μg/L)	Equalizing Basin Soil (μg/kg)	SW Drying Beds Sludge (μg/kg)
VOCs			
Vinyl chloride	< 4	**70**	< 48
Methylene chloride	**213**	**124**	**95**
Acetone	< 2	**78**	**45**
1,1-dichloroethene	< 4	**10**	< 48
1,1-dichloroethane	< 8	< 3	< 107
1,1,1-trichloroethane	**10**	< 3	< 83
Trichloroethene	**124**	**3,900**	< 83
Tetrachloroethene	< 5	< 3	< 66
Toluene	< 9	< 3	< 117
Ethylbenzene	< 5	< 3	< 68
Total xylenes	< 11	**14**	< 144
Trans-1,2-dichloroethene	**148**	**5,800**	< 90
2-nitrophenol	**8.5**	–	< 15,100
SVOCs			
Total phenol	< 5	< 50	< 100
Dibutyl phthalate	**5.2**	–	< 7,500
Bis(2-ethylhexyl)phthalate	**25.5**	–	**2,256**

Notes: 1. Detections shown in bold.
2. – = not analyzed.

Table D-3

Southeastern Drying Bed Sludge Analytical Results
BSB Property, Kent, Washington

Sample	Core Depth (ft)	Arsenic	Cyanide	Vinyl chloride	1,1-Di-chloro-ethene	Methylene chloride	Trans-Di-chloride-ethene	1,1-Di-chloro-ethane	1,1,1-Tri-chloro-dthane	1,2-Di-chloro-ethane	Trichloro-ethene	Toluene	Tetra-chloro-ethene	Total Xylenes	Ethyl-benzene
RS 19/108	1.66	**6.3**	**220**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
RS 72/117	1.75	**5.6**	**100**	ND	ND	ND	ND	ND	ND	ND	**3**	ND	ND	ND	ND
RS 76/111	2.16	**3.8**	**390**	ND	**20**	ND	ND	ND	ND	ND	ND	ND	ND	**38**	ND
RS 77/70	2.66	**4.2**	**300**	ND	ND	ND	ND	ND	ND	ND	ND	ND	**30**	**74**	ND
RS 108/34	1.75	**7.5**	**170**	ND	**24**	ND	ND	**17**	ND	ND	ND	**13**	ND	**13**	ND
RS 6/103	2.23	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:
1. All results in mg/kg.
2. ND = not detected.
3. All detections shown in bold.

Table D-4

Stabilized Sludge Sampling Results
Southwestern Drying Beds Closure
BSB Property, Kent, Washington

				EP Toxicity Constituents (mg/L)							
Lift Number	Test Cylinder Number	Date Sample Collected	pH	Arsenic	Cadmium	Chromium	Lead	Copper	Nickel	Zinc	Cyanide
1	NE-1-1.3	9/8/88	10.8	< 0.2	**3.3**	**1.8**	< 0.1	**0.4**	**3.3**	**0.5**	**0.017**
	NE-1-1.1	9/8/88	11.0	< 0.2	< 0.01	**1.8**	< 0.1	**0.4**	< 0.1	< 0.1	< 0.005
	NE-1-1.5	9/8/88	11.0	< 0.2	< 0.01	**1.7**	< 0.1	**0.4**	< 0.1	< 0.1	< 0.005
	SW-1-1.1	9/9/88	11.2	< 0.2	< 0.01	**1.3**	< 0.1	**0.1**	< 0.1	< 0.1	**0.047**
2	NW-2-1.4	9/13/88	11.3	< 0.2	< 0.01	**1.0**	< 0.1	**0.1**	< 0.1	< 0.1	**0.008**
3	SE-3-2.1	9/14/88	11.0	< 0.2	< 0.01	**0.9**	< 0.1	**0.1**	< 0.1	< 0.1	< 0.005
4	NW-4-1.1	9/15/88	11.0	< 0.2	**0.03**	**0.9**	< 0.1	< 0.1	**0.1**	< 0.1	**0.047**
5	NE-5-1.1	9/15/88	10.8	< 0.2	**0.15**	**0.9**	< 0.1	< 0.1	**0.3**	< 0.1	**0.019**
6	SE-6-1.3	9/16/88	11.1	< 0.2	**0.40**	**0.8**	< 0.1	< 0.1	**0.7**	< 0.1	**0.031**
7	SURF-1.4	9/16/88	10.4	< 0.2	**1.2**	**0.7**	< 0.1	< 0.1	**0.9**	**0.2**	**0.98**
	SURF-1.1	9/16/88	11.0	< 0.2	< 0.01	**0.6**	< 0.1	**0.1**	< 0.1	< 0.1	< 0.005
	SURF-1.3	9/16/88	11.0	< 0.2	< 0.01	**0.6**	< 0.1	**0.1**	< 0.1	< 0.1	< 0.005

Notes:
1. Source = *Closure Report for the Three Sludge Drying Beds Regulated Waste Management Units* (Landau, 1988b).
2. EP Toxicity test detections in bold.
3. All samples except for NE-1-1.1, NE-1-1.5, SURF-1.1, and SURF-1.3 were tested before the cylinders were fully stabilized; samples NE-1-1.1, NE-1-1.5, SURF-1.1, and SURF-1.3 were tested when more fully cured.

Table D-5

Parcel G Soil Gas VOC Results
BSB Property, Kent, Washington

Sample Location	cis + trans 1,2-dichloroethene	Trichloroethene	Tetrachloroethene
Off-site Background Locations			
SG-1	–	< 5	–
SG-1 (dup)	–	< 5	–
SG-2	–	< 5	–
SG-3	–	< 5	–
SG-104	**5**	**15**	< 20
SG-104 (dup)	**15**	**40**	< 20
SG-105	< 2	< 5	< 20
SG-120	**Trace**	**5**	< 20
Parcel G Locations			
SG-4	–	< 5	–
SG-5	–	**250,000**	–
SG-6	–	**6,000**	–
SG-13	–	**14**	–
SG-13 (dup)	–	**21**	–
SG-20	–	**800**	–
SG-21	–	**150**	–
SG-22	< 5	< 5	–
SG-23	–	**500**	–
SG-24	–	**8,000**	–
SG-24 (dup)	–	**20,000**	–
SG-25	–	< 5	–
SG-103	**20**	**35**	< 20
SG-106	**20**	**16,000**	< 20
SG-107	< 2	**5**	< 20
SG-108	< 2	**Trace**	< 20
SG-109	**10**	**45**	< 20
SG-123	**5**	**10**	< 20
SG-123 (dup)	**Trace**	< 10	< 20
SG-124	< 2	< 5	< 20
SG-125	**5**	**10**	< 20
SG-125 (dup)	**10**	**20**	< 20
SG-126	**35**	**140**	< 20
SG-131	**90**	**30**	< 20
SG-133	< 5	< 10	< 20
SG-136	**10**	**20**	< 20

Notes:
1. Results in parts per billion.
2. Detected results in bold.
3. Dup = duplicate sample.

Table D-6

Confirmation Soil Sampling Results
Closure of Equalizing and Settling Lagoons
BSB Property, Kent, Washington

Lab Sample Number	Sample Description	Date Sample Collected	Water-soluble Cyanide (mg/L)	EP Toxicity Metals (mg/L)						
				Arsenic	Cadmium	Chromium	Lead	Copper	Nickel	Zinc
1001	Settling lagoon composite	9/18/87, 9/19/87	**0.042**	< 0.2	**2.5**	< 0.1	< 0.1	< 0.1	**0.3**	**0.2**
1002	Equalizing lagoon composite no. 1	9/19/87	**1.1**	< 0.2	**1.3**	< 0.1	< 0.1	**0.2**	**0.5**	**0.2**
1003	Equalizing lagoon composite no. 2	9/19/87	**2.0**	< 0.2	**1.2**	< 0.1	< 0.1	**1.0**	**0.8**	**0.2**
1004	Equalizing lagoon composite no. 3	9/21/87	**0.014**	< 0.2	**0.01**	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1005	Equalizing lagoon composite no. 4	9/19/87	**0.035**	< 0.2	**0.31**	< 0.1	< 0.1	< 0.1	**0.2**	**0.1**
1006	Equalizing lagoon composite no. 5	9/19/87	**0.020**	< 0.2	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Notes:
1. Source = *Closure Report for the Equalizing Lagoon and Settling Basin Regulated Waste Management Units* (Landau, 1988a).
2. Each composite sample was formed from 5 individual grab samples.
3. Detections in bold.

Table D-7

Confirmation Soil Sampling Results
Southwestern Drying Beds Closure
BSB Property, Kent, Washington

Lab Sample Number	Sample Description	Date Sample Collected	pH	EP Toxicity Constituents (mg/L)							
				Arsenic	Cadmium	Chromium	Lead	Copper	Nickel	Zinc	Cyanide
1000	East drying bed composite no. 1	8/1/88	7.5	< 0.2	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1001	East drying bed composite no. 2	8/1/88	7.2	< 0.2	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1002	Center drying bed composite no. 1	8/1/88	6.4	< 0.2	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1003	Center drying bed composite no. 2	8/1/88	7.2	< 0.2	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1004	West drying bed composite no. 1	8/1/88	6.9	< 0.2	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1005	West drying bed composite no. 2	8/1/88	7.3	< 0.2	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
31	Center/west drying bed composite	8/1/88	5.3	< 0.2	**0.53**	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1006	East drying bed composite no. 3	8/3/88	6.8	< 0.2	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1007	East drying bed composite no. 4	8/3/88	6.7	< 0.2	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1008	Center drying bed composite no. 3	8/3/88	6.7	< 0.2	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1009	Center drying bed composite no. 4	8/3/88	6.8	< 0.2	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1010	West drying bed composite no. 3	8/3/88	6.8	< 0.2	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1011	West drying bed composite no. 4	8/3/88	7..3	< 0.2	< 0.01	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Notes:
1. Source = *Closure Report for the Three Sludge Drying Beds Regulated Waste Management Units* (Landau, 1988b).
2. Each composite sample was formed from 5 individual grab samples.
3. EP Toxicity test detections in bold.

Table D-8

Parcel G Source Area Investigation Soil Inorganics Results
BSB Property, Kent, Washington

Sample Number	Date Collected	Sample Depth	Chromium	Iron	Manganese	Chemical Oxygen Demand
SP-1	11/28/00	21	13	10,400	94	9,678
SP-5	12/1/00	29	6	5,560	47	1,648
SP-9	12/1/00	20	17	12,400	129	17,193
SP-10	12/1/00	33	11	10,000	82	7,775
SP-11	11/29/00	32	6	7,890	89	11,213
SP-11	11/29/00	34	11	12,800	126	11,301
SP-12	11/30/00	14	14	8,660	83	11,699

Notes: 1. Depths in feet below ground surface.
2. Results in mg/kg.

Table D-9

Total Chlorinated VOC Concentrations in Unsaturated Soil
BSB Property, Kent, Washington

Test Boring	Sample # 1 (mg/kg)	Mean Depth (ft)	Sample # 2 (mg/kg)	Mean Depth (ft)	Sample # 3 (mg/kg)	Mean Depth (ft)	Sample # 4 (mg/kg)	Mean Depth (ft)	Sample # 5 (mg/kg)	Mean Depth (ft)
TH-1	0.760	1.0	7.119	2.4	–	–	–	–	–	–
TH-2	79.609	1.7	–	–	–	–	–	–	–	–
TH-3	4.396	1.2	111.583	2.0	–	–	–	–	–	–
TH-4	0.638	1.0	2.417	2.9	–	–	–	–	–	–
TH-5	0.120	1.1	–	–	–	–	–	–	–	–
TH-6	0.039	1.1	0.294	3.2	–	–	–	–	–	–
TH-7	0.138	2.0	0.163	3.7	–	–	–	–	–	–
TH-8	0.094	1.5	3.014	4.0	–	–	–	–	–	–
TH-9	0.058	3.5	0.011	4.5	–	–	–	–	–	–
TH-10	1.026	2.5	0.908	3.0	0.807	3.6	–	–	–	–
TH-11	0.020	1.7	0.360	1.6	–	–	–	–	–	–
TH-12	ND	1.1	0.004	1.7	0.006	2.3	0.002	3.0	–	–
TH-13	9.376	1.5	44.271	2.2	35.882	3.0	–	–	–	–
TH-14	0.370	2.1	0.139	3.0	–	–	–	–	–	–
TH-15	0.719	3.0	1.947	4.3	–	–	–	–	–	–
TH-16	1.450	2.7	1.968	3.7	0.565	4.6	–	–	–	–
TH-17	1.802	2.7	1.144	3.7	2.996	4.6	–	–	–	–
TH-18	0.571	1.9	1.781	3.3	1.732	4.3	–	–	–	–
TH-19	0.013	1.6	0.061	2.7	0.053	3.4	0.002	4.0	–	–
TH-20	0.113	1.2	1.082	2.2	0.693	3.2	–	–	–	–
TH-21	0.512	1.0	0.924	1.7	0.667	2.8	–	–	–	–
TH-22	1.661	2.0	2.177	3.0	–	–	–	–	–	–
TH-23	0.017	1.5	4.364	2.5	5.033	3.2	4.545	3.7	3.027	4.2
TH-24	0.233	0.7	0.239	2.0	0.291	3.0	–	–	–	–
TH-25	0.183	1.7	0.378	2.0	0.842	3.0	–	–	–	–

Notes: 1. Depth in feet below ground surface.
2. – = not analyzed.
3. ND = not detected above the method reporting limit.

Table D-10

Confirmation Soil Sample Results for Parcel G Drum Storage Area Excavation
BSB Property, Kent, Washington

	Analytical Results (mg/kg)																		
Constituent	1A-a	1A-b	1A-c	2A-a	2A-b	3A-a	3A-a'	3A-b	3A-b'	3A-c	3A-c'	4A-a	4A-b	4A-c	5A-a	5A-b	5A-c	6A-a	6A-b
Vinyl chloride	< 0.1	< 0.1	< 0.1	< 0.1	**0.2**	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,1-dichloroethene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**0.2**	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Methylene chloride	< 0.1	**0.1**	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**0.1**	< 0.1	**0.2**	**0.1**	< 0.1	**0.2**	**0.1**
trans-1,2-dichloroethene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,1-dichloroethane	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
cis-1,2-dichloroethene	< 0.1	< 0.1	**0.1**	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**0.6**	< 0.1	< 0.1
Chloroform	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,1,1-trichloroethane	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**1**	< 0.1	< 0.1
Carbon tetrachloride	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2-dichloroethane	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Trichloroethene	< 0.1	**4**	**8**	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**5**	**3**	< 0.1	**3**	**8**	**19**	**4**	**90**	**1**	< 0.1
Toluene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,1,2-trichloroethane	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**0.1**	< 0.1	< 0.1	< 0.1	< 0.1
Tetrachloroethene	< 0.1	< 0.1	**0.2**	< 0.1	**0.2**	< 0.1	< 0.1	< 0.1	< 0.1	**1**	**0.7**	< 0.1	**0.8**	**2**	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
m,p-xylene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
o-xylene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Notes:

1. Source: Sweet-Edwards/EMCON letter to Heath Tecna Aerospace dated November 22, 1988.
2. All samples collected above the water table between October 22 and November 7, 1988.
3. Sample suffixes "a", "b", and "c" represent samples collected near the top, middle, and bottom of the excavation, respectively.
4. Samples with a ' suffix represent duplicate samples.

Table D-10

Confirmation Soil Sample Results for Parcel G Drum Storage Area Excavation
BSB Property, Kent, Washington

	Analytical Results (mg/kg)																	
Constituent	6A-c	7A-a	7A-b	7A-c	8A-a	8A-a'	8A-b	8A-b'	8A-c	8A-c'	9A-a	9A-b	11A-a	11A-b	11A-c	12A-a	12A-b	12A-c
Vinyl chloride	< 0.1	< 0.1	< 0.1	**0.1**	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,1-dichloroethene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Methylene chloride	< 0.1	**0.4**	**0.1**	**0.2**	**0.1**	**0.1**	< 0.1	< 0.1	< 0.1	**0.1**	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**0.1**
trans-1,2-dichloroethene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,1-dichloroethane	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
cis-1,2-dichloroethene	**36**	< 0.1	**0.1**	**0.6**	< 0.1	< 0.1	< 0.1	< 0.1	**0.5**	**0.5**	< 0.1	**0.3**	**8**	**9**	**2**	< 0.1	< 0.1	**0.2**
Chloroform	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,1,1-trichloroethane	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**0.1**
Carbon tetrachloride	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2-dichloroethane	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Benzene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Trichloroethene	**19**	< 0.1	**0.4**	**1**	< 0.1	< 0.1	**0.1**	**0.2**	**0.5**	**2**	**0.3**	**3**	**3**	**26**	**11**	**0.3**	**1**	**0.5**
Toluene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,1,2-trichloroethane	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Tetrachloroethene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
m,p-xylene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
o-xylene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Notes:

1. Source: Sweet-Edwards/EMCON letter to Heath Tecna Aerospace dated November 22, 1988.
2. All samples collected above the water table between October 22 and November 7, 1988.
3. Sample suffixes "a", "b", and "c" represent samples collected near the top, middle, and bottom of the excavation, respectively.
4. Samples with a ' suffix represent duplicate samples.

Table D-10

Confirmation Soil Sample Results for Parcel G Drum Storage Area Excavation
BSB Property, Kent, Washington

	Analytical Results (mg/kg)															
Constituent	23A-a	23A-b	23A-bb	23A-c	24A-a	24A-b	24A-c	1B-a	1B-b	1B-c	2B-a	2B-b	2B-c	14B-a	14B-b	14B-c
Vinyl chloride	< 0.1	**0.1**	< 0.1	**0.1**	< 0.1	< 0.1	< 0.1	**0.3**	< 0.1	**0.2**	**0.2**	**0.4**	**0.8**	**0.9**	**2**	**2**
1,1-dichloroethene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Methylene chloride	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
trans-1,2-dichloroethene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,1-dichloroethane	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**0.2**	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**0.1**	**0.3**	**0.2**
cis-1,2-dichloroethene	< 0.1	< 0.1	< 0.1	**0.2**	< 0.1	< 0.1	< 0.1	**0.9**	**0.2**	**1**	**12**	**11**	**15**	**0.1**	< 0.1	**1**
Chloroform	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,1,1-trichloroethane	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**4**	< 0.1	**1**	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Carbon tetrachloride	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
1,2-dichloroethane	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**0.1**	< 0.1	< 0.1
Benzene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Trichloroethene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**130**	**17**	**80**	**6**	**15**	**59**	< 0.1	< 0.1	< 0.1
Toluene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**0.1**	< 0.1	< 0.1
1,1,2-trichloroethane	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Tetrachloroethene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
m,p-xylene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	**0.1**	< 0.1	< 0.1
o-xylene	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

Notes:

1. Source: Sweet-Edwards/EMCON letter to Heath Tecna Aerospace dated November 22, 1988.
2. All samples collected above the water table between October 22 and November 7, 1988.
3. Sample suffixes "a", "b", and "c" represent samples collected near the top, middle, and bottom of the excavation, respectively.
4. Samples with a ' suffix represent duplicate samples.

Table D-11

Summary of Soil VOC Results from Hand Auger Samples
BSB Property, Kent, Washington

Hand Auger Boring Site	Sample Zone	Vinyl Chloride	1,1-Dichloro-ethene	Methylene-chloride	Trans-Dichloro-ethene	1,1-Dichloro-ethane	1,1,1-Trichloro-ethane	1,2-Dichloro-ethane	Trichloro-ethene	Toluene	Tetrachloro-ethene	Total Xylenes	Ethyl-benzene
HA-13	U	ND	**16**	ND	ND	ND	ND	**19**	**68**	ND	**12**	**67**	ND
	S	**400**	**10**	ND	ND	**17**	**2**	ND	**39**	ND	ND	**13**	ND
HA-14	U	ND	ND	ND	ND	**13**	ND	ND	**10**	ND	ND	ND	ND
	S	**50**	ND	ND	ND	**16**	ND	ND	**7**	ND	ND	ND	ND
HA-15	U	ND	**52**	ND	ND	**57**	**4**	**33**	**12**	ND	ND	**16**	ND
	S	ND	**15**	**140**	ND	**21**	**3**	**97**	**2**	ND	ND	**21**	ND
HA-16	U	ND	**17**	ND	ND	**10**	ND	ND	**86**	ND	**58**	**25**	**13**
	S	ND	**18**	ND	**11**	**18**	ND	**21**	**39**	ND	ND	**15**	ND
HA-17	U	ND	**18**	ND	ND	**160**	**5**	**42**	**90**	**36**	ND	**59**	ND
	S	**170**	**40**	ND	ND	**800**	**25**	**500**	**150**	**10**	ND	**87**	ND
HA-18	U	ND	**13**	ND	ND	**46**	**3**	ND	**20**	ND	ND	**18**	**14**
	S	ND	**12**	ND	ND	**68**	**2**	ND	**5**	ND	ND	**10**	ND
HA-19	S	**79**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HA-20	U	ND	ND	ND	ND	ND	**2**	ND	**10**	**10**	ND	ND	ND
	S	ND	ND	ND	ND	ND	ND	**13**	**15**	ND	ND	**61**	**15**
HA-21	U	ND	**10**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	S	ND	ND	ND	ND	ND	ND	ND	ND	**10**	ND	ND	ND
HA-22	U	ND	ND	ND	ND	ND	ND	ND	**48**	**14**	ND	**38**	ND
	S	ND	ND	ND	ND	ND	ND	ND	**48**	ND	ND	**130**	**13**
HA-23	U	ND	ND	ND	ND	ND	ND	**1,000**	**60,000**	**47**	**170**	**2,000**	**66**
	S	ND	ND	**18**	ND	ND	**98**	**36**	**200,000**	**120**	**480**	**5,000**	**800**
HA-24	U	ND	**44**	**147**	**31**	**14**	**4,000**	**78**	**800,000**	**2,000**	**100,000**	**30,000**	**9,000**
	S	**34**	**260**	ND	**380**	ND	**4,000**	ND	**2,000,000**	**60,000**	**10,000**	**30,000**	**60,000**
HA-25	U	ND	**55**	**12**	**13**	**97**	**20,000**	**260**	**50,000**	**700**	**50,000**	**40,000**	**900**
	S	ND	**65**	**290**	**75**	**58**	**8,000**	**34**	**30,000**	**6,000**	**8,000**	**10,000**	**10,000**
HA-26	U	ND	**10**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	S	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HA-27	S	ND	**21**	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
HA-BN	S	ND	ND	ND	ND	ND	**3**	ND	**2**	ND	ND	ND	ND

Notes:
1. Results in µg/kg.
2. U = unsaturated zone sample.
3. S = saturated zone sample.
4. Detections shown in bold.

Table D-12

Phase 3 Soil VOC Results
BSB Property, Kent, Washington

Boring	Location	Depth (feet)	Vinyl Chloride	Methylene Chloride	1,1-Dichloro-ethene	1,1-Dichloro-ethane	trans-1,2-dichloroethene	Trichloro-ethene	1,1,1-Tri-chloroethane	Tetrachloro-ethene	Toluene	Ethylbenzene	Total Xylenes
HYSS-4	North of equalizing basin	11 - 12.5	**3,700**	< 100	**74**	**30**	**24,000**	< 20	< 20	ND	< 20	ND	ND
		16 - 17.5	**140**	< 100	< 20	< 20	< 40	< 20	< 20	ND	< 20	ND	ND
HYSS-6	NW corner of waste facility	4 - 6	< 10	**200**	< 20	**22**	< 40	< 20	< 20	ND	< 20	ND	ND
		11.5 - 13	**190**	< 100	< 20	**47**	< 40	< 20	< 20	ND	< 20	ND	ND
HYSS-7	Old Glick basin	1.5 - 3	**120**	< 100	< 20	**91**	< 40	< 20	< 20	ND	< 20	ND	ND
		6 - 7.5	**1,000**	**540**	**39**	**210**	**2,300**	**1,500**	< 20	ND	< 20	ND	ND
		16 - 17	**240**	**840**	**23**	**49**	**9,700**	**130,000**	< 20	ND	**22**	ND	ND
HYSS-8	SW corner of waste facility	3 - 4.5	**190**	**170**	**160**	**630**	**260**	**6,200**	**61,000**	ND	**80**	ND	ND
		8 - 9.5	< 10	< 100	**530**	**1,500**	**1,500**	**11,000**	**4,800**	ND	**44**	ND	ND
		16 - 17.5	**430**	**350**	**190**	**550**	**21,000**	**48,000**	**36,000**	ND	**52**	ND	ND
HYSS-9	East end of ditch	1.5 - 3	< 10	< 100	< 20	< 20	< 40	< 20	< 20	ND	< 20	ND	ND
		7.5 - 9	**230**	**240**	**20**	**20**	**40**	< 20	< 20	ND	< 20	ND	ND
HYSS-10	Middle of ditch	1 - 3	< 10	< 100	< 20	< 20	**46**	**73,000**	**34**	ND	< 20	ND	ND
		6 - 7.5	< 10	< 100	< 20	< 20	**240**	**185,000**	**180**	**120**	**730**	**70**	**500**
		8 - 10	< 10	**400**	< 20	< 20	**120**	**220,000**	**110**	ND	**540**	ND	ND
HYSS-11	Old drying bed	2.5 - 4	< 10	< 100	< 20	< 20	< 40	< 20	< 20	ND	< 20	ND	ND
		7 - 8.5	< 10	**190**	< 20	< 20	< 40	< 20	< 20	ND	< 20	ND	ND
		8.5 - 10	< 10	**760**	< 20	< 20	< 40	< 20	< 20	ND	< 20	ND	ND
HYSS-12	Pit north of drying beds	2.5 - 4	< 10	**130**	< 20	< 20	< 40	< 20	< 20	ND	< 20	ND	ND
		7 - 8.5	< 10	**130**	< 20	< 20	< 40	< 20	< 20	ND	< 20	ND	ND
HYSS-14	South of drying bed	1.5 - 3	< 10	**200**	< 20	< 20	< 40	< 20	< 20	ND	< 20	ND	ND
		4.5 - 6	< 10	**140**	< 20	< 20	< 40	< 20	< 20	ND	< 20	ND	ND
		8 - 10.5	< 10	< 100	< 20	< 20	< 40	< 20	< 20	ND	< 20	ND	ND
HYSS-15	Drum storage area	13 - 14.5	< 100	< 100	< 100	< 100	**5,400**	**79,000**	< 100	< 100	< 100	< 100	< 100
HYSS-16	Drum storage area	19.5 - 21	< 100	< 100	< 100	< 100	**20,000**	**70,000**	< 100	**14,000**	< 100	< 100	< 100
HYSS-17	Drum storage area	7 - 8.5	< 100	< 100	< 100	**3,500**	**14,000**	< 100	**2,500**	< 100	< 100	< 100	< 100
HYSS-18	Drum storage area	10 - 11.5	< 100	< 100	< 100	< 100	**31,000**	**20,000**	< 100	< 100	< 100	< 100	< 100

Notes:
1. Results in µg/kg.
2. Depths in feet below ground surface.
3. Detections in bold.
4. ND = not detected; method detection limit not reported.

Table D-13

Parcel G Source Area Investigation Soil VOC Results
BSB Property, Kent, Washington

Sample Number	Date	Vinyl Chloride	Toluene	Ethyl-benzene	Total Xylenes	*trans*- 1,2-DCE	1,1-DCA	*cis* -1,2-DCE	TCE	PCE	Total VOCs
Detection Limit		0.25	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	NA
SP1-20	11/28/00	ND	ND	ND	ND	ND	ND	**0.24**	ND	ND	**0.24**
SP1-21	11/28/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP1-31	11/28/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP1-38	11/28/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP1-40	11/28/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP2-18	11/28/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP2-19	11/28/00	ND	ND	ND	ND	ND	ND	**1.3**	ND	ND	**1.3**
SP2-21	11/28/00	ND	ND	ND	ND	ND	ND	**5.8**	ND	ND	**5.8**
SP2-38	11/28/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP2-40.5	11/28/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP3-16	11/29/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP3-18	11/29/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP3-21	11/29/00	ND	ND	ND	ND	ND	ND	**0.60**	ND	ND	**0.6**
SP3-24	11/29/00	ND	ND	ND	ND	ND	ND	**1.3**	ND	ND	**1.3**
SP3-27	11/29/00	ND	ND	ND	ND	ND	ND	**3.9**	**1.6**	ND	**5.5**
SP3-30	11/29/00	ND	ND	ND	ND	ND	ND	**5.9**	**6.7**	ND	**12.6**
SP3-38.5	11/29/00	ND	ND	ND	ND	ND	ND	**0.06**	**0.07**	ND	**0.1**
SP4-16.5	12/1/00	ND	ND	ND	ND	ND	ND	**0.71**	**0.10**	ND	**0.8**
SP4-21	12/1/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP4-41	12/1/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP4-43	12/1/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP5-17	12/1/00	ND	ND	ND	ND	ND	ND	**0.61**	**0.13**	ND	**0.7**
SP5-18	12/1/00	**0.43**	ND	ND	ND	ND	ND	**1.9**	**0.06**	ND	**2.4**
SP5-20	12/1/00	**0.46**	**0.10**	ND	ND	**0.06**	ND	**23**	**37**	ND	**60.6**
SP5-A	12/1/00	**0.51**	**0.08**	ND	ND	**0.08**	ND	**25**	**>40**	ND	**25.7**
SP5-23	12/1/00	ND	ND	ND	ND	ND	ND	**9.3**	**9.1**	ND	**18.4**
SP5-35	12/1/00	ND	ND	ND	ND	ND	ND	**3.4**	**6.5**	ND	**9.9**
SP5-40	12/1/00	ND	ND	ND	ND	ND	ND	**0.30**	**0.49**	ND	**0.8**
SP5-41	12/1/00	ND	ND	ND	ND	ND	ND	**0.20**	ND	ND	**0.2**
SP6-17	11/29/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP6-21	11/29/00	**1.3**	ND	ND	ND	ND	ND	**3.5**	ND	ND	**4.8**
SP6-22	11/29/00	ND	ND	ND	ND	ND	ND	**0.37**	ND	ND	**0.4**
SP6-33	11/29/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP6-36	11/29/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP7-11	11/30/00	ND	ND	ND	ND	ND	ND	**0.18**	**0.11**	ND	**0.3**
SP7-B	11/30/00	ND	ND	ND	ND	ND	ND	**0.21**	**0.10**	ND	**0.3**
SP7-13	11/30/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP7-A	11/30/00	ND	ND	ND	ND	ND	ND	**0.08**	ND	ND	**0.1**
SP7-40	11/30/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP7-C	11/30/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP7-43	11/30/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP7-D	11/30/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP8-8	11/30/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP8-9	11/30/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0

Table D-13

Parcel G Source Area Investigation Soil VOC Results
BSB Property, Kent, Washington

Sample Number	Date	Vinyl Chloride	Toluene	Ethyl-benzene	Total Xylenes	*trans*- 1,2-DCE	1,1-DCA	*cis* -1,2-DCE	TCE	PCE	Total VOCs
Detection Limit		0.25	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	NA
SP8-11	11/30/00	**1.1**	ND	ND	ND	ND	ND	**5.0**	ND	ND	**6.1**
SP8-41	11/30/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP8-44	11/30/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP9-8	12/1/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP9-11	12/1/00	**1.2**	ND	ND	ND	**0.95**	ND	ND	ND	ND	**2.2**
SP9-20	12/1/00	**1.1**	**0.32**	ND	**0.13**	**0.20**	ND	**77**	**250**	ND	**328.8**
SP9-34	12/1/00	**0.47**	ND	ND	ND	**0.19**	ND	**2.7**	**0.45**	ND	**3.8**
SP9-36	12/1/00	ND	ND	ND	ND	ND	ND	**0.56**	**0.10**	ND	**0.7**
SP10-7	12/1/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP10-8	12/1/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP10-11	12/1/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP10-17	12/1/00	ND	ND	ND	ND	ND	ND	**0.24**	ND	ND	**0.2**
SP10-19.5	12/1/00	**1.1**	ND	ND	ND	**0.18**	ND	**33**	**3.2**	ND	**37.5**
SP10-24	12/1/00	ND	ND	ND	ND	ND	ND	**8.7**	**0.14**	ND	**8.8**
SP10-30	12/1/00	ND	ND	ND	ND	**0.76**	ND	**11**	**93**	ND	**104.8**
SP10-33	12/1/00	ND	ND	ND	ND	**0.44**	ND	**9.1**	**77**	ND	**86.5**
SP10-36	12/1/00	ND	ND	ND	ND	**0.81**	ND	**12**	**100**	ND	**112.8**
SP11-6	11/29/00	ND	ND	ND	ND	ND	ND	**0.33**	ND	ND	**0.3**
SP11-10	11/29/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP11-14	11/29/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP11-32	11/29/00	ND	**3.1**	**2.2**	**15.8**	ND	ND	**1.5**	**570**	**7.8**	**600.4**
SP11-34	11/29/00	ND	ND	**3.5**	ND	ND	ND	**0.46**	**130**	**1.8**	**135.8**
SP12-10	11/30/00	**0.61**	ND	ND	ND	ND	ND	**2.0**	ND	ND	**2.6**
SP12-12	11/30/00	**0.73**	ND	ND	ND	ND	ND	**7.3**	ND	ND	**8.0**
SP12-14	11/30/00	**1.30**	ND	ND	ND	**0.05**	ND	**11**	**1.2**	ND	**13.6**
SP12-24	11/30/00	ND	**0.18**	ND	ND	ND	ND	**0.33**	ND	ND	**0.5**
SP12-30	11/30/00	ND	ND	ND	ND	**0.07**	ND	**1.4**	ND	ND	**1.5**
SP12-33	11/30/00	ND	ND	ND	ND	**0.06**	ND	**1.2**	ND	ND	**1.3**
SP13-9	11/30/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP13-11	11/30/00	ND	ND	ND	ND	ND	ND	ND	**1.3**	ND	**1.3**
SP13-A	11/30/00	ND	ND	ND	ND	ND	ND	ND	**7.1**	ND	**7.1**
SP13-14	11/30/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP13-29	11/30/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP13-32	11/30/00	ND	ND	ND	ND	ND	ND	**0.08**	ND	ND	**0.1**
SP14-21	11/29/00	ND	ND	ND	ND	ND	ND	**0.57**	ND	ND	**0.6**
SP14-22	11/29/00	ND	ND	ND	ND	ND	ND	**0.94**	ND	ND	**0.9**
SP14-24	11/29/00	ND	ND	ND	ND	ND	ND	**0.50**	ND	ND	**0.5**
SP14-37	11/29/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP14-39	11/29/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP30-11	12/12/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP30-12	12/12/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP30-14	12/12/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP30-32	12/12/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP30-33	12/12/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP31-17	12/11/00	ND	ND	ND	ND	ND	ND	**0.84**	ND	ND	**0.8**
SP31-18	12/11/00	ND	ND	ND	ND	ND	ND	**0.91**	**0.10**	ND	**1.0**

Table D-13

Parcel G Source Area Investigation Soil VOC Results
BSB Property, Kent, Washington

Sample Number	Date	Vinyl Chloride	Toluene	Ethyl-benzene	Total Xylenes	*trans-* 1,2-DCE	1,1-DCA	*cis* -1,2-DCE	TCE	PCE	Total VOCs
Detection Limit		0.25	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	NA
SP31-20	12/11/00	ND	ND	ND	ND	ND	ND	**3.1**	**0.69**	ND	**3.8**
SP31-23	12/11/00	ND	ND	ND	ND	ND	ND	**6.8**	**2.6**	ND	**9.4**
SP31-39	12/11/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP31-41	12/11/00	ND	ND	ND	ND	ND	ND	**1.2**	**0.18**	ND	**1.4**
SP32-11	12/14/00	ND	ND	ND	ND	ND	ND	**0.97**	**2.1**	ND	**3.1**
SP32-14	12/14/00	ND	ND	ND	ND	ND	ND	**3.4**	**5.1**	ND	**8.5**
SP32-17	12/14/00	ND	ND	ND	ND	ND	ND	**11**	**15**	ND	**26.0**
SP32-20	12/14/00	ND	ND	ND	ND	ND	ND	**7.1**	**25**	ND	**32.1**
SP32-23	12/14/00	ND	ND	ND	ND	ND	ND	**1.5**	**4.4**	ND	**5.9**
SP32-28	12/14/00	ND	ND	ND	ND	ND	ND	**1.4**	**7.7**	ND	**9.1**
SP32-29	12/14/00	ND	ND	ND	ND	ND	ND	**3.3**	**30**	ND	**33.3**
SP33-17	12/14/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP33-20	12/14/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP33-21	12/14/00	ND	ND	ND	ND	ND	ND	**0.51**	ND	ND	**0.5**
SP33-27	12/14/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP33-30	12/14/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP34-16	12/14/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP34-18	12/14/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP34-20	12/14/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP34-30	12/14/00	ND	ND	ND	ND	ND	ND	**3.4**	**3.6**	ND	**7.0**
SP-34-36	12/14/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP34-A	12/14/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP34-39	12/14/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP35-12	12/13/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP35-14	12/13/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP35-16	12/13/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP35-31	12/13/00	ND	ND	ND	ND	ND	ND	ND	**0.30**	ND	**0.3**
SP35-33	12/13/00	ND	ND	ND	ND	ND	ND	**0.27**	**120**	**0.06**	**120.3**
SP36-11	12/14/00	ND	**0.26**	ND	**0.23**	ND	ND	ND	ND	ND	**0.5**
SP36-12	12/14/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP36-17	12/14/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP36-18	12/14/00	ND	**0.08**	**0.10**	ND	ND	ND	**0.20**	ND	ND	**0.4**
SP36-20	12/14/00	ND	ND	ND	ND	ND	ND	**6.1**	**1.0**	ND	**7.1**
SP36-A	12/14/00	ND	ND	ND	ND	ND	ND	**5.4**	**1.3**	ND	**6.7**
SP36-23	12/14/00	ND	ND	ND	ND	ND	ND	**2.0**	**1.6**	ND	**3.6**
SP36-38	12/14/00	ND	ND	ND	ND	ND	ND	**0.05**	**0.08**	ND	**0.1**
SP36-40	12/14/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP37-11	12/13/00	**0.80**	**0.07**	**0.05**	**0.09**	ND	ND	**3.9**	ND	ND	**4.9**
SP37-12	12/13/00	**0.97**	**0.07**	**0.12**	**1.44**	ND	ND	**7.7**	ND	ND	**10.3**
SP37-14	12/13/00	**1.9**	ND	ND	ND	ND	**0.07**	**4.6**	ND	ND	**6.6**
SP37-30	12/13/00	ND	ND	ND	ND	ND	**1.3**	**7.4**	ND	ND	**8.7**
SP37-32	12/13/00	ND	ND	ND	ND	**0.63**	ND	**19**	**16**	ND	**35.6**
SP38-8	12/13/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP38-12	12/13/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP38-17	12/13/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP38-30	12/13/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0

Table D-13

Parcel G Source Area Investigation Soil VOC Results
BSB Property, Kent, Washington

Sample Number	Date	Vinyl Chloride	Toluene	Ethyl-benzene	Total Xylenes	*trans*- 1,2-DCE	1,1-DCA	*cis* -1,2-DCE	TCE	PCE	Total VOCs
Detection Limit		0.25	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	NA
SP38-32	12/13/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP39-30	12/14/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP39-32	12/14/00	ND	ND	ND	ND	ND	ND	**0.46**	ND	ND	**0.5**
No. of Detections		15	9	5	5	13	2	71	44	3	
Detection %		11	6	4	4	9	1	51	32	2	
Maximum		1.9	3.1	3.5	15.8	1.0	1.3	77	570	7.8	
Minimum		0.43	0.07	0.05	0.09	0.05	0.07	0.05	0.06	0.06	

Notes:
1. Results in mg/kg.
2. Only detected constituents shown.
3. Soil samples are numbered by location with a depth suffix; samples with letter suffixes represent duplicates of the samples immediately above.
4. Benzene, 1,1-dichloroethene, methylene chloride, chloroform, 1,1,1-trichlroethane, carbon tetrachloride, 1,2-dichloroethane, 1,1,2-trichloroethane, and 1,1,1,2-tetrachloroethane not detected above 0.05 mg/kg.
5. Detections shown in bold.
6. ND = not detected.
7. *trans* -1,2-DCE = *trans* -1,2-dichloroethene.
8. 1,1-DCA = 1,1-dichloroethane.
9. *cis* -1,2-DCE = *cis* -1,2-dichloroethene.
10. TCE = trichloroethene.
11. PCE = tetrachloroethene.

Table D-14

Parcel G Groundwater Metals Results
BSB Property, Kent, Washington

Site	Replicate	Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Hex + Tri Chromium	Hexavalent Chromium	Trivalent Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
HY-1s	H	6/25/1982	–	–	–	–	< 2	–	< 5	< 2	**6**	–	–	< 10	–	–	**17**
	Y	6/25/1982	–	–	–	–	–	–	< 5	–	–	–	–	–	–	–	–
	4	6/25/1982	–	–	–	–	–	–	< 5	–	–	–	–	–	–	–	–
	5	6/25/1982	–	–	–	–	–	–	< 5	–	–	–	–	–	–	–	–
	H	10/1/1982	–	–	–	–	< 2	–	< 5	**3**	**4**	–	–	< 5	–	–	**11**
	Y	10/1/1982	–	–	–	–	< 2	–	< 5	**3**	**4**	–	–	< 5	–	–	**18**
	4	10/1/1982	–	–	–	–	< 2	–	< 5	**5**	< 2	–	–	< 5	–	–	**14**
	5	10/1/1982	–	–	–	–	< 2	–	< 5	**5**	**5**	–	–	< 5	–	–	**29**
	A	1/10/1983	–	–	–	–	< 2	–	< 5	< 2	**16**	–	–	< 5	–	–	**120**
	B	1/10/1983	–	–	–	–	< 2	–	< 5	< 2	**2**	–	–	< 5	–	–	**110**
	C	1/10/1983	–	–	–	–	< 2	–	< 5	< 2	**7**	–	–	< 5	–	–	**22**
	D	1/10/1983	–	–	–	–	< 2	–	< 5	< 2	**2**	–	–	< 5	–	–	**23**
	A	4/8/1983	–	–	–	–	**2**	< 2	< 5	–	< 2	–	–	< 5	–	–	**9**
	B	4/8/1983	–	–	–	–	**2**	< 2	< 5	–	< 2	–	–	< 5	–	–	**9**
	C	4/8/1983	–	–	–	–	**3**	< 2	< 5	–	< 2	–	–	< 5	–	–	**11**
	D	4/8/1983	–	–	–	–	**4**	< 2	< 5	–	< 2	–	–	< 5	–	–	**13**
	–	11/2/1983	< 5	**61**	–	< 2	< 1	< 2	–	–	< 2	< 5	< 5	< 5	< 5	< 2	**2**
	–	1/31/1984	–	–	–	–	< 10	< 20	–	–	< 20	< 20	–	< 20	–	–	**30**
	–	1/31/1984	< 2	**50**	–	< 2	< 1	< 2	–	–	< 2	< 5	< 0.5	< 5	< 5	< 2	**2**
	–	9/10/1984	–	**46**	–	–	–	**5**	–	–	**5**	–	–	< 5	–	< 5	**14**
HYCP-2	–	1/17/95	–	–	< 5	–	< 3	< 5	–	–	< 10	–	–	< 20	–	–	**12**
	–	3/28/96	–	–	**7**	–	< 4	< 5	–	–	< 10	–	–	< 20	–	–	< 10
	–	3/4/97	–	–	**7**	–	< 4	< 5	–	–	< 10	–	–	< 20	–	–	< 10
	–	3/10/98	–	–	**12**	–	< 4	< 5	–	–	< 10	–	–	< 20	–	–	< 10
	–	4/22/99	–	–	**7**	–	< 4	< 5	–	–	< 10	–	–	< 20	–	–	< 10
	–	4/17/00	–	–	**10**	–	< 4	< 5	–	–	< 10	–	–	< 20	–	–	< 10
	–	4/26/01	–	–	**8.1**	–	< 5	< 5	–	–	< 10	–	–	< 20	–	–	< 10
	–	4/25/02	–	–	**9.1**	–	< 5	< 5	–	–	< 10	–	–	< 20	–	–	< 10
	–	4/10/03	–	–	**9.6**	–	< 2	< 3	–	–	**5.7 JB**	–	–	< 20	–	–	**3.5 JB**
	–	4/14/04	–	–	**10.4**	–	< 5	< 5	–	–	< 10	–	–	< 20	–	–	< 10

Table D-14

Parcel G Groundwater Metals Results
BSB Property, Kent, Washington

Site	Replicate	Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Hex + Tri Chromium	Hexavalent Chromium	Trivalent Chromium	Copper	Lead	Mercury	Nickel	Selenium	Silver	Zinc
HYCP-5	–	1/17/95	–	–	**20**	–	< 3	**8**	–	–	< 10	–	–	**66**	–	–	**14**
	–	3/28/96	–	–	**21**	–	< 4	**10**	–	–	< 10	–	–	**59**	–	–	< 10
	–	3/4/97	–	–	**16**	–	< 4	**13**	–	–	< 10	–	–	**75**	–	–	< 10
	–	3/9/98	–	–	**21**	–	< 4	**12**	–	–	< 10	–	–	**90**	–	–	< 10
	–	4/23/99	–	–	**15**	–	< 4	**12**	–	–	< 10	–	–	**109**	–	–	< 10
	–	4/17/00	–	–	**14**	–	< 4	**9**	–	–	< 10	–	–	**81**	–	–	< 10
	–	4/26/01	–	–	**14.8**	–	< 5	**7.8**	–	–	< 10	–	–	**48**	–	–	< 10
	–	4/25/02	–	–	**15.4**	–	< 5	**11.7**	–	–	< 10	–	–	**114**	–	–	**13.9**
	–	4/9/03	–	–	**11.5**	–	< 2	**14.8**	–	–	**4.1 JB**	–	–	**98**	–	–	**5.3 JB**
	–	4/13/04	–	–	**14.7**	–	< 5	**10.2**	–	–	< 10	–	–	**85**	–	–	< 10
HY-1d	–	1/18/95	–	–	**32**	–	< 3	**18**	–	–	**26**	–	–	< 20	–	–	**12**
	–	3/27/96	–	–	**32**	–	< 3	**13**	–	–	**17**	–	–	< 20	–	–	**10**

Notes:
1. All results in µg/L.
2. All results represent dissolved metals (field filtered) unless otherwise specified.
3. Detections shown in bold.
4. < = not detected at the method reporting limit shown.
5. – = not analyzed.
6. J = the result is an estimated concentration that is less than the method reporting limit but greater than or equal to the method detection limit.
7. B = the analyte was found in the associated method blank at a level that is significant relative to the sample result.
8. The first 1/31/84 HY-1s sampled was analyzed in Ecology's lab as total metals; the second 1/31/84 HY-1s sample was analyzed in a Hytek-contracted lab as dissolved metals (field filtered).

Table D-15

Parcel G Groundwater General Chemistry Results
BSB Property, Kent, Washington

Well	Replicate	Date	Specific Conductance (µmhos/cm)*	pH *	Eh *	T (^{o}C) *	Specific Conductance (µmhos/cm)	pH	Hardness (mg/L)	TOC (µg/L)	TOX (µg/L)	Chloride (mg/L)	Sulfate (mg/L)	Total Solids (mg/L)	Total Volatile Solids (mg/L)	TSS (mg/L)	TDS (mg/L)	Total Cyanide (µg/L)
HY-1s	H	6/25/1982	–	–	–	–	570	6.7	170	13,000	13,000	–	–	–	–	–	–	–
HY-1s	Y	6/25/1982	–	–	–	–	530	6.7	160	14,000	20	–	–	–	–	–	–	–
HY-1s	4	6/25/1982	–	–	–	–	380	6.7	160	14,000	27	–	–	–	–	–	–	–
HY-1s	5	6/25/1982	–	–	–	–	370	6.7	160	14,000	< 5	–	–	–	–	–	–	–
HY-1s	H	10/1/1982	–	–	–	–	350	6.7	160	8,001	990	–	–	–	–	–	–	–
HY-1s	Y	10/1/1982	–	–	–	–	340	6.8	150	11,000	22,000	–	–	–	–	–	–	–
HY-1s	4	10/1/1982	–	–	–	–	350	6.8	140	8,002	1,001	–	–	–	–	–	–	–
HY-1s	5	10/1/1982	–	–	–	–	360	6.8	160	8,000	14,000	–	–	–	–	–	–	–
HY-1s	A	1/10/1983	–	–	–	–	390	6.4	160	16,000	11	–	–	–	–	–	–	–
HY-1s	B	1/10/1983	–	–	–	–	400	6.5	160	13,000	11	–	–	–	–	–	–	–
HY-1s	C	1/10/1983	–	–	–	–	400	6.4	160	13,000	13	–	–	–	–	–	–	–
HY-1s	D	1/10/1983	–	–	–	–	400	6.4	160	11,000	10	–	–	–	–	–	–	–
HY-1s	A	4/8/1983	–	–	–	–	390	6.3	160	11,000	28	–	–	–	–	–	–	–
HY-1s	B	4/8/1983	–	–	–	–	410	6.4	160	13,000	31	–	–	–	–	–	–	–
HY-1s	C	4/8/1983	–	–	–	–	440	6.5	180	12,000	27	–	–	–	–	–	–	–
HY-1s	D	4/8/1983	–	–	–	–	410	6.3	160	1,000	29	–	–	–	–	–	–	–
HY-1s	–	11/2/1983	730	–	–	–	430	6.2	–	–	–	–	–	–	–	–	–	160
HY-1s	–	1/31/1984	–	–	–	–	370	6.3	210	6,000	–	5	110	410	62	120	280	–
HY-1s	–	1/31/1984	530	6.7	–	11	250	6.6	–	–	–	–	–	–	–	–	–	< 5
HY-1s	–	9/10/1984	625	6.33	204	17	460	6.4	210	–	–	–	–	–	–	–	–	2

Notes: 1. * = field measurement.
2. T = temperature.
3. TOC = total organic carbon.
4. TOX = total organic halogens.
5. TSS = total suspended solids.
6. TDS = total dissolved solids.
7. – = not analyzed.
8. The first 1/31/84 HY-1s sampled was analyzed in Ecology's lab; the second 1/31/84 HY-1s sample was analyzed in a Hytek-contracted lab.

Table D-16

Parcel G Boundary Investigation Groundwater General Chemistry Results
BSB Property, Kent, Washington

Sample Location	GP-1b	GP-2b	GP-20a[1]	GP-12b	GP-13b	GP-14b
Screened Interval (feet bgs)	18 to 22	13 to 17	13 to 17	15 to 19	34 to 38	22 to 26
Date Sampled	04/14/99	04/06/99	04/06/99	04/14/99	04/14/99	04/13/99
Organic and Inorganic Parameters						
Chloride	15.7	9.4	9.3	19.6	197	10.2
Nitrate as Nitrogen	0.2	< 0.2	< 0.2	< 0.2	0.5	0.3
Total Dissolved Solids	298	495	493	447	1,010	721
Sulfate	14.5	127	126	501	0.3	17
Total Organic Carbon	16.3	12	12	14	13.3	37.8
Dissolved Metals						
Calcium	26.1	15.9	15.8	54.8	18.5	19.2
Iron	25.8	29.1	28.9	52.6	4.74	10.8
Magnesium	13.8	7.34	7.28	15	19.1	16.3
Manganese	1.13	0.985	0.977	5.41	0.358	0.566
Sodium	27	114	113	223	204	117

Notes: Results reported in mg/L

< = not detected at or above the given method reporting limit (MRL)

Dissolved metals analyzed by U.S. Environmental Protection Agency (USEPA) Method 6010B; chloride, nitrate as nitrogen, and sulfate analyzed by USEPA Method 300.0; total dissolved solids (TDS) analyzed by USEPA Method 160.1; and total organic carbon (TOC) analyzed by USEPA Method 415.1

[1] GP-2b duplicate sample

Table D-17

Parcel G Boundary Investigation Groundwater Field Parameters Results
BSB Property, Kent, Washington

Sample Identification	Date Sampled	Screened Interval (ft-bgs)	Volume Purged (gallons)	Specific Conductance[a] (μS)	pH	Temperature (°C)	Oxidation Reduction Potential (mv)	Turbidity (NTU)	Dissolved Oxygen YSI Meter/Hach Kit (mg/L)	Alkalinity (mg/L)
GP-1b-10-0499	04/14/99	10 to 14	2.0	374	6.74	15	-386.4	24.6	3.42/1.7	-
GP-1b-18-0499	04/14/99	18 to 22	2.0	454	6.23	16	-391.3	269	1.5/0.1	220
GP-1b-32-0499	04/14/99	32 to 36	2.0	418	6.42	16	-430.2	>1,000	1.27/NA	-
GP-2b-13-0499[b]	04/06/99	13 to 17	4.0	502	5.86	15	-463.5	139	1.85/3.9	240
GP-2b-27-0499	04/06/99	27 to 32	30.0	394	6.11	16	-564	80.8	1.62/0.9	300
GP-12b-15-0499	04/14/99	15 to 19	2.0	1,528	6.78	14	-423.8	374	1.75/0.9	300
GP-12b-21-0499	04/14/99	21 to 25	2.0	1,010	6.50	13	-390.2	114	1.93/2.3	-
GP-12b-35-0499	04/14/99	35 to 39	2.0	350	6.67	14	-437	144	1.30/NA	-
GP-13b-11-0499	04/14/99	11 to 15	2.0	730	6.32	11	-390.3	223	1.53/1.3	-
GP-13b-20-0499	04/14/99	20 to 24	2.0	435	6.14	13	-388.8	223	1.38/1.0	-
GP-13b-34-0499	04/14/99	34 to 38	2.5	1,328	6.87	14	-446.7	501	1.34/1.0	380
GP-14b-13-0499	04/13/99	13 to 17	2.5	490	6.69	14	-90.6[c]	60.9	1.6/0.7	-
GP-14b-22-0499	04/13/99	22 to 26	3.0	542	6.39	16	-68.8[c]	515	1.4/2.4	420

Notes: NA = not analyzed, sample too turbid

[a] = field parameters collected after conductivity stabalized within +/- 10 percent. Final conductivity reading is shown.

[b] = collected duplicate sample, designated GP-20a-13-0499

[c] = reading may be off due to instrument malfunctio

Table D-18

Parcel G Boundary Investigation Groundwater Chlorinated VOC Results
BSB Property, Kent, Washington

Sample Location	GP-1b	GP-1b	GP-1b	GP-2b	GP-20a[1]	GP-2b	GP-12b	GP-12b	GP-12b	GP-13b	GP-13b	GP-13b	GP-14b	GP-14b
Screened Interval (feet bgs)	10 to 14	18 to 22	32 to 36	13 to 17	13 to 17	27 to 32	15 to 19	21 to 25	35 to 39	11 to 15	20 to 24	34 to 38	13 to 17	22 to 26
Date Sampled	04/14/99	04/14/99	04/14/99	04/06/99	04/06/99	04/06/99	04/14/99	04/14/99	04/14/99	04/14/99	04/14/99	04/14/99	04/13/99	04/13/99
Analyte														
Dichlorodifluoromethane (CFC 12)	<10	<20 J	<2 J	<5	<5	<5	<20	<1	<1	<1	<1	<1	<1	<1
Chloromethane	<10	<20 J	<2 J	<5	<5	<5	<20	<1	<1	<1	<1	<1	<1	<1
Vinyl Chloride	**190**	**4,100 J**	**31 J**	**760**	**1,000**	**220**	**180**	**23**	<0.5	**2,400**	**3,600**	**170**	**14**	**78**
Bromomethane	<5	<10 J	<1 J	<2	<2	<2	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chloroethane	<5	<10 J	<1 J	<2	<2	<2	<10	<0.5	<0.5	120	<0.5	<0.5	<0.5	<0.5
Trichlorofluoromethane (CFC 11)	<5	<10 J	<1 J	<2	<2	<2	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1-Dichloroethene	<5	**11 J**	<1 J	**10**	**12**	<2	<10	<0.5	<0.5	**1.1**	**52**	**4.7**	<0.5	**0.7**
Trichlorotrifluoroethane (CFC 113)	<5	<10 J	<1 J	<2	<2	<2	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Methylene Chloride	<50	<100 J	<10 J	<25	<25	<25	<100	<5	<5	<5	<5	<5	<5	<5
trans-1,2-Dichloroethene	<5	**26 J**	<1 J	**22**	**35**	**9**	<10	<0.5	<0.5	**8.3**	**51**	**95**	<0.5	**10**
cis-1,2-Dichloroethene	**6**	**5,500 J**	**5 J**	**2,700**	**3,500**	**590**	**420**	**27**	**0.7**	**93**	**13,000**	**1,800**	**2.7**	**520**
1,1-Dichloroethane	**10**	**95 J**	<1 J	**14**	**54**	**6**	<10	**1.3**	**0.6**	**39**	**84**	<0.5	<0.5	**1.7**
Chloroform	<5	<10 J	<1 J	<2	<2	<2	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,1-Trichloroethane (TCA)	<5	<10 J	<1 J	<2	<2	<2	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Carbon Tetrachloride	<5	<10 J	<1 J	<2	<2	<2	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,2-Dichloroethane	<5	<10 J	<1 J	<2	<2	<2	<10	<0.5	<0.5	**1.3**	**1.1**	<0.5	<0.5	<0.5
Trichloroethene (TCE)	<5	**72 J**	<1 J	**31**	**89**	<2	<10	<0.5	<0.5	<0.5	<0.5	**460**	<0.5	<0.5
1,2-Dichloropropane	<5	<10 J	<1 J	<2	<2	<2	<10	<0.5	<0.5	<0.5	**79**	<0.5	<0.5	<0.5
Bromodichloromethane	<5	<10 J	<1 J	<2	<2	<2	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chloroethyl Vinyl Ether	<50	<100 J	<10 J	<25	<25	<25	<100	<5	<5	<5	<5	<5	<5	<5
trans-1,3-Dichloropropene	<5	<10 J	<1 J	<2	<2	<2	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
cis-1,3-Dichloropropene	<5	<10 J	<1 J	<2	<2	<2	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2-Trichloroethane	<5	<10 J	<1 J	<2	<2	<2	<10	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5
Tetrachloroethene (PCE)	<5	<10 J	<1 J	<2	<2	<2	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibromochloromethane	<5	<10 J	<1 J	<2	<2	<2	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chlorobenzene	<5	<10 J	<1 J	<2	<2	<2	<10	<0.5	<0.5	**1.0**	<0.5	<0.5	**140**	<0.5
Bromoform	<5	<10 J	<1 J	<2	<2	<2	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,1,2,2-Tetrachloroethane	<5	<10 J	<1 J	<2	<2	<2	<10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1,3-Dichlorobenzene	<10	<20 J	<2 J	<5	<5	<5	<20	<1	<1	<1	<1	<1	**7**	<1
1,4-Dichlorobenzene	<10	<20 J	<2 J	<5	<5	<5	<20	<1	<1	<1	<1	<1	**67**	<1
1,2-Dichlorobenzene	<10	<20 J	<2 J	<5	<5	<5	<20	<1	<1	<1	<1	<1	**91**	<1

Notes: Results reported in µg/L

Detections shown in bold.

Analyzed by U.S. Environmental Protection Agency (USEPA) Methods 8010 or 8260

< = not detected at or above the given method reporting limit (MRL)

J = estimated result.

[1] GP-2b duplicate sampl

Table D-19

Parcel G Source Area Investigation Groundwater VOC Results
BSB Property, Kent, Washington

Sample Number	Date	Vinyl Chloride	Toluene	Ethyl-benzene	Total Xylenes	1,1-DCE	*trans* -1,2-DCE	1,1-DCA	*cis* -1,2-DCE	TCE	Total VOCs
Detection Limit		5.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	NA
SP12B-14	12/13/00	**500 E**	**52**	**4.2**	**13**	**160**	**400 E**	**66**	**92,000**	**21,000**	**113,295**
SP12B-28	12/13/00	**390**	**2.9**	ND	ND	**1.2**	**71 E**	ND	**1,100**	**15**	**1,509**
SP13B-14	12/12/00	**42**	ND	ND	ND	ND	**3.5**	ND	**170**	ND	**216**
SP13B-29	12/12/00	**5.3**	ND	ND	ND	ND	ND	ND	**3.6**	**1.4**	**10.3**
SP15-15	12/06/00	**19**	ND	ND	ND	**9.6**	**8.5**	**9.1**	**240**	**2.2**	**288.4**
SP15-27	12/06/00	ND	ND	ND	ND	ND	ND	ND	**2.5**	ND	**2.5**
SP15-A	12/06/00	ND	ND	ND	ND	ND	ND	ND	**1.8**	ND	**1.8**
SP16-16	12/05/00	**20**	ND	ND	ND	ND	**2.6**	**4.3**	**40**	ND	**66.9**
SP16-29	12/05/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP17-14	12/06/00	**23**	ND	ND	ND	**2.8**	**5.2**	**2.9**	**170**	ND	**203.9**
SP17-A	12/06/00	**21**	ND	ND	ND	**2.6**	**4.4**	**2.3**	**150**	ND	**180.3**
SP17-26	12/06/00	ND	ND	ND	ND	ND	ND	ND	**1.8**	ND	**1.8**
SP18-12	12/04/00	**9.5**	ND	ND	ND	**6.1**	**9.7**	**3.3**	**950**	ND	**978.6**
SP18-29	12/04/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP19-13	12/04/00	ND	ND	ND	ND	**1.0**	ND	**46**	**14**	ND	**61.0**
SP19-27	12/04/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP20-12	12/04/00	**20**	ND	ND	ND	ND	ND	**6.4**	**1.7**	ND	**28.1**
SP20-22	12/04/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP21-15	12/09/00	ND	ND	ND	ND	ND	ND	**31**	**150**	ND	**181.0**
SP21-30	12/09/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	**0**
SP22-13	12/04/00	**5.2**	ND	ND	ND	ND	ND	**2.1**	**20**	ND	**27.3**
SP22-25	12/04/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP23-20	12/05/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP23-29	12/05/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP24-19	12/05/00	**120**	ND	ND	ND	**2.2**	**4.6**	**2.8**	**610**	**4.8**	**744.4**
SP24-30	12/05/00	ND	ND	ND	ND	ND	ND	ND	**3.7**	ND	**3.7**
SP25-14	12/05/00	ND	ND	ND	ND	ND	ND	ND	**8.1**	ND	**8.1**
SP25-29	12/05/00	ND	ND	ND	ND	ND	ND	**1.2**	ND	ND	**1.2**
SP26-14	12/11/00	ND	**1.8**	**2.1**	**15**	ND	ND	ND	ND	ND	**18.9**
SP26-29	12/11/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP27-17	12/06/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP27-32	12/06/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP28-15	12/09/00	ND	ND	ND	ND	ND	ND	**2.9**	ND	ND	**2.9**
SP28-30	12/09/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP29-14	12/06/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP29-29	12/06/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
SP30B-14	12/12/00	ND	ND	ND	ND	ND	ND	**4.7**	**2.1**	ND	**6.8**
SP30B-22	12/12/00	**5.5**	ND	ND	ND	ND	ND	**1.7**	**8.3**	ND	**15.5**
SP30B-31	12/12/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0

Table D-19

Parcel G Source Area Investigation Groundwater VOC Results
BSB Property, Kent, Washington

Sample Number	**Date**	**Vinyl Chloride**	**Toluene**	**Ethyl-benzene**	**Total Xylenes**	**1,1-DCE**	***trans* -1,2-DCE**	**1,1-DCA**	***cis* -1,2-DCE**	**TCE**	**Total VOCs**
Detection Limit		5.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	NA
SP38B-12	12/13/00	ND	ND	ND	ND	ND	ND	ND	**6.4**	**2.9**	**9.3**
SP38B-24	12/13/00	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.0
No. of Detections		13	3	2	2	8	9	15	22	6	
Detection %		29	7	5	5	20	17	37	54	15	
Maximum		390	52	4.2	15	160	9.7	66	92,000	21,000	
Minimum		5.2	1.8	2.1	13	1.0	2.6	1.2	1.7	1.4	

Notes:
1. Results in µg/L.
2. Only detected constituents shown.
3. Groundwater samples are numbered by location with a depth suffix; samples with letter suffixes represent duplicates of the samples immediately above.
4. Benzene, methylene chloride, chloroform, 1,1,1-trichlroethane, carbon tetrachloride, 1,2-dichloroethane, 1,1,2-trichloroethane, tetrachloroethene, and 1,1,1,2-tetrachloroethane not detected above 1.0 µg/L.
5. Detections shown in bold.
6. ND = not detected.
7. 1,1-DCE = 1,1-dichloroethene.
8. *trans* -1,2-DCE = *trans* -1,2-dichloroethene.
9. 1,1-DCA = 1,1-dichloroethane.
10. *cis* -1,2-DCE = *cis* -1,2-dichloroethene.
11. TCE = trichloroethene.

Table D-20

Annual Groundwater VOC Results
BSB Property, Kent, Washington

Well	HY-1d	HYCP-2	HYCP-2	HYCP-2	HYCP-2	HYCP-2	HYCP-2
Sample Date	1/18/95	1/17/95	3/18/97	3/10/98	4/22/99	4/17/00	4/26/01
dichlorodifluoromethane (CFC 12)	–	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
chloromethane	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
vinyl chloride	< 10	**180**	**13**	**1.6**	**42 E**	**7.2**	**0.84**
bromomethane	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
chloroethane	< 10	**1.4**	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
trichlorofluoromethane (CFC 11)	< 10	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
trichlorotrifluoroethane (CFC 113)	< 10	–	–	–	< 0.5	< 0.5	< 0.5
acetone	< 100	**84**	< 20	< 20	< 20	< 20	< 20
1,1-dichloroethene	< 5	**0.5**	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
carbon disulfide	< 100	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
methylene chloride	< 5	< 1	< 1	< 1	< 1	< 1	< 1
trans-1,2-dichloroethene	< 5	**0.6**	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-dichloroethane	< 5	**18**	**3.1**	**2.1**	**7.9**	**2.0**	< 0.5
2-butanone (MEK)	< 100	< 20	< 20	< 20	< 20	< 20	< 20
2,2-dichloropropane	–	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
cis-1,2-dichloroethene	< 5	**30**	< 0.5	< 0.5	**33**	**22**	< 0.5
chloroform	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
bromochloromethane	–	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,1-trichloroethane (TCA)	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1-dichloropropene	–	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
carbon tetrachloride	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-dichloroethane (EDC)	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
vinyl acetate	< 50	–	–	–	–	–	–
benzene	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
trichloroethene (TCE)	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-dichloropropane	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
bromodichloromethane	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
2-chloroethyl vinyl ether	< 10	–	–	–	–	–	–
dibromomethane	–	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
2-hexanone	< 50	< 20	< 20	< 20	< 20	< 20	< 20
cis-1,3-dichloropropene	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
toluene	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
trans-1,3-dichloropropene	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,2-trichloroethane	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
4-methyl-2-pentanone (MIBK)	< 50	< 20	< 20	< 20	< 20	< 20	< 20
1,3-dichloropropane	–	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
tetrachloroethene (PCE)	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
dibromochloromethane	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-dibromoethane (EDB)	–	< 2	< 2	< 2	< 2	< 2	< 2
chlorobenzene	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,1,1,2-tetrachloroethane	–	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
ethylbenzene	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
total xylenes	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
styrene	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
bromoform	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
isopropylbenzene	–	< 2	< 2	< 2	< 2	< 2	< 2
1,1,2,2-tetrachloroethane	–	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5

Table D-20

Annual Groundwater VOC Results
BSB Property, Kent, Washington

Well	HY-1d	HYCP-2	HYCP-2	HYCP-2	HYCP-2	HYCP-2	HYCP-2
Sample Date	1/18/95	1/17/95	3/18/97	3/10/98	4/22/99	4/17/00	4/26/01
1,2,3-trichloropropane	–	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
bromobenzene	–	< 0.5	< 0.5	< 0.5	< 0.5	< 2	< 2
n-propylbenzene	–	< 2	< 2	< 2	< 2	< 2	< 2
2-chlorotoluene	–	< 2	< 2	< 2	< 2	< 2	< 2
4-chlorotoluene	–	< 2	< 2	< 2	< 2	< 2	< 2
1,3,5-trimethylbenzene	–	< 2	< 2	< 2	< 2	< 2	< 2
tert-butylbenzene	–	< 2	< 2	< 2	< 2	< 2	< 2
1,2,4-trimethylbenzene	–	< 2	< 2	< 2	< 2	< 2	< 2
sec-butylbenzene	–	< 2	< 2	< 2	< 2	< 2	< 2
1,3-dichlorobenzene	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
4-isopropyltoluene	–	< 2	< 2	< 2	< 2	< 2	< 2
1,4-dichlorobenzene	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
n-butylbenzene	–	< 2	< 2	< 2	< 2	< 2	< 2
1,2-dichlorobenzene	< 5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
1,2-dibromo-3-chloropropane	–	< 2	< 2	< 2	< 2	< 2	< 2
1,2,4-trichlorobenzene	–	< 2	< 2	< 2	< 2	< 2	< 2
1,2,3-trichlorobenzene	–	< 2	< 2	< 2	< 2	< 2	< 2
naphthalene	–	< 2	< 2	< 2	< 2	< 2	< 2
hexachlorobutadiene	–	< 2	< 2	< 2	< 2	< 2	< 2

Notes:
1. Results in µg/L.
2. Detections shown in bold.
3. < = not detected at the method reporting limit shown.
4. E = lab-assigned qualifier indicating an estimated concentration due to inconclusive lab QA/QC.
5. J = the result is an estimated concentration that is less than the method reporting limit but greater than or equal to the method detection limit.

Table D-20

Annual Groundwater VOC Results
BSB Property, Kent, Washington

Well	HYCP-2	HYCP-2	HYCP-2	HYCP-5	HYCP-5	HYCP-5	HYCP-5
Sample Date	4/25/02	4/10/03	4/14/04	1/17/95	3/4/97	3/9/98	4/23/99
dichlorodifluoromethane (CFC 12)	< 0.5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5
chloromethane	< 0.5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5
vinyl chloride	**14**	**1.2**	**4.0**	**250**	**210**	**260**	**280**
bromomethane	< 0.5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5
chloroethane	< 0.5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5
trichlorofluoromethane (CFC 11)	< 0.5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5
trichlorotrifluoroethane (CFC 113)	< 0.5	< 0.5	< 0.5	–	–	–	–
acetone	< 20	**50**	< 20	< 200	< 200	< 20	< 20
1,1-dichloroethene	< 0.5	< 0.5	< 0.5	< 5	< 5	**5.0**	**8.4**
carbon disulfide	< 0.5	**0.85**	< 0.5	< 5	< 5	< 0.5	< 0.5
methylene chloride	< 2.0	< 2.0	< 2.0	< 10	< 10	< 1	< 1
trans-1,2-dichloroethene	< 0.5	< 0.5	< 0.5	**9.3**	**8**	**12**	**26**
1,1-dichloroethane	**1.0**	**0.49 J**	**0.74**	**7.4**	< 5	**3.7**	**3.0**
2-butanone (MEK)	< 20	< 20	< 20	< 200	< 200	< 20	< 20
2,2-dichloropropane	< 0.5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5
cis-1,2-dichloroethene	**0.87**	**0.27 J**	**3.1**	**1,200**	**1,600**	**1,200**	**1,300**
chloroform	< 0.5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5
bromochloromethane	< 0.5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5
1,1,1-trichloroethane (TCA)	< 0.5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5
1,1-dichloropropene	< 0.5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5
carbon tetrachloride	< 0.5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5
1,2-dichloroethane (EDC)	< 0.5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5
vinyl acetate	–	–	–	–	–	–	–
benzene	< 0.5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5
trichloroethene (TCE)	< 0.5	< 0.5	< 0.5	**65**	< 5	**11**	**12**
1,2-dichloropropane	< 0.5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5
bromodichloromethane	< 0.5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5
2-chloroethyl vinyl ether	–	–	–	–	–	–	–
dibromomethane	< 0.5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5
2-hexanone	< 20	< 20	< 20	< 200	< 200	< 20	< 20
cis-1,3-dichloropropene	< 0.5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5
toluene	< 0.5	**0.12 J**	< 0.5	< 5	< 5	< 0.5	**1.0**
trans-1,3-dichloropropene	< 0.5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5
1,1,2-trichloroethane	< 0.5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5
4-methyl-2-pentanone (MIBK)	< 20	< 20	< 20	< 200	< 200	< 20	< 20
1,3-dichloropropane	< 0.5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5
tetrachloroethene (PCE)	< 0.5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5
dibromochloromethane	< 0.5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5
1,2-dibromoethane (EDB)	< 2.0	< 2.0	< 2.0	< 200	< 200	< 2	< 2
chlorobenzene	< 0.5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5
1,1,1,2-tetrachloroethane	< 0.5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5
ethylbenzene	< 0.5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5
total xylenes	< 0.5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5
styrene	< 0.5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5
bromoform	< 0.5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5
isopropylbenzene	< 2.0	< 2.0	< 2.0	< 200	< 200	< 2	< 2
1,1,2,2-tetrachloroethane	< 0.5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5

Table D-20

Annual Groundwater VOC Results
BSB Property, Kent, Washington

Well	HYCP-2	HYCP-2	HYCP-2	HYCP-5	HYCP-5	HYCP-5	HYCP-5
Sample Date	4/25/02	4/10/03	4/14/04	1/17/95	3/4/97	3/9/98	4/23/99
1,2,3-trichloropropane	< 0.5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5
bromobenzene	< 2.0	< 2.0	< 2.0	< 5	< 5	< 0.5	< 0.5
n-propylbenzene	< 2.0	< 2.0	< 2.0	< 200	< 200	< 2	< 2
2-chlorotoluene	< 2.0	< 2.0	< 2.0	< 200	< 200	< 2	< 2
4-chlorotoluene	< 2.0	< 2.0	< 2.0	< 200	< 200	< 2	< 2
1,3,5-trimethylbenzene	< 2.0	< 2.0	< 2.0	< 200	< 200	< 2	< 2
tert-butylbenzene	< 2.0	< 2.0	< 2.0	< 200	< 200	< 2	< 2
1,2,4-trimethylbenzene	< 2.0	< 2.0	< 2.0	< 200	< 200	< 2	< 2
sec-butylbenzene	< 2.0	< 2.0	< 2.0	< 200	< 200	< 2	< 2
1,3-dichlorobenzene	< 0.5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5
4-isopropyltoluene	< 2.0	< 2.0	< 2.0	< 200	< 200	< 2	< 2
1,4-dichlorobenzene	< 0.5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5
n-butylbenzene	< 2.0	< 2.0	< 2.0	< 200	< 200	< 2	< 2
1,2-dichlorobenzene	< 0.5	< 0.5	< 0.5	< 5	< 5	< 0.5	< 0.5
1,2-dibromo-3-chloropropane	< 2.0	< 2.0	< 2.0	< 200	< 200	< 2	< 2
1,2,4-trichlorobenzene	< 2.0	< 2.0	< 2.0	< 200	< 200	< 2	< 2
1,2,3-trichlorobenzene	< 2.0	< 2.0	< 2.0	< 200	< 200	< 2	< 2
naphthalene	< 2.0	< 2.0	< 2.0	< 200	< 200	< 2	< 2
hexachlorobutadiene	< 2.0	< 2.0	< 2.0	< 200	< 200	< 2	< 2

Notes:
1. Results in µg/L.
2. Detections shown in bold.
3. < = not detected at the method reporting limit shown.
4. E = lab-assigned qualifier indicating an estimated concentration due to inconclusive lab QA/QC.
5. J = the result is an estimated concentration that is less than the method reporting limit but greater than or equal to the method detection limit.

Table D-20

Annual Groundwater VOC Results
BSB Property, Kent, Washington

Well	HYCP-5	HYCP-5	HYCP-5	HYCP-5	HYCP-5
Sample Date	4/17/00	4/26/01	4/25/02	4/9/03	4/13/04
dichlorodifluoromethane (CFC 12)	< 25	< 0.5	< 2.5	< 1.0	< 1.0
chloromethane	< 25	< 0.5	< 2.5	< 1.0	< 1.0
vinyl chloride	**520**	**70**	**360**	**180**	**380**
bromomethane	< 25	< 0.5	< 2.5	< 1.0	< 1.0
chloroethane	< 25	< 0.5	< 2.5	< 1.0	< 1.0
trichlorofluoromethane (CFC 11)	< 25	< 0.5	< 2.5	< 1.0	< 1.0
trichlorotrifluoroethane (CFC 113)	–	–	–	–	–
acetone	< 1000	< 20	< 100	< 40	< 40
1,1-dichloroethene	< 25	**0.52**	**3.1**	**1.5**	**1.7**
carbon disulfide	< 25	< 0.5	< 2.5	< 1.0	< 1.0
methylene chloride	< 50	< 1	< 10	< 4.0	< 4.0
trans-1,2-dichloroethene	< 25	**2.1**	**12**	**5.2**	**11**
1,1-dichloroethane	< 25	**0.73**	< 2.5	**0.8 J**	**1.1**
2-butanone (MEK)	< 1000	< 20	< 100	< 40	< 40
2,2-dichloropropane	< 25	< 0.5	< 2.5	< 1.0	< 1.0
cis-1,2-dichloroethene	**2,200**	**150**	**1,100**	**440**	**710**
chloroform	< 25	< 0.5	< 2.5	< 1.0	< 1.0
bromochloromethane	< 25	< 0.5	< 2.5	< 1.0	< 1.0
1,1,1-trichloroethane (TCA)	< 25	< 0.5	< 2.5	< 1.0	< 1.0
1,1-dichloropropene	< 25	< 0.5	< 2.5	< 1.0	< 1.0
carbon tetrachloride	< 25	< 0.5	< 2.5	< 1.0	< 1.0
1,2-dichloroethane (EDC)	< 25	< 0.5	< 2.5	< 1.0	< 1.0
vinyl acetate	–	–	–	–	–
benzene	< 25	< 0.5	< 2.5	< 1.0	< 1.0
trichloroethene (TCE)	< 25	< 0.5	**4.3**	**0.20 J**	< 1.0
1,2-dichloropropane	< 25	< 0.5	< 2.5	< 1.0	< 1.0
bromodichloromethane	< 25	< 0.5	< 2.5	< 1.0	< 1.0
2-chloroethyl vinyl ether	–	–	–	–	–
dibromomethane	< 25	< 0.5	< 2.5	< 1.0	< 1.0
2-hexanone	< 1000	< 20	< 100	< 40	< 40
cis-1,3-dichloropropene	< 25	< 0.5	< 2.5	< 1.0	< 1.0
toluene	< 25	< 0.5	< 2.5	< 1.0	< 1.0
trans-1,3-dichloropropene	< 25	< 0.5	< 2.5	< 1.0	< 1.0
1,1,2-trichloroethane	< 25	< 0.5	< 2.5	< 1.0	< 1.0
4-methyl-2-pentanone (MIBK)	< 1000	< 20	< 100	< 40	< 40
1,3-dichloropropane	< 25	< 0.5	< 2.5	< 1.0	< 1.0
tetrachloroethene (PCE)	< 25	< 0.5	< 2.5	< 1.0	< 1.0
dibromochloromethane	< 25	< 0.5	< 2.5	< 1.0	< 1.0
1,2-dibromoethane (EDB)	< 100	< 2	< 10	< 4.0	< 4.0
chlorobenzene	< 25	< 0.5	< 2.5	< 1.0	< 1.0
1,1,1,2-tetrachloroethane	< 25	< 0.5	< 2.5	< 1.0	< 1.0
ethylbenzene	< 25	< 0.5	< 2.5	< 1.0	< 1.0
total xylenes	< 25	< 0.5	< 2.5	< 1.0	< 1.0
styrene	< 25	< 0.5	< 2.5	< 1.0	< 1.0
bromoform	< 25	< 0.5	< 2.5	< 1.0	< 1.0
isopropylbenzene	< 100	< 2	< 10	< 4.0	< 4.0
1,1,2,2-tetrachloroethane	< 25	< 0.5	< 2.5	< 1.0	< 1.0

Table D-20

Annual Groundwater VOC Results
BSB Property, Kent, Washington

Well	HYCP-5	HYCP-5	HYCP-5	HYCP-5	HYCP-5
Sample Date	4/17/00	4/26/01	4/25/02	4/9/03	4/13/04
1,2,3-trichloropropane	< 25	< 0.5	< 2.5	< 1.0	< 1.0
bromobenzene	< 100	< 2	< 10	< 4.0	< 4.0
n-propylbenzene	< 100	< 2	< 10	< 4.0	< 4.0
2-chlorotoluene	< 100	< 2	< 10	< 4.0	< 4.0
4-chlorotoluene	< 100	< 2	< 10	< 4.0	< 4.0
1,3,5-trimethylbenzene	< 100	< 2	< 10	< 4.0	< 4.0
tert-butylbenzene	< 100	< 2	< 10	< 4.0	< 4.0
1,2,4-trimethylbenzene	< 100	< 2	< 10	< 4.0	< 4.0
sec-butylbenzene	< 100	< 2	< 10	< 4.0	< 4.0
1,3-dichlorobenzene	< 25	< 0.5	< 2.5	< 1.0	< 1.0
4-isopropyltoluene	< 100	< 2	< 10	< 4.0	< 4.0
1,4-dichlorobenzene	< 25	< 0.5	< 2.5	< 1.0	< 1.0
n-butylbenzene	< 100	< 2	< 10	< 4.0	< 4.0
1,2-dichlorobenzene	< 25	< 0.5	< 2.5	< 1.0	< 1.0
1,2-dibromo-3-chloropropane	< 100	< 2	< 10	< 4.0	< 4.0
1,2,4-trichlorobenzene	< 100	< 2	< 10	< 4.0	< 4.0
1,2,3-trichlorobenzene	< 100	< 2	< 10	< 4.0	< 4.0
naphthalene	< 100	< 2	< 10	< 4.0	< 4.0
hexachlorobutadiene	< 100	< 2	< 10	< 4.0	< 4.0

Notes:
1. Results in µg/L.
2. Detections shown in bold.
3. < = not detected at the method reporting limit shown.
4. E = lab-assigned qualifier indicating an estimated concentration due to inconclusive lab QA/QC.
5. J = the result is an estimated concentration that is less than the method reporting limit but greater than or equal to the method detection limit.

Table D-21

Parcel G Groundwater SVOC Results
BSB Property, Kent, Washington

Well	HY-1s	HY-1s	HYCP-2	HYCP-2	HYCP-2	HYCP-2	HYCP-2
Sample Date	11/2/83	11/31/84	1/17/95	3/28/96	3/4/97	3/10/98	4/22/99
N-Nitrosodimethylamine	–	–	< 25	< 25	< 25	< 25	< 25
Aniline	–	–	< 25	< 25	< 25	< 25	< 25
Bis(2-chloroethyl) Ether	–	–	< 10	< 10	< 10	< 10	< 10
1,3-Dichlorobenzene	–	–	< 10	< 10	< 10	< 10	< 10
1,2-Dichlorobenzene	–	–	< 10	< 10	< 10	< 10	< 10
1,4-Dichlorobenzene	–	–	< 10	< 10	< 10	< 10	< 10
Bis(2-chloroisopropyl) Ether	–	–	< 10	< 10	< 10	< 10	< 10
Hexachloroethane	–	–	< 10	< 10	< 10	< 10	< 10
N-Nitrosodi-n-propylamine	–	–	< 10	< 10	< 10	< 10	< 10
Nitrobenzene	–	–	< 10	< 10	< 10	< 10	< 10
Isophorone	–	–	< 10	< 10	< 10	< 10	< 10
Bis(2-chloroethoxy)methane	–	–	< 10	< 10	< 10	< 10	< 10
1,2,4-Trichlorobenzene	–	–	< 10	< 10	< 10	< 10	< 10
Naphthalene	–	–	< 10	< 10	< 10	< 10	< 10
4-Chloroaniline	–	–	< 10	< 10	< 10	< 10	< 10
Hexachlorobutadiene	–	–	< 10	< 10	< 10	< 10	< 10
2-Methylnaphthalene	–	–	< 10	< 10	< 10	< 10	< 10
Hexachlorocyclopentadiene	–	–	< 10	< 10	< 10	< 10	< 10
2-Chloronaphthalene	–	–	< 10	< 10	< 10	< 10	< 10
2-Nitroaniline	–	–	< 25	< 25	< 25	< 25	< 25
Acenaphthylene	–	–	< 10	< 10	< 10	< 10	< 10
Dimethyl Phthalate	–	–	< 10	< 10	< 10	< 10	< 10
2,6-Dinitrotoluene	–	–	< 10	< 10	< 10	< 10	< 10
Acenaphthene	–	–	< 10	< 10	< 10	< 10	< 10
3-Nitroaniline	–	–	< 25	< 25	< 25	< 25	< 25
Dibenzofuran	–	–	< 10	< 10	< 10	< 10	< 10
2,4-Dinitrotoluene	–	–	< 10	< 10	< 10	< 10	< 10
Fluorene	–	–	< 10	< 10	< 10	< 10	< 10
4-Chlorophenyl Phenyl Ether	–	–	< 10	< 10	< 10	< 10	< 10
Diethyl Phthalate	–	–	< 10	< 10	< 10	< 10	< 10
4-Nitroaniline	–	–	< 25	< 25	< 25	< 25	< 25
N-Nitrosodiphenylamine	–	–	< 10	< 10	< 10	< 10	< 10
4-Bromophenyl Phenyl Ether	–	–	< 10	< 10	< 10	< 10	< 10
Hexachlorobenzene	–	–	< 10	< 10	< 10	< 10	< 10
Phenanthrene	–	–	< 10	< 10	< 10	< 10	< 10
Anthracene	–	–	< 10	< 10	< 10	< 10	< 10
Di-n-butyl Phthalate	< 2	< 1	< 10	< 10	< 10	< 10	< 10
Fluoranthene	–	–	< 10	< 10	< 10	< 10	< 10
Pyrene	–	–	< 10	< 10	< 10	< 10	< 10
Butyl Benzyl Phthalate	–	–	< 10	< 10	< 10	< 10	< 10
3,3'-Dichlorobenzidine	–	–	< 25	< 25	< 25	< 25	< 25
Benz(a)anthracene	–	–	< 10	< 10	< 10	< 10	< 10
Chrysene	–	–	< 10	< 10	< 10	< 10	< 10
Bis(2-ethylhexyl) Phthalate	< 5	< 2	< 10	< 10	< 10	< 10	< 10
Di-n-octyl Phthalate	–	–	< 10	< 10	< 10	< 10	< 10
Benzo(b)fluoranthene	–	–	< 10	< 10	< 10	< 10	< 10
Benzo(k)fluoranthene	–	–	< 10	< 10	< 10	< 10	< 10

Table D-21

Parcel G Groundwater SVOC Results
BSB Property, Kent, Washington

Well	HY-1s	HY-1s	HYCP-2	HYCP-2	HYCP-2	HYCP-2	HYCP-2
Sample Date	11/2/83	11/31/84	1/17/95	3/28/96	3/4/97	3/10/98	4/22/99
Benzo(a)pyrene	–	–	< 10	< 10	< 10	< 10	< 10
Indeno(1,2,3-cd)pyrene	–	–	< 10	< 10	< 10	< 10	< 10
Dibenz(a,h)anthracene	–	–	< 10	< 10	< 10	< 10	< 10
Benzo(g,h,i)perylene	–	–	< 10	< 10	< 10	< 10	< 10
Phenol	< 5	**8**	< 10	< 10	< 10	< 10	< 10
2-Chlorophenol	–	–	< 10	< 10	< 10	< 10	< 10
Benzyl Alcohol	–	–	< 10	< 10	< 10	< 10	< 10
2-Methylphenol	–	–	< 10	< 10	< 10	< 10	< 10
3- and 4-Methylphenol Coelution	–	–	< 10	< 10	< 10	< 10	< 10
2-Nitrophenol	< 2	< 1	< 10	< 10	< 10	< 10	< 10
2,4-Dimethylphenol	–	–	< 10	< 10	< 10	< 10	< 10
2,4-Dichlorophenol	–	–	< 10	< 10	< 10	< 10	< 10
Benzoic Acid	–	–	< 25	< 25	< 25	< 25	< 25
4-Chloro-3-methylphenol	–	–	< 10	< 10	< 10	< 10	< 10
2,4,6-Trichlorophenol	–	–	< 10	< 10	< 10	< 10	< 10
2,4,5-Trichlorophenol	–	–	< 10	< 10	< 10	< 10	< 10
2,4-Dinitrophenol	–	–	< 25	< 25	< 25	< 25	< 25
4-Nitrophenol	–	–	< 25	< 25	< 25	< 25	< 25
2-Methyl-4,6-dinitrophenol	–	–	< 25	< 25	< 25	< 25	< 25
Pentachlorophenol (PCP)	–	–	< 25	< 25	< 25	< 25	< 25

Notes:
1. Results in µg/L.
2. – = not analyzed.
3. Detections shown in bold.
4. < = not detected at the method reporting limit shown.

Table D-21

Parcel G Groundwater SVOC Results
BSB Property, Kent, Washington

Well	HYCP-2	HYCP-2	HYCP-2	HYCP-2	HYCP-2	HYCP-5	HYCP-5
Sample Date	4/17/00	4/26/01	4/25/02	4/10/03	4/14/04	1/17/95	3/28/96
N-Nitrosodimethylamine	< 25	< 24	< 24	< 24	< 24	< 25	< 25
Aniline	< 25	< 24	< 24	< 24	< 24	< 25	< 25
Bis(2-chloroethyl) Ether	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
1,3-Dichlorobenzene	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
1,2-Dichlorobenzene	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
1,4-Dichlorobenzene	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
Bis(2-chloroisopropyl) Ether	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
Hexachloroethane	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
N-Nitrosodi-n-propylamine	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
Nitrobenzene	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
Isophorone	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
Bis(2-chloroethoxy)methane	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
1,2,4-Trichlorobenzene	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
Naphthalene	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
4-Chloroaniline	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
Hexachlorobutadiene	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
2-Methylnaphthalene	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
Hexachlorocyclopentadiene	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
2-Chloronaphthalene	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
2-Nitroaniline	< 25	< 24	< 24	< 24	< 24	< 25	< 25
Acenaphthylene	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
Dimethyl Phthalate	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
2,6-Dinitrotoluene	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
Acenaphthene	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
3-Nitroaniline	< 25	< 24	< 24	< 24	< 24	< 25	< 25
Dibenzofuran	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
2,4-Dinitrotoluene	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
Fluorene	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
4-Chlorophenyl Phenyl Ether	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
Diethyl Phthalate	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
4-Nitroaniline	< 25	< 24	< 24	< 24	< 24	< 25	< 25
N-Nitrosodiphenylamine	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
4-Bromophenyl Phenyl Ether	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
Hexachlorobenzene	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
Phenanthrene	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
Anthracene	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
Di-n-butyl Phthalate	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
Fluoranthene	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
Pyrene	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
Butyl Benzyl Phthalate	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
3,3'-Dichlorobenzidine	< 25	< 24	< 24	< 24	< 24	< 25	< 25
Benz(a)anthracene	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
Chrysene	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
Bis(2-ethylhexyl) Phthalate	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
Di-n-octyl Phthalate	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
Benzo(b)fluoranthene	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
Benzo(k)fluoranthene	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10

Table D-21

Parcel G Groundwater SVOC Results
BSB Property, Kent, Washington

Well	HYCP-2	HYCP-2	HYCP-2	HYCP-2	HYCP-2	HYCP-5	HYCP-5
Sample Date	4/17/00	4/26/01	4/25/02	4/10/03	4/14/04	1/17/95	3/28/96
Benzo(a)pyrene	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
Indeno(1,2,3-cd)pyrene	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
Dibenz(a,h)anthracene	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
Benzo(g,h,i)perylene	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
Phenol	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
2-Chlorophenol	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
Benzyl Alcohol	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
2-Methylphenol	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
3- and 4-Methylphenol Coelution	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
2-Nitrophenol	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
2,4-Dimethylphenol	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
2,4-Dichlorophenol	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
Benzoic Acid	< 25	< 24	< 24	< 24	< 24	< 25	< 25
4-Chloro-3-methylphenol	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
2,4,6-Trichlorophenol	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
2,4,5-Trichlorophenol	< 10	< 9.6	< 9.6	< 9.6	< 9.6	< 10	< 10
2,4-Dinitrophenol	< 25	< 24	< 24	< 24	< 24	< 25	< 25
4-Nitrophenol	< 25	< 24	< 24	< 24	< 24	< 25	< 25
2-Methyl-4,6-dinitrophenol	< 25	< 24	< 24	< 24	< 24	< 25	< 25
Pentachlorophenol (PCP)	< 25	< 24	< 24	< 24	< 24	< 25	< 25

Notes:
1. Results in µg/L.
2. – = not analyzed.
3. Detections shown in bold.
4. < = not detected at the method reporting limit shown.

Table D-21

Parcel G Groundwater SVOC Results
BSB Property, Kent, Washington

Well Sample Date	HYCP-5 3/4/97	HYCP-5 3/9/98	HYCP-5 4/22/99	HYCP-5 4/17/00	HYCP-5 4/26/01	HYCP-5 4/25/02
N-Nitrosodimethylamine	< 25	< 25	< 25	< 25	< 24	< 24
Aniline	< 25	< 25	< 25	< 25	< 24	< 24
Bis(2-chloroethyl) Ether	< 10	< 10	< 10	< 10	< 9.6	< 9.6
1,3-Dichlorobenzene	< 10	< 10	< 10	< 10	< 9.6	< 9.6
1,2-Dichlorobenzene	< 10	< 10	< 10	< 10	< 9.6	< 9.6
1,4-Dichlorobenzene	< 10	< 10	< 10	< 10	< 9.6	< 9.6
Bis(2-chloroisopropyl) Ether	< 10	< 10	< 10	< 10	< 9.6	< 9.6
Hexachloroethane	< 10	< 10	< 10	< 10	< 9.6	< 9.6
N-Nitrosodi-n-propylamine	< 10	< 10	< 10	< 10	< 9.6	< 9.6
Nitrobenzene	< 10	< 10	< 10	< 10	< 9.6	< 9.6
Isophorone	< 10	< 10	< 10	< 10	< 9.6	< 9.6
Bis(2-chloroethoxy)methane	< 10	< 10	< 10	< 10	< 9.6	< 9.6
1,2,4-Trichlorobenzene	< 10	< 10	< 10	< 10	< 9.6	< 9.6
Naphthalene	< 10	< 10	< 10	< 10	< 9.6	< 9.6
4-Chloroaniline	< 10	< 10	< 10	< 10	< 9.6	< 9.6
Hexachlorobutadiene	< 10	< 10	< 10	< 10	< 9.6	< 9.6
2-Methylnaphthalene	< 10	< 10	< 10	< 10	< 9.6	< 9.6
Hexachlorocyclopentadiene	< 10	< 10	< 10	< 10	< 9.6	< 9.6
2-Chloronaphthalene	< 10	< 10	< 10	< 10	< 9.6	< 9.6
2-Nitroaniline	< 25	< 25	< 25	< 25	< 24	< 24
Acenaphthylene	< 10	< 10	< 10	< 10	< 9.6	< 9.6
Dimethyl Phthalate	< 10	< 10	< 10	< 10	< 9.6	< 9.6
2,6-Dinitrotoluene	< 10	< 10	< 10	< 10	< 9.6	< 9.6
Acenaphthene	< 10	< 10	< 10	< 10	< 9.6	< 9.6
3-Nitroaniline	< 25	< 25	< 25	< 25	< 24	< 24
Dibenzofuran	< 10	< 10	< 10	< 10	< 9.6	< 9.6
2,4-Dinitrotoluene	< 10	< 10	< 10	< 10	< 9.6	< 9.6
Fluorene	< 10	< 10	< 10	< 10	< 9.6	< 9.6
4-Chlorophenyl Phenyl Ether	< 10	< 10	< 10	< 10	< 9.6	< 9.6
Diethyl Phthalate	< 10	< 10	< 10	< 10	< 9.6	< 9.6
4-Nitroaniline	< 25	< 25	< 25	< 25	< 24	< 24
N-Nitrosodiphenylamine	< 10	< 10	< 10	< 10	< 9.6	< 9.6
4-Bromophenyl Phenyl Ether	< 10	< 10	< 10	< 10	< 9.6	< 9.6
Hexachlorobenzene	< 10	< 10	< 10	< 10	< 9.6	< 9.6
Phenanthrene	< 10	< 10	< 10	< 10	< 9.6	< 9.6
Anthracene	< 10	< 10	< 10	< 10	< 9.6	< 9.6
Di-n-butyl Phthalate	< 10	< 10	< 10	< 10	< 9.6	< 9.6
Fluoranthene	< 10	< 10	< 10	< 10	< 9.6	< 9.6
Pyrene	< 10	< 10	< 10	< 10	< 9.6	< 9.6
Butyl Benzyl Phthalate	< 10	< 10	< 10	< 10	< 9.6	< 9.6
3,3'-Dichlorobenzidine	< 25	< 25	< 25	< 25	< 24	< 24
Benz(a)anthracene	< 10	< 10	< 10	< 10	< 9.6	< 9.6
Chrysene	< 10	< 10	< 10	< 10	< 9.6	< 9.6
Bis(2-ethylhexyl) Phthalate	< 10	< 10	< 10	< 10	< 9.6	< 9.6
Di-n-octyl Phthalate	< 10	< 10	< 10	< 10	< 9.6	< 9.6
Benzo(b)fluoranthene	< 10	< 10	< 10	< 10	< 9.6	< 9.6
Benzo(k)fluoranthene	< 10	< 10	< 10	< 10	< 9.6	< 9.6

Table D-21

Parcel G Groundwater SVOC Results
BSB Property, Kent, Washington

Well	HYCP-5	HYCP-5	HYCP-5	HYCP-5	HYCP-5	HYCP-5
Sample Date	3/4/97	3/9/98	4/22/99	4/17/00	4/26/01	4/25/02
Benzo(a)pyrene	< 10	< 10	< 10	< 10	< 9.6	< 9.6
Indeno(1,2,3-cd)pyrene	< 10	< 10	< 10	< 10	< 9.6	< 9.6
Dibenz(a,h)anthracene	< 10	< 10	< 10	< 10	< 9.6	< 9.6
Benzo(g,h,i)perylene	< 10	< 10	< 10	< 10	< 9.6	< 9.6
Phenol	< 10	< 10	< 10	< 10	< 9.6	< 9.6
2-Chlorophenol	< 10	< 10	< 10	< 10	< 9.6	< 9.6
Benzyl Alcohol	< 10	< 10	< 10	< 10	< 9.6	< 9.6
2-Methylphenol	< 10	< 10	< 10	< 10	< 9.6	< 9.6
3- and 4-Methylphenol Coelution	< 10	< 10	< 10	< 10	< 9.6	< 9.6
2-Nitrophenol	< 10	< 10	< 10	< 10	< 9.6	< 9.6
2,4-Dimethylphenol	< 10	< 10	< 10	< 10	< 9.6	< 9.6
2,4-Dichlorophenol	< 10	< 10	< 10	< 10	< 9.6	< 9.6
Benzoic Acid	< 25	< 25	< 25	< 25	< 24	< 24
4-Chloro-3-methylphenol	< 10	< 10	< 10	< 10	< 9.6	< 9.6
2,4,6-Trichlorophenol	< 10	< 10	< 10	< 10	< 9.6	< 9.6
2,4,5-Trichlorophenol	< 10	< 10	< 10	< 10	< 9.6	< 9.6
2,4-Dinitrophenol	< 25	< 25	< 25	< 25	< 24	< 24
4-Nitrophenol	< 25	< 25	< 25	< 25	< 24	< 24
2-Methyl-4,6-dinitrophenol	< 25	< 25	< 25	< 25	< 24	< 24
Pentachlorophenol (PCP)	< 25	< 25	< 25	< 25	< 24	< 24

Notes:
1. Results in µg/L.
2. – = not analyzed.
3. Detections shown in bold.
4. < = not detected at the method reporting limit shown.

Table D-21

Parcel G Groundwater SVOC Results
BSB Property, Kent, Washington

Well	HYCP-5	HYCP-5	HY-1d	HY-1d
Sample Date	4/9/03	4/13/04	1/18/95	3/27/96
N-Nitrosodimethylamine	< 24	< 24	< 25	< 25
Aniline	< 24	< 24	< 25	< 25
Bis(2-chloroethyl) Ether	< 9.6	< 9.6	< 10	< 10
1,3-Dichlorobenzene	< 9.6	< 9.6	< 10	< 10
1,2-Dichlorobenzene	< 9.6	< 9.6	< 10	< 10
1,4-Dichlorobenzene	< 9.6	< 9.6	< 10	< 10
Bis(2-chloroisopropyl) Ether	< 9.6	< 9.6	< 10	< 10
Hexachloroethane	< 9.6	< 9.6	< 10	< 10
N-Nitrosodi-n-propylamine	< 9.6	< 9.6	< 10	< 10
Nitrobenzene	< 9.6	< 9.6	< 10	< 10
Isophorone	< 9.6	< 9.6	< 10	< 10
Bis(2-chloroethoxy)methane	< 9.6	< 9.6	< 10	< 10
1,2,4-Trichlorobenzene	< 9.6	< 9.6	< 10	< 10
Naphthalene	< 9.6	< 9.6	< 10	< 10
4-Chloroaniline	< 9.6	< 9.6	< 10	< 10
Hexachlorobutadiene	< 9.6	< 9.6	< 10	< 10
2-Methylnaphthalene	< 9.6	< 9.6	< 10	< 10
Hexachlorocyclopentadiene	< 9.6	< 9.6	< 10	< 10
2-Chloronaphthalene	< 9.6	< 9.6	< 10	< 10
2-Nitroaniline	< 24	< 24	< 25	< 25
Acenaphthylene	< 9.6	< 9.6	< 10	< 10
Dimethyl Phthalate	< 9.6	< 9.6	< 10	< 10
2,6-Dinitrotoluene	< 9.6	< 9.6	< 10	< 10
Acenaphthene	< 9.6	< 9.6	< 10	< 10
3-Nitroaniline	< 24	< 24	< 25	< 25
Dibenzofuran	< 9.6	< 9.6	< 10	< 10
2,4-Dinitrotoluene	< 9.6	< 9.6	< 10	< 10
Fluorene	< 9.6	< 9.6	< 10	< 10
4-Chlorophenyl Phenyl Ether	< 9.6	< 9.6	< 10	< 10
Diethyl Phthalate	< 9.6	< 9.6	< 10	< 10
4-Nitroaniline	< 24	< 24	< 25	< 25
N-Nitrosodiphenylamine	< 9.6	< 9.6	< 10	< 10
4-Bromophenyl Phenyl Ether	< 9.6	< 9.6	< 10	< 10
Hexachlorobenzene	< 9.6	< 9.6	< 10	< 10
Phenanthrene	< 9.6	< 9.6	< 10	< 10
Anthracene	< 9.6	< 9.6	< 10	< 10
Di-n-butyl Phthalate	< 9.6	< 9.6	< 10	< 10
Fluoranthene	< 9.6	< 9.6	< 10	< 10
Pyrene	< 9.6	< 9.6	< 10	< 10
Butyl Benzyl Phthalate	< 9.6	< 9.6	< 10	< 10
3,3'-Dichlorobenzidine	< 24	< 24	< 25	< 25
Benz(a)anthracene	< 9.6	< 9.6	< 10	< 10
Chrysene	< 9.6	< 9.6	< 10	< 10
Bis(2-ethylhexyl) Phthalate	< 9.6	< 9.6	**17**	< 10
Di-n-octyl Phthalate	< 9.6	< 9.6	< 10	< 10
Benzo(b)fluoranthene	< 9.6	< 9.6	< 10	< 10
Benzo(k)fluoranthene	< 9.6	< 9.6	< 10	< 10

Table D-21

Parcel G Groundwater SVOC Results
BSB Property, Kent, Washington

Well	HYCP-5	HYCP-5	HY-1d	HY-1d
Sample Date	4/9/03	4/13/04	1/18/95	3/27/96
Benzo(a)pyrene	< 9.6	< 9.6	< 10	< 10
Indeno(1,2,3-cd)pyrene	< 9.6	< 9.6	< 10	< 10
Dibenz(a,h)anthracene	< 9.6	< 9.6	< 10	< 10
Benzo(g,h,i)perylene	< 9.6	< 9.6	< 10	< 10
Phenol	< 9.6	< 9.6	< 10	< 10
2-Chlorophenol	< 9.6	< 9.6	< 10	< 10
Benzyl Alcohol	< 9.6	< 9.6	< 10	< 10
2-Methylphenol	< 9.6	< 9.6	< 10	< 10
3- and 4-Methylphenol Coelution	< 9.6	< 9.6	< 10	< 10
2-Nitrophenol	< 9.6	< 9.6	< 10	< 10
2,4-Dimethylphenol	< 9.6	< 9.6	< 10	< 10
2,4-Dichlorophenol	< 9.6	< 9.6	< 10	< 10
Benzoic Acid	< 24	< 24	< 25	< 25
4-Chloro-3-methylphenol	< 9.6	< 9.6	< 10	< 10
2,4,6-Trichlorophenol	< 9.6	< 9.6	< 10	< 10
2,4,5-Trichlorophenol	< 9.6	< 9.6	< 10	< 10
2,4-Dinitrophenol	< 24	< 24	< 25	< 25
4-Nitrophenol	< 24	< 24	< 25	< 25
2-Methyl-4,6-dinitrophenol	< 24	< 24	< 25	< 25
Pentachlorophenol (PCP)	< 24	< 24	< 25	< 25

Notes:
1. Results in μg/L.
2. – = not analyzed.
3. Detections shown in bold.
4. < = not detected at the method reporting limit shown.

Table D-22

Annual Groundwater PCB Results
BSB Property, Kent, Washington

		Aroclor						
Well	Sampling Date	1016	1221	1232	1242	1248	1254	1260
HYCP-2	1/24/95	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
	3/28/96	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
	3/4/97	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
	3/10/98	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
	4/22/99	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
	4/17/00	< 0.2	< 0.4	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
	4/25/02	< 0.19	< 0.38	< 0.19	< 0.19	< 0.19	< 0.19	< 0.19
	4/10/03	< 0.20	< 0.39	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
	4/14/04	< 0.20	< 0.40	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
HYCP-5	1/24/95	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
	3/28/96	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
	3/4/97	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
	3/9/98	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
	4/23/99	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
	4/17/00	< 0.2	< 0.4	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
	4/25/02	< 0.19	< 0.38	< 0.19	< 0.19	< 0.19	< 0.19	< 0.19
	4/9/03	< 0.20	< 0.39	< 0.20	< 0.20	< 0.20	< 0.20	< 0.20
	4/13/04	< 0.19	< 0.38	< 0.19	< 0.19	< 0.19	< 0.19	< 0.19
HY-1d	1/24/95	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
	3/27/96	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2

Notes: 1. Results in µg/L.

2. Detections shown in bold.

3. < = not detected at the method reporting limit shown.

Table D-23

Parcel G Groundwater Pesticides Results
BSB Property, Kent, Washington

Well	HYCP-2	HYCP-5
Sample Date	3/10/98	3/9/98
alpha BHC	< 0.04	< 0.04
beta-BHC	< 0.04	< 0.04
gamma-BHC (Lindane)	< 0.04	< 0.04
delta-BHC	< 0.04	< 0.04
heptachlor	< 0.04	< 0.04
aldrin	< 0.04	< 0.04
heptachlor epoxide	< 0.04	< 0.04
endosulfan I	< 0.04	< 0.04
dieldrin	< 0.04	< 0.04
4,4'-DDE	< 0.04	< 0.04
endrin	< 0.04	< 0.04
endosulfan II	< 0.04	< 0.04
4,4'-DDD	< 0.04	< 0.04
endrin aldehyde	< 0.04	< 0.04
endosulfan sulfate	< 0.04	< 0.04
4,4'-DDT	< 0.04	< 0.04
methoxychlor	< 0.04	< 0.04
toxaphene	< 1	< 1
chlordane	< 0.5	< 0.5

Notes: 1. Results in µg/L.
2. Detections shown in bold.
3. < = not detected at the method reporting limit shown.

Groundwater Chemistry Data
Well HY-1d
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloroethene µg/L	cis+trans	cis-1,2-Dichloroethene µg/L	1,1-Dichloroethene µg/L	1,1-Dichloroethane µg/L	1,2-Dichloroethane µg/L	1,1,1-Trichloroethane µg/L	Trichloroethene µg/L	Tetrachloroethene µg/L	Toluene µg/L	Ethylbenzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
HY-1d	01/20/86		1 U	81	1 U	1		1 U	1 U		1 U	2	1 U	1 U	1 U	1 U	2	85		
HY-1d	01/20/86	Dupl	1 U	22	1 U	1		1 U	1 U		1 U	1 U	1 U	10 U	1 U	10 U		22		
HY-1d	03/10/87		100 U	50 U	10 U	10		10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U		ND		
HY-1d	08/12/87		10 U	5 U	1 U	1		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		ND	0.008	0.005 U
HY-1d	09/09/87		10 U	5 U	1 U	1		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		ND	0.005 U	0.005 U
HY-1d	10/08/87		10 U	5 U	1 U	1		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		ND	0.005 U	0.005 U
HY-1d	11/10/87		10 U	5 U	1 U	1		1 U	3	1 U	1 U	1 U	1 U	1 U	1 U	1 U		3	0.005 U	0.005 U
HY-1d	03/21/88		10 U	5 U	1 U	1		1 U	1 U	1 U	1 U	1 U	1 U	4	1 U	1 U		4	0.005 U	0.005 U
HY-1d	06/30/88		10 U	5 U	1 U	1		1 U	1 U	1 U	4	1 U	1 U	1 U	1 U	1 U		4	0.005 U	0.005 U
HY-1d	01/09/92		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.006	0.01 U
HY-1d	01/06/93		10 U	5 U	5 U	10	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	ND	0.007	0.01 U
HY-1d	01/13/94		10 U	5 U	5 U	10	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	ND	0.005 U	0.01 U
HY-1d	01/18/95		10 U	5 U	5 U	10	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	ND	0.005	0.01 U
HY-1d	03/27/96		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005	0.01 U
HY-1d	03/04/97		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.006	0.01 U
HY-1d	03/04/97	Dupl	0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.006	0.01 U
HY-1d	03/09/98		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.006	0.01 U
HY-1d	04/22/99		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
HY-1d	10/05/99		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
HY-1d	04/14/00		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.007	0.01 U
HY-1d	10/10/00		0.5 U	1 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	ND	0.008	0.01 U
HY-1d	04/26/01		0.5 U	1 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	ND	0.01 U	0.01 U
HY-1d	10/25/01		0.5 U	1 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	ND	0.01 U	0.01 U
HY-1d	04/24/02		0.5 U	2 U	0.5 U	1.6	1.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	1.1	0.01 U	0.01 U
HY-1d	10/16/02		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	ND	0.0052	0.01 U
HY-1d	04/09/03		0.22 U	0.2 U	0.14 U	0.26	0.12 U	0.12 U	0.091 U	0.12 U	0.12 U	0.12 U	0.11 U	0.14 J	0.13 U	0.299 U	0.11 U	0.14	0.0053	0.01 U
HY-1d	10/21/03		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	ND	0.0089	0.01 U

Groundwater Chemistry Data
Well HY-1i
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloro-ethene µg/L	cis+trans	cis-1,2-Dichloro-ethene µg/L	1,1-Di-chloro-ethene µg/L	1,1-Di-chloro-ethane µg/L	1,2-Di-chloro-ethane µg/L	1,1,1-Tri-chloro-ethane µg/L	Tri-chloro-ethene µg/L	Tetra-chloro-ethene µg/L	Toluene µg/L	Ethyl-benzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
HY-1i	01/20/86		1 U	10 U	4	4		1 U	2		1 U	1 U	1 U	1 U	1 U	1 U		6.0		
HY-1i	01/20/86	Dupl	1 U	10 U	5	5		1 U	2		1 U	1 U	1 U	1 U	1 U	1 U		7.0		
HY-1i	03/10/87		U	50 U	10 U	10		10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U		ND		
HY-1i	08/12/87		10 U	5 U	1 U	1		1 U	4	1 U	1 U	1 U	1 U	1 U	1 U	1 U		4.0	0.005 U	0.005 U
HY-1i	09/10/87		10 U	5 U	1 U	1		1 U	3	1 U	1 U	1 U	1 U	1 U	1 U	1 U		3.0	0.005 U	0.005 U
HY-1i	10/08/87		10 U	5 U	1 U	1		1 U	3	1 U	1 U	1 U	1 U	1 U	1 U	1 U		3.0	0.005 U	0.005 U
HY-1i	11/10/87		10 U	5 U	1 U	1		1 U	4	1 U	6	1 U	1 U	1 U	1 U	1 U		10.0	0.005 U	0.005 U
HY-1i	03/21/88		10 U	5 U	1 U	14	13	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		13.0	0.005 U	0.005 U
HY-1i	06/30/88		10 U	7	1 U	1		1 U	2	1 U	1 U	1 U	1 U	1 U	1 U	1 U		9.0	0.005 U	0.005 U
HY-1i	09/20/88		10 U	7	1 U	1		1 U	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U		8.0	0.005 U	0.005 U
HY-1i	03/17/89		2 U	1 U	1 U	1		1 U	1.3	1 U	1 U	1 U	1 U	1 U	1 U	2 U		1.3	0.005 U	0.01 U
HY-1i	06/26/89		2 U		1 U	1		1 U	2.5	1 U	1 U	2 U	2 U	1 U	1 U	2 U	1 U	2.5	0.005 U	0.01 U
HY-1i	10/05/89		1 U	1 U	1 U	1		1 U	3.9	1 U	1 U	1 U	1 U	1 U	1 U	2 U	1 U	3.9	0.005 U	0.01 U
HY-1i	04/03/90		0.5 U	2 U	0.5 U	18.6	18.1	0.5 U	0.5 U	1.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	19.2	0.005 U	0.03
HY-1i	06/26/90		0.5 U	2 U	0.5 U	23.4	22.9	0.5 U	1.7	0.5 U	0.5 U	1.2	0.5 U	0.5 U	0.5 U	1 U	0.5 U	25.8	0.005 U	0.01 U
HY-1i	01/08/91		0.5 U	2 U	0.5 U	22.8	22.3	0.5 U	0.5	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.6	23.4	0.005 U	0.01 U
HY-1i	04/02/91		0.5 U	2 U	0.5 U	32	31.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	3.1	0.5 U	34.6	0.005 U	0.01 U
HY-1i	07/02/91		0.5 U	2 U	0.5 U	27.5	27	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	27.0	0.005 U	0.01 U
HY-1i	07/02/91	Dupl	0.5 U	2 U	0.5 U	24.5	24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	24.0	0.005 U	0.01 U
HY-1i	10/08/91		0.5 U	2 U	0.5 U	26.5	26	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	26.0	0.005 U	0.01 U
HY-1i	01/09/92		0.5 U	2 U	0.5 U	22.5	22	0.5 U	1.5	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	23.5	0.005 U	0.01 U
HY-1i	04/01/92		1 U	10 U	1 U	20	19	1 U	2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	21.0	0.005 U	0.01 U
HY-1i	07/01/92	#1	2	10 U	1 U	22	21	1 U	2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	25.0	0.005 U	0.01 U
HY-1i	10/07/92		0.5 U	2 U	0.5 U	25.5	25	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U					25.0	0.005 U	0.01 U
HY-1i	01/06/93		0.5 U	2 U	0.5 U	61.5	61	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	61.0	0.005 U	0.01 U
HY-1i	04/01/93		1.1	3	0.5 U	25.5	25	0.9	2	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	32.0	0.005 U	0.01 U
HY-1i	07/06/93		4	5 U	0.8	35.8	35	0.5 U	2.3	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	42.1	0.005 U	0.01 U
HY-1i	10/12/93		0.5 U	5 U	0.5 U	53.5	53	1.1	1.3	0.5 U	0.5 U	0.5 U	0.5 U	1	1 U	3	0.6	60.0	0.005 U	0.01 U
HY-1i	01/13/94		11	5 U	0.9	45.9	45	9.3	2.2	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	68.4	0.005 U	0.01 U
HY-1i	01/13/94	Dupl	12	5 U	0.9	53.9	53	9.8	2.1	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	77.8	0.005 U	0.01 U
HY-1i	04/13/94		28	2 U	0.9	96.1	95.2	0.6	2	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	126.7	0.005 U	0.01 U
HY-1i	07/14/94		19	2 U	0.5	83.8	83.3	0.5 U	0.8	0.5 U	0.5 U	2.6	0.5 U	1 U	1 U	1 U	0.5 U	106.2	0.005 U	0.01 U
HY-1i	11/07/94		8.4	2 U	1	56	55	0.5 U	1.6	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	66.0	0.005 U	0.01 U
HY-1i	01/18/95		4.7	2 U	0.9	53.9	53	0.5 U	1.4	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	60.0	0.005 U	0.01 U
HY-1i	04/26/95		6.8	2 U	0.8	35.8	35	0.5 U	1.3	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	43.9	0.005 U	0.01 U
HY-1i	07/11/95		4.1	2 U	0.8	37.8	37	0.5 U	1.3	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	43.2	0.005 U	0.01 U
HY-1i	12/07/95		9	2 U	0.5 U	39.5	39	0.5 U	1.1	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	49.1	0.005 U	0.01 U
HY-1i	03/27/96		15	2 U	0.7	39.7	39	0.5 U	1.5	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	56.2	0.005 U	0.01 U
HY-1i	05/30/96		20	2 U	0.7	43.7	43	0.5 U	1.5	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	65.2	0.005 U	0.01 U
HY-1i	09/11/96		15	2 U	0.7	50.7	50	0.5 U	1.3	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	67.0	0.005 U	0.01 U
HY-1i	12/05/96		14	2 U	0.6	48.6	48	0.5 U	1.1	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	63.7	0.005 U	0.01 U
HY-1i	03/04/97		14	2 U	0.6	40.6	40	0.5 U	1.2	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	55.8	0.005 U	0.01 U
HY-1i	06/18/97		17	2 U	0.6	45.6	45	0.5 U	1.4	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	64.0	0.005 U	0.01 U
HY-1i	09/18/97		22	5 U	0.9	71.9	71	0.5 U	1.7	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	95.6	0.005 U	0.01 U
HY-1i	12/09/97		15	5 U	0.7	50.7	50	0.5 U	1.1	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	66.8	0.005 U	0.01 U
HY-1i	03/09/98		30	5 U	0.7	51.7	51	0.5 U	1.4	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	83.1	0.005 U	0.01 U
HY-1i	03/09/98	Dupl	25	5 U	0.7	59.7	59	0.5 U	1.5	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	86.2	0.005 U	0.01 U
HY-1i	06/11/98		5.1	5 U	0.5 U	85.5	85	0.5 U	0.7	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	90.8	0.005 U	0.01 U

Groundwater Chemistry Data
Well HY-1i
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloro-ethene µg/L	cis+trans	cis-1,2-Dichloro-ethene µg/L	1,1-Di-chloro-ethene µg/L	1,1-Di-chloro-ethane µg/L	1,2-Di-chloro-ethane µg/L	1,1,1-Tri-chloro-ethane µg/L	Tri-chloro-ethene µg/L	Tetra-chloro-ethene µg/L	Toluene µg/L	Ethyl-benzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
HY-1i	09/20/98		16	5 U	0.9	79.9	79	0.5 U	1.4	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	97.3	0.005 U	0.01 U
HY-1i	04/22/99		22	5 U	0.8	65.8	65	0.5 U	1.2	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	89.0	0.005 U	0.01 U
HY-1i	10/05/99		6.2	5 U	0.7	41.7	41	0.5 U	0.8	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	48.7	0.005 U	0.01 U
HY-1i	04/14/00		10	5 U	0.5 U	29.5	29	0.5 U	0.7	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	39.7	0.005 U	0.01 U
HY-1i	10/10/00		6.1	1 U	0.57	22.57	22	0.5 U	0.65	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	29.3	0.005 U	0.01 U
HY-1i	04/26/01		22	1 U	0.5 U	39.5	39	0.5 U	0.9	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	62.4	0.005 U	0.01 U
HY-1i	10/25/01		6.5	1 U	1.3	34.3	33	0.5 U	0.53	0.5 U	0.5 U	5.1	0.5 U	0.5 U	0.5 U	1 U	0.5 U	46.4	0.005 U	0.01 U
HY-1i	04/23/02		14	1 U	0.5 U	33	33	0.5 U	0.59	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	47.6	0.005 U	0.01
HY-1i	10/16/02		15	2 U	0.56	31.56	31	0.5 U	0.66	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	47.2	0.005 U	0.01 U
HY-1i	04/09/03		18	0.2 U	0.41 J	22.41	22	0.18 J	0.42 J	0.12 U	0.12 U	0.12 U	0.11 U	0.13 J	0.13 U	0.299 U	0.11 U	41.1	0.005 U	0.01 U
HY-1i	10/21/03		11	2 U	0.5 U	23	23	0.54	0.51	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	35.1	0.005 U	0.01 U
HY-1i	10/21/03	Dupl	11	2 U	0.5 U	23	23	0.5 U	0.51	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	34.5	0.005 U	0.01 U
HY-1i	04/14/04		13	2 U	0.5 U	22	22	0.5 U	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	35.5	0.005 U	0.01 U
HY-1i	10/05/04		17	2 U	0.5 U	9.5	9.5	0.5 U	0.51	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	27.0	0.005 U	0.01 U

Groundwater Chemistry Data
Well HY-1s
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloro-ethene µg/L	cis+trans	cis-1,2-Dichloro-ethene µg/L	1,1-Di-chloro-ethene µg/L	1,1-Di-chloro-ethane µg/L	1,2-Di-chloro-ethane µg/L	1,1,1-Tri-chloro-ethane µg/L	Tri-chloro-ethene µg/L	Tetra-chloro-ethene µg/L	Toluene µg/L	Ethyl-benzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
HY-1s	01/10/83	A-repl.	1 U	6.1	1 U	1		31				17						54.1		
HY-1s	01/10/83	B-repl	1 U	5.6	2.4	2.4		21				16						45		
HY-1s	01/10/83	C-repl	1 U	4.9	2.1	2.1		21				6.5						34.5		
HY-1s	01/10/83	D-repl	1 U	3.5	1 U	1		18				2.3						23.8		
HY-1s	04/08/83	A-repl.	1 U	11	1 U	1		10				1 U						21		
HY-1s	04/08/83	B-repl	1 U	12	1 U	1		9				1 U						21		
HY-1s	04/08/83	C-repl	1 U	15	1 U	1		11				1 U						26		
HY-1s	04/08/83	D-repl	1 U	54	1 U	1		10				1 U						64		
HY-1s	11/02/83		10 U	10 U	10 U	10		10 U	10 U		10 U	10 U	10 U	1 U	1 U	1 U		ND		
HY-1s	01/31/84		5	10 U	10 U	10		10 U	10 U		10 U	10 U	10 U	1 U	1 U	1 U		5		
HY-1s	09/01/84		1.9	5 U	1 U	1		1 U	1 U		1 U	1 U	10 U	1 U	1 U	1 U		1.9		
HY-1s	12/08/84		1 U	5 U	27	27		1.5	1 U		1 U	1 U	1 U	1 U	1 U	1 U		28.5		
HY-1s	02/01/85		1 U	5 U	12.3	12.3		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U		12.3		
HY-1s	04/05/85		9	5 U	14.3	14.3		1 U	1 U		1 U	1 U	1 U					23.3		
HY-1s	01/20/86		6	10 U	25	25		1 U	1 U		1 U	1 U	1 U	2	1 U	1 U		33		
HY-1s	08/11/86		10 U	1 U	1 U	1		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U		ND		
HY-1s	03/10/87		100 U	50 U	10 U	10		10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U		ND		
HY-1s	08/12/87		8	5 U	1 U	1		1 U	1 U	5	1 U	1 U	1 U	1 U	1 U	1 U		13	0.009	0.006
HY-1s	09/10/87		10	5 U	1 U	1		1 U	1 U	3	1 U	1 U	1 U	1 U	1 U	1 U		13	0.013	0.005 U
HY-1s	10/08/87		29	5 U	1 U	1		1 U	1 U	4	1 U	1 U	1 U	1 U	1 U	1 U		33	0.012	0.005 U
HY-1s	11/10/87		51	5 U	1 U	1		11	2	5	12	1 U	1 U	1 U	1 U	1 U		81		
HY-1s	03/21/88		23	5 U	1 U	27	26	1 U	1 U	4	1 U	1 U	1 U	1 U	1 U	1 U		53	0.008	0.008
HY-1s	06/30/88		16	6	1 U	1		1 U	1 U	2	1 U	1 U	1 U	1 U	1 U	1 U		24	0.012	0.008
HY-1s	09/20/88		16	17	1 U	1		1 U	1.0	1.0	1 U	1 U	1 U	1 U	1 U	1 U		35	0.012	0.005 U
HY-1s	03/17/89		6.8	1 U	1 U	1		1 U	1 U	1 U	1 U	2	1 U	1 U	1 U	2 U		8.8	0.013	0.01 U
HY-1s	06/26/89		15		1 U	1		1 U	2.5	1 U	1 U	2 U	2 U	1 U	1 U	2 U	1 U	17.5	0.011	0.01 U
HY-1s	10/05/89		26	1 U	1 U	1		1 U	3.2	1.8	1 U	1 U	1 U	1 U	1 U	1 U	1 U	31	0.01	0.01 U
HY-1s	01/10/90		17	1 U	1 U	34	33	1 U	1 U	2.4	1 U	1 U	1 U	1.2	1 U	1	1 U	54.6	0.011	0.01 U
HY-1s	04/03/90		15.1	2 U	0.5 U	42	41.5	0.5 U	1	2.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	60.1	0.011	0.01 U
HY-1s	01/08/91		10.9	2 U	0.5 U	52.3	51.8	0.5 U	1.6	3.1	0.5 U	2.2	0.5 U	1 U	1 U	1 U	0.5 U	69.6	0.012	0.01 U
HY-1s	04/02/91		21.7	2 U	0.5 U	51.7	51.2	0.5 U	2.8	1.9	0.5 U	0.5 U	0.5 U	1 U	1 U	2.4	0.5 U	80	0.012	0.02
HY-1s	07/02/91		10.4	2 U	0.5 U	53.5	53	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3.7	1 U	1 U	0.5 U	67.1	0.007	0.01 U
HY-1s	10/08/91		0.5 U	2 U	0.5 U	34.5	34	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	34	0.005 U	0.01 U
HY-1s	01/09/92		5.4	2 U	0.5 U	49.5	49	0.5 U	3.2	2.8	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	60.4	0.01	0.01 U
HY-1s	04/01/92		7	10 U	1 U	39	38	1 U	3	3	1 U	2	1 U	1 U	1 U	1 U	1 U	53	0.01	0.01 U
HY-1s	07/01/92		11	10 U	1 U	33	32	1 U	2	3	1 U	1 U	1 U	1 U	1 U	1 U	1 U	48	0.008	0.01 U
HY-1s	10/07/92		3	2 U	0.5 U	45.5	45	0.5 U	2	0.5 U	0.5 U	0.5 U	0.5 U					50	0.008	0.01 U
HY-1s	01/06/93		0.5 U	2 U	0.5 U	81.5	81	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	81	0.009	0.01 U
HY-1s	04/01/93		3.5	2	0.5	23.5	23	0.5 U	2.4	1.6	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	33	0.008	0.01 U
HY-1s	07/06/93		8.9	8	1.5	46.5	45	0.5 U	5.9	1.8	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.7	71.8	0.008	0.01 U
HY-1s	10/12/93		16	2 U	1.1	37.1	36	0.5 U	4.8	1.7	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	59.6	0.007	0.01 U
HY-1s	01/13/94		19	2 U	2	62	60	1.1	6.4	2.1	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	90.6	0.008	0.01 U
HY-1s	04/13/94		23	2 U	1.4	73.6	72.2	0.5 U	4	1.6	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	102.2	0.007	0.01 U
HY-1s	07/14/94		32	2 U	1.5	264.5	263	0.5 U	3.6	1.4	0.5 U	125	0.5 U	1 U	1 U	1 U	0.5 U	426.5	0.007	0.01 U
HY-1s	11/07/94		43	20 U	5.4	265.4	260	0.5 U	12	5 U	5 U	5 U	5 U	10 U	10 U	10 U	5 U	320.4	0.007	0.01 U
HY-1s	01/18/95		53	10 U	5.3	375.3	370	2.5 U	8	2.5 U	2.5 U	2.5 U	2.5 U	5 U	5 U	5 U	2.5 U	436.3	0.008	0.01 U
HY-1s	04/26/95		43	2 U	3.6	183.6	180	1.3	8	2.4	2.5 U	1.1	0.5 U	1 U	1 U	1 U	0.5 U	239.4	0.01	0.01 U
HY-1s	07/11/95		130	50 U	12.5 U	942.5	930	12.5 U	16	12.5 U	12.5 U	12.5 U	12.5 U	25 U	25 U	25 U	12.5 U	1076	0.012	0.01 U
HY-1s	12/07/95		200	40 U	10 U	1310	1300	10 U	18	10 U	10 U	12	10 U	20 U	20 U	20 U	10 U	1530	0.009	0.01 U
HY-1s	03/27/96		96	20 U	12	912	900	5 U	11	5 U	5 U	16	5 U	10 U	10 U	10 U	5 U	1035	0.007	0.01 U
HY-1s	05/30/96		110	2 U	12	982	970	8.9	10	1.6	0.5 U	16	0.5 U	1 U	1 U	1 U	0.5 U	1129	0.007	0.01 U

Groundwater Chemistry Data
Well HY-1s
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloro-ethene µg/L	cis+trans	cis-1,2-Dichloro-ethene µg/L	1,1-Di-chloro-ethene µg/L	1,1-Di-chloro-ethane µg/L	1,2-Di-chloro-ethane µg/L	1,1,1-Tri-chloro-ethane µg/L	Tri-chloro-ethene µg/L	Tetra-chloro-ethene µg/L	Toluene µg/L	Ethyl-benzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
HY-1s	09/11/96		150	20 U	12	1012	1000	7	14	5 U	5 U	19	5 U	10 U	10 U	10 U	5 U	1202	0.008	0.01 U
HY-1s	12/05/96		130	20 U	10	840	830	6	13	5 U	5 U	16	5 U	10 U	10 U	10 U	5 U	1005	0.01	0.01 U
HY-1s	03/04/97		54	100 U	25 U	410	410	25 U	25 U	25 U	25 U	25 U	25 U	50 U	50 U	50 U	25 U	464	0.008	0.01 U
HY-1s	06/18/97		32	4 U	4	184	180	2	3	1 U	1 U	7	1 U	2 U	2 U	2 U	1 U	228	0.007	0.01 U
HY-1s	09/18/97		120	5 U	10	710	700	5.4	12	1.8	0.5 U	13	0.5 U	1 U	1 U	1 U	0.5 U	862.2	0.01	0.01 U
HY-1s	12/09/97		130	50 U	10	670	660	5 U	9	5 U	5 U	19	5 U	10 U	10 U	10 U	5 U	828	0.01	0.01 U
HY-1s	03/09/98		73	5 U	6.9	416.9	410	2.7	6.6	1.3	0.5 U	9.8	0.5 U	1 U	1 U	1 U	0.5 U	510.3	0.016	0.01 U
HY-1s	06/11/98		67	50 U	5.4	645.4	640	5 U	5.3	5 U	5 U	5.4	5 U	10 U	10 U	10 U	5 U	723.1	0.009	0.01 U
HY-1s	06/11/98	Dupl	77	50 U	5.7	625.7	620	5 U	5.8	5 U	5 U	5.5	5 U	10 U	10 U	10 U	5 U	714.0	0.009	0.01 U
HY-1s	09/19/98		110	50 U	8.5	618.5	610	5 U	8.8	5 U	5 U	8.9	5 U	10 U	10 U	10 U	5 U	746.2	0.009	0.01 U
HY-1s	04/22/99		65	5 U	6.8	356.8	350	2.5	5.6	0.8	0.5 U	5.7	0.5 U	1 U	1 U	1 U	0.5 U	436.4	0.009	0.01 U
HY-1s	10/05/99		75	5 U	8.4	488.4	480	3.2	6.5	0.8	0.5 U	6.5	0.5 U	1 U	1 U	1 U	0.5 U	580.4	0.01	0.01 U
HY-1s	04/14/00		48	5 U	5.8	325.8	320	2	4.6	0.5 U	0.5 U	4.6	0.5 U	1 U	1 U	1	0.5 U	386.0	0.01	0.01 U
HY-1s	10/10/00		76	1 U	15	445	430	3	6.9	0.71	0.5 U	5.3	0.5 U	0.5 U	0.5 U	1 U	0.5 U	536.9	0.012	0.01
HY-1s	04/25/01		70	1 U	6.8	346.8	340	2	5.9	0.78	0.5 U	6.2	0.5 U	0.5 U	0.5 U	1 U	0.5 U	431.7	0.0155	0.01
HY-1s	10/25/01		53	7.3	6	316	310	2.5 U	5.1	2.5 U	2.5 U	7.9	2.5 U	2.5 U	2.5 U	5 U	2.5 U	389.3	0.0086	0.01 U
HY-1s	04/23/02		50	2 U	5.5	245.5	240	1.3	4.9	1 U	0.5 U	4.7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	306.4	0.01	0.02
HY-1s	10/16/02		23	2 U	3.1	153.1	150	0.86	3.2	0.66	0.5 U	2.8	0.5 U	0.5 U	0.5 U	1 U	0.5 U	183.6	0.0097	0.01 U
HY-1s	04/09/03		22	0.2 U	2.6	80.6	78	0.54	1.2	0.28 J	0.12 U	1.4	0.11 U	0.14 J	0.13 U	0.299 U	0.11 U	106.2	0.01	0.01
HY-1s	04/09/03	Dupl	22	0.2 U	2.7	77.6	75	0.53	0.99	0.29 J	0.12 U	1.4	0.11 U	0.1 J	0.13 U	0.299 U	0.11 U	102.9	0.01	0.01
HY-1s	10/21/03		36 J	2 UJ	5.4 J	255.4	250 J	1.3 J	4.4 J	0.63 J	0.5 UJ	2.7 J	0.5 UJ	0.5 UJ	0.5 UJ	1 UJ	0.5 UJ	300.4	0.0101	0.01
HY-1s	04/13/04		25	2 U	3.3 J	113.3	110 J	0.63	2.3	0.5 U	0.5 U	1.6	0.5 U	0.5 U	0.5 U	1 U	0.5 U	142.8	0.0079	0.01 U
HY-1s	10/04/04		4.1	2 U	1.7	69.7	68	0.5 U	1.4	0.5 U	0.5 U	1.3	0.5 U	0.5 U	0.5 U	1 U	0.5 U	76.5	0.0108	0.01

Groundwater Chemistry Data
Well HY-3
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloro-ethene µg/L	cis+trans	cis-1,2-Dichloro-ethene µg/L	1,1-Di-chloro-ethene µg/L	1,1-Di-chloro-ethane µg/L	1,2-Di-chloro-ethane µg/L	1,1,1-Tri-chloro-ethane µg/L	Tri-chloro-ethene µg/L	Tetra-chloro-ethene µg/L	Toluene µg/L	Ethyl-benzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
HY-3	01/10/83	B	4.9	17	9.9	9.9		43				38						113		
HY-3	01/10/83	C	1 U	8.3	5.8	5.8		34				23						71.1		
HY-3	01/10/83	D	11	18	5	5		33				25						92		
HY-3	04/08/83	A	1 U	7.2	35	35		8				1 U						50.2		
HY-3	04/08/83	B	1 U	7.2	17	17		11				1 U						35.2		
HY-3	04/08/83	C	1.3	6.3	13	13		7.3				1 U						27.9		
HY-3	04/08/83	D	1 U	8	18	18		15				1 U						41		
HY-3	11/02/83		10 U	10 U	10 U	10		10 U	10 U		10 U	10 U	10 U	1 U	1 U	1 U		ND		
HY-3	02/01/84		5 U	10 U	10 U	10		10 U	10 U		10 U	10 U	10 U	1 U	1 U	1 U		ND		
HY-3	09/10/84		1 U	5 U	1 U	1		1 U	1 U									ND		
HY-3	12/08/84		1 U	5 U	10	10		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U		10		
HY-3	02/01/85		1 U	5 U	1 U	1		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U		ND		
HY-3	04/05/85		1 U	5 U	1 U	1		1 U	1 U		1 U	1 U	1 U					ND		
HY-3	01/20/86		1 U	30	1 U	1		1 U	1 U		1 U	13	1 U	1 U	1 U	1 U		43		
HY-3	07/11/86		10 U	25 U	5 U	5		5 U	5 U		5 U	5 U	5 U	1 U	1 U	1 U		ND		
HY-3	09/30/86		20 U	1 U	1 U	1		1 U	1 U		1 U	1	1 U	1 U	1 U	1 U		1		
HY-3	01/23/87		10 U	5 U	1 U	1		1 U	1 U		1 U	2	1 U	1 U	1 U	1 U		2		
HY-3	03/09/87		10	1 U	1 U	1		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U		10		
HY-3	08/12/87		10 U	5 U	1 U	1		1 U	1 U	1 U	1 U	1 U	1 U	1	1 U	1 U		1	0.008	0.005 U
HY-3	09/09/87		10 U	5 U	1 U	1		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		ND	0.007	0.005 U
HY-3	10/06/87		10 U	5 U	1 U	1		1 U	1 U	1 U	1 U	1 U	1 U	1	1 U	1 U		1	0.008	0.005 U
HY-3	11/10/87		10 U	5 U	1 U	1		1 U	1 U	1 U	10	1 U	1 U	1 U	1 U	1 U		10	0.005 U	0.005 U
HY-3	03/24/88		10 U	5 U	1 U	17	16	1 U	1 U	1 U	1 U	4	1 U	1	1 U	1 U		21	0.005 U	0.005 U
HY-3	06/27/88		10 U	7	1 U	1		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		7	0.005	0.005 U

Groundwater Chemistry Data
Well HY-11d
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloroethene µg/L	cis+trans	cis-1,2-Dichloroethene µg/L	1,1-Dichloroethene µg/L	1,1-Dichloroethane µg/L	1,2-Dichloroethane µg/L	1,1,1-Trichloroethane µg/L	Trichloroethene µg/L	Tetrachloroethene µg/L	Toluene µg/L	Ethylbenzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
HY-11d	01/17/86		1 U	15	1 U	1		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U		15		
HY-11d	01/17/86	Dupl	1 U	15	1 U	1		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U		15		
HY-11d	03/09/87		100 U	20 U	10 U	10		10 U	10 U		10 U	10 U	10 U	10 U	10 U	10 U		ND		
HY-11d	08/12/87		10 U	5 U	1 U	1		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		ND	0.006	0.005 U
HY-11d	09/10/87		10 U	5 U	1 U	1		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		ND	0.005 U	0.005 U
HY-11d	10/08/87		10 U	5 U	1 U	1		1 U	1 U	1 U	1	1 U	1 U	1 U	1 U	1 U		1	0.005 U	0.005 U
HY-11d	11/09/87		10 U	5 U	1 U	1		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		ND	0.005 U	0.005 U
HY-11d	03/23/88		10 U	8	1 U	1		1 U	1 U	1 U	1 U	2	1	1 U	1 U	2		13	0.005 U	0.005 U
HY-11d	06/27/88		10 U	8	1 U	1		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		8	0.005 U	0.005 U
HY-11d	10/07/91		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.007	0.01 U
HY-11d	01/07/92		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.007	0.01 U
HY-11d	04/01/92		1 U	10 U	1 U	2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	ND	0.007	0.01 U
HY-11d	07/02/92		1 U	10 U	1 U	2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	ND	0.007	0.01 U
HY-11d	10/08/92		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U					ND	0.006	0.01 U
HY-11d	01/08/93		0.5 U	3	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	3.0	0.007	0.01 U
HY-11d	04/01/93		0.5 U	3	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	3.0	0.007	0.01 U
HY-11d	07/08/93		0.5 U	5	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	4	2	10	1.8	22.8	0.008	0.01 U
HY-11d	10/11/93		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2	1 U	5	0.5	7.5	0.008	0.01 U
HY-11d	01/14/94		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.007	0.01 U
HY-11d	04/11/94		1 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.007	0.01 U
HY-11d	07/13/94		1 U	10	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2	1 U	1	0.5 U	13.0	0.006	0.01 U
HY-11d	11/08/94		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.008	0.01 U
HY-11d	01/19/95		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.007	0.01 U
HY-11d	04/25/95		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.006	0.01 U
HY-11d	07/12/95		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.006	0.01 U
HY-11d	12/05/95		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.008	0.01 U
HY-11d	03/26/96		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.006	0.01 U
HY-11d	05/30/96		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.6	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	0.6	0.006	0.01 U
HY-11d	09/10/96		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.006	0.01 U
HY-11d	12/05/96		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.008	0.01 U
HY-11d	03/05/97		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.007	0.01 U
HY-11d	03/16/97		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.006	0.01 U
HY-11d	06/16/97		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.006	0.01 U
HY-11d	09/19/97		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.007	0.01 U
HY-11d	12/10/97		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.007	0.01 U
HY-11d	03/11/98		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.006	0.01 U
HY-11d	03/11/98	Dupl	0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.01	0.01 U
HY-11d	06/11/98		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.006	0.01 U
HY-11d	09/24/98		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.008	0.01 U
HY-11d	04/23/99		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.006	0.01 U
HY-11d	10/05/99		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.006	0.01 U
HY-11d	04/17/00		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.01	0.01 U
HY-11d	10/10/00		0.5 U	1 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	ND	0.008	0.01 U
HY-11d	04/26/01		0.5 U	1 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	ND	0.009	0.01 U
HY-11d	10/26/01		0.5 U	1 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	ND	0.005 U	0.01 U
HY-11d	04/24/02		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.53	0.5 U	1 U	0.5 U	0.53	0.01 U	0.01 U
HY-11d	10/16/02		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.74	0.5 U	1 U	0.5 U	0.74	0.0071	0.01 U
HY-11d	04/09/03		0.25 J	0.2 U	0.14 U	0.26	0.12 U	0.12 U	0.19 J	0.12 U	0.12 U	0.12 U	0.11 U	11	0.13 U	0.299 U	0.11 U	11.44	0.0063	0.01 U

Groundwater Chemistry Data
Well HY-11d
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloro-ethene µg/L	cis+trans	cis-1,2-Dichloro-ethene µg/L	1,1-Di-chloro-ethene µg/L	1,1-Di-chloro-ethane µg/L	1,2-Di-chloro-ethane µg/L	1,1,1-Tri-chloro-ethane µg/L	Tri-chloro-ethene µg/L	Tetra-chloro-ethene µg/L	Toluene µg/L	Ethyl-benzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
HY-11d	10/21/03		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	ND	0.0066	0.01 U

Groundwater Chemistry Data
Well HY-11i
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloro-ethene µg/L	cis+trans	cis-1,2-Dichloro-ethene µg/L	1,1-Di-chloro-ethene µg/L	1,1-Di-chloro-ethane µg/L	1,2-Di-chloro-ethane µg/L	1,1,1-Tri-chloro-ethane µg/L	Tri-chloro-ethene µg/L	Tetra-chloro-ethene µg/L	Toluene µg/L	Ethyl-benzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
HY-11i	01/17/86		1 U	1 U	1 U	1		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U		ND		
HY-11i	01/17/86	Dupl	1 U	27 @	1 U	1		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U		27		
HY-11i	03/09/87	#2	10 U	9	1 U	1		1 U	1 U		1 U	1 U	8	1 U	1 U	1 U		17		
HY-11i	08/12/87		10 U	5 U	1 U	1		1 U	1 U	1 U	1 U	1	1 U	1 U	1 U	1 U		1	0.005 U	0.005 U
HY-11i	09/10/87		10 U	5 U	1 U	1		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		ND	0.005 U	0.005 U
HY-11i	10/08/87		10 U	5 U	1 U	1		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		ND	0.005 U	0.005 U
HY-11i	11/09/87		10 U	5 U	1 U	1		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		ND	0.005 U	0.005 U
HY-11i	03/23/88		10 U	5 U	1 U	1		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		ND	0.005 U	0.005 U
HY-11i	06/27/88		10 U	10	1 U	1		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		10	0.005 U	0.005 U
HY-11i	10/07/91		25 U	100 U	25 U	50	25 U	25 U	25 U	25 U	25 U	25 U	25 U	50 U	50 U	50 U	25 U	ND	0.005 U	0.01 U
HY-11i	01/07/92		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	ND	0.005 U	0.01 U
HY-11i	04/01/92		1 U	10 U	1 U	4	3	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	3	0.005 U	0.01 U
HY-11i	07/02/92		2	10 U	1 U	3	2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	4	0.005 U	0.01 U
HY-11i	10/08/92		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U					ND	0.005 U	0.01 U
HY-11i	01/08/93		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
HY-11i	04/01/93		0.5 U	3	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3	1 U	2	0.7	8.7	0.005 U	0.01 U
HY-11i	04/01/93	Dupl	0.5 U	4	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3	1 U	2	0.7	9.7	0.005 U	0.01 U
HY-11i	07/08/93		0.5 U	10	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	4	2	8	3.6	27.6	0.005 U	0.01 U
HY-11i	07/08/93	Dupl	0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	4	1	5	0.8	10.8	0.005 U	0.01 U
HY-11i	10/11/93		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1	1 U	3	0.5 U	4	0.005 U	0.01 U
HY-11i	01/14/94		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
HY-11i	04/11/94		1 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
HY-11i	04/11/94	Dupl	1 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
HY-11i	07/13/94		1 U	2	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1	1 U	1 U	0.5 U	3	0.005 U	0.01 U
HY-11i	11/08/94		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
HY-11i	01/17/95		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
HY-11i	04/25/95		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
HY-11i	07/12/95		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
HY-11i	07/12/95	Dupl	0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
HY-11i	12/05/95		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
HY-11i	03/26/96		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
HY-11i	05/30/96		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
HY-11i	09/10/96		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
HY-11i	12/05/96		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
HY-11i	03/05/97		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
HY-11i	06/16/97		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
HY-11i	09/19/97		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
HY-11i	12/10/97		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
HY-11i	03/11/98		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
HY-11i	06/11/98		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
HY-11i	09/24/98		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
HY-11i	04/23/99		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
HY-11i	10/05/99		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
HY-11i	04/17/00		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
HY-11i	10/10/00		0.5 U	1 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	ND	0.005 U	0.01 U
HY-11i	04/26/01		0.5 U	1 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	ND	0.005 U	0.01 U
HY-11i	10/26/01		0.5 U	1 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	ND	0.005 U	0.01 U
HY-11i	04/24/02		0.5 U	1 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5	0.5 U	1 U	0.5 U	0.5	0.01 U	0.01 U

Groundwater Chemistry Data
Well HY-11i
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloroethene µg/L	cis+trans	cis-1,2-Dichloroethene µg/L	1,1-Dichloroethene µg/L	1,1-Dichloroethane µg/L	1,2-Dichloroethane µg/L	1,1,1-Trichloroethane µg/L	Trichloroethene µg/L	Tetrachloroethene µg/L	Toluene µg/L	Ethylbenzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
HY-11i	10/16/02		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	ND	0.005 U	0.01 U
HY-11i	04/09/03		0.22 U	0.2 U	0.14 U	0.26	0.12 U	0.12 U	0.091 U	0.12 U	0.12 U	0.12 U	0.11 U	0.1 J	0.13 U	0.299 U	0.11 U	0.1	0.005 U	0.01 U
HY-11i	10/21/03		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.76 B	0.5 U	1 U	0.5 U	0.76	0.005 U	0.01 U
HY-11i	04/13/04		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2.7 B	0.5 U	1 U	0.5 U	2.7	0.005 U	0.01 U
HY-11i	10/04/04		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	130	0.5 U	1 U	0.5 U	130	0.005 U	0.01 U

Groundwater Chemistry Data
Well HY-11s
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloro-ethene µg/L	cis+trans	cis-1,2-Dichloro-ethene µg/L	1,1-Di-chloro-ethene µg/L	1,1-Di-chloro-ethane µg/L	1,2-Di-chloro-ethane µg/L	1,1,1-Tri-chloro-ethane µg/L	Tri-chloro-ethene µg/L	Tetra-chloro-ethene µg/L	Toluene µg/L	Ethyl-benzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
HY-11s	09/11/84		1 U	5 U	1 U	1		1 U	3									3		
HY-11s	12/08/84		1 U	5 U	2.2	2.2		1 U	1.4		1 U	1 U	1 U	1 U	1 U	1 U		3.6		
HY-11s	02/04/85		1 U	5 U	1 U	1		2.8	1 U		1 U	20	1 U	1 U	1 U	1 U		22.8		
HY-11s	04/05/85		1 U	5 U	1 U	1		1 U	1 U		1 U	1 U	1 U					ND		
HY-11s	01/20/86		1 U	10 U	1 U	1		1 U	1 U		1 U	2	1 U	1 U	1 U	1 U		2		
HY-11s	08/11/86		10 U	1 U	1 U	1		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U		ND		
HY-11s	03/09/87		10 U	4	1 U	1		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U		4		
HY-11s	08/12/87		10 U	5 U	1 U	1		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		ND	0.005 U	0.005 U
HY-11s	09/10/87		10 U	5 U	1 U	1		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		ND	0.005 U	0.005 U
HY-11s	10/08/87		10 U	5 U	1 U	1		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		ND	0.005 U	0.005 U
HY-11s	11/09/87		10 U	5 U	1 U	1		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		ND	0.005 U	0.005 U
HY-11s	03/23/88		10 U	5 U	1 U	1		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		ND	0.005 U	0.005 U
HY-11s	06/27/88		10 U	7	1 U	1		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		7	0.005 U	0.005 U
HY-11s	10/07/91		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
HY-11s	01/07/92		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
HY-11s	04/01/92		1 U	10 U	1 U	2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	ND	0.005 U	0.01 U
HY-11s	06/30/92		1 U	10 U	1 U	2	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	ND	0.005	0.01 U
HY-11s	10/08/92		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U					ND	0.006	0.01 U
HY-11s	01/08/93		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.006	0.01 U
HY-11s	04/01/93		0.5 U	6	0.5 U	1	0.5 U	0.5 U	0.6	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	6.6	0.011	0.01 U
HY-11s	07/08/93		0.5 U	9	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	9	0.005 U	0.01 U
HY-11s	10/11/93		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.014	0.01 U
HY-11s	10/11/93	Dupl	0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	1.1	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	1.1	0.014	0.01 U
HY-11s	01/14/94		0.5 U	2 U	0.5 U	1.3	0.8	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	0.8	0.026	0.01 U
HY-11s	04/11/94		1 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.037	0.01 U
HY-11s	07/13/94		1 U	6	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	6	0.016	0.01 U
HY-11s	07/13/94	Dupl	1 U	9	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	1 U	0.5 U	9	0.024	0.01 U
HY-11s	11/08/94		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.9	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	0.9	0.022	0.01 U
HY-11s	11/08/94	Dupl	0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.8	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	0.8	0.034	0.01 U
HY-11s	01/19/95		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.6	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	0.6	0.008	0.01 U
HY-11s	01/19/95	Dupl	0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.6	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	0.6	0.013	0.01 U
HY-11s	04/25/95		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	0.5	0.018	0.01 U
HY-11s	07/12/95		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.7	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	0.7	0.009	0.01 U
HY-11s	12/05/95		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.7	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	0.7	0.034	0.01 U
HY-11s	03/26/96		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.009	0.01 U
HY-11s	05/30/96		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.012	0.01 U
HY-11s	09/10/96		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.01	0.01 U
HY-11s	12/05/96		5 U	20 U	5 U	10	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U	10 U	5 U	ND	0.007	0.01 U
HY-11s	03/05/97		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.013	0.01 U
HY-11s	06/16/97		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.006	0.01 U
HY-11s	09/19/97		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	0.5	0.005 U	0.01 U
HY-11s	12/10/97		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.014	0.01 U
HY-11s	03/11/98		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.01	0.01 U
HY-11s	06/11/98		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.014	0.01 U
HY-11s	09/24/98		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.018	0.01 U
HY-11s	04/23/99		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.007	0.01 U
HY-11s	10/05/99		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.7	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	0.7	0.011	0.01 U
HY-11s	04/17/00		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.006	0.02

Groundwater Chemistry Data
Well HY-11s
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloro-ethene µg/L	cis+trans	cis-1,2-Dichloro-ethene µg/L	1,1-Di-chloro-ethene µg/L	1,1-Di-chloro-ethane µg/L	1,2-Di-chloro-ethane µg/L	1,1,1-Tri-chloro-ethane µg/L	Tri-chloro-ethene µg/L	Tetra-chloro-ethene µg/L	Toluene µg/L	Ethyl-benzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
HY-11s	10/10/00		0.5 U	1 U	0.5 U	1	0.5 U	0.5 U	0.76	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.76	0.009	0.01 U
HY-11s	04/26/01		0.5 U	1 U	0.5 U	1	0.5 U	0.5 U	0.74	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.74	0.0125	0.01 U
HY-11s	10/26/01		0.5 U	1 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	ND	0.0106	0.01 U
HY-11s	04/27/02		0.5 U	1 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	ND	0.01 U	0.01 U
HY-11s	10/16/02		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	1.2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	1.2	0.0146	0.01 U
HY-11s	04/09/03		0.22 U	0.2 U	0.14 U	0.26	0.12 U	0.12 U	0.12 J	0.12 U	0.12 U	0.12 U	0.11 J	0.098 U	0.13 U	0.299 U	0.11 U	0.23	0.005 U	0.01 U
HY-11s	10/21/03		0.5 U	0.5 U	0.5 U	1	0.5 U	0.5 U	2.7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	2.7	0.0118	0.01 U
HY-11s	04/13/04		0.5 U	0.5 U	0.5 U	1	0.5 U	0.5 U	0.5 J	0.5 U	0.5 U	0.5 U	0.5 J	0.5 U	0.5 U	1 U	0.5 U	1	0.005 U	0.01 U
HY-11s	10/04/04		0.5 U	0.5 U	0.5 U	1	0.5 U	0.5 U	0.64	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.64	0.0139	0.01 U

Groundwater Chemistry Data
Well HYCP-1d
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloro-ethene µg/L	cis+trans	cis-1,2-Dichloro-ethene µg/L	1,1-Di-chloro-ethene µg/L	1,1-Di-chloro-ethane µg/L	1,2-Di-chloro-ethane µg/L	1,1,1-Tri-chloro-ethane µg/L	Tri-chloro-ethene µg/L	Tetra-chloro-ethene µg/L	Toluene µg/L	Ethyl-benzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
HYCP-1d	12/08/84		1 U	5 U	115	115		1 U	1 U		1 U	21	1 U	1.1	1 U	1 U		137.1		
HYCP-1d	06/07/85		10 U	10 U	10 U	10		10 U	10 U		10 U	10 U	10 U	1 U	1 U	1 U		ND		
HYCP-1d	01/14/86		1 U	13	1 U	1		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U		13		
HYCP-1d	07/03/86		10 U	400	5 U	5		5 U	5 U		25	2 U	5	1 U	1 U	1 U		430		
HYCP-1d	09/30/86		20 U	1 U	1 U	1		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U		ND		
HYCP-1d	01/22/87		13	5 U	5	5		1 U	1 U		1 U	140	15	14	2	19		208		
HYCP-1d	03/11/87		10 U	10 U	1 U	1		1 U	1 U		1 U	2	1 U	1 U	1 U	1 U		2		
HYCP-1d	08/12/87		10 U	5 U	1 U	1		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		ND	0.005 U	0.005 U
HYCP-1d	09/14/87		10.2 U	5 U	1 U	1		1 U	1 U	1 U	1 U	3	1 U	2	1 U	1		6	0.005 U	0.005 U
HYCP-1d	10/08/87		10 U	5 U	1 U	1		1 U	1 U	1 U	1 U	1 U	1 U	8	2	10		20	0.005 U	0.005 U
HYCP-1d	11/10/87		10 U	5 U	1 U	1		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		ND	0.005 U	0.005 U
HYCP-1d	03/23/88		10 U	5 U	1 U	4	3	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		3	0.005 U	0.005 U
HYCP-1d	06/30/88		10 U	5 U	1 U	1		1 U	1 U	1 U	1 U	10	1 U	1 U	1 U	1 U		10	0.005 U	0.005 U
HYCP-1d	10/07/91		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
HYCP-1d	01/08/92		0.5 U	2 U	0.5 U	4.7	4.2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	4.2	0.005 U	0.01 U
HYCP-1d	04/01/92		2	10 U	1 U	5	4	1 U	1 U	1 U	1 U	1 U	1 U	4	1 U	2	1 U	12	0.005 U	0.01 U
HYCP-1d	07/01/92		5	10 U	1 U	11	10	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	15	0.005 U	0.01 U
HYCP-1d	10/08/92		1	2 U	0.5 U	10.5	10	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U					11	0.005 U	0.01 U
HYCP-1d	01/08/93		0.5 U	2 U	0.5 U	4.7	4.2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	4.2	0.005 U	0.01 U
HYCP-1d	04/01/93		1.8	3	0.5 U	7.1	6.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	11.4	0.005 U	0.01 U
HYCP-1d	07/06/93		0.5 U	5 U	0.5 U	2.6	2.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	2.1	0.005 U	0.01 U
HYCP-1d	10/12/93		0.5 U	5 U	0.5 U	4.5	4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1	1 U	2	0.5 U	7.0	0.005 U	0.01 U
HYCP-1d	01/12/94		1.9	2 U	0.5 U	7.6	7.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	9.0	0.005 U	0.01 U
HYCP-1d	04/12/94		1 U	2 U	0.5 U	3.6	3.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	3.1	0.005 U	0.01 U
HYCP-1d	07/11/94		42	2 U	0.5 U	48.8	48.3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1	1 U	1 U	0.5 U	91.3	0.005 U	0.01 U
HYCP-1d	11/07/94		5.2	2 U	0.5 U	2.2	1.7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	6.9	0.005 U	0.01 U
HYCP-1d	01/17/95		9.7	2 U	0.5 U	3.3	2.8	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	12.5	0.005 U	0.01 U
HYCP-1d	04/25/95		13	2 U	0.5 U	4.7	4.2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	17.2	0.005 U	0.01 U
HYCP-1d	07/11/95		7.7	2 U	0.5 U	2.5	2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	9.7	0.005	0.01 U
HYCP-1d	12/06/95		0.6	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1	0.5 U	1.6	0.005 U	0.01 U
HYCP-1d	03/28/96		3.6	2 U	0.5 U	1.6	1.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	4.7	0.005 U	0.01 U
HYCP-1d	05/29/96		2.8	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	2.8	0.005 U	0.01 U
HYCP-1d	09/10/96		2.5	2 U	0.5 U	1.2	0.7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	3.2	0.005 U	0.01 U
HYCP-1d	12/05/96		5.9	2 U	0.5 U	1.5	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	6.9	0.005	0.01 U
HYCP-1d	03/05/97		0.7	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	0.7	0.005	0.01 U
HYCP-1d	06/17/97		9.4	2 U	0.5 U	2	1.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2	1 U	2	0.5 U	14.9	0.005 U	0.01 U
HYCP-1d	09/17/97		7	5 U	0.5 U	1.3	0.8	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	7.8	0.005 U	0.01 U
HYCP-1d	12/10/97		1.2	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	1.2	0.005 U	0.01 U
HYCP-1d	03/09/98		19	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	19	0.005 U	0.01 U
HYCP-1d	06/10/98		32	5 U	0.5 U	1.5	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	33	0.005 U	0.01 U
HYCP-1d	09/20/98		31	5 U	0.5 U	1.1	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	31.6	0.005 U	0.01 U
HYCP-1d	04/23/99		8	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	8	0.005 U	0.01 U
HYCP-1d	04/23/99	Dupl	7.8	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	7.8	0.005 U	0.01 U
HYCP-1d	10/05/99		37	5 U	0.5 U	1.4	0.9	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	37.9	0.005 U	0.01 U
HYCP-1d	04/17/00		52	5 U	0.5 U	1.5	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	53	0.006	0.01 U
HYCP-1d	10/10/00		80	1 U	0.5 U	2.4	1.9	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1	0.5 U	1 U	0.5 U	82.9	0.005	0.01 U
HYCP-1d	04/26/01		21	1 U	0.5 U	3.1	2.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1	0.5 U	1 U	0.5 U	24.6	0.01 U	0.01 U
HYCP-1d	10/24/01		47	1 U	0.5 U	2.8	2.3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1	0.5 U	1 U	0.5 U	50.3	0.01 U	0.01 U
HYCP-1d	04/24/02		74	1 U	0.5 U	4.6	4.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1	0.5 U	1 U	0.5 U	79.1	0.01 U	0.01 U
HYCP-1d	10/18/02		55	2 U	0.5 U	6.8	6.3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	61.3	0.01 U	0.01 U
HYCP-1d	04/15/03		65	2 U	0.5 U	11.5	11	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	76	0.0105	0.01 U

Groundwater Chemistry Data
Well HYCP-1d
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L		Methylene Chloride µg/L		trans-1,2-Dichloro-ethene µg/L		cis+trans	cis-1,2-Dichloro-ethene µg/L	1,1-Di-chloro-ethene µg/L		1,1-Di-chloro-ethane µg/L		1,2-Di-chloro-ethane µg/L		1,1,1-Tri-chloro-ethane µg/L		Tri-chloro-ethene µg/L		Tetra-chloro-ethene µg/L		Toluene µg/L		Ethyl-benzene µg/L		total Xylenes µg/L		Benzene µg/L		total VOCs µg/L	dissolved Arsenic mg/L		total Cyanide mg/L	
HYCP-1d	10/21/03		76		2	U	0.5	U	10.1	9.6	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	1	U	0.5	U	85.6	0.005	U	0.01	U

Grounwater Chemistry Data
Well HYCP-1i
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloro-ethene µg/L	cis+trans	cis-1,2-Dichloro-ethene µg/L	1,1-Di-chloro-ethene µg/L	1,1-Di-chloro-ethane µg/L	1,2-Di-chloro-ethane µg/L	1,1,1-Tri-chloro-ethane µg/L	Tri-chloro-ethene µg/L	Tetra-chloro-ethene µg/L	Toluene µg/L	Ethyl-benzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
HYCP-1i	12/08/84		590	5 U	8100	8100		26	8		1 U	2800	1 U	3.4	1 U	1.3 U		11,527		
HYCP-1i	06/07/85		450	10 U	2300	2300		16	10 U		250	10 U	10 U	1.4	1 U	1 U		3,017		
HYCP-1i	01/13/86		700	10 U	3200	3200		17	5		2	80	1 U	1 U	1 U	1 U		4,004		
HYCP-1i	07/03/86		240	120	9	9		9	7		11	65	5 U	1 U	1 U	1 U		461		
HYCP-1i	09/30/86		4000	1 U	30	30		40	5		1 U	440	1 U	2	1 U	1 U		4,517		
HYCP-1i	01/22/87		7900	5 U	100	100		77	7		1 U	1200	1 U	3	1 U	1 U		9,287		
HYCP-1i	03/09/87		2400	10 U	200	200		83	13		1 U	5600	1 U	10	1 U	2		8,308		
HYCP-1i	08/12/87		1700	500 U	100 U	100		100 U	100 U	100 U	100 U	460	100 U	100 U	100 U	100 U		2,160	0.005 U	0.005 U
HYCP-1i	09/14/87		1300	5 U	74	74		58	13	1 U	1 U	81	1 U	4	1 U	1		1,531	0.005 U	0.005 U
HYCP-1i	10/08/87		2100	5 U	31	31		25	9	1 U	1 U	24	1 U	12	1	9		2,211	0.005 U	0.005 U
HYCP-1i	11/10/87		3200	5 U	42	42		32	8	1 U	1 U	34	1 U	3	1 U	1 U		3,319	0.005 U	0.005 U
HYCP-1i	03/23/88		390	50 U	80	17080	17000	58	8	1 U	1 U	260	5	5	1 U	3		17,809	0.005 U	0.005 U
HYCP-1i	06/30/88		10060 U	8000	1000 U	1000		1000 U	1000 U	1000 U	1000 U	1070 U	1000 U	1000 U	1000 U	1000 U		8,000	0.005 U	0.015
HYCP-1i	01/09/90		14800	1 U	304	33904	33600	230	134	21	1 U	14600	1.8	28	1.7	5.3	15	63,741	0.005 U	0.01 U
HYCP-1i	10/07/91		9300	2000 U	500 U	57500	57000	500 U	500 U	500 U	500 U	11000	500 U	1000 U	1000 U	1000 U	500 U	77,300	0.005 U	0.01 U
HYCP-1i	10/07/91	Dupl	9200	100 U	360	54360	54000	240	110	25 U	25 U	10000	25 U	50 U	50 U	50 U	25 U	73,910	0.005 U	0.01
HYCP-1i	01/08/92		1600	1000 U	250 U	39250	39000	250 U	250 U	250 U	250 U	3200	250 U	500 U	500 U	500 U	250 U	43,800	0.005 U	0.01 U
HYCP-1i	04/01/92		5900	10 U	160	39160	39000	97	82	2	1 U	4300	1 U	27	1 U	2	1 U	49,570	0.005 U	0.01 U
HYCP-1i	07/01/92	#1	16000	10 U	320	55320	55000	200	140	3	1 U	9200	1	46	1	4	1	80,916	0.005 U	0.01 U
HYCP-1i	10/08/92		8000	200 U	50 U	22050	22000	50 U	50 U	50 U	50 U	50 U	50 U					30,000	0.005 U	0.01 U
HYCP-1i	01/08/93		3300	2000 U	500 U	36500	36000	500 U	500 U	500 U	500 U	500 U	500 U	1000 U	1000 U	1000 U	500 U	39,300	0.005 U	0.01 U
HYCP-1i	04/01/93		2400	1000 U	250 U	11250	11000	250 U	250 U	250 U	250 U	540	250 U	500 U	500 U	500 U	250 U	13,940	0.005 U	0.01 U
HYCP-1i	07/06/93		1800	50 U	30	5930	5900	20	51	5 U	5 U	110	5 U	10 U	10 U	10 U	5 U	7,911	0.005 U	0.01 U
HYCP-1i	10/12/93		1600	20 U	34	4934	4900	37	30	5 U	5 U	220	5 U	10 U	10 U	10 U	0.5 U	6,821	0.005 U	0.01 U
HYCP-1i	01/12/94		2100	20 U	39	6939	6900	37	76	5 U	5 U	170	5 U	10	10 U	10 U	0.5 U	9,332	0.005 U	0.01 U
HYCP-1i	01/12/94	Dupl	2000	20 U	40	6840	6800	36	77	5 U	5 U	170	5 U	10	10 U	10 U	0.5 U	9,133	0.005 U	0.01 U
HYCP-1i	04/12/94		4000	2 U	334	17334	17000	83.2	85.6	0.9	0.5 U	410	0.5 U	37	1	4	0.5 U	21,956	0.005 U	0.01 U
HYCP-1i	07/11/94		400	2 U	78.7	2378.7	2300	6.7	4.5	0.5 U	0.5 U	296	0.5 U	2	1 U	1	0.5 U	3,089	0.005 U	0.01 U
HYCP-1i	11/07/94		970	10 U	77	4477	4400	26	48	2.5 U	2.5 U	310	2.5 U	6	5 U	5 U	2.5 U	5,837	0.005 U	0.01 U
HYCP-1i	01/17/95		1800	100 U	42	5642	5600	35	79	25 U	25 U	90	25 U	50 U	50 U	50 U	25 U	7,646	0.005 U	0.01 U
HYCP-1i	04/25/95		1200	100 U	42	3842	3800	25 U	68	25 U	25 U	25 U	25 U	50 U	50 U	50 U	25 U	5,110	0.005 U	0.01 U
HYCP-1i	07/11/95		400	100 U	54	1554	1500	25 U	25 U	25 U	25 U	25 U	25 U	50 U	50 U	50 U	25 U	1,954	0.005 U	0.01 U
HYCP-1i	12/06/95		980	100 U	25 U	2025	2000	25 U	41	25 U	25 U	40	25 U	50 U	50 U	50 U	25 U	3,061	0.005 U	0.01 U
HYCP-1i	03/28/96		990	10 U	12	1012	1000	5.2	29	2.5 U	2.5 U	2.5 U	2.5 U	5 U	5 U	5 U	2.5 U	2,036	0.005 U	0.01 U
HYCP-1i	05/29/96		790	2 U	10	690	680	4.9	26	0.5 U	0.5 U	1.6	0.5 U	1 U	1 U	2	0.5 U	1,515	0.005 U	0.01 U
HYCP-1i	09/10/96		900	20 U	9	519	510	5 U	20	5 U	5 U	5 U	5 U	10 U	10 U	10 U	5 U	1,439	0.005 U	0.01 U
HYCP-1i	12/05/96		590	2 U	7.5	487.5	480	2.2	17	0.5 U	0.5 U	2.8	0.5 U	1 U	1 U	1	0.5 U	1,101	0.005 U	0.01 U
HYCP-1i	03/05/97		630	20 U	9	379	370	5 U	25	5 U	5 U	5 U	5 U	10 U	10 U	10 U	5 U	1,034	0.005 U	0.01 U
HYCP-1i	06/17/97		600	20 U	5	245	240	5 U	15	5 U	5 U	5 U	5 U	2	1 U	2	0.5 U	864	0.005 U	0.01 U
HYCP-1i	09/17/97		220	50 U	18	358	340	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U	10 U	5 U	578	0.005 U	0.01 U
HYCP-1i	12/10/97		280	50 U	5 U	185	180	5 U	10	5 U	5 U	5 U	5 U	10 U	10 U	10 U	5 U	470	0.005 U	0.01 U
HYCP-1i	03/09/98		0.5 U	5 U	14	494	480	2.2	16	0.5 U	0.5 U	0.7	0.5 U	1 U	1 U	1	0.5 U	512.9	0.005 U	0.01 U
HYCP-1i	06/10/98		260	50 U	24	844	820	5 U	5 U	5 U	5 U	7.7	5 U	10 U	10 U	10 U	5 U	1,111.7	0.005 U	0.02
HYCP-1i	09/20/98		590	50 U	98	2798	2700	8.5	5 U	5 U	5 U	92	5 U	10 U	10 U	10 U	5 U	3,488.5	0.005 U	0.01 U
HYCP-1i	04/23/99		650	5 U	8.1	388.1	380	1.4	15	0.5 U	0.5 U	1.2	0.5 U	1 U	1 U	1	0.5 U	1,056.7	0.005 U	0.01 U
HYCP-1i	10/05/99		600	12 U	61	1661	1600	1 U	2	1 U	1 U	2	1 U	2 U	2 U	2 U	1 U	2,270.0	0.005 U	0.01 U
HYCP-1i	04/17/00		560	5 U	72	1672	1600	6	2	0.5 U	0.5 U	35	0.5 U	1 U	1 U	1 U	0.5 U	2,275.0	0.005 U	0.01 U
HYCP-1i	10/10/00		1300	1 U	180	4680	4500	14	1.6	0.5 U	0.5 U	74	0.5 U	1.7	0.5 U	0.5 U	0.5 U	6,071.3	0.005 U	0.01 U
HYCP-1i	04/26/01		860	6	78	2578	2500	10	11	2.5 U	2.5 U	270	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	4,005.0	0.005 U	0.01 U
HYCP-1i	10/24/01		1000	27	190	6290	6100	22	13 U	13 U	13 U	21	13 U	13 U	13 U	13 U	13 U	7,360.0	0.005 U	0.01 U
HYCP-1i	04/24/02		1000	40 U	150	5150	5000	10 U	10 U	10 U	10 U	160	10 U	10 U	10 U	10 U	10 U	6,310.0	0.01 U	0.01 U

Grounwater Chemistry Data
Well HYCP-1i
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloroethene µg/L	cis+trans	cis-1,2-Dichloroethene µg/L	1,1-Dichloroethene µg/L	1,1-Dichloroethane µg/L	1,2-Dichloroethane µg/L	1,1,1-Trichloroethane µg/L	Trichloroethene µg/L	Tetrachloroethene µg/L	Toluene µg/L	Ethylbenzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
HYCP-1i	10/18/02		580	10 U	37	1337	1300	6.3	5	2.5 U	2.5 U	2.7	2.5 U	2.5 U	2.5 U	5 U	2.5 U	1,931.0	0.005 U	0.01 U
HYCP-1i	04/10/03		590	2 U	63	2263	2200	11	3.7 J	1.2 U	1.2 U	30	1.1 U	0.98 U	1.3 U	2.99 U	1.1 U	2,897.7	0.005 U	0.01 U
HYCP-1i	10/21/03		920	10 U	56	1756	1700	5.8	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	5 U	2.5 U	2,681.8	0.005 U	0.01 U
HYCP-1i	04/13/04		350	4 U	16	576	560	1.6	2.3	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	929.9	0.005 U	0.01 U
HYCP-1i	10/05/04		220	2 U	8.3	258.3	250	0.9	1.8	0.5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	482.0	0.005 U	0.01 U

Groundwater Chemistry Data
Well HYCP-1s
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloro-ethene µg/L	cis+trans	cis-1,2-Dichloro-ethene µg/L	1,1-Di-chloro-ethene µg/L	1,1-Di-chloro-ethane µg/L	1,2-Di-chloro-ethane µg/L	1,1,1-Tri-chloro-ethane µg/L	Tri-chloro-ethene µg/L	Tetra-chloro-ethene µg/L	Toluene µg/L	Ethyl-benzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
HYCP-1s	12/08/84		5400	2700	24000	24000		10 U	400		10 U	53000	3400	450	60	360		89770		
HYCP-1s	05/07/85		2570	12.7	43.5	43.5		1 U	106		5.6	1600	1 U	7.1	1 U	2.4 U		4344.9		
HYCP-1s	06/07/85		2420	140	2025	2025		11	80		16	10 U	10 U	5.7	2	3.2		4702.9		
HYCP-1s	01/13/86		5600	10 U	16000	16000		60	420		7	40	1 U	31	1 U	1		22159		
HYCP-1s	07/03/86		10500	6000	100	100		190	125		350	350	30	20	1	2		17668		
HYCP-1s	07/03/86		2600	5300	250	250		170	120		160	370	50 U	20	10 U	10 U		8990		
HYCP-1s	09/30/86		15900	1 U	56	56		49	95		126	85	1 U	1 U	1 U	2		16313		
HYCP-1s	01/22/87		62000	5 U	360	360		300	140		13	5500	1 U	39	2	9	7	68370		
HYCP-1s	03/11/87		16000	10 U	160	160		150	120		100 U	1200	100 U	13	100 U	1		17644		
HYCP-1s	08/12/87		1400	5 U	180	180		270	43	1 U	1 U	150	1 U	8	1 U	1 U		2051	0.006	0.005 U
HYCP-1s	09/11/87		2800	5 U	150	150		140	48	1 U	1 U	21	1 U	1 U	1 U	1 U		3159	0.005 U	0.005 U
HYCP-1s	10/08/87		5700	5 U	71	71		45	110	1 U	1 U	3	1 U	11	1	6		5947	0.005	0.005
HYCP-1s	11/10/87		6100	6	56	56		46	65	1 U	1 U	2	1 U	6	1 U	1 U		6281	0.007	0.005 U
HYCP-1s	03/23/88		5300	200 U	40 U	1740	1700	40 U	94	40 U	40 U	40 U	40 U	46	40 U	40 U		7140	0.009	0.014
HYCP-1s	06/30/88		10000 U	7800	1000 U	1000		1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U		7800	0.007	0.013
HYCP-1s	abandoned																			

Groundwater Chemistry Data
Well HYCP-2
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloroethene µg/L	cis+trans	cis-1,2-Dichloroethene µg/L	1,1-Dichloroethene µg/L	1,1-Dichloroethane µg/L	1,2-Dichloroethane µg/L	1,1,1-Trichloroethane µg/L	Trichloroethene µg/L	Tetrachloroethene µg/L	Toluene µg/L	Ethylbenzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
HYCP-2	12/08/84		40000	5 U	210000	210000		600	1 U		380	5	1 U	120	8	33		251,146		
HYCP-2	05/07/85		26600	1 U	440	440		7.3	500		232	15.1	1 U	135	15	39		27,983		
HYCP-2	06/07/85		850	18	6900	6900		400	10 U		11	720	10 U	125	12	29		9,065		
HYCP-2	01/14/86		26000	23	18000	18000		60	270		130	10 U	1 U	46	2	7	3	44,541		
HYCP-2	07/03/86		41000	6400	180	180		54	160		200	2 U	25	13	1 U	2		48,034		
HYCP-2	09/30/86		173000	1 U	200	200		100 U	700		100	100 U	100 U	200	100 U	100 U		174,200		
HYCP-2	01/22/87		102000	50 U	120	120		310	280		89	10 U	10 U	19	10 U	10 U		102,818		
HYCP-2	01/22/87		111000	50 U	130	130		290	300		92	10 U	10 U	17	10 U	10 U		111,829		
HYCP-2	03/11/87		80000	10 U	140	140		21	220		44	2	1 U	1 U	1 U	1 U		80,427		
HYCP-2	09/11/87		480	5 U	120	120		10 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		600	0.005 U	0.005 U
HYCP-2	09/11/87	Split	710	9 J	480	480		45 U	20 U	23 U	16 U	14 U	12 U	5 M	21 U	24 U	17 U	1,204		
HYCP-2	10/08/87		1100	5 U	6	6		1 U	4	1 U	1 U	2	1 U	1 U	1 U	1		1,113	0.005 U	0.005 U
HYCP-2	11/10/87		4100	7	12	12		8	9	1 U	1 U	2	1 U	1 U	1 U	1 U		4,138	0.005 U	0.005 U
HYCP-2	03/23/88		9100	500 U	100 U	390	290	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U		9,390	0.005 U	0.026
HYCP-2	06/29/88		1000 U	630	230	230		800	1900	100 U	100 U	100 U	100 U	100 U	100 U	100 U		3,560	0.005 U	0.025
HYCP-2	06/29/88	Dupl	25000	5700	1000 U	1000		1000 U	1400	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U	1000 U		32,100	0.005 U	0.04
HYCP-2	03/17/89		9080	1 U	156	156		107	489	1 U	1 U	1 U	1 U	113	6.4	24		9,975	0.005	0.03
HYCP-2	06/26/89		29100		262	262		214	2240	42	118	40	2 U	82	1 U	2 U	4.8	32,103	0.005 U	0.01
HYCP-2	10/05/89		39300	2.4	194	194		121	2490	31	40	4.7	1 U	103	3.6	13	3.4	42,306	0.005	0.05
HYCP-2	10/05/89	Dupl	43100	1.9	189	189		120	2860	33	39	4	1 U	102	3.4	12	3.3	46,468	0.006	0.05
HYCP-2	01/09/90		30200	2	106	9836	9730	102	1820	32	23	12	1 U	76	4.8	19	14	42,141	0.005 U	0.01
HYCP-2	04/03/90		14500	2 U	74.7	5594.7	5520	27	701	12.6	0.5 U	4.6	4.6	44.6	1 U	2 U	4.8	20,894	0.007	0.1
HYCP-2	06/26/90		14100	2 U	86.8	3696.8	3610	28.2	620	18.2	1.1	8	0.5 U	82	5.3	19.8	6.6	18,586	0.006	0.01
HYCP-2	01/07/91		7800	100 U	75	3975	3900	25 U	470	25 U	25 U	25 U	25 U	50 U	50 U	50 U	25 U	12,245	0.012	0.01 U
HYCP-2	01/07/91	Dupl	5200	100 U	25 U	2625	2600	25 U	500	25 U	25 U	25 U	25 U	50 U	50 U	50 U	25 U	8,300	0.012	0.01 U
HYCP-2	04/02/91		4700	200 U	50 U	4050	4000	50 U	50 U	50 U	50 U	50 U	50 U	100 U	100 U	100 U	50 U	8,700	0.011	0.02
HYCP-2	07/03/91		6100	200 U	50 U	3850	3800	50 U	250	50 U	120	50 U	50 U	100 U	100 U	100 U	50 U	10,270	0.006	0.02
HYCP-2	10/11/91		7400	100 U	25 U	4925	4900	25 U	260	25 U	25 U	25 U	25 U	50 U	50 U	50 U	25 U	12,560	0.007	0.01
HYCP-2	01/08/92		6000	200 U	50 U	3450	3400	50 U	50 U	50 U	50 U	50 U	50 U	100 U	100 U	100 U	50 U	9,400	0.008	
HYCP-2	04/01/92		6300	500 U	50 U	4350	4300	50 U	340	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	10,940	0.009	0.01 U
HYCP-2	06/30/92		5400	1000 U	100 U	1800	1700	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	7100	0.009	0.01
HYCP-2	10/08/92		5600	100 U	25 U	5725	5700	25 U	150	25 U	25 U	25 U	25 U					11450	0.005 U	0.01 U
HYCP-2	10/08/92	Dupl	5200	20 U	18	5218	5200	5 U	210	5 U	5 U	5 U	5 U					10628	0.005 U	0.01 U
HYCP-2	01/11/93		1300	25 U	25 U	805	780	25 U	120	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	2,200	0.01	0.01
HYCP-2	01/11/93	Dupl	1400	50 U	50 U	630	580	50 U	98	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	2,078	0.011	0.01
HYCP-2	04/01/93		530	50 U	12 U	192	180	12 U	42	12 U	12 U	12 U	12 U	25 U	25 U	25 U	12 U	752	0.012	0.01 U
HYCP-2	07/06/93		170	9	1.3	26.3	25	0.5 U	30	0.5 U	0.5 U	0.5 U	0.5 U	2	2	1 U	0.7	240	0.018	0.01 U
HYCP-2	10/12/93		690	20 U	5 U	245	240	5 U	44	5 U	5 U	71	5 U	10 U	10 U	10 U	0.5 U	1,045	0.019	0.01 U
HYCP-2	01/13/94		1500	5 U	5 U	825	820	5 U	110	5 U	5 U	510	5 U	9	5 U	5 U	5 U	2,949	0.018	0.01 U
HYCP-2	04/13/94		100	2 U	0.7	44.6	43.9	1.9	36.2	0.5 U	0.5 U	19.3	0.5 U	1 U	1 U	1 U	0.5 U	202.00	0.018	0.01 U
HYCP-2	07/11/94		335	2 U	1.4	311.4	310	6.6	71.6	0.5 U	0.5 U	58	0.5 U	3	1 U	2	0.5 U	787.60	0.017	0.01 U
HYCP-2	11/07/94		67	2 U	0.5 U	6	5.5	0.5 U	19	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	91.50	0.017	0.01 U
HYCP-2	01/17/95		180	1 U	0.6	30.6	30	0.5	18	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	229.10	0.015	0.01 U
HYCP-2	04/26/95		24	2 U	0.5 U	14.5	14	0.5 U	3.2	0.5 U	0.5 U	1.2	0.5 U	1 U	1 U	1 U	0.5 U	42.40	0.017	0.01 U
HYCP-2	07/11/95		630	2 U	6.1	586.1	580	3.3	30	0.5 U	0.5 U	0.9	0.5 U	1 U	1 U	1 U	0.5 U	1250.30	0.014	0.01 U
HYCP-2	12/06/95		5 U	20 U	5 U	10	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U	10 U	5 U	ND	0.02	0.01 U
HYCP-2	03/28/96		29	2	0.5 U	1.3	0.8	0.5 U	4	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	35.80	0.016	0.01 U
HYCP-2	05/29/96		5 U	20 U	5 U	10	5 U	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U	10 U	5 U	ND	0.021	0.01 U
HYCP-2	09/10/96		27	2 U	0.5 U	4.6	4.1	0.5 U	6.3	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	37.4	0.017	0.01 U
HYCP-2	12/12/96		84	3	0.5	76.5	76	0.5 U	9.6	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	173.1	0.022	0.01 U
HYCP-2	03/04/97		13	1 U	0.5 U	1	0.5 U	0.5 U	3.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	16.1	0.021	0.01 U
HYCP-2	06/17/97		13	2 U	0.5 U	6.8	6.3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	19.3	0.016	0.02 U
HYCP-2	09/17/97		10	5 U	0.5 U	4.7	4.2	0.5 U	2.7	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	16.90	0.022	0.01 U
HYCP-2	12/11/97		1	5 U	0.5 U	1	0.5 U	0.5 U	1.5	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	2.5	0.022	0.01 U
HYCP-2	03/10/98		1.6	1 U	0.5 U	1	0.5 U	0.5 U	2.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	3.7	0.021	0.01 U

Groundwater Chemistry Data
Well HYCP-2
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloroethene µg/L	cis+trans	cis-1,2-Dichloroethene µg/L	1,1-Dichloroethene µg/L	1,1-Dichloroethane µg/L	1,2-Dichloroethane µg/L	1,1,1-Trichloroethane µg/L	Trichloroethene µg/L	Tetrachloroethene µg/L	Toluene µg/L	Ethylbenzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
HYCP-2	06/10/98		7.4	5 U	0.5 U	2.3	1.8	0.5 U	10	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	19.2	0.019	0.01 U
HYCP-2	09/20/98		2.8	5 U	0.5 U	1	0.5	0.5 U	2.4	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	5.7	0.016	0.01 U
HYCP-2	04/22/99		42 J	1 U	0.5 U	33.5	33	0.5 U	7.9	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	82.9	0.014	0.01 U
HYCP-2	10/05/99		74	1 U	1	63	62 J	0.6	6.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	144.2	0.027	0.01 U
HYCP-2	10/05/99	Dupl	55	1 U	0.7	73.7	73	0.5 U	5.7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	134.4	0.028	0.01 U
HYCP-2	04/17/00		8	5 U	0.5 U	23.5	23	0.5 U	2	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	33.0	0.024	0.01 U
HYCP-2	04/17/00	Dupl	290 J	1 U	2	722	720 J	2	10 J	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	1024.0	0.024	0.01 U
HYCP-2	10/10/00		220	1 U	2.5	242.5	240	1.3	11	0.5 U	0.5 U	0.5 U	0.5 U	0.78	0.5 U	1 U	0.5 U	475.6	0.02	0.01 U
HYCP-2	04/26/01		0.84	1 U	0.5 U	5.5	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	0.8	0.027	0.01 U
HYCP-2	10/24/01		1.4	1 U	0.5 U	5.5	5 U	0.5 U	0.84	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	2.2	0.023	0.01 U
HYCP-2	04/25/02		14	1 U	0.5 U	1.37	0.87	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	15.9	0.0217	0.01 U
HYCP-2	10/24/02		16	2 U	0.5 U	3.7	3.2	0.5 U	1.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	20.3	0.0176	0.01 U
HYCP-2	10/18/02	Dupl	17	2 U	0.5 U	2.7	2.5	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	20.5	0.017	0.01 U
HYCP-2	04/10/03		1.2	0.2 U	0.14 U	0.41	0.27 J	0.12 U	0.49 J	0.12 U	0.12 U	0.12 U	0.11 U	0.12 J	0.13 U	0.299 U	0.11 U	2.1	0.0207	0.01 U
HYCP-2	10/21/03		20	2 U	0.5 U	1	0.5 U	0.5 U	0.62	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	20.6	0.0274	0.01 U
HYCP-2	04/13/04		4	2 U	0.5 U	3.6	3.1	0.5 U	0.74	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	7.8	0.017	0.01 U
HYCP-2	10/05/04		25	2 U	0.5 U	14.5	14	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	40.0	0.0109	0.01 U

Groundwater Chemistry Data
Well HYCP-3d
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloro-ethene µg/L	cis+trans	cis-1,2-Dichloro-ethene µg/L	1,1-Di-chloro-ethene µg/L	1,1-Di-chloro-ethane µg/L	1,2-Di-chloro-ethane µg/L	1,1,1-Tri-chloro-ethane µg/L	Tri-chloro-ethene µg/L	Tetra-chloro-ethene µg/L	Toluene µg/L	Ethyl-benzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
HYCP-3d	12/08/84		19	5 U	150	150		1.7	1 U		1 U	840	4	3	1	1.6				
HYCP-3d	12/08/84		140	10 U	250	250		10 U	10 U		10 U	10 U	10 U	1 U	1 U	2 U				
HYCP-3d	01/14/86		4	10 U	1 U	1		1 U	1 U		1 U	3	1 U	1 U	1 U	1 U				
HYCP-3d	07/03/86		10 U	3800	5 U	5		5 U	5 U		97	3	13	1 U	1 U	1 U				
HYCP-3d	10/01/86		20 U	1	1 U	1		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U				
HYCP-3d	10/01/86		20 U	1	1 U	1		1 U	1 U		1 U	1 U	1 U	1 U	1 U	1 U				
HYCP-3d	01/23/87		10 U	5 U	1 U	1		1 U	1 U		1 U	12	1 U	1 U	1 U	1 U				
HYCP-3d	03/11/87		10 U	10 U	1 U	1		1 U	1 U		1 U	5 U	1 U	1 U	1 U	1 U				
HYCP-3d	08/12/87		10 U	5 U	1 U	1		1 U	1 U	1 U	1 U	6	1 U	1 U	1 U	1 U			0.005 U	0.005 U
HYCP-3d	09/10/87		10 U	5 U	1 U	1		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U			0.005 U	0.005 U
HYCP-3d	10/08/87		10	5 U	1 U	1		1 U	1 U	1 U	1 U	13	3	1 U	1 U	1 U	1 U		0.005 U	0.005 U
HYCP-3d	11/10/87		28	5 U	1 U	1		4	1 U	1 U	1 U	28	4	1 U	1 U	1 U			0.005 U	0.005 U
HYCP-3d	03/24/88		100 U	100 U	100 U	100		100 U	100 U	100 U	100 U	640	100 U	100 U	100 U	100 U			0.005 U	0.006
HYCP-3d	06/30/88		10 U	5 U	1 U	1		1 U	1 U	1 U	1	1 U	1 U	1 U	1 U	1 U			0.005 U	0.005
			Well Abandoned																	

Groundwater Chemistry Data
Well HYCP-3i
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloroethene µg/L	cis+trans	cis-1,2-Dichloroethene µg/L	1,1-Dichloroethene µg/L	1,1-Dichloroethane µg/L	1,2-Dichloroethane µg/L	1,1,1-Trichloroethane µg/L	Trichloroethene µg/L	Tetrachloroethene µg/L	Toluene µg/L	Ethylbenzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
HYCP-3i	01/28/84		440	7	3300	3300		18	10		19	4,400	5	17	10	7		8,233		
HYCP-3i	06/07/85		280	10 U	1020	1020		10 U	10 U		300	10 U	10 U	1.9	1.7	2.5		1,606		
HYCP-3i	07/11/86		85	25 U	5 U	5		5 U	5 U		5 U	5 U	5 U	1 U	1 U	1		86.0		
HYCP-3i	09/30/86		630	1 U	17	17		2	1 U		1 U	350	1 U	1 U	1 U	1 U		999.0		
HYCP-3i	03/21/89		979	37	36	36		72	118	1 U	7.8	22,600	21	288	60	235		24,454	0.006	0.01 U
HYCP-3i	06/20/89		655		103	103		173	716	1 U	606	15,100	2 U	209	41	133	21	17,757	0.01	0.01
HYCP-3i	10/05/89		1 U	3.2	173	173		231	1440	6.4	184	51,800	13	349	95	286	7.9	54,589	0.009	0.01 U
HYCP-3i	01/10/90		2170	7.8	149	17949	17800	203	729	1 U	342	43,700	17	394	99	308	46	65,965	0.008	0.01 U
HYCP-3i	04/03/90		1590	2 U	140	45640	45500	218	312	1 U	318	151,000	16.2	439	87.7	277	6.3	199,904	0.01	0.02
HYCP-3i	06/26/90		4580	4.3	208	41508	41300	198	587	0.5 U	65.9	187,000	80	736	124	737	21.3	235,642	0.01	0.01 U
HYCP-3i	01/08/91		6100	100 U	280	72280	72000	240	1200	25 U	25 U	170,000	25 U	480	150	510	25 U	250,960	0.011	0.01
HYCP-3i	01/08/91	Dupl	5700	100 U	200	73200	73000	170	990	25 U	330	160,000	25 U	50 U	50 U	50 U	25 U	240,390	0.011	0.01
HYCP-3i	04/02/91		5000 U	20,000 U	5000 U	195000	190000	5000 U	5000 U	5000 U	5000 U	320,000	5000 U	10000 U	10000 U	10000 U	5000 U	510,000	0.013	0.01 U
HYCP-3i	04/02/91	Dupl	5000 U	20,000 U	5000 U	155000	150000	5000 U	5000 U	5000 U	5000 U	280,000	5000 U	10000 U	10000 U	10000 U	5000 U	430,000	0.015	0.01 U
HYCP-3i	07/02/91		2000 U	8,000 U	2000 U	89000	87000	2000 U	2000 U	2000 U	2000 U	163,000	2000 U	4000 U	4000 U	4000 U	2000 U	250,000	0.005 U	0.01
HYCP-3i	10/09/91		14000	10,000 U	2500 U	46500	44000	2500 U	2500 U	2500 U	2500 U	2,500 U	2500 U	5000 U	5000 U	5000 U	2500 U	58,000	0.01	0.01 U
HYCP-3i	01/09/92		3700	1000 U	250 U	120250	120000	250 U	250 U	250 U	250 U	360,000	250 U	500 U	500 U	500 U	500 U	483,700	0.016	0.02
HYCP-3i	04/01/92		4300	5000 U	500 U	110500	110000	500 U	500 U	500 U	500 U	380,000	500 U	500 U	500 U	500 U	500 U	494,300	0.013	0.02
HYCP-3i	04/01/92	Dupl	4400	5000 U	500 U	110500	110000	500 U	500 U	500 U	500 U	360,000	500 U	500 U	500 U	500 U	500 U	474,400	0.011	0.02
HYCP-3i	06/30/92		21000	40000 U	4000 U	42000	38000	4000 U	4000 U	4000 U	4000 U	6,000	4000 U	4000 U	4000 U	4000 U	4000 U	65,000	0.008	0.01 U
HYCP-3i	10/06/92		23000	400 U	100 U	110100	110000	100 U	560	100 U	100 U	20,000	100 U					153,560	0.014	0.01
HYCP-3i	01/05/93		12000	100 U	60	52060	52000	25 U	280	25 U	25 U	9,500	25 U	50 U	50 U	50 U	25 U	73,840	0.01	0.01 U
HYCP-3i	04/01/93		13000	2000 U	500 U	15500	15000	500 U	500 U	500 U	500 U	1,400	500 U	1000 U	1000 U	1000 U	500 U	29,400	0.01	0.01 U
HYCP-3i	07/06/93		15000	27	89	18089	18000	32	300	5 U	37	22,000	5 U	170	10 U	72	5 U	55,727	0.011	0.01 U
HYCP-3i	10/11/93		13000	20 U	36	9036	9000	14	87	5 U	5 U	31,000	5 U	180	82	88	5 U	53,487	0.019	0.01 U
HYCP-3i	01/13/94		9500	20 U	100	12100	12000	69	83	5 U	5 U	12,000	12	170	50	140	5	34,117	0.015	0.01 U
HYCP-3i	01/13/94	Dupl	8600	20 U	82	10082	10000	55	140	5 U	5 U	2,400	5 U	170	41	110	5	21,603	0.015	0.01 U
HYCP-3i	04/11/94		21000	2 U	41.1	7641.1	7600	11.1	95.2	0.6	4.5	114	0.5 U	114	20	1 U	2.3	29,003	0.012	0.01 U
HYCP-3i	07/14/94		3300	2 U	76.2	32076.2	32000	94.3	51.1	0.5	5.4	40,000	4	139	49	74	4	75,798	0.013	0.01 U
HYCP-3i	11/07/94		2500	2000 U	500 U	33500	33000	500 U	500 U	500 U	500 U	78,000	500 U	1000 U	1000 U	1000 U	500 U	113,500	0.014	0.01 U
HYCP-3i	01/18/95		6200	400 U	100 U	12100	12000	100 U	170	100 U	100 U	5,000	100 U	200 U	200 U	200 U	100 U	23,770	0.01	0.01 U
HYCP-3i	04/26/95		4200	1000 U	250 U	32250	32000	250 U	250 U	250 U	250 U	77,000	250 U	500 U	500 U	500 U	250 U	113,200	0.011	0.01 U
HYCP-3i	07/11/95		500 U	2000 U	500 U	38500	38000	500 U	500 U	500 U	500 U	84,000	500 U	1000 U	1000 U	1000 U	500 U	122,000	0.009	0.01 U
HYCP-3i	12/06/95		4400	2000 U	500 U	5500	5000	500 U	500 U	500 U	500 U	500 U	500 U	1000 U	1000 U	1000 U	500 U	9,400	0.012	0.01 U
HYCP-3i	03/27/96		2900	100 U	25 U	3125	3100	25 U	67	25 U	25 U	920	25 U	83	50 U	53	25 U	7,123	0.01	0.01 U
HYCP-3i	05/30/96		2500	2 U	13	1513	1500	5	54	0.5 U	2.4	14	0.5 U	39	10	35	1.4	4,174.4	0.01	0.01
HYCP-3i	09/11/96		3500	100 U	98	20098	20000	29	49	25 U	25 U	34,000	25 U	170	50 U	140	25 U	57,986	0.011	0.02
HYCP-3i	12/05/96		2700	100 U	25 U	4425	4400	25 U	25 U	25 U	25 U	1,700	25 U	74	50 U	73	25 U	8,947	0.015	0.03
HYCP-3i	12/05/96		2700	100 U	25 U	4425	4400	25 U	25 U	25 U	25 U	1,700	25 U	74	50 U	73	25 U	8,947	0.015	0.03
HYCP-3i	03/06/97		1900	100 U	25 U	2125	2100	25 U	46	25 U	25 U	890	25 U	100	50 U	68	25 U	5,104	0.011	0.03
HYCP-3i	06/18/97		800	100 U	25 U	1525	1500	25 U	26	25 U	25 U	2,600	25 U	50 U	50 U	50 U	25 U	4,926	0.009	0.03
HYCP-3i	09/18/97		460	50 U	5 U	155	150	5 U	30	5 U	5 U	60	5 U	38	14	43	5 U	795	0.012	0.02
HYCP-3i	12/09/97		1400	100 U	10 U	1310	1300	10 U	40	10 U	10 U	950	10 U	35	20 U	61	10 U	3,786	0.013	0.01 U
HYCP-3i	03/09/98		1800	100 U	20	5220	5200	10 U	31	10 U	10 U	11000	10 U	89	35	88	10 U	18,263	0.014	0.02
HYCP-3i	06/11/98		5400	2500 U	250 U	41250	41000	10 U	250 U	250 U	250 U	77000	250 U	500 U	500 U	500 U	250 U	123,400	0.01	0.03
HYCP-3i	09/19/98		6600	5000 U	500 U	41500	41000	500 U	500 U	500 U	500 U	61000	500 U	1000 U	1000 U	1000 U	500 U	108,600	0.012	0.03
HYCP-3i	04/22/99		4700	500 U	170	33170	33000	50 U	50 U	50 U	50 U	75000	50 U	180	100 U	100 U	50 U	113,050	0.011	0.04
HYCP-3i	10/05/99		5100	500 U	180	32180	32000	52	50 U	50 U	50 U	63000	50 U	100 U	100 U	100 U	50 U	100,332	0.01	0.02
HYCP-3i	04/14/00		3600	5000 U	500 U	30500	30000	500 U	500 U	500 U	500 U	67000	500 U	1000 U	1000 U	1000 U	500 U	100,600	0.012	0.02
HYCP-3i	10/10/00		8200	1 U	200 U	41200	41000	46	32	1.1	0.5 U	72000	3.8	500 U	55	130	1.6	121,471	0.012	0.04
HYCP-3i	10/10/00	Dupl	7500	1000 U	500 U	41700	37000	500 U	500 U	500 U	500 U	64000	500 U	500 U	500 U	1000 U	500 U	108,500	0.01	0.03
HYCP-3i	04/26/01		730	20 U	10 U	770	760	10 U	11	10 U	10 U	960	10 U	22	18	19	10 U	2,530	0.015	0.02
HYCP-3i	04/26/01	Dupl	820	25 U	13 U	873	860	13 U	13	13 U	13 U	1200	13 U	25	19	22	13 U	2,972	0.017	0.02
HYCP-3i	10/25/01		630	110	50 U	3050	3000	50 U	50 U	50 U	50 U	4100	50 U	50 U	50 U	50 U	50 U	7,890	0.011	0.03
HYCP-3i	10/25/01	Dupl	670	120	50 U	3250	3200	50 U	50 U	50 U	50 U	4400	50 U	50 U	50 U	50 U	50 U	8,390	0.011	0.03
HYCP-3i	04/24/02		3700	400 U	130	32130	32000	100 U	100 U	100 U	100 U	76000	100 U	140	100 U	100 U	100 U	111,970	0.0103	0.02
HYCP-3i	04/24/02	Dupl	3300	200 U	110	27110	27000	50 U	50 U	50 U	50 U	66000	50 U	130	68	64	50 U	96,672	0.0113	0.02

Groundwater Chemistry Data
Well HYCP-3i
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloro-ethene µg/L	cis+trans	cis-1,2-Dichloro-ethene µg/L	1,1-Di-chloro-ethene µg/L	1,1-Di-chloro-ethane µg/L	1,2-Di-chloro-ethane µg/L	1,1,1-Tri-chloro-ethane µg/L	Tri-chloro-ethene µg/L	Tetra-chloro-ethene µg/L	Toluene µg/L	Ethyl-benzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
HYCP-3i	10/16/02		7500	500 U	190	42190	42000	130 U	130 U	130 U	130 U	59000	130 U	170	130 U	260 U	130 U	108,860	0.0107	0.04
HYCP-3i	04/09/03		1400	9.7 U	24 U	5524	5500	11 J	10 J	5.7 U	5.7 U	8500	5.5 U	45	43	53	5.3 U	15,562	0.0122	0.01
HYCP-3i	10/22/03		240	2 U	2	202	200	0.5 U	3.1	0.5 U	0.5 U	110	0.5 U	7.8	7	31	0.5 U	601	0.0147	0.04
HYCP-3i	04/14/04		3100	200 U	200	34200	34000	51	50 U	50 U	50 U	74000	50 U	110	65	72	50 U	111,598	0.0067	0.01 U
HYCP-3i	10/05/04		38	4 U	1.2	311.2	310	1 U	2.5	1 U	1 U	540	1 U	1 U	1 U	12	1 U	904	0.0117	0.02
HYCP-3i	10/05/04	Dupl	37	4 U	1.4	331.4	330	1 U	2.5	1 U	1 U	570	1 U	1 U	1 U	12	1 U	953	0.0156	0.01

Groundwater Chemistry Data
Well HYCP-3s
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloro-ethene µg/L	cis+trans	cis-1,2-Dichloro-ethene µg/L	1,1-Di-chloro-ethene µg/L	1,1-Di-chloro-ethane µg/L	1,2-Di-chloro-ethane µg/L	1,1,1-Tri-chloro-ethane µg/L	Tri-chloro-ethene µg/L	Tetra-chloro-ethene µg/L	Toluene µg/L	Ethyl-benzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
HYCP-3s	12/08/84		4300	160	35000	35000		10 U	1400		580	2E+06	3100	8200	1400	5700		1,859,840		
HYCP-3s	06/07/85		570	7100	2750	2750		260	740		121000	2750	1130	3920	590	1970		142,780		
HYCP-3s	01/14/86		850	140	28000	28000		320	930		480	140000	1100	5900	1200	3200	79000	261,120		
HYCP-3s	07/03/86		400	4000	100	100		230	1600		800	264000	1200	4200	700	2500		279,730		
HYCP-3s	09/30/86		2500	100 U	100 U	100		300	1100		300	325000	1100	6000	1100	4600		342,000		
HYCP-3s	01/23/87		470	14	190	190		370	1100		3300	161000	2100	2400	400 U	1400		172,344		
HYCP-3s	03/11/87		86	28	210	210		540	1000		430	140000	1200	24	840	1900		146,258		
HYCP-3s	08/12/87		10000 U	5000 U	1000 U	1000		1000 U	1000 U	1000 U	1000 U	140000	1000 U	2800	1000 U	2000		144,800	0.028	0.096
HYCP-3s	09/10/87		220	42	600	600		540	740	5	770	94000	230	1200	870	*		99,217	0.025	0.091
HYCP-3s	09/10/87	Split	210	29 B	71000	71000		130	480	12 U	270	125000	800	2400	960	2900	34	204,213		
HYCP-3s	10/08/87		860	16	330	330		180	620	440	670	97000	1300	2300	820	3400	25	107,961	0.028	0.093
HYCP-3s	10/08/87	Split	290 M	1700 U				2300 U	480 J	1200 U	800 U	130000	960	2900	1200	5000	850 U	140,830		
HYCP-3s	11/11/87		1300	2500 U	560	560		500 U	900	500 U	500 U	310000	1600	2600	500 U	2000		318,960	0.032	0.13
HYCP-3s	11/11/87	Split	2200 M	9500 B	150000	150000		330 J	650 J	1800 J	590 J	150000	1100	3100	8800 J	3000	230 J	331,300		
HYCP-3s	03/24/88		100 U	100 U	180	66180	66000	150	610	100 U	220	230000	1900	2100	100 U	2000		303,160	0.015	0.1
HYCP-3s	06/30/88		10000 U	1000 U	1000 U	1000		1000 U	1000 U	1000 U	1000 U	53000	1000 U	1000 U	1000 U	1000 U		53,000	0.024	0.1
HYCP-3s	03/21/89		452	1 U	20	20		100	169	1 U	1 U	12200	16	158	42	163		13,320	0.013	0.01 U
HYCP-3s	06/27/89		1720		246	246		579	1910	8.9	1920	12300	84	314	1 U	2 U	16	19,098	0.01	0.01 U
HYCP-3s	10/05/89		1 U	15	378	378		978	2410	10	3980	80200	49	816	1 U	683 U	13	88,849	0.021	0.01
HYCP-3s	01/10/90		754		11	2301	2290	11	44	1 U	42	129	84	7.8	11	1.3	3.9	3,389	0.01	0.01 U
HYCP-3s	04/03/90		167	2 U	1.7	178.7	177	2.8	17.2	0.5 U	19.4	363	0.7	1.4	0.5 U	1 U	0.5 U	750	0.005 U	0.04
HYCP-3s	06/26/90		475	1 U	4.9	307.9	303	12.8	20	0.5 U	18.7	146	0.8	3.1	1.1	3.6	0.1	989	0.005 U	0.01 U
HYCP-3s	01/08/91		1100	100 U	25 U	305	280	25 U	25 U	25 U	25 U	25 U	25 U	50 U	50 U	50 U	25 U	1,380	0.005 U	0.01 U
HYCP-3s	04/02/91		300	20 U	5 U	215	210	5 U	5 U	5 U	5 U	330	5 U	10 U	10 U	10 U	5 U	840	0.005	0.01 U
HYCP-3s	07/02/91		1300	20 U	5 U	1705	1700	5 U	5 U	5 U	5 U	29	5 U	10 U	10 U	10 U	5 U	3,029	0.005 U	0.01 U
HYCP-3s	10/09/91		23000	200 U	50 U	43050	43000	50 U	50 U	50 U	50 U	6300	50 U	100 U	100 U	100 U	50 U	72,300	0.006	0.01 U
HYCP-3s	01/09/92		5.2	2 U	0.5 U	94.5	94	0.5 U	0.5 U	0.5 U	0.5 U	230	0.5 U	1 U	1 U	1 U	0.5 U	329	0.005 U	0.01 U
HYCP-3s	04/01/92		260	100 U	10 U	270	260	10 U	10 U	10 U	10 U	49	10 U	10 U	10 U	10 U	10 U	569	0.005 U	0.01 U
HYCP-3s	06/30/92		7900	100 U	30	5130	5100	10 U	80	10 U	20	25	10 U	19	10 U	14	10 U	13,188	0.005 U	0.01 U
HYCP-3s	10/06/92		9200	400 U	100 U	84100	84000	100 U	420	100 U	100 U	110000	100 U					203,620	0.006	0.01 U
HYCP-3s	01/05/93		6500	200 U	50 U	8450	8400	50 U	50 U	50 U	50 U	510	50 U	100 U	100 U	100 U	50 U	15,410	0.005 U	0.01 U
HYCP-3s	01/05/93	Dupl	5400	200 U	50 U	10050	10000	50 U	50 U	50 U	50 U	380	50 U	100 U	100 U	100 U	50 U	15,780	0.005 U	0.01 U
HYCP-3s	04/01/93		130	20 U	5 U	165	160	5 U	7.9	5 U	5 U	18	5 U	10 U	10 U	10 U	5 U	315.9	0.005 U	0.01 U
HYCP-3s	07/06/93		1700	50 U	32	14032	14000	76	130	5 U	140	2100	5 U	54	10 U	20	5 U	18,252	0.005 U	0.01 U
HYCP-3s	10/11/93		17000	20 U	35	20035	20000	170	260	5 U	570	6300	5 U	190	25	120	5 U	44,670	0.008	0.01 U
HYCP-3s	01/13/94		1600	50 U	7	167	160	5 U	65	5 U	5 U	13	5 U	10 U	10 U	10 U	5 U	1,845	0.005 U	0.01 U
HYCP-3s	04/11/94		2	2 U	0.5 U	49.6	49.1	0.5 U	3	0.5 U	0.5 U	25	0.5 U	1 U	1 U	1 U	0.5 U	79.1	0.005 U	0.01 U
HYCP-3s	07/14/94		1100	2 U	2.8	532.8	530	2.8	61.9	0.5 U	2.8	157	0.5 U	6	1 U	4	1.1	1,868	0.005 U	0.01 U
HYCP-3s	11/07/94		22000	40 U	120	28120	28000	120	580	10 U	190	6900	10 U	280	48	210	10 U	58,448	0.005 U	0.01 U
HYCP-3s	01/18/95		20	2 U	0.5 U	67.5	67	0.8	4.2	0.5 U	0.5 U	30	0.5 U	1 U	1 U	1 U	0.5 U	122.0	0.005 U	0.01 U
HYCP-3s	04/26/95		55	10 U	2.5 U	162.5	160	2.5 U	6.3	2.5 U	2.5 U	36	2.5 U	5 U	5 U	5 U	2.5 U	257	0.005 U	0.01 U
HYCP-3s	07/11/95		3300	10 U	100	17100	17000	70	210	2.5 U	200	1100	2.5 U	110	5 U	98	3.5	22,192	0.005 U	0.01 U
HYCP-3s	12/06/95		19	2 U	0.5 U	31.5	31	0.5 U	4	0.5 U	0.5 U	20	0.5 U	1 U	1 U	1 U	0.5 U	74	0.005 U	0.01 U
HYCP-3s	03/27/96		45	2 U	0.5 U	110.5	110	0.5 U	4	0.5 U	0.5 U	23	0.5 U	1 U	1 U	1 U	0.5 U	182.0	0.005 U	0.01 U
HYCP-3s	05/30/96		44	2 U	0.8	130.8	130	0.5 U	3.6	0.5 U	0.5 U	21	0.5 U	1 U	1 U	1 U	0.5 U	199.4	0.005 U	0.01 U
HYCP-3s	09/11/96		4000	2 U	12	15012	15000	11	39	0.5 U	21	16	0.5 U	26	6	29	1	19,162	0.005 U	0.01 U
HYCP-3s	12/05/96		11	2 U	0.5 U	43.5	43	0.5 U	2.5	0.5 U	0.5 U	17	0.5 U	1 U	1 U	1 U	0.5 U	73.5	0.005 U	0.01 U
HYCP-3s	03/06/97		55	2 U	0.7	68.7	68	0.5 U	2.4	0.5 U	0.5 U	8.6	0.5 U	1 U	1 U	1 U	0.5 U	135	0.005 U	0.01 U
HYCP-3s	06/18/97		17	4 U	1 U	131	130	1 U	2	1 U	1 U	23	1 U	2 U	2 U	2 U	1 U	172	0.005 U	0.01 U
HYCP-3s	09/18/97		11000	2500 U	250 U	47250	47000	250 U	600	250 U	250 U	250 U	250 U	500 U	500 U	500 U	250 U	58,600	0.005 U	0.01 U
HYCP-3s	12/09/97		46	5 U	0.5 U	110.5	110	0.5 U	2.7	0.5 U	0.5 U	11	0.5 U	1 U	1 U	1 U	0.5 U	170	0.005 U	0.01 U
HYCP-3s	03/09/98		12	5 U	0.5 U	32.5	32	0.5 U	1.4	0.5 U	0.5 U	6.9	0.5 U	1 U	1 U	1 U	0.5 U	52.3	0.005 U	0.01 U

Groundwater Chemistry Data
Well HYCP-3s
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloro-ethene µg/L	cis+trans	cis-1,2-Dichloro-ethene µg/L	1,1-Di-chloro-ethene µg/L	1,1-Di-chloro-ethane µg/L	1,2-Di-chloro-ethane µg/L	1,1,1-Tri-chloro-ethane µg/L	Tri-chloro-ethene µg/L	Tetra-chloro-ethene µg/L	Toluene µg/L	Ethyl-benzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
HYCP-3s	06/11/98		570	50 U	5 U	595	590	5 U	11	5 U	5 U	5 U	5 U	10 U	10 U	10 U	5 U	1,171	0.005 U	0.01 U
HYCP-3s	09/20/98		14000	50 U	130	46130	46000	120	360	5 U	190	350	5 U	250	74	210	13	61,697.0	0.005 U	0.01 U
HYCP-3s	04/22/99		8.9	5 U	0.5 U	67.5	67	0.5 U	1.3	0.5 U	0.5 U	6.8	0.5 U	1 U	1 U	1 U	0.5 U	84.0	0.005 U	0.01 U
HYCP-3s	10/05/99		510 J	5 U	1	60	59	0.5 U	24	0.5 U	1.5	0.5 U	0.5 U	9 B	2	5	0.5 U	612	0.005 U	0.01 U
HYCP-3s	04/14/00		7	5 U	0.5 U	49.5	49	0.5 U	1	0.5 U	0.5 U	5	0.5 U	1 U	1 U	1 U	0.5 U	62.0	0.005 U	0.01 U
HYCP-3s	10/10/00		150	10 U	5 U	10	5 U	5 U	26	5 U	5 U	5 U	5 U	6.6	5 U	5 U	5 U	183	0.005 U	0.01 U
HYCP-3s	04/26/01		1.6	1 U	0.5 U	46.5	46	5 U	0.85	0.5 U	0.5 U	6.2	0.5 U	0.5 U	0.5 U	5 U	5 U	55.2	0.005 U	0.01 U
HYCP-3s	10/25/01		1100	26	13 U	1913	1900	13 U	67	13 U	13 U	13	13 U	19	13 U	14	13 U	3,139	0.005 U	0.01 U
HYCP-3s	04/23/02		4.1	2 U	0.5 U	49.5	49	0.5 U	0.5 U	0.5 U	0.5 U	5.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	58.7	0.01 U	0.01 U
HYCP-3s	10/16/02		4900	200 U	72	26072	26000	80	270	50 U	78	710	50 U	69	50 U	97	50 U	32,276	0.005 U	0.01 U
HYCP-3s	04/09/03		1.7	0.2 U	0.14 U	6.64	6.5	0.12 U	0.18 J	0.12 U	0.12 U	1.6	0.11 U	0.13 J	0.13 U	0.299 U	0.11 U	10.1	0.005 U	0.01 U
HYCP-3s	10/22/03		580	4 U	2.4	392.4	390	1.7	9.3	1 U	1 U	4.5	1 U	2.6 B	1.3	2.9	1 U	995	0.0067	0.01 U
HYCP-3s	04/14/04		9.5	2 U	0.5 U	32.5	32	0.5 U	1.2	0.5 U	0.5 U	3.8	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	46.5	0.005 U	0.01 U
HYCP-3s	10/05/04		260	0.2 U	0.53	40.53	40	0.5 U	10	0.5 U	0.61 J	0.5 U	0.5 U	3.4	1.9	4.7	0.5 U	321	0.005 U	0.01 U
HYCP-3s	10/05/04	Dupl	220	0.2 U	0.63	46.63	46	0.5 U	10	0.5 U	0.61 J	0.5 U	0.5 U	3.5	2	4.9	0.5 U	288	0.005 U	0.01 U

Groundwater Chemistry Data
Well HYCP-4
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloroethene µg/L	cis+trans	cis-1,2-Dichloroethene µg/L	1,1-Dichloroethene µg/L	1,1-Dichloroethane µg/L	1,2-Dichloroethane µg/L	1,1,1-Trichloroethane µg/L	Trichloroethene µg/L	Tetrachloroethene µg/L	Toluene µg/L	Ethylbenzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
HYCP-4	12/08/84		1 U	5 U	121	121		1.2	10		2.7	70	1 U	1 U	1 U	1 U		204.9		
HYCP-4	06/07/85		115	150	120	120		10 U	12		18	10 U	10 U	17	4.5	10.1		446.6		
HYCP-4	01/14/86		22	10 U	130	130		1 U	5		1 U	43	1 U	1 U	1 U	1 U		200.0		
HYCP-4	07/03/86		90	3600	9	9		5 U	28		160	40	22	1 U	1 U	1 U		3949.0		
HYCP-4	10/01/86		20 U	1 U	1 U	1		1 U	1		1 U	2	1 U	1 U	1 U	1 U		3.0		
HYCP-4	01/23/87		100 U	50 U	10 U	10		10 U	10 U		10 U	50 U	10 U	10 U	10 U	10 U		ND		
HYCP-4	03/10/87		12	1 U	6	6		1 U	8		1 U	22	1 U	1 U	1 U	1 U		48.0		
HYCP-4	08/20/87		19	5 U	1 U	1		1 U	5	1 U	2	2	1 U	1 U	1 U	1 U		28.0	0.005 U	0.005 U
HYCP-4	09/14/87		10 U	5 U	1 U	1		2	3	1 U	1 U	6	1 U	1 U	1 U	1 U		11.0	0.005 U	0.005 U
HYCP-4	10/08/87		15	5 U	1 U	1		1 U	2	1 U	1 U	13	1 U	1 U	1 U	1 U	1 U	30.0	0.005 U	0.005 U
HYCP-4	11/11/87		10 U	5 U	1 U	1		1 U	4	1 U	1 U	2	1 U	1 U	1 U	1 U		6.0	0.005 U	0.005 U
HYCP-4	03/24/88		10 U	5 U	1	54	53	1 U	1	1 U	1 U	13	1 U	1 U	1 U	1 U		68.0	0.005 U	0.006
HYCP-4	06/30/88		10 U	5	1 U	1		1 U	1 U	1 U	1 U	9	1 U	1 U	1 U	1 U		14.0	0.005 U	0.008
HYCP-4	06/30/88	Dupl	10 U	5 U	1 U	1		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		ND	0.005	0.005
HYCP-4	03/15/89		5.3	1 U	1 U	1		1 U	1.1	1 U	1 U	2.5	1 U	1 U	1 U	2 U		8.9	0.006	0.03
HYCP-4	06/21/89		243		8.8	8.8		1 U	4.6	1 U	1 U	333	2 U	1.7	1 U	2 U	1 U	589.4	0.005 U	0.01
HYCP-4	10/05/89		18	1 U	1 U	1		1 U	4.4	1 U	1 U	1.2	1 U	1 U	1 U	1 U	1 U	23.6	0.005 U	0.01 U
HYCP-4	01/10/90		2.4	1 U	1 U	19	18	1 U	1 U	1 U	1 U	1.2	1 U	1 U	1 U	1 U	1 U	21.6	0.005 U	0.01 U
HYCP-4	04/03/90		48.1	2 U	0.5 U	24.3	23.8	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	71.9	0.005	0.05
HYCP-4	06/26/90		234	2 U	1.7	44.6	42.9	0.5 U	1.9	0.5 U	0.5 U	0.9	0.5 U	1.4	0.7	1 U	0.6	284.1	0.007	0.01 U
HYCP-4	01/08/91		8.8	2 U	0.5 U	23.1	22.6	0.5 U	0.5 U	0.5 U	0.5 U	2.8	0.5 U	1.8	1 U	2	0.5 U	38.0	0.01	0.01 U
HYCP-4	04/02/91		520	2 U	2.4	51.5	49.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5.3	1.3	5.7	0.5 U	583.8	0.008	0.01 U
HYCP-4	07/02/91		0.5 U	2 U	0.5 U	39.5	39	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	39.0	0.006 U	0.01 U
HYCP-4	10/08/91		1200	2 U	0.5 U	790.5	790	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	18	1 U	1 U	2	2010.0	0.005 U	0.01 U
HYCP-4	01/09/92		11	2 U	0.5 U	27.5	27	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	38.0	0.005 U	0.01 U
HYCP-4	04/01/92		1100	10 U	4	344	340	1	9	1 U	1 U	2	1 U	32	4	8	1 U	1500.0	0.008	0.01 U
HYCP-4	07/01/92		6900	500 U	50 U	2550	2500	50 U	50 U	50 U	50 U	50 U	50 U	150	50 U	50 U	50 U	9400.0	0.006	0.01 U
HYCP-4	10/08/92		43	20 U	5 U	205	200	5 U	5 U	5 U	5 U	5 U	5 U					243.0	0.005 U	0.01 U
HYCP-4	01/06/93		29	2 U	0.5 U	98.5	98	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	127.0	0.008	0.01 U
HYCP-4	04/01/93		2.4	3	16	166	150	1.2	16	0.8	0.5 U	3	0.5 U	1 U	1 U	1 U	0.5 U	192.4	0.016	0.02
HYCP-4	07/06/93		15	9	16	91	75	0.6	16	1.9	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	133.5	0.009	0.01 U
HYCP-4	10/11/93		40	2 U	1	27	26	0.5 U	2.1	0.5 U	0.5 U	0.6	0.5 U	1 U	1 U	1	0.7	71.4	0.008	0.01 U
HYCP-4	01/14/94		140	2 U	13	173	160	0.5 U	6	0.5 U	0.5 U	11	0.5 U	1 U	1 U	2	0.5 U	332.0	0.01	0.01 U
HYCP-4	04/13/94		1 U	2 U	1.3	19.1	17.8	0.5 U	0.6	0.5 U	0.5 U	6.9	0.5 U	1 U	1 U	1 U	0.5 U	26.6	0.009	0.01 U
HYCP-4	07/14/94		28	2 U	1.1	313.1	312	0.9	4.2	0.5 U	0.5 U	399	0.5 U	3	1 U	1	0.5	749.7	0.005	0.01 U
HYCP-4	11/07/94		27	20 U	5 U	74	69	5 U	5 U	5 U	5 U	19	5 U	10 U	10 U	10 U	5 U	115.0	0.01	0.01 U
HYCP-4	01/18/95		0.7	2 U	8.4	268.4	260	1.3	3.1	0.5 U	0.5 U	46	0.5 U	1 U	1 U	1 U	0.5 U	319.5	0.01	0.01 U
HYCP-4	04/26/95		4.8	10 U	7.2	447.2	440	3.8	3.9	2.5 U	2.5 U	100	2.5 U	5 U	5 U	5 U	2.5 U	557.7	0.014	0.01 U
HYCP-4	07/11/95		75	20 U	14	1414	1400	8	5 U	5 U	5 U	57	5 U	10 U	10 U	10 U	5 U	1554.0	0.014	0.01 U
HYCP-4	12/07/95		5	2 U	1.1	71.1	70	0.5 U	3.1	0.5 U	0.5 U	3	0.5 U	1 U	1 U	1 U	0.5 U	82.2	0.009	0.01 U
HYCP-4	03/27/96		1.9	2 U	1	50	49	0.5 U	0.5 U	0.5 U	0.5 U	0.8	0.5 U	1 U	1 U	1 U	0.5 U	52.7	0.01	0.01 U
HYCP-4	05/29/96		170	10 U	23	3523	3500	17	7	2 U	2 U	21	2 U	5 U	5 U	5 U	2 U	3738.0	0.005 U	0.01 U
HYCP-4	09/11/96		180	100 U	25 U	3925	3900	25 U	25 U	25 U	25 U	67	25 U	50 U	50 U	50 U	25 U	4147.0	0.009	0.01 U
HYCP-4	12/05/96		180	100 U	25 U	145	120	25 U	25 U	25 U	25 U	25 U	25 U	50 U	50 U	50 U	25 U	120.0	0.019	0.01 U
HYCP-4	03/06/97		0.5 U	2 U	0.8	57.8	57	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	57.8	0.017	0.01 U
HYCP-4	03/06/97	Dupl	1.1	2 U	1.1	75.1	74	0.5 U	0.6	0.5 U	0.5 U	0.8	0.5 U	1 U	1 U	1 U	0.5 U	77.6	0.018	0.01 U
HYCP-4	06/18/97		1 U	4 U	1 U	89	88	1 U	1 U	1 U	1 U	2	1 U	2 U	2 U	2 U	1 U	90.0	0.012	0.01 U
HYCP-4	09/18/97		1	10 U	1 U	87	86	1 U	1 U	1 U	1 U	2	1 U	2 U	2 U	2 U	1 U	89.0	0.02	0.01 U

Groundwater Chemistry Data
Well HYCP-4
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloroethene µg/L	cis+trans	cis-1,2-Dichloroethene µg/L	1,1-Dichloroethene µg/L	1,1-Dichloroethane µg/L	1,2-Dichloroethane µg/L	1,1,1-Trichloroethane µg/L	Trichloroethene µg/L	Tetrachloroethene µg/L	Toluene µg/L	Ethylbenzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
HYCP-4	09/18/97	Dupl	0.9	5 U	1	87	86	0.5 U	0.7	0.5 U	0.5 U	1.7	0.5 U	1 U	1 U	1 U	0.5 U	90.3	0.19	0.01 U
HYCP-4	12/09/97		2.7	5 U	1.2	83.2	82	0.5 U	0.8	0.5 U	0.5 U	1.2	0.5 U	1 U	1 U	1 U	0.5 U	87.9	0.024	0.01 U
HYCP-4	12/09/97	Dupl	6.5	5 U	1.9	141.9	140	0.5 U	1	0.5 U	0.5 U	1.3	0.5 U	1 U	1 U	1 U	0.5 U	150.7	0.024	0.01 U
HYCP-4	03/09/98		1.6	5 U	1.7	231.7	230	1.2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	234.5	0.034	0.01 U
HYCP-4	06/11/98		10 U	100 U	15	1515	1500	10 U	10 U	10 U	10 U	10 U	10 U	20 U	20 U	20 U	10 U	1515.0	0.015	0.01 U
HYCP-4	09/20/98		6	50 U	5 U	325	320	5 U	8	5 U	5 U	5 U	5 U	10 U	10 U	10 U	5 U	334.0	0.08	0.01 U

Groundwater Chemistry Data
Well HYCP-5
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloro-ethene µg/L	cis+trans	cis-1,2-Dichloro-ethene µg/L	1,1-Di-chloro-ethene µg/L	1,1-Di-chloro-ethane µg/L	1,2-Di-chloro-ethane µg/L	1,1,1-Tri-chloro-ethane µg/L	Tri-chloro-ethene µg/L	Tetra-chloro-ethene µg/L	Toluene µg/L	Ethyl-benzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
HYCP-5	03/21/89		1450	1 U	151	151		99	36	1 U	9.1	2210	1 U	16	1.3	6.6		3979.0	0.005	0.02
HYCP-5	06/20/89		3530		206	206		264	37	1 U	9.9	5970	8.3	21	1 U	2 U	1 U	10046.2	0.005 U	0.01 U
HYCP-5	10/05/89		11100	1 U	251	251		183	198	5.1	1 U	579	1 U	28	1 U	2.3	1.2 U	12346.4	0.006	0.01
HYCP-5	01/09/90		14600	1 U	181	26281	26100	133	169	9.5	1 U	2300	1 U	31	2.5	7.1	4.1	43537.2	0.005	0.03
HYCP-5	04/03/90		5340	2 U	215	55315	55100	180	138	0.5 U	0.5 U	14000	3.8	27	2	4.6	0.5 U	75010.4	0.007	0.111
HYCP-5	06/26/90		14600	2 U	249	38949	38700	318	154	0.5 U	17.9	13400	2.1	52.2	3.1	7.5	1 U	67503.8	0.007	0.02
HYCP-5	01/07/91		6400	100 U	110	28110	28000	83	25 U	25 U	25 U	4000	25 U	50 U	50 U	50 U	25 U	38593.0	0.008	0.01 U
HYCP-5	04/02/91		8700	200 U	50 U	64050	64000	50 U	50 U	50 U	50 U	1100	50 U	100 U	100 U	100 U	50 U	73800.0	0.007	0.01 U
HYCP-5	04/02/91	Dupl	7800	200 U	50 U	68050	68000	50 U	50 U	50 U	50 U	1100	50 U	100 U	100 U	100 U	50 U	76900.0	0.007	0.01 U
HYCP-5	07/03/91		430	2 U	0.5 U	750.5	750	0.5 U	0.5 U	0.5 U	6.1	0.5 U	0.5 U	1.8	1 U	1 U	0.5 U	1187.9	0.005 U	0.02
HYCP-5	10/08/91		500 U	2000 U	500 U	33500	33000	500 U	500 U	500 U	500 U	1200	500 U	1000 U	1000 U	1000 U	500 U	34200.0	0.014	0.01 U
HYCP-5	10/08/91	Dupl	7000	2000 U	500 U	35500	35000	500 U	500 U	500 U	500 U	2500	500 U	1000 U	1000 U	1000 U	500 U	44500.0	0.005 U	0.01 U
HYCP-5	01/08/92		160	200 U	50 U	800	750	50 U	50 U	50 U	50 U	50 U	50 U	100 U	100 U	100 U	50 U	910.0	0.005 U	
HYCP-5	03/31/92		360	100 U	10 U	1110	1100	10 U	10 U	14	10 U	40	10 U	10 U	10 U	10 U	10 U	1514.0	0.005 U	0.01 U
HYCP-5	03/31/92	Dupl	400	100 U	10 U	1410	1400	10 U	10 U	15	10 U	66	10 U	10 U	10 U	10 U	10 U	1881.0	0.006	0.03
HYCP-5	07/01/92		150	20 U	3	323	320	3	4	4	2 U	2 U	2 U	2 U	2 U	2 U	2 U	484.0	0.005 U	0.07
HYCP-5	10/07/92		910	20 U	5 U	1605	1600	5 U	5 U	5 U	5 U	19	5 U					2529.0	0.005 U	0.01
HYCP-5	01/08/93		200	10 U	10 U	540	530	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	730.0	0.005 U	0.02
HYCP-5	03/31/93		2500	20 U	130	18130	18000	50	15	5 U	5 U	190	5 U	10 U	10 U	10 U	5 U	20885.0	0.005 U	0.01
HYCP-5	07/07/93		110	50 U	5 U	305	300	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U	10 U	5 U	410.0	0.005 U	0.01
HYCP-5	10/12/93		190	50 U	5 U	565	560	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U	10 U	5 U	750.0	0.005 U	0.01 U
HYCP-5	01/12/94		400	5 U	18	1618	1600	8	12	5 U	5 U	120	5 U	5 U	5 U	5 U	5 U	2158.0	0.005 U	0.01 U
HYCP-5	04/13/94		1900	2 U	660	24660	24000	66.4	4.2	0.5 U	0.5 U	67.4	0.5 U	5	1 U	1 U	0.5 U	26703.0	0.005 U	0.01 U
HYCP-5	07/11/94		1000	2 U	132	19132	19000	30.5	11.6	0.5 U	0.5 U	31.2	0.5 U	5	1 U	1	0.5 U	20211.3	0.005 U	0.01 U
HYCP-5	11/07/94		180	20 U	6.5	426.5	420	5 U	21	5 U	5 U	50	5 U	10 U	10 U	10 U	5 U	677.5	0.005 U	0.01 U
HYCP-5	01/17/95		250	10 U	9.3	1209.3	1200	5 U	7.4	5 U	5 U	65	5 U	5 U	5 U	5 U	5 U	1531.7	0.005 U	0.01 U
HYCP-5	04/25/95		210	20 U	14	994	980	5 U	7.8	5 U	5 U	64	5 U	10 U	10 U	10 U	5 U	1275.8	0.005 U	0.01 U
HYCP-5	07/11/95		160	50 U	12 U	862	850	12 U	12 U	12 U	12 U	56	12 U	25 U	25 U	25 U	12 U	1066.0	0.005 U	0.01 U
HYCP-5	12/06/95		17	2 U	0.7	62.7	62	0.5 U	0.8	0.5 U	0.5 U	2.8	0.5 U	1 U	1 U	1 U	0.5 U	83.3	0.005 U	0.01 U
HYCP-5	03/28/96		230	40 U	17	2317	2300	10 U	10 U	10 U	10 U	18	10 U	20 U	20 U	20 U	10 U	2565.0	0.005 U	0.01 U
HYCP-5	05/29/96		180	20 U	12	1612	1600	5 U	5 U	5 U	5 U	8	5 U	10 U	10 U	10 U	5 U	1800.0	0.005 U	0.01 U
HYCP-5	09/11/96		230	20 U	10	860	850	5 U	5 U	5 U	5 U	17	5 U	10 U	10 U	10 U	5 U	1107.0	0.005 U	0.01 U
HYCP-5	12/05/96		15	20 U	9	103	94	5 U	19	5 U	5 U	6	5 U	10 U	10 U	10 U	5 U	143.0	0.005 U	0.01 U
HYCP-5	03/04/97		210	10 U	8	1608	1600	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	1818.0	0.008	0.01 U
HYCP-5	06/17/97		110	20 U	5 U	670	670	5 U	5 U	5 U	5 U	5 U	5 U	1 U	1 U	1 U	0.5 U	780.0	0.005 U	0.01 U
HYCP-5	09/17/97		27	5 U	0.6	9.8	9.2	5 U	4.1	5 U	5 U	5 U	5 U	1 U	1 U	1 U	0.5 U	40.9	0.005 U	0.01 U
HYCP-5	12/09/97		22	5 U	0.5 U	6.4	5.9	0.5 U	3.9	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	32.4	0.005 U	0.01 U
HYCP-5	03/09/98		260	1 U	12	1212	1200	5	3.7	0.5 U	0.5 U	11	0.5 U	1	0.5 U	0.5 U	0.5 U	1492.7	0.007	0.01 U
HYCP-5	06/10/98		800	10 U	57	7357	7300	10 U	10 U	10 U	10 U	10 U	10 U	20 U	20 U	20 U	10 U	8157.0	0.005 U	0.01 U
HYCP-5	09/19/98		560	500 U	50 U	3750	3700	50 U	50 U	50 U	50 U	50 U	50 U	100 U	100 U	100 U	50 U	4260.0	0.005 U	0.01 U
HYCP-5	04/23/99		280	1 U	26	1326	1300	8.4	3	0.5 U	0.5 U	12	0.5 U	1	0.5 U	1 U	0.5 U	1630.4	0.005 U	0.01 U
HYCP-5	10/05/99		780	25 U	40	3640	3600	10	3	2 U	2 U	2 U	2 U	5 U	5 U	5 U	2 U	4433.0	0.005 U	0.01 U
HYCP-5	04/17/00		570	250 U	25 U	2425	2400	25 U	25 U	25 U	25 U	25 U	25 U	50 U	50 U	50 U	25 U	2970.0	0.008	0.01 U
HYCP-5	10/10/00		660	50 U	26	2126	2100	25 U	25 U	25 U	25 U	25 U	25 U	25 U	25 U	50 U	25 U	2786.0	0.005 U	0.01 U
HYCP-5	04/26/01		70	1 U	2.1	152.1	150	0.52	0.73	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	223.4	0.005 U	0.01 U
HYCP-5	10/23/01		490	1 U	19	1519	1500	5 U	5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2009.0	0.005 U	0.01 U
HYCP-5	04/25/02		360	10 U	12	1112	1100	3.1	2.5 U	2.5 U	2.5 U	4.3	2.5 U	2.5 U	2.5 U	2.5 U	2.5 U	1479.4	0.005 U	0.01 U
HYCP-5	10/16/02		110	2 U	5.3	385.3	380	1.3	1.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	497.7	0.01 U	0.01 U
HYCP-5	10/16/02	Dupl	120	2 U	5.1	365.1	360	1.3	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	487.4	0.005 U	0.01 U
HYCP-5	04/09/03		180	0.39 U	5.2	445.2	440	1.5	0.8 J	0.23 U	0.23 U	0.24 U	0.22 U	0.2 J	0.26 U	0.6 U	0.21 U	627.7	0.0057	0.01 U
HYCP-5	10/21/03		8.4	2 U	0.5 U	2.9	2.9	0.5 U	0.5 U	0.5 U	0.5 U	0.5 UJ	0.5 UJ	0.5 UJ	0.5 UJ	1 UJ	0.5 U	11.3	0.0051	0.01 U

Groundwater Chemistry Data
Well HYCP-5
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloroethene µg/L	cis+trans	cis-1,2-Dichloroethene µg/L	1,1-Dichloroethene µg/L	1,1-Dichloroethane µg/L	1,2-Dichloroethane µg/L	1,1,1-Trichloroethane µg/L	Trichloroethene µg/L	Tetrachloroethene µg/L	Toluene µg/L	Ethylbenzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
HYCP-5	04/13/04		380	4 U	11	721	710	1.7	1.1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1103.8	0.005 U	0.01 U
HYCP-5	10/04/04		12	2 U	0.5 U	28	28	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	40.0	0.005 U	0.01 U

Groundwater Chemistry Data
Well HYCP-6
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloroethene µg/L	cis+trans	cis-1,2-Dichloroethene µg/L	1,1-Dichloroethene µg/L	1,1-Dichloroethane µg/L	1,2-Dichloroethane µg/L	1,1,1-Trichloroethane µg/L	Trichloroethene µg/L	Tetrachloroethene µg/L	Toluene µg/L	Ethylbenzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
HYCP-6	03/21/89		1800	1 U	166	166		126	64	1 U	1 U	4040	1	17	1.8	5.8		6,222	0.005 U	0.01 U
HYCP-6	06/20/89		6150		200	200		248	129	2.1	1 U	6650	6.2	27	1.2	4.5	1 U	13,418	0.005 U	0.01
HYCP-6	10/05/89		5320	1 U	172	172		132	19	1 U	1 U	5920	1.2	15	1 U	2.9	1 U	11,582	0.005 U	0.04
HYCP-6	01/09/90		1750	1 U	81	15981	15900	59	8.8	7.9	1 U	3310	1 U	27	1 U	4.7	13	21,161	0.005 U	0.04
HYCP-6	04/03/90		21000	2 U	0.5 U	18100.5	18100	106	11.2	0.5 U	0.5 U	2410	0.5 U	11.9	0.5 U	5.6	1 U	41,645	0.005 U	0.14
HYCP-6	06/26/90		9.3	2 U	0.5 U	69.6	69.1	0.5 U	0.5 U	0.5 U	0.5 U	6.4	0.5 U	0.5 U	0.5 U	1 U	0.5	85.3	0.005 U	0.02
HYCP-6	01/07/91		600	100 U	25 U	7725	7700	25 U	25 U	25 U	25 U	170	25 U	50 U	50 U	50 U	25 U	8,470	0.005 U	0.01 U
HYCP-6	04/02/91		420	200 U	50 U	21050	21000	50 U	50 U	50 U	50 U	50 U	50 U	100 U	100 U	100 U	50 U	21,420	0.005 U	0.01 U
HYCP-6	07/03/91		670	20 U	5 U	12005	12000	5 U	5 U	5 U	60	5 U	5 U	10 U	10 U	10 U	5 U	12,730	0.005 U	0.01
HYCP-6	10/08/91		50 U	200 U	50 U	4350	4300	50 U	50 U	50 U	50 U	50 U	50 U	100 U	100 U	100 U	50 U	4,300	0.005 U	0.01 U
HYCP-6	01/08/92		8.1	2 U	0.5 U	91.5	91	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	99.1	0.005 U	0.02 U
HYCP-6	03/31/92		210	10 U	28	4028	4000	9	1 U	2	1 U	1 U	1 U	1	1 U	1 U	1 U	4,250	0.005 U	0.01 U
HYCP-6	07/01/92		1 U	10 U	1 U	7	6	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	6.0	0.005 U	0.01 U
HYCP-6	10/07/92		0.5 U	2 U	0.5 U	3.5	3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U					3.0	0.005 U	0.01 U
HYCP-6	01/11/93		3.5	2 U	0.5 U	140.5	140	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	143.5	0.005 U	0.01 U
HYCP-6	03/31/93		9.8	4	2.9	182.9	180	1.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	197.8	0.005 U	0.01 U
HYCP-6	07/07/93		0.5 U	10	0.5 U	2.1	1.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1	1 U	1 U	0.5 U	12.6	0.005 U	0.01 U
HYCP-6	10/12/93		0.5 U	2 U	0.5 U	5.3	4.8	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	4.8	0.005 U	0.01 U
HYCP-6	01/13/94		10 U	5 U	5 U	38	33	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	33	0.005 U	0.01 U
HYCP-6	04/13/94		20	2 U	2.4	235.4	233	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	253	0.005 U	0.01 U
HYCP-6	07/11/94		36	2 U	1.5	317.5	316	0.5 U	0.6	0.5 U	0.5 U	0.5 U	0.5 U	1	1 U	1 U	0.5 U	355	0.005 U	0.01 U
HYCP-6	11/07/94		0.5 U	2 U	0.5 U	7.4	6.9	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	6.9	0.005 U	0.01 U
HYCP-6	01/17/95		3.9	2 U	0.5 U	22.5	22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	26	0.005 U	0.01 U
HYCP-6	04/25/95		5.8	2 U	0.9	37.9	37	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	44	0.005 U	0.01 U
HYCP-6	07/11/95		0.5 U	2 U	0.5 U	6.6	6.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	6.1	0.005 U	0.01 U
HYCP-6	12/06/95		6.1	2 U	0.5 U	13.5	13	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	19.1	0.005 U	0.01 U
HYCP-6	03/28/96		22	2 U	0.9	35.9	35	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	57.9	0.005 U	0.01 U
HYCP-6	05/29/96		16	2 U	0.5 U	22.5	22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	38.0	0.005 U	0.01 U
HYCP-6	09/11/96		75	2 U	2.9	78.9	76	0.5 U	1.4	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	155.3	0.005 U	0.01 U
HYCP-6	12/05/96		32	2 U	1.1	44.1	43	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	76.1	0.005 U	0.01 U
HYCP-6	03/04/97		58	2 U	2.4	97.4	95	0.5	0.5	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	156.4	0.005 U	0.01 U
HYCP-6	06/17/97		53	4 U	1	90	89	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	0.5 U	143.0	0.005 U	0.02 U
HYCP-6	09/17/97		180	50 U	5 U	205	200	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U	10 U	5 U	380.0	0.005 U	0.01
HYCP-6	12/09/97		80	5 U	2.3	132.3	130	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	212.3	0.005 U	0.01 U
HYCP-6	03/09/98		56	5 U	2.1	122.1	120	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	178.1	0.007	0.01
HYCP-6	06/10/98		86	10 U	2	152	150	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	2 U	1 U	238.0	0.005 U	0.05
HYCP-6	09/19/98		94	10 U	3	113	110	1 U	1 U	1 U	1 U	1 U	1 U	2 U	2 U	2 U	1 U	207.0	0.005 U	0.01
HYCP-6	04/23/99		42	5 U	1.7	89.7	88	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	154.3	0.005 U	0.02
HYCP-6	10/05/99		80	5 U	2	65	63	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	145.0	0.005 U	0.01
HYCP-6	04/17/00		63	5 U	2	83	81	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	146.0	0.006 U	0.01
HYCP-6	10/10/00		75	1 U	1.9	55.9	54	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2	0.5 U	1.18	0.5 U	176.1	0.005 U	0.03
HYCP-6	04/26/01		68	1 U	1.1	36.1	35	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	104.1	0.005 U	0.01 U
HYCP-6	10/23/01		48	1 U	0.69	14.69	14	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	62.7	0.005 U	0.01 U
HYCP-6	04/25/02		36	1 U	0.72	20.69	20	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	56.7	0.01 U	0.01 U
HYCP-6	10/16/02		26	2 U	0.5 U	2.8	2.3	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.53	0.5 U	1 U	0.5 U	28.8	0.005 U	0.01 U
HYCP-6	04/09/03		29	0.2 U	0.67	22.67	22	0.19 J	0.15 J	0.12 U	0.12 U	0.12 U	0.11 U	0.28 J	0.13 U	0.3 U	0.11 U	52.3	0.005 U	0.01 U
HYCP-6	04/09/03	dupl.	28	0.2 U	0.66	21.66	21	0.18 J	0.17 J	0.12 U	0.12 U	0.12 U	0.11 U	0.29 J	0.13 U	0.31 U	0.11 U	50.3	0.005 U	0.01 U
HYCP-6	10/21/03		11	2 U	0.5 U	11	11	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	22.0	0.0078	0.01 U
HYCP-6	04/13/04		28	2 U	0.5	12.5	12	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	40.5	0.005 U	0.01 U
HYCP-6	10/04/04		21	2 U	0.5 U	4.2	4.2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	25.2	0.0056	0.02

Groundwater Chemistry Data
Well HYO-2
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloroethene µg/L	cis+trans	cis-1,2-Dichloroethene µg/L	1,1-Dichloroethene µg/L	1,1-Dichloroethane µg/L	1,2-Dichloroethane µg/L	1,1,1-Trichloroethane µg/L	Trichloroethene µg/L	Tetrachloroethene µg/L	Toluene µg/L	Ethylbenzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
HYO-2	03/20/89		726	1 U	15	15		1 U	102	1 U	1 U	123	1 U	3.8	1 U	2.7		973	0.01	0.01 U
HYO-2	06/22/89		1490		11	11		1 U	79	1 U	1 U	90	2 U	1 U	1 U	2 U	1 U	1,670	0.01	0.01 U
HYO-2	06/22/89	Dupl	1780		22	22		4.2	82	1 U	1 U	51	2 U	4.7	1 U	2 U	1 U	1,944	0.009	0.01 U
HYO-2	10/05/89		4890	1 U	34	34		32 U	133	1.1	1 U	5.9	1 U	6.1	1 U	1 U	1 U	5,070	0.009	0.01 U
HYO-2	01/09/90		4350	1 U	24	3594	3570	16	80	1.9	1 U	21	1 U	1 U	1 U	2	1 U	8,065	0.011	0.01
HYO-2	04/04/90		2600	2 U	8.5	1488.5	1480	2.1	73.4	0.71	0.5 U	5	0.5 U	1.3	0.5 U	1 U	0.5 U	4,171	0.012	0.01 U
HYO-2	06/26/90		1900	2 U	11.3	603.3	592	4.5	79.2	1.1	0.5 U	0.5 U	5.3	2.3	1.2	3.4	1.3	2,602	0.013	0.01 U
HYO-2	01/07/91		1800	100 U	25 U	1325	1300	25 U	25 U	25 U	25 U	25 U	25 U	50 U	50 U	50 U	25 U	3,100	0.014	0.01 U
HYO-2	04/02/91		810	2 U	2.9	152.9	150	0.5 U	38	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	1,001	0.014	0.01 U
HYO-2	07/02/91		1100	20 U	5 U	225	220	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U	10 U	5 U	1,320	0.009	0.01
HYO-2	10/07/91		560	100 U	25 U	225	200	25 U	25 U	25 U	25 U	25 U	25 U	50 U	50 U	50 U	25 U	760	0.011	0.01
HYO-2	01/08/92		580	20 U	5 U	285	280	5 U	14	5 U	5 U	5 U	5 U	10 U	10 U	10 U	5 U	874	0.009	0.01 U
HYO-2	04/01/92		600	100 U	10 U	920	910	10 U	22	10 U	10 U	21	10 U	10 U	10 U	10 U	10 U	1,553	0.012	0.01 U
HYO-2	07/01/92		430	500 U	50 U	170	120	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	550	0.011	0.01 U
HYO-2	10/08/92		1100	20 U	16	10016	10000	5 U	13	5 U	5 U	5 U	5 U					11129	0.009	0.01 U
HYO-2	01/08/93		160	20 U	5 U	905	900	5 U	5 U	5 U	5 U	9	5 U	5 U	5 U	5 U	5 U	1069	0.012	0.01 U
HYO-2	04/01/93		86	20 U	5 U	104	99	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U	10 U	5 U	185	0.01	0.01 U
HYO-2	07/06/93		80	5 U	1.6	2.1	0.5 U	0.5 U	1.9	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	83.5	0.01	0.01 U
HYO-2	10/12/93		350	50 U	5 U	685	680	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U	10 U	5 U	1030	0.006	0.01 U
HYO-2	01/12/94		105	2 U	1.9	131.9	130	1.1	2.6	0.5 U	0.5 U	1	0.5 U	1 U	1 U	1 U	0.5 U	241.6	0.008	0.01 U
HYO-2	04/12/94		26	2 U	0.5 U	4.2	3.7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	29.7	0.009	0.01 U
HYO-2	07/11/94		233	2 U	1.6	306.6	305	0.5 U	3.7	0.5 U	0.5 U	0.5 U	0.5 U	1	1 U	1	0.5 U	545.3	0.008	0.01 U
HYO-2	11/08/94		78	2 U	0.6	11.6	11	0.5 U	3.6	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	93.2	0.007	0.01 U
HYO-2	01/17/95		61	2 U	0.5 U	7.3	6.8	0.5 U	3.8	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	71.6	0.007	0.01 U
HYO-2	04/25/95		54	2 U	0.8	19.8	19	0.5 U	2.6	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	76.4	0.007	0.01 U
HYO-2	07/11/95		58	2 U	0.6	7.7	7.1	0.5 U	2.4	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	68.1	0.006	0.01 U
HYO-2	12/06/95		39	2 U	0.5 U	3.6	3.1	0.5 U	1.7	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	43.8	0.01	0.01 U
HYO-2	03/28/96		41	2 U	0.5 U	2.4	1.9	0.5 U	2.2	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	45.1	0.008	0.01 U
HYO-2	05/29/96		32	2 U	0.5 U	2.8	2.3	0.5 U	1.1	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	35.4	0.009	0.01 U
HYO-2	09/10/96		180	2 U	4.6	134.6	130	0.7	11	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	326.3	0.007	0.01 U
HYO-2	12/05/96		34	2 U	0.5 U	8.5	8	0.5 U	6.5	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	48.5	0.011	0.01 U
HYO-2	03/05/97		18	2 U	0.5 U	7.4	6.9	0.5 U	4.6	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	29.5	0.009	0.01 U
HYO-2	06/17/97		28	2 U	0.5 U	7.7	7.2	0.5 U	4.4	0.5 U	0.5 U	0.5	0.5 U	1 U	1 U	1 U	0.5 U	40.1	0.011	0.01 U
HYO-2	09/17/97		28	2 U	0.5 U	3.7	3.2	0.5 U	5.7	0.5 U	0.5 U	0.5	0.5 U	1 U	1 U	1 U	0.5 U	36.9	0.006	0.01 U
HYO-2	12/10/97		40	5 U	0.5 U	13.5	13	0.5 U	4.3	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	57.3	0.006	0.01 U
HYO-2	03/09/98		36	5 U	0.5 U	4.6	4.1	0.5 U	3.1	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	43.2	0.011	0.01 U
HYO-2	06/10/98		100	10 U	1.4	121.4	120	1 U	3.6	1 U	1 U	1 U	1 U	2 U	2 U	2 U	1 U	225	0.006	0.01 U
HYO-2	09/20/98		28	5 U	0.5 U	3.2	2.7	0.5 U	2.1	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	32.8	0.007	0.01 U

Groundwater Chemistry Data
Well HYO-3
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloroethene µg/L	cis+trans	cis-1,2-Dichloroethene µg/L	1,1-Dichloroethene µg/L	1,1-Dichloroethane µg/L	1,2-Dichloroethane µg/L	1,1,1-Trichloroethane µg/L	Tri-Chloroethene µg/L	Tetrachloroethene µg/L	Toluene µg/L	Ethylbenzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
HYO-3	01/22/86		300	10 U	13	13		1 U	2		1 U	9	1 U	3	1 U	2 U		327		

Groundwater Chemistry Data
Well HYO-4
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloro-ethene µg/L	cis+trans	cis-1,2-Dichloro-ethene µg/L	1,1-Di-chloro-ethene µg/L	1,1-Di-chloro-ethane µg/L	1,2-Di-chloro-ethane µg/L	1,1,1-Tri-chloro-ethane µg/L	Tri-chloro-ethene µg/L	Tetra-chloro-ethene µg/L	Toluene µg/L	Ethyl-benzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
HYO-4	01/23/87		1700	50 U	30	30		40	140		360	16000	210	10 U	10 U	10 U		18480		
HYO-4	03/11/87		180	10 U	38	38		8	9		24	1800	12	5	3	3		2082		
HYO-4	08/12/87		160	5 U	38	38		8	1 U	1 U	10	160	1 U	1 U	1 U	1 U		376	0.005 U	0.005 U
HYO-4	09/10/87		170	5 U	27	27		1 U	1 U	1 U	1 U	160	1 U	1 U	1 U	1 U		357	0.005 U	0.005 U
HYO-4	09/10/87	Split	230	3.3 U	680	680		1.6 J	2 U	2.3 U	1.6 U	220	1.2 U	0.6 J	2.1 U	2.4 U	1.7 U	1132.2		
HYO-4	10/08/87		380	5 U	13	13		2	1 U	1 U	1 U	92	1 U	1 U	1 U	1 U	1 U	487	0.005 U	0.005 U
HY0-4	11/10/87		360	50 U	21	21		10 U	10 U	10 U	10 U	480	10 U	10 U	10 U	10 U		861	0.005 U	0.005 U
HY0-4	03/24/88		180	5 U	15	1715	1700	5	5 U	5 U	5 U	590	5 U	5 U	5 U	5 U		2490	0.005 U	0.005 U
HY0-4	06/30/88		1000 U	430	100 U	100		100 U	100 U	100 U	150	100 U	100 U	100 U	100 U	100 U		580	0.005 U	0.005 U

Groundwater Chemistry Data
Well HYR-1
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloro-ethene µg/L	cis+trans	cis-1,2-Dichloro-ethene µg/L	1,1-Di-chloro-ethene µg/L	1,1-Di-chloro-ethane µg/L	1,2-Di-chloro-ethane µg/L	1,1,1-Tri-chloro-ethane µg/L	Tri-chloro-ethene µg/L	Tetra-chloro-ethene µg/L	Toluene µg/L	Ethyl-benzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
HYR-1	07/13/95		1300	500 U	92	10092	10000	50 U	50 U	50 U	50 U	4100	50 U	1 U	1 U	1 U	0.5 U	15,492	0.005 U	0.01 U
HYR-1	12/06/95		1800	200 U	69	12069	12000	50 U	50 U	50 U	50 U	6100	50 U	100 U	100 U	100 U	50 U	19,969	NA	NA
HYR-1	03/28/96		2000	400 U	100 U	12000	12000	100 U	100 U	100 U	100 U	6000	100 U	200 U	200 U	200 U	100 U	20,000	NA	NA
HYR-1	04/08/98		1100	5 U	770	10070	9300	0.5 U	0.5 U	0.5 U	0.5 U	5700	0.5 U	NA	NA	NA	NA	16,870	NA	NA
HYR-1	04/05/99		1100	50 U	50	55	5 U	27	20	5 U	5 U	4200	5 U	NA	NA	NA	NA	5,397	NA	NA
HYR-1	04/04/00		870	1000 U	100 U	7300	7300	100 U	100 U	100 U	100 U	5100	100 U	NA	NA	NA	NA	13,270	NA	NA
HYR-1	11/08/01		1100	200 U	100 U	8400	8400	100 U	100 U	100 U	100 U	5300	100 U	100 U	100 U	200 U	100 U	14,800	NA	NA
HYR-1	07/02/02		690	50 U	43	7943	7900	19	13 U	13 U	13 U	6900	13 U	NA	NA	NA	NA	15,552	NA	NA
HYR-1	05/01/03		850	50 U	42	8242	8200	25 U	25 U	25 U	25 U	5300	25 U	NA	NA	NA	NA	14,392	NA	NA
HYR-1	08/11/03		580	100 U	36	6436	6400	25 U	25 U	25 U	25 U	4000	25 U	NA	NA	NA	NA	11,016	NA	NA
HYR-1	11/11/03		370	40 U	51	6551	6500	17	10 U	10 U	10 U	4400	10 U	NA	NA	NA	NA	11,338	NA	NA
HYR-1	02/12/04		690	50 U	39	6539	6500	15	13 U	13 U	13 U	4100	13 U	NA	NA	NA	NA	11,344	NA	NA

Groundwater Chemistry Data
Well HYR-2
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloroethene µg/L	cis+trans	cis-1,2-Dichloroethene µg/L	1,1-Dichloroethene µg/L	1,1-Dichloroethane µg/L	1,2-Dichloroethane µg/L	1,1,1-Trichloroethane µg/L	Trichloroethene µg/L	Tetrachloroethene µg/L	Toluene µg/L	Ethylbenzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
HYR-2	07/13/95		120	50 U	5 U	245	240	5 U	19	5 U	5 U	15	5 U	1 U	1 U	1 U	0.5 U	394	0.005 U	0.01 U
HYR-2	12/06/95		160	10 U	2.5 U	322.5	320	2.5 U	26	2.5 U	2.5 U	21	2.5 U	5 U	5 U	5 U	2.5 U	527	NA	NA
HYR-2	03/28/96		86	2 U	1.7	191.7	190	1.6	13	0.5 U	0.5 U	6	0.5 U	1 U	1 U	1 U	0.5 U	296.6	NA	NA
HYR-2	04/08/98		42	5 U	0.5 U	100	100	0.5 U	4	0.5 U	0.5 U	4	3	NA	NA	NA	NA	153	NA	NA
HYR-2	04/02/99		47	5 U	0.8	75.8	75	0.6	4.1	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	127	NA	NA
HYR-2	04/04/00		27	5 U	1.1	45.1	44	0.5 U	1.8	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	74	NA	NA
HYR-2	11/08/01		34	1 U	0.62	42.62	42	0.5 U	1.9	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	79	NA	NA
HYR-2	07/02/02		21	2 U	0.5 U	25	25	0.5 U	1.3	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	47	NA	NA
HYR-2	05/01/03		22	2 U	0.5 U	19	19	0.5 U	0.85	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	41.9	NA	NA
HYR-2	08/11/03		19	2 U	0.5 U	20	20	0.5 U	0.89	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	39.9	NA	NA
HYR-2	11/11/03		19	2 U	0.5 U	18	18	0.5 U	0.83	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	37.8	NA	NA
HYR-2	02/12/04		21	2 U	0.5 U	19	19	0.5 U	0.95	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	41.0	NA	NA

Groundwater Chemistry Data
Well Ld
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloro-ethene µg/L	cis+trans	cis-1,2-Dichloro-ethene µg/L	1,1-Di-chloro-ethene µg/L	1,1-Di-chloro-ethane µg/L	1,2-Di-chloro-ethane µg/L	1,1,1-Tri-chloro-ethane µg/L	Tri-chloro-ethene µg/L	Tetra-chloro-ethene µg/L	Toluene µg/L	Ethyl-benzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
Ld	08/11/87		10 U	5 U	1 U	1		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		ND	0.005 U	0.005 U
Ld	09/14/87		10 U	5 U	1 U	1		1 U	1 U	1 U	1 U	3	1 U	1 U	1 U	1 U		3	0.005 U	0.005 U
Ld	10/08/87		10 U	5 U	1 U	1		1 U	1 U	1 U	1 U	2	1 U	1 U	1 U	1 U	1 U	2	0.005 U	0.005 U
Ld	11/11/87		10 U	5 U	1 U	1		1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		ND	0.006	0.005 U
Ld	11/11/87	Split	2.5 U	5.4 B	1.4 J	1.4		5 U	3.3 U	3.1 U	0.9 U	0.4 J	1.7 U	0.6 U	2.5 U	2.1 U	1.4 U	7.2		
Ld	03/23/88		10 U	5 U	1 U	2	1	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U		1	0.005 U	0.005 U
Ld	06/28/88		1000 U	520	100 U	100		100 U	100 U	160	100 U	100 U	100 U	100 U	100 U	100 U		680	0.005 U	0.012
Ld	10/09/91		25 U	100 U	25 U	50	25 U	25 U	25 U	25 U	25 U	25 U	25 U	50 U	50 U	50 U	25 U	ND	0.005 U	0.01 U
Ld	01/08/92		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
Ld	04/01/92		3	10 U	1 U	16	15	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	18	0.005 U	0.01 U
Ld	07/01/92		7	10 U	1 U	6	5	1 U	1 U	1 U	1 U	1 U	1 U	1	1 U	1 U	1 U	13	0.005 U	0.01 U
Ld	10/07/92		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U					ND	0.005 U	0.01 U
Ld	01/06/93		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
Ld	04/01/93		1.2	3	0.5 U	2.2	1.7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	5.9	0.005 U	0.01 U
Ld	07/08/93		0.5 U	7	0.5 U	5	4.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	11.5	0.005 U	0.01 U
Ld	10/11/93		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005	0.01 U
Ld	01/14/94		9	5 U	0.5 U	2.2	1.7	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	10.7	0.005 U	0.01 U
Ld	04/11/94		1 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
Ld	07/14/94		1 U	2	0.5 U	4.5	4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	2	1 U	1	0.5	9.5	0.005 U	0.01 U
Ld	11/07/94		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
Ld	01/18/95		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
Ld	04/26/95		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
Ld	07/11/95		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
Ld	12/07/95		0.7	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	0.7	0.005 U	0.01 U
Ld	03/27/96		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
Ld	05/30/96		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
Ld	09/11/96		0.5 U	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
Ld	12/05/96		0.5 U	2 U	0.5 U	5.1	4.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	4.6	0.006	0.01 U
Ld	03/06/97		1.6	2 U	0.5 U	2.1	1.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	3.2	0.005 U	0.01 U
Ld	06/18/97		0.6	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	0.6	0.005 U	0.01 U
Ld	09/18/97		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
Ld	12/09/97		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
Ld	03/09/98		0.5 U	5 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	ND	0.005 U	0.01 U
Ld	06/11/98		0.5 U	5 U	0.5 U	1	0.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	0.5	0.005 U	0.01 U
Ld	09/20/98		0.5 U	5 U	0.5 U	2	1.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	1.5	0.005 U	0.01 U

Groundwater Chemistry Data
Well Ls
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloro-ethene µg/L	cis+trans	cis-1,2-Dichloro-ethene µg/L	1,1-Di-chloro-ethene µg/L	1,1-Di-chloro-ethane µg/L	1,2-Di-chloro-ethane µg/L	1,1,1-Tri-chloro-ethane µg/L	Tri-chloro-ethene µg/L	Tetra-chloro-ethene µg/L	Toluene µg/L	Ethyl-benzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
Ls	08/11/87		28	5 U	6	6		3	1 U	1 U	1 U	19000	1 U	1 U	1 U	1		19038	0.006	0.005 U
Ls	09/14/87		27	5 U	10	10		4	1 U	1 U	1 U	8800	1 U	1 U	1 U	1 U		8841	0.013	0.007
Ls	10/08/87		38	5 U	7	7		4	1 U	1 U	1 U	3500	1 U	1 U	1 U	1 U	1 U	3549	0.016	0.008
Ls	11/11/87		50	5 U	6	6		2	1 U	1 U	1 U	3000	1 U	1 U	1 U	1 U		3058	0.016	0.008
Ls	03/23/88		27	5 U	11	1611	1600	3	1 U	1 U	6	520	1 U	1 U	1 U	1 U		2167	0.007	0.008
Ls	06/28/88		10 U	5 U	5	5		5	1 U	1 U	1 U	63	1 U	1 U	1 U	1 U		73	0.019	0.009
Ls	09/20/88		13	7	7	7		1 U	1 U	1 U	1 U	47	1 U	1 U	1 U	1 U		74	0.022	0.007
Ls	03/16/89		375	1 U	12	12		15	1 U	1 U	1 U	174	1 U	1 U	1 U	2 U		576	0.013	0.01 U
Ls	03/16/89	Dupl	364	1 U	11	11		15	1 U	1 U	1 U	166	1 U	1 U	1 U	2 U		556	0.014	0.01 U
Ls	06/27/89		246		12	12		18	1.6	1 U	1 U	238	2 U	1 U	1 U	2 U	1 U	515.6	0.012	0.01 U
Ls	10/05/89		250	1 U	9.2	9.2		17	2.4	1 U	1 U	40	1 U	1 U	1 U	1 U	1 U	318.6	0.016	0.01 U
Ls	01/10/90		395	1 U	5.2	505.2	500	5.9	1 U	1 U	1 U	129	1 U	7.8 U	1.2	3.7	1.3	1041.3	0.016	0.01 U
Ls	04/03/90		131	2 U	4.1	493.1	489	0.9	0.5 U	0.5 U	0.5 U	245	0.5 U	0.5 U	0.5 U	1 U	0.5 U	870	0.013	0.01 U
Ls	06/26/90		332	2 U	4.1	243.1	239	0.5	0.5 U	0.5 U	0.5 U	112	0.5 U	0.6	1.3	3.3 U	0.5 U	689.5	0.014	0.01 U
Ls	01/08/91		120	20 U	3.4	553.4	550	5 U	5 U	5 U	5 U	98	5 U	10 U	10 U	10 U	5 U	771.4	0.012	0.01 U
Ls	04/02/91		5 U	20 U	5 U	265	260	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U	10 U	5 U	260	0.018	0.01 U
Ls	07/02/91		500	23	5 U	295	290	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U	10 U	5 U	813	0.009	0.01 U
Ls	10/09/91		350	20 U	5 U	135	130	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U	10 U	5 U	480	0.019	0.01 U
Ls	01/08/92		90	20 U	5 U	195	190	5 U	5 U	5 U	5 U	5 U	5 U	10 U	10 U	10 U	5 U	280	0.014	0.01 U
Ls	04/01/92		180	100 U	10 U	71	61	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	241	0.014	0.01 UJ
Ls	07/01/92		270	20 U	2 U	38	36	2 U	2 U	2 U	3	3	2 U	2 U	2 U	2 U	2 U	312	0.017	0.01 U
Ls	10/07/92		44	20 U	5 U	98	93	5 U	5 U	5 U	5 U	5 U	5 U					137	0.018	0.01 U
Ls	01/06/93		46	2 U	0.5 U	49.5	49	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	95	0.015	0.01 U
Ls	04/01/93		74	3	0.6	22.6	22	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	99.6	0.016	0.01 U
Ls	07/06/93		58	9	2.2	71.2	69	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	138.2	0.014	0.01 U
Ls	10/11/93		110	5 U	0.5 U	69.5	69	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2	0.5 U	181	0.02	0.01 U
Ls	01/14/94		43	2 U	0.7	24.7	24	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1	1 U	0.5 U	68.7	0.017	0.01 U
Ls	04/11/94		46	2 U	0.6	37.1	36.5	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	83.1	0.016	0.01 U
Ls	07/14/94		25	2	0.5 U	28.1	27.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	5	1 U	3	3	65.6	0.022	0.01 U
Ls	11/07/94		34	2 U	0.5 U	6.7	6.2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1	0.5 U	41.2	0.02	0.01 U
Ls	01/18/95		35	2 U	0.5 U	21.5	21	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	56	0.016	0.01 U
Ls	04/26/95		37	2 U	0.5 U	6.7	6.2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	43.2	0.02	0.01 U
Ls	07/11/95		34	2 U	0.5 U	6.1	5.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	39.6	0.018	0.01 U
Ls	12/07/95		26	2 U	0.5 U	4.7	4.2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	30.2	0.018	0.01 U
Ls	03/27/96		140	2 U	6.2	716.2	710	14	0.5 U	0.5 U	0.5 U	340	0.5 U	1 U	1 U	2	0.5 U	1212.2	0.019	0.01 U
Ls	05/30/96		140	2 U	6.7	606.7	600	12	0.5 U	0.5 U	0.5 U	500	0.5 U	1	1 U	2	0.5 U	1260.7	0.023	0.01 U
Ls	09/11/96		32	2 U	0.6	37.6	37	0.6	0.5 U	0.5 U	0.5 U	12	0.5 U	1 U	1 U	1 U	0.5 U	82.2	0.022	0.01 U
Ls	12/05/96		24	2 U	0.5 U	6.6	6.1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1	0.5 U	27.1	0.021	0.01 U
Ls	03/06/97		74	2 U	3	173	170	2.4	0.5 U	0.5 U	0.5 U	36	0.5 U	1 U	1 U	4	0.5 U	289.4	0.025	0.01 U
Ls	06/18/97		47	4 U	2	152	150	3	1 U	1 U	1 U	110	1 U	2 U	2 U	2 U	1 U	312	0.02	0.01 U
Ls	09/18/97		21	5 U	0.5 U	8.5	8	0.5 U	0.5 U	0.5 U	0.5 U	1.3	0.5 U	1 U	1 U	2	0.5 U	32.3	0.021	0.01 U
Ls	12/09/97		180	25 U	2 U	202	200	3	2 U	2 U	2 U	16	2 U	5 U	5 U	5 U	2 U	401	0.019	0.01 U
Ls	03/09/98		20	5 U	0.5 U	1.9	1.4	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	3	0.5 U	24.4	0.021	0.01 U
Ls	06/11/98		5.4	5 U	0.5 U	1.3	0.8	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	6.2	0.014	0.01 U
Ls	06/11/98	Dupl	5.9	5 U	0.5 U	1.3	0.8	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	6.7	0.013	0.01 U
Ls	09/20/98		12	5 U	0.5 U	1.5	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2 B	0.5 U	15	0.014	0.01 U
Ls	04/22/99		80	5 U	0.7	23.7	23	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	2	0.5 U	105.7	0.02	0.01 U
Ls	10/05/99		6.2	5 U	0.5 U	1.7	1.2	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1 U	0.5 U	8.5	0.014	0.01 U

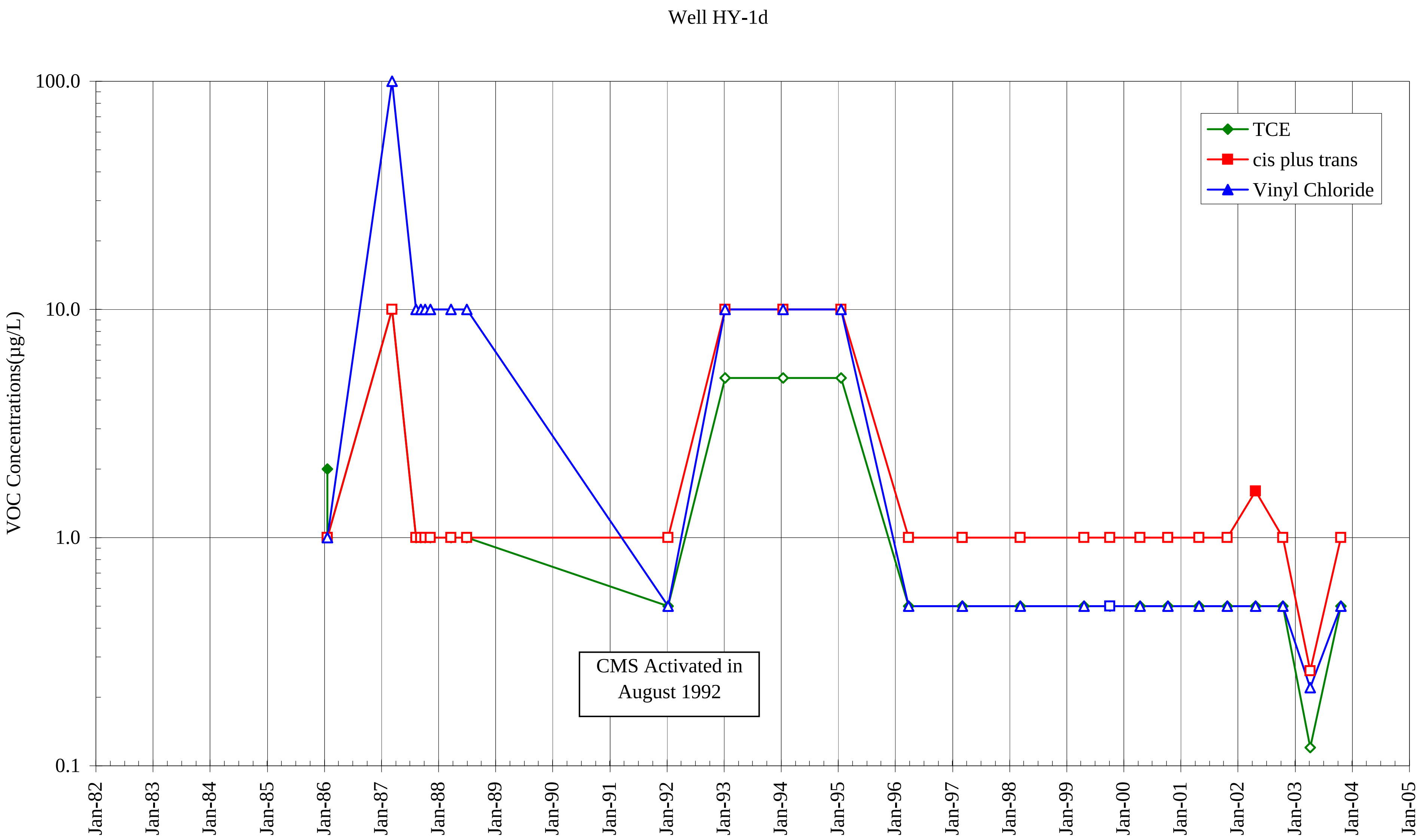
Groundwater Chemistry Data
Well Ls
Kent Facility, Kent, Washington

Site	Date	Note	Vinyl Chloride µg/L	Methylene Chloride µg/L	trans-1,2-Dichloroethene µg/L	cis+trans	cis-1,2-Dichloroethene µg/L	1,1-Dichloroethene µg/L	1,1-Dichloroethane µg/L	1,2-Dichloroethane µg/L	1,1,1-Trichloroethane µg/L	Trichloroethene µg/L	Tetrachloroethene µg/L	Toluene µg/L	Ethylbenzene µg/L	total Xylenes µg/L	Benzene µg/L	total VOCs µg/L	dissolved Arsenic mg/L	total Cyanide mg/L
Ls	04/17/00		2.4	5 U	0.5 U	1.1	0.6	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	1 U	1	0.5 U	3.1	0.019	0.01 U
Ls	10/10/00		6.3	1 U	0.5 U	1.35	0.85	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1	0.5 U	1 U	0.5 U	8.2	0.014	0.01 U
Ls	04/26/01		1.6	1 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.75	1.7	0.5 U	4.1	0.016	0.01 U
Ls	10/25/01		3.7	1 U	0.5 U	1.03	0.53 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	1 U	0.5 U	3.7	0.015	0.01 U
Ls	04/23/02		2.2	1 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	1 U	0.5 U	2.2	0.0139	0.01 U
Ls	04/23/02	Dupl	2.2	1 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	1 U	0.5 U	2.2	0.0136	0.01 U
Ls	10/16/02		4.9	2 U	0.5 U	1.25	0.75	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	5.7	0.014	0.01 U
Ls	04/09/03		1.6	0.2 U	0.14 J	0.56	0.41 J	0.12 U	0.091 U	0.12 U	0.12 U	0.12 U	0.11 U	0.21 J	0.24 J	0.75 U	0.11 U	2.6	0.0163	0.01 U
Ls	10/22/03		21	2 U	0.5 U	29	29	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	50.0	0.0175	0.01 U
Ls	04/14/04		1.8	2 U	0.5 U	1	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 J	0.5 J	0.69	0.5 U	3.5	0.0157	0.01 U
Ls	10/04/04		2.5	2 U	0.5 U	0.55	0.55	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	1 U	0.5 U	3.1	0.015	0.01 U

Groundwater Chemistry Data
Notes
Kent Facility, Kent, Washington

Notes: "U" indicates a value less than detectior
"J" indicates an estimated concentration assigned based on holding time criteri
"B" indicates possible laboratory cross-contaminatior
"Dupl" indicates a field duplicate sample collected at the same time as the ground water sampl
"Repl" indicates field duplicate samples collected at the same time as the ground water sampl
"Split" indicates a field duplicate and ground water samples were analyzed by separate laboratory.
#1 The July 1992 samples for HYCP-1i and HY-1i were mislabeled. Sample names were switche
#2 Well HY-11i on 3/9/87 both VOC vials contained head space
In 1988, well HYCP-1s was abandoned and replaced with well HYO-2
Well HYCP-3s was replaced in late 1988 with a well with the same name

BSB Diversified
Kent, Washington
Ground Water Chemistry



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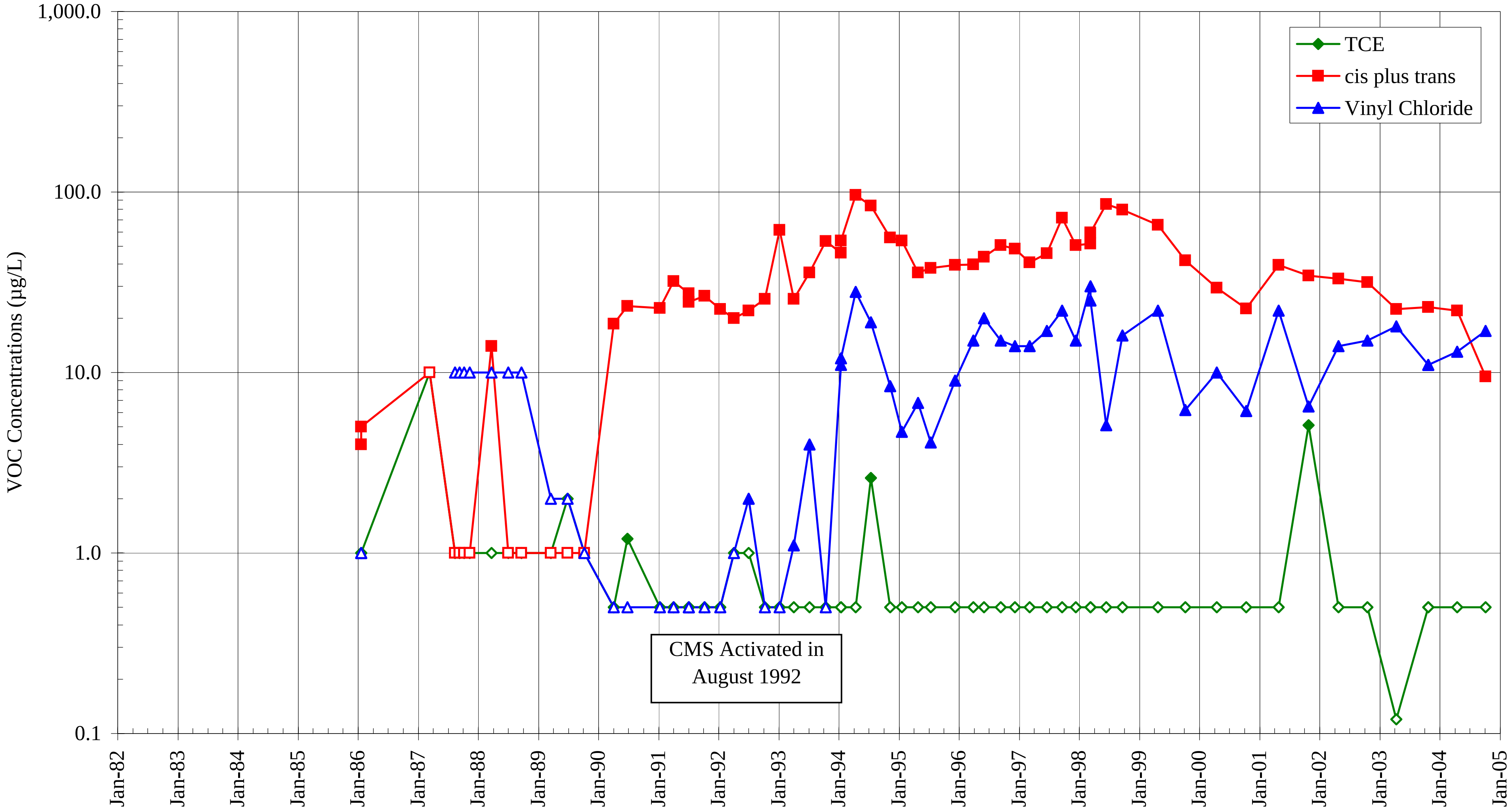
BSB Diversified
Kent, Washington
Ground Water Chemistry

Well HY-1i



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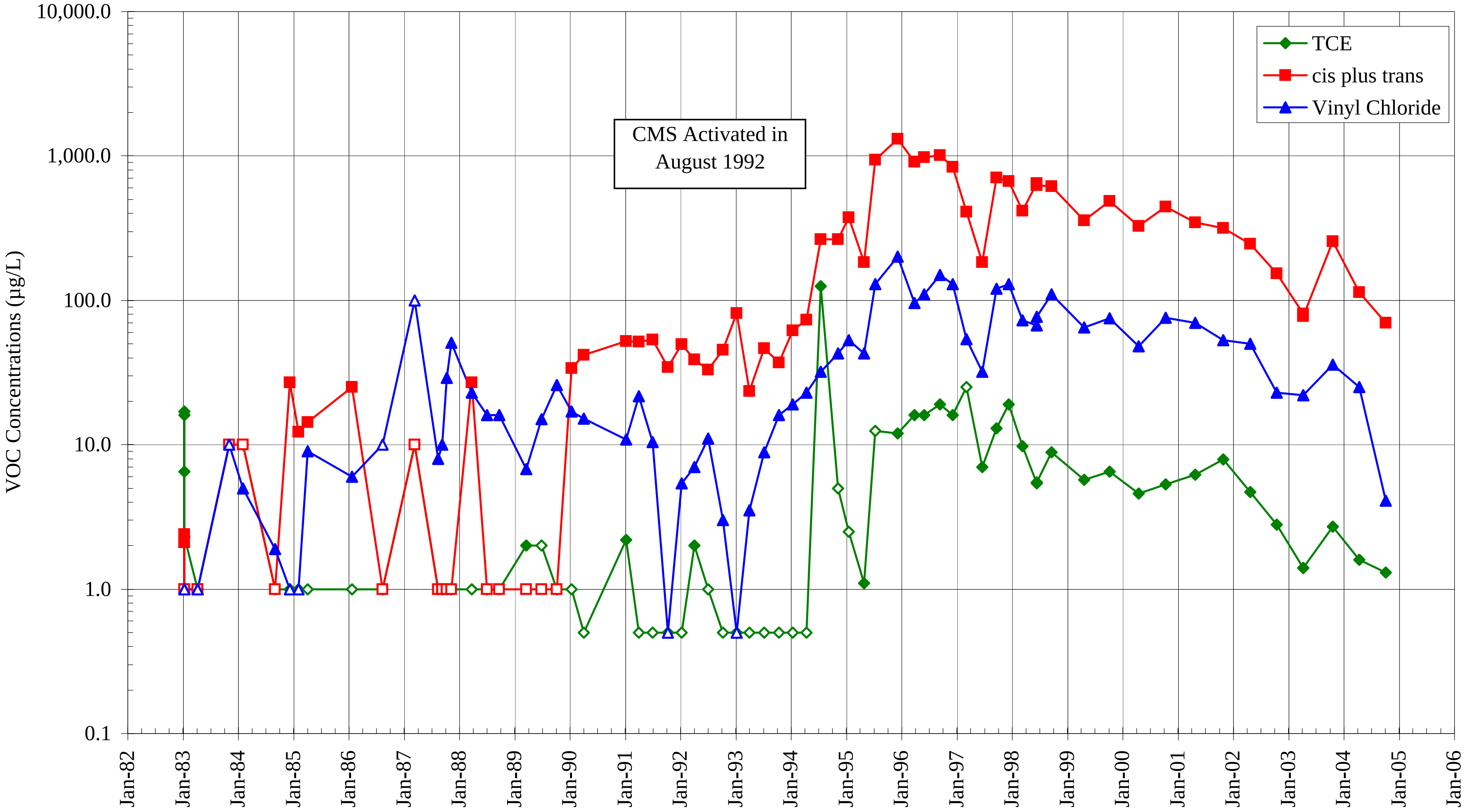
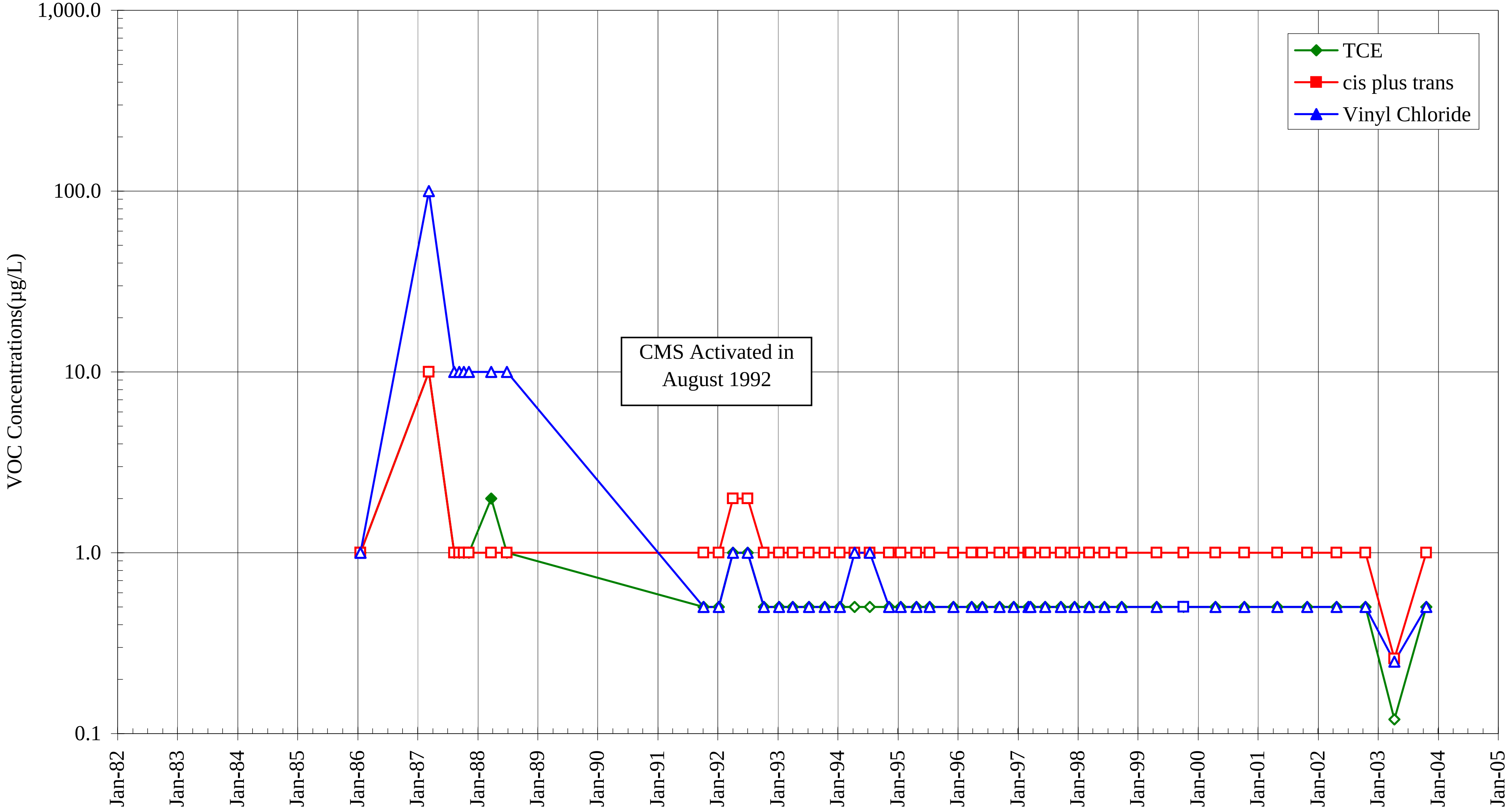
BSB Diversified
Kent, Washington
Ground Water Chemistry

Well HY-1s



BSB Diversified
Kent, Washington
Ground Water Chemistry

Well HY-11d (Background)



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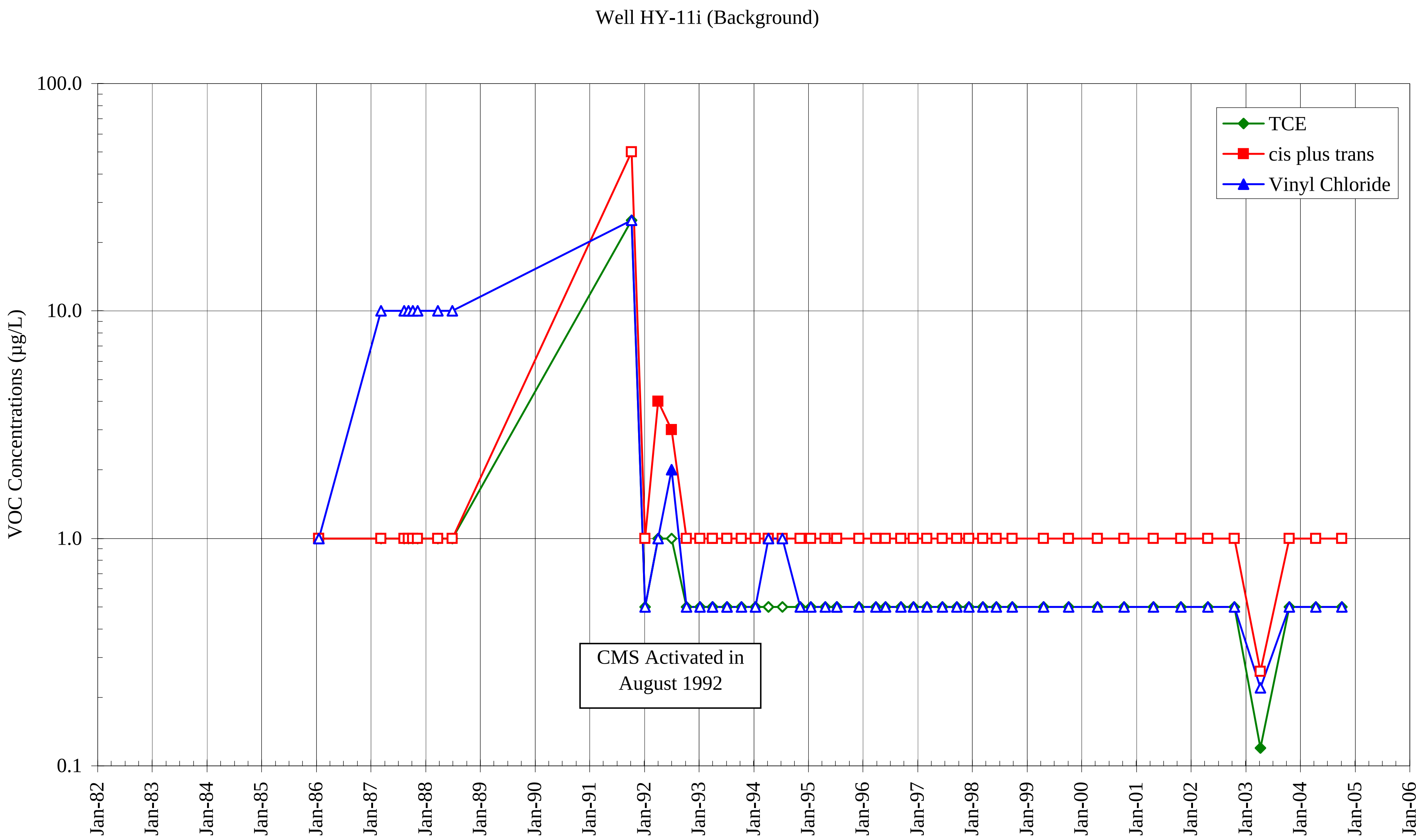
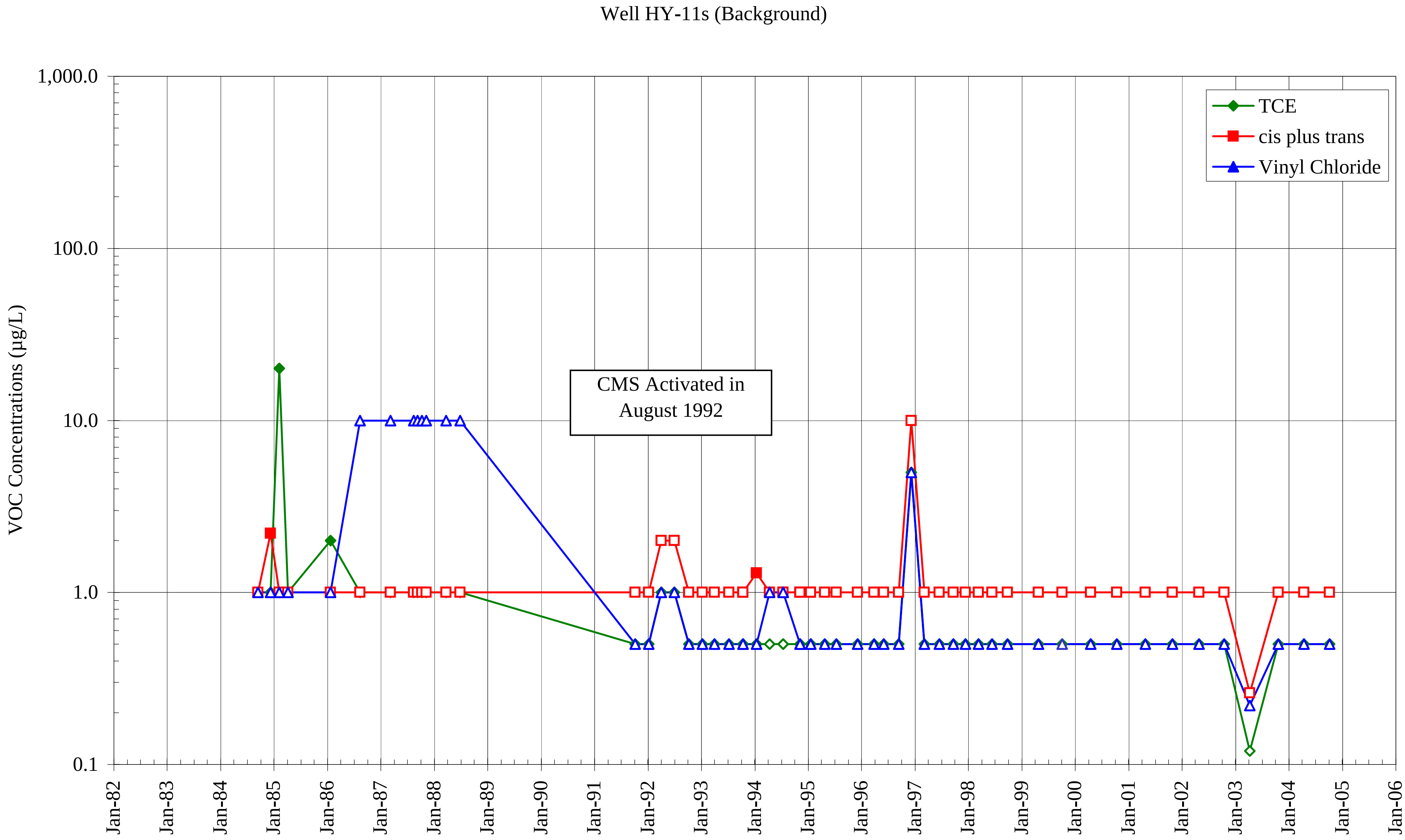
BSB Diversified
Kent, Washington
Ground Water Chemistry



BSB Diversified
Kent, Washington
Ground Water Chemistry



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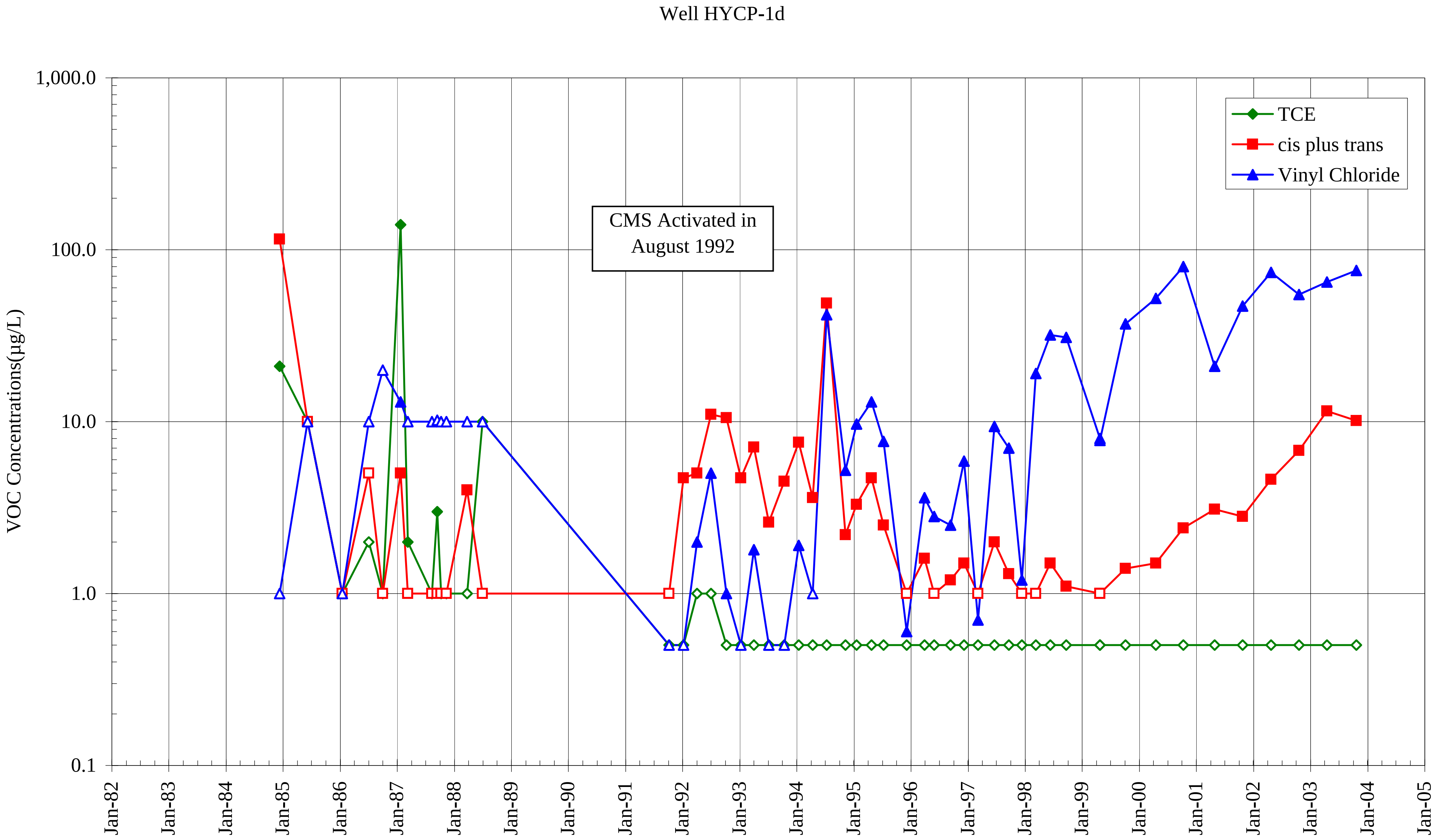
BSB Diversified
Kent, Washington
Ground Water Chemistry



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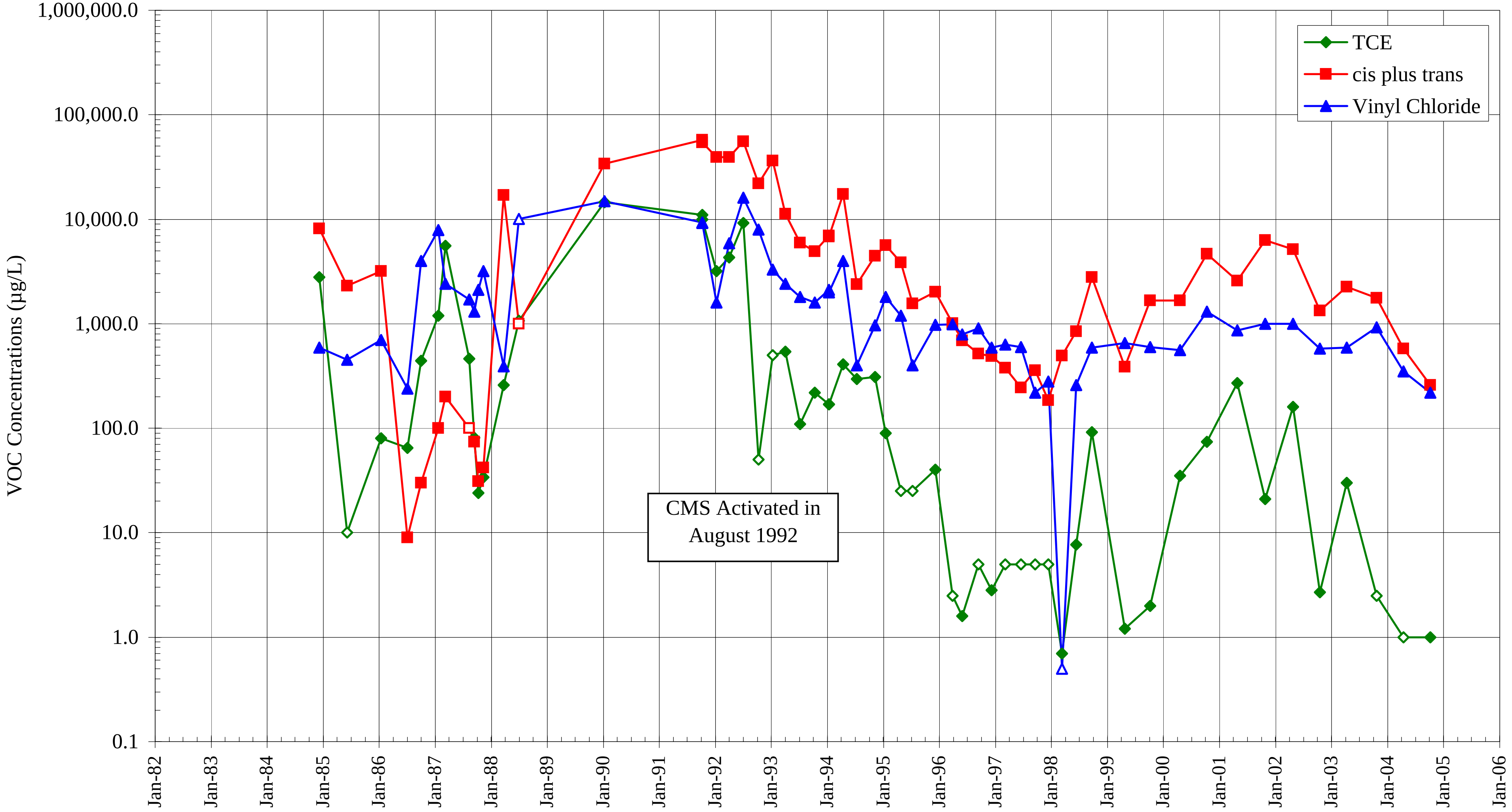
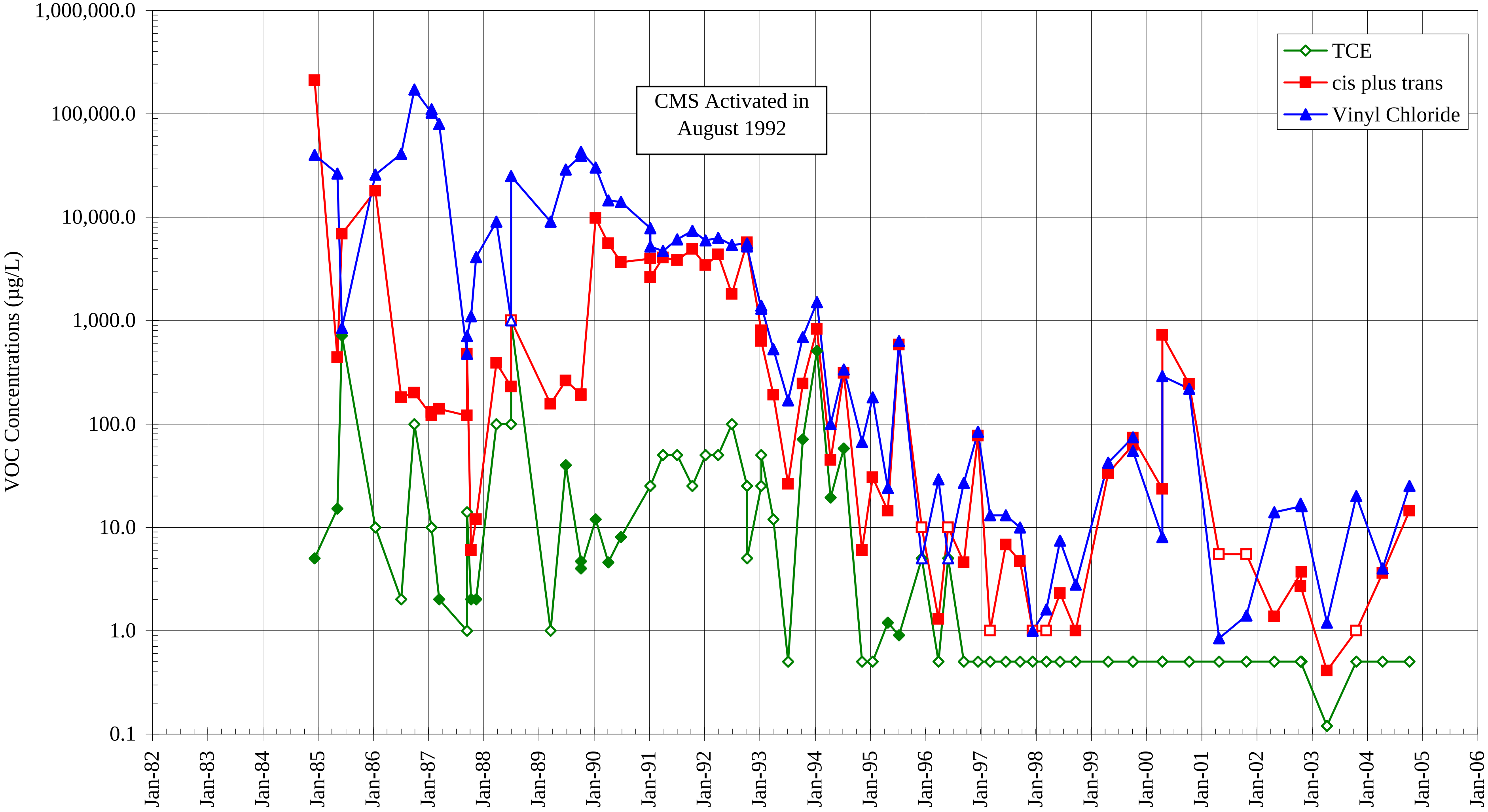
BSB Diversified
Kent, Washington
Ground Water Chemistry

Well HYCP-1i



BSB Diversified
Kent, Washington
Ground Water Chemistry

Well HYCP-2



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BSB Diversified
Kent, Washington
Ground Water Chemistry

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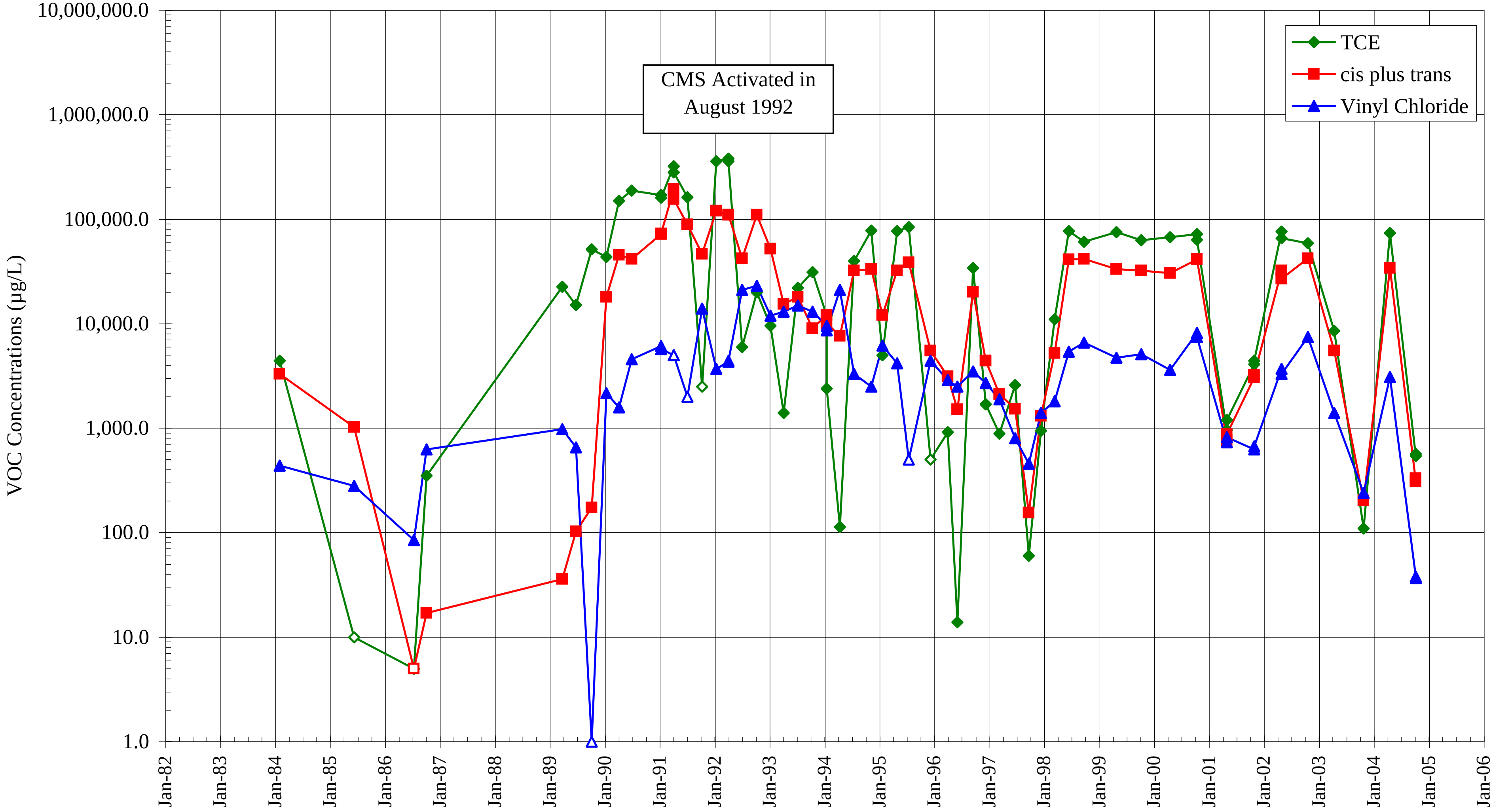

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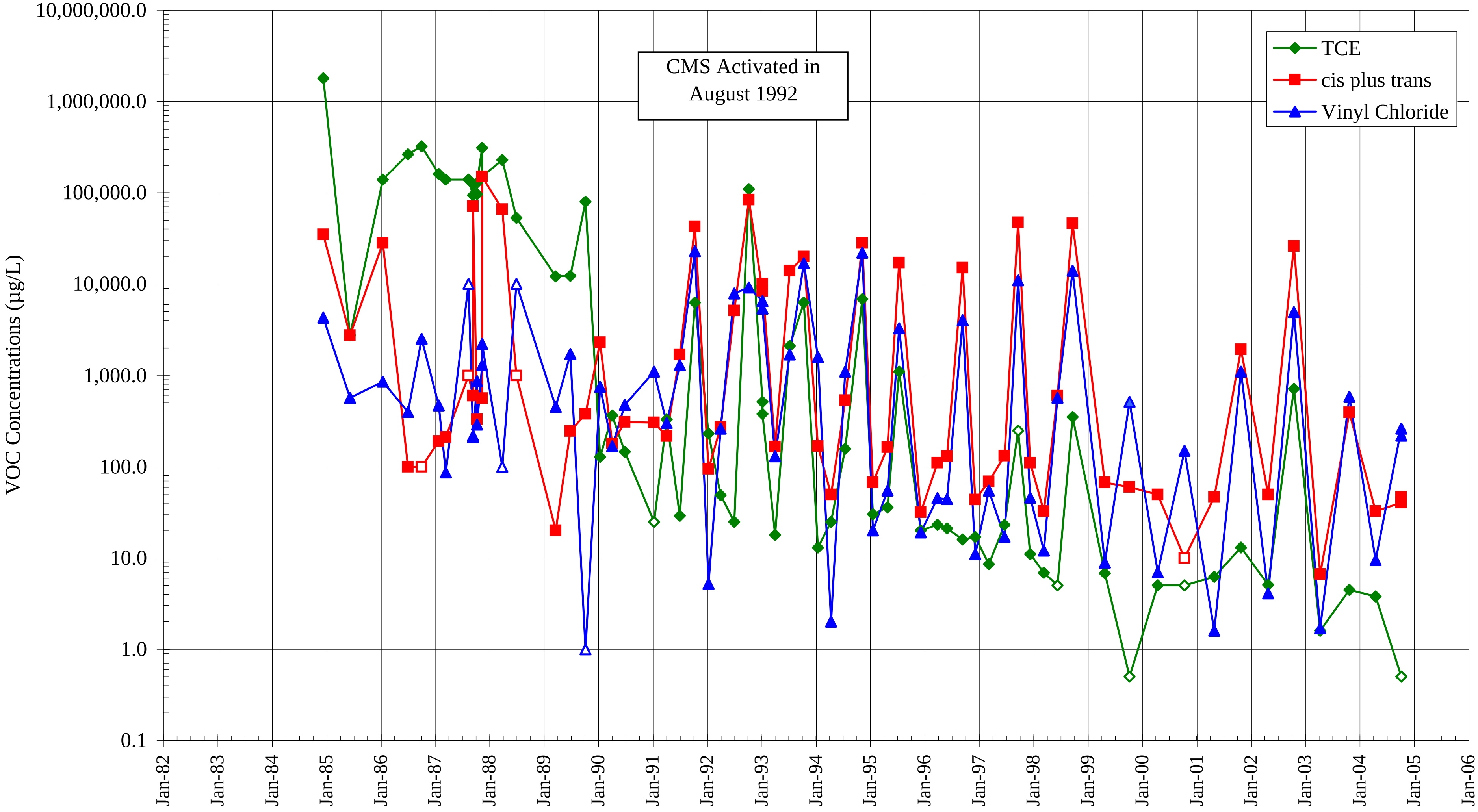

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Ground Water Chemistry

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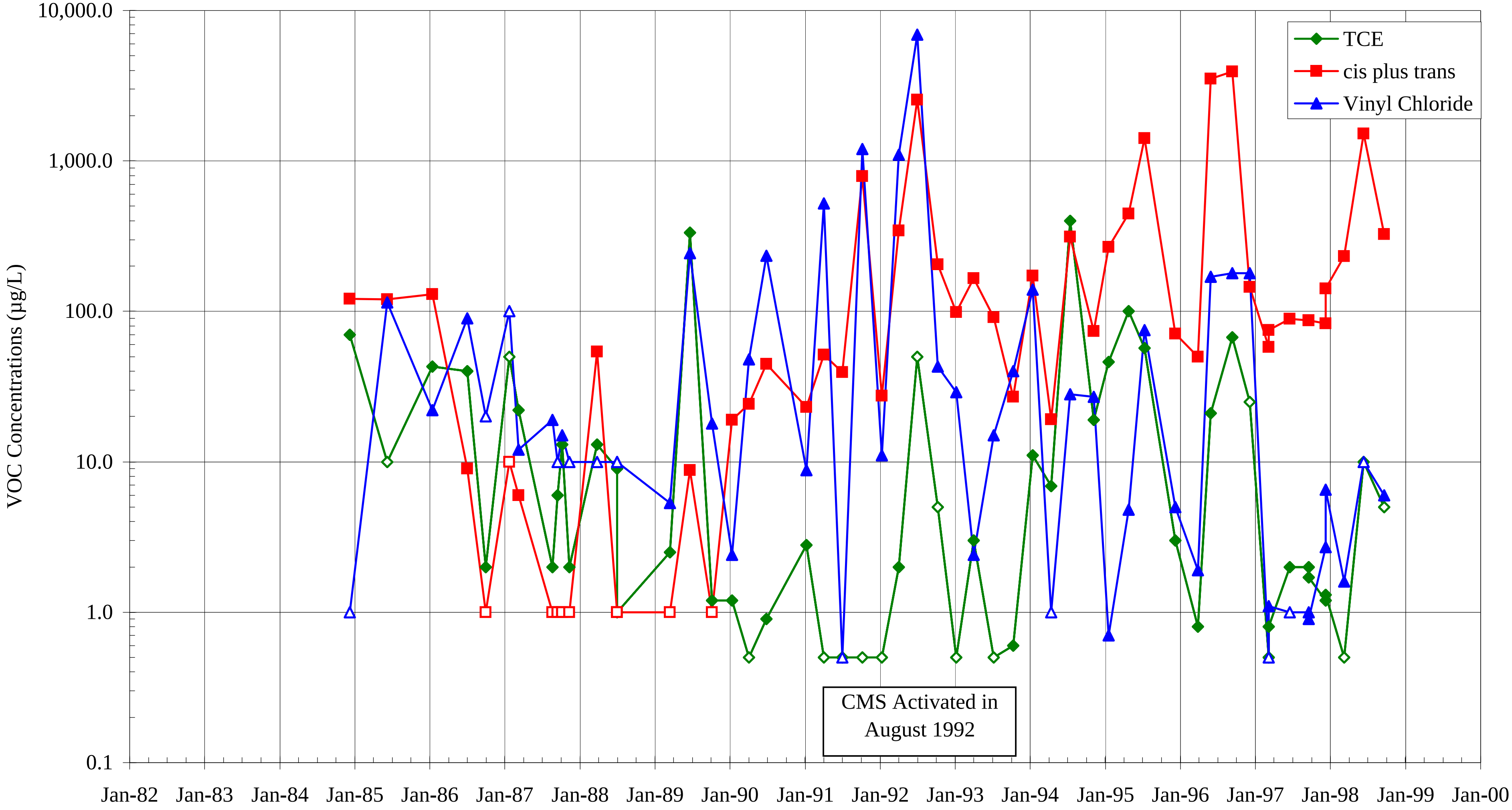

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Ground Water Chemistry

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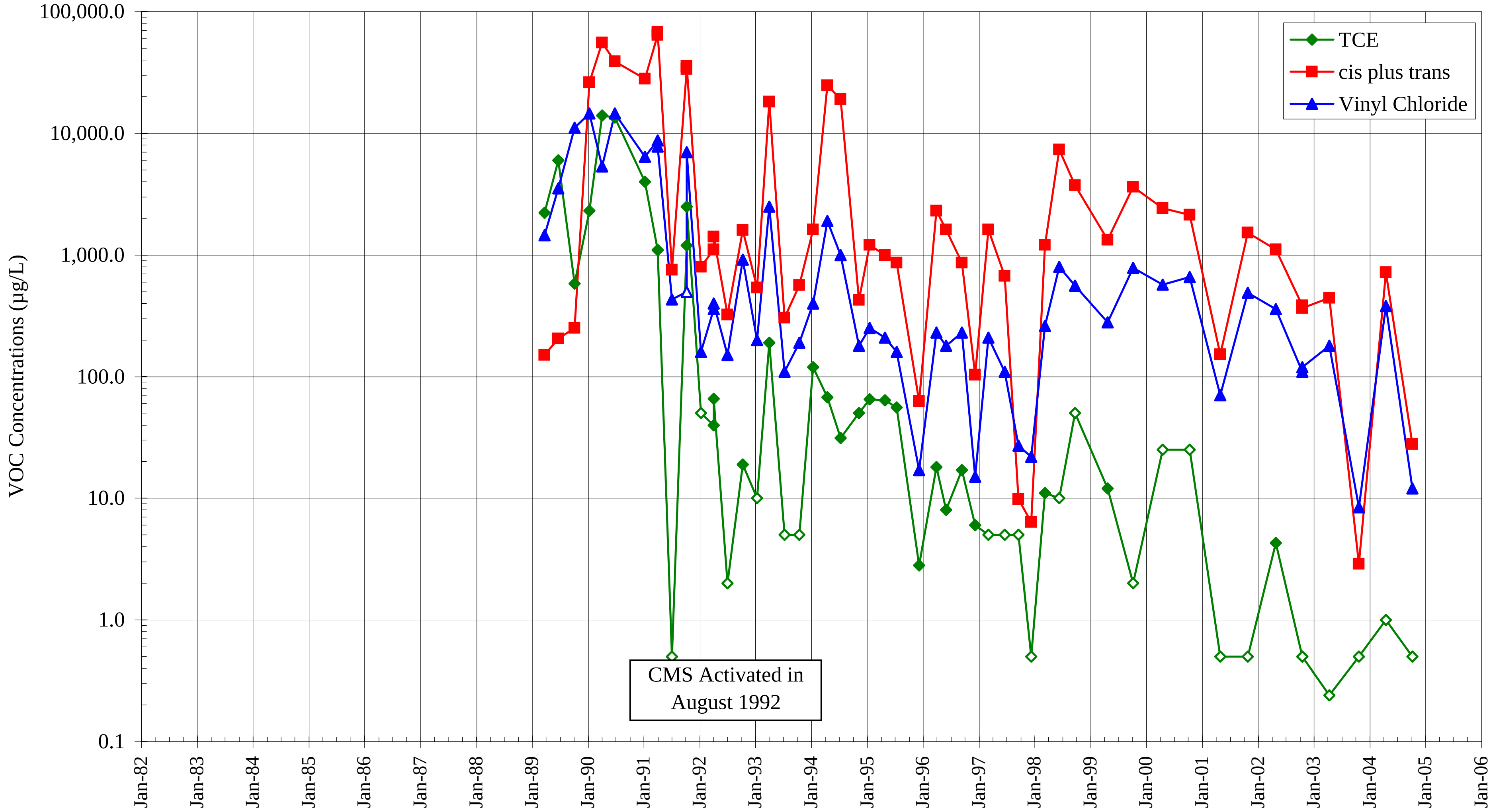

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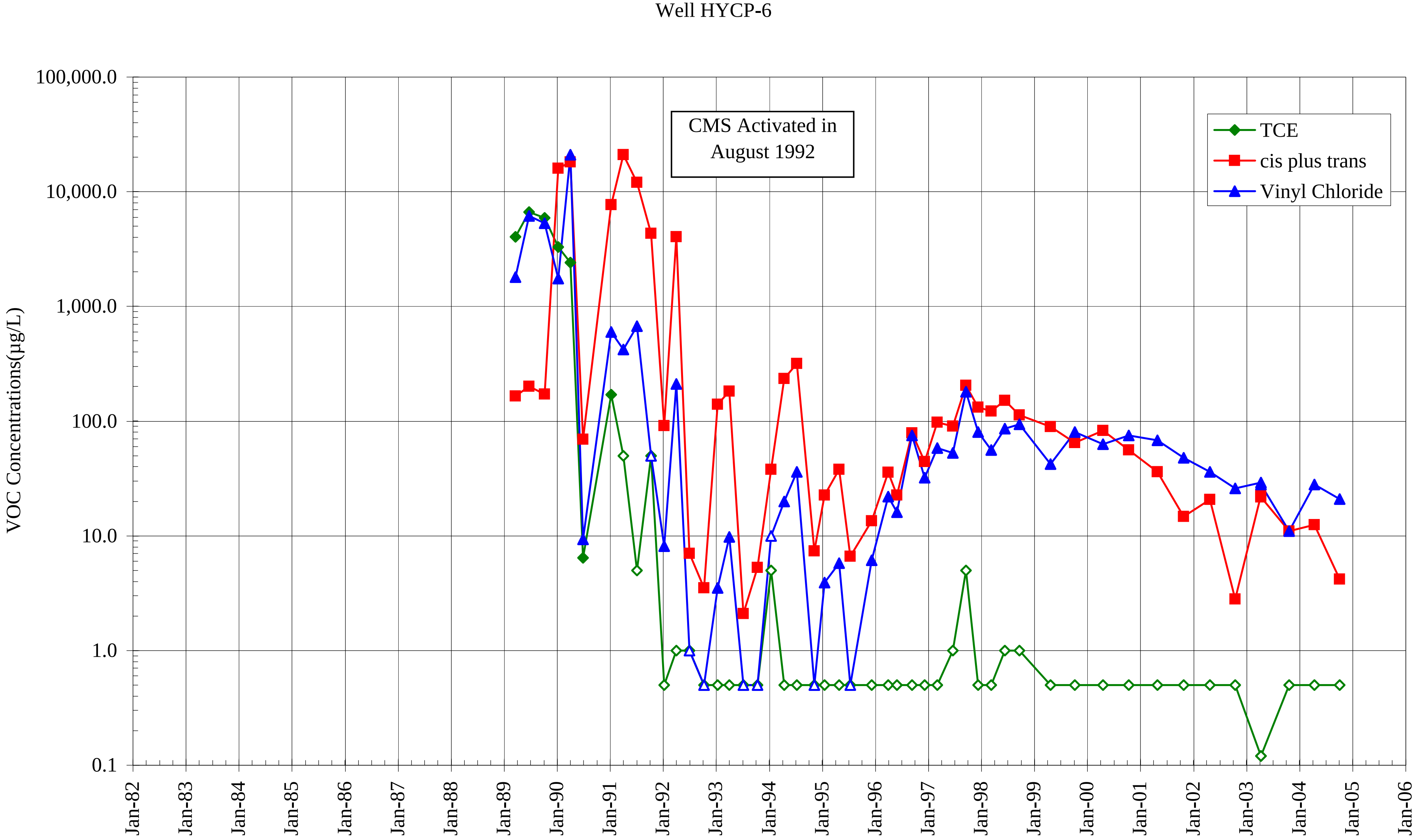

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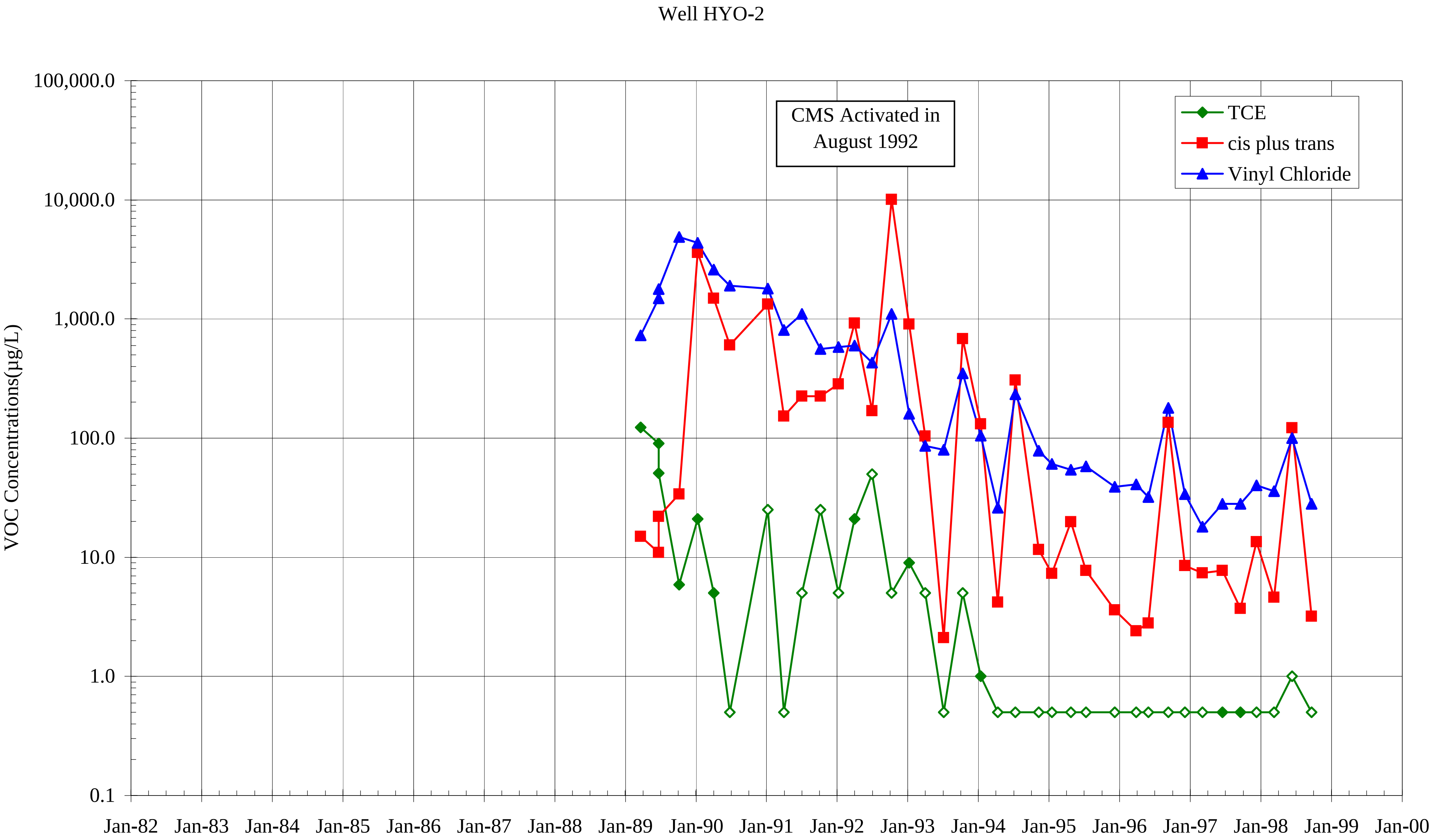

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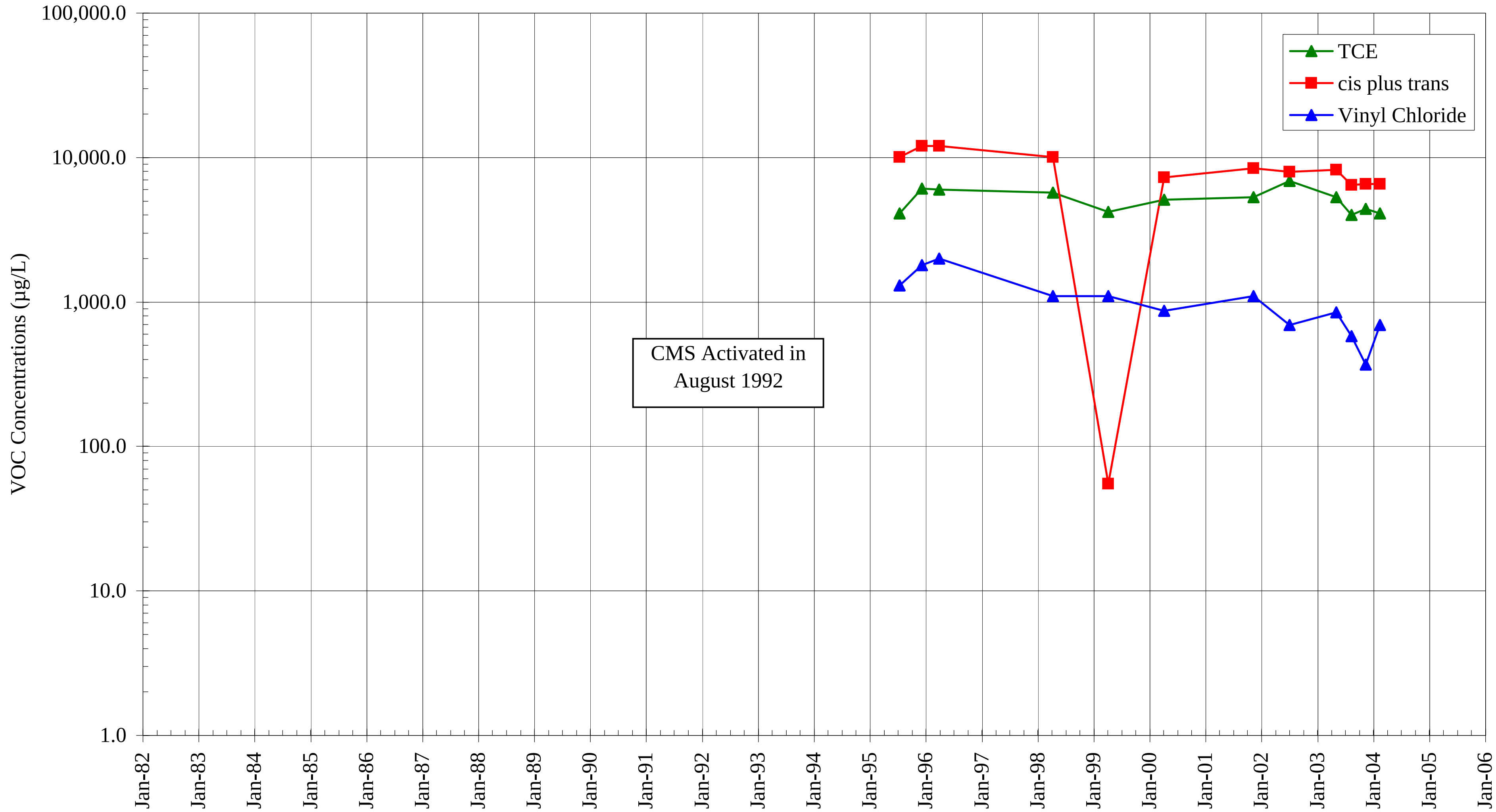

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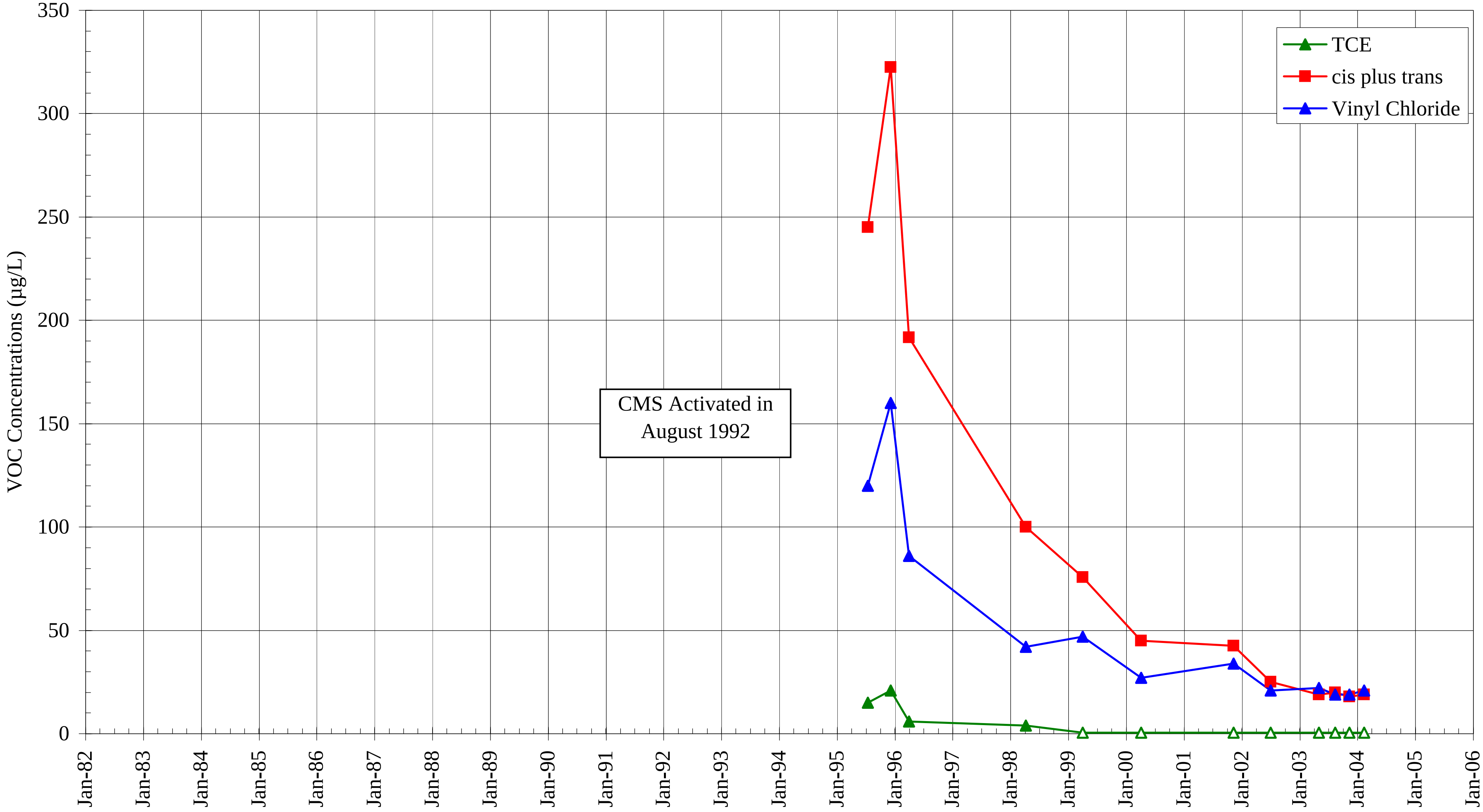

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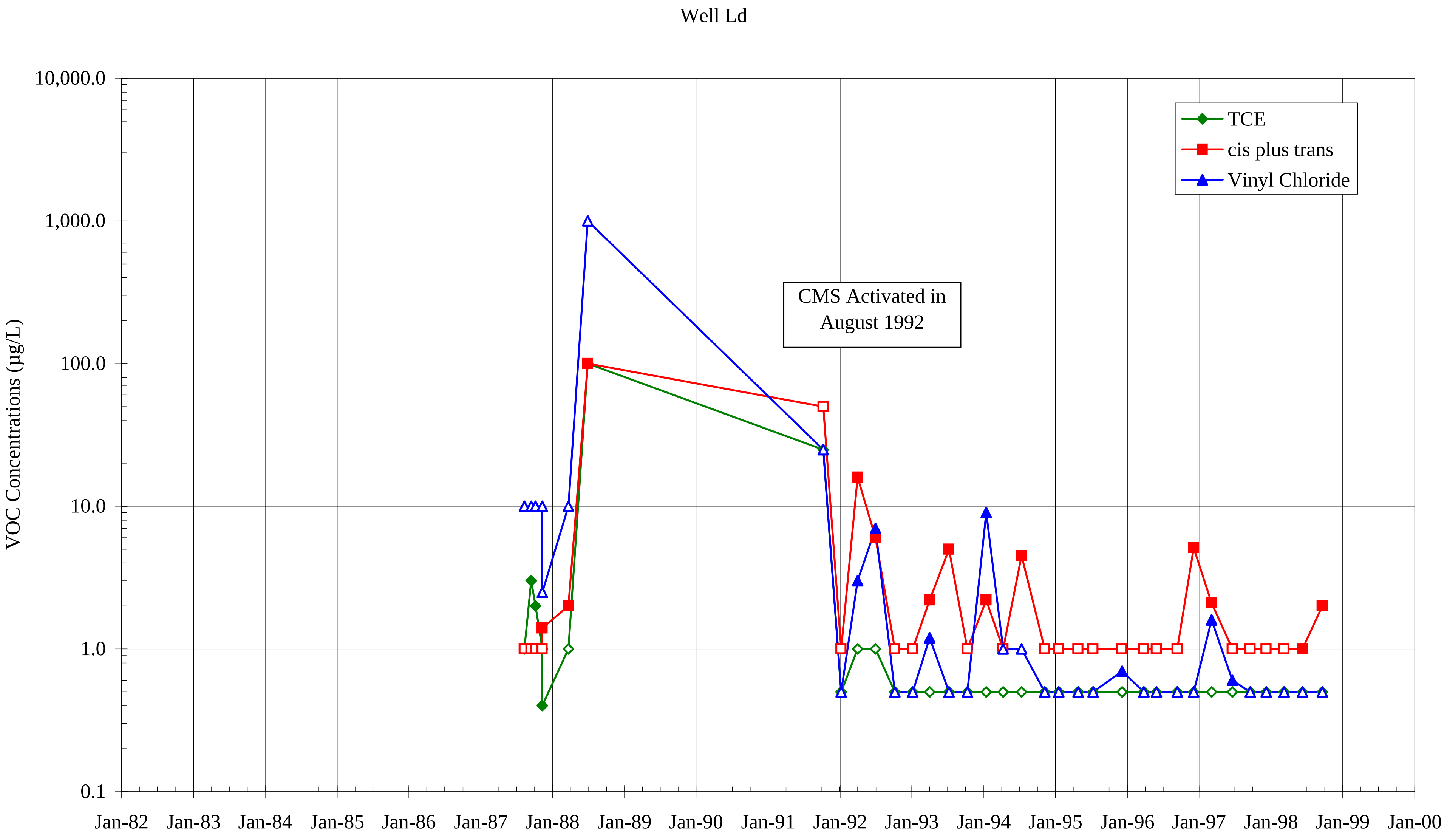

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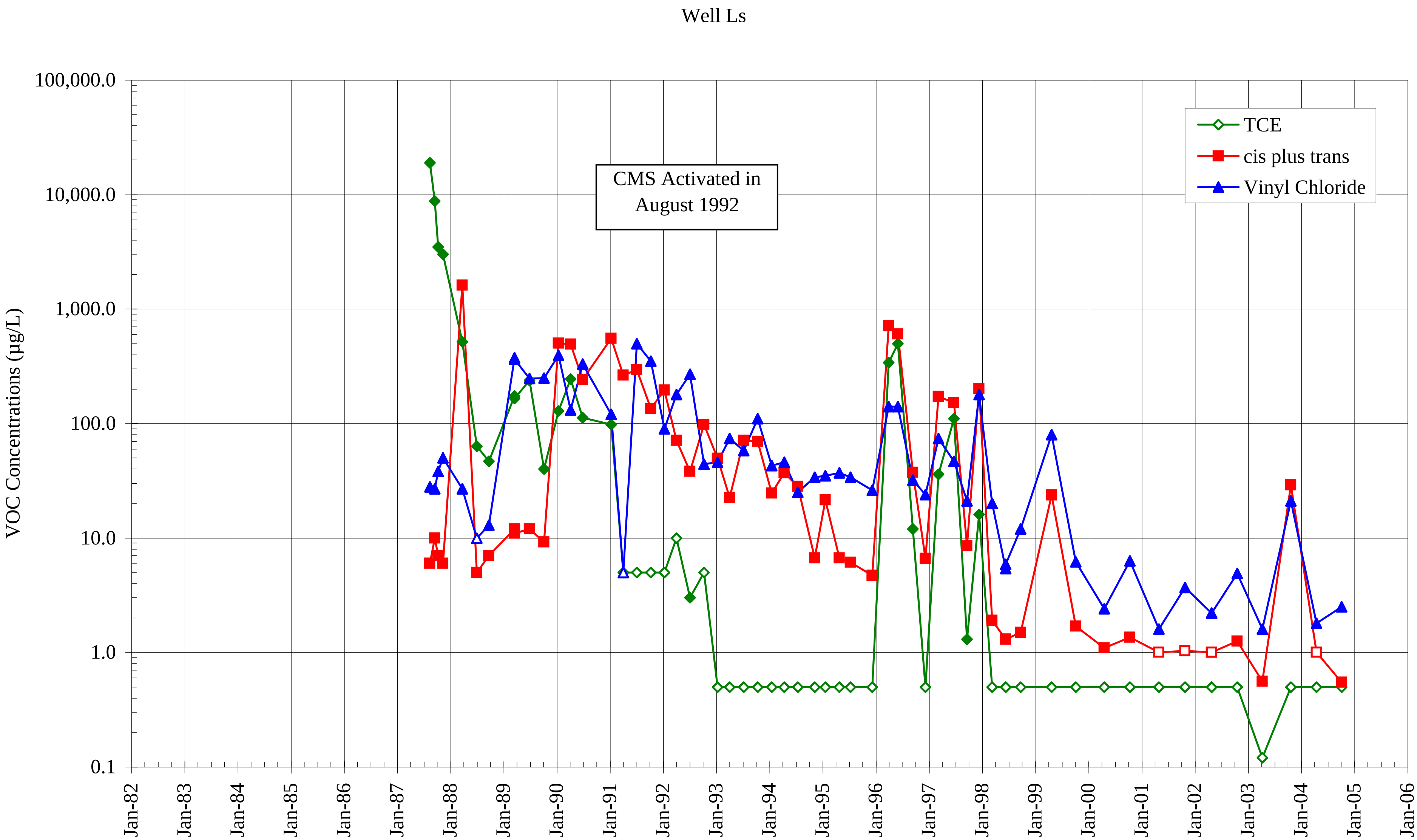

envirometal
technologies
inc.

Bench-Scale Treatability Report of the EnviroMetal Process at the BSB Site in Kent, Washington

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1.0 INTRODUCTION AND BACKGROUND

This bench-scale test report was prepared for EMCON, as part of the initial evaluation of the use of the EnviroMetal Process for treatment of dissolved volatile organic compounds (VOCs) present in groundwater at the BSB Diversified Site, Kent, Washington (the "site"). This report presents the procedures, results and data interpretation of a column test conducted at the Institute for Groundwater Research, University of Waterloo (UW), Waterloo, Ontario, Canada, under contract to EnviroMetal Technologies Inc. (ETI).

1.1 Background Information on the EnviroMetal Process

As a consequence of the significant limitations of pump-and–treat systems, *in-situ* permeable reactive barriers (PRBs) have been identified as an innovative alternative groundwater remediation technology (Gillham, 1996; O'Hannesin and Gillham, 1998). The concept involves the construction of a permeable wall or barrier, containing appropriate reactive materials, across the path of a contaminant plume. As the contaminated groundwater passes through the wall, the contaminants are removed through chemical or physical processes. Various configurations of *in-situ* treatment systems have been evaluated, based on site-specific conditions. Advantages of *in-situ* reactive barriers include:

- conservation of groundwater resources
- long-term passive treatment
- absence of waste materials requiring treatment or disposal
- absence of invasive surface structures and equipment
- low operations and maintenance costs

Several types of materials have been suggested for use in *in-situ* treatment zones. The most advanced stage of application has been achieved with systems using zero-valent iron to degrade chlorinated organic compounds. Under highly reducing conditions and in the presence of metallic surfaces, certain dissolved chlorinated organic compounds in groundwater degrade to non-toxic products such as ethene, ethane and chloride (Gillham and O'Hannesin, 1994). The process is abiotic reductive dehalogenation, with the metal serving to lower the solution redox potential (Eh) and as the electron source in the reaction. Using iron as the reactive metal, reaction half-lives (the time required to degrade one half of the original contaminant mass) are commonly several orders of magnitude lower than those measured under natural conditions. The technology is particularly attractive for the remediation of contaminated groundwater because of the high rates of degradation, the iron is relatively inexpensive, the process requires no external energy supply and because most compounds are degraded with production of few, if any, hazardous (chlorinated) organic by-products.

Since 1994, thirty-seven PRBs containing granular iron have been installed to remediate volatile organic compounds (VOCs) throughout the United States, Europe and Australia. There are currently 22 *in-situ* full scale systems removing VOCs from groundwater, in addition to 15 pilot-scale systems which have been installed to provide "proof of concept" data and more recently to demonstrate innovative construction methods.

1.2 Approach to Technology Implementation at the BSB Site in Kent, Washington

The EnviroMetal process has been proposed as an *in-situ* treatment alternative to degrade VOCs in groundwater at the BSB Site. When viewed in the context of previous successful applications, the BSB Site appears quite amenable to treatment using this technology:

(1) the primary VOCs present, trichloroethene and cis 1,2-dichloroethene, have been successfully treated at other sites.

(2) the inorganic chemistry of the plume appears to pose no significant impediment to technology application.

Several design parameters need to be addressed and quantified in order to apply the EnviroMetal process in the field, and to determine its cost-competitiveness with other treatment technologies. The bench-scale test was initiated to provide design parameters (VOC degradation rates) for use in the design of the treatment system. Specifically, the following factors need to be investigated to facilitate field implementation of a treatment system at the site:

i) The degradation rates of chlorinated VOCs present in site groundwater. Degradation rates determined using site groundwater allow refinement of the degradation rates and resulting residence time. This residence time within the iron treatment zone will provide the time for the VOCs to achieve the regulated cleanup criteria.

ii) The production and subsequent degradation rates of chlorinated compounds produced from the VOCs originally present in the site groundwater (e.g., dichloroethene isomers and vinyl chloride from trichloroethene). These can also affect the dimensions of the treatment system.

iii) The volume of iron material required. This volume is based on the concentrations of VOCs present in groundwater entering the treatment zone and potential breakdown products, removal/degradation rates and groundwater flow velocity.

iv) The effects of the process on the inorganic chemistry of the groundwater, in particular, the potential for mineral precipitation. Mineral precipitates could affect the long-term operations and maintenance (O&M) requirements of the treatment system.

1.3 Bench-Scale Test Report Organization

The remainder of this report is organized as follows:

- Section 2.0 presents the detailed objectives and methods for the bench-scale test.
- Section 3.0 presents the organic and inorganic bench-scale test results.
- Section 4.0 discusses the calculated residence time required to meet the target levels.
- Section 5.0 summarizes the results.

2.0 BENCH-SCALE TEST OBJECTIVES AND METHODS

2.1 Bench-Scale Test Objectives

The primary objective of the bench-scale test was to provide the data necessary to determine the required residence time to degrade the VOCs present (and their chlorinated breakdown products) in groundwater at the BSB Site in Kent, Washington to below their regulatory criteria. Samples collected during the laboratory column test were used to evaluate the following specific objectives:

- determine degradation rates of VOCs in site groundwater using granular iron;
- characterization of chlorinated breakdown products, and evaluation of the rates of degradation of these products;
- magnitude of Eh and pH changes; and
- changes in inorganic geochemistry as a result of the pH and Eh changes, including possible mineral precipitation.

2.2 Bench-Scale Test Methods

The granular iron used in the test was obtained from Connelly-GPM, Inc. of Chicago, Illinois (a commercial granular iron source). The grain size of the iron ranged from 2.0 to 0.25 mm (–8 to +50 mesh, US Standard Sieve Mesh No.). The specific surface area was 1.1 m^2/g determined by the BET method (Brunauer et al., 1938) on a Micromeretic Gemini 2375 surface analyzer. A hydraulic conductivity value of 5.0 x 10^{-2} cm/sec (143 ft/day) was obtained using a falling head permeameter test.

The column was constructed of Plexiglas™ with a length of 1.64 ft (50 cm) and an internal diameter of 1.5 in (3.8 cm). Seven sampling ports were positioned along the length at distances of 0.08, 0.16, 0.33, 0.5, 0.66, 1.0 and 1.3 ft from the inlet end. The column also allowed for the collection of samples from the influent and effluent solutions (Figure 1). Each sampling port consisted of a nylon Swagelok fitting (1/16 in) tapped into the side of the column, with a syringe needle (16G) secured by the fitting. Glass wool was placed in the needle to exclude the iron particles. The sampling ports allowed samples to be collected along the central axis of the column. Each sample port was fitted with a Luer-Lok™ fitting, such that a glass syringe could be attached to the port to collect a sample. When not in operation the ports were sealed by Luer-Lok™ plugs.

The column was packed with 100% granular iron. To assure a homogeneous mixture, aliquots of iron material were packed vertically in lift sections within the column. Values of bulk density, porosity, and pore volume were determined by weight (Table 1). The column experiment was performed at room temperature.

An Ismatec™ IPN pump was used to feed the site water from a collapsible Teflon® bag to the influent end of the column. The pump tubing consisted of Viton®, and all the other tubing was Teflon® (1/8-inch OD x 1/16-inch ID). A flow velocity of 1.8 ft/day (55 cm/day) was selected in consultation with EMCON to allow the tests to be completed within a reasonable time length.

2.2.1 Groundwater Shipment and Storage

Groundwater was collected from the pump and treat system (HYR-1) by EMCON and shipped to UW in 8 (4L) amber sample bottles with no headspace. The site water was stored at 4°C until required, at which time it was siphoned from the sample bottles into a collapsible Teflon® bag. As noted in Appendix A by reservoir number (RN), all the site water could not be held in the collapsible bag and thus the reservoir had to be filled twice [a-b] over the course of the test. Water was analyzed immediately upon arrival at UW for select VOCs, using the methods described in Section 2.3. The VOCs that were detected included trichloroethene (TCE), cis 1,2-dichloroethene (cDCE), and vinyl chloride (VC) with concentrations of about 3200, 5000 and 700 μg/L, respectively. Trace amounts of 1,1-dichloroethene (11DCE) and trans 1,2-dichloroethene (tDCE) were also detected.

Over the duration of the test, a beige organic floc or precipitate formed within the reservoir, hence the VC concentration declined from an initial value of 500 to <100 μg/L from 18 to 26 pore volumes as shown in Appendix A. It was believed that the VC possibly degraded or sorbed onto the organic floc or precipitate. Due to this decrease in VC concentration, VC was added to the influent reservoir at a similar concentration to the initial reservoir.

2.2.2 Sampling and Analysis

The column was sampled periodically over time until steady state concentration profiles were achieved. In the bench-scale tests, steady state is defined as the time when VOC concentration versus distance profiles do not change significantly between sampling events (Appendix A). After removing the stagnant water from the sampling needle, 2.0 to 3.0 mL samples were collected from the sampling ports using glass on glass syringes, transferred to glass sample bottles, and analyzed immediately (no holding time). Samples for organic analyses, redox potential (Eh) and pH measurements were collected from each port as well as from the influent solution and the effluent overflow bottles (Appendix A). Samples for inorganic analyses were obtained from the influent solution and the effluent overflow bottles as steady state conditions were approached (Appendix B).

2.3 Analytical Methods

2.3.1 Organic Analyses

The less volatile halogenated organics such as TCE, was extracted from the water sample within the glass sample bottle using pentane with an internal standard of 1,2-dibromoethane, at a water to pentane ratio of 2.0 to 2.0 mL. The sample bottles were placed on a rotary shaker for 10 minutes to allow equilibration between the water and the pentane phases, then the pentane phase was transferred to an autosampler bottle. Using a Hewlett Packard 7673 autosampler, a 1.0 µL aliquot of pentane with internal standard was automatically injected directly into a Hewlett Packard 5890 Series II gas chromatograph. The chromatograph was equipped with a Ni^{63} electron capture detector (ECD) and DB-624 megabore capillary column (30 m x 0.538 mm ID, film thickness 3 µm). The gas chromatograph had an initial temperature of 50 °C, with a temperature time program of 15 °C/minute reaching a final temperature of 150 °C. The detector temperature was 300 °C. The carrier gas was helium and makeup gas was 5% methane and 95% argon, with a flow rate of 30 mL/min.

For the more volatile compounds such as the DCE isomers and VC, 3.0 mL samples were collected in glass on glass syringes and placed in 10 mL Teflon® faced septa crimp cap vials, creating a headspace with a ratio of 7.0 mL headspace to 3.0 mL aqueous sample. The samples were placed on a rotary shaker for 15 minutes to allow equilibration between the water and gas phase. Using a Hewlett Packard 7694 headspace auto sampler, a 1 mL stainless steel sample loop injected the samples directly onto a Hewlett Packard 5890 Series II gas chromatograph. The chromatograph was equipped with a HNU photoionization detector (PID) with a bulb ionization potential of 10.2 eV. The gas chromatograph was fitted with a fused silica capillary NSW-PLOT column (15 m x 0.53 mm ID). The samples were placed in the analyzer oven for 2 minutes at 75°C, and subsequently injected onto the gas chromatograph. The temperature program was 160°C for 5.5 minutes, then increased at 20°C/min to 200°C and held for 5.5 minutes. The injector and detector temperatures were 100°C and 120°C, respectively. The carrier gas was helium with a flow rate of 5.5 mL/min. Data was collected with a Pentium 166 computer using HP-Chemstation Version 5.04.

Method detection limits (MDL) were determined for each compound as the minimum concentration of a substance that can be identified, measured and reported with 99% confidence that the analyte concentration is greater than zero. The MDLs were determined from analysis of samples from a solution matrix containing the analytes of interest. Although MDLs are reported, these values are not subtracted from any reported VOC concentrations (Appendix A). The reason for this is that it indicates that the organic concentrations are approaching or advancing within the column, and is helpful when determining degradation rates. Detection limits for all compounds, as given in Table 2, were determined using the EPA procedure for MDL (US EPA, 1982).

2.3.2 Inorganic Analyses

Eh was determined using a combination Ag/AgCl reference electrode with a platinum button and a Markson™ Model 90 meter. The electrode was standardized with ZoBell™. Millivolt (mV) readings were converted to Eh, using the electrode reading and the standard potential of the Ag/AgCl electrode at a given temperature. The pH measurements were made using a combination pH/reference electrode and a Markson™ Model 90 meter, standardized with the pH buffer 7 and the appropriate buffer of either 4 or 10. A 2.0 mL sample was collected with a glass on glass syringe and analyzed immediately for Eh and then pH.

Over the course of the test, two water samples were collected from the influent and two from the effluent of the column, and sent to Philip Services, Mississauga, Ontario for cation and anion analyses (Appendix B). Cation analyses, included Fe (total), Na, Mg, Ca, K, Mn and a suite of other cations. These analyses were performed using inductively coupled plasma (ICP). The unfiltered, 60 mL samples were acidified to a pH of 2 with nitric acid and stored at 4 °C until analyzed. Anion analyses, including Cl, NO_3 and SO_4, were performed using ion chromatography on 60 mL unfiltered samples. Alkalinity (as mg $CaCO_3$/L) in water was determined by colorimetry. Detection limits (DL) for the inorganic parameters are included in Table 2.

3.0 BENCH-SCALE TEST RESULTS

3.1 Degradation of Volatile Organic Compounds

Samples for measurement of VOC concentrations along the length of the column were taken approximately every 7 to 10 pore volumes (Appendix A). Although respiking of the influent reservoir caused some variation in the VC influent concentrations during the test, this did not affect interpretation of test results as influent concentrations are monitored at each sampling event. The results obtained when steady state conditions were reached are plotted as VOC concentration (µg/L) versus distance along the column (ft). The profiles of most interest are the steady state concentration profiles, collected at the end of the measurement period (46 pore volumes).

Steady state concentration profiles are shown in Figures 2-4. At a flow velocity of 1.8 ft/day (55 cm/day), a total of 46 pore volumes of water had passed through the column. In this case, one pore volume corresponds to a residence time of about 22 hr. Steady declines in concentration were observed for both TCE and cDCE (Figure 2). A steady decline in TCE concentration was observed from an initial value of 2,333 µg/L to non-detectable values at the 0.66 ft distance. The cDCE concentration profile showed an initial increase in concentration from a value of 3,607 µg/L to a peak value of 3,864 µg/L at the 0.08 ft distance (Figure 2). This initial increase in cDCE was attributed to the dechlorination of TCE. From this peak value, a gradual decline in concentration was observed along the column, with non-detectable values at distances of 1.0 , 1.3 and 1.6 ft. Figure 3 shows a gradual decline in VC concentration, from an initial value of 743 µg/L to non-detectable values at the 1 ft distance and for the remainder of the column. Trace amounts of tDCE and 11DCE were observed along the column profile at distances up to 0.16 and 0.33 ft respectively, followed by non-detectable values.

Using the flow velocity, the distance along the column was converted to time and the degradation rate constants were calculated for each VOC in the influent solution groundwater, using the first-order kinetic model:

$$C = C_o e^{-kt} \qquad (1)$$

where: C = VOC concentration in solution at time,
C_o = VOC concentration of the influent solution,
k = first-order rate constant, and
t = time.

For the VOCs, C_o is the concentration of the compound in the influent solution at steady state (Table 3). By rearranging and taking the natural log (ln), equation (1) becomes:

$$\ln(C/C_o) = -kt \qquad (2)$$

The time at which the initial concentration declines by one-half, ($C/C_o = 0.5$), is the half-life ($t_{1/2}$), which, by rearranging equation (2), is given by:

$$t_{1/2} = 0.693/k \qquad (3)$$

The decay constants k [l/time], were computed from the slope of the first-order model, obtained by fitting equation 2 to the experimental data. Half-lives, along with corresponding correlation coefficients (r^2) values are provided in Table 3. The r^2 values indicate how well the first-order model represents the experimental data.

The first-order decay model provided good fits to the TCE, cDCE and VC data, with r^2 values greater than 0.88 (Appendix A). The laboratory half-lives calculated for TCE and VC were 0.9 and 1.5 hr, respectively. Due to the initial increase in cDCE concentrations, the half-life was calculated by setting the initial concentration (C_o) equal to the peak concentration. This resulted in a half-life calculation of 1.2 hr. These half-lives were quite consistent over several column profiles at steady state (Appendix A).

3.2 Inorganic Results

Figure 4 shows the Eh and pH profiles observed at steady state. The Eh profile showed reducing conditions, decreasing from an initial value of +260 to about –283 mV within the granular iron, while pH increased from values of 7.4 to 9.4 (Appendix A).

Two influent and effluent samples were collected from the column as steady state approached (Appendix B). Changes in inorganic chemical constituents observed in the influent and effluent groundwater are summarized in Table 4. Comparison of column influent and effluent results show that concentrations of sodium, potassium, manganese, sulphate, ammonia, nitrate and chloride remained relatively unchanged. Decreases in calcium, magnesium, silica, dissolved organic carbon and alkalinity were observed in the column effluent.

Total iron concentrations decreased from an influent value of 1.2 mg/L to an effluent value of 0.02 mg/L as the groundwater passed through the iron material. Typically, total iron concentrations increase slightly in the iron zone. Independent corrosion rate measurements of metallic iron (Reardon, 1995) indicate that several mmol/L Fe^{2+} would be introduced to groundwater as a result of iron corrosion.

$$Fe^0 + 2H_2O \rightarrow Fe^{2+} + 2OH^- + H_{2(g)} \qquad (4)$$

Since the total iron concentration decreased within the column, it appears that very few iron precipitates were forming in the column. Iron minerals which form could include iron carbonate (siderite, $FeCO_3$) and/or iron hydroxide ($Fe(OH)_2$). Some iron hydroxides may be converted over time to iron oxide (magnetite, Fe_3O_4) (Odziemkowski et al., 1998):

$$3Fe(OH)_{2(s)} \rightarrow Fe_3O_{4(s)} + 2H_2O + H_{2(g)} \qquad (5)$$

Calcium concentrations decreased from 17 mg/L in the influent to 4 mg/L in the effluent. A corresponding decrease in alkalinity from 179 to 93 mg/L was observed as the water passed through the iron. Declines in calcium, magnesium and alkalinity concentrations occur in response to increasing pH values due to the corrosion of iron (Equation 4). Typically, as pH increases to values of about 9.5 in the iron treatment zone, bicarbonate (HCO_3^-) in solution converts to carbonate (CO_3^{2-}) to buffer the pH increase:

$$HCO_3^- \rightarrow CO_3^{2-} + H^+ \qquad (6)$$

The carbonate then combines with cations (Ca^{2+}, Fe^{2+}, Mg^{2+}, etc.) in solution to form mineral precipitates:

$$Ca^{2+} + CO_3^{2-} \rightarrow CaCO_{3(s)} \qquad (7)$$
$$Fe^{2+} + CO_3^{2-} \rightarrow FeCO_{3(s)} \qquad (8)$$
$$Mg^{2+} + CO_3^{2-} \rightarrow MgCO_{3(s)} \qquad (9)$$

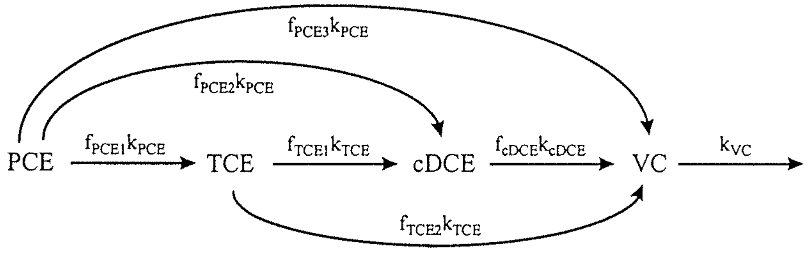
In analyses of iron obtained from previous laboratory studies and field sites, both calcite and aragonite, which are forms of calcium carbonate, have been identified. The changes in iron and magnesium concentration between column influent and effluent samples, which reflect mineral precipitation in the column, are given in Table 4. The observed higher calcium and alkalinity loss relative to the amount of calcium and magnesium losses indicate that siderite may have formed in addition to calcite, aragonite and/or magnesite.

4.0 DETERMINATION OF RESIDENCE TIME IN THE FIELD-SCALE TREATMENT SYSTEM

4.1 Required Residence Time

To estimate the residence time required in a field-scale treatment system, expected field influent VOC concentrations were used, along with the column half-lives, in a mathematical model representing sequential VOC degradation. The degradation model calculates the VOC concentrations over time, from which the time required for the VOCs to degrade to their regulatory criteria can be determined. The residence time calculation is shown conceptually in Figure 5. In the model, potential breakdown products are concurrently produced and degraded as described by first-order kinetic equations. The equations are similar to those found in many chemical kinetic texts and were adapted by ETI to represent the EnviroMetal Process. The software Scientist® for Windows Version 2.0 (1995) was used to perform the calculations.

The model is an expression of the chemistry that is observed in the solution phase. For PCE, TCE, cDCE and VC, the model takes the form:



where: f = mole fraction
k = first-order rate constant

In order to determine the VOC concentrations at a given time the following first-order equations are used:

$$dPCE / dt = -k_{PCE}PCE \qquad (10)$$
$$dTCE / dt = f_{PCE1}k_{PCE}PCE - k_{TCE}TCE \qquad (11)$$
$$dcDCE / dt = f_{PCE2}k_{PCE}PCE + f_{TCE1}k_{TCE}TCE - k_{cDCE}cDCE \qquad (12)$$
$$dVC / dt = f_{PCE3}k_{PCE}PCE + f_{TCE2}k_{TCE}TCE + f_{cDCE}k_{cDCE}cDCE - k_{VC}VC \qquad (13)$$

These equations can be used directly in Scientist® which can perform the integration, or their integrated form may also be used. As an example, integration of equation 10 yields the more familiar form of the first-order equation for parent compounds:

$$PCE = PCE_o e^{-k_{PCE}t} \qquad (14)$$

where: t = time
PCE = PCE concentration at time t
PCE_o = PCE concentration at t = 0

Figure 6 gives the molar quantities of a parent compound converted to a degradation product by the model.

Laboratory half-lives established at room temperature (23°C) must be adjusted to the field groundwater temperature (10°C). Previous laboratory and field experience has shown that bench-scale half-lives should be increased to account for field effects including temperature. If it is assumed that the operating (groundwater) temperature will not fall substantially below 10 °C, it is reasonable to increase the effective half-lives by a factor of two.

Figures 7 and 8 show the simulation results using half-lives adjusted for lower groundwater temperature. Based on results of the geoprobe investigation along the proposed line of installation conducted by EMCON, VOC concentrations typical of those anticipated to reach the treatment wall were used in the model. Results of the geoprobe sampling suggest that VOC concentrations vary along the line of installation. Therefore, high and low concentration scenarios were simulated (Table 5). The highest VOC concentrations were observed to exist in geoprobe boring 13 (GP-13), while the lowest concentrations were observed in GP-12.

Assuming the VOCs require treatment to MCLs (maximum contaminant levels), the residence time required in a field-scale treatment system would be about 1.4 days (34 hr) using the field anticipated high concentration scenario and 0.8 days (20 hr) using the low concentration scenario. Therefore, along the proposed line of installation, the residence time required can range between 1.4 and 0.8 days. During the design phase, further simulations can be undertaken to incorporate variations in concentration distribution both vertically and along the line of installation.

4.2 Possible Effect of Precipitation on Field-Scale Performance

The rise in pH as a result of corrosion of the iron typically causes the precipitation of carbonate minerals such as calcium carbonate and iron carbonate (siderite), and at pH values in the range of 9 to 10, iron will precipitate as iron hydroxide. Concern has been expressed regarding the potential for these precipitates to reduce the activity of the iron and/or to reduce the permeability through pore clogging. Experience to date indicates calcium carbonate to represent by far the largest volume of precipitates, and also indicates that precipitates have only minor effect on the activity of the iron.

Recent core analyses from pilot-scale systems in New York and Colorado revealed porosity losses in the upgradient few inches of iron in the range of 10% of the initial porosity, with losses declining sharply over the first foot to below 2% (Vogan et al., 1998). These porosity losses were calculated based on carbonate analyses of iron material retrieved by coring the treatment zone. The porosity loss measured in the core samples was consistent with that predicted on the basis of changes in the inorganic water chemistry. Assuming an initial porosity of 0.5, the porosity after 18 months (Colorado) to 2 years (New York) in the first few inches of the iron zones had declined to about 0.45. Concurrent field data (VOC and groundwater velocity measurements) indicated that system hydraulics and iron reactivity had not been adversely affected by the precipitates. A commercial system in Sunnyvale, CA (Szerdy et. al., 1996) has also been performing consistently for over 4.5 years. Groundwater at this site exhibits TDS in the range of 1,000 to 3,500 mg/L. No significant precipitates were observed in cores from an in situ reactive wall at the University of Waterloo Borden test site two and four years after it was installed (O'Hannesin and Gillham, 1998). This wall performed consistently over a 5 year period, with the expectation that it would continue to perform for at least another five years with no maintenance.

4.3 Potential for Biofouling of Reactive Material

There was no evidence of biofouling (sliming, etc.) observed during the treatability studies. Field tests to date from other sites have been encouraging. Cores of the reactive wall at the Borden test site (O'Hannesin and Gillham, 1998), collected two years after the wall was installed, showed no significant population of iron oxidizing microbes, and only low numbers of sulphate reducers (Matheson and Tratnyek, 1994). Phospholipid-fatty acid analysis of groundwater from an above-ground test reactor at an industrial facility in California and an *in-situ* site in New York showed no enhanced microbial population in the reactive material relative to background groundwater samples

Core samples from the two sites described above were also analyzed for microbial population. The results indicated no evidence of increased microbial growth or fouling in the iron zone.

5.0 SUMMARY

Bench-scale testing using groundwater from the BSB Site, Kent, Washington showed that:

i) the EnviroMetal Process will degrade the chlorinated VOCs present to below MCLs;

ii) rates of VOC degradation were consistent with those measured in previous studies;

iii) a residence time ranging from about 0.8 to 1.4 days should be adequate to reduce the influent VOC concentrations in the groundwater to below MCLs;

iv) minimal mineral precipitates (mainly carbonates) will likely occur in a field-scale in-situ treatment system. These should not significantly affect system performance for many years.

6.0 REFERENCES

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Table 1: Column and Iron Properties

Iron:	
Source	Connelly-GPM., Chicago, IL
Grain Size	2.0 to 0.25 mm (-8 to +50 mesh)
Surface Area	1.1 m^2/g
Hydraulic Conductivity	5.0 x 10^{-2} cm/sec (143 ft/day)
Column:	
Flow Velocity	55 cm/day (1.8 ft/day)
Residence Time	22 hr
Pore Volume	338 mL
Porosity	0.59
Bulk Density	2.80 g/cm^3 (175 lb/ft^3)
Iron to Volume of Solution Ratio	4.7 g : 1 mL
Surface Area to Volume of Solution Ratio	5.2 m^2 : 1 mL

Table 2: Method Detection Limits (MDL) and Detection Limits (DL)

Organic Compounds:	**MDL (μg/L)**
Tetrachloroethene	0.7
Trichloroethene	0.9
cis 1,2-Dichloroethene	1.4
trans 1,2-Dichloroethene	1.8
1,1-Dichloroethene	2.0
Vinyl Chloride	2.6
Inorganic Compounds	**DL (mg/L)**
Calcium	0.05
Iron, Total	0.01
Magnesium	0.05
Manganese	0.005
Potassium	1.0
Silica, Reactive	0.05
Sodium	0.10
Ammonia	0.02
Nitrate	0.2
Chloride	0.5
Sulphate	0.5
Alkalinity (as $CaCO_3$)	3.0
Total Dissolved Solids (Calculated)	4.0
Dissolved Organic Carbon (DOC)	0.2

Table 3: **Bench-Scale Test Half-Lives at Steady State for the BSB Site, Kent, Washington**

Compound	**Influent Concentration (μg/L)**	**Laboratory Half-Life (hr)**	**r^2**
Trichloroethene (TCE)	2,333	0.9	0.893
cis 1,2-Dichloroethene (cDCE)	3,607 3,864[a]	1.2	0.894
Vinyl Chloride (VC)	743	1.5	0.875

r^2 = Correlation Coefficient

[a] Half-life determined from peak concentration

Table 4: Column Influent and Effluent Inorganic Concentrations at Steady State, BSB Site, Kent, Washington

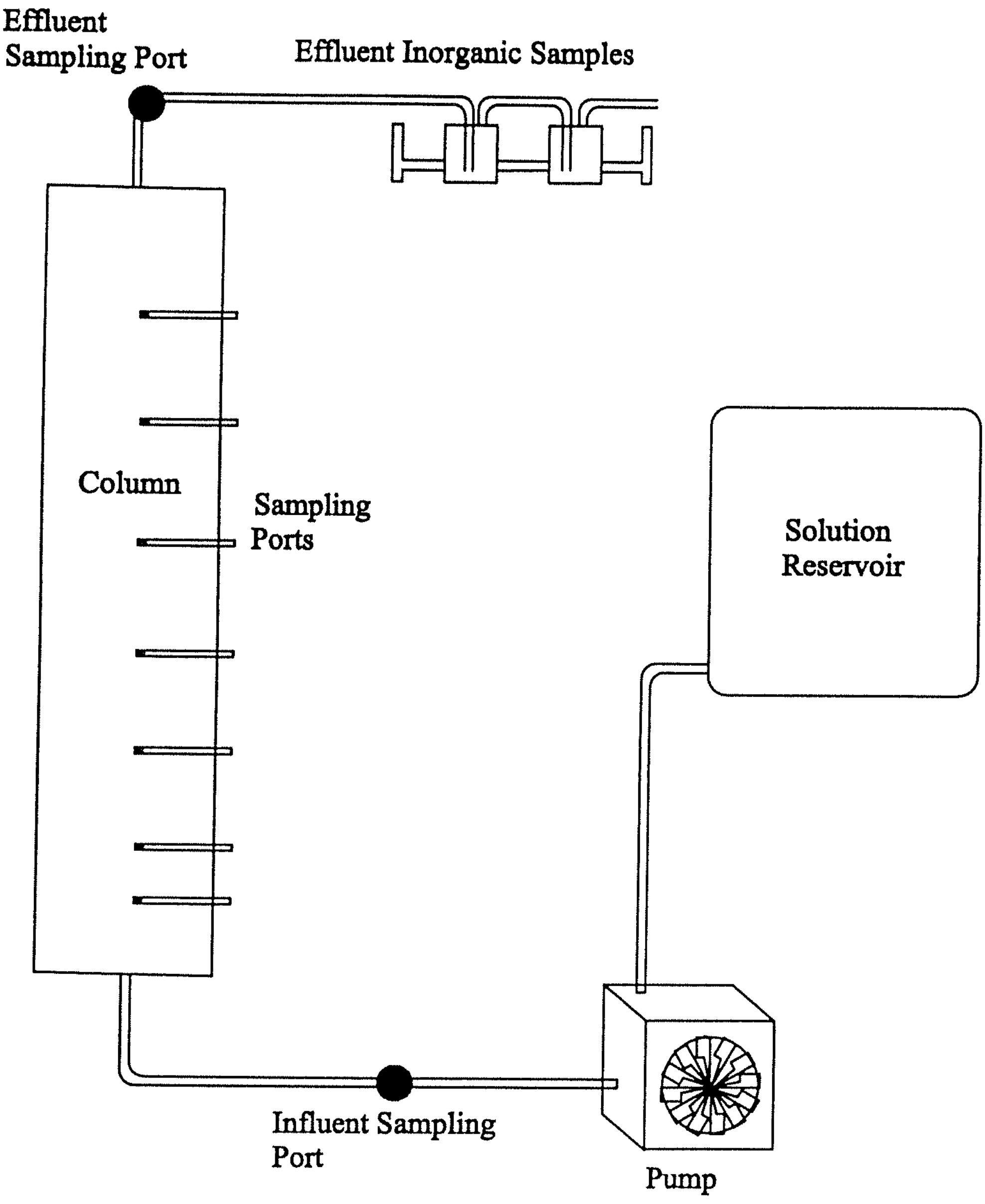
	Concentration (mg/L)	
	Influent	**Effluent**
Cations:		
Calcium	17 16	4.0 5.0
Iron, Total	1.2 0.34	0.02 0.02
Magnesium	13 12	2.2 5.7
Manganese	0.313 <0.005	<0.005 0.045
Potassium	7.0 7.0	7.0 5.0
Silica, Reactive	25 23	0.47 0.46
Sodium	73 73	71 75
Ammonia	1.9 1.7	1.9 0.03
Anions:		
Chloride	40 35	41 47
Sulphate	21 19	19 2.9
Alkalinity (as mg $CaCO_3$/L)	179 180	93 122
Nitrate	<0.2 <0.2	0.2 0.2
Dissolved Organic Carbon	7.4 7.8	3.1 2.8
Total Dissolved Solids	278 271	199 213

ND = not detected

Table 5: **Design Parameters, BSB Site, Kent, Washington**

VOC	Anticipated Field Concn (µg/L)		MCLs (µg/L)	Laboratory Half Life (hr)	Field Anticipated Half Life (hr)	Residence Time (hr)	
	High Concn Scenario	Low Concn Scenario				High Concn Well	Low Concn Well
TCE	460	0.5	5	0.9	1.8	34	20
cDCE	13000	420	70	1.2	2.4		
VC	3600	180	2	1.5	3.0		
11DCA	84	2.0	800	--	--	Not included in simulation.	

MCLs = Maximum Contaminant Levels



Schematic of the Apparatus Used in the Bench Scale Test

envirometal technologies inc.	Figure 1	1999

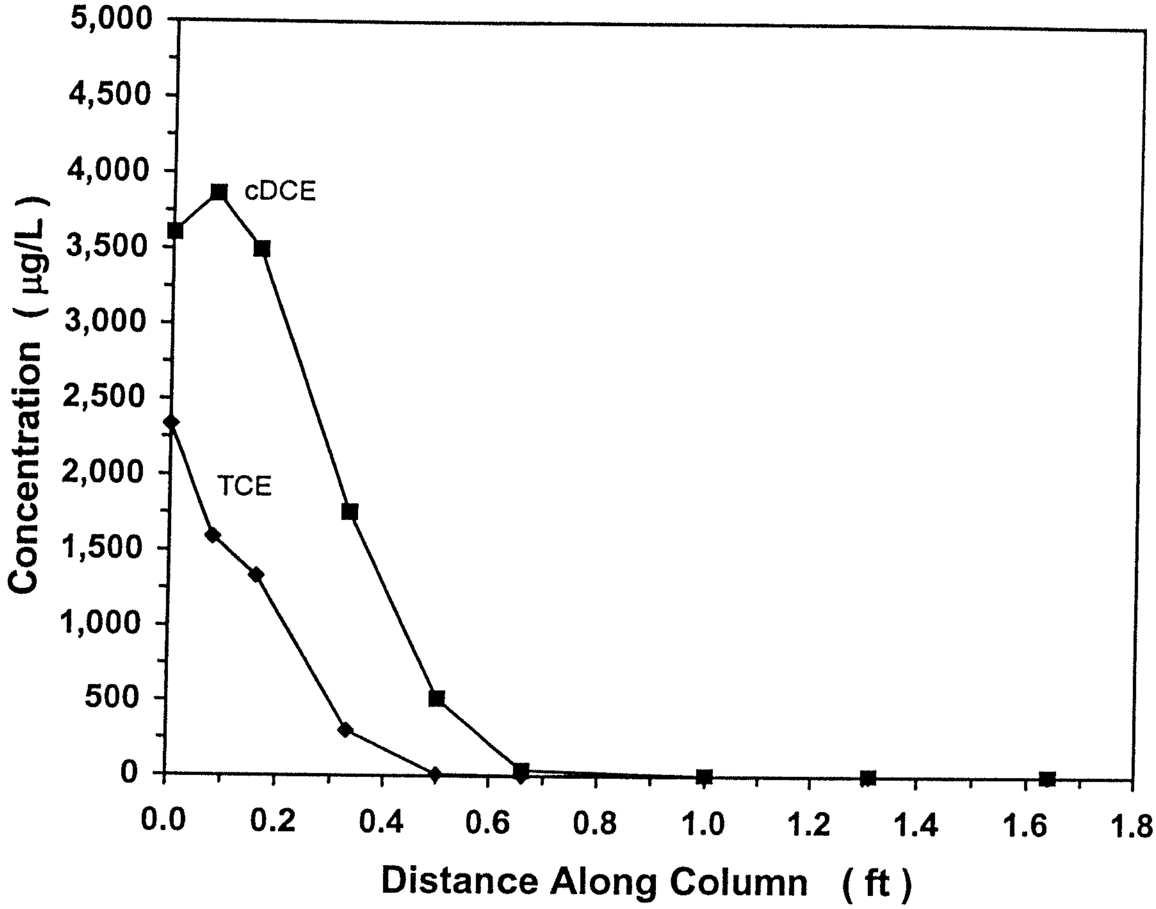


Figure 2: Steady state TCE and cDCE concentration profiles versus distance along the bench-scale column.

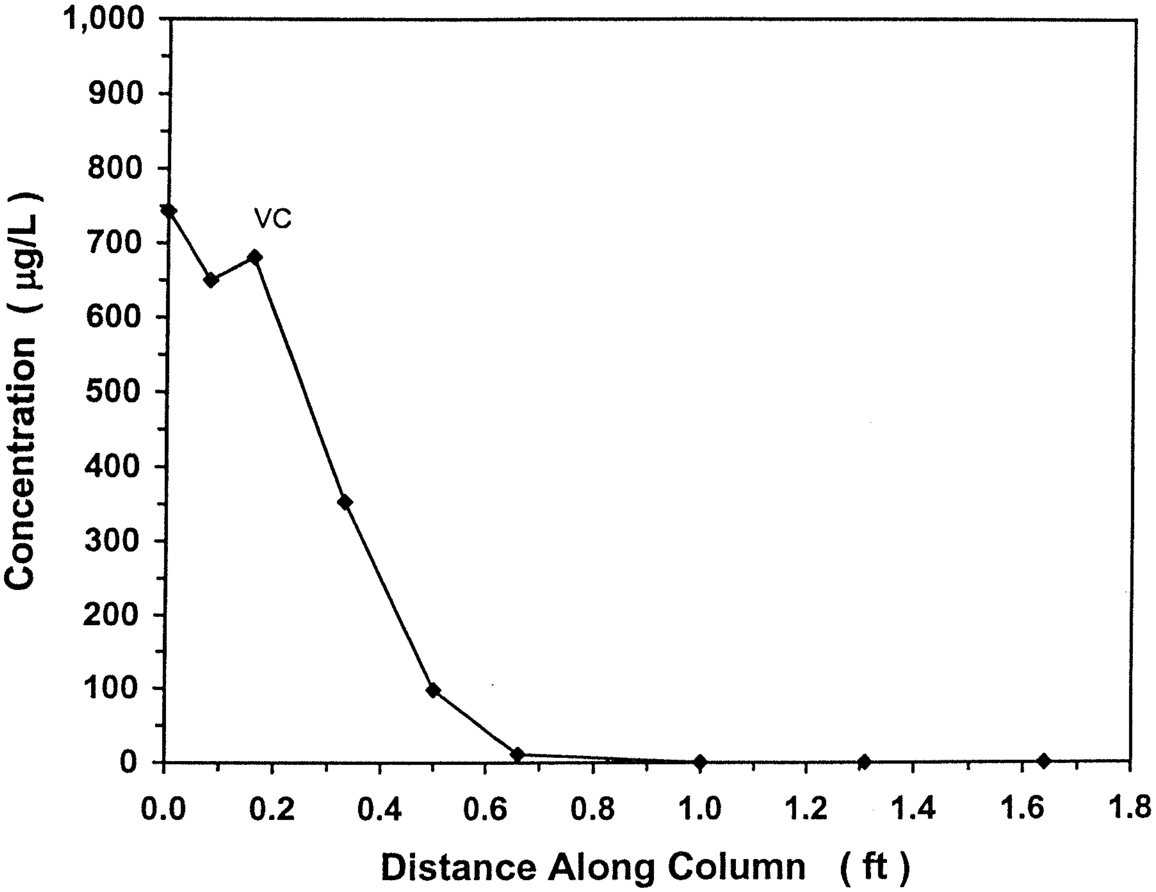


Figure 3: Steady state VC concentration profile versus distance along the bench-scale column.

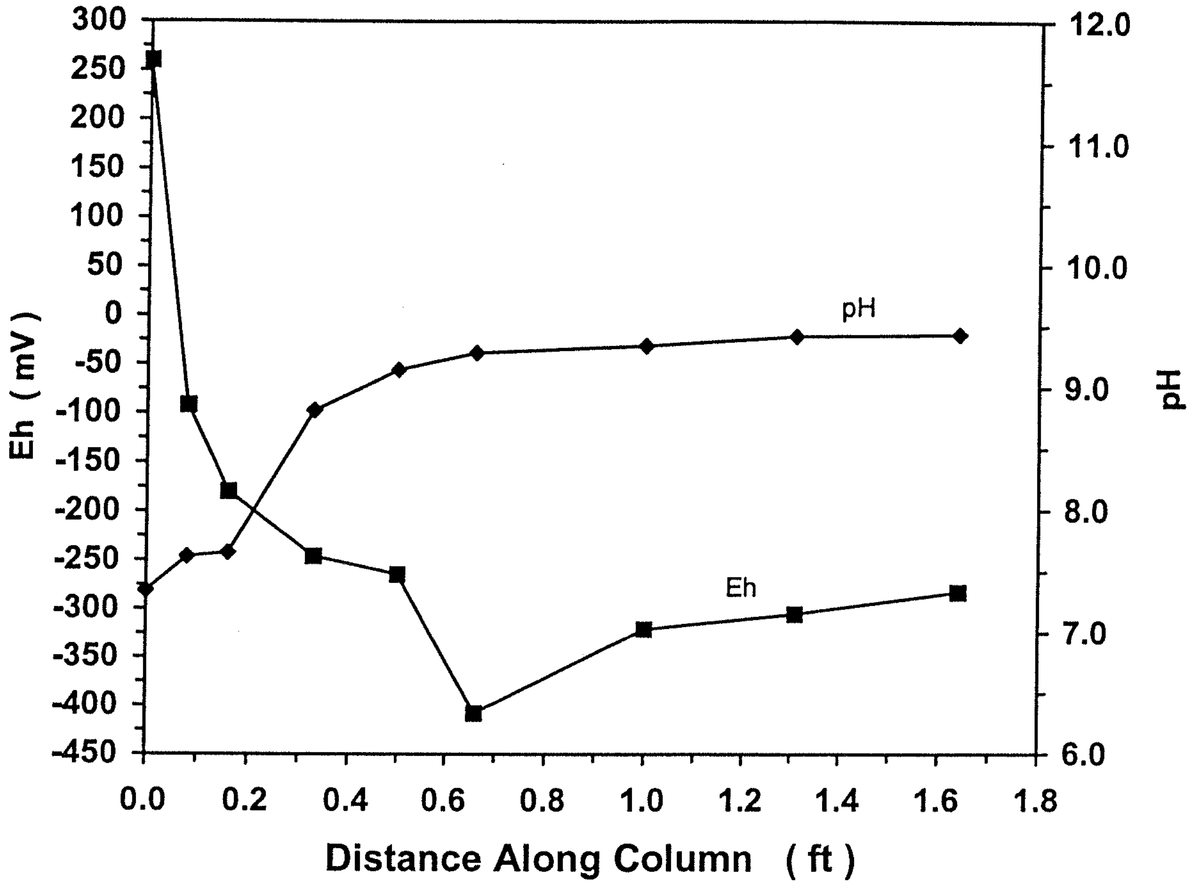


Figure 4: Steady state Eh/pH profiles versus distance along the bench-scale column.

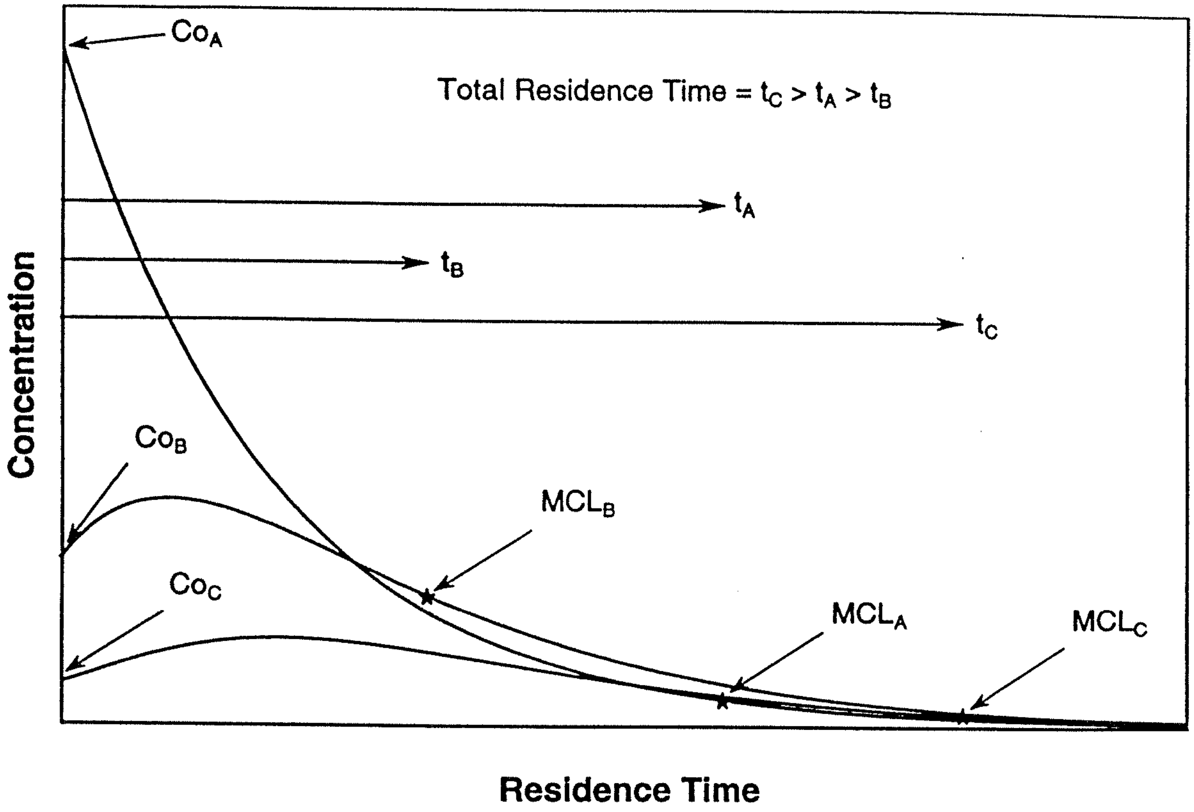


Figure 5: Illustration of residence time calculations using a first-order kinetic model assuming concurrent and sequential degradation.

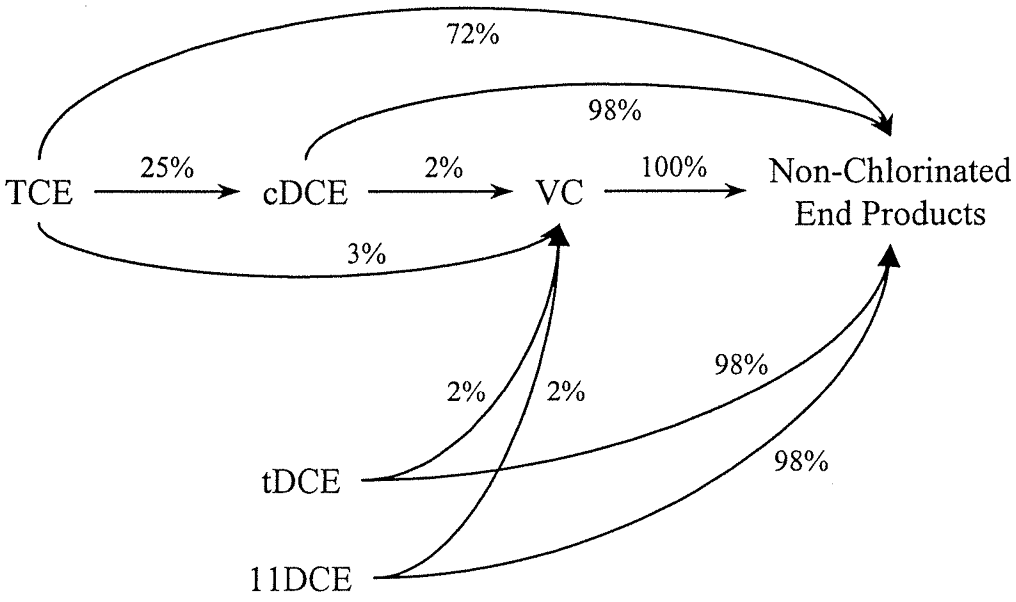


Figure 6: Assumed Molar Conversions, BSB Site, Kent, Washington

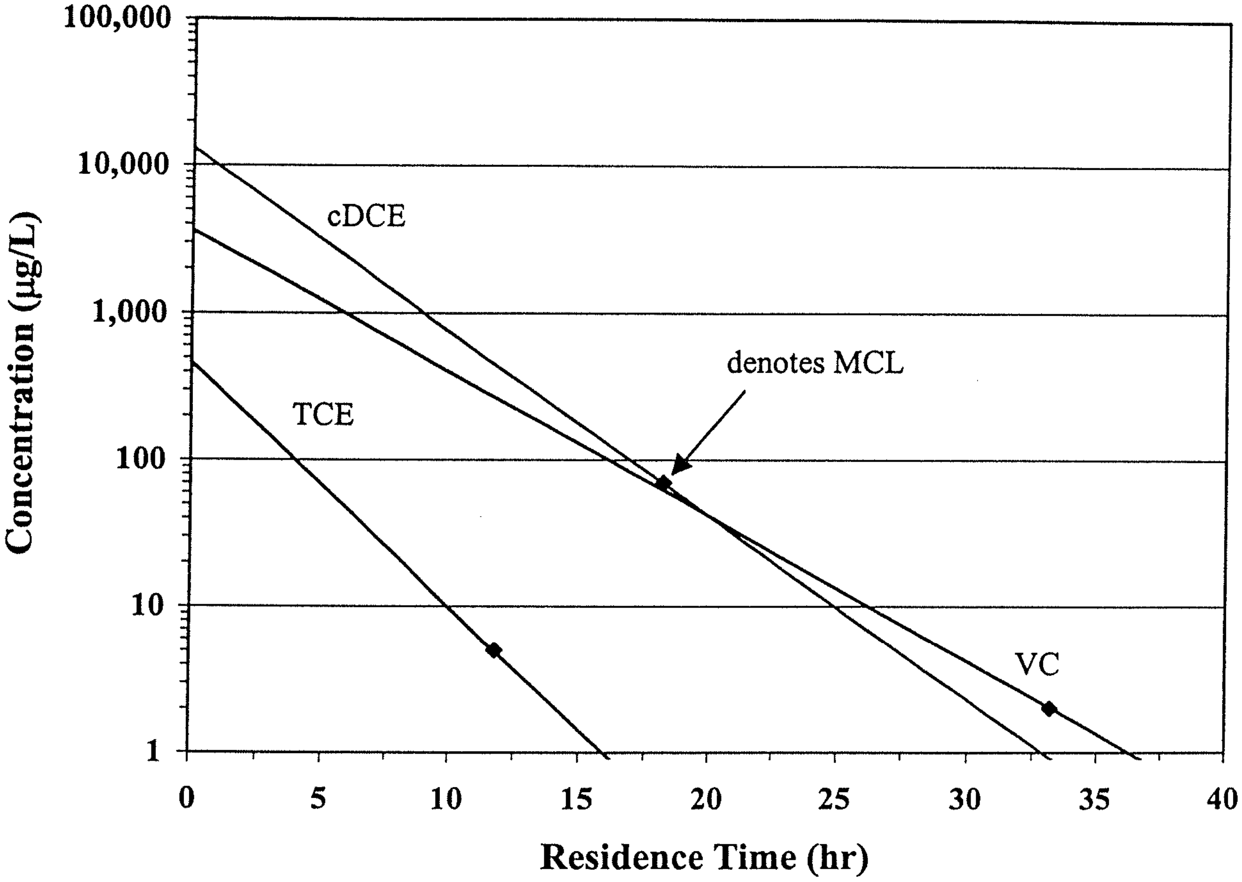


Figure 7: First-order kinetic model results for TCE, cDCE, and VC using anticipated field half-lives and high concentration scenario.

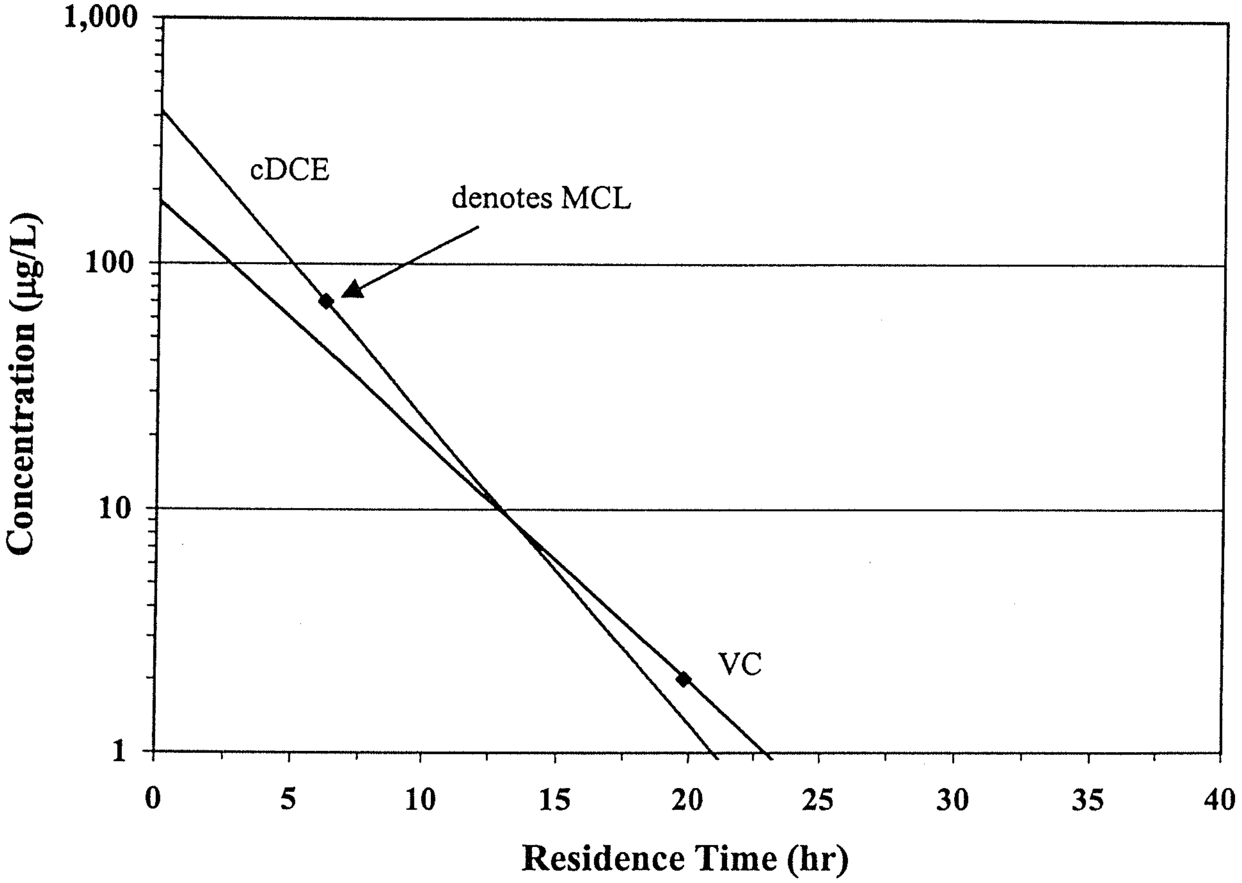


Figure 8: First-order kinetic model results for TCE, cDCE, and VC using anticipated field half-lives and low concentration scenario

Appendix A

Laboratory Organic Analyses for Bench-Scale Testing Involving the EnviroMetal Process

Treatability Test
EMCON

Column Identification: 292
Column Composition: 100 % Connelly Iron (UW#173)
Pore Volume (PV): 338 mL
Porosity: 0.59
Column Length: 1.6 ft (50 cm)
Column Diameter: 1.5 in (3.8 cm)
Flow Velocity: 1.8 ft/day (54.6 cm/day)

Column Distance (ft)			0.0	0.08	0.16	0.33	0.50	0.66	1.0	1.3	1.6		
Residence Time (hr)			0.0	1.1	2.1	4.4	6.7	8.8	13.4	17.6	22.0		
	PV	RN	Influent			Organic Concentration (µg/L)					Effluent	HL	r2
TCE													
	7.4	a	4840	1612	621	7.8	nd	nd	nd	nd	nd		
	15.7	a	4146	1810	721	16	nd	nd	nd	nd	nd		
	24.1	a	3096	2406	1281	97	nd	nd	nd	nd	nd		
	30.8	a	2525	1370	640	29	nd	nd	nd	nd	nd	0.7	0.955
	38.1	b	2879	2619	1744	261	4.4	nd	nd	nd	nd	0.7	0.892
	46.1	b	2333	1591	1331	300	9.1	nd	nd	nd	nd	0.9	0.893
cDCE													
	9.8	a	6237	4364	3750	1178	673	41	nd	nd	nd		
	18.1	a	5648	3518	2306	482	29	nd	nd	nd	nd		
	26.4	a	5091	4500	3630	1250	277	20	nd	nd	nd		
	31.8	b	6120	5442	3250	1430	325	nd	nd	nd	nd	1.5	0.964
	39.2	b	4644	4545	4118	1144	298	36	nd	nd	nd	1.2	0.936
	46.1	b	3607	**3864**	3495	1758	515	36	nd	nd	nd	1.2	0.894
tDCE													
	9.8	a	24	10	nd	3.4	2.3	2.3	nd	nd	nd		
	18.1	a	16	13	5.3	nd	nd	nd	nd	nd	nd		
	26.4	a	16	12	11	nd	nd	nd	nd	nd	nd		
	31.8	b	24	22	14	nd	nd	nd	nd	nd	nd		
	39.2	b	13	12	6.7	nd	nd	nd	nd	nd	nd		
	46.1	b	6.1	5.0	4.7	nd	nd	nd	nd	nd	nd		
11DCE													
	9.8	a	19	11	nd	nd	nd	nd	nd	nd	nd		
	18.1	a	13	16	7.7	nd	nd	nd	nd	nd	nd		
	26.4	a	13	11	10	3.8	nd	nd	nd	nd	nd		
	31.8	b	15	14	11	nd	nd	nd	nd	nd	nd		
	39.2	b	15	13	7.3	4.6	nd	nd	nd	nd	nd		
	46.1	b	12	9.5	8.6	3.5	nd	nd	nd	nd	nd		

nd = not detected
na = not applicable
RN = reservoir number
HL = half life
r2 = coefficient of variation
BOLD = peak concentration

Treatability Test
EMCON

Column Identification: 292
Column Composition: 100 % Connelly Iron (UW#173)
Pore Volume (PV): 338 mL
Porosity: 0.59
Column Length: 1.6 ft (50 cm)
Column Diameter: 1.5 in (3.8 cm)
Flow Velocity: 1.8 ft/day (54.6 cm/day)

Column Distance (ft)	0.0	0.08	0.16	0.33	0.50	0.66	1.0	1.3	1.6
Residence Time (hr)	0.0	1.1	2.1	4.4	6.7	8.8	13.4	17.6	22.0

	PV	RN	Influent				Organic Concentration (µg/L)				Effluent	HL	r2
VC													
	9.8	a	527	205	19	52	11	nd	nd	nd	nd		
	18.1	a	78	81	69	20	8.5	nd	nd	nd	nd		
	26.4	a	13	17	34	40	19	nd	nd	nd	nd		
	31.8	b*	699	544	350	121	32	nd	nd	nd	nd	1.5	0.983
	46.1	b*	743	650	681	353	98	11	nd	nd	nd	1.5	0.875
			pH Along Column										
pH													
	3.8	a	6.7	7.5	9.1	8.7	9.6	9.9	10.4	10.8	10.8		
	10.9	a	7.2	7.2	8.1	9.0	9.3	9.4	9.6	10.0	10.2		
	16.9	a	7.3	7.5	8.2	9.0	9.2	9.2	9.4	9.5	9.7		
	25.3	a	7.5	8.0	8.4	9.0	9.2	9.2	9.2	9.4	9.4		
	33.7	b	7.1	7.1	7.4	8.7	8.9	9.1	9.1	9.1	9.5		
	40.3	b	7.4	7.6	7.7	8.8	9.2	9.3	9.4	9.4	9.4		
			Redox Potential Along Column (mV)										
Eh													
	3.8	a	419	-351	-343	-262	-222	-221	-164	-101	-45		
	10.9	a	402	-350	-333	-364	-348	-427	-471	-423	-486		
	16.9	a	309	-183	-152	-206	-213	-133	-176	-295	-357		
	25.3	a	399	-139	-220	-257	-316	-279	-269	-239	-275		
	33.7	b	282	-374	-316	-223	-116	-126	-237	-224	-221		
	40.3	b	260	-92	-180	-246	-265	-408	-321	-305	-283		

nd = not detected
na = not applicable
RN = reservoir number
HL = half life
r2 = coefficient of variation
BOLD = peak concentration
* increased reservoir concentration

eof//

Appendix B

Laboratory Inorganic Analyses for Bench-Scale Testing Involving the EnviroMetal Process

PSC
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10-Jun-99

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Attn: Wayne Noble
Project:
PO #:
Received: 28-May-99 11:40

Job: 9953747
Status: Final

Water Samples

Sample Id	Ag ICAP mg/L	Al ICAP mg/L	As ICAP mg/L	B ICAP mg/L	Ba ICAP mg/L	Be ICAP mg/L	Bi ICAP mg/L	Ca ICAP mg/L
UW-223 - influent	<0.005	<0.05	<0.1	0.23	<0.005	<0.0005	<0.1	17.0
UW-224 291, eff, pv28.4, rna	<0.005	<0.05	<0.1	0.20	0.007	<0.0005	<0.1	5.29
UW-225 292, eff, pv30.8, rna	<0.005	0.07	<0.1	0.35	0.010	<0.0005	<0.1	4.02
UW-226 - influent	<0.005	<0.05	<0.1	0.25	<0.005	<0.0005	<0.1	16.4
UW-227 291, eff, pv.324, rna	<0.005	<0.05	<0.1	0.17	<0.005	<0.0005	<0.1	6.41
Blank	<0.005	<0.05	<0.1	<0.01	<0.005	<0.0005	<0.1	<0.05
QC Standard (found)	0.932	1.02	1.0	0.99	0.977	0.967	1.0	45.5
QC Standard (expected)	1.00	1.00	1.0	1.00	1.00	1.00	1.0	50.0
Repeat UW-223	<0.005	<0.05	<0.1	0.20	<0.005	<0.0005	<0.1	16.3

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Water Samples

Sample Id	Cd ICAP mg/L	Co ICAP mg/L	Cr ICAP mg/L	Cu ICAP mg/L	Fe ICAP mg/L	K ICAP mg/L	Mg ICAP mg/L	Mn ICAP mg/L
UW-223 influent	<0.005	<0.005	<0.005	0.005	1.17	7	13.1	0.313
UW-224 col 291, eff, pv.28.4, rna	<0.005	<0.005	<0.005	0.004	0.16	7	4.11	0.034
UW-225 col 292, eff, p.v. 30.8, rna	<0.005	<0.005	0.006	0.009	0.02	7	2.19	<0.005
UW-226 influent	<0.005	<0.005	<0.005	0.005	0.34	7	12.3	<0.005
UW-227 col 291, eff, p.v. 30.4, rna	<0.005	<0.005	<0.005	0.003	0.34	6	6.34	<0.005
Blank	<0.005	<0.005	<0.005	0.004	0.01	<1	<0.05	<0.005
QC Standard (found)	0.944	0.995	0.960	1.03	0.98	47	9.75	0.973
QC Standard (expected)	1.00	1.00	1.00	1.00	1.00	50	10.0	1.00
Repeat UW-223	<0.005	<0.005	<0.005	0.004	1.07	6	12.4	0.295

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Water Samples

Sample Id	Mo ICAP mg/L	Na ICAP mg/L	Ni ICAP mg/L	P ICAP mg/L	Pb ICAP mg/L	S ICAP mg/L	Sb ICAP mg/L	Se ICAP mg/L
UW-223 influent	<0.02	72.5	<0.02	0.5	<0.05	7.3	<0.1	<0.1
UW-224 col 291, eff, p.v. 28.4, rna	0.06	72.4	<0.02	0.2	<0.05	4.9	<0.1	<0.1
UW-225 col 292, eff, p.v. 30.8, rna	<0.02	71.0	<0.02	0.1	<0.05	6.0	<0.1	<0.1
UW-226 influent	0.02	73.2	<0.02	0.2	<0.05	6.1	<0.1	<0.1
UW-227 col 291, eff, p.v. 30.4, rna	0.04	72.3	<0.02	0.1	<0.05	4.4	<0.1	<0.1
Blank	<0.02	<0.1	<0.02	<0.1	<0.05	0.0	<0.1	<0.1
QC Standard (found)	0.97	50.0	1.00	1.0	0.97	1.0	1.0	1.0
QC Standard (expected)	1.00	50.0	1.00	1.0	1.00	1.0	1.0	1.0
Repeat UW-223	<0.02	67.2	<0.02	0.5	<0.05	6.6	<0.1	<0.1

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Job: 9953747 **Status: Final**

Water Samples

Sample Id	Si ICAP mg/L	Sn ICAP mg/L	Sr ICAP mg/L	Ti ICAP mg/L	V ICAP mg/L	Zn ICAP mg/L	F- SM 4500F mg/L	Cl- SM 4110B mg/L
UW-223 influent	25.0	<0.05	0.071	<0.005	<0.005	0.011	0.4	40.2
UW-224 col 291, eff, p.v. 28.4, rna	2.93	<0.05	0.024	<0.005	<0.005	<0.005	0.2	50.2
UW-225 col 292, eff, p.v. 30.8, rna	0.47	<0.05	0.025	<0.005	0.005	<0.005	0.3	40.5
UW-226 influent	23.1	<0.05	0.077	<0.005	<0.005	<0.005	0.2	35.3
UW-227 col 291, eff, p.v. 30.4, rna	3.26	<0.05	0.028	<0.005	<0.005	<0.005	0.2	42.3
Blank	<0.05	<0.05	<0.001	<0.005	<0.005	<0.005	<0.1	<0.5
QC Standard (found)	0.47	<0.05	0.977	0.978	0.983	0.989	4.4	58.3
QC Standard (expected)	0.50	<0.05	1.00	1.00	1.00	1.00	4.4	60.0
Repeat UW-223	23.3	<0.05	0.067	<0.005	<0.005	0.007	0.2	39.6

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PO #:
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Job: 9953747
Status: Final

Water Samples

Sample Id	NO2-N SM 4110B mg/L	PO4-3 SM 4110B mg/L	Br- SM 4110B mg/L	NO3-N SM 4110B mg/L	SO4= SM 4110B mg/L	pH SM 4500B pH Units	Alk 8.3 SM 2320B mg CaCO3/L
UW-223 influent	<0.2	<1	<0.5	<0.2	21.4	7.87	<1
UW-224 col 291, eff, p.v. 28.4, rna	<0.2	<1	<0.5	<0.2	13.2	9.60	28
UW-225 col 292, eff, p.v. 30.8, rna	<0.2	<1	<0.5	0.2	18.6	9.60	25
UW-226 influent	<0.2	<1	<0.5	<0.2	18.5	7.22	<1
UW-227 col 291, eff, p.v. 30.4, rna	<0.2	<1	<0.5	<0.2	12.2	9.60	27
Blank	<0.2	<1	<0.5	<0.2	<0.5	---	---
QC Standard (found)	9.2	18	9.4	29.5	59.7	7.01	123
QC Standard (expected)	10.0	19	10.0	30.0	60.0	7.00	125
Repeat UW-223	<0.2	<1	<0.5	<0.2	21.0	7.87	<1

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Water Samples

Sample Id	Alk 4.2 SM 2320B mg CaCO3/L	NH3-N SM 4500H mg/L	DOC SM 5310C mg/L	Th. TDS Calc. mg/L	pHs Calc. pH Units	CAB Calc. %	Hard(Calc) SM 2340B mg CaCO3/L
UW-223 influent	179	1.90	7.4	278	7.97	-2.20	96.6
UW-224 col 291, eff, pv. 28.4, ma	102	1.77	2.9	213	8.72	-4.07	30.2
UW-225 col 292, eff, p.v. 30.8, ma	93	1.94	3.1	199	8.87	-5.28	19.0
UW-226 influent	180	1.66	7.8	271	7.98	-3.14	91.7
UW-227 col 291, eff, pv. 30.4, ma	120	1.72	2.6	218	8.57	-5.28	42.1
Blank	3	<0.02	<0.2	4	12.14	42.9	0.3
QC Standard (found)	52	1.52	10.1	302	8.09	-22.4	153.8
QC Standard (expected)	50	1.50	10.0	310	8.07	-24.5	166.0
Repeat UW-223	179	1.90	7.2	270	7.98	0.81	92.3

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Water Samples

Sample Id	CO3= Calc. mg/L	HCO3- Calc. mg/L	L.I. Calc. None	A.I. Calc. None	R.S.I. Calc. None	Colour SM 2120B TCU	Turb. SM 2130B NTU	Sp. Cond. SM 2510B umhos/cm
UW-223 influent	1	215.2	-0.1	12.11	8.1	626	151.	495
UW-224 col 291, eff, p.v. 28.4, ma	15	58.8	0.9	13.09	7.8	8	1.0	397
UW-225 col 292, eff, p.v. 30.8, ma	14	56.1	0.7	12.85	8.1	6	0.6	389
UW-226 influent	1	217.2	-0.8	11.44	8.7	424	74.0	499
UW-227 col 291, eff, p.v. 30.4, ma	15	81.3	1.0	13.30	7.5	8	0.8	408
Blank	nan	nan	nan	nan	nan	<1	0.2	2
QC Standard (found)	74	0.0	-1.1	10.91	9.2	52	1.8	739
QC Standard (expected)	75	0.0	-1.1	10.92	9.1	50	1.8	718
Repeat UW-223	1	215.6	-0.1	12.09	8.1	634	151.	493

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Ralph Siebert, B.Sc.
Project Manager

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Sample Id	Ag ICAP mg/L	Al ICAP mg/L	As ICAP mg/L	B ICAP mg/L	Ba ICAP mg/L	Be ICAP mg/L	Bi ICAP mg/L	Ca ICAP mg/L
UW-228 col 292, eff, pv47, ma	<0.003	<0.03	<0.1	0.27	0.013	<0.0005	<0.1	4.99
Blank	<0.003	<0.03	<0.1	<0.01	<0.005	<0.0005	<0.1	<0.05
QC Standard (found)	0.035	10.3	1.1	0.21	0.963	1.00	1.1	51.3
QC Standard (expected)	0.030	10.0	1.0	0.20	1.00	1.00	1.0	51.0
Repeat UW-228	<0.003	<0.03	<0.1	0.27	0.017	<0.0005	<0.1	5.64

Sample Id	Cd ICAP mg/L	Co ICAP mg/L	Cr ICAP mg/L	Cu ICAP mg/L	Fe ICAP mg/L	K ICAP mg/L	Mg ICAP mg/L	Mn ICAP mg/L
UW-228 col 292, eff, pv47, ma	<0.005	<0.005	<0.005	<0.003	0.02	5	5.71	0.045
Blank	<0.005	<0.005	<0.005	<0.003	<0.01	<1	<0.05	<0.005
QC Standard (found)	0.956	0.959	0.964	0.966	1.04	10	11.0	0.960
QC Standard (expected)	1.00	1.00	1.00	1.00	1.00	10	11.0	1.00
Repeat UW-228	<0.005	<0.005	<0.005	<0.003	0.02	5	5.85	0.055

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Water Samples

Sample Id	Mo ICAP mg/L	Na ICAP mg/L	Ni ICAP mg/L	P ICAP mg/L	Pb ICAP mg/L	S ICAP mg/L	Sb ICAP mg/L	Se ICAP mg/L
UW-228 col 292, eff, p.v.47, rna	0.11	74.5	<0.02	<0.1	<0.05	1.7	<0.1	<0.1
Blank	<0.02	<0.1	<0.02	<0.1	<0.05	<0.1	<0.1	<0.1
QC Standard (found)	1.09	50.6	0.97	2.0	0.94	10.3	1.0	1.1
QC Standard (expected)	1.10	50.0	1.00	2.0	1.00	10.0	1.0	1.0
Repeat UW-228	0.08	73.5	<0.02	<0.1	<0.05	1.6	<0.1	<0.1

Sample Id	Si ICAP mg/L	Sn ICAP mg/L	Sr ICAP mg/L	Ti ICAP mg/L	V ICAP mg/L	Zn ICAP mg/L	F- SM 4500F mg/L	Cl- SM 4110B mg/L
UW-228 col 292, eff, p.v.47, rna	0.46	<0.05	0.015	<0.005	<0.005	0.035	0.2	46.5
Blank	<0.05	<0.05	<0.001	<0.005	<0.005	<0.005	<0.1	<0.5
QC Standard (found)	2.12	0.99	0.954	0.950	0.968	0.975	4.6	58.7
QC Standard (expected)	2.00	1.00	1.00	1.00	1.00	1.00	4.5	60.0
Repeat UW-228	0.45	<0.05	0.017	<0.005	<0.005	0.039	0.3	48.8

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Water Samples

Sample Id	NO2-N SM 4110B mg/L	PO4-3 SM 4110B mg/L	Br- SM 4110B mg/L	NO3-N SM 4110B mg/L	SO4= SM 4110B mg/L	pH SM 4500B pH Units	Alk 8.3 SM 2320B mg CaCO3/L
UW-228 col 292, eff, p.v. 47, ma	<0.2	<1	<0.5	0.2	2.9	8.48	<1
Blank	<0.2	<1	<0.5	<0.2	<0.5	---	---
QC Standard (found)	9.5	18	9.5	29.4	57.4	7.01	<1
QC Standard (expected)	10.0	19	10.0	30.0	60.0	7.00	---
Repeat UW-228	<0.2	<1	<0.5	<0.2	2.9	8.54	<1

Sample Id	Alk 4.2 SM 2320B mg CaCO3/L	NH3-N SM 4500H mg/L	DOC SM 5310C mg/L	Th. TDS Calc. mg/L	pHs Calc. pH Units	CAB Calc. %	Hard(Calc) SM 2340B mg CaCO3/L
UW-228 col 292, eff, p.v. 47, ma	122	0.03	2.8	213	8.66	-3.45	36.0
Blank	<1	<0.02	<0.2	3	12.61	7.89	0.3
QC Standard (found)	253	0.32	5.6	391	7.36	14.1	173.6
QC Standard (expected)	250	0.30	5.0	392	7.36	14.7	172.6
Repeat UW-228	121	0.03	2.9	215	8.62	-3.07	38.1

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Water Samples

Sample Id	CO3= Calc. mg/L	HCO3- Calc. mg/L	L.I. Calc. None	A.I. Calc. None	R.S.I. Calc. None	Turb. SM 2130B NTU	Colour SM 2120B TCU	Sp. Cond. SM 2510B umhos/cm
UW-228 col 292, eff, pv.47, rna	1	146.5	-0.2	12.12	8.8	1.2	<1	391
Blank	nan	nan	nan	nan	nan	<0.1	<1	<1
QC Standard (found)	1	306.0	-0.3	11.65	7.7	1.8	26	727
QC Standard (expected)	nan	nan	-0.4	11.64	7.7	1.8	25	718
Repeat UW-228	0	145.3	-0.1	12.20	8.7	1.2	<1	394

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Ralph Siebert, B.Sc.
Project Manager

Final FRI/FS Report, Appendix H

This appendix describes the hydraulic analysis used in the preliminary design of the containment areas considered in the FFS. Calculations and computer simulations were performed to estimate the maximum expected groundwater flow out of the Alternative 2 reactor vessel system and the expected groundwater pumping rate needed to prevent hydraulic head buildup in the Alternative 3 containment area. In addition, computer simulations were used to evaluate the expected influence of Alternative 2 on the direction and magnitude of the vertical gradient across the Layer C aquitard underlying the Layer B aquifer. The data collected during the various phases of work comprising the RI were used in the calculations. Additional data (such as detailed lithology along the wall alignment) will be collected as part of final design of the selected containment alternative.

H.1 <u>Modeling Objectives</u>

H.1.1 Alternative 2

Alternative 2 consists of a surface low-permeability cap with a vertical slurry wall through the full extent of the Layer B aquifer around the boundary of Parcel G. At the northeast corner of the slurry wall, a zero valent iron (ZVI) treatment system will be installed consisting of a gravel-filled collection trench and ZVI reactor vessels inside the wall and a gravel-filled infiltration gallery located downgradient outside the wall (Figure 40). A valve in the pipe between the treatment vault and the infiltration gallery would prevent water from entering the containment area through the treatment system during periods of rising water levels outside the slurry wall. The surface cap, slurry wall, and basal aquitard (Layer C) would form low-permeability boundaries to the containment area. As part of the preliminary design of the ZVI reactor vessel system, the site groundwater flow model was used to evaluate these assumptions and to estimate the maximum expected groundwater flow rate out through the reactor vessel system. Furthermore, because the potential for downward transport of contaminants from the Layer B aquifer through the underlying Layer C aquitard is a potential issue, the model was used to evaluate the effect of Alternative 2 on vertical gradients.

H.1.2 Alternative 3

The Alternative 3 remedy consists of a surface low-permeability cap with a vertical slurry wall through the full extent of the Layer B aquifer around the entire boundary of Parcel G (Figure 41), with a groundwater extraction system within the containment area to provide hydraulic control. The objective of the groundwater extraction system would be to maintain an inward hydraulic gradient to prevent groundwater from flowing out of the containment area through the slurry wall or Layer C.

As with Alternative 2, the surface cap, slurry wall, and Layer C would form low-permeability boundaries to the containment area. As part of the preliminary design of the groundwater extraction system in the containment area, the site groundwater flow model was used to estimate the expected groundwater extraction rate required to provide hydraulic control.

The following sections describe the method used to estimate rainfall infiltration through the Parcel G cap, the groundwater flow model and its historical use at the site, the set up of the groundwater flow model to evaluate Alternatives 2 and 3, and the model results.

H.2 Estimate of Infiltration Through the Low-Permeability Cap

Rainfall infiltration through the low-permeability Parcel G cap was estimated to provide an input parameter for the groundwater flow model. Two methods were used to estimate the amount of rainfall infiltration into the containment area through the cap.

H.2.1 Mean monthly rainfall method

To estimate the maximum infiltration rate into the containment area, the mean wet season monthly rainfall for Parcel G was determined, the expected evaporation was determined and subtracted from the monthly rainfall total, and an estimated cap infiltration percentage was applied to the remainder. Since estimating runoff using the SCS curve number equation (see below) requires daily rainfall data, runoff was ignored. Table H-1 provides a summary of the data sources and calculations. The rainiest months are November, December, and January, with mean monthly rainfall totals of approximately 6 inches. Since runoff was ignored, a low cap infiltration (0.5 percent) was selected. Based on this method, the rate of infiltration through the cap (into the vadose zone) during the rainiest months of the year was estimated to be 0.07 gallons per minute (gpm).

H.2.2 Extreme rainfall event method

To estimate the maximum rainfall infiltration rate into the containment area, the volume of water falling on Parcel G during a very heavy 24-hour rain event was estimated, the volume of stormwater runoff during that event was estimated and subtracted, evaporation was estimated and subtracted, and the remainder was assumed to infiltrate through the Parcel G cap. A 24-hour storm total of 3 inches was assumed to fall on Parcel G. The total volume of water falling on the 4.2 acre Parcel G during the storm was calculated to be (0.25 feet) x (182,951 square feet) x (7.4805 gallons/cubic foot), or approximately 342,140 gallons of stormwater. The amount of runoff was calculated using the SCS curve number equation (Ecology, 2001):

$$Q = (P - 0.2S)^2/(P + 0.8S),\ Q = 0 \text{ if } P < 0.2S, \qquad (1)$$

Where Q = runoff depth over the area of interest (in),
P = precipitation depth (in),
S = potential maximum detention over the area due to infiltration, storage, etc. (in)
$S = (1{,}000/CN) - 10$, where CN = Western Washington runoff curve number (98 for paved surfaces).

Per the SCS equation, approximately 315,890 gallons of runoff would be generated from a 3 inch rainstorm, with approximately 26,250 gallons retained on site. If it is assumed that the entire thickness of the low-permeability cap is saturated (which it likely would not be since it sits on the vadose zone), the flow rate of the ponded water through the cap can be estimated by:

$$Q = kiA, \qquad (2)$$

Where Q = flow rate (cubic ft/min),
k = hydraulic conductivity (ft/min),
i = hydraulic gradient (ft/ft),
A = area of cap (square ft).

Assuming that the cap hydraulic conductivity is 1 x 10^{-7} ft/min (typical maximum hydraulic conductivity for designed low-permeability caps) and that the water is ponded in a 0.5-acre puddle, the flow rate of ponded water through the cap is estimated to be:

$$Q_{cap} = (1 \text{ x } 10^{-7} \text{ ft/min}) \text{ x } (1 \text{ ft/ft}) \text{ x } (21{,}780 \text{ ft}^2) \text{ x } (7.4805 \text{ gal/ft}^3)$$
$$= 0.0163 \text{ gpm out the bottom of the cap.}$$

Based on the local measured evaporation rates (see Table H-1), the 26,250-gallon puddle (1.93 inches thick) would take less than 1 day to approximately 3 months to evaporate (depending on the time of year), compared to years to infiltrate the cap.

Based on these results, it is likely that rainfall infiltration through a well-maintained asphalt cap would be insignificant. For the sake of a conservative maximum flow estimate, a maximum rainfall infiltration rate of 0.07 gpm was selected for use in the model.

H.3 Groundwater Flow Model Description and Historical Use

The site groundwater flow model consists of a MODFLOW model developed by S.S. Papadopulos and Associates, Inc. (SSPA), as part of the corrective measures system (CMS) design (SSPA, 1993). The model uses the U.S. Geological Survey MODFLOW groundwater simulation code (McDonald and Harbaugh, 1988) to simulate hydrogeologic conditions and water-level gradients and the particle tracking code PATH3D (Zheng, 1989) to evaluate groundwater flow. Historically, the model was used to define target pumping rates for each recovery well and to evaluate the performance of the CMS with respect to capture of groundwater contaminants.

The groundwater flow model was modified in 2003 to incorporate new data generated during the Parcel G source area investigations (IT Corporation, 2001). During these investigations, numerous borings were drilled across the site. Detailed soil sampling and logging resulted in fuller characterization of the shallow Layer B aquifer, including the thicknesses of the upper sand, the lower sand, and the intervening silt layer. While absent in some areas of Parcel G, the intermediate silt of Layer B was determined to be more continuous and thicker in most areas of Parcel G than was recognized at the time the original model was constructed. Based on these data, the flow model was modified to better represent the revised thicknesses and to explicitly represent the intermediate silt layer (Patterson Planning & Services, 2003). As in the original model, the transmissivity of the combined sand units in the revised model was based upon results of a pumping test using wells that penetrated the upper sand, the intermediate silt, and the lower sand. The hydraulic conductivity values used for the upper and lower sand units of Layer B were derived from the transmissivity and the thicknesses of the units. In addition to the change in the model layers, the model was also re-oriented to be consistent with a more accurate base map of the BSB and Hexcel facilities. The model was recalibrated using hydrologic and pumping data from the first four years of operation, 1993-1997.

H.4 Groundwater Flow Modeling of Alternatives 2 and 3

H.4.1 Groundwater Flow Model Set Up

The finite-difference grid for the groundwater flow model is shown in Figure H-1. The mean direction of groundwater flow is towards the northeast. The groundwater model is aligned so that the axes of the grid are aligned with the mean flow direction. The model is 2,550 feet wide divided into 80 rows, and 10,100 feet long divided into 70 columns. The BSB property is located in the core area of the model, where the grid spacing is 25 feet in both directions. The model is divided into 10 layers as summarized below.

Model Layer	Hydrostratigraphic Unit	Description
1	A	Alluvium
2	A	Alluvium
3	B	Aquifer
4	B	Silt zone
5	B	Aquifer
6	C	Confining unit
7	C	Confining unit
8	D	Aquifer
9	D	Aquifer
10	-	Regional artesian aquifer

The boundary conditions are shown in Figure H-2. The same types of boundary condition are applied for each model layer. The specified inflow along the upgradient boundary is distributed across the model layers according to their relative transmissivities. The specified head along the downgradient boundary is set at a constant value of 13.04 feet. No-flow boundary conditions are specified implicitly along the northwestern and southeastern edges of the model. These edges are conceived as streamlines parallel to the mean groundwater flow direction and are sufficiently distant from the site that they have no impact on groundwater flow at the BSB property.

Recharge is applied across the uppermost layer of the model. Recharge represents the infiltration of precipitation. The water table lies within the alluvial sediments of Unit A; the elevation of the water table is calculated during the solution, and the transmissivity of the upper model layers is adjusted to account for changes in the saturated thickness.

The bottommost layer of the model is assigned a uniform head of 37.0 feet. This water level represents the artesian conditions in the deep regional aquifer beneath the site; the water level was set based on calibration of the model.

H.4.2 Additional Modifications to the Groundwater Flow Model

The updated model from 2003 was used as the starting point for the current analysis. The following modifications were made to the updated 2003 model:

- Adaptation of the model to simulate transient flow on a monthly basis;
- Based on laboratory tests, adjustment of the hydraulic conductivity of Unit C (model layers 6 and 7) to better represent water level gradients between Units B and D; and
- Adjustment of the boundary head in the regional aquifer underlying Unit D to better represent water levels in Unit D.

Groundwater flow was simulated for a "representative" year. Simulations consisting of six annual cycles were used for all analyses. Groundwater levels stabilized to the annual cycle after a relatively brief period, between two and three years after the start of each simulation. A longer duration was used to ensure complete stabilization to a repeatable seasonal pattern. This is consistent with a long-term evaluation of groundwater flow for Alternatives 2 and 3. The model was adapted for the simulation of transient flow by subdividing each year into twelve month-long stress periods. Recharge rates and pumping rates were specified on a monthly basis.

The vertical hydraulic conductivity of the Unit C confining layer was adjusted to incorporate the results of recent tests. The values of five measurements of the vertical hydraulic conductivity ranged from 1.3×10^{-7} to 2.6×10^{-7} cm/sec. A value corresponding to the geometric mean (5.3×10^{-7} cm/sec) was specified for the current analyses.

The model has also been updated to include a revised estimate of the water level in the deep regional aquifer that underlies Unit D. A uniform water level of 37.0 feet has been specified to improve the match to the observed difference in water levels across Unit C.

The assigned properties for the model layers adjacent to the location of the proposed ZVI reactor vessel system are listed below.

Model Layer	Unit	Thickness (ft)	Horizontal Hydraulic Conductivity (ft/day)	Vertical Hydraulic Conductivity (ft/day)
1	A	5	2	0.01
2	A	5	20	0.1
3	B	2.1 – 12.9	51	0.26
4	B	0 – 8.7[a]	1	0.005
5	B	5.2 – 23.7	51	0.26
6	C	5	3	4.5×10^{-4}
7	C	5	3	4.5×10^{-4}
8	D	10	20	0.1
9	D	15	20	0.1
10	Regional aquifer	-	-	-

[a] Zero thickness is represented in the model by a layer thickness of one foot and hydraulic properties of the overlying unit.

With the exception of the layers representing Unit C, a uniform vertical anisotropy ratio (K_V/K_H) of 0.005 was retained from the previous model. The Unit C vertical hydraulic conductivity of 4.5×10^{-4} ft/day is equivalent to 5.3×10^{-7} cm/sec. The properties assigned for the deep regional aquifer (model layer 10) are not shown because they have no bearing on the model as the water levels are fixed in this layer.

H.4.3 Calibration of the transient model

A focused effort was made to calibrate the groundwater model to match observed water levels. The objective of the analysis was to retain the structure and parameters of the existing model to the extent possible while matching transient water levels observed at the site. To achieve this objective, only the recharge function is adjusted.

Recharge represents the amount of precipitation that infiltrates to the water table. Previous modeling conducted at the BSB and Hexcel properties demonstrated that the average annual recharge rate can be approximated as a fixed fraction of the total annual precipitation. For modeling of Alternatives 2 and 3, this approach was used to generate a representative record of monthly recharge rates from the monthly values of precipitation. The ratio between recharge and precipitation was treated as an adjustable fitting parameter. To simplify the analysis, it was assumed that the recharge to the water table was a constant fraction of the monthly precipitation.

The monthly rainfall at Parcel G from the beginning of 1993 to December 2004 is plotted in Figure H-3. To represent a monsoonal climate, a “representative” year was considered during which the annual precipitation occurs between November and March. For this study, a synthetic monthly precipitation record was used to represent long-term average seasonal changes in precipitation: the average monthly precipitation was specified according to the following distribution of the total annual precipitation.

Month	**Percentage of Annual Precipitation,** $\frac{P_{month}}{P_{annual}} \times 100$
October	0
November	14
December	23
January	23
February	22
March	18
April	0
May	0
June	0
July	0
August	0
September	0
Total	100

The total annual precipitation is plotted in Figure H-4. The total annual precipitation varied between 25 and 50 inches, with an average of about 39 inches over an 11-year period. The highest discharge from Parcel G corresponds to the period during which the rate of decline in the water levels within Parcel G is at a maximum. A typical hydrograph from a well within Parcel G is plotted in Figure H-5. The year of October 1, 1999, to September 30, 2000, was selected as the year most representative of high discharge from Parcel G, because the decline of water levels was sustained over the longest period. As shown in Figure H-5, the trend of water level patterns was very similar between years, indicating that the selection of a particular year for use is not critical. The total rainfall measured at the site for October 1, 1999, to September 30, 2000, was 49.3 inches, 11 inches above average.

The specified recharge rate for each month was calculated by multiplying the annual precipitation by the percentage of annual precipitation for that month and scaling that value by a factor that yielded the best match to the observed water levels:

$$I_{month} = P_{annual} \times \frac{P_{month}}{P_{annual}} \times \text{Recharge multiplier}$$

The following observation wells were examined to match the transient water level records:

- HY-1s and HY-1i;

- HY-11s and HY-11i;
- HYCP-3s and HYCP-3i; and
- Ls and Ld.

These wells were chosen as they are shallow and intermediate well pairs (upper and lower Unit B wells) located at or upgradient from Parcel G and sufficiently far removed from the HYR extraction wells such that they respond more to changes in recharge than to fluctuations in pumping rate.

Based on the results of a suite of simulations, the recharge multiplier of 0.15 yielded the closest match between the observed and calculated water levels. The match for HY-1s and HY-1i is shown in Figure H-6.

H.4.4 Alternative 2 Predictive Simulations

Following is a discussion of the predictive simulations for Alternative 2. For all simulations, it was assumed that Parcel G would be capped with a low-permeability cap. As discussed in Section H-2, the infiltration rate through the cap was conservatively assumed to be 0.07 gpm. The flow through the cap was represented as an equivalent steady recharge over the area of Parcel G.

The configuration of the ZVI reactor vessel system simulated in the model is shown in Figure H-7. The collection trench is located along the northern alignment of the slurry wall with the reactor vessels located inside the northeast corner of the slurry wall and the infiltration gallery located on the outside of the slurry wall and downgradient from the treatment vault.

For the simulation of both Alternative 2 and 3, the slurry wall was assumed to be 21 inches thick and to have a hydraulic conductivity of 1×10^{-7} cm/sec, based on information provided by DeWind One-pass Trenching.

In Alternative 2, the collection trench was treated as a high hydraulic conductivity zone with a MODFLOW DRAIN cell located at the inflow to the reactor vessels. The head at the DRAIN cell was set equal to the head in the infiltration gallery. The infiltration gallery was treated as a MODFLOW injection well with the flow rate in the injection well determined by the flow into the reactor vessel DRAIN cell. This representation does not introduce any artificial breaks in the slurry wall and results in one-way gravity flow from inside the wall to outside the wall. Because the DRAIN is linked to the infiltration gallery by both head and flow, the solution is iterative. Consequently, the model was run over several annual cycles while updating the head in the DRAIN cell and injection well rate until the head and flow converged between successive runs. The conductance in the DRAIN cell was set such that a head loss of approximately 0.1 feet occurred through the reactor vessel system.

Maximum Discharge Rate Through the ZVI Reactor Vessel System. The groundwater discharge through reactor vessel system is show in Figure H-8. The variations in the calculated discharge rates reflect the stratified nature of the soil as represented in the variable transmissivities, and the variable influence of the vertical components of flow (infiltration through the cap and flow upward through Unit C).

The critical design quantity is the maximum groundwater flow rate through the ZVI reactor vessel system. For a reactor vessel system with backflow control this is approximately 1.1 gpm, which occurs in July and August with slightly lower flow rates in September and October. There is minimal flow in November and no flow from December through April as water levels outside the wall are higher than water levels inside the wall.

Vertical Gradients Across Layer C. Tables and hydrographs in Appendix C (Tables C-5 through C-15 and accompanying hydrographs) compare Layer B and Layer D groundwater elevations measured between July 1992 and December 2004. Data are presented for Parcel G well clusters (HY-1, L, and HYCP-1) and for off-site well clusters (HY-11, G, H, B, C, HY-7, HY-8, and K). The hydrographs for the on-site and off-site well clusters show that under current corrective measures system (CMS) pumping conditions, there are occasional reversals of the typically upward gradients across Layer C. These reversals, when they occur, are generally short-lived and tend to happen at annual high water level peaks.

Because of the potential for downward transport of contaminants from the Layer B aquifer through the underlying Layer C aquitard if downward gradients were to occur for significant periods, the model was used to evaluate the effect of Alternative 2 on vertical gradients. Figure H-9 presents the simulated potentiometric heads at the HYCP-3i well location (situated within the containment cell) for the calibration simulation (current CMS pumping) and the Alternative 2 simulation. The results of these simulations indicate that, compared to current CMS pumping conditions, Alternative 2 will lower the highest potentiometric heads in Layer B inside the containment cell on the order of 1 to 2 feet. This suggests that Alternative 2 will reduce the potential for occasional reversals in gradient between Layers B and D.

It should be noted that the model is not currently capable of simulating variations in potentiometric heads in Layer D with the same degree of sensitivity as in Layer B. The similarity observed in Layers B and D of the period and magnitude of seasonal head changes suggests there is a significant hydraulic connection between these two layers in areas beyond the boundaries of Parcel G. However, the nature of discontinuities in Layer C that may hydraulically connect Layers B and D in areas beyond Parcel G is not sufficiently understood to incorporate in the model. The model is currently constructed assuming that Layer C is continuous. Therefore, although model simulations of the mean potentiometric head in Layer D reasonably match observations, the magnitude of the simulated seasonal head changes is attenuated in comparison to observations. Accordingly, model simulations of head in Layer D have not been directly compared to simulations of head in Layer B to evaluate the hydraulic gradients across Layer C.

H.4.5 Alternative 3 Predictive Simulations

This section presents a discussion of the predictive simulations for Alternative 3. For all simulations, it was assumed that Parcel G would be capped with a low-permeability cap. As discussed in Section H-2, the infiltration rate through the cap was assumed to be 0.07 gpm. The flow through the cap was represented as an equivalent steady recharge over the area of Parcel G.

For the Alternative 3 simulations, a slurry cutoff wall was placed completely around Parcel G. The slurry wall extended from the ground surface to the top of Unit C. Three extraction wells were located within Parcel G to ensure inward groundwater flow. In this scenario, there would be four components of flow within Parcel G: infiltration through the cap (recharge), flow through the cutoff wall (flow through the sides), flow across Unit C (flow through the base), and extraction by wells.

The results for this scenario are shown in Figure H-10. The following sign convention is adopted for Figure H-10:

- Infiltration through cap: recharge is positive;
- Flow through base: upward flow is positive;
- Flow through sides: flow across the wall into Parcel G is positive; and
- Extraction by wells is positive.

As shown in Figure H-10, there would be important seasonal fluctuations in the flow across the wall and across Unit C. Several pumping rates were evaluated to estimate the rate that could achieve the objective of complete containment throughout the year. The minimum cumulative pumping rate that achieves this objective is 0.6 gpm, or 0.2 gpm per well.

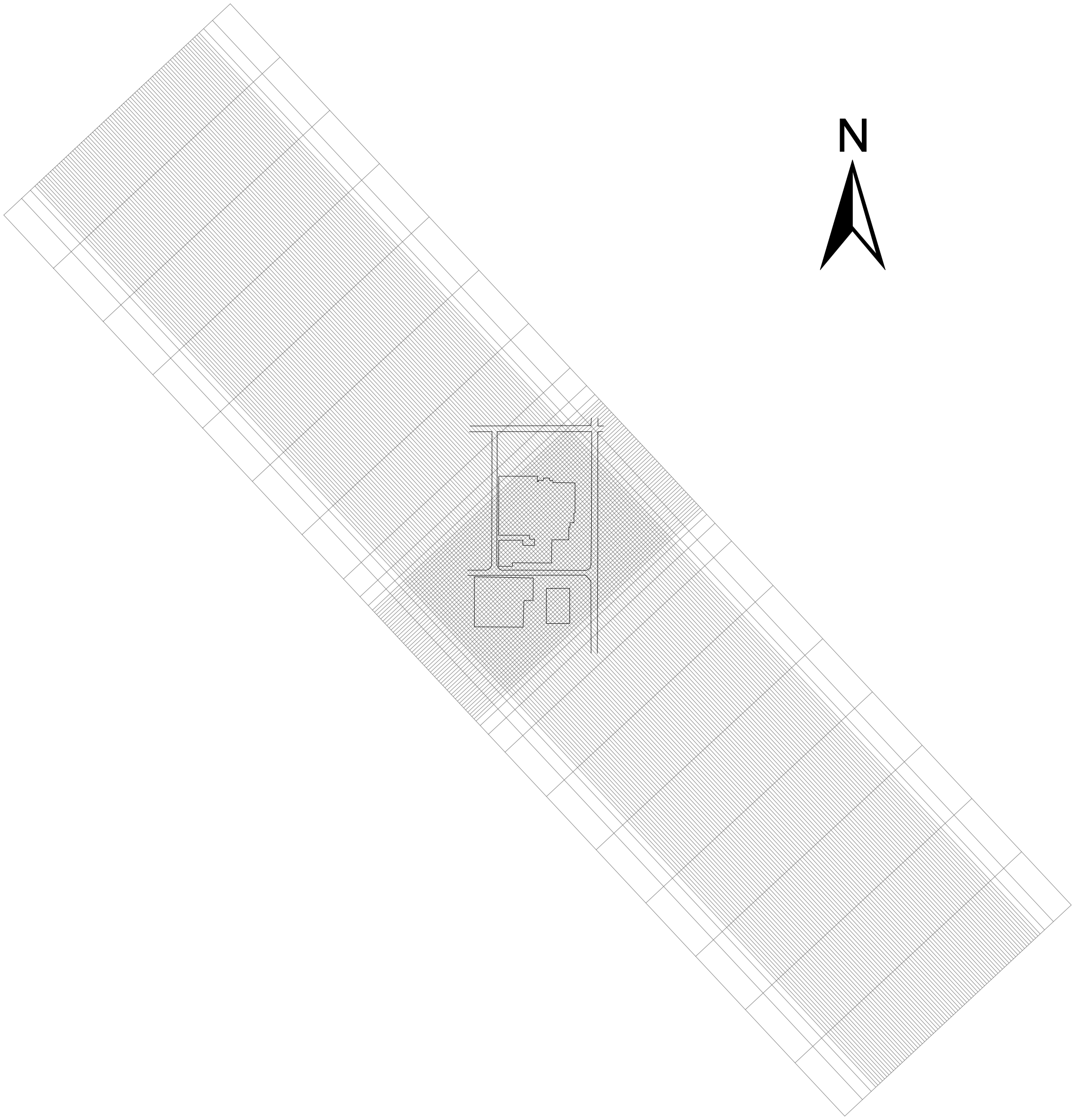

Figure H-1. Finite-difference grid for groundwater flow model

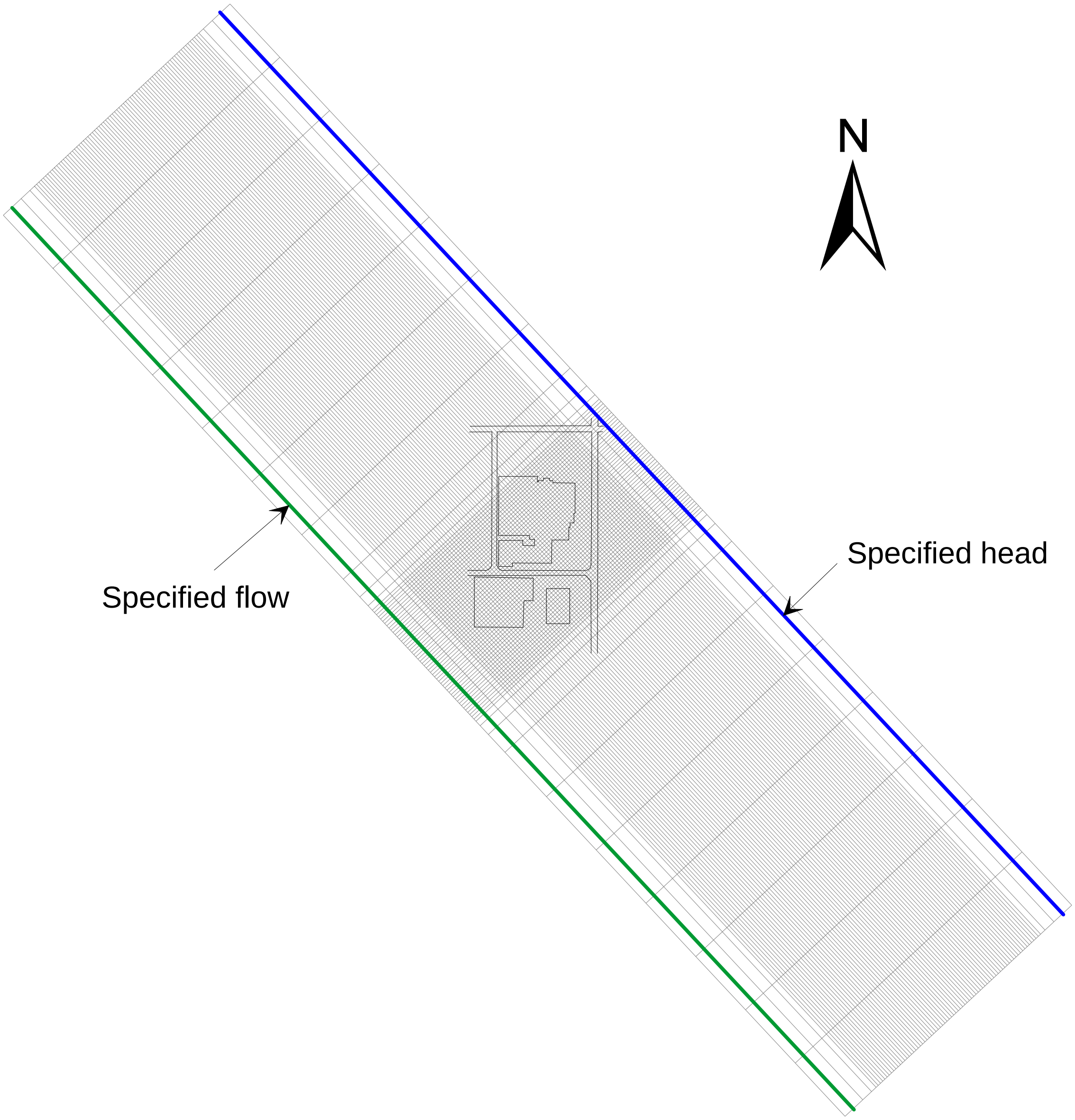

Figure H-2. Model boundary conditions

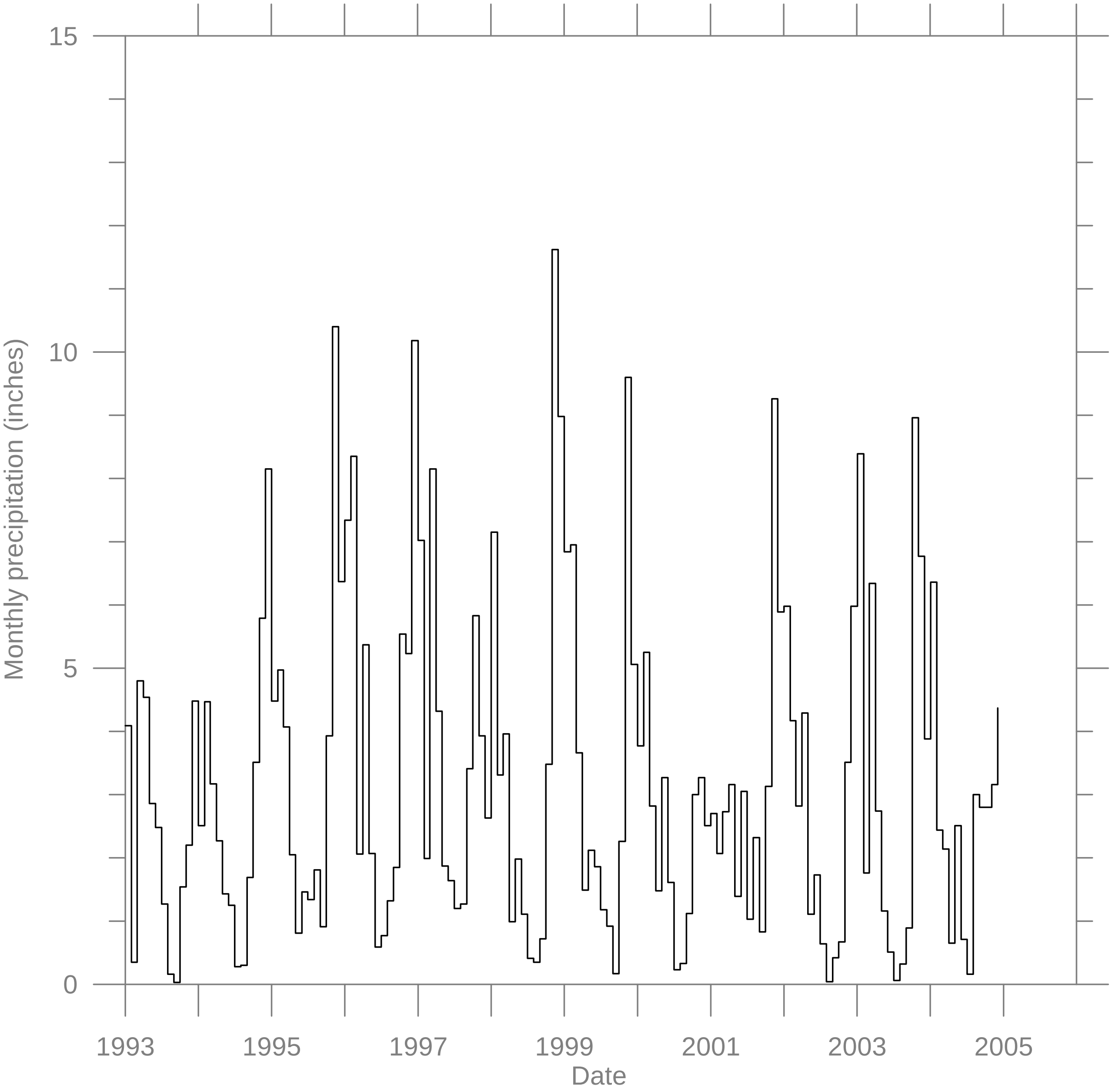

Figure H-3. Monthly precipitation record

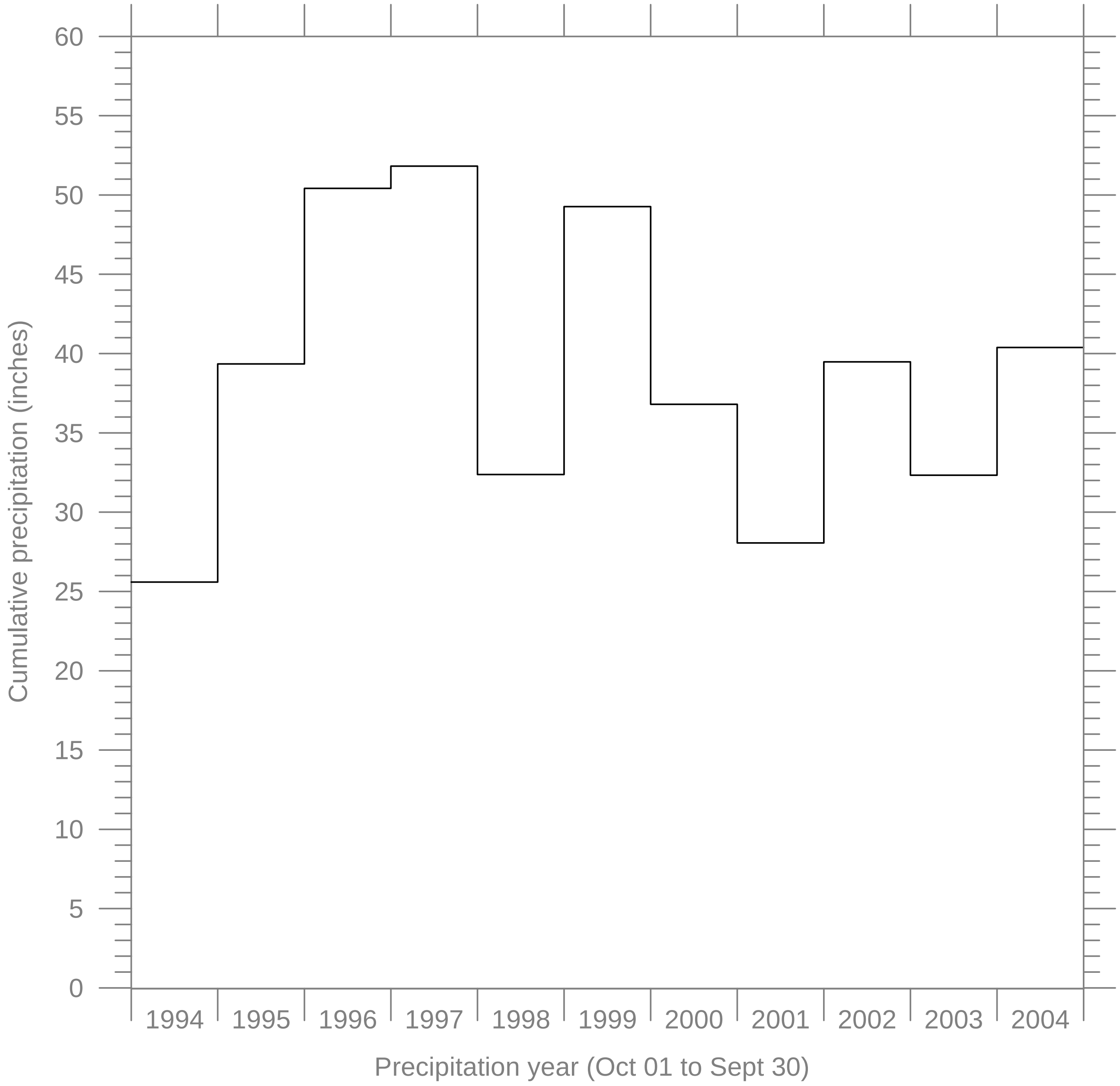

Figure H-4. Cumulative precipitation by water year (October 1 to September 30)

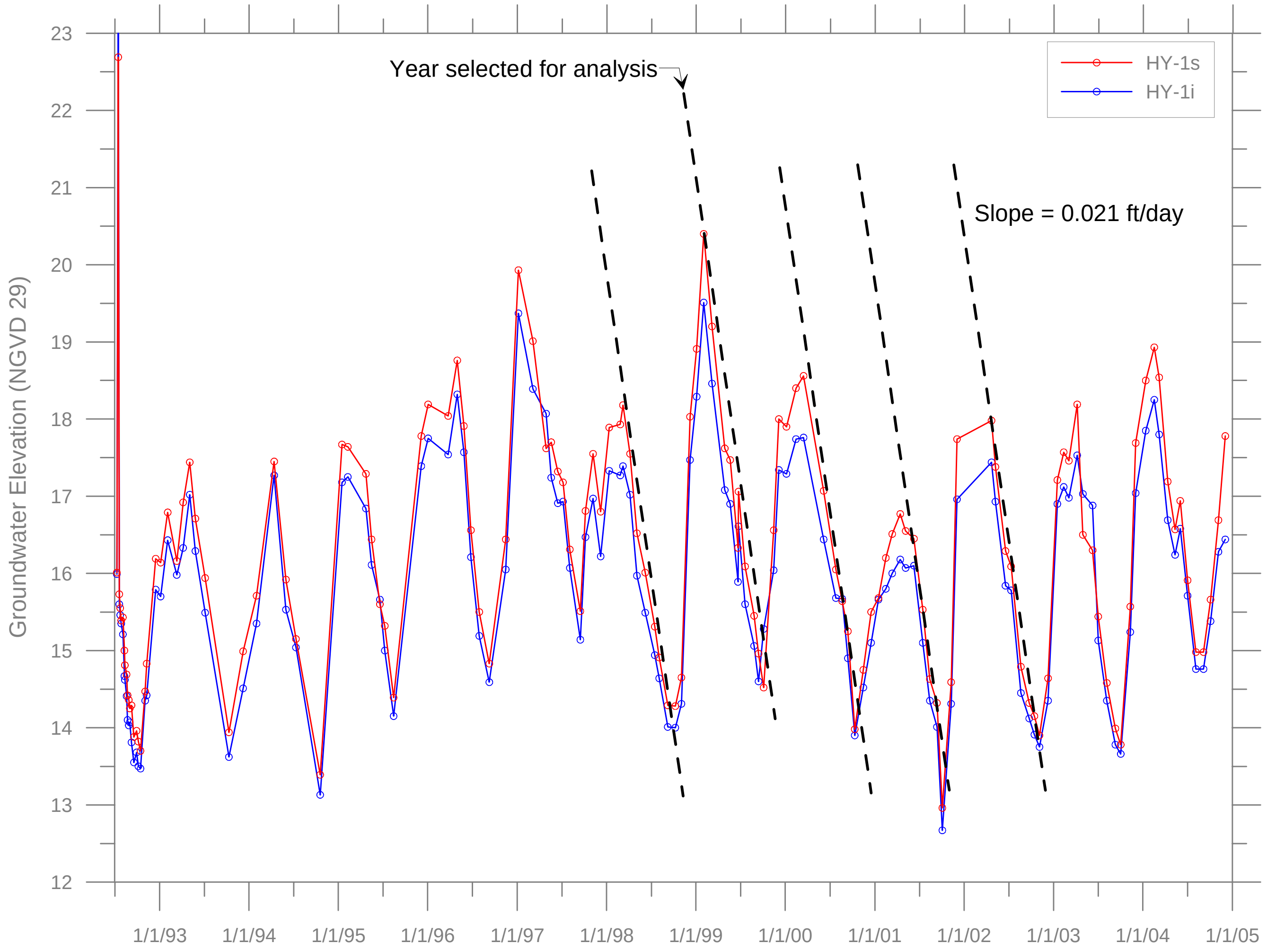

Figure H-5. Hydrograph for wells HY-1s and HY-1i

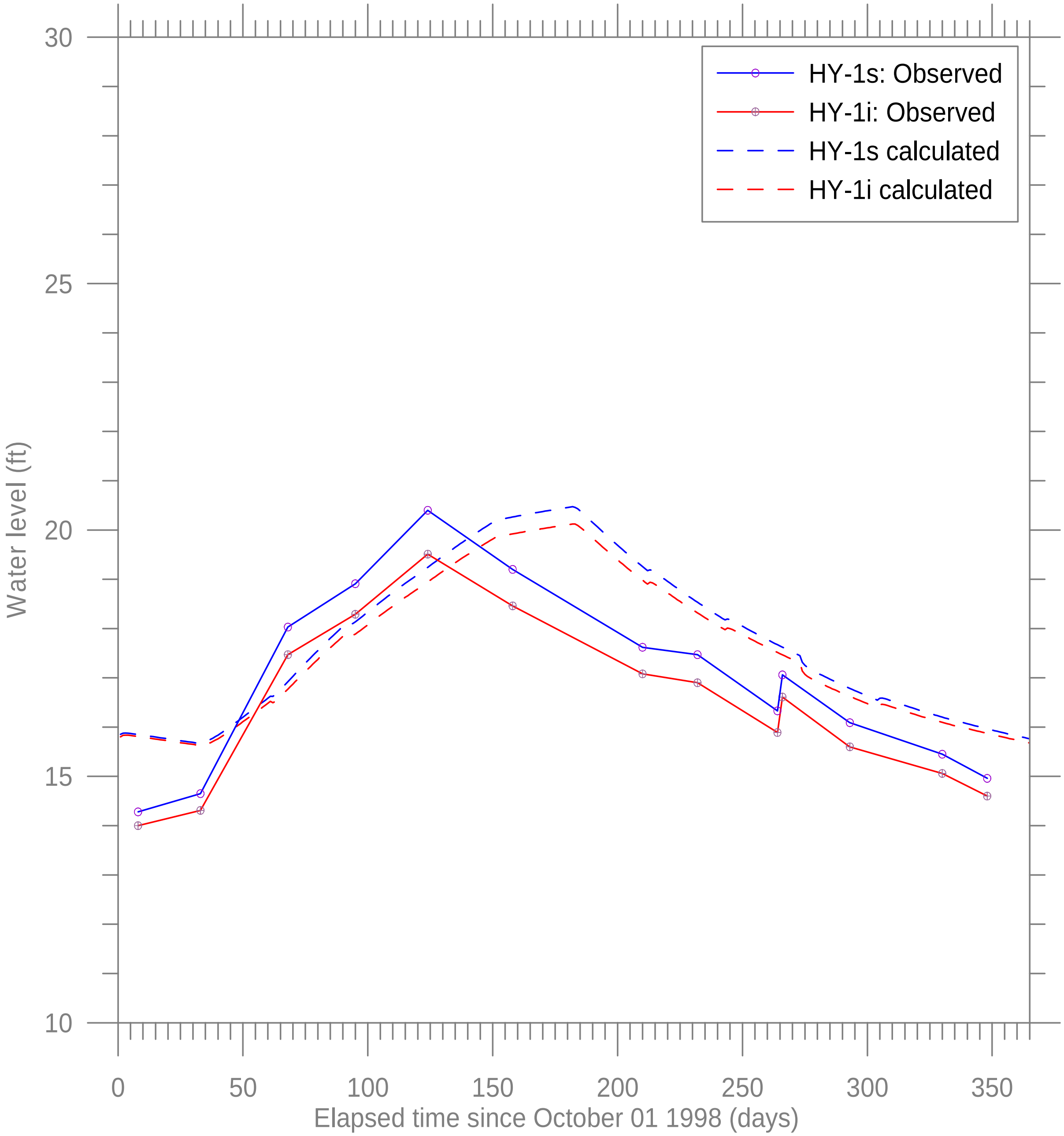

Figure H-6. Comparison between observed and calculated water levels for wells HY-1s and HY-1i

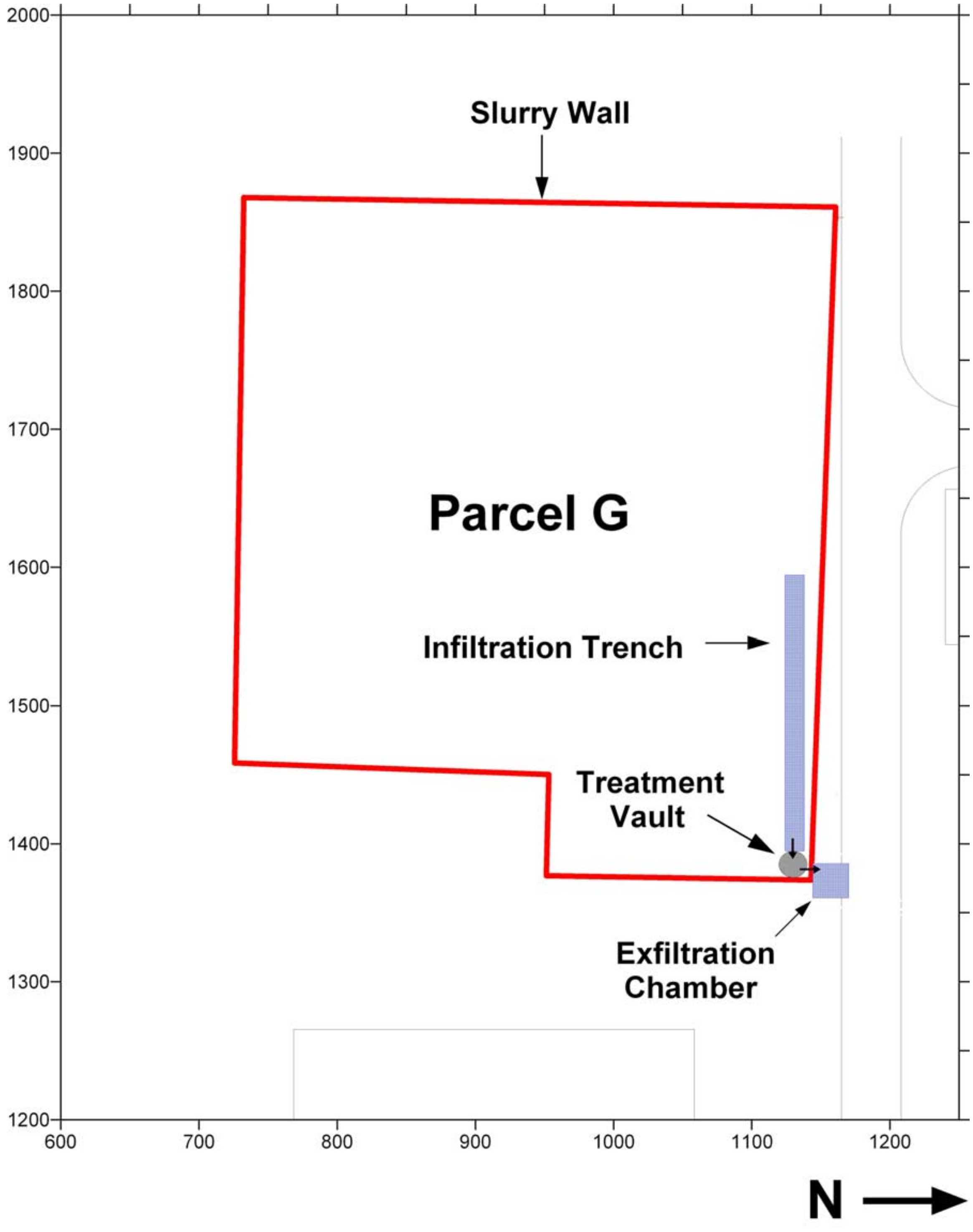

Figure H-7. Location of slurry wall and ZVI treatment vault system

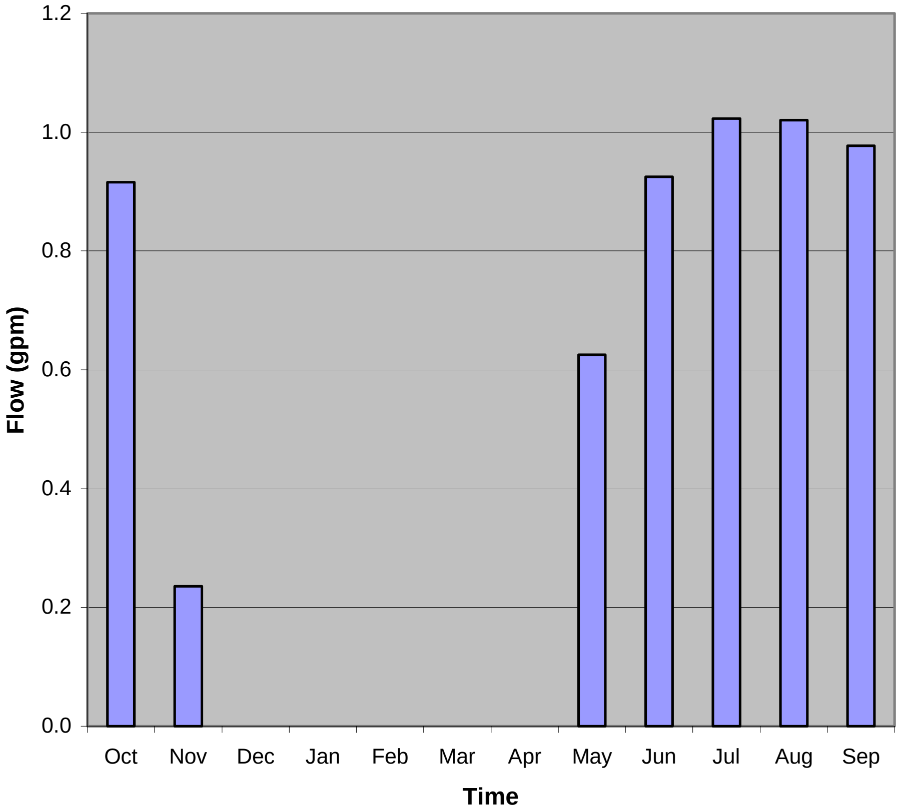

Figure H-8. Calculated flows through the ZVI treatment system

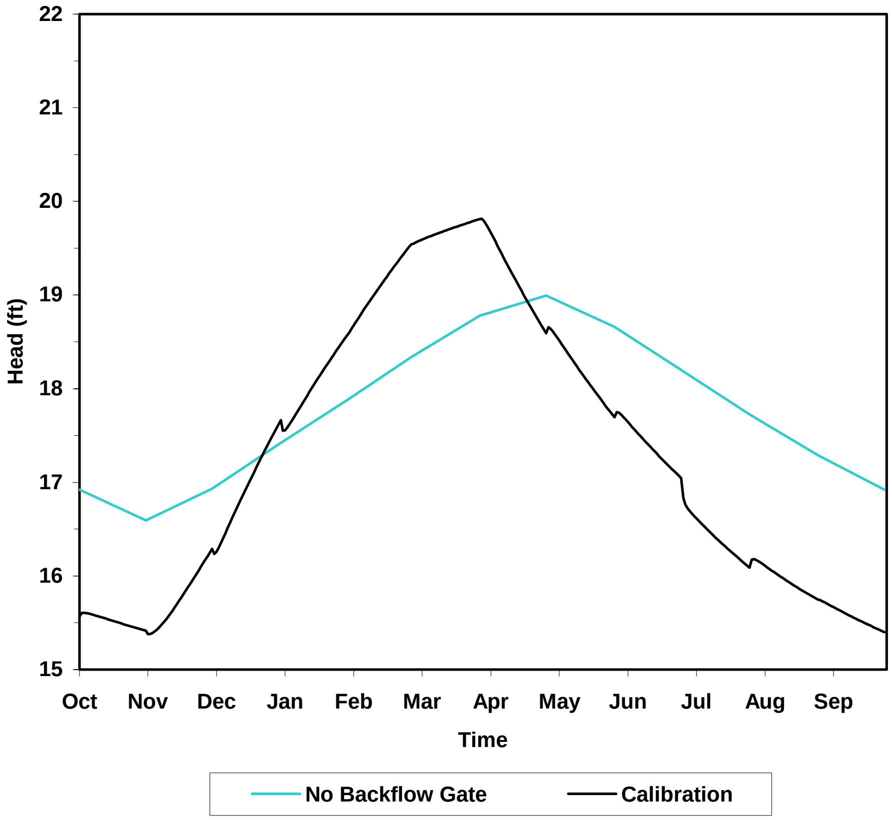

Figure H-9. Calculated water levels at HYCP-3i

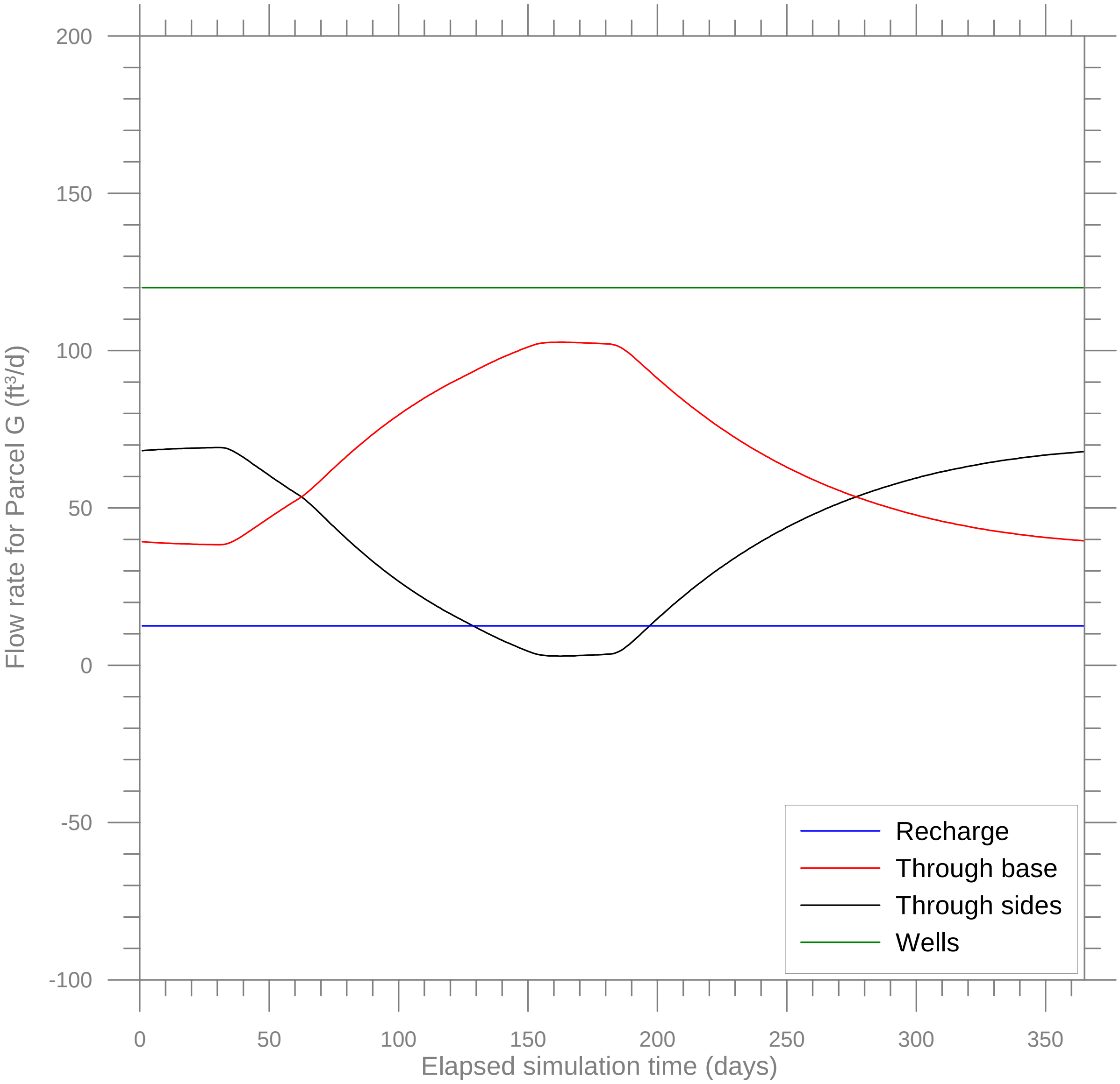

Figure H-10. Calculated flows across full containment slurry wall

Table H-1

Estimated Flow Into Containment Area Through The Surface Asphalt Cap
BSB Property, Kent, Washington

Month	Mean Rainfall (in.)	Estimated Pan Evaporation Rates (in.)	Calculated Evaporation Rates (in.)	Rainfall Minus Evaporation (in.)	Potential Water Available for Infiltration (gal)	Cap Infiltration Rate (gpm) Based on Estimated Cap Leakage		
						0.5%	1%	5%
January	5.71	0.61	1.2	4.51	514,354	0.06	0.12	0.58
February	4.10	0.71	1.6	3.39	386,621	0.05	0.10	0.48
March	3.73	1.58	2.3	2.15	245,202	0.03	0.05	0.27
April	2.53	2.46	3.2	0.07	7,983	0.00	0.00	0.01
May	1.68	3.97	5.1	-2.29	0	0	0	0
June	1.44	4.63	5.8	-3.19	0	0	0	0
July	0.76	5.61	7.0	-4.85	0	0	0	0
August	1.11	4.97	5.5	-3.86	0	0	0	0
September	1.74	2.92	3.5	-1.18	0	0	0	0
October	3.51	1.28	2.0	2.23	254,326	0.03	0.06	0.28
November	6.03	0.61	1.2	5.42	618,137	0.07	0.14	0.72
December	5.82	0.61	1.0	5.21	594,187	0.07	0.13	0.67
Annual	38.16	29.96	39.4	23.0				

NOTE: 1. Mean monthly rainfall (1948-2004) from http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?waseat.

2. Pan evaporation rates from the NOAA Western Regional Climate Center (http://www.wrcc.dri.edu/htmlfiles/westevap.final, 11/13/04); the WRCC adjusted the pan evaporation rates (determined by pan measurements in Puyallup, WA, between 1931 and 1995) by a factor of 0.7 to 0.8 to account for pan effects. Pan measurements were not available for January and December; the lowest pan measurement available (November) was used for January and December.

3. Calculated evaporation rates (from NOAA WRCC website referenced above) were determined by the WRCC using Seattle-Tacoma meteorological data and the Penman Equation.

4. The lower of two evaporation rates was used to calculate potential rainfall available for cap infiltration.

5. Runoff was ignored since daily rainfall data would be required for analysis by the SCS curve number equation.

6. Containment area = 4.2 acres = 182,951 square feet.