# REMEDIAL INVESTIGATION/ FEASIBILITY STUDY REPORT

at the

#### STOREY GAS STATION FACILITY

1310 East First Street Cle Elum, Washington

for

EARL STOREY, SUZANNE STOREY, MARILYN STOREY, and JOANNE STOREY MANKUS

Cle Elum, Washington 98922

prepared by



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March 2000

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#### **EXECUTIVE SUMMARY**

This report presents the results of Galloway Environmental, Inc.'s (GEI's) Remedial Investigation and Feasibility Study (RI/FS) of the Storey Gas Station Facility located at 1310 East First Street in Cle Elum, Washington. This RI/FS was prepared as part of the Storey Family's (Storey's) response to an Agreed Order issued on the site by the Washington State Department of Ecology (Ecology) in October 1997. Storey intends to completely upgrade the facility and continue the present use of the site as a petroleum service station and retail facility.

A residence belonging to Mr. and Mrs. Earl Storey presently occupies the site, along with an approximately 4,000 square-foot shop building, and one abandoned residence. A new Station office and mini-convenience store will be constructed this spring.

Ten aboveground storage tanks (ASTs), three underground storage tanks (USTs), and four fuel islands and associated piping have been properly decommissioned from the site. These tanks have been replaced with seven new ASTs situated in a new aboveground concrete secondary containment basin. A "Draft" Spill Prevention, Control and Countermeasures (SPCC) Plan has been forwarded to EPA Region X. This Plan will be finalized and forwarded to the EPA when the facility upgrades are completed.

GEI conducted a phased series of site investigations after acceptance of the RI/FS Work Plan by Ecology (November 1997). These investigations included the following scope of work.

 Two phases of test pit soil sampling and analysis — the soil samples were field-screened for the contaminants of concern and representative samples were submitted for laboratory analysis.

2) Four groundwater-monitoring wells were installed and properly developed — one up-gradient and three down-gradient wells. The wells were sampled at approximately regional high and low water table (three sampling periods). The water samples were submitted for laboratory analysis. Also, hydrogeologic gradient and flow analysis was completed on the wells.

 Surface water and sediment samples were collected from an on-site drainage ditch. These samples were submitted to a laboratory for chemical analysis.

4) As the areas became accessible during facility decommissioning and upgrading, Storey excavated petroleum-impacted soil from impacted soil source areas identified in the two phases of test pit sampling. GEI collected soil samples from the source removal areas for field screening and follow-up chemical analysis. This sampling was intended to direct the source area removals and to test the soils remaining following the removals. The following summarizes the results of these investigations.

<u>Soil Samples</u> - Results of the test pit sampling indicated that soils in the vicinity of the ASTs, USTs, and pump islands contained concentrations of petroleum hydrocarbons in excess of the MTCA Method A cleanup levels.

Representative samples of the affected soils were also analyzed for volatiles, semivolatiles and metals. The results of these tests confirmed that the soils are within MTCA-acceptable limits for these contaminants with the exception of one sample, which contained 310 mg/kg for lead — slightly above the MTCA Method A limit of 250 mg/kg in soils.

<u>Water Samples</u> - GEI monitored the installation of four groundwater wells at the site — one upgradient and three downgradient wells. Laboratory analysis of soil samples collected from the monitoring well borings resulted in no-detectable petroleum compounds in the soil.

Water from each of the wells was sampled on January 15 1998, June 4, 1998 and September 16, 1999. Laboratory analysis of these samples confirmed petroleum hydrocarbons were within MTCA Method A Cleanup Standards in all of the wells for all sampling events — with the exception of monitoring well MW-2, which contained gasoline-range petroleum compounds in excess of MTCA Method A in the water sample collected on June 4, 1999. This well is situated in the northeast corner of the property — downgradient of the previous location of the ASTs. This single excedence in this well may be a result of high water table migrating through the affected source area soils. The presence of floating product was not observed in the groundwater monitoring wells.

<u>Younger Creek Water and Sediment Samples</u> – Sediment samples were collected from the drainage ditch located along the southeastern portion of the property (Younger Creek) on January 15 and June 4, 1998. Petroleum hydrocarbon concentrations were slightly above the MTCA-Action limit in the January samples and not detectable in the June samples. Petroleum hydrocarbons were not detectable in the water samples collected from the drainage.

<u>Source Removals (Interim Remedial Action)</u> - An interim remedial action was conducted at the Storey site in September of 1999. This action consisted of the removal of approximately 600 cubic yards of petroleum-impacted soils, following the removal of the pre-existing ASTs, USTs, and fuel pump islands.

Impacted soil was removed from these source areas until: 1) remaining petroleum concentrations in the soil were within Ecology's Method A Cleanup Levels for residential soil; or 2) continued excavation may have jeopardized the structural integrity of the concrete secondary containment housing the ASTs. The excavated soil is currently stockpiled on-site in a

lined, secure stockpile area awaiting remediation. Remaining petroleum hydrocarbon concentrations remaining belowground at the site are summarized as follows:

- Source area clearance samples have confirmed that petroleum concentrations in soil are less than the MTCA Method A Cleanup Level in the upper eight feet of the ground surface, with one exception 1,900 mg/kg diesel-range petroleum hydrocarbons at six feet below the ground surface (bgs) beneath the previous location of the Station office
- 2) Diesel-range petroleum hydrocarbons are confirmed in soil up to 8,100 mg/kg at depths greater than eight feet bgs (approximately 20 feet west of the previous location of the Station office building);
- 3) Gasoline-range petroleum hydrocarbons in the soil are less than the MTCA Method A Cleanup Level in all areas tested, with one exception —480 mg/kg at 9.5 feet bgs beneath the previous location of the facilities AST pumps; and
- 4) Petroleum hydrocarbon concentrations are within MTCA Method A limits in the area of the previous fueling island locations at depths less than 9.5 feet bgs; however, diesel-range petroleum hydrocarbon are present at depths greater than 9.5 feet bgs at concentrations up to 2,800 mg/kg. NOTE: groundwater table at the time of source removals excavation in this area was approximately 8.5 feet bgs.

<u>Corrective Action Regulatory Framework</u> - State of Washington's MTCA Cleanup Levels (MTCA promulgated by Washington Administrative Code 173-340) and federal drinking water standards were reviewed during this RI and considered with respect to the contaminant characteristics (i.e., mobility and degradation).

The site is relatively simple in that the primary contaminants of concern are all petroleum compounds. Those compounds are still present belowground in soil downgradient of the petroleum-impacted source areas. These compounds may also be present in groundwater downgradient from the source areas. These compounds include benzene, toluene, ethyl benzene, and xylene, along with general gasoline, dieseland oil-range hydrocarbons.

Based on GEI's evaluation, MTCA Method A cleanup levels are appropriate for the site. The Method A cleanup levels for benzene, toluene, ethyl benzene, and xylene in groundwater are 5, 40, 30, and 20  $\mu$ g/L, respectively. The cleanup level for gasoline and diesel-range hydrocarbons in water are 1000  $\mu$ g/L.

The MTCA Method A soil cleanup levels are 0.5, 40.0, 20.0, and 20.0 mg/kg for benzene, toluene, ethylbenzene, and xylene. The soil cleanup

levels for gasoline- and diesel-/oil-range petroleum hydrocarbons are 100 mg/kg and 200 mg/kg, respectively.

GEI's research did not detect any drinking water wells likely to be impacted by the off-site migration of petroleum compounds from the site. Therefore, GEI concludes that this site does not currently present an imminent threat to human health and the environment.

As part of the Feasibility Study, several potentially applicable technologies were evaluated to address the contaminated soil stockpiled on the property. These included thermal treatment, bioremediation, aeration, off-site disposal to a landfill, and incorporation into an asphalt mix. Based on the screening of the corrective action alternatives against the remedial action objectives, the bioremediation option has been selected as the remedial option of choice. It is recommended that a Compliance Monitoring Program be implemented to address the potentially contaminated groundwater remaining on-site.

#### 1.0 INTRODUCTION

This report presents the results of Galloway Environmental's (GEI) Remedial Investigation (RI) of a property (site) located at 1310 East First Street in Cle Elum, Washington (known as the Storey Service Station). This RI/FS was prepared as part of the Storey Family's (Storey) response to an Agreed Order issued on the site by the Washington State Department of Ecology (Ecology) in October 1997. Storey intends to completely upgrade the facility and to continue the present use of the site as a petroleum service station and retail facility.

#### 1.1 BACKGROUND

Mr. Earl Storey has used the Storey site for petroleum fuel storage and retail sales since its acquisition in 1949, at which time the service station and two 12,000-gallon aboveground storage tanks (ASTs) were installed on the site. The service station business was operated concurrently with a logging business through 1968. The shop building was used as a maintenance shed for Storey's logging equipment. Additional ASTs were added in 1953, 1982, and 1989. Three underground storage tanks (USTs) were installed in 1964.

In November 1995, Ecology responded to a reported release of petroleum product into Younger Creek — located at the southeastern portion of the site. Ecology personnel observed petroleum product along the banks of the creek for approximately 1,000 feet downstream of the site. Ecology provided oleophilic booms for the containment of the WDOE-estimated 55-gallon oil spill, however these booms were swept away during a subsequent flood event and were not recovered.

In response to the release, Ecology investigated 24 service station/bulk fuel storage facilities in Cle Elum to determine the source of the spill. The Storey site was included in the investigation. Ecology's in-situ soil vapor sampling results indicated that the subject site was among four sites with potential petroleum contamination in soil. The other three sites are located upgradient of the subject site with respect to groundwater flow direction. Ecology conducted no sampling or testing immediately upgradient of the property to determine if petroleum contaminants may be migrating onto the subject property.

Ecology completed thirteen soil vapor borings, three soil borings and three groundwater-monitoring wells at the subject property. The results of the testing indicated that two monitoring wells exhibited concentrations of gasoline compounds exceeding the Model Toxics Control Act (MTCA) Method A Cleanup level. Ecology concluded that the petroleum contamination in the vicinity of the aboveground tank farm was most likely due to releases during petroleum product offloading and storage tank cleanout operations at the site. Products released from underground piping

may also account for the soil and groundwater contamination detected in the vicinity of the USTs.

Ecology issued an Agreed Order to the owners of the site in October 1997. Ecology determined that Earl Storey, Suzanne Storey, Marilyn Storey, and Joanne Storey Mankus were considered as "owners or operators" of the facility and were thereby notified of their status as "potentially liable persons" (PLPs) under RCW 70.105D.040 after notice and opportunity for comment on March 24, 1997. Attached to the Agreed Order was a Statement of Work for the Remedial Design/Feasibility Study of the station site. The Statement was amended to allow for a phased approach to the remediation of the known site conditions to accommodate the proposed upgrading of the facility by Storey. This document reports the results of the implementation of that Statement of Work.

#### 1.2 PURPOSE

The purpose of this RI/FS is to evaluate the nature, extent, and potential migration of contamination by performing data collection and analysis. The RI provides a focused methodology to document the completeness of the source area removals and to define the extent of remaining petroleum contamination at the site. The results of the RI are compared to Washington State Model Toxics Control Act (MTCA) cleanup regulations promulgated in Washington Administrative Code (WAC) 73-340. This information is subsequently used in preparation of an FS to evaluate potential remedial alternatives.

# 1.3 OBJECTIVES

Objectives for this RI/FS include the following:

- Review and summary of existing data for the project area
- Characterize the nature and extent of contamination in soil and groundwater in soil and groundwater on-site
- Determine the groundwater flow direction and gradient
- Develop cleanup levels
- Evaluate the threat that contaminated soil and groundwater poses to human health and the environment, if any, and
- Development of preliminary remedial alternatives for cleanup of contaminants of concern (COCs) in soil and groundwater

#### 2.0 GENERAL FACILITY INFORMATION

The information below is provided to comply with WAC 173-340-350(6)(a), "General Facility Information".

#### 2.1 PROJECT TITLE

"Remedial Investigation/Feasibility Study - Storey Gas Station Facility"

#### 2.2 INVOLVED PARTIES

#### **Property owners and addresses**

Earl Storey, Suzanne Storey, Marilyn Storey and Joanne Storey Mankus 1310 east First Street Cle Elum, Washington 98922

#### Environmental Consultant

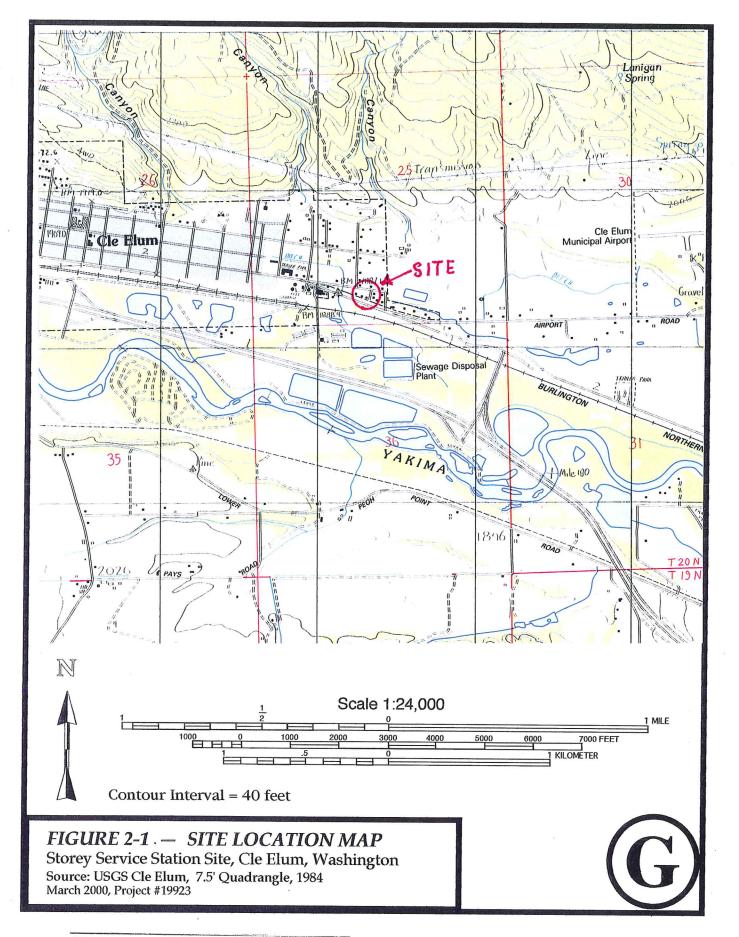
Gary Galloway, RG, REA Galloway Environmental, Inc. 3102 220th Place SE Sammamish, Washington 98029-9540

#### Ecology Project Manager

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#### 2.3 SITE LOCATION

The Storey Gas Station Facility is located in the City of Cle Elum, Washington, between First Street and State Route 903 (see Figure 2-1 - Site Location Map). The site address is currently identified as 1310 East First Street. The site latitude is 47 11' 28"N and the longitude is 120 54'32"W.



#### 2.4 SITE LEGAL DESCRIPTION

The subject property is situated in the SE 1/4 of the SW 1/4 of Section 25, Township 20 North, Range 15 East, Willamette Meridian. The site consists of the following tracts of land:

• Steiner's Garden Tracts #2; East 20 feet of Lot 28, Lot 29 (Parcel #20-15-2552-0029-00) owned by Suzanne G. Storey, Marilyn Storey, and Joanne Storey Mankus.

• Steiner's Garden Tracts #2 — Lot 21 and East 20 feet of Lot 22(Parcel #20-15-2552-0021-00) owned by Suzanne G. Storey, Marilyn Storey, and Joanne Storey Mankus.

#### 2.5 SITE CONDITIONS

The layout of the property with respect to property boundaries and other site features prior to the facility upgrades is shown in Figure 2-2 — Pre-Upgrades Site Plan. The property is fairly level. Younger Creek, a drainage ditch fed from the nearby Yakima River, cuts through the southern portion of the property.

Prior to the interim remedial action undertaken in the summer and fall of 1999, the site contained an operating petroleum service station, a large cement block shop/maintenance building, four outbuildings, three underground fuel storage tanks, eleven aboveground fuel storage tanks and three fuel islands. The capacity of the aboveground tanks, used to support the retail sale of petroleum products, totaled approximately 140,000 gallons.

Also prior to the remedial action, various items had been allowed to accumulate on the ground surface of the site, such as scrap metal, automobile hulks, used tires and barrels full of used car batteries. A bulk fuel delivery truck and two fuel transport trailers were also kept on-site. Petroleum-stained soils were observed in the south-central portion of the property. Barrels and buckets of waste petroleum products were stored in the area around the service station building and in various other locations about the property. A variety of horse trailers and railroad ties were stored on the southern portion of the site awaiting retail sale.

During cleanup operations conducted in September 1999, all eleven of the aboveground tanks and the three underground tanks were decommissioned. The service station building was demolished, along with the pump islands, and is temporarily being replaced by one of the outbuildings already present on the property. A new service station and convenience store is planned for the site. Seven ASTs and have been installed in a concrete secondary-containment area to service the new fueling system. New pump islands (with canopies) and asphalt has been installed as shown in Figure 2-3 — Existing Site Plan.

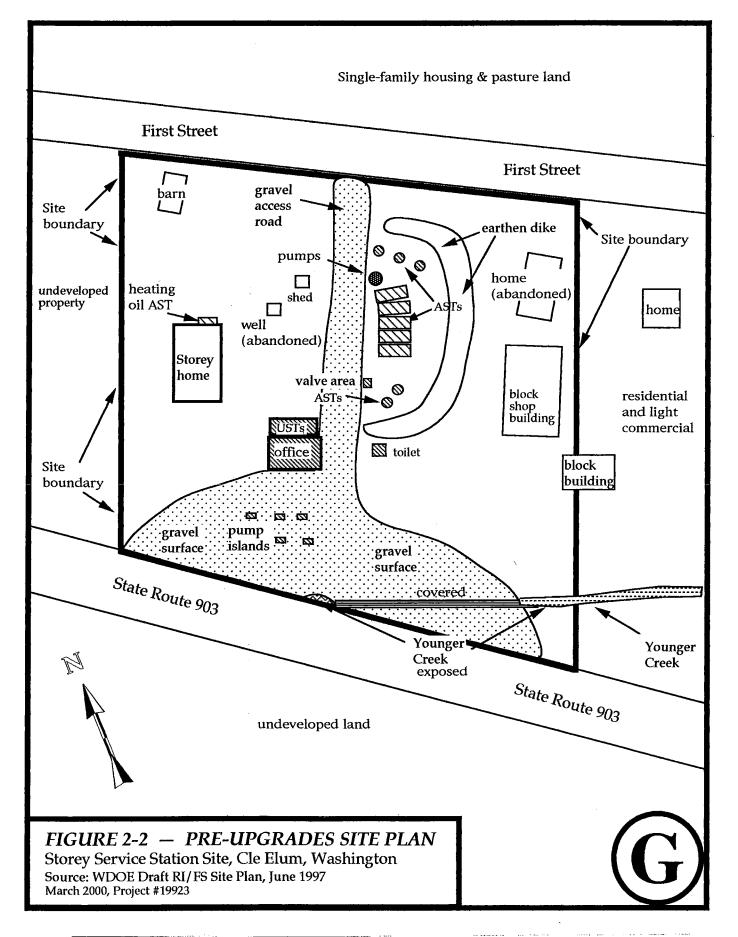
The site vicinity is commercial, as it is located on the eastern end of the main commercial "strip" of downtown Cle Elum. The site is bounded on the north by East First Street and on the south by State Rout 903. Residential homes and various commercial retail establishments border the property on the east and west and across First Street to the north. A Burlington Northern mainline extends from east to west along the south side of State Route 903.

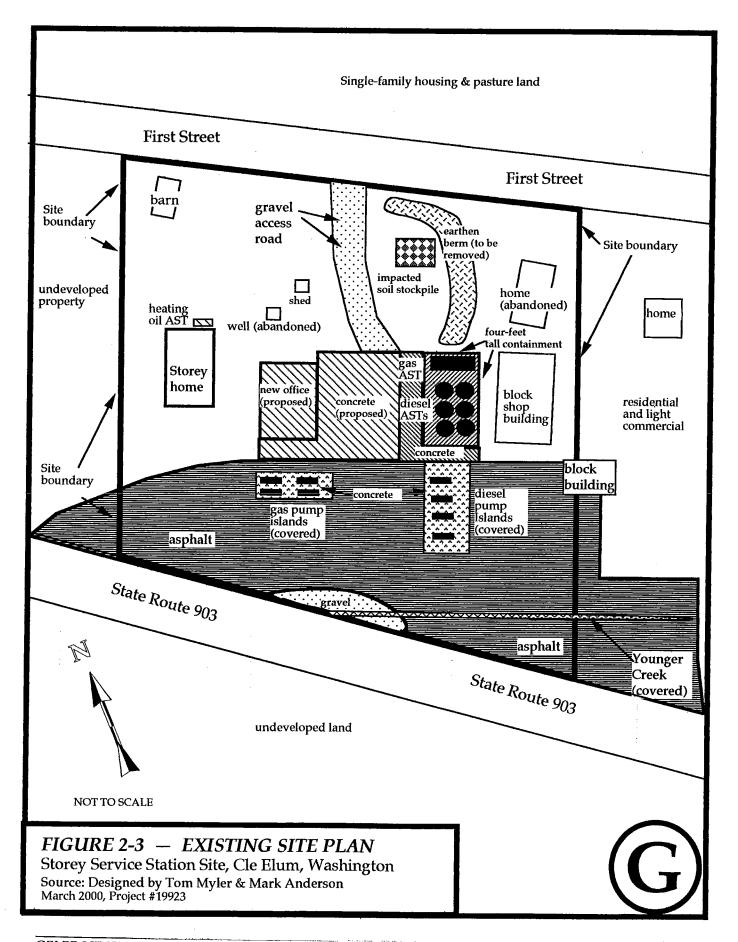
#### 2.6 OPERATIONAL HISTORY

Mr. Earl Storey purchased the property in 1949. At that time, there was a single residence on the site, which has since been moved to the northern portion of the property and is currently unused. A service station building (recently demolished), the residence currently located on-site, and three aboveground tanks were installed in 1949, at which time the service station began operating.

Storey operated the service station concurrently with a logging business from 1949 until 1968, at which time the logging business was discontinued. The cement block shop building was used for repair and maintenance of Storey's logging equipment. The service station building was destroyed by fire in 1959, but was subsequently replaced. Three aboveground tanks were installed during the reconstruction of the service station building. Three underground storage tanks were installed south of the service station building in 1964. Three 10,000-gallon aboveground tanks were installed in 1953 and were replaced by four other aboveground tanks in 1982. Five additional aboveground tanks were installed in approximately 1989.

Since the beginning of this RI/FS, the Storeys have removed and replaced all of the former fuel storage tanks on the property. Currently, there are no underground storage tanks known to be on-site. Seven aboveground tanks provide fuel for the retail fueling business still in operation.





#### 2.7 PREVIOUS SITE STUDIES

In November 1995, Ecology responded to a reported release of petroleum product into nearby Younger Creek. Ecology personnel observed petroleum product along the banks of Younger Creek for approximately 1,000 feet downstream of the site. Ecology provided oleophilic booms for the containment of the estimated 55-gallon oil spill, however these booms were swept away during a subsequent flood event and were not recovered.

As a follow-up to that release, Ecology investigated 24 service stations and bulk storage facilities located on First Street in Cle Elum. The findings associated with this investigation are documented in "Phase 1 and 2 Environmental Site Assessment, Former and Current Service Stations and Bulk Storage Facilities, Cle Elum, Washington, December, 1996". The Storey site was included in this investigation. In-situ soil vapor samples analyzed using an organic vapor analyzer (OVA) and a flame ionization detector (FID) indicated that the site was among four sites with potentially high petroleum contamination.

All of the sites included in Ecology's investigation are located upgradient of the Storey site with respect to the assumed groundwater flow direction. Of these sites, three were identified by Ecology to have potentially high petroleum contamination. These included:

- 1) The Knife Works, 316 West First Street
- 2) Willette's Shell Service, 901 East First Street
- 3) Former Unocal Bulk Plant 0095/Devere & Sons Distributing, Short and First Street

No drilling or sampling activities were conducted immediately upgradient of the site to determine if petroleum contaminants may be migrating onto the subject property.

# 2.7.1 Ecology Soil Investigation-Storey Site

Ecology conducted a limited soil vapor survey at the Storey site. Based on this vapor survey, Ecology's contractor — Geoboring and Development, Inc., Puyallup, Washington (Geoboring) installed three soil borings, which were ultimately completed as two-inch groundwater monitoring wells, at the site.

The results of the vapor survey and comparison of the analytical results with MTCA Method A Cleanup Levels (WAC 173-340-740) for soil indicated that remedial action was necessary at the site to reduce gasoline and diesel concentrations to acceptable levels. The extent or volume of the impacted soil was not determined by Ecology.

#### 2.7.2 Groundwater Investigation

Ecology supervised the installation of groundwater monitoring wells at the soil boring locations installed by Geoboring, Inc. Ecology collected groundwater samples from each of the monitoring wells in June and September of 1996.

Comparison of the analytical results with the MTCA Method A Cleanup Levels for groundwater indicated that remedial action was required to reduce the concentrations of the following petroleum compounds.

- Benzene and xylenes in MW-23; and
- Benzene, toluene, ethylbenzene, xylenes, and gasoline/diesel in MW-24.

Ecology concluded that the petroleum contamination in the vicinity of the tank farm (unpaved area) was most likely due to releases during product offloading and storage tank cleanout operations. Products released from underground fueling system piping may also have accounted for the soil contamination found in the vicinity of the underground storage tanks.

All three of the groundwater monitoring wells installed by Ecology were destroyed during the interim remedial action and facility upgrades undertaken at the site in September 1999.

#### 2.8 PROPOSED LAND USE

The Storeys intend to complete any necessary remedial actions on the property and to construct a new service station and convenience store on the site. Therefore, no land use changes are anticipated (see Appendix D-Photos).

Records on file with the Kittitas County Planning Department indicate that the site is zoned as "Commercial", although it is currently also used as a residence. The Department has no plans to change the zoning of the property in the future.

#### 3.0 FIELD INVESTIGATION ACTIVITIES

The purpose of GEI's field investigation was to characterize contaminants of concern in on-site soil and groundwater, as well as to evaluate the potential for off-site contaminant migration. A phased approach was used, with field investigation activities conducted as part of all phases. The data obtained from each phase of the investigation was used to direct each subsequent phase. The work was conducted in accordance with the Sampling and Analysis Plan (SAP) and the Health and Safety Plan (HASP) prepared by GEI as part of the RI/FS Work Plan (November 1997). The following sections describe field activities performed during the RI.

#### 3.1 SOIL INVESTIGATION

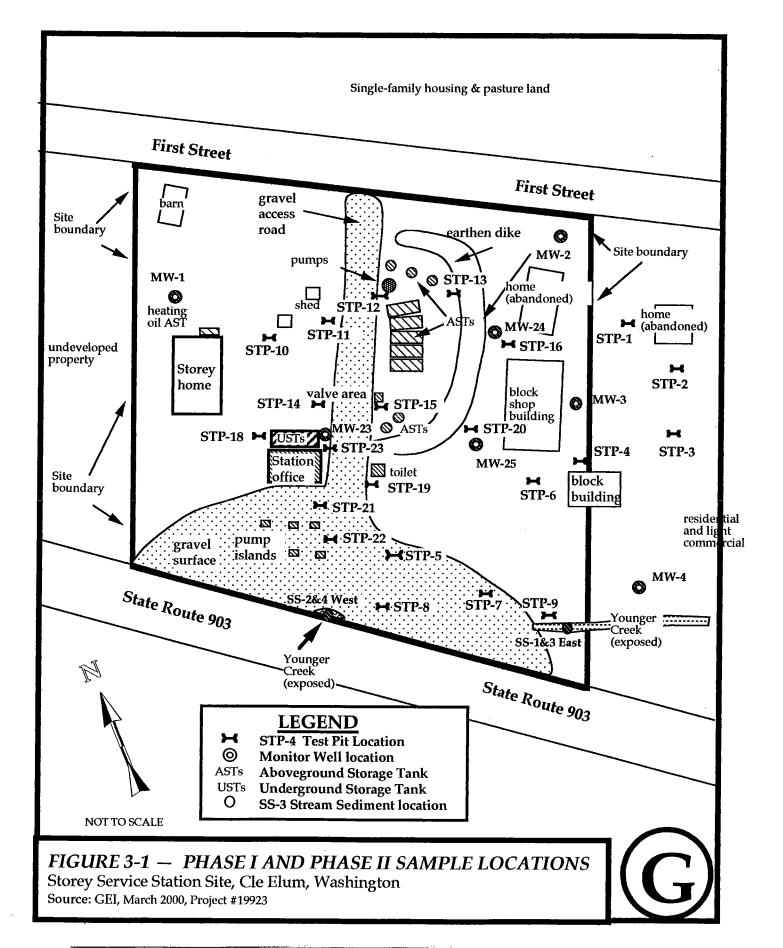
#### **3.1.1** *Test Pits*

GEI explored subsurface soil conditions on-site by excavating 22 test pits at the sampling locations shown in Figure 3-1 — Phase I and Phase II Sample Locations (see Appendices A — Test Pit Logs and D — Photos).

In December of 1997, twelve test pits were excavated to collect samples for site characterization, as part of the Phase I RI investigation. The test pits were advanced with an owner-supplied backhoe. Samples were collected by GEI from one to seven feet in depth from the test pits and were screened in the field for indications of contamination. Test pit samples with indications of petroleum contamination were submitted to OnSite Environmental Laboratory of Redmond, Washington for analysis. At least one sample from each test pit was analyzed for the contaminants of concern. The soil samples were analyzed for NWTPH-DX (diesel/oil) and NWTPH-G/BTEX (gasoline). In addition, three of the samples with the highest levels of petroleum contamination were analyzed for RCRA metals, Volatiles (EPA 8260) and Semi-Volatiles (EPA 8270) analysis.

Ten additional test pits were excavated in May of 1998 to collect samples for site characterization, as part of the Phase II RI investigation. Onsite Laboratory analyzed a representative sample from each test pit for the contaminants of concern. The soil samples were analyzed for WTPH-Dx (diesel/oil) and NWTPH-G/BTEX (gasoline). Also, one of the samples was analyzed for RCRA metals.

Logs of the test pits are provided in Appendix A.



#### 3.1.2 Soil Borings and Sediment Sampling

Four soil borings were advanced on the property in December 1997, and were ultimately completed as groundwater monitoring wells. The locations of the borings are presented in Figure 3-1 — Phase I and Phase II Sample Locations. Soil samples from the hollow stem auger-drilled borings were field screened to test for indications of petroleum-related soil contamination and selected soil samples were submitted to Onsite Laboratory for chemical analysis.

The vertical borings were drilled to an approximate depth of 15 feet below the ground surface (bgs). Drilling activities were monitored in the field by a GEI geologist who examined and classified the soils encountered, collected soil samples for chemical analysis, field-screened soils for volatile organic compounds, and recorded pertinent information, including stratigraphy and groundwater occurrence (see Appendix B—Borehole and Monitoring Well Completion Logs).

Soil samples were collected at five-foot intervals from the soil borings. Soil samples and cuttings were visually examined and classified according to the Unified Soil Classification System (USCS). Completion logs for each borehole are presented in Appendix B. Soil samples were examined for obvious signs of contamination (i.e., discoloration, sheen, and obvious odor), and field screened for VOCs using an organic vapor meter equipped with a photoionization detector (OVM-PID). Soil samples anticipated to be submitted for chemical analysis were immediately packed in laboratory-supplied containers, labeled, and placed into a chilled cooler. Samples not immediately submitted for analyses were kept refrigerated at GEI's offices until they were eventually disposed.

Two sediment samples were collected from Younger Creek, the drainage ditch that extends along the southern boundary of the property in January and again in June 1998. The samples were collected from two locations — one from the eastern end of the ditch, with respect to the property, and one sample from the western end of the ditch (see Figure 3-1 — Phase I and Phase II Sample Locations). The samples were collected at the active water/sediment interface of the ditch. These discrete samples were placed directly into a pre-washed, decontaminated, stainless steel mixing bowl. The samples were immediately packed in laboratory-supplied containers, labeled, and placed into a chilled cooler.

Soil samples collected from the borings were analyzed for Ecology's Petroleum Hydrocarbon Identification analyses (WTPH HCID — Gas/Diesel/Oil). The sediment samples were analyzed for HCID Gas/Diesel/Oil, followed by an analysis for NWTPH-Dx (Diesel/Oil), and as appropriate.

#### 3.2 GROUNDWATER INVESTIGATION

#### 3.2.1 Monitoring Well Installation

The four hollow-stem auger soil borings, described above, were converted to four monitoring wells (see Figure 3-1 — Phase I and Phase II Sample Locations). All monitoring wells are 2-inch diameter and constructed with 0.020-inch slotted schedule-40 PVC screen with 2-inch diameter solid PVC riser. The wells are completed with traffic-rated flush monuments (see Appendices B — Borehole and Monitoring Well Completion Logs and D — Photos).

The upper portion of the uppermost aquifer at the site is screened with a 10-foot long section of slotted PVC. Well depths were all approximately fifteen feet below the existing grade at the time of completion. Detailed descriptions of each well are provided in Appendix B.

#### 3.2.2 Well Development and Sampling

Surging and bailing using a surge block and stainless steel bailer developed monitoring wells. Groundwater samples were collected using a disposable bailer. Three to five well volumes were purged from each well prior to sampling. Temperature, conductivity, and pH were monitored during purging and prior to sampling. The final stabilized measurements were recorded in a field logbook (see Appendix B— Borehole and Monitoring Well Completion Logs).

All monitoring well development and groundwater sampling procedures strictly follow the EPA field guidance document (SW-846) and are detailed in the GEI's Work Plan developed for this site.

# 3.2.3 Survey

On-site monitoring well/soil boring locations were initially established in the field by measuring from structures with a field tape. After completion of the well installations, the elevation of the top-of-casing for all new wells were surveyed relative to the US Coast and Geodetic Survey Benchmark M17 (1931) at 1912.01 feet above mean sea level. The top-of-monument for each previously existing monitoring well was surveyed by Ecology relative to this benchmark in 1996.

A Washington State-Licensed Surveyor surveyed the locations and elevations of the four new wells relative to permanent site survey markers and to the US Coast and Geodetic Survey Benchmark M17 (1931).

#### 3.2.4 Water Level Monitoring

Water levels were measured upon completion and prior to sampling events in January 1998, June 1998, and September 1999. Water levels were measured using an electronic sounding device prior to sampling each well. Water level measurements and corresponding elevations are summarized in Appendix B. Groundwater flow direction and gradient is discussed in Section 4.0.

#### 3.2.5 Chemical Analysis

Groundwater samples were submitted to Onsite Environmental Laboratory for chemical analysis. The samples were analyzed for HCID, followed by TPH-Gas and EPA 8020 (BTEX) when results of the HCID indicated that further analysis was necessary.

PAGE 3-5

#### 4.0 SITE PHYSICAL CHARACTERISTICS

#### 4.1 CLIMATE

Seasonal precipitation and evaporation trends influence groundwater recharge and flow patterns. This, in turn, can help predict contaminant migration. Cle Elum is located on the East Side of the crest of the Cascade Range, and is shielded in large part by the Cascades from the heavy precipitation found on the West Side of the Range.

The average monthly temperature ranges from a minimum in January of 19°F (degrees Fahrenheit) to a maximum in July of 84 °F. The average mean annual precipitation is 19.22 inches. Most of this precipitation occurs between October and March. Most regional groundwater recharge (by precipitation) occurs during this six-month period when precipitation greatly exceeds evapotranspiration.

#### 4.2 REGIONAL AND SITE GEOLOGY

The City of Cle Elum lies on the northern margin of the Roslyn Basin, an east-west trending valley bounded on the north by Cle Elum Ridge and on the south by South Cle Elum Ridge. The Cle Elum Ridge is composed of rocks consisting of the Roslyn Formation to the north and the Teanaway Basalts and Andesite of Peoh Point to the south. Landslide deposits and Pleistocene moraine remnants are present on the valley margins.

The subject site is positioned upon the floor of the Roslyn Basin, which consists of valley fill composed of an approximately 300-foot thickness of varved clay and sands overlying the Roslyn Formation. Approximately thirty feet of surficial deposits consisting of glacial outwash and conglomerates and flood silts deposited by the Yakima River overlie these clays and sands.

The surficial soil at the site consists of sandy silt flood deposits. These flood silts are likely to extend only a few feet below ground surface and are underlain by a conglomerate deposited by the Yakima River.

According to a report prepared for a property located approximately 1500 feet west of the Storey property, soils in the area consist of river-deposited, subrounded cobbles and boulders ranging up to a foot in diameter, with a matrix of gravelly sand. This stratigraphy was confirmed during excavation of test pits on the property.

The Storey site is flat, with a surficial topography that slopes very gently to the southeast.

#### 4.3 SITE HYDROGEOLOGY

#### 4.3.1 Groundwater Occurrence

A shallow, surficial aquifer lies approximately eight feet below the ground surface (bgs) at the site. Based on the topography of the Cle Elum Basin, it is likely that this unconfined aquifer flows in a generally easterly direction. Groundwater investigation studies conducted by Ecology (Phase I and II Environmental Site Assessment, Former and Current Service Stations and Bulk Storage Facilities, Cle Elum, Washington, WDOE Central Region Office, December 1996) confirm that this is the general direction of groundwater flow. This is further confirmed by the water table measurements recorded on three occasions during this Remedial Investigation. Figure 4-1 — Hydrogeological Gradient illustrates graphically the results of GEI's RI water level measurements.

Logs of water supply wells provided by the Department of Ecology's Central Regional Office indicate the presence of at least one or more additional aquifers at depth beneath the site. Wells in these deep aquifers are typically screened at depths ranging from 190 to over 400 feet below the local ground surface (see Appendix C — Water Wells within One Mile of Site).

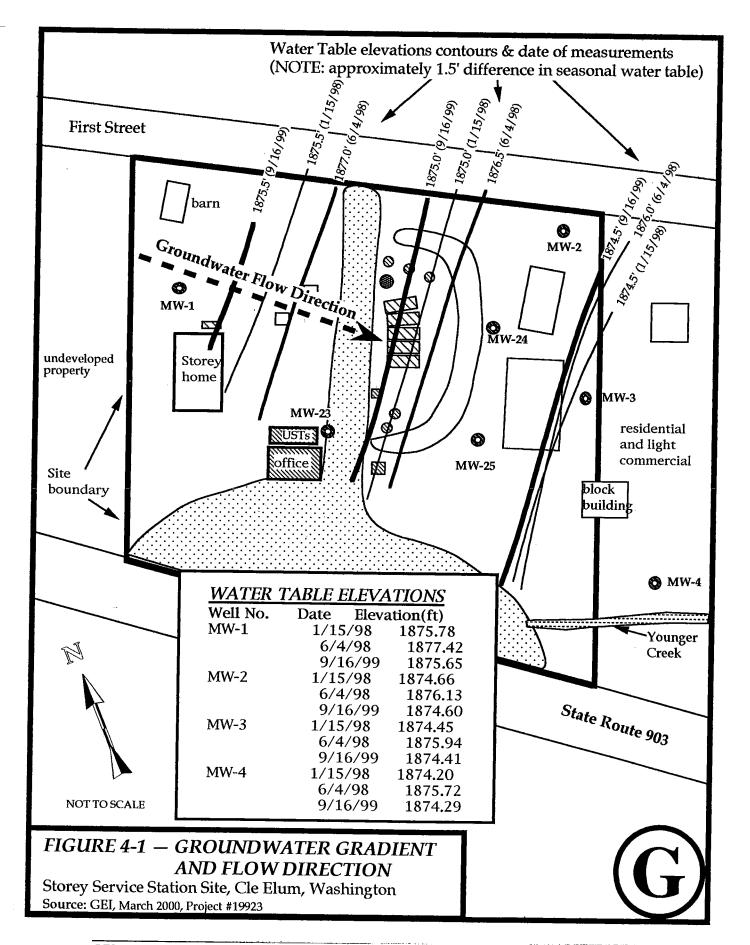
#### 4.3.2 Current Groundwater Use

Each of the aquifers underlying the Storey site has been used as a source of water supply. Although examination of appropriate well logs on file at Ecology's Central Regional Office reveals that the deeper pressure aquifers are predominantly drawn on in this area for domestic use. Several of the logs indicate that the shallow aquifer is also drawn on for domestic water consumption. It does not appear that any of these beneficial users of shallow groundwater are located in a downgradient position with respect to the subject property.

During this RI, GEI obtained water supply well logs on file with the Department of Ecology for Sections 25, 26, 35, and 36 of Township 20 N., Range 15 E; and Sections 30 and 31 of Township 20 N., Range 16 E. Copies of the well logs thus obtained are included in Appendix C — Water Wells Within One Mile of Site.

#### 4.4 SURFACE WATER

Younger Creek (currently used for irrigation) is an unlined perennial surface water feature that runs through the southern portion of the site. Comparison of the surface water elevation observed in Younger Creek with the elevation of the groundwater surface indicates that Younger Creek may serve as a hydraulic divide. An un-named pond lies approximately one-tenth mile east of the site. The City of Cle Elum Sewage Disposal Plant (which includes four lagoons) lies approximately one-tenth mile south of the site. The Yakima River lies approximately one-quarter mile south of the subject property.



#### 5.0 CONTAMINANT NATURE AND DISTRIBUTION

This section presents chemical analytical results for soil, sediments, surface water and groundwater obtained during the RI. Contaminant types, concentrations and distribution are summarized for each environmental media.

Section 6 discusses contaminant characteristics, fate, and transport. In addition, cleanup standards are discussed and compared with contaminant concentrations identified at the site in Section 7.

#### 5.1 CHEMICAL DATA QUALITY

The GEI Project Manager reviewed the RI analytical results. In general, the data are complete and of known and acceptable quality. Data completeness and quality are discussed in the Quality Assurance Reports included with laboratory analytical reports in Appendix D.

#### 5.2 SOIL AND SEDIMENT CHEMICAL RESULTS

Soil samples were collected from the Phase I/II test pits, the soil borings, and from the bottom and sides of excavations during the source area removal action in September 1999. Contaminant levels remaining on-site (post source re hovals) are discussed in Section 7.

The results of the chemical analyses performed on soil samples collected from the test pits excavated at the site in the course of the RI are summarized in Table 5-1 and are compared with OVM-PID readings. Generally, there appears to be a poor correlation of the OVM-PID readings with chemical analytical results. The lack of correlation between the OVM-PID readings and the laboratory analysis is most likely due to the fact that the affected soils contain a wide range of petroleum compounds (i.e., gasoline, diesel, and heavy oil) each with drastic differences in volatility and age of their release to the soil (degree of degradation).

Chemical testing indicates that gasoline-, diesel-, and oil-range petroleum hydrocarbons are the contaminants of concern present at detectable concentrations in on-site soils. Detected concentrations ranged from 40 to 2600 milligrams per kilogram (mg/kg) for diesel- and oil-range hydrocarbons. Detected gasoline-range hydrocarbons ranged from 55 to 2600 mg/kg (see Tables 5-1 and 5-2 — Soil and Sediment Chemical Analytical Summary).

Soil samples with the highest hydrocarbon concentrations were collected from those test pits excavated closest to the aboveground and underground storage tank locations. Concentrations appear to drop off at a depth of ten to eleven feet (NOTE: Seasonal water table fluctuates from

about seven to ten feet belowground at the site). Comparison of the analytical results with the tank locations indicates that the source of the hydrocarbon contamination is the former storage tanks, pump islands, and possibly the associated underground piping.

Examination of the chemical test data performed on the soil samples collected from the monitoring well soil borings indicates that no detectable concentrations of hydrocarbons were encountered at sample depths of 5, 10, or 15 feet.

Sediment samples collected in January 1998 from the drainage ditch (Younger Creek) near the point where surface water enters and exits the site indicated the presence of diesel-range hydrocarbons. NWTPH-Diesel and Oil were present at concentrations of 190 mg/kg and 280 mg/kg in the eastern sample, and at concentrations of 590 mg/kg and 400 mg/kg in the western sample. However, when the ditch was resampled at the same points in June of 1998, no detectable concentrations of hydrocarbons were found.

#### 5.3 GROUND AND SURFACE WATER CHEMICAL RESULTS

Groundwater chemical results are summarized in Table 5-3.

Ecology's Monitor Wells Summary - Of the three wells installed by Ecology during the course of their 1996 study, two of them, MW-23 and MW-24 contained elevated (above MTCA Method A) concentrations of both gasoline and diesel-range hydrocarbons during the January 1998 and June 1998 sampling events. Gasoline-range hydrocarbons ranged from 630 to 58,000 microgram per liter (μg/L) and diesel range hydrocarbons ranged from 1400 to 1700 μg/L. A heavy-oil fraction was also present in these two wells at an average concentration of approximately 530 μg/L. Benzene levels ranged from 71 to 1200 μg/L, toluene from 3 to 3900 μg/L, ethyl benzene from 39 to 980 μg/L, and total xylene isomers from 24 to 6500 μg/L. No detectable levels of petroleum compounds were found in samples collected from monitoring well MW-25 in the course of either sampling event. MW-23 and MW-24 were destroyed in the course of the remedial action undertaken in September 1999.

GEI installed and sampled four additional groundwater-monitoring wells as part of this RI. The upgradient well, MW-1 did not exhibit any detectable hydrocarbons during any of the three sampling events. Two of the three-downgradient wells, MW-3 and MW-4, also did not contain any detectable hydrocarbons during the course of the sampling events. A single sample collected from the remaining well, MW-2, did exhibit gasoline-level hydrocarbons during the June 1998 sampling event, but did not contain detectable hydrocarbons during the January or September samplings.

Two surface water samples were collected from the Younger Creek drainage ditch in June 1998. The samples were collected at points where surface water enters and exits the site. Chemical results of testing performed on these water samples indicate that contaminant levels were non-detect for all compounds tested.

TABLE 5-	TABLE 5-1- PHASE I - TEST PIT SOIL AND SEDIMENT SAMPLE SUMMARY (mg/kg)									
Sample	Depth	PID	HCID			NWTF	H-Dx	Total RCRA	EPA	
No.	(feet)	Reading	Gas	Diesel	Oil	Diesel	/Oil	Metals	8260/8270	
STP-1a	0-1	NIR	ND	ND	ND		<b>-</b>			
STP-1b	1-3	"					- <i></i>			
STP-1c	3-7	"								
STP-2a	0-0.5	"				<b>-</b>			- <b>-</b> -	
STP-2b	0.5-2	"	ND	ND	ND	<b>-</b>				
STP-2c	2-7	"				- <b></b>				
STP-3a	0-0.5	"					<b>-</b>			
STP-3b	0.5-2.5	"								
STP-3c	2.5-10	14.6	ND	ND	ND					
STP-3d	10	10.2								
STP-4a	0-0.3	NIR								
STP-4b	0.3-1	"								
STP-4c	1-5	8.1	ND	ND	ND					
STP-5a	0-1	22.3	ND	diesel	oil	140	440	<mtca< td=""><td><mtca< td=""></mtca<></td></mtca<>	<mtca< td=""></mtca<>	
STP-5b	1-3	2.6								
STP-5c	3-6	NIR						<del>-</del>		
STP-6a	0-1	22.7	ND	diesel	oil	490	1300	<mtca ()lead="310&lt;/td"><td><mtca< td=""></mtca<></td></mtca>	<mtca< td=""></mtca<>	
STP-6b	1-2.5	NIR								
STP-6c	2.5-4	"								
STP-7a	0-0.5	"								
STP-7b	0.5-2	"	ND	ND	oil	40	ND			
STP-7c	2-5	"								
STP-8a	0-1.3	"	ND	diesel	oil	60	180			
STP-8b	1.3-2.5	. "								
STP-8c	2.5-4	"								
STP-9a	0-0.3	"								
STP-9b	0.3-1	13.4								
STP-9c	1-5	18.5	ND	ND	ND					
STP-15a	0-1	15.6	ND	ND	ND					
STP-15b	1-6	13.4	ND	ND	ND.					
STP-15c	6-10	9.2	ND	ND	ND					
STP-19a	0-1	11.6	ND	ND	oil	92	210	<mtca< td=""><td><mtca< td=""></mtca<></td></mtca<>	<mtca< td=""></mtca<>	
STP-19b	1-3	5.6	ND	ND	ND					
STP-19c	3-7	18.2	ND	ND	ND		L			
STP-190	0-1.3	NIR	140		1410	<u> </u>				
STP-20a	1.3-3.3	0.2								
STP-200 STP-20c	3.3-7	2.6	ND	ND	ND	i	1		I 	
SS-1 East	0-6"	65.2	ND	diesel	oil	190	280			
SS-2 West		2.6	ND	diesel	oil	590	400			
NIID No. 1			1.12	1	<u> </u>		1	<u> </u>	<del></del>	

NIR = No Instrument Response

ND = Non Detect @ Practical Quantification Limit / --- = Not Analyzed

<MTCA = Less Than WDOE Model Toxics Control Act Cleanup Levels (Method A Residential Soils)</p>

TABLE 5-2-	PHASE I	II - TEST P	IT SOIL	AND SE	DIME	NT SAI	MPLE S	UMMARY (mg/kg)	
Sample No.	Depth (feet)	PID Reading	HCID Gas	Diesel	Oil	NWTP Diesel		NWTPH-G/BTEX	Total RCRA Metals
STP-10a	0-1	53.1							
STP-10b	1-5	41.9			<b>-</b>				
STP-10c	5-6	56.0	ND	ND	ND				
STP-11a	0-1	37.8							
STP-11b	1-4.5	131	ND	diesel	oil	120	170		<mtca< td=""></mtca<>
STP-11c	4.5-6	329	ND	ND	ND		<b></b>		
STP-12a	0-1	1260	gas	diesel	ND	310	220	55 0.1/1/ 0.3/2.9	
STP-12b	1-4	1878	ND	ND	ND				
STP-12c	4-6	1527	gas	diesel	ND	430	61	2300 ND/0.3/ 0.4/24.7	
STP-13a	0-1	444	gas	ND	ND			82 ND/0.5/ ND/2.3	
STP-13b	1-4.5	327				- <b>-</b> -	<u> </u>		
STP-13c	4.5-6	375							
STP-14a	0-1.5	94							
STP-14b	1.5-6.5	48.9							
STP-14c	6.5-8.5	145	ND	ND	ND				
STP-16a	0-1	62.2						<del>-</del>	
STP-16b	1-4	20.1							
STP-16c	4-8	110	ND	ND	ND				
STP-18a	0-1	57.6							
STP-18b	1-7	44.3							
STP-18c	7-8	145	gas	diesel	ND	1300	110	580 0.7/0.9/ 1.1/8	
STP-21a	0-1.5	87.4							
STP-21b	1.5-4	63.2			<b>-</b>				
STP-21c	4-8.5	77.2			- <b>-</b> -				
STP-21d	8.5-9.5	98.6	ND	diesel	ND	1600	530		
STP-22a	0-1.2	51.1							
STP-22b	1.2-4.5	41.2							
STP-22c	4.5-9	<b>78.</b> 1							
STP-22d	9-9.5	102	ND	diesel	ND	2600	110		
STP-23a	0-1.5	682	ND	ND	oil	40	140		<mtca< td=""></mtca<>
STP-23b	1.5-6	942							
STP-23c	6-9	1021					]		
STP-23d	9-10.5	1820	gas	diesel	oil	4500	360	2600 0.7/0.6 3.9/34.8	<mtca< td=""></mtca<>
SS-4 West	NA	NIR	ND	ND	ND		<u> </u>		
SS-3 East	NA	NIR	ND	ND	ND				

NIR = No Instrument Response

ND = Non Detect @ Practical Quantification Limit

---= Not Analyzed

Bold Print = positive HCID analysis or > WDOE Model Toxics Control Act Cleanup Levels (Method A)

Sample Number and date sampled	HCID TPH- B/T/E/X Gas/ Diesel/ Oil Gas				TPH-Dx Diesel/Oil					
MW-1 (Jan. 15, 1998)	ND	ND	ND					<b></b>		
MW-1 (June 4, 1998)	ND	ND	ND							
MW-1 (Sept. 16, 1999)	ND	ND	ND							
MW-2 (Jan. 15, 1998)	ND	ND	ND							
MW-2 (June 4, 1998)	gas	ND	ND	10000	350	1400	140	940		
MW-2 (Sept. 16, 1999)	ND	ND	ND							<b>-</b>
MW-3 (Jan. 15, 1998)	ND	ND	ND							
MW-3 (June 4, 1998)	ND	ND	ND							
MW-3 (Sept. 16, 1999)	ND	ND	ND							
MW-4 (Jan. 15, 1998)	ND	ND	ND							
MW-4 (June 4, 1998)	ND	ND	ND							
MW-4 (Sept. 16, 1999)	ND	ND	ND							
MW-23 (Jan. 15, 1998)	gas	ND	ND	2600	71	31	79	179		
MW-23 (June 4, 1998)	gas	diesel	ND	58000	1200	870	980	6500	1700	540
MW-23 (removed)										
MW-24 (Jan. 15, 1998)	gas	ND	ND	630	480	3	39	23.6		
MW-24 (June 4, 1998)	gas	diesel	ND	25000	1200	3900	330	1870	1400	520
MW-24 (removed)				- <b>-</b> -				- <b>-</b> -		
MW-25 (Jan. 15, 1998)	ND	ND	ND				<b>-</b>			
MW-25 (June 4, 1998)	ND	ND	ND							
MW-25 (removed)										
YC-UP (June 4, 1998)	ND	ND	ND						***************************************	
YC-DOWN (June 4, 1998)	ND	ND	ND							
MTCA Cleanup Levels				1000	5.0	40.0	30.0	20.0	1000	1000

ND = Non Detect @ Practical Quantification Limit

---= Not Analyzed
Bold Print = positive HCID analysis or > WDOE Model Toxics Control Act Cleanup Levels (Method A)

#### CONTAMINANT NATURE, FATE, AND TRANSPORT

#### 6.1 NATURE OF CONTAMINANTS

#### 6.1.1 Contaminant Characteristics

6.0

The primary contaminants at the site have been confirmed to be gasoline-, diesel- and oil-range petroleum compounds. These compounds are typically a mixture of over 200 petroleum-derived chemicals and several synthetic products added to improve fuel performance. Petroleum hydrocarbon content analysis has been conducted for detecting volatile aromatic compounds including benzene, ethylbenzene, toluene, and total xylene polymers (BTEX). These compounds are reported to pose the most serious known threat to human health of all of the petroleum hydrocarbon constituents. BTEX is present in relatively high concentrations in gasoline and has the greatest potential to migrate through the soil and impact groundwater quality. Basic chemical characteristics for BTEX are listed in Table 6-1.

The chemical components contained in gasoline exhibit a specific gravity less than that of water, and therefore, in the non-aqueous phase, will exist in a positively buoyant state (float) on top of the phreatic surface of the water table. As a result, dispersion of gasoline components occurs primarily as a hydraulically downgradient plume and secondarily as a slight hydraulically upgradient plume along the surface of the water table. Fractionation of the various components also occurs as they move from the source. Individual component partition coefficients, soil permeability, and soil type determine the extent of fractionation. In addition, some of the more soluble gasoline components, such as benzene, dissolve into the water and are transported with groundwater below the water table.

A computer simulation program developed for the EPA evaluated the physical characteristics of gasoline components. The program, called "The Seasonal Soil Component Model" (SESOIL), indicated that lighter hydrocarbons associated with gasoline are more likely to volatilize, while heavier constituents bind tightly to soil particles, especially if the soil contains a high percentage of clay minerals.

# 6.1.2 Characterization of Hazardous and Toxic Effects

The hazardous and toxic effects of the aromatic volatile organic constituents found in gasoline and motor fuels are described in this section. Table 6-1 summarizes the toxicological effect of each constituent.

<u>Benzene</u> -Benzene is colorless and may create an explosion hazard. Benzene is incompatible with strong oxidizers, chlorine, and bromine with iron, and is irritating to the eyes, nose, and respiratory system. Prolonged exposure may result in giddiness, headache, nausea, staggering gait, fatigue, bone marrow depression, or abdominal pain. Routes of entry

include inhalation, absorption, ingestion, and skin or eye contact. Benzene targets red blood cells, the central nervous system (CNS), skin, bone marrow, eyes, and the respiratory system. Benzene is carcinogenic.

<u>Ethylbenzene</u> - Ethylbenzene is a colorless liquid and may create an explosion hazard. Ethylbenzene is incompatible with strong oxidizers and is irritating to the eyes and mucous membranes. Prolonged exposure may result in headache, dermatitis, narcosis, or coma. Routes of entry include inhalation, ingestion, and skin or eye contact. Ethylbenzene targets the eyes, the upper respiratory system, the CNS, and skin.

<u>Toluene</u> - Toluene is a colorless liquid and may create an explosion hazard. Toluene is incompatible with strong oxidizers, and prolonged exposure may result in fatigue, confusion, euphoria, dizziness, headache, dilation of pupils, lacrimation, insomnia, dermatitis, or photophobia. Routes of entry are inhalation, absorption, ingestion, and skin or eye contact. Toluene can target the CNS, liver, kidneys, and skin.

<u>Xylene Isomers</u> - Xylenes are colorless liquids and may create an explosion hazard. Xylenes are incompatible with strong oxidizers and are irritating to the eyes, nose and throat. Prolonged exposure may result in dizziness, excitement, drowsiness, staggering gait, corneal vacuolization, vomiting, abdominal pain, or dermatitis. Routes of entry are inhalation, absorption, ingestion, and skin or eye contact. Xylenes target the skin, CNS, eyes, the gastrointestinal tract, red blood cells, liver and the kidneys.

TABLE 6 – 1 —BTEX PROPERTIES OF GASOLINE									
COMPOUND	SOLUBILITY (MG/KG)	MOBILITY CLASS	WEIGHT % IN GASOLINE	TOXIC EFFECTS					
Benzene	1,730	high	0.12-3.5	carcinogenic -					
Toluene	500	moderate	2.73-21.80	neurotoxic					
Ethylbenzene	150	low	0.36-2.86	neurotoxic					
Xylene (ortho)	170	moderate	0.68-2.86	neurotoxic					
Xylene (meta)	146	low	1.77-3.87	neurotoxic					
Xylene (para)	156	low	0.77-1.58	neurotoxic					

#### 6.2 FATE AND MIGRATION OF RESIDUAL CONTAMINATION

Several mechanisms will primarily affect the fate of the residual soil contamination. These include leaching and downward migration due to infiltration of moisture, adsorption/desorption from soil, advection of dissolved constituents and biodegradation. Direct migration of free product has probably been a significant mechanism contributing to the movement of hydrocarbons beneath the site in the past, but is no longer considered of significance, subsequent to the removal of the contaminated

soils and the installation of the product storage and fuel dispensing systems.

Biological degradation of petroleum hydrocarbons in saturated soils at the site is expected to be the single largest mechanism affecting their fate if engineering controls (i.e., capping) are not instituted. This mechanism is recognized as being relatively slow in anaerobic conditions. Therefore, biodegradation would be expected to occur for many years.

# 6.3 CURRENT AND POTENTIAL EXPOSURE PATHWAYS

# 6.3.1 Pathways of Concern

The primary pathways of concern for the contaminants at the Storey site were identified as follows in the RI/FS Work Plan (November 1997). These are:

- 1) direct contact with surface soil or stream sediments
- 2) airborne or surface water-based dispersion of surface soil
- 3) direct contact with impacted subsurface soil during site investigation or remedial activities, and
- 4) leaching of contaminants from impacted soil to groundwater.

The RI has determined that the stream sediments are not affected by the contaminants of concern. All affected surface soils have been stockpiled on-site in a bermed and secure area, with a liner beneath the stockpile and covered with plastic so dispersion via wind and surface water is no longer a concern.

Potential exposure of the hydrocarbons in the impacted soil remaining belowground is mainly limited to direct contact and inhalation during any future excavation and sampling, or potentially during any significant future site grading during redevelopment.

The surface and subsurface geology was studied in order to evaluate any features, such as paleochannels or man-made structures, which might act as a preferential pathway of hydrocarbon migration. Published geologic data and site-specific information reviewed for this RI/FS has not identified any potential natural or man-made structures that would provide a significant preferential migration pathway. There are no groundwater supply wells located on or adjacent to the property. There is no indication that significant concentrations of contaminants are leaving the property through groundwater migration.

The potential for the stockpiled soils to present a release to the vapor phase exposure pathway during on-site remediation operations is not believed to be significant, given the relatively low concentrations of the contaminants of concern in the stockpiles. However, this potential will be

evaluated (and mitigated if necessary) during the initial phase of the remedial activities by monitoring of the air quality throughout the site.

### 6.3.2 Potential Mechanisms for Exposure

The potential exposure mechanisms include inhalation of volatilized chemicals, inhalation of dust, ingestion of contaminated soil or groundwater, and dermal contact.

Although BTEX constituents are highly volatile, no organic vapors were measured in the breathing zone at the site using portable organic vapor analyzers during the field reconnaissance or remedial operations activities. Volatilization from subsurface soils is limited since most of the contaminated materials have been excavated. Atmospheric dispersion and dilution should further minimize any potential impacts. Therefore, inhalation of volatilized chemicals from soil and groundwater at the site is not considered likely.

Chemical compounds can potentially migrate form the soil in airborne soil particles as a result of wind erosion or traffic. However, the surface soils, which contained significant levels of the contaminants of concern, have been removed and stockpiled on-site. Consequently, exposure to sorbed contaminants through dust inhalation is considered unlikely.

Any potential exposures through ingestion of contaminated soil and groundwater are limited. The contaminated soils are either at depth onsite or are in a covered stockpile area. The shallow groundwater is not used as a source of drinking water. For the same reasons, the potential for dermal exposures to contaminated soil and groundwater is limited.

#### 7.0 CLEANUP LEVELS

The Washington Department of Ecology has developed guidance for identifying constituent levels in various media, which are protective of human health and the environment (i.e., cleanup levels). As part of the Model Toxics Control Act (MTCA) Cleanup Regulation, appropriate cleanup levels for constituents of concern are defined as concentrations which comply with all of the following requirements (WAC 173-340, as amended January 1996):

- Concentrations established under Applicable or Relevant and Appropriate Requirements state and federal laws (ARARs)
- Concentrations estimated to result in no adverse effects on aquatic and terrestrial life
- Concentrations which are estimated to result in no acute or chronic toxic effects (non-carcinogenic) on human health, i.e. total hazard index is less than or equal to one
- Concentrations which are estimated to result in a total estimated cancer risk, summing individual risks, of less than or equal to one in one hundred thousand; and
- Concentrations which eliminate or minimize the potential for food chain contamination and other cross media contamination.

With lower limits set by background levels and the quantitation limits of current analytical methods, cleanup levels which meet the above criteria can be selected for constituents of concern at a waste site. To establish exposure conditions for the estimation of human health based cleanup levels (the third and fourth bullets), the Reasonable Maximum Exposures (RME) expected to occur under current and future site use conditions are identified. For application to the Storey Site, the standard method for determining cleanup levels for individual constituents, Method A of the MTCA, was used.

# 7.0.1 Stepwise Procedure for Cleanup Level Development

Based upon this guidance, cleanup standards were devised using the stepwise approach described below.

- 1) The most stringent quantitative ARAR speciffc to the constituent and the medium, if any, was identified. The ARAR concentration limit was input to the risk equations for the RME scenario defined in the MTCA to determine whether the concentration met target risk levels.
- 2) If target risk goals were exceeded (or if no ARARs were available), a lower concentration which did meet target risk goals was calculated as the appropriate cleanup level.
- 3) If necessary, the cleanup level was lowered to prevent violations of cleanup levels in other media.

4) Whether the ARAR or a calculated risk-based value was the identified cleanup level, the concentration was compared to background levels, if available, and to practical quantitation limits of current analytical techniques as the lower limits of reasonable cleanup levels. For media in which multiple hazardous constituents are present, the target risk goals apply to the sum total of non-carcinogenic indices and carcinogenic risks. Similarly, when the same individual is reasonably likely to be exposed to multiple media and pathways, the target risk goals apply to the sum total of non-carcinogenic indices and carcinogenic risks for all exposures.

5) Appropriate cleanup levels for exposure to the entire site are calculated by lowering individual cleanup levels for constituents contributing the largest portion of risk so that the sum total of all exposures, by all media and all pathways, does not exceed an HI of 1.0

and cancer risk of 1 x 10-5.

# 7.1 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

Outlined below is an analysis of federal, state, and local regulations and standards that are potentially applicable to the Storey site.

### RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)

RCRA Subtitle C provides standards for the management of hazardous waste. RCRA requirements would be triggered if materials at the site were hazardous wastes and the remedial activities at the site involved handling, treatment, storage or disposal of those materials.

The RCRA regulations identify solid wastes that are hazardous (through either lists of hazardous wastes or identification of four hazardous waste characteristics), and establish various administrative requirements for three categories of hazardous waste handlers. Those categories include generators, transporters, and owners/operators of treatment storage and disposal facilities (including waste piles). Subtitle C regulations also establish standards for the design and safe operation of those facilities, and impose restrictions on the land disposal of hazardous wastes.

RCRA requirements applicable to the site would be implemented through the EPA-authorized State Hazardous Waste Management Act and Dangerous Waste regulations (see discussion below). A recently promulgated federal requirement, which is applied by EPA until promulgation by the state, revised the toxicity characteristic (one of four characteristics used by EPA to identify hazardous waste). The results to date do not indicate that the soil or water is a hazardous waste.

### <u>COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION</u> AND LIABILITY ACT (CERCLA)

CERCLA provides funding and enforcement authority for the remediation of hazardous waste sites created by past practices. Many businesses are also subject to reporting requirements for spills and certain categories of environmental releases. Under CERCLA, the National Contingency Plan (NCP) regulations establish a program for evaluating and placing the sites on the National Priorities List (Superfund). CERCLA requirements are ARARs only at sites that are on the Federal "Superfund" list. As no notification or state referral has occurred for this site, CERCLA and NCP standards are not applicable to this remedial action.

# WASHINGTON DEPARTMENT OF ECOLOGY (ECOLOGY) HAZARDOUS WASTE MANAGEMENT ACT AND DANGEROUS WASTE REGULATIONS

The Washington State regulatory program for hazardous waste management, authorized by EPA, generally parallels the federal requirements for hazardous waste handlers and technical standards for treatment, storage, and disposal facilities (including waste piles). As with the federal RCRA requirements, these regulations would be ARARs only if materials handled at this site were classified as "dangerous" or "extremely hazardous waste".

The State standards for determining a hazardous waste (referred to as dangerous or extremely hazardous wastes under state regulations) are more comprehensive than the federal standards. In addition to the hazardous waste lists and hazardous waste characteristics identified in the federal program, the State regulations include "persistent" dangerous wastes identified as wastes containing halogenated hydrocarbons or polynuclear aromatic hydrocarbons (PAHs). The results of this RI confirm that the site would not be considered dangerous or extremely hazardous waste.

Under the remedial approaches to be considered at this site, excavated materials may be temporarily stored on-site to await treatment or disposal off-site. Regulations require that such temporary storage of dangerous waste beyond 90 days would require application and receipt of a permit for a waste pile. Washington Administrative Code (WAC) standards outline specific administrative and technical standards for permitted wasted piles. In general, the technical standards (WAC 173303-660) require the following:

- Liners and leachate collection systems
- Run-on, runoff control systems
- Groundwater monitoring
- Weekly inspections; and
- Removal of all waste, waste residues and contaminated subsurface soils at closure.

The conduct of the remedial action under a consent decree would alleviate the need to apply for a RCRA permit for storage beyond 90 days. However, under the authority of the consent decree, Ecology would still require the waste pile to meet "substantive" technical standards listed above. If the soil and groundwater contamination is lower than thresholds for a dangerous waste, the media would not be required to meet these technical standards. Minimum standards for protection of human health and the environment (i.e., liners and covers over the material) may be required by Ecology upon review of the site work plan.

# ECOLOGY'S MODEL TOXICS CONTROL ACT (MTCA)

As the state counterpart to CERCLA, MTCA provides funding and enforcement authority for the remediation of state hazardous waste sites created by past practices. Sites are identified through a reporting program of "hazardous substance" releases because of past practices. Specifically, owner/operators having information that a hazardous substance has been released to the environment and may be a threat to human health or the environment must report such information by June 1,1990 or within 90 days of discovery.

Reports are followed by an initial site investigation and a more detailed site hazard assessment where required. Sites are then prioritized on a list of sites requiring further remedial action based on an Ecology ranking method.

In addition to complying with other relevant ARARs, MTCA also establishes general criteria for selecting cleanup actions and specific methodologies for designing cleanup levels. In general, Method A applies to routine actions with relatively few hazardous substances. Method A provides specific concentration levels for the most prevalent hazardous substances. Method B uses a risk assessment approach (using risk equations and standard exposure assumptions) to achieve an overall excess cancer risk of 1x10-6, or 10-5 for multiple hazardous substances. Method C allows a 10-5 risk level but places strict restrictions on future land use, requiring institutional controls.

Finally, MTCA provides several administrative options for conducting remedial actions. The "potentially liable person" (PLP) may undertake an independent remedial action without oversight or approval from Ecology.

The PLP may undertake the action under the auspices of an approved consent decree enforceable by judicial action, or the remediation may take place under an agreed order. Cleanup levels, standards for conduct of the investigation and cleanup, and administrative options for conduct of the action at the site are discussed below.

# Ecology's Site-specific Air Quality Requirements for On-Site Treatment

GEI has discussed the possibility of on-site bioremediation of the petroleum-impacted (stockpiled) soils with Ecology's Central Regional Office. On-site bioremediation of the affected, stockpiled soils will be allowed by Ecology, provided that the following conditions are complied with (e-mail Letter from WDOE Central Regional Office, R. D. Swackhamer, November 23, 1999).

- 1. The proposed soil treatment project shall be limited to bioremediation of 600 cubic yards or less of petroleum contaminated soil generated on-site. No soil, groundwater, or surface water from other contaminated sites shall be transported to the Storey site or treated at the Storey site.
- 2. Soil handling shall he conducted using techniques which minimize the uncontrolled volatilization of the petroleum, which is not a part of the bioremediation. Tillage shall he conducted only if necessary and not as a means of accelerated aeration. During weather conditions that enhance uncontrolled petroleum volatilization, soil handling shall be minimized. Aeration of petroleum contaminated soil is not authorized herein.
- 3. There shall be no visible emissions, particulate matter, or odor from the project detectable beyond the facility boundary. At no time shall the opacity of any emission at the facility exceed 10%.
- 4. Soil bioremediation shall be conducted only on pads, which include, but are not limited to 18 inches or more of compacted sandy clay and a 30-mil geomembrane liner placed over a smooth bed. Water runoff from the bioremediation piles shall be prevented from entering surface or groundwater. The piles of petroleum contaminated soil shall be covered with plastic at all times when fertilizer mixing is not occurring.
- 5. Fertilizer or other nutrients may be mixed with the petroleum contaminated soil to enhance bioremediation, with a target addition of approximately ten percent of the total hydrocarbon loading, a target phosphorous addition of approximately one percent of the total petroleum hydrocarbon loading and a target potassium addition of approximately 0.1 percent of the total petroleum hydrocarbon loading. If the hydrocarbon loading exceeds 1,000 parts per million, the nutrients may have to be added in steps over time so that the bacteria will not be destroyed. Alternative methods and quantities of nutrient addition may be approved by the Department of Ecology.

The WAC standards require that the cleanup level selected by the method described above must be attained at the point of compliance. Point of compliance for soils is generally defined as throughout the site from the ground surface to fifteen feet below the surface. Point of compliance for groundwater is generally considered to be at the site boundary.

# Administrative Options for Conduct of the Remedial Action

As outlined above, WAC standards outline three options for conducting the remedial action: independent action, action under the auspices of a consent results indicate that the contaminated soil is a hazardous or dangerous waste.

A city or county permit may be required for the remedial action

### <u>SUMMARY OF REGULATORY IMPLICATIONS</u>

This RI has concluded that the soil is not a RCRA waste or a Washington-defined EHW. Because the waste is not hazardous, it may be stored on site for over 90 days.

DOT regulations (49 CFR 172) define the constituents contained in the contaminated soil at the site not to be considered hazardous substances under RCRA. As such, shipment of the contaminated soil is not subject to DOT shipping standards, requiring that the generator complete DOT shipping papers, which accompany the transport of the contaminated material to the disposal facility. Additional requirements for placarding and record keeping are placed on the transporter of the material.

#### 7.2 SELECTION OF CLEANUP LEVELS

Either MTCA Method A or Method B could be acceptable for the site. Given the relative routine nature of the contamination found at the Storey site, and the limited number of hazardous substances, the Method A cleanup level may be most appropriate for this site.

The Washington State Department of Ecology has developed a guidance document for cleanup levels in soils for TPH and BTEX. The appropriate levels at the Storey site were determined utilizing the information available and considering the current land use in the vicinity of the site. These cleanup levels were established for the protection of public health and the environment in accordance with WAC 173-340. Therefore, the MTCA Method A (Residential) Cleanup Levels for soil have been selected as the appropriate levels for the Storey property.

The site is relatively simple in that the primary contaminants of concern are all petroleum compounds. Those compounds are still present belowground in soil downgradient of the petroleum-impacted source areas. These compounds may also be present in groundwater downgradient from the source areas. These compounds include benzene, toluene, ethyl benzene, and xylene, along with general gasoline-, dieseland oil-range hydrocarbons.

# 7.2.1 MTCA Method A (Residential) Cleanup Levels

The Method A cleanup levels for benzene, toluene, ethyl benzene, and xylene in groundwater are 5, 40, 30, and 20  $\mu$ g/L, respectively. The cleanup level for gasoline and diesel-range hydrocarbons in water are 1000  $\mu$ g/L.

The MTCA Method A soil cleanup levels are 0.5, 40.0, 20.0, and 20.0 mg/kg for benzene, toluene, ethylbenzene, and xylene. The soil cleanup levels for gasoline-range hydrocarbons are 100 mg/kg, and diesel- and oil-range petroleum hydrocarbons and 200 mg/kg.

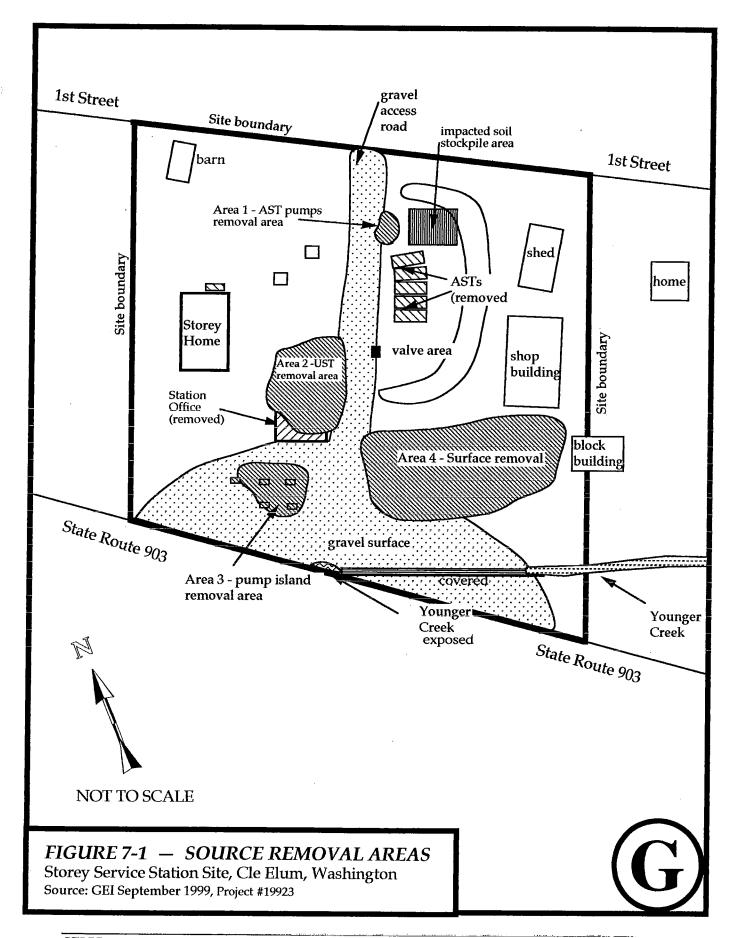
#### 7.3 CONTAMINANT CONCENTRATIONS (REMAINING) IN SOIL

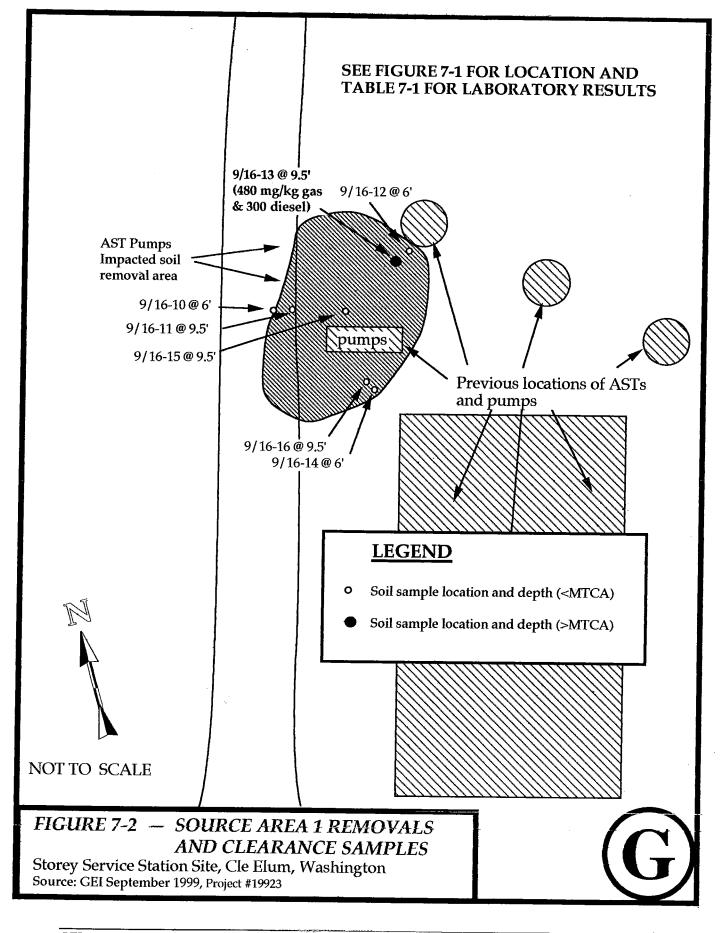
Following the removals of tanks and other on-site structures, petroleum-impacted soil was removed from source areas identified during the RI/FS Phase I, Phase II and Source Area Removals environmental studies at the site. During the Source Area Removals phase, impacted soil was removed from these source areas until either 1) remaining petroleum concentrations in the soil were within Ecology's Method A Cleanup Levels for residential soil; or 2) excavation of impacted soils downgradient of the source areas would have required the removal of an excessive amount of non-impacted soil from the surface (see Appendix E-Photos).

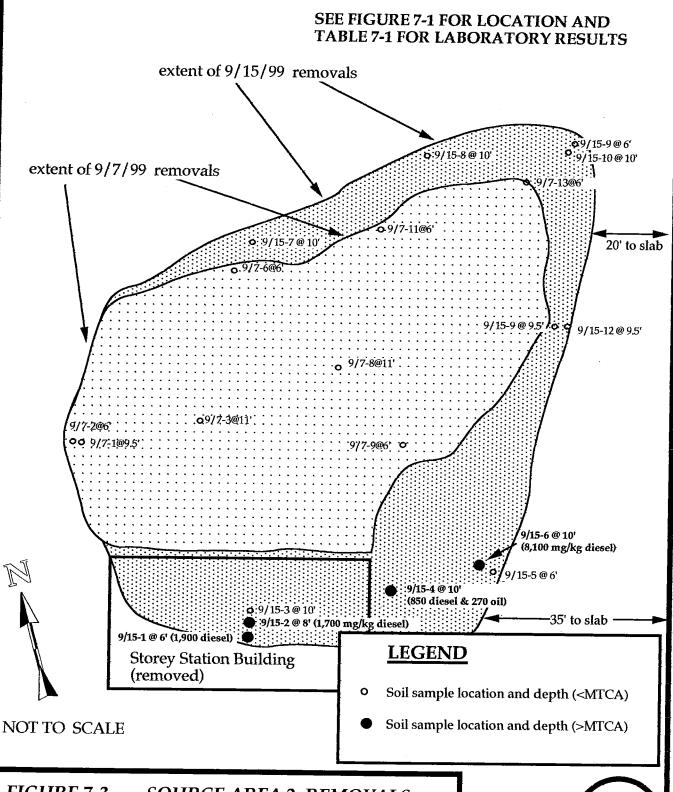
The majority of the soil exhibiting excedence of the cleanup levels was excavated on September 7, 15, and 16, of 1999. Approximately 600 cubic yards (cys) of impacted soils were excavated and placed in a secure, lined revetment situated in the north-central portion of the site, where it awaits treatment or transport to a permitted facility.

Specifically, petroleum-impacted soil was removed from the following source areas (see Figure 7-1 — Source Area Removal Areas and Clearance Sample Locations and Table 7-1 Contaminant Concentrations Remaining in Soil).

- 1) Source Area 1 AST pump area (see Figure 7-2)
- 2) Source Area 2 USTs area (see Figure 7-3)
- 3) Source Area 3 Fuel dispensing islands (see Figure 7-4); and
- 4) The upper one-foot of impacted soil was dozed from the surface of the southeastern potion of the site (see Section 3.1 Soil Investigation).





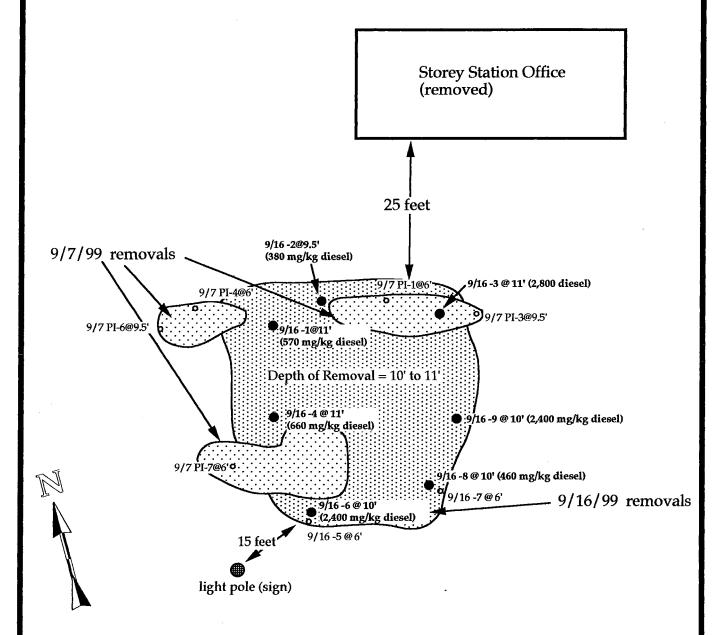


# FIGURE 7-3 — SOURCE AREA 2 REMOVALS AND CLEARANCE SAMPLES

Storey Service Station Site, Cle Elum, Washington Source: GEI September 1999, Project #19923







NOT TO SCALE

# FIGURE 7-4 — SOURCE AREA 3 PUMP ISLAND REMOVALS AND CLEARANCE SAMPLES

Storey Service Station Site, Cle Elum, Washington Source: GEI September 1999, Project #19923



Sample	Depth		HCID		TPH-	]	B/T	/E/X		TPH-	Dx
No.	(feet)	Gas	s/ Diesel/ (	Gas					Diesel/Oil		
9/7 PI-1@6'	6	ND	ND	ND							
9/7 PI-3@9.5′	9.5	ND	ND	ND							
9/7 PI-4@6′	6	ND	ND	NĐ							
9/7 PI-6@9.5'	9.5	ND	ND	ND							
9/7 PI-7@6'	6	ND	diesel	ND						53	ND
9/7 PI-11@9.5′	<b>9.</b> 5	ND	diesel	ND						5800	ND
9/7-1@9.5′	9.5	ND	diesel	ND						130	70
9/7-2@6′	6	ND	ND	ND							
9/7-3@11'	11	ND	ND	ND		<b>-</b>					
9/7-6@6′	6	ND	ND	ND		Ī					
9/7-8@11′	11	gas	diesel	ND	ND	ND	ND	ND	0.76	92	ND
9/7-9@6′	6	ND	ND	ND							
9/7-11@6′	6	ND	diesel	oil		]				64	170
9/7-13@6′	6	ND	ND	ND							
9/15-1@6′	6	ND	diesel	ND			<b>-</b>			1900	NĐ
9/15-2@8′	8	ND	diesel	ND		<b>-</b>				1700	ND
9/15-3@10′	10	ND	diesel	ND		l - <i></i>				51	ND
9/15-4@10′	10	ND	diesel	oil						850	270
9/15-5@6′	6	ND	ND	ND							
9/15-6@10′	10	ND	diesel	ND						8100	ND
9/15-7@10′	10	ND	ND	ND							
9/15-8@10′	10	ND	ND	ND			- <b></b>				
9/15-9@6′	9	ND	ND	ND			- <b></b>				
9/15-10@10′	10	gas	diesel	ND	87	ND	0.33	ND	1.89	62	ND
9/15-11@6′	6	ND	ND	ND							
9/15-12@9.5′	9.5	ND	ND	ND							
9/16-1@11′	11	ND	diesel	ND						570	ND
9/16-2@9.5′	9.5	ND	diesel	ND						380	ND
9/16-3@11′	11	ND	diesel	ND						2800	ND
9/16-4@11′	11	ND	diesel	ND		}				660	NĐ

ND = Non Detect @ Practical Quantification Limit

Samples designated SP- # are stockpile samples

Bold Print = positive HCID analysis or > WDOE Model Toxics Control Act Cleanup Levels (Method A)

<sup>---=</sup> Not Analyzed

TABLE 7-1 (Continued — all results in mg/kg)														
Sample	Depth	_	HCID		TPH-	1					TPH-Dx			
No.	(feet)	Gas	/ Diesel/ C	Dil	Gas					Diesel/Oil				
9/16-5@6′	6	ND	ND	ND										
9/16-6@10′	10	ND	diesel	ND						2400	ND			
9/16-7@6′	6	ND	ND	ND										
9/16-8@10'	10	ND	diesel	ND						460	ND			
9/16-9@10′	10	ND	diesel	ND						2400	ND			
9/16-10@6'	6	ND	ND	ND										
9/16-11@9.5'	6-11@9.5' 9.5 ND ND ND													
9/16-12@6′	6	ND	diesel	oil						68	170			
9/16-13@9.5′	9.5	gas	diesel	ND	480	ND	0.8	0.33	14.7	300	200			
9/16-14@6′	6	ND	ND	ND										
9/16-15@9.5′	9.5	ND	ND	ND										
9/16-16@9.5′	9.5	ND	ND	ND										
9/7 SP-1'		gas	diesel	oil	54	0.49	2.3	0.42	3.9	57	87			
9/7 SP-2		gas	diesel	oil	740	0.91	6.2	2.3	20.8	1000	470			
9/7 SP-3		gas	diesel	oil	34	ND	0.35	0.073	1.41	110	290			
9/16 SP-1'		ND	diesel	oil						380	560			
9/16 SP-2		ND	diesel	oil						1100	520			
9/16 SP-3		ND	ND_	ND										
9/16 SP-4		ND	ND	ND										
MTCA Cleanup	Levels				100	0.5	40.0	20.0	20.0	200	200			

ND = Non Detect @ Practical Quantification Limit

Samples designated SP- # are stockpile samples

**Bold Print** = Greater than MTCA Cleanup Levels

#### 7.4 CONTAMINANT CONCENTRATIONS IN GROUNDWATER

One of the four wells installed and sampled by GEI in the course of the RI exhibited one exceedance of the Method A cleanup level, during the June 1998 sampling event. This exceedance was not observed during the January 1998 sampling event, nor was it repeated during the September 1999 sampling. Exceedences of the Method A levels were not observed in samples collected from the other three wells.

#### 7.5 POINT OF COMPLIANCE

Identification of the points of compliance for the impacted soil and/or groundwater medium is considered to be the Site boundary. The point of compliance for surface water is also the Site boundary.

<sup>---=</sup> Not Analyzed

# 8.0 EVALUATION OF APPLICABLE REMEDIAL TECHNOLOGIES

The remedial investigation (RI) has served to identify the need for remedial action at the Storey site. Based on this information, we have developed this feasibility study to identify and screen potentially applicable remedial technologies from a broad base of general remedial technology categories. We also recognize the need to incorporate the potential for the off-site migration of impacted groundwater from the site into the final design of the remedial action.

The remedial technologies must be evaluated for effectiveness, impacts on future development and use, implementability, and cost. This screening step identifies those alternatives with sufficient merit to undergo additional evaluation.

Following this screening, using a three-step process, remedial alternatives that may reach the Remedial Action Objectives are developed. The first step develops response criteria to evaluate the anticipated applicability of each alternative with respect to the protection of environmental and human health. Second, the Applicable or Relevant and Appropriate Requirements (ARARs) and performance requirements are identified and used to evaluate potential risks for each remedial action. Third, the costs and impacts on future use and development for these technically feasible technologies are compared.

Using MTCA (WAC 173-340-360, Selection of Cleanup Actions) as a model, we have targeted our discussion of appropriate remedial technologies to protect human health and the environment; comply with the applicable cleanup standards; comply with relevant environmental regulations; and provide compliance monitoring. We understand that an important goal of the remediation will be to provide permanent solutions for the cleanup and to minimize the amount of hazardous substances remaining at the site, to the extent practicable. With these goals in mind, we will present the remedial alternatives in Ecology's descending order of preference:

- Reuse or recycling
- Destruction or detoxification
- Separation or volume reduction followed by reuse, recycling, destruction, or detoxification of the residual hazardous substances
- Immobilization of hazardous substances
- On-site or off-site disposal at an engineered facility designed to minimize the future releases of hazardous substances and in accordance with applicable state and federal laws
- Isolation or containment with attendant engineering controls; and
- Institutional controls and monitoring.

#### 8.3 REMEDIAL ACTION ALTERNATIVES

The RI has served to identify the need for remedial action at this site. Based on this information, this feasibility study has been developed to identify and screen potentially applicable remedial technologies from a broad base of general remedial technology categories.

Appropriate technologies, which are potentially applicable at the site, include the following:

#### WATER

- Institutional Controls
- Groundwater monitoring
- Deed restrictions
- Access restrictions
- Hydraulic barriers
- Plume containment

#### SOIL

- Soil excavation
- Soil treatment
- Incineration
- Stabilization
- Bioremediation
- Chemical Treatment
- Aeration
- On-site Containment
- Capping
- Off-site Disposal
- Disposal at a solid waste landfill (after treatment)
- Disposal at a special waste landfill (with no treatment)
- Incorporation into asphalt

Each of these alternatives are discussed below.

#### 8.3.1 Institutional Controls

# 8.3.1.1 Groundwater Monitoring

Monitoring of groundwater is a potentially applicable alternative to the remediation of groundwater at the Storey site, when performed in conjunction with the excavation and source removal alternative. Since the majority of the affected soil at the site has already been excavated, and the source areas (i.e., petroleum storage and fueling equipment and affected soils) have been removed, groundwater remediation may not be required. A long-term groundwater-monitoring program is an applicable

#### 8.3.4 Soil Excavation

In this technology, soil containing the chemical constituents is excavated using conventional construction machinery and is then treated either offsite or on-site or hauled to a landfill for disposal. This is a relatively inexpensive option and usually results in immediate source removal. This option has already been implemented at the Storey site as part of the September 1999 interim remedial action (see Section 7.3 — Contaminant Concentrations Remaining in Soil).

#### 8.3.5 Soil Treatment

Soil treatment types evaluated here include incineration, stabilization, bioremediation, chemical treatment, and aeration.

#### 8.3.5.1 Incineration

Soil incineration involves the application of sufficient heat to thermally destroy chemicals of concern that are present. The operation typically tales place in a kiln or similar furnace. Incineration is a technology that is effective for destruction of organic compounds. Soils containing high amounts of organic materials are best suited for incineration because combustion of the organic compounds release heat to assist the external heat supply. Incineration may pose air pollution problems — if not properly controlled and permitting may be a significant issue.

Soils could be incinerated on-site and subsequently disposed of on-site or off-site. Incineration is potentially applicable to remediation of petroleum-contaminated soils. However, the economics of using this technique on-site are scale-sensitive in that several thousand yards of material is required to justify the mobilization fees for the portable incineration equipment. The economics of off-site incineration are dependent on trucking costs. The closest thermal treatment centers to the Storey site are located in Seattle and/or Spokane. Due to the estimated hauling and mobilization costs, this alternative will not be considered further.

#### 8.3.5.2 Stabilization

Stabilization of contaminated soils involves chemical and/or physical treatment to render the contaminants less mobile. This treatment can be effective in treating soils containing multiple contaminants. Stabilization of the soil can make the soil suitable for reuse on-site or land disposal by decreasing contaminant mobility. Stabilization may be effectively implemented only if it results in constituent waste extract concentrations that are below regulatory levels. Stabilization is usually applied to soils containing significant levels of metallic contaminants. It therefore will not be considered further for the Storey property.

considered further (see Section 7.1 — ARARs, Air Quality Requirements for on-site Bioremediation).

#### 8.3.6 On-site Containment

### **8.3.6.1** *Capping*

Capping soils that are contaminated with petroleum compounds is an acceptable remedial alternative. Capping with a suitable impervious material will substantially reduce the leaching potential of the chemicals of concern remaining in the contaminated soil, which was not accessible during the interim action and will protect the groundwater resource.

Facility upgrades at the Site have included asphalt paving of the southern portion of the site — covering the fuel islands impacted soil source areas. Also, a new service station office will be constructed on a concrete slab in the area of the previous sales office — this pad and building will cover most of the UST impacted soil source area. All soil sample locations with petroleum concentrations exceeding MTCA Method A (Residential) action levels are covered with a minimum of six feet of "clean" soil and asphalt or concrete — with the exception of one soil sample collected at the northeastern corner of Source Removal Area 1 at 9.5 feet bgs (see Figure 8-1 Source Area Cap Zones).

Additional capping is an alternative, which may need to be further evaluated if the proposed groundwater monitoring discloses that the remaining petroleum-contaminated soils are having a negative effect on groundwater quality.

# 8.3.7 Off-site Disposal

# 8.3.7.1 Disposal at a Solid Waste Landfill

This option may be applicable to soils, which meet TCLP testing criteria and contain petroleum at concentrations below MTCA Method A cleanup criteria. The majority of the soil excavated from the site exhibits levels of petroleum in excess of the Method A levels.

This option would be available only after the MTCA Method A cleanup levels are achieved through treatment of the affected soils. Transportation costs of the affected soil may substantially increase the overall costs of this approach. Therefore, this alternative will not be considered any further unless on-site remedial options are excluded.

# 8.3.7.2 Disposal at a Special Waste Landfill

This option is applicable to soil with a petroleum concentration in excess of 200 mg/kg. The landowner that utilizes this option may become liable for a portion of the remedial response costs should the selected landfill

ever face a cleanup action. However, the long-term liability issue remains, as do the trucking costs and tipping fees, which are generally more expensive than at solid waste landfills.

This option is not considered cost-effective for large quantities of soil, unless the time involved in achieving the cleanup goal is the paramount issue involved.

### 8.3.7.3 Incorporation into Asphalt

This option is considered applicable to sites with petroleum-contaminated soils. Asphalt plants are very specific as to the types of soils they can accept. Based upon the samples collected from borings and test pits at the site, the majority of the soil appears to have a high coarse gravel fraction and would have to be screened before its acceptance by an asphalt plant. The screened fraction would then have to be treated by some other technology. Therefore, this technology will not be considered further.

#### 8.4 APPLICABLE TECHNOLOGIES

The technologies that are applicable to the remediation at this Site are based upon the discussion in Section 8.3. A list of the technologies includes:

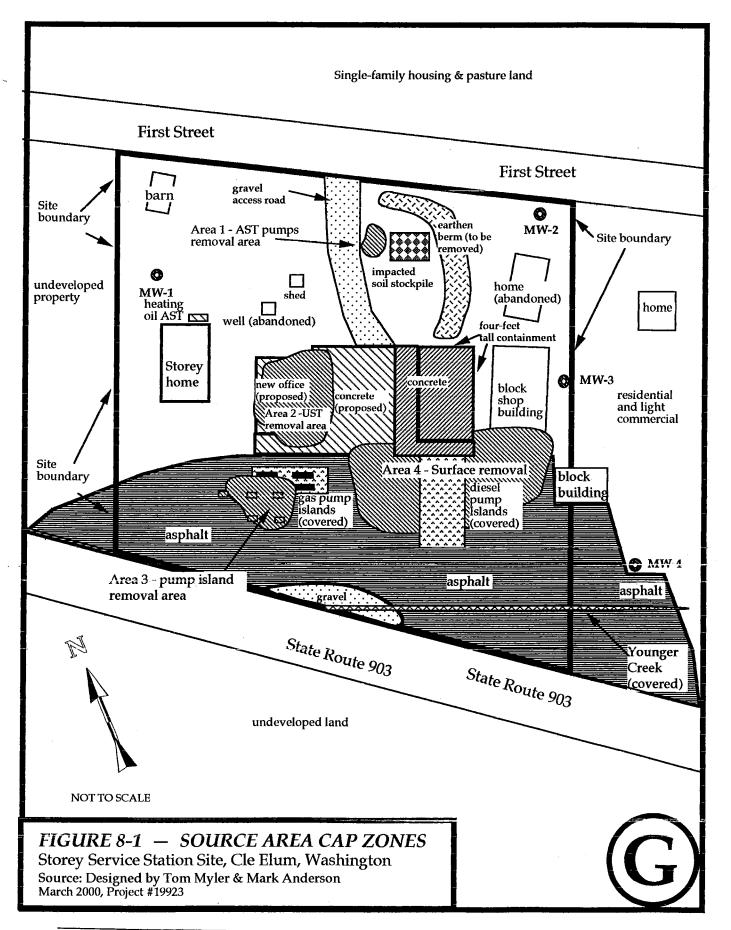
- Soil excavation
- Off-site disposal
- On-site bioremediation
- Long-term groundwater monitoring
- Capping

#### 8.5 REMEDIAL ALTERNATIVES

These applicable technologies have been grouped together to form complete remedial alternatives which will meet the remedial action objectives. The alternatives developed are as follows:

- Alternative 1 No action
- Alternative 2 Soil excavation with off-site disposal; groundwater monitoring
- Alternative 3 Soil excavation with on-site biotreatment of the excavated soil; groundwater monitoring
- Alternative 4 Capping of the site with groundwater monitoring

The "No Action" alternative is considered for comparison purposes only.



#### 8.6 EVALUATION CRITERIA

As required by MTCA, this evaluation of cleanup alternatives is targeted to protect human health and the environment by "eliminating, reducing, or otherwise controlling risks posed through each exposure pathway and migration pathway". Each of the four alternatives developed for the site are described below and are evaluated based on the following criteria:

- Technical feasibility
- Protection of human health and the environment
- Long-term effectiveness
- Permanent toxicity and mobility reduction
- Compliance with regulatory requirements; and
- Cost.

#### 8.7 ALTERNATIVE 1 - NO ACTION ALTERNATIVE

Under the no-action alternative, no further remediation costs would be incurred developing the site. The no-action alternative is not likely to be acceptable to the regulatory agencies because the stockpiled soil at the site contains chemical constituents exceeding MTCA cleanup levels and potential exposure routes to contaminants (groundwater) would not be eliminated.

# 8.8 ALTERNATIVE 2 - SOIL EXCAVATION WITH OFF-SITE DISPOSAL

Under this alternative, the soil containing concentrations of petroleum exceeding MTCA Method A levels would be excavated (or the stockpiled soils) and hauled to a landfill. It is estimated that approximately 600 cubic yards of soil at the site exceeding MTCA cleanup levels requires disposal. If additional petroleum-impacted soils require excavation, then after excavation and disposal, clean backfill would be placed in the excavated areas to the existing grade.

# 8.8.1 Technical Feasibility

This alternative is technically feasible and will effectively remove all accessible soils with concentrations exceeding MTCA Method A levels. The excavation and backfilling portion of this task has already been completed, and compliance sampling has indicated that all accessible soils containing chemicals of potential concern have been removed. If the soils are disposed of at a landfill, permits will have to be obtained from the governing agencies.

#### 8.8.2 Health and the Environment

Excavation of and relocation of contaminated soil eliminates the exposure pathway to soil and prevents any additional leaching of contaminants into groundwater.

# 8.8.3 Long-term Effectiveness

Excavation of the contaminated soil would permanently clean up the soil at the site, now that the source areas (petroleum storage and fueling systems) have been removed.

# 8.8.4 Permanent Toxicity

Excavation and removal of the soil from the site would eliminate the toxicity at the site. The toxicity of the material would persist in the disposal site.

# 8.8.5 Compliance with Regulatory Requirements

The off-site disposal facility will have acceptance criteria, which must be met. The permitting process for this alternative is expected to be relatively short. A deed restriction may be required to address the impacted soil remaining downgradient of the source areas on-site.

#### 8.8.6 *Cost*

The off-site disposal of the stockpiled soil is estimated at approximately \$50,000, including any required analytical testing, permitting, haulage and the tipping fee. The groundwater-monitoring phase is expected to last three years and total approximately \$30,000.

# 8.9 ALTERNATIVE 3 - SOIL EXCAVATION WITH ON-SITE BIOTREATMENT

On-site biotreatment would require the treatment of contaminated soils on an engineered biotreatment pad constructed on-site. Treated soil could be reused, following the successful treatment.

# 8.9.1 Technical Feasibility

The implementation of this alternative would be enhanced by the readily available space for pad construction at the property. The equipment and materials necessary to perform the treatment at the site are readily available.

#### 8.9.2 Health and the Environment

Soil treatment would remediate the contamination at the site and would significantly reduce exposure pathways to the contaminated soil at the site. However, exposure pathways may develop during on-site treatment of the stockpiled soils.

Ecology's site-specific restrictions to on-site treatment of the impacted soils are discussed in Section 7.1 — ARARs, Air Quality.

# 8.9.3 Long-Term Effectiveness

If the treatment technologies are successful, excavation and treatment of the contaminated soil and sediment would permanently clean up soil at the site.

### 8.9.4 Permanent Toxicity

Treatment of the soil at the site would permanently reduce concentrations of gasoline- and diesel-range petroleum at the site.

# 8.9.5 Compliance with Regulatory Requirements

The permitting of the biotreatment process may require an Ecology Central Regional Office Air Quality Section permit for release of hydrocarbons to the atmosphere. Since an Agreed Order has been issued, this cleanup may qualify for an exemption from procedural requirements; however, Ecology will ensure that the remediation project complies with substantive requirements. The permitting process for this alternative is expected to be relatively short. A deed restriction may be required to address the soil remaining on-site (see Section 7.1 — ARARs, Air Quality).

#### 8.9.6 *Costs*

Biological treatment of petroleum in soil often requires six months to a year to complete. Given the small volume of material requiring treatment, it is anticipated that only one phase of soil treatment will be required. The uncertainty of the required time may affect the total cost of this alternative.

The total estimated cost for soil bioremediation is difficult to gauge, as the excavation work, which was accomplished with the larger systems removal and demolition project in September 1999, is already finished. The bioremediation process is estimated to be approximately \$30,000. Optimum weather conditions would greatly secure the final costs to the lower of the two amounts.

The groundwater-monitoring phase is expected to last three years and total approximately \$30,000.

#### 8.10 ALTERNATIVE 4 - CAPPING OF THE SITE

The capping alternative is presented because it may be evaluated in the future if groundwater monitoring indicates that levels of contaminants in the groundwater beneath the site have not responded to the removal of the contaminant sources.

Facility upgrades at the Site have included asphalt paving of the southern portion of the site — covering the fuel islands impacted soil source areas. Also, a new service station office will be constructed on a concrete slab in the area of the previous sales office — this pad and building will cover most of the UST impacted soil source area. All soil sample locations with petroleum concentrations exceeding MTCA Method A (Residential) action levels are covered with a minimum of six feet of "clean" soil and asphalt or concrete — with the exception of one soil sample collected at the northeastern corner of Source Removal Area 1 at 9.5 feet bgs (see Figure 8-1 Source Area Cap Zones).

The currently stockpiled impacted soils would also require remediation.

# 8.10.1 Technical Feasibility

If necessary, the equipment and expertise needed to construct the cap are readily available in this area. It is suggested that the cap be designed and constructed in coordination with the redevelopment of the site, assuming that such development occurs in the next few years. If required, the cap could significantly reduce the leaching potential of the chemicals of potential concern. Cap maintenance and groundwater monitoring would be required.

#### 8.10.2 Health and the Environment

Construction and maintenance of an asphalt cap would eliminate direct contact with soil and prevent the infiltration of surface water through contaminated soil at the site.

# 8.10.3 Long-Term Effectiveness

Capping of the areas of the site believed to contain residual soil contamination would effectively reduce the infiltration of surface water into the contaminated subsurface soil, which would reduce the migration of contaminants from the site and reduce exposure to surficial contamination. However, the cap would require periodic inspection and maintenance to remain effective.

#### 9.0 SUMMARY OF ALTERNATIVES

Section 8.0 presented remedial alternatives for each area of potential concern. This analysis will provide the basis for developing a remedial action program for the Storey site.

The analysis of alternatives has been objective in nature. Costs for each alternative were provided in Section 8.0. A summary of the costs, advantages and disadvantages for each alternative is presented in Table 9-1. These costs are based on certain assumptions and are specific to the site and the remedial alternative.

TABLE 9-1 SUMMARY	OF REMEDIA	L ALTERNATIVES	3			
Remedial Alternative	Estimated Total Costs	Advantages	Disadvantages			
No Action (Capping only)	Not applicable	-Low costs -No cleanup time required	-Long-term liability -Does not meet regulatory requirements			
Off-site disposal of stockpiled soils, including long-term groundwater monitoring	\$80,000	-Meets regulatory requirements -Short cleanup time	-Not least-cost alternative -Long-term liability at an additional site			
On-site bioremediation of stockpiled soils, including long-term groundwater monitoring	\$60,000	-Meets regulatory requirements -Permanent reduction in toxicity -Reduced long-term liability -Relatively lower costs	-Cleanup time and space requirements			
Capping of impacted soils downgradient of source areas, including long-term groundwater monitoring (see Figure 8-1 Source Area Cap Zones)	\$66,000	-Has been integrated with planned facility upgrades	-Additional costs -Not a permanent solution -Cap maintenance is required -Deed restrictions may be necessary			

# APPENDIX A

TEST PIT LOGS

Project Number: 19923

Date of excavation: 12/10/97

Logged by: Gary Galloway

# TEST PIT LOGS

TEST PIT NO. STP-1	<u>DEPTH (FT)</u> 0.0 – 1.0	<u>USCS</u> SM	DESCRIPTION TOPSOIL: Silty, fine-grained sand, dark brown, dry to damp, loose to medium dense (Sample #STP-1a)
	1.0 – 3.0	SM	TOPSOIL: Silty, fine-grained sand, brown, damp, medium dense (Sample #STP-1b)
	3.0 – 7.0	SW	Qal: Cobbly course-grained sand, gray, damp, dense (Sample #STP-1c)
STP-2	0.0 - 0.5	SM	TOPSOIL: Silty, fine-grained sand, dark brown, dry to damp, loose to medium dense (Sample #STP-2a)
	0.5 – 1.0	SM	TOPSOIL: Silty, fine-grained sand, brown, damp, medium dense (Sample #STP-2b)
	1.0 – 5.0	SW	Qal: Silty, cobbly course-grained sand, gray, damp, dense (Sample #STP-2c)
STP-3	0.0 – 0.3	SM	TOPSOIL: Silty, fine-grained sand, dark brown, dry to damp, loose to medium dense (Sample #STP-3a)
	0.3 – 1.0	SM	TOPSOIL: Silty, fine-grained sand, brown, damp, medium dense (Sample #STP-3b)
	1.0 – 10.0	SW	Qal: Silty, cobbly course-grained sand, gray, wet (water @ 9'), dense (Sample #STP-3c)
STP-4	0.0 – 0.2	SM	TOPSOIL: Silty, fine-grained sand, dark brown, dry to damp, loose to medium dense (Sample #STP-4a)
	0.2 – 1.0	SM	TOPSOIL: Silty, fine-grained sand, brown, damp, medium dense (Sample #STP-4b)
	3.0 – 7.0	SW	Qal: Silty, cobbly course-grained sand, gray, damp, dense (Sample #STP-4c)

Project Number: 19923

Date of excavation: 12/10/97

Logged by: Gary Galloway

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TEST PIT NO. STP-5	<u>DEPTH (FT)</u> 0.0 – 1.0	USCS SM	DESCRIPTION TOPSOIL: Silty, fine-grained sand, dark brown, dry to damp, loose to medium dense (Sample #STP-5a)
	1.0 – 3.0	SM	TOPSOIL: Silty, fine-grained sand, brown, damp, medium dense (Sample #STP-5b)
	3.0 – 5.0	SW	Qal: Silty, cobbly course-grained sand, gray, damp, dense (Sample #STP-5c)
STP-6	0.0 – 0.6	SM	TOPSOIL: Silty, fine-grained sand with bricks & other debris, dark brown, dry to damp, loose to medium dense, heavy dark-staining (Sample #STP-6a)
	1.0 – 3.0	SM	TOPSOIL: Silty, fine-grained sand, brown, damp, medium dense (Sample #STP-6b)
	3.0 – 5.0	SW	Qal: Silty, cobbly course-grained sand, gray, damp, dense (Sample #STP-6c)
STP-7	0.0 – 0.5	SM	Qaf: Silty, fine-grained sand with bricks & other debris, dark brown, dry to damp, loose to medium dense, moderate staining (Sample #STP-7a)
	0.5 – 2.5	SM	TOPSOIL: Silty, fine-grained sand, brown, damp, medium dense (Sample #STP-7b)
	2.5 – 5.0	SW	Qal: Silty, cobbly course-grained sand, gray, damp, dense (Sample #STP-7c)
STP-8	0.0 – 1.3	SM	Qaf: Silty, fine-grained sand with bricks & other debris, dark brown, dry to damp, loose to medium dense, moderate staining (Sample #STP-8a)
	1.3 – 2.5	SM	TOPSOIL: Silty, fine-grained sand, brown, damp, medium dense (Sample #STP-8b)

Project Number: 19923

Date of excavation: 12/10/97

Logged by: Gary Galloway

	2.5 – 4.0	SW	Qal: Silty, cobbly course-grained sand, gray, damp, dense (Sample #STP-8c)
STP-9	0.0 – 1.0	SM	TOPSOIL: Silty, fine-grained sand, dark brown, dry to damp, loose to medium dense (Sample #STP-9a)
	1.0 - 2.0	SM	TOPSOIL: Silty, fine-grained sand, brown, damp, medium dense (Sample #STP-9b)
	2.0 – 5.0	SW	Qal: Silty, cobbly course-grained sand, gray, damp, dense (Sample #STP-9c)

Project Number: 19923

Date of excavation: 12/17/98

Logged by: Gary Galloway

TEST PIT NO. STP-14	DEPTH (FT) 0.0 – 1.2	USCS SM	DESCRIPTION  Qaf: Silty, fine-grained sand with bricks & debris, dark brown, dry to damp, loose to medium dense (Sample #STP-14a)
	1.2 – 3.0	SM	TOPSOIL: Silty, fine-grained sand, brown, damp, medium dense (Sample #STP-14b)
	3.0 - 7.0	SW	Qal: Silty, cobbly course-grained sand, gray, damp, dense (Sample #STP-14c)
STP-15	0.0 – 0.6	SM	TOPSOIL: Silty, fine-grained sand, brown, dry to damp, loose to medium dense (Sample #STP-15a)
	0.6 – 6.0	SM	TOPSOIL: Silty, fine-grained sand, light brown, damp to moist, medium dense (Sample #STP-15b)
	6.0 – 7.0	SW	Qal: Fine-grained sand, tan, moist, (Sample #STP-15c)
	7.0 – 9.0	SW	Qal: Silty, cobbly course-grained sand, gray, wet (water @ 8'), dense (Sample #STP-15d)
STP-19	0.0 – 1.3	SM	Qaf: Silty, fine-grained sand with coal slag & wood debris, brown, dry to damp, medium dense (Sample #STP-19a)
	1.3 – 2.5	SM	TOPSOIL: Silty, fine-grained sand, brown, damp, medium dense (Sample #STP-19b)
	2.5 – 4.0	SW	Qal: Silty, cobbly course-grained sand, brown, damp, dense (Sample #STP-19c)
STP-20	0.0 – 0.7	SM	Qaf: Silty, fine-grained sand with bricks & debris, brown, dry to damp, loose to medium dense (Sample #STP-20a)
	0.7 – 2.5	SM	TOPSOIL: Silty, fine-grained sand, brown, damp, medium dense (Sample #STP-20b)
	2.5 – 5.0	SW	Qal: Silty, cobbly course-grained sand, brown, damp, dense (Sample #STP-1c)

Project Number: 19923

Date of excavation: 6/10/98

Logged by: Gary Galloway

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TEST PIT NO. STP-10	<u>DEPTH (FT)</u> 0.0 – 1.0	<u>USCS</u> SM	DESCRIPTION TOPSOIL: Silty, fine-grained sand, dark brown, dry to damp, loose to medium dense (Sample #STP-10a)
	1.0 – 5.0	SM	TOPSOIL: Silty, fine-grained sand, brown, damp, medium dense (Sample #STP-10b)
	5.0 – 6.0	SW	Qal: Silty, cobbly course-grained sand, gray, damp, dense (Sample #STP-10c)
STP-11	0.0 – 1.0	SM	TOPSOIL: Silty, fine-grained sand, brown, dry to damp, loose to medium dense (Sample #STP-11a)
	1.0 – 4.5	SM	TOPSOIL: Silty, fine-grained sand, light brown, damp, medium dense (Sample #STP-1b)
	4.5 – 6.0	SW	Qal: Silty, cobbly course-grained sand, brown, damp to moist, dense (Sample #STP-11c)
STP-12	0.0 – 1.0	SM	TOPSOIL: Silty, fine-grained sand, dark brown, dry to damp, loose to medium dense (Sample #STP-12a)
	1.0 – 4.0	SM	TOPSOIL: Silty, fine-grained sand, gray to black, damp, medium dense (Sample #STP-12b, strong hydrocarbon odor & staining)
	4.0 – 6.0	SW	Qal: Silty, cobbly course-grained sand, gray, wet, dense (Sample #STP-12c, slight hydrocarbon odor)
STP-13	0.0 – 1.0	SM	TOPSOIL: Silty, fine-grained sand, dark brown, dry, loose to medium dense (Sample #STP-13a)
	1.0 – 4.5	SM	TOPSOIL: Silty, fine-grained sand, light brown, damp, medium dense (Sample #STP-13b)

Project Number: 19923

Date of excavation: 6/10/98

Logged by: Gary Galloway

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TEST PIT NO.	DEPTH (FT)	<u>USCS</u>	DESCRIPTION
	4.5 – 6.0	SW	Qal: Silty, cobbly course-grained sand, brown, wet, dense (Sample #STP-13c, water @ 6')
STP-16	0.0 – 1.0	SM	TOPSOIL: Silty, fine-grained sand, dark brown, dry, loose to medium dense (Sample #STP-16a)
	1.0 – 4.0	SM	TOPSOIL: Silty, fine-grained sand, light brown, damp, medium dense (Sample #STP-16b)
	4.0 – 8.0	SW	Qal: Silty, cobbly course-grained sand, brown, wet, dense (Sample #STP-16c, water @ 8')
STP-17			No access to area (No STP-17)
STP-18	0.0 – 1.0	SM	TOPSOIL: Silty, fine-grained sand, dark brown, dry to damp, loose to medium dense (Sample #STP-18a)
	1.0 – 7.0	SM	TOPSOIL: Silty, fine-grained sand, brown, damp, medium dense (Sample #STP-18b)
	7.0 – 8.0	SM	Qal: Silty, fine-grained sand, dark gray, damp, dense (Sample #STP- 18c, strong hydrocarbon odor)
STP-21	0.0 – 1.5	SM	TOPSOIL: Gravelly, fine-grained sand with asphalt chips, dark gray to black, dry to damp, loose to medium dense (Sample #STP-21a)
·	1.5 – 4.0	SM	TOPSOIL: Silty, fine-grained sand, light brown, damp, medium dense (Sample #STP-21b, no hydrocarbon odor or stains)
,	4.0 – 8.5	SW	Qal: Cobbly course-grained sand, gray, moist to wet @ 8.5', dense (Sample #STP-21c)

Project Number: 19923 Date of excavation: 6/10/98 Logged by: Gary Galloway

TEST PIT NO.	DEPTH (FT)	<u>USCS</u>	DESCRIPTION
	8.5 – 9.0	SW	Same except moderate hydrocarbon odor
STP-22	0.0 – 1.2	SM	Qaf: Silty, fine-grained sand with coal slag, bricks & debris, black with orange/red slag & bricks, dry to damp, loose to medium dense (Sample #STP-22a, no odors, etc.)
	1.2 – 4.5	SM	TOPSOIL: Silty, fine-grained sand, brown, damp, medium dense (Sample #STP-22b)
	4.5 – 9.0	SW	Qal: Cobbly course-grained sand, brown, damp, dense (Sample #STP-22c)
	9.0 – 9.5	SW	Qal: Cobbly course-grained sand, brown, damp, dense (Sample #STP-22d, slight hydrocarbon odor, water @ 9')
STP-23	0.0 – 1.5	SW	Qaf: Gravelly & cobbly, medium- Grained sand, rown, dry, loose to medium dense (Sample #STP-23a)
	1.5 – 6.0	SW	Qaf: Gravelly, medium-grained sand, brown, dry, medium dense (Sample #STP-23b)
	6.0 – 9.0	SW	Qaf: Silty, fine-grained sand, dark brown, damp, dense (Sample #STP-1c, moderately strong hydrocarbon odor, water @ 8.5')

# APPENDIX B

# BOREHOLE AND MONITORING WELL COMPLETION LOGS

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DRILLING CONTRACTOR: Holt Drilling										oft Drilling TOTAL DEPTH; 16'								
CLIENT NAME: Storey DRILLING METHOD: HSA SURFACE ELEVATION										SURFACE ELEVATION:								
Si	Œ	MAN	NAGER: Gary Galloway  BIT SZ/HAMMER/WT/DROP: 6"/140#/30"  WATER DEPTH: 9'  Split Spoon  GW V									/140#/30" 9' WATER DEPTH:						
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	-		1	+				-	-	1	<u> </u>		<u> </u>	<u> </u>	1			staining, wet, poor recovery (60%)
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		3 X							3	5"	23	1						@5' Soil sample, no odor/no staining, moist, poor recovery
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										}						}		@10' Soil sample, no odor/no staining, wet, poor recovery
																		(30%) @15' Soil sample, no odor/no
																		staining, wet, poor recovery (40%)
Leg	jend	- se	e ba	ıck		!	<u>. t</u>			FII	EL	.D	В	0	RI	N(	G L	.og
 Sig	nati	ıre		_	h		<u>ー</u> フ		/	Zu	<u></u>	5		/	<del></del>			Date 12/16/97

•

													•				
PA	OJECT	NO.	(	ξE	<del> </del> #	19	82	23			i	ВС	R	IN	G	L	OG SHEET 3 OF 4
PH	OJECT	NAN	ЛE:		St	ore	еу		_			BOR	ING I	MUN	BER		B-3 DATE/TIME STARTED: 12/16/97
LO	CATIO	N: _	Cle	Εl	um	, V	۷A				8	ORIN	IG LC	CAT	NOI	Cen	nter East Side DATE/TIME COMPLETED: 15:05 Hrs
_		. <u> </u>							_	DR	ILLII	NG Ç	ONTI	RAC	TOR	. <u>H</u>	oft Drilling TOTAL DEPTH: 16'
ì	IENT N		_		ito	_							ing i				HSA SURFACE ELEVATION:
sn	ге май	ìAGE							_	BIT S	3Z/H.	AMM	ERM	וסידו	ROP	": ——	"/140#/30"
LO	GGED	BY:	Ga	ary	/ G	allo	wa	ay_		SA	MPL	E RE	TRIE	VAL	SYS	. Sp	plit Spoon CLOSURE METHOD: GW Well
=		GR	APH	ic	LO	G		T		-			DATA				DESCRIPTION
DEPTII (Feet)								1		€ —	E)				<del>%</del>		
E		Boulders	ples	<u> </u>	San San	Fine Sand		Sample #	Blows / 6"	OVA (ppm)	cei (% LEL)	L	-	Molsture	Porosily (%)	USCS Symbols	
ä		2 G	Pe (	ğ (	3 ₹	Fig.		San	B	ò	20	opo	Color	Mol	Porc	Sym	5
					+	1										SM	
				∦				}		}	}	}				}	0'-6" Soil: brown, organic-rich,
		1	$\Pi$	1	Ť	ÌΪ	Ť	-	İ	İ						<del>                                     </del>	silty sand, med dense, damp (SM)
																	6"-16' Qal: gray/brn., cobbly
-5 <b>-</b>	800000		<del>!  </del>	4	$\bot$			-	39	10.0		<u> </u>		_	<u> </u>	ISW	course-grained sand dense
	1				'			1	26	6.1						SW	moist (SW)
	<b>****</b>			$\ $			-		38								
					T	П					1						]
10			<u>                                     </u>	4	+		+	+	150		<u> </u> 	<u> </u>			<u>                                      </u>	1	-
	2			╢				2	50 /3"	23.4							
<u>}</u>						<u> </u>	1		1	<u> </u>					( 		
			П		Π			T							1	1	
							1									1	
15		+	+	-	+		+	3	36	1	1_	1		}	<u> </u>	1	Sample Log
	<b>         </b>							3	50, 4"	22	13			}			@5' Soil sample, no odor/no staining, moist, poor recovery
									<u> </u>								(70%)
															}	}	@10' Soil sample, no odor/no staining, wet, poor recovery
	1																(30%)
-	<b>   </b>	+	++	+	+	+	+	+-	1	-		+		<u>                                       </u>	-	-	@15' Soil sample, no odor/no
	} }							}							}		staining, wet, poor recovery (40%)
L		•		1				_					_				
	- 100 m	100 h	- لمو						FI	ΕL	<b>.</b> D	В	OI	RI	N	G I	LOG
	gend - s		ACK M		_		1	2		, –	_						
Sig	natur	∍ _∠			Z_	_/			-/	<u>/</u>							Date12/16/97

<b></b>					-												
28	OJECT	NC	ο.	GE	} #	£19	38	23			-	BC	)F	N	IG	L	OG SHEET 4 OF 4
	OJECT			_					<del>-</del>		B	ORIN	IG L	NUM	TION	Sou I:	B-4  th East Side  Out Drilling  DATE/TIME STARTED: 12/17/97  08:00 Hrs  14'
	IENT N							way	— — ,		Ε	RILL	ING	MET	HOE	):	HSA surface ELEVATION:
ļ	GGED		ε			all			_	SA	MPL	E RE	TRIE	VAL	SYS	: S <sub>:</sub> _S <sub>I</sub>	DIIT Spoon CLOSURE METHOD: GW Well
eet)	GRAPHIC LOG							SAMPLE DATA							DESCRIPTION		
DEPTII (Feet)		Boulders	Cobules	Gravel	Crs. Sand	Fine Sand	ilis 5	Sample #	Blows / 6"	OVA (ppm)	CGI (% LEL)	Odor	Color	Molsture	Porosily (%)	USCS Symbols	
										-						SM	0'-8" Soil: brown, silty sand, loose to med dense, damp
-5 -								1	44	20.						SW	(SM) 8"-16"Soil, It. brn., silty sand, loose to med. dense, wet (SM)
-	1								50 /3 "								16"-14' Qal: It. brn./brn., cobbly medium-grained sand, dense, moist (SW)
10-									50						<u> </u>		HSA ring broke @ 14' Stop
	2							2	/5'	21.4	   			_			
15																	<u>Sample Log</u>
					•			3	50,	20	.8						@5' Soil sample, no odor/no staining, moist, poor recovery (5%)
																	@10' Soil sample, no odor/no staining, wet, poor recovery (60%)
																	@15' Soil sample, no odor/no staining, wet, poor recovery (40%)
Leg	end - s	ee l	pack	<u> </u>	1-				FI	EL	.D	В	O	RI	N(	G I	.og
Sig	nature	) _	pe	in	7	/	pi	r	7	_	<i>/</i> *						Date 12/17/97

### MONITORING WELL INSTALLATION REPORT MW-1' 12/16/97 WELL NUMBER: **INSTALLATION DATE:** Storey SURFACE ELEV: PROJECT NAME: (FT ABOVE MSL) Cle Elum, WA ADDRESS: \_\_ TOP OF CASING: (FT ABOVE MSL) TYPE OF WELL: 2" GW Monitor Well SURVEYED West side of property INSTALLATION **Holt Drilling Gary Galloway** SITE MANAGER: CONTRACTOR: SURFACE GRADE CASING CAP LOCK -CONCRETE BACKFILL TYPE concrete BLANK CASING TYPE sch 40 PVC DIAMETER\_2"\_\_ IMPERMEABLE SEAL TYPE Bentonite THICKNESS\_2' QUANTITY\_45#\_ 2 FEET OR LESS SCREEN TYPE Sch 40 PVC DIAMETER\_2" SLOT SIZE 010" -10' .11' FILTER PACK TYPE Colo. Silica Sand SAND SIZE\_10/20 15' **CASING TOTAL DEPTH** 16' **BORING TOTAL DEPTH BORING DIAMETER** 10-5/8"

### MONITORING WELL INSTALLATION REPORT MW-3 12/16/97 **INSTALLATION DATE:** WELL NUMBER: Storey SURFACE ELEV: PROJECT NAME: (FT ABOVE MSL) Cle Elum, WA ADDRESS: TOP OF CASING: (FT ABOVE MSL) East/center TYPE OF WELL: 2" GW Monitor Well **SURVEYED** of property INSTALLATION WELL LOCATION: **Holt Drilling Gary Galloway** CONTRACTOR: SITE MANAGER: SURFACE GRADE CASING CAP LOCK CONCRETE BACKFILL TYPE concrete BLANK CASING TYPE sch 40 PVC DIAMETER 2" IMPERMEABLE SEAL TYPE Bentonite THICKNESS\_2' QUANTITY\_45# \_\_ 2 FEET OR LESS SCREEN TYPE\_sch 40 PVC DIAMETER\_2"\_ SLOT SIZE 010" 10' . 11' FILTER PACK TYPE Colo. Silica Sand SAND SIZE\_10/20 15' **CASING TOTAL DEPTH** 16' **BORING TOTAL DEPTH BORING DIAMETER** 10-5/8"

		WEL	L DEVELO		)G
Project Na Project Num E Site Engir	nber:1	torey 9823 /15/98 Iry Galloway		-	nt: peristaltic pump  H & Orion Cond. meters/ isposable teflon bailer
Depth to Se Depth to Wa Water Colum	ater (Ft)		8.16 5.6	5'	AFTER 14.2' 8.09' 6.11
Well Volum Well Volum		ons) 0.16 g		IITIAL 2 gallons	RECOVERED  0.978 gallons
Time	Ph.	Temp. °C	Conductiv	ity Pump Ra	ite Comments
12:0F U	2,00000 0000 0000 00000	0070 1 (20000 12000000000000000000000000000	0.47	-	
13:05 Hrs	6.56	7.3	347 uS/cn		2 gallons pumped
13:15 Hrs	6.56 5.59	7.3	347 uS/cn 355 uS/ci		2 gallons pumped  0.5 gallons pumped
<del></del>					
<del></del>		7.4	355 uS/ci	m	0.5 gallons pumped
<del></del>	5.59	7.4 Disposab	355 uS/ci	m 	0.5 gallons pumped
13:15 Hrs	5.59	Disposab	355 uS/ci	ler, 2 - 40 m	0.5 gallons pumped

		WEL	L DEVEL (SAM	OPMEN PLING)	IT LOG		
Project Na Project Num D Site Engin	ber: 19	orey 9823 15/98 y Galloway		Equ	dispo ntractor:	MW-3  peristaltic pump  Orion Cond. meters/ esable teflon bailer  ary Galloway	
Depth to Se Depth to Wa Water Colur	iter (Ft)	Ft)	8.	BEFORE 28' 33 .95		AFTER 14.46 8.28 6.18	
Well Volume Well Volume		<i>ns)</i> 0.16 g		INITIAL 952 gallo	ons	RECOVERED 0.989 gallons	
						The second second second second second	
Time	Ph.	Temp. %	C Conduc	tivity Pu	mp Rate	Comments	
	Ph. 6.90	Temp: %	C Conduc 329 uS/		mp Rate	Comments 3 gallons pumped	
14:30 Hrs		7.2 6.8		′cm	mp Rate	3 gallons pumped 0.5 gallons pumped	
14:30 Hrs 14:45 Hrs	6.90	7.2	329 uS/	/cm /cm	mp Rate	3 gallons pumped	
Time 14:30 Hrs 14:45 Hrs 14:50 Hrs	6.90 6.83	7.2 6.8	329 uS/ 335 uS	/cm /cm	mp Rate	3 gallons pumped 0.5 gallons pumped	
14:30 Hrs 14:45 Hrs	6.90 6.83	7.2 6.8	329 uS/ 335 uS	/cm /cm	mp Rate	3 gallons pumped 0.5 gallons pumped	
14:30 Hrs 14:45 Hrs	6.90 6.83	7.2 6.8	329 uS/ 335 uS	/cm /cm	mp Rate	3 gallons pumped 0.5 gallons pumped	
14:30 Hrs 14:45 Hrs	6.90 6.83	7.2 6.8	329 uS/ 335 uS	/cm /cm	mp Rate	3 gallons pumped 0.5 gallons pumped	
14:30 Hrs 14:45 Hrs	6.90 6.83	7.2 6.8	329 uS/ 335 uS	/cm /cm	mp Rate	3 gallons pumped 0.5 gallons pumped	
14:30 Hrs 14:45 Hrs	6.90 6.83	7.2 6.8	329 uS/ 335 uS	/cm /cm	mp Rate	3 gallons pumped 0.5 gallons pumped	
14:30 Hrs 14:45 Hrs	6.90 6.83	7.2 6.8	329 uS/ 335 uS	/cm /cm	mp Rate	3 gallons pumped 0.5 gallons pumped	
14:30 Hrs 14:45 Hrs	6.90 6.83	7.2 6.8	329 uS/ 335 uS	/cm /cm	mp Rate	3 gallons pumped 0.5 gallons pumped	
14:30 Hrs 14:45 Hrs	6.90 6.83 6.86	7.2 6.8 6.8	329 uS/ 335 uS 326 uS	/cm /cm /cm	- 40 ml V	3 gallons pumped 0.5 gallons pumped 0.5 gallons pumped	
14:30 Hrs 14:45 Hrs 14:50 Hrs	6.90 6.83 6.86	7.2 6.8 6.8 Disposal 1 - 500	329 uS/ 335 uS 326 uS	/cm /cm /cm 	- 40 ml V	3 gallons pumped 0.5 gallons pumped 0.5 gallons pumped	

		WEL		LOPM MPLING	ENT LO	OG .	entre Constant
Project Na Project Num D	ber: 19 ate: 1/1	orey 9823 15/98	•	<del>-</del> '	d	nt: per H & Orion lisposable	W-4 istaltic pump n Cond. meters/ teflon bailer
Site Engine	eer: <u>Gar</u>	y Galloway	<u> </u>	<del>-</del> -	Contract	or: Gary Ga	alloway
Depth to Sec Depth to Wa Water Colum	ter (Ft)	-t)		BEFO 12.82 9.90 2.92	PRE		AFTER 12.89 9.86 3.03
Well Volume Well Volume		os) 0.16 g		INITI. D.467 g			RECOVERED 0.485 gallons
Time	Ph,	Temp. º(	C Cond	uctivity	Pump R	ate	Comments
Time 15:10 Hrs	Ph. 6.53	Temp. %	C   Cond 329 u		Pump A	3 g	jallons pumped
			329 u		Pump R	3 g	
15:10 Hrs	6.53	7.6	329 u	S/cm	Pump A	3 g	jallons pumped
15:10 Hrs	6.53	7.6	329 u	S/cm	Pump A	3 g	gallons pumped gallons pumped
15:10 Hrs	6.53	7.6	329 u	S/cm	Pump A	3 g	gallons pumped gallons pumped
15:10 Hrs	6.53	7.6	329 u	S/cm	Pump A	3 g	gallons pumped gallons pumped
15:10 Hrs	6.53	7.6	329 u	S/cm	Pump A	3 g	gallons pumped gallons pumped
15:10 Hrs	6.53	7.6	329 u	S/cm	Pump A	3 g	gallons pumped gallons pumped
15:10 Hrs	6.53	7.6	329 u	S/cm	Pump R	3 g	gallons pumped gallons pumped
15:10 Hrs	6.53 6.58	7.6 7.5 Disposal 1 - 500	329 u 326 u	S/cm uS/cm n bailer, er glass	2 - 40 1	3 g	gallons pumped gallons pumped

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			WELL	54946241132127	ELOPN AMPLING	IENT LC	)G	
Project Na Project Num E Site Engir	nber: Date:	Store 1983 1/15 Gary (	23	•	_ W	-	nt: P H & Or isposal or:	MW-23 eristaltic pump ion Cond. meters/ ole teflon bailer Galloway
Depth to Se Depth to Wa Water Colum	ater (Ft)				BEF0 11.6 9.48 2.12	ORE		AFTER 11.82 9.40 2.42
Well Volum Well Volum	• • •-	•	0.16 gal	/ft 	ואודו 0.339 <u>ס</u>		<del></del>	RECOVERED 0.387 gallons
Time				3 2 5 5 F		7000 (ARCO 10)		
111116	Ph.		Temp. °C	Con	ductivity	Pump R	ate	Comments
15:38 Hrs	Ph. 6.31	1	1emp. °C 6.6		ductivity uS/cm	Pump R		Comments 2 gallons pumped
	10.000		100000	182		Pump Ra	7	
15:38 Hrs	6.31		6.6	182	uS/cm	Pump R	7	2 gallons pumped
15:38 Hrs	6.31		6.6	182	uS/cm	Pump R	7	2 gallons pumped 0.5 gallons pumped
15:38 Hrs	6.31		6.6	182	uS/cm	Pump R	7	2 gallons pumped 0.5 gallons pumped
15:38 Hrs	6.31		6.6	182	uS/cm	Pump R	7	2 gallons pumped 0.5 gallons pumped
15:38 Hrs	6.31		6.6	182	uS/cm	Pump R	7	2 gallons pumped 0.5 gallons pumped
15:38 Hrs	6.31		6.6	182	uS/cm	Pump R	7	2 gallons pumped 0.5 gallons pumped
15:38 Hrs	6.31		6.6	182	uS/cm	Pump R	7	2 gallons pumped 0.5 gallons pumped
15:38 Hrs	6.31		6.6	182	uS/cm	Pump R	7	2 gallons pumped 0.5 gallons pumped
15:38 Hrs 15:45 Hrs	6.31	0	6.6	182	uS/cm uS/cm		0	2 gallons pumped 0.5 gallons pumped
15:38 Hrs	6.31	0	6.6	182 (176)	uS/cm uS/cm	2 - 40 n	al VOA	gallons pumped 0.5 gallons pumped vials plus
15:38 Hrs 15:45 Hrs	6.31	0	6.6 6.5 Disposable	182 ( 176 176 e tefloni amb	uS/cm uS/cm	2 - 40 n	al VOA	gallons pumped 0.5 gallons pumped vials plus

		WEL	L DEVEI	LOPN IPLIN		)G			
Project Na Project Num E Site Engin	hber: 19	orey 9823 15/98 y Galloway		Well Number: MW-24  Equipment: peristaltic pump pH & Orion Cond. meters/ disposable teflon bailer Contractor: Gary Galloway					
Depth to Se Depth to Wa Water Colu		<b>-</b> t)	9	BEF0 5.4 .85 5.55	DRE		AFTER 15.5 9.55 5.95		
Well Volum Well Volum	e/(Ft) (gallor e (gallons)	<i>ns)</i> 0.16 g		ТіЛІ ) 888.	IAL gallons		RECOVERED 0.952 gallons		
Time	Ph.	Temp. °0	Condu	ctivity	Pump R	ate	Comments		
16:10 Hrs	6.71	6.7	338 uS	/cm			2 gallons pumped		
16:20 Hrs	6.80	6.9	336 us	S/cm			1 gallons pumped		
						-			
		ļ			· · · · · · · · · · · · · · · · · · ·				
		<del>                                     </del>							
		ļ			<del> </del>	-			
	! <u> </u>	-			<del> </del>				
				<u>,,, </u>		$\neg \uparrow$			
Sampling F	rocedure.	Disposal	ole teflon	bailer	, 2 - 40 r	nl VO	A vials plus		
Camping I		1 - 500		glass			reserved),		
	<u></u>	stored II		ier.					

		WEL	L DEVELOPI (SAMPLIN		)G
Project Na Project Num E Site Engin	ber: 1	torey 9823 '15/98 ry Galloway	·	•	nt: peristaltic pump  H & Orion Cond. meters/ isposable teflon bailer
Depth to Se Depth to Wa Water Colu	ater (Ft)	. op'	9.98 5.92	ORE	AFTER 16.2 9.92 6.28
Well Volume Well Volume	- •	ons) 0.16 g		TAL gallons	RECOVERED 1.002 gallons
Time	Ph.	Temp. °C	Conductivity	Pump Ra	ate Comments
16:40 Hrs	6.6	4.6	162.3 uS/cn	n n	2 gallons pumped
16:50 Hrs	6.59	5.7	182.7 uS/cn	1	1 gallons pumped
	·				
				<b> </b>	
Sampling P	rocedure:	1 - 500			nl VOA vials plus ICI-preserved),

		WELL	DEVELOP (SAMPLIN	MENT LOG IG)	
	ber: 19 6/4	823 /98 Galloway		-	MW-1  peristaltic pump  Orion Cond. meters/ psable teflon bailer
Site Engin					ary Galloway
			BEF	ORE	AFTER
Depth to Se Depth to Wa Water Colu		t)	7.13'		7.21'
Well Volum Well Volum	e/(Ft) (gallon: e (gallons)	s) 0.16 ga	al/ft INI	TIAL	RECOVERED
Time	Ph,	Temp. °C	Conductivit	y Pump Rate	Comments
11:34 Hrs	6,51	11.9	445 uS/cm		2 gallons pumped
11:44 Hrs	6.83	11.7	383 uS/cm	)	0.5 gallons pumped
11: 57 Hrs	6.87	12.1	360 uS/cm		0.5 gallons pumped
	· · · · · · · · · · · · · · · · · · ·				
Sampling F	Procedure: _			er, 2 - 40 ml V ss bottle (HCl-	
	•		iced cooler.	20 20110 (1101	p
ļ	<del></del>				

		WEL	L DEVELOI (SAMPLI	PMENT LOG NG)	ere grand to the control of the cont					
Project Na Project Num	ber: 19	orey 9823 4/98		Well Number: Equipment:	MW-2  peristaltic pump  R Orion Cond. meters/					
D Site Engin	Co-	y Galloway		disposable teflon bailer Contractor: Gary Galloway						
Depth to Se	diment (Ft)	·		FORE	AFTER					
Depth to Wa Water Colum		-t)	6.69		6.69'					
Well Volume Well Volume		<i>ns</i> ) 0.16 g	al/ft IN	IITIAL	RECOVERED					
Time	Ph.	Temp. °C	Conductivi	ty Pump Rate						
12:29 Hrs	Ph: 7.17 7.18	Temp. °C	Conductivi 324 uS/cm 345 uS/cr	1	Comments  2 gallons pumped  0.5 gallons pumped					
12:29 Hrs	7.17	11.0	324 uS/cm	1	2 gallons pumped					
12:29 Hrs	7.17	11.0	324 uS/cm	1	2 gallons pumped					
12:29 Hrs	7.17	11.0	324 uS/cm	1	2 gallons pumped					
12:29 Hrs	7.17	11.0	324 uS/cm	1	2 gallons pumped					
Time 12:29 Hrs 12:37 Hrs  Sampling Pa	7.17 7.18	11.0 10.0 Disposal:	324 uS/cn 345 uS/cr	er, 2 - 40 ml \	2 gallons pumped 0.5 gallons pumped					

		WELL	******************	OPN	IENT LC	G	
Project Nam Project Num E Site Engin	ber: 19	orey 1823 1/98 y Galloway		<b>W</b>		nt: peris H & Orion isposable	V-3 staltic pump Cond. meters/ teflon bailer
Depth to Se Depth to Water Colu		- - - t)	6	BEFC	DRE	-	6.92'
Well Volum Well Volum	e/(Ft) (gallor e (gallons) Ph.	os) 0.16 ga		INIT		alė l	RECOVERED
17:00 Hrs 17:10 Hrs	7.08 7.17	12.9	354 uS 345 uS	/cm			allons pumped gallons pumped
Sampling F	Procedure: -		ml ambe	r glass		nl VOA via	

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		WELL	DEVELOPI (SAMPLIN		ingangan (1991) a sa	
Project Nar Project Numb Da Site Engine	per: 198 ate: 6/4	Storey 19823 6/4/98 Gary Galloway		Well Number: MW-4  Equipment: peristaltic pump pH & Orion Cond. meters disposable teflon bailer Contractor: Gary Galloway		
			BEF	ORE	AFTER	
Depth to Sec Depth to Wat Water Colum	ter (Ft)	<b>r)</b>	8.38		8.72	
Well Volume		s) 0.16 ga	al/ft INF	TIAL .	RECOVERED	
Well Volume	(gallons)					
Time	Ph.	Temp. °C	Conductivity	Pump Rate	e Comments	
		Temp. °C	117 uS/cm		2 gallons pumped	
Time	Ph.					
Time 13:45 Hrs	Ph. 7.47	13.6	117 uS/cm		2 gallons pumped	
Time 13:45 Hrs	Ph. 7.47	13.6	117 uS/cm		2 gallons pumped	
Time 13:45 Hrs	Ph. 7.47	13.6	117 uS/cm		2 gallons pumped	
Time 13:45 Hrs	Ph. 7.47	13.6	117 uS/cm		2 gallons pumped	
Time 13:45 Hrs	Ph. 7.47	13.6	117 uS/cm		2 gallons pumped	
Time 13:45 Hrs	Ph. 7.47	13.6	117 uS/cm		2 gallons pumped	
Time 13:45 Hrs	Ph. 7.47	13.6	117 uS/cm		2 gallons pumped	
Time 13:45 Hrs	Ph. 7.47 7.13	13.6 15.1 Disposab 1 - 500	117 uS/cm 135 uS/cm	er, 2 - 40 ml	2 gallons pumped  0.5 gallons pumped	

			and the second s		MW-23
Project Nar		torey		ell Number:	peristaltic pump
Project Numb	Jei	9823 ′4/98		Equipment: pH &	Orion Cond. meters
	ale	ry Galloway	·	dispo	sable teflon bailer
Site Engine	er:	.,			ry Galloway
			BEFO	RE	AFTER
Depth to Sec	diment (Ft)				
Depth to Wa			7.91	<u> </u>	7.93
Water Colum	าก·Height (	(Ft)	<u> </u>		<del></del>
Well Volume Well Volume	(gallons)				RECOVERE
Well Volume	(gallons) Ph.	Temp. °C			
Well Volume	(gallons)		Conductivity		Comments
Well Volume Time 14:30 Hrs	Ph.	Temp. °C	Conductivity 115 uS/cm		Comments 2 gallons pumped
Well Volume Time 14:30 Hrs	Ph.	Temp. °C	Conductivity 115 uS/cm		Comments 2 gallons pumped 0.5 gallons pumpe
Well Volume Time 4:30 Hrs	Ph.	Temp. °C	Conductivity 115 uS/cm		Comments 2 gallons pumped 0.5 gallons pumpe
Well Volume Time 4:30 Hrs	Ph.	Temp. °C	Conductivity 115 uS/cm		Comments 2 gallons pumped 0.5 gallons pumpe
Well Volume Time 14:30 Hrs	Ph.	Temp. °C	Conductivity 115 uS/cm		Comments 2 gallons pumped 0.5 gallons pumpe
Well Volume Time 4:30 Hrs	Ph.	Temp. °C	Conductivity 115 uS/cm		Comments 2 gallons pumped 0.5 gallons pumpe
Well Volume Time 14:30 Hrs	Ph.	Temp. °C	Conductivity 115 uS/cm		Comments 2 gallons pumped 0.5 gallons pumpe

er e			WELL	397 - A. A. A. A. A. A. A. A. A. A. A. A. A.	LOPN IPLING	MENT LO	G	
Project Na Project Num	nber: _	Store 1982 6/4/9	23		<b>. W</b>	ell Numbe/ Equipmen	t: pe	MW-24 ristaltic pump on Cond. meters/
Site Engir	Date: _ neer: _ —		Galloway			dis Contracto	r:	e teflon bailer Galloway
Donath to Co	dimont	(E+)			BEFC	RE		AFTER
Depth to Se Depth to W Water Colu	ater (Ft)	}		8	.08			8.19
Well Volum Well Volum	• • •	-	0.16 gal	l/ft 	INITI	AL		RECOVERED
Time	Ph.		Temp. °C	Condu	ctivity	Pump Ra	ie	Comments
13:15 Hrs 13.25 Hrs	6.9 7.0		12.1 13.8	373 uS 367 uS				gallons pumped 5 gallons pumped
			•					
			•					
			Dienosahl	e teflon	hailer	2 - 40 m	LVOA	riale nlue
Sampling F	'roceaui  -			nl amber	glass	bottle (H		

	WEL			.OG
19 6/4	823 /98		-	pent: peristaltic pump pH & Orion Cond. meters/ disposable teflon bailer
ent (Ft) (Ft) Height (Ft	r)			7.69
) (gallons allons)	s) 0.16 ga	ıl/ft ir	VITIAL	RECOVERED
Ph.	Temp. °C	Conductiv	ity Pump F	
6.81	13.4			2 gallons pumped 0.5 gallons pumped
edure:	Disposab 1 - 500 r	le teflon bai	ler, 2 - 40 ass bottle (	ml VOA vials plus
	ent (Ft) (Ft) Height (Ft) (Sallons) Ph. 6.81 6.91	Storey 19823 6/4/98 Gary Galloway  ent (Ft) (Ft) Height (Ft)  Temp. °C 6.81 13.4 6.91 14.1  Disposable 1 - 500 re	Storey   19823   6/4/98   Gary Galloway	19823   Equipm

} .

		WELL		LOPM IPLING	ENT LOG	
Project Nan Project Numb Da Site Engine	per: 19	orey 823 6/99 / Galloway		<del>-</del> - -	Well Number: MW-1  Equipment: peristaltic pump pH & Orion Cond. meter disposable teflon bailer Contractor: Gary Galloway	
		· · · · · · · · · · · · · · · · · · ·	<del></del>	BEFO	RE	AFTER
Depth to Sec Depth to Wat Water Colum	ter (Ft)	T)		8.90		8.99
Well Volume Well Volume		<i>s</i> ) 0.16 g	al/ft 	INITI	AL 	RECOVERED
	A All A. Sales conference and the Sales	k nancova svišta švištiša	855-8-30000000000	in and in		
Time	Ph,	Temp. °C	Cond	uctivity	Pump Rate	
Time 15:11 Hrs	Ph. 6.45	Temp: °C		uctivity S/cm	Pump Rate	2 gallons pumped
	33.86		343 u		Pump Rate	2 gallons pumped 0.5 gallons pumped
15:11 Hrs	6.45	14.6	343 u 352 u	S/cm	Pump Rate	2 gallons pumped
15:11 Hrs 15:30 Hrs	6.45 6.25	14.6 13.9	343 u 352 u	S/cm uS/cm	Pump Rate	2 gallons pumped 0.5 gallons pumped
15:11 Hrs 15:30 Hrs	6.45 6.25	14.6 13.9	343 u 352 u	S/cm uS/cm	Pump Rate	2 gallons pumped 0.5 gallons pumped
15:11 Hrs 15:30 Hrs	6.45 6.25	14.6 13.9	343 u 352 u	S/cm uS/cm	Pump Rate	2 gallons pumped 0.5 gallons pumped
15:11 Hrs 15:30 Hrs	6.45 6.25	14.6 13.9	343 u 352 u	S/cm uS/cm	Pump Rate	2 gallons pumped 0.5 gallons pumped
15:11 Hrs 15:30 Hrs	6.45 6.25 5.91	14.6 13.9 13.1 Disposa 1 - 500	343 u 352 u 401 u	S/cm S/cm S/cm sidentification	r, 2 - 40 ml	2 gallons pumped 0.5 gallons pumped

Storey 19823 9/16/99 Gary Gallov t (Ft) tght (Ft)		E	dispe Contractor: Ga	peristaltic pump Orion Cond. meters/ psable teflon bailer ary Galloway  AFTER  8.25
t) ight (Ft)	8		E	
ons)	6 gal/ft 5. °C Condu	INITIAL		RECOVERED
33 16.2	2 350 uS	5/cm		2 gallons pumped 0.5 gallons pumped
1 - 5	00 ml amber	glass b		
	Temp 33 16.3 07 14.  Dispo 1 - 5	Temp. °C Condu 33 16.2 350 uS 07 14.4 366 uS 17 17 18 18 18 18 18 18 18 18 18 18 18 18 18	Temp. °C Conductivity  1 16.2 350 uS/cm  14.4 366 uS/cm	Temp. °C Conductivity Pump Rate  33 16.2 350 uS/cm  14.4 366 uS/cm  Disposable teflon bailer, 2 - 40 ml \ 1 - 500 ml amber glass bottle (HCI-

		WELL	DEVELOPN (SAMPLING	90.000 (190.000 (190.000 (190.000 (190.000 (190.000 (190.000 (190.000 (190.000 (190.000 (190.000 (190.000 (190	
Project Na Project Num D	ber: 19	orey 823 6/99	W	-	MW-3  peristaltic pump  Orion Cond. meters/ esable teflon bailer
Site Engin	eer: Gary	/ Galloway		Contractor:	ıry Galloway
			BEFC	RE	AFTER
Depth to Se Depth to Wa Water Colum	iter (Ft)	t)	8.37		8.38
Well Volume		s) 0.16 gal	I/ft initi	AL	RECOVERED
Time	Ph.	Temp. °C	Conductivity	Pump Rate	Comments
17:20 Hrs 17:30 Hrs	6.17 5.92	13.9 13.0	406 uS/cm 412 uS/cm		2 gallons pumped 0.5 gallons pumped
Sampling Pi	rocedure:	1 - 500 m	e teflon bailer, nl amber glass iced cooler.		

		WELL	DEVELOF (SAMPLI	MENT LOG NG)	A gardien generalis Transportunia e s
Project Name Project Numb Da Site Engine	ner: 198 ate: 9/1	rey 823 6/99 Galloway	·	disp Contractor:	peristaltic pump & Orion Cond. meters/ posable teflon bailer
			BE	FORE	AFTER
Depth to Sec Depth to Wa Water Colum	ter (Ft)	ı)	9.81		9.82
Well Volume	·/(Ft) (gallons	s) 0.16 ga	al/ft in	IITIAL	RECOVERED
Well Volume		Temp.ºC	Conductiv	ty Pump Rate	Comments
Time	Ph.	Temp. °C	8.9	ty Pump Rate	Comments 2 gallons pumped
		Temp: ºC 15.6 15.2	Conductive 323 uS/cr 351 uS/cr	n	
Time 6:50 Hrs	Ph. 6.57	15.6	323 uS/cr	n	2 gallons pumped
Time 6:50 Hrs	Ph. 6.57	15.6	323 uS/cr	n	2 gallons pumped 0.5 gallons pumped
Time 6:50 Hrs	Ph. 6.57	15.6	323 uS/cr	n	2 gallons pumped 0.5 gallons pumped
Time 6:50 Hrs	Ph. 6.57	15.6	323 uS/cr	n	2 gallons pumped 0.5 gallons pumped
Time 6:50 Hrs	Ph. 6.57	15.6	323 uS/cr	n	2 gallons pumped 0.5 gallons pumped
Time 6:50 Hrs	Ph. 6.57	15.6	323 uS/cr	n	2 gallons pumped 0.5 gallons pumped

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### APPENDIX C

### WATER WELL REPORTS WITHIN ONE MILE OF SITE

Water Right Permit No. \_\_\_

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

Start Card	No	079328
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(1)	OWNER: Name Floyd Rogolski	Address 1313 F. Third St. Cle Flu	m, Wa.
<del>ار</del> ت (ر	LOCATION OF WELL: County Kittitas	NW W SE W Sec 25 T 20 N	15 wm
	STREET ADDDRESS OF WELL (or nearest address) 1313 ©		.,
	<b>Y</b> 7 D	(10) WELL LOG OF ABANDONMENT PROCEDURE D	ECCRIPTION
(3)	☐ Irrigation ☐ DeWater Test Well ☐ Other ☐	Formation: Describe by color, character, size of material and struthickness of aguilfers and the kind and nature of the material in each str	cture, and show
(4)	TYPE OF WORK: Owner's number of well (if more than one)	with at least one entry for each change of information.  MATERIAL FRO	
	Abandoned New well St Method: Dug D Bored D		
	Deepened ☐ Cable ☐ Driven ☐ Reconditioned ☐ Rotary ☑ Jetted ☐	Soil 0 Br. clay, gravel, And rock 14	<del></del> -
(5)	DIMENSIONS: Diameter of well 6 inches.	Sand gravel, silt, and water 16	
<b>.</b> ,	70	Blue gray clay 30	
	Diffied 20 teet. Deptil of completed well		
(6)	CONSTRUCTION DETAILS:		
	Casing installed: 6 • Diam. from +1 ft. to 30 ft.		
	Welded K Diam. from ft. to ft.		<del></del>
	Threaded Diam. from ft. to ft.		
	Perforations: Yes No 1		
	SIZE of perforations in. by in.		-
	perforations fromft. toft.		<del>-  </del>
	perforations fromft. toft.		
	perforations fromft. toft.		
	Screens: Yes No X		
	Manufacturer's Name		
	Type Model No		
	Diamft. toft.		
_	DiamSlot sizefromft. toft.		
	Gravel packed: Yes No Size of gravel	ORREINE STATE	<del></del>
	Gravel placed fromft. toft.		<del></del>
	Surface seal: Yes No To what depth? 20 ft.		<del>   </del>
	Material used in seal Bentonite		
	Did any strata contain unusable water? Yes No		
	Type of water?Depth of strata	DEPARTMENT OF ECOLOGY	
	Method of sealing strata off	CENTRAL REGION OFFICE	
(7)	PUMP: Manufacturer's Name	·	
	Type:H.P		
(8)	WATER LEVELS: Land-surface elevation above mean sea levelft.		
	Static level 6 ft. below top of well Date 2/4/91	2 Day of the Sand	
	Artesian pressurelbs. per square inch Date		
	(Cap, valve, etc.))	Work started 2/4/91 19. Completed 2/4/91	
(9)	WELL TESTS: Drawdown is amount water level is lowered below static level Was a pump test made? Yes No 2 If yes, by whom?		
	Yield: gal./min. with ft. drawdown after hrs.	WELL CONSTRUCTOR CERTIFICATION:	
	0 0 0	I constructed and/or accept responsibility for construction and its compliance with all Washington well construct	
	n n n n	Materials used and the information reported above are t	
	Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)	knowledge and belief.	
	Time Water Level Time Water Level Time Water Level	NAME Water Wells Drilling	
-	· · · · · · · · · · · · · · · · · · ·		YPE OR PRINT)
		Address 5503 Ahtanum Rd., Yakima, Wa.	·
	Date of test		
		(Signed) Ulmon f. Drank License No.	0854
	r test gal./min. with ft. drawdown after hra.	Contractor's	
	10 gal./min. with stem set at 30 ft. for 2 hrs.	Registration No. WATERWD1120B Date 2/26/91	, 19
	flowg.p.m. Date		
	re of water Was a chemical analysis made? Yes No	(USE ADDITIONAL SHEETS IF NECESSAR	Y)

3

ECY 050-1-20 (10/87) ·1329·

14:55 83026 Start Card No. \_

Department of Ecology Second Copy—Owner's Copy

Third	Copy—Driller's Copy	Water Right Permit No.		<u></u>
(1)	OWNER: Name Ted Johnson	Address Cle Ehm		
•	LOCATION OF WELL: County Littles  STREET ADDDRESS OF WELL (or nearest address) 3rd St	NEN SW N Sec 25 T. 2	O N., R. J.	5 Ew.m.
	PROPOSED USE: Domestic   Industrial □   Municipal □   Irrigation   DeWater   Test Well □   Other □	(10) WELL LOG or ABANDONMENT PROCEDUR	d structure,	and show
(4)	TYPE OF WORK: Owner's number of well (if more than one)	thickness of aquifers and the kind and nature of the material in ea with at least one entry for each change of information.  MATERIAL	FROM	ro TO
	Abandoned  New well  Method: Dug  Bored  Cable  Driven  Reconditioned  Reconditioned  State   Boulders + cravel	6	23	
(5)	Drilled 40 feet. Depth of completed well 2. ft.	Clary blue	23' 26'	40
	CONSTRUCTION DETAILS:  Casing installed:			
-	Perforations: Yes No No Size of perforations In. by			
		The state of the s		
	Screens: Yes No No Manufacturer's Name  Type Model No.  Diam. Slot size from ft. to ft.	DEC 4 1992		
	Diam.         Slot size         from         ft. to         ft           Gravel packed:         Yes         No         Size of gravel	ly		
-	Surface seal: Yes No To what depth?			
(7)	PUMP: Manufacturer's Name			
(8)	WATER LEVELS: Land-surface elevation above mean sea level			
(9)	WELL TESTS: Drawdown is amount water level is lowered below static level  Was a pump test made? Yes No If yes, by whom?	WELL CONSTRUCTOR CERTIFICATION:	1//6	, 19
	и и и	and its compliance with all Washington well cor Materials used and the information reported above knowledge and belief.	struction :	standards
		NAME American Dr. 1/12  (PERSON, FIRM, OR CORPORATION)  Address POBX & Chrehm	/	R PRINT)
	Date of test gal./min. with ft. drawdown after hrs.  Airtest gal./min. with stem set at pr.m. Date ft. for hrs.	Contractor's !	No18	f7 _,19_9
	Temperature of water Was a chemical analysis made? Yes No	(USE ADDITIONAL SHEETS IF NECE	SSARY)	45

File Original and First Copy with Department of Ecology

Start Card No. 086678 WATER WELL REPORT Second Copy-Owner's Copy STATE OF WASHINGTON Third Copy-Driller's Copy Water Right Permit No. ... OWNER: Name Ray Rogalski Address P.O. Box 160 Cle Elum, WA Kittitas LOCATION OF WELL: County.... NE , NE , sec 35 T. 20 N. R. 15 (2a) STREET ADDDRESS OF WELL (or nearest address). M Domestic (3) PROPOSED USE: Industrial [ Municipal [ WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION (10) Irrigation Test Well □ DeWater Other 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. (4) TYPE OF WORK: Owner's number of well (If more than one) W-2MATERIAL FROM Abandoned [] New well Method: Dug Bored [] Deepened Cable Top soil brown medium 2 Driven Reconditioned Rotary 🔯 Jetted | Sand gravel cobbles boulders (5) DIMENSIONS: Diameter of well\_\_\_ 10" very hard 14 inches. 20 Sand silt gravel cobbles hard Drilled\_ \_\_\_feet. Depth of completed well\_ 14 16 Sand gravel cobbles hard 16 20wate CONSTRUCTION DETAILS: Clay blue gray medium Casing Installed: 6" Diam. from +1 ft. to 19 Welded X Liner installed C Threaded C \_\_\_\_\_ \* Diam. from\_\_\_\_\_\_ft. to\_\_\_\_\_ . \* Diam. from.... No X Perforations: Yes Type of perforator used \_\_\_ SIZE of perforations \_ \_\_ perforations from \_ \_\_\_ perforations from \_\_\_\_ \_\_ ft. to \_\_\_ fŧ perforations from \_\_\_\_ Screens: Yes Manufacturer's Name.\_\_\_ \_\_\_\_ Model No...\_ from Slot size\_\_\_\_ ft to \_ Slot size\_ Diam Gravel packed: Yes No X Size of gravel... Sent Francis Gravel placed from\_ Surface seal: Yes No To what depth?\_\_\_ Material used in seal \_\_\_\_Bentonice Did any strata contain unusable water? Yes Type of water? \_Depth of strata. Method of sealing strata off.... 6" Drive shoe utilized (7) PUMP: Manufacturer's Name \_ Туре:\_\_\_\_ Land-surface elevation WATER LEVELS: above mean sea level \_ Static level \_\_\_\_8 \_\_\_\_ ft/below top of well Date \_\_\_ Artesian pressure \_ \_\_\_\_Ibs. per square inch Date \_ Artesian water is controlled by \_\_\_\_ (Cap, valve, etc.)) 5-21-92 Work started\_ 19. Completed WELL TESTS: Drawdown is amount water level is lowered below static level Was a pump test made? Yes No If yes, by whom? **WELL CONSTRUCTOR CERTIFICATION:** Yield: \_\_\_\_\_ gal./min. with \_\_\_\_\_\_ ft. drawdown after \_ t constructed and/or accept responsibility for construction of this well, Estimated air lift 75 GPM ,, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best Recovery data (time taken as zero when pump turned off) (water level measured knowledge and belief. from well top to water level) Time Water Level NAME Ponderosa Drilling & Development, Inc. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT) Address E. 6010 Braodway Spokane, WA 99212 Date of test \_\_\_\_ \_License No. <u>13</u>35 (Signed)\_ (WELL DRILLER) (Steve Mills) \_\_\_ gal./min. with \_\_\_\_\_ ft. drawdown after \_\_ Contractor's Airtest \_\_\_\_\_ gal./min. with stem set at \_\_\_ Registration No. PO-ND-EI\*248JE Date 6-1 \_\_\_\_\_g.p.m. Date \_

Temperature of water \_\_\_\_\_ Was a chemical analysis made? Yes No \_\_\_\_

3

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

>Y 050-1-20 (10/87) -1329-

**3** 

# WATER WELL REPORT

STATE OF WASHINGTON

	Water Right Permit No.	1
OWNER: Name Ray Rogalski	Address P.O. Box 160 Cle Elum, WA 98	3922
LOCATION OF WELL: County Kittitas	N1/2 NE , NE , Sec 35 T 20 N. R	15
) STREET ADDDRESS OF WELL (or nearest address)		VV.IVI,
PROPOSED USE: ☐ Domestic Industrial ☐ Municipal ☐ DeWater Test Well ☐ Other ☐	(10) WELL LOG or ABANDONMENT PROCEDURE DESC	
TYPE OF WORK: Owner's number of well W-1	Formation: Describe by color, character, size of material and structure, thickness of aquifers and the kind and nature of the material in each stratum with at least one entry for each change of information.	, and show penetrated,
Abandoned New well Method: Dug Bored Despensed Cable Driven D	MATERIAL FROM	то
Deepened ☐ Cable ☐ Driven ☐ Reconditioned ☐ Rotary ※ Jetted ☐	Sand gravel cobbles boulders very hard	
DIMENSIONS: Diameter of well 10" 6" inches.	Silt sand gravel boulders hard 9	9_
Drillad 37	Clay silt sand gravel cobble hard 15	_ <u>15w</u> a 17
CONSTRUCTION DETAILS:	Clay & clay shale blue/gray med. 17	23
	Sandstone w/clay & sand med/soft 23	32
Casing installed: 6" Diam. from +1 ft. to 37		37
Liner installed Diam. from ft. to ft.		
Threaded Diam. from ft. to ft.		<del></del>
Perforations: Yes No X	4 T F	
Type of perforator used		
SIZE of perforations in. by in.		
perforations fromft. toft.		
perforations fromft. toft.		
perforations fromft. toft.		
Screens: Yes No X	A CONTRACT OF THE PROPERTY OF	
Manufacturer's Name	100 度份 医贝里克门门	
Type Model No	and the same of th	
Diam	W 1 0 1000	
Diam. Slot size from ft. to ft.	JUN 1 U ISBC	
Gravel packed: Yes No Size of gravel		
Gravel placed fromft. toft.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Surface seal: Yes No To what depth? 18' ft.  Material used in seal Bentonite	COURT RELEASE OF THE PROPERTY	
Did any strata contain unusable water? Yes No X		
Type of water?Depth of strata		
Method of sealing strate off	·	
PUMP: Manufacturer's Name	6" Drive shoe utilized	
Type: H.P.	U DIIVE SHOE ULIIIZED	
WATER LEVELS: Land-surface elevation		
Static levelft. Static levelft.		
Artesian pressure lbs. per square inch Date		
Artesian water is controlled by(Cap, valve, etc.))		
WELL TESTS: Drawdown is amount water level is lowered below static level	Work started 5-19-92 , 19. Completed 5-20	92
Was a pump test made? Yes No X If yes, by whom?		
Yield: 3-4 gal./min. with ft. drawdown after hrs.	WELL CONSTRUCTOR CERTIFICATION:	
" Estimated air lift 3 -4 GPM "	I constructed and/or accept responsibility for construction of t and its compliance with all Washington well construction st	this well,
n n n	Materials used and the information reported above are true to	andards. my best
Recovery data (time taken as zero when pump turned off) (water level measured	knowledge and belief.	
from well top to water level) Time Water Level Time Water Level Time Water Level	NAME Ponderosa Drilling & Dovolorment	T 🗠 🚓
Time Westerland To the control of th	NAME Ponderosa Drilling & Development, (PERSON, FIRM, OR CORPORATION) (TYPE OR	Inc.
Time Westerland To the control of th	(TYPE OR	PRINT)
Time Westerland To the control of th	Address E. 6010 Broadway Spokane, WA 992	212
Time Water Level Time Water Level Time Water Level  Date of test	Address E. 6010 Broadway Spokane, WA 993	212
Time Water Level Time Water Level Time Water Level  Date of test	Address E. 6010 Broadway Spokane, WA 992  (Signed) License No. 1335  Contractor's (WELL DRILLER) (Steve Mills)	212
Time Water Level Time Water Level Time Water Level  Date of test	Address E. 6010 Broadway Spokane, WA 993	212

# **WATER WELL REPORT**

Start Card No. <u>086992</u>

STATE OF WASHINGTON

	- Copy — Driner & Copy	Water Right Permit No.		
(1)	OWNER: Name John Uribe	Address 403 Columbia Ave., Cle E	lum, WA	989
(د.	LOCATION OF WELL: County_ Kittitas	_ NW <sub>¼</sub> NE <sub>¼ Sec.</sub> 31 <sub>T.</sub>	20 N B 16	5 14.14
(2a)	STREET ADDDRESS OF WELL (or nearest address) Parcel #	20 16 31 520004		
(3)	PROPOSED USE: ☐ Industrial ☐ Municipal ☐ Industrial ☐ Other ☐ DeWater	(10) WELL LOG or ABANDONMENT PROCEDU		-
(4)	TYPE OF WORK: Owner's number of well (if more than one)	Formation: Describe by color, character, size of material an thickness of aquifers and the kind and nature of the material in exwith at least one entry for each change of information.	d structure, s ach stratum pe	and show enetrated
	Abandoned ☐ New well 🖾 Method: Dug ☐ Bored ☐	MATERIAL	FROM	то
	Deepened ☐ Cable ☐ Driven ☐ ☐ Reconditioned ☐ Rotary [X] Jetted ☐	Sandy clay and gravel brown medium Sand gravel hard		2
(5)	DIMENSIONS: p	Gravel cobbles boulders very hard	10	<u>10_</u> 
	Drilled 26 feet. Depth of completed well 26 ft.	Sand gravel cobbles medium	16	26w
(6)	CONSTRUCTION DETAILS:	Clay gray soft	26	
,	Casing installed: 8" Diam. from +1 ft. to 24 ft.			
	Welded Liner Installed	1 7 0 T	7) (7)	<del>- H</del>
	Threadedft. toft.	13 12 15 11 1	<del>/                                      </del>	<del></del>
	Perforations: Yes No X			1
	Type of perforator used	FEB 16 F	8	
	SIZE of perforations in. by in in ft. to ft.			
	perforations fromft. toft.	DELY RIMENT OF ECO	LOGY	<del>!</del>
	perforations fromft. toft.	TIMAL REGION O	+1() <u>+</u>	<del></del>
	Screens: Yes No X			
	Manufacturer's Name			
	Type         Model No.           Diam.         Slot elze         from.         ft. to.         ft.			
	Diam,Slot sizefromtt to #			
	Gravel packed: Yes No X Size of gravel			<del></del>
	Gravel placed fromtt. toft.			
	Surface seal: Yes No To what depth? 18 t.  Material used in seal Bentonite			
	Did any strata contain unusable water? Yes No	,		
	Type of water?Depth of strata			
	Method of sealing strata off			
_	PUMP: Manufacturer's Name			
	WATER LEVELS. Land-surface elevation	8" Drive shoe utilized		
	Static level ft. below top of well Date ft.	o brive sine utilized	<del>-  </del> -	
,	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	Work started $\frac{2/1/93}{}$ , 19. Completed $\frac{2/1}{}$		, <sub>19</sub> _93
'	Nas a pump test made? Yes $\square$ No $\square$ If yes, by whom? $\square$ field: $25-50$ gal./min. with $\square$ ft. drawdown after $\square$ hrs.	WELL CONSTRUCTOR CERTIFICATION:		
	" Estimated air lift 45-50 GPM	constructed and/or accept responsibility for constr	ruction of the	is well,
	п п п	and its compliance with all Washington well cons Materials used and the information reported above a	truction star are true to m	ndards. ny best
1	Recovery data (time taken as zero when pump turned off) (water level measured rom well top to water level)	knowledge and belief.		
	ime Water Level Time Water Level Time Water Level	NAME Ponderosa Drilling & Develop	ment. Ti	nc.
		(PERSON, FIRM, OR CORPORATION)	(TYPE OR PE	
· - <u>-</u>		Address E. 6010 Broadway Spokane,	WA 992	12
	Date of test	In Will.		
	sailer test gat./min. with ft. drawdown after hrs.	(Signed) License N	o <u>. 1335</u>	
A	lirtest gal./min. with stem set at ft. for hrs.	Registration		
	rtesian flow g.p.m. Date	No. PO-ND-EI*248JE Date 2/4	, 1	19_93
T	emperature of water Was a chemical analysis made? Yes No No	ALCE ADDITIONAL CHEETO IS MEDICAL	4 22 4	

83077 Start Card No. \_ /ATER WELL REPORT Second Copy-Owner's Copy STATE OF WASHINGTON Third Copy-Driller's Copy Water Right Permit No. .. Mribe oku (1) OWNER: Name. Kittitas LOCATION OF WELL: County\_ (2a) STREET ADDDRESS OF WELL (or nearest address). Hwy Domestic Irrigation PROPOSED USE: Industrial Municipal (10)WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION Test Well □ ☐ DeWater Other 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, TYPE OF WORK: Owner's number of well (if more than one) with at least one entry for each change of information. MATERIAL FROM TO ₩ Method: Dug New well Abandoned Bored Over burden O' Deepened Cable 🔲 Driven Reconditioned Jetted □ Rotary 🔀 DIMENSIONS: Diameter of well. (5)inches. Drilled. feet. Depth of completed well. **CONSTRUCTION DETAILS:** Casing installed: \_\_ \* Diam. from\_ Welded \_ " Diam. from. ft. to iner installed. Threaded . '` Diam. from\_ Perforations: Yes Type of perforator used \_ SIZE of perforations \_ perforations from \_ ft. to \_ perforations from \_ ft. to perforations from \_ Nol Screens: Yes Manufacturer's Name Туре \_ Model No. Diam.\_\_\_ \_ Slot size\_ \_ Slot size\_ \_from\_ No Size of gravel\_ Gravel packed: Yes Grave! placed from. Surface seal: Yes No To what depth? Material used in seal Benthuite No Did any strata contain unusable water? Yes Type of water?\_ Depth of strata Method of sealing strata off. PUMP: Manufacturer's Name Land-surface elevation WATER LEVELS: above mean sea level . Static level \_ ft. below top of well Date \_ Artesian pressure \_ \_\_\_Ibs. per square inch Date Artesian water is controlled by \_\_\_\_\_ (Cap, valve, etc.)) Work started. WELL TESTS: Drawdown is amount water level is lowered below static level Was a pump test made? Yes No No If yes, by whom?\_ \_\_\_\_ gal./min.:with \_

### 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.

Contractor's

Registration No. AMERIOPUSSES Date\_

\_\_ gal./min. with \_\_\_

gal./min. with stem set at \_\_\_

Recovery data (time taken as zero when pump turned off) (water level measured

Water Level

\_\_\_\_ g.p.m. Date

\_\_\_ ft. drawdown after

\_\_\_ ft. drawdown after \_\_

\_ Was a chemical analysis made? Yes 📖 🛛 No 🔀

Temperature of water \_

from well top to water level) Water Level

Date of test \_\_\_

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

# **WATER WELL REPORT**

Start Card No. W079094

OWNER: Name Ray Owens Ac	dress 109W 4TH St. CleElim WA 98922		
2) LOCATION OF WELL: County <u>Kittitas</u> (2a) STREET ADDRESS OF WELL (or nearest address) <u>Main St. to (</u>	1/4NW_1/4 Sec25T2/	0N, R	15 W.M.
3) PROPOSED USE: D Domestic Industrial C Musiciani C	(10) WELL LOG OF ABANDONMENT PROCEDURE D	ESCRIPT	ION
☐ Irrigation ☐ DeWater Test Well ☐ Other ☐	Formation: Describe by color, character, size of material and structure, and and the kind and nature of the material in each stratum penetrated, with a change of information.	show thickne	see of positions
(If more than one)	MATERIAL	FROM	то
Abandoned ☐ New well Ž. Method: Dug ☐ Bored ☐ Depend ☐ Cable ☐ Driven ☐	Clay Brown	0	25
Reconditioned □ Rotary 🔀 Jetted 🗅	Clay Gray Small Gravels	25	- <del>25</del>
5) DIMENSIONS: Diameter of well 6" inches.	I	55	160
Drilled 300 feet. Depth of completed well 300 ft.	Shale Gray	160	200
6) CONSTRUCTION DETAILS:	Shale Gray Soft Fractured	200	240
6"	Shale Gray Medium	240	260
Casing installed:	Shale Gray With Water	260	300
Perforations: Yes 🗓 No 🗌			
Type of perforator used         Skillsaw           SIZE of perforations         1/8         in. by         6         in.		$f_{i}$	
40		3	
perforations from tt. to tt.	<b>11 329 - 5 1997</b>	/ <u> </u>	<u> </u>
		$\sqcup$	<u> </u>
Screens: Yes U No 🔀 Manufacturer's Name	DESTRIMENT OF EXOLOGY	<del>                                     </del>	<u> </u>
Type Model No	CENTRAL REGION OFFICE		<u> </u>
Diam. Slot size from ft. to ft.		<b></b>	<del> </del>
Diam. Slot size from ft. to ft.			<del>                                     </del>
Gravel packed: Yes No Size of gravel	TO BE WE		<del> </del>
Gravel placed fromft. toft.		1	<del> </del>
	ALICO OLDON	<del>                                      </del>	-
Surface seal: Yes No To what depth? 20 ft.	AUG 2 0 1997		<del> </del>
Material used in seal Bentonite  Did any strata contain unusable water? Yes No V			·
Type of water? Depth of strata	DEFINITION OF ECOLOGY EASTERN REGIONAL OFFICE		
Method of sealing strata off	THE GOVAL OFFICE		
7) PUMP: Manufacturer's Name			-
8) WATER LEVELS: Land-surface elevation	. 744		<del>                                     </del>
Static level 120 shove mean sea level ft. below top of well Date 8/8/97 ft.			1
Artesian pressure lbs. per square inch Date			ł
Artesian water is controlled by(Cap, valve, etc.)			
The second secon	- Work Started <u>8/7/97</u> , 19. Completed <u>8/8/</u>	97	, 19
B) WELL TESTS: Drawdown is amount water level is lowered below static level Was a pump test made? Yes  No  If yes, by whom?	WELL CONSTRUCTOR CERTIFICATION:		
Yield:gal./min. withft. drawdown afterhrs.			
11 11 11 11	I constructed and/or accept responsibility for construction compliance with all Washington well construction standards	s. Materials	used and
77 71 11 11 11	the information reported above are true to my best knowledg	e and belie	∋f.
Recovery data (time taken as zero when pump turned off) (water level measured from well	NAME H2O WELL SVC INC. 1-800-772		
top to water level) Time Water Level Time Water Level Time Water Level	(PERSON, FIRM, OR CORPORATION) (TYPE OR	•	TD 030
	Address 582 W Hayden AVe Hayden		
	(Signed) Jim McLiulii Licens	ie No	2257
Date of test	(Jim Mcleslie)		
Baller test gal./min. with ft. drawdown after hrs.	Contractor's Registration		
Airtest 50 gal./mln. with stem set at 298 ft. for 1 hrs.	No. H20WESI101DW Date 8/8/	/97	19
Artesian flow g.p.m. Date	(USE ADDITIONAL SHEETS IF NECESSA	ARY)	_
Temperature of water Was a chemical analysis made? Yes No	(222 NOSTRONIE ONLE TO IL PROCEOUP	,	
CL 050-1-20 (2/93) ** f • • • • • • • • • • • • • • • • •	, , , , , , , , , , , , , , , , , , , ,	,	

ile Original and First Copy with epartment of Ecology second Copy — Owner's Copy Third Copy — Driller's Copy

### WATER WELL REPORT

STATE OF WASHINGTON

Application	No.	

Permit No. ....

(1) OWNER: Name TANK 1 MAGLICTI	Address RT#1 Box 7C CL	e EL	BM
LOCATION OF WELL: County HITTAS	- NE 1/4 SE 1/4 Sec 25 T.S	20 N B	15 11211
g and distance from section or subdivision corner			. 1941. W
3) PROPOSED USE: Domestic A Industrial A Municipal	(10) WELL LOG:		*
Irrigation   Test Well   Other		al and stee	iotura and
	Formation: Describe by color, character, size of materi show thickness of aquifers and the kind and nature of stratum penetrated, with at least one entry for each	the mater	ial in each formation.
(4) TYPE OF WORK: Owner's number of well (if more than one)	MATERIAL	FROM	TO
New well 🎦 Method: Dug 🗌 Bored 🗍  Deepened 🗍 Cable 🗎 Driven 🗍	Topsoil	0	15
Reconditioned Rotary K Jetted	Coarse gravel	15	30
(5) DIMENSIONS: Diameter of well 8 inches.	Coarse gravel & blue clay	30	38
5) DIMENSIONS: Diameter of well 8 inches.  Drilled 305 ft. Depth of completed well 305 ft.	Blue clay	38	70
<del>,</del>	Sand & Gravel	70	75
(6) CONSTRUCTION DETAILS:	Grey rock	75	80
Casing installed: 8 "Diam. from 12 ft. to 80 ft.	Hard Grey clay Grey rock	95	95
Threaded This to ft. to ft.	Sand stome	100	185
Welded ft. to ft.	Hard clay	185	200
Perforations: Yes M No	Sandstone	200	230
Type of perforator used	Hard Clay	230	240
SIZE of perforations in. by in.	Oil shale	240	250
perforations from	Sandstone	250	290
perforations from	Coal	290	292
	Sandstone	292	305
Screens: Yes   No 🗷			
Manufacturer's Name		<del> </del>	
Diam,		<del> </del>	
Diam Slot size from ft. to ft.	·	<del> </del>	<u> </u>
Gravel packed: Yes No 25 Size of gravel:		<del> </del>	ļ <u>.</u>
Gravel placed from ft. to ft.	[ <del></del>	<del> </del>	<u> </u>
		<del> </del>	
Surface seal: Yes No Bentonite		<del> </del>	<del></del>
material used in seat		<del> </del>	<del></del>
Did any strata contain unusable water? Yes No 🗷 Type of water? Depth of strata		<del> </del>	<del> </del>
Method of sealing strata off		<del> </del>	<del></del> .
(7) DUMD.	JAN 3 0 1981	<del>†</del>	
(7) PUMP: Manufacturer's Name		<del>                                     </del>	<del></del>
Туре:		1	
(8) WATER LEVELS: Land-surface elevation above mean sea levelft.			
Static level	The state of the s		
Artesian pressurelbs. 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	Work started 9/3/80 , 19 Completed 9	/10/80	, 19
Was a pump test made? Yes \( \square\) No \( \frac{1}{2}\) If yes, by whom?	WELL DRILLER'S STATEMENT:		
" " " " "		3 43 7-	
11 11 11	This well was drilled under my jurisdiction true to the best of my knowledge and belief.	and this	report is
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	NAME Vernon Rank		******
The state of the s		Type or p	rint)
	Address P.C. Box 9871 Yakima, Wn.		**************
7,5	n/ 12	1)	
.te of test	[Signed] Vernon 2. Kan	R	
Bailer test. 20 gal./min. with	(Well Driller)		
Artesian flowg.p.m. Date	License No. 0854 Date 8/10	j	19 80
	200		, 20

**€** 3

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## WATER WELL REPORT

STATE OF WASHINGTON

Application	No.	
Permit No.	• • • •	

antition 1

1.10//-	0 0 1 1 1		
(1) OWNER: Name WHYNE HILL	Address BOX 378, CLE ELUM,	WAG	892
" LOCATION OF WELL: County Kitti	Lot 6-7-8 of BALMER A	O <sub>N.R</sub>	SWM
	5. of House Lot 6-7-8 of BALMER A	DDITION	J-CKE EL
(3) PROPOSED USE: Domestic   Industrial   Municipal	(10) WELL LOG:		<del></del>
Irrigation M Test Well □ Other □	Formation: Describe by color, character, size of material show thickness of aquifers and the kind and nature of t	l and stru he materi	cture, and al in each
(4) TYPE OF WORK: Owner's number of well	stratum penetrated, with at least one entry for each ch	lange of	formation.
New well  Method: Dug  Bored	MATERIAL.	FROM	то
Deepened K Cable Driven	FRACTURED, BRN TO GRAY SILT STAND SON	<u> 187</u>	290
Reconditioned   Rotary & Jetted	GREY HARD ROCK	290	320
(5) DIMENSIONS: Diameter of well inches.			
(5) DIMENSIONS:  Diameter of well			
Drilled 1 Depth of completed well 5			
(6) CONSTRUCTION DETAILS:			
Casing installed: 7 Diam. from 137 ft. to 300 ft.			
Threaded			
Perforations: Yes No Day 2001			
Perforations: Yes No □ TORCH			
SIZE of perforations /8 in. by 24 in. 50 st. to 300 ft.			
perforations from ft. to 500 ft.			
perforations from			
Screens: Yes 🗆 No 🔀			
Manufacturer's Name			
Type			
Diam. Slot size from ft. to ft.  Diam. Slot size from ft, to ft.			
Didni Slot size			
Gravel packed: Yes   No K Size of gravel:			
Gravel placed from ft. to ft.			<u> </u>
Surface seal: Yes No No No No What depth? 10 tt.			
Material used in seal			
Type of water? Depth of strata		<del></del> -	
Method of sealing strata off			
(A) DYING			
(7) PUMP: Manufacturer's Name			
Type: H.P		-	<del></del>
(8) WATER LEVELS: Land-surface elevation above mean sea levelft.			<del> </del>
above mean sea level			
Artesian pressurelbs. per square inch Date			
Artesian water is controlled by		ļ	<del> </del>
(Cap, valve, etc.)			<del> </del>
(9) WELL TESTS: Drawdown is amount water level is lowered below static level.	Work started 6-3 19.80 Completed 6:	10	61
Was a pump test made? Yes No   If yes, by whom? DEILLER			, 1909
Yield: 75 gal./min. with ft. drawdown after hrs.	WELL DRILLER'S STATEMENT:		
n n n	This well was drilled under my jurisdiction	and this	report is
n n n	true to the best of my knowledge and belief.		.•
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	NAME OELKE DRILLING (	ر مر	
Time Water Level   Time Water Level   Time Water Level	(Person, firm, or corporation)	Type or p	rint)
	Address 701 - 41 of AUE. N. E. Puplle	n.9	837/
		7	J
Jate of test	Island /gen Voll		
Bailer testgal./min, withft, drawdown afterhrs.	[Signed] (Well Driller)		
Artesian flowg.p.m. Date		ı	ارے
Temperature of water	License No		, 19.8
	'		
(USE ADDITIONAL S	HEETS IF NECESSARY) / DK 1. 14.	81	
	V 27 1.17.	41	0.00

Start Card No.
Unique Well I.D. #
Water Right Permit No.

(1) UWNER: Name GRANGER, DIGBY Address P.O. 1	80X 87      CLE ELUM, WA 98922- 
(2) LOCATION OF WELL: County KITTITAS (2a) STREET ADDRESS OF WELL (or nearest address) ,	- SE 1/4 SW 1/4 Sec 26 T 20 N., R 1SE WM
(3) PROPOSED USE: DOMESTIC	(10) WELL LOG
(4) TYPE OF WORK: Owner's Number of well (If more than one) 1 DECOMMISSIONED Method: ROTARY	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 in formation.
(S) DIMENSIONS: Diameter of well inches Drilled ft. Depth of completed well ft.	MATERIAL   FRUM   TU
(6) CONSTRUCTION DETAILS: Casing installed:  " Dia. from ft. to ft. " Dia. from ft. to ft. " Dia. from ft. to ft.	
Perforations: 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.	PULLED CASING. FILLED WITH
Screens: NO Manufacturer's Name Type Model No. Diam. slot size from ft. to ft. Diam. slot size from ft. to ft.	BENTONITE FROM 15' TO SURFACE. DECOMMISSIONED WELL.
Gravel packed: NO Size of gravel Gravel placed from ft. to ft.	DEGEOVE
Surface seal: NO lo what depth? ft. Material used in seal Did any strata contain unusable water? NO Type of water? Depth of strata ft. Method of sealing strata off	APR 2 7 1995  DEPARTMENT OF ECOLOGY CENTRAL REGION OFFICE
(7) PUMP: Manufacturer's Name Type H.P.	CENTRAL REGION OFFICE
(8) WATER LEVELS: Land-surface elevation above mean sea level ft. Static level ft. below top of well Date Artesian Pressure lbs. per square inch Date Artesian water controlled by	Work started 2-1-95 Completed 2-1-95
(9) WELL TESTS: Orawdown is amount water level is lowered below static level.  Was a pump test made? NO	I constructed and/or accept responsibility for con- struction of this well, and its compliance with all
Recovery data Time Water Level Time Water Level Time Water Level	NAME PONDEROSA DRILLING   (Person, firm, or corporation) (Type or print)
Date of test / / Bailer test gal/min. ft. drawdown after hrs. Air test gal/min. w/ stem set at ft. for hrs. Artesian flow g.p.m. Date Temperature of water Was a chemical analysis made? NO	Contractor's

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

ECY 050-1-20 (10/87) -1329-

# WATER WELL REPORT

Start Card No. 34/20

M I	En	AA I	SLL		1EP	•
	STATE	OF	WASH	NG	TON	

Copy—Dillier's Copy	Water Right Permit No.
DWNER: Name Orville Montgomery	Address
LOCATION OF WELL: County Kittitas	SENSENSOC 35 T20 N. RIJEWN
STREET ADDDRESS OF WELL (or nearest address)	
PROPOSED USE: ☐ Domestic Industrial ☐ Municipa	
☐ DeWater Test Well ☐ Other  TYPE OF WORK: Owner's number of well	Formation: Describe by color, character, size of material and structure, and sho thickness of aquifers and the kind and nature of the material in each stratum penetrate with at least one entry for each change of information.
(II IIIDI O TIBII ONO)	MATERIAL FROM TO
Abandoned  New well  Method: Dug  Bored  Deepened  Cable  Driven	0 User burden 0 3
Reconditioned 🗆 Rotary 🕱 Jetted	
DIMENSIONS: Diameter of well incl	(250 m) 1/15 24' 108'
116/	locate small whoma soud 68 99
Drilled 1 8 feet. Depth of completed well 1 8	Gravelsmall little sand 98 118
CONSTRUCTION DETAILS:	water bearing
Casing Installed:Oft. toO	b the second sec
Welded Diam. from ft. to	
Liner installed Threaded Diam, from ft, to ft, to	
	<del></del>
Perforations: Yes No Type of perforator used Torch	
SIZE of perforations 74 In. by 12	— in.
perforations from 1.10	ft.
perforations from 106 ft. to 16	ft.
perforations fromft. to	ft.
Screens: Yes No X	
Manufacturer's Name	
Type Model No	The second secon
Diamft.toft.	
DiamSlot sizefromft. to	
Oize of graver	land land
Gravel placed from ft. to	t.
Surface seal: Yes No To what depth?	n. DEPARTMENT OF ECOLOGY
Material used in seal granular bentonite +ve	CENTRAL REGION OF FICE
Did any strata contain unusable water? Yes No No	
Type of water?Depth of strata	
Method of sealing strata off	
<del></del>	
PUMP: Manufacturer's Name	
Туре:	The standard of the standard o
WATER LEVELS: Land-surface elevation 1,500	
Static level 90 ft, below top of well Date 2//7/9	
Artesian pressure lbs. per square inch Date	
Artegian water is controlled by	
(Cap, valve, etc.))	Work started 2/9 19. Completed 2/1/ 19.5
WELL TESTS: Drawdown is amount water level is lowered below static t	level 13. Completed 1
Was a pump test made? Yes No if yes, by whom?	WELL CONSTRUCTOR CERTIFICATION:
Yield: gal./min. with ft. drawdown after	hrs. I constructed and/or accept responsibility for construction of this wel
0 0	and its compliance with all Washington well construction standards
Recovery data (time taken as zero when pump turned off) (water level measure)	materials used and the information reported above are true to my bes
from well top to water level)	, , , , , , , , , , , , , , , , , , ,
Time Water Level Time Water Level Time Water Lev	vel NAME American Drilling
	(PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)
	- Address PO R. 89 Cle Flux 6/4 989
<u> </u>	Address O St of Children WHY 187
Date of test	1W61RC-1 1887
Bailer test gal./mln. with ft. drawdown after	hrs. (Signed) Karl Store License No. 100 (WELL DRILLER)
Airtest 30 gal./min. with stem set at 115 ft. for 2	Contractor's  Hrs. Registration
Artesian flow g.p.m. Date	No. AMERIA * 1210W Date Feb 25 19 9
Temperature of water Was a chemical analysis made? Yes L No.	(USE ADDITIONAL SHEETS IF NECESSARY)

### WATER WELL REPORT

STATE OF WASHINGTON

An	nlies	ation	Mo
αþ	$\mathbf{p}_{\mathbf{HC}}$	111011	TAO.

	Permit No	<i>5</i>
(1) OWNER: Name HARTING VATHERRER		1 1.1A 9097
(2) LOCATION OF WELL: County Kittitas	_ NV NE 14 Sec 35 T.20 N	15
searing and distance from section or subdivision corner		., R <i>I.</i> W.M.
(3) PROPOSED USE: Domestic X Industrial   Municipal	(10) WELL LOG:	
Irrigation   Test Well   Other		l structure and
(4) TYPE OF WORK: Owner's number of well	Formation: Describe by color, character, size of material and show thickness of aquifers and the kind and nature of the n stratum penetrated, with at least one entry for each chang	iaterial in each e of formation.
New well Method: Dug Bored	3.4.4. Market 1.4.	OM TO
Deepened 🖂 Cable Driven 🖸	D No.	
Reconditioned Rotary Jetted	BROWN CLAS & ROCKS &	36
(5) DIMENSIONS: Diameter of well inches.	BROWN CLAY & SILT 30	129
Drilledft. Depth of completed well		
(6) CONSTRUCTION DETAILS:	BROWN CLAY & LOSE	
Casing installed: 6 "Diam. from 6 ft. to 15 ft.	_GRAVEC 3	9 60
Threaded [] "Diam. from ft. to ft.	COMPACT GRAY CLAY	
Welded 1 1 Diam. from ft. to ft.	+ ROCKS 6	0 80
Perforations: yes No No		
Type of perforator used	CLAY & GRAVEL SOME WATER S	80 100
perforations from ft, to ft.	CLAY & layer of Gravel 10	
perforations from ft. to ft.	with water	0 //5
Screens: Yes No W Manufacturer's Name	WATER BEARING	
Type Model No 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 denth? ft.		
Material used in seal		
Type of water? Depth of strata		
Method of sealing strata off		
(7) PUMP: Manufacturer's Name		
Туре:	Printed Andrews Company Compan	
(8) WATER LEVELS: Land-surface elevation above mean sea levelft.	No. 12 to 1	
Static levelft. below top of well Date		<del></del>
Artesian pressurelbs. per square inch Date	III THE COURT OF T	
Artesian water is controlled by(Cap, valve, etc.)	DEPARTMENT REGION GENCE	
(9) WELL TESTS: Drawdown is amount water level is lowered below static level	Commission with the second	
Was a pump test made? Yes No If yes, by whom?	Work started, 1985 Completed	, 1985
Yield: gal./min. with ft. drawdown after hrs.	WELL DRILLER'S STATEMENT:	
n n n	This well was drilled under my jurisdiction and t true to the best of my knowledge and belief.	his report is
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	NAME MOUNTAIN WELL DRILL (Person, firm, or corporation) (Type	NG
Time Water Level	(Person, firm, or corporation) (Type	or print)
	Address P.O. BOX 144 CLE ELVM, C	5Av 98922
Data of And	1 1 7 R	
Bailer test 20 gal/min. with 10 ft. drawdown after 4 hrs.	[Signed] (World Driller)	
Artesian flowg.p.m. Date	1200	
Temperature of water Was a chemical analysis made? Yes   No	License No	19
· · · · · · · · · · · · · · · · · · ·		

# Original and First Copy with Department of Ecology

# **WATER WELL REPORT**

Start Card No. W	050	375	٠.
UNIQUE WELL I.D. #	ACL-1	140	

Second Copy — Owner's Copy rd Copy — Driller's Copy

STATE OF WASHINGTON

Water Right Permit No.

ļ	WNER: Name LESTE (C) LICITISON Addi	ress DIO UPOLY FICH POINT CIL ELLINO
1	LOCATION OF WELL: County KIHITOS	<u>NW 1/4 NW 1/4 Soc 35 T. 20 N., R 15 W.M.</u>
1)	STREET ADDRESS OF WELL (or nearest address)	
(3)	PROPOSED USE: Domestic Industrial   Municipal	(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION
	☐ Irrigation ☐ DeWater Test Well ☐ Other ☐  TYPE OF WORK: Owner's number of well	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.
(4)	(If more than one)	MATERIAL FROM TO
1	Abandoned	Sandy top soil gravel 0 2 maity colored m
٠,	DIMENSIONS: Diameter of well /0 " 6" inches.  Drilled /36 feet. Depth of completed well /36 ft.	Sand Gravei maity color Br. MH 2 6
-	CONSTRUCTION DETAILS:	Sand gravel Cobbeis malty Color H 36 72
<b>\-</b> /	Casing installed: 6" Diam. from 42 ft. to 136 ft.	Sand Gravel Maity Color MH 172 89 (
<u> </u>	Welded         ■         Diam. from         ft. to         ft.           Liner installed         □         Diam. from         ft. to         ft.	Sand Brave I Cabbels maily comil on 1100
	Perforations: Yes No 🔀	SIN Grovel Cobbas many color MH 125 154
	Type of perforator usedin. byin.	SITY Sand Grave Grave Cohes 134 136
ļ	perforations from ft. to ft.	maitly colormate
ſ	perforations fromft. toft.	
	perforations fromft. toft.	
l	Screens: Yes No 🔀	
	/pe Model No	TO B B B W B D C C C C C C C C C C C C C C C C C C
	Diam Slot size from ft. to ft.	
	Diam. Slot size from ft. to ft.	IN I 0 1997   [1]
	Gravel packed: Yes No Size of gravel	
	Surface seal: Yes X No  To what depth?	DEPARTMENT OF ECOLOGY CENTRAL REGION OFFICE
1	Did any strata contain unusable water? Yes No 🔀	
	Type of water? Depth of strata	
	Method of sealing strata off	
)	PUMP: Manufacturer's Name	
~)	WATER LEXELS: Land-surface elevation	Work Started 5/15/97 , 19. Completed 5/19/97 , 19
•	above mean sea level ft.  Static level ft. below top of well Date htesian pressure lbs. per square inch Date	WELL CONSTRUCTOR CERTIFICATION:
	Artesian water is controlled by(Cap, valve, etc.)	I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and
1)	WELL TESTS: Drawdown is amount water level is lowered below static level	the information reported above are true to my best knowledge and belief.
	Was a pump test made? Yes No If yes, by whom?	NAME (LOTE / ICI) (LO) (LO) (TYPE OF PRINT)
_	11 11 11 11	Address DE BERRIMON IN Selah Wn 9894
-	Recovery data (time taken as zero when pump turned off) (water level measured from well	(Signed)License No. 1335
_ T	top to water level) ime Water Level Time Water Level Time Water Level Aprox 10 to 2 spm	Contractor's Registration No. O.A. T.C. T. T. W.C. (0.4.) 2. Date 5/19/97 19
_	Air Lift	(USE ADDITIONAL SHEETS IF NECESSARY)
	Date of test  Baller test gal./min. with ft. drawdown after hrs.	<del></del>
	Airtest gal./min. with stem set at ft, for hrs.	Ecology is an Equal Opportunity and Affirmative Action employer. For spe-
	Artesian flow g.p.m. Date Temperature of water Was a chemical analysis made? Yes No	clal accommodation needs, contact the Water Resources Program at (206) 407-6600. The TDD number is (206) 407-6006.

rile Original and First Copy with Department of Ecology

No water Abandoned

Start Card No.	NOS0375
7	

# WATER WELL REPORT

UNIQUE WELL I.D. #\_

	and Copy — Owner's Copy of Copy — Driller's Copy	ASHINGTON Water Right Permit No.
(7)	WNER: Name Stable Williamoon Addre	5 560 Lipper Floh Point Cle Elum
``.  }	LOCATION OF WELL: County 1 LLTCA.S	NW 1/4 NW 1/4 500 35 T. QCN, R/5 W.M.
.≟a)	STREET ADDRESS OF WELL (or nearest address)	D
(3)	PROPOSED USE: Momestic Industrial Municipal	(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION
1	☐ Irrigation	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
(4)	TYPE OF WORK: Owner's number of well (If more than one)	change of information.
1	Abandoned New well Method: Dug 🗆 Bored 🗀	MATERIAL FROM TO
	Deepened □ Cable □ Driven□ Reconditioned □ Rotary ☐ Jetted □	Clay + Grand Brown H 4 12
(5)	DIMENSIONS: Diameter of well 16" 6" inches.	Clay & Gravel Dirk Brown In 12 16
_	Drilledfeet. Depth of completed wellft.	Complex Grand Callets Colors # 16 51 Sand & Grand multipedan N 51 54
(6)	CONSTRUCTION DETAILS:	Grant multy color # 54 64
1	Casing installed: 6" Dlam. from +2 ft. to 300 ft.  Welded 6 " Dlam. from ft. to ft.	Stilly sent Gravel from H 64 130
!	Liner installed Threaded Diam. from ft. to ft.	Clay & Grand Bown # 130 133
	Perforations: Yes No No	Clay with coal seems from In 133 151
í	Type of perforator used	Clay + Grand Gray ms 180 215
!	SIZE of perforations In. by	Clay + Coul Gray 30 234 234
í	perforations fromft. toft.	Clay + Govel Groy 24 234 239 Clay Gray 2 239 248
_	perforations from ft. to ft.	Clay Gravel Gay MS 24A 273
	Screens: Yes \( \text{No.} \) No.	Sanly Clay Garel White In 273 326
1	pe Model No	Sinfy simboline + Clay White 24 325 344
	DiamSlot sizefromft. toft.	Clay Gay # 344 352
	Diam. Slot size from ft. to ft.	Sandofone Gray In 352 373
1	Gravel placed from	Standstone with Chy lends In 373 390 Standstone Grow In 390 460
	Surface seal: Yes No D To what depth? 18' 560 ft.	Sandstone with Clay Lini In 460 560
	Material used in seal	Wed 9 Basic comend
	Did any strata contain unusable water? Yes No Depth of strata	Usel 28 Basi Benfonthe
	Type of water? Depth of strata  Method of sealing strata off	to Abandoned this well
_	DIMID. W. C. L. W.	
ν,	PUMP: Manufacturer's Name H.P	
3)	WATER LEVELS: Land-surface elevation above mean sea level ft.	Work Started <u>\$/4/97</u> , 19. Completed <u>5//3/97</u> , 19
î	Static level	WELL CONSTRUCTOR CERTIFICATION:
}	Artesian water is controlled by (Cap, varys, etq.) (V)	I constructed and/or accept responsibility for construction of this well, and its
9)	WELL TESTS: Drawdown is amount water level is towered below static tevel	compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.
,	Was a pump test made? Yes No No Yes, by whom?	NAME Water Mrs well DAHing
<u> </u>	Yield:gal./min. withtt. dray(d) a te 3 1997 Inc. 3	(PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)
	n n n	Address 106 Berniman Ly Selah mich 96942
	Recovery data (time taken as zero when pump turned CHARTMENT OF ECULUSY	(Signed) License No. 3333
1 -	top to water level) Time Water Level Time Water Level Time Water Level	Contractor's
; (	- No water.	Registration Notice 432 Date 6/16/97 19
<u> </u>		(USE ADDITIONAL SHEETS IF NECESSARY)
1	Date of test ft. drawdown after hrs.	
	Airtestgal./min. with stem set atft. forhrs.	Ecology is an Equal Opportunity and Affirmative Action employer. For special accommodation needs, contact the Water Resources Program at (206)
ì	Artesian flowg.p.m. Date Temperature of water Was a chemical analysis made? Yes \[ \begin{array}{cccccccccccccccccccccccccccccccccccc	407-6600. The TDD number is (206) 407-6006.
1		1

8	70	ĺ
	8	870

Department of Ecology	WATER WELL REPORT	Otall Of
Second Copy—Owner's Copy	STATE OF WASHINGTON	

		Water Right Permit No.
Ī	OWNER: Name MACILYN WOODS	Address HC 60 Box 11019
-:(- !:)	LOCATION OF WELL: County Kithtas	5W , NW , sec 35 T. 20 N., R 15
2 <b>a</b> )	STREET ADDDRESS OF WELL (or nearest address)	
3)	PROPOSED USE: Domestic Industrial I Municipal I DeWater Test Well I Other I	(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPT Formation: Describe by color, character, size of material and structure, and
— ‡)	TYPE OF WORK: Owner's number of well	thickness of aquifers and the kind and nature of the material in each stratum penetr with at least one entry for each change of information.
	Abandoned New well Method: Dug Bored	MATERIAL FROM TO
	Deepened 🖊 🗋 Cable 🗌 Driven 🗆 Reconditioned 🗎 Rotary 🔲 Jetted 🗆	DIRT 04
5)	DIMENSIONS: Diameter of well	GRAVEL + CLAY 420
		SAND + GRAVEL CEMENTED 20 1
6)	CONSTRUCTION DETAILS:	7 700 100
	Casing installed:  Welded Liner installed Threaded  Diam. from Th. to Th. to Th. to Th. to Th. to Th. to Th. to Th. to Th. to Th. to Th. to Th. to Th. to Th. to Th. to Th. to Th. to Th. to	LOOSE SANDY GRAVER 120 1.
	Perforations: Yes No	
	Type of perforator used	
	SIZE of perforationsin. byin.	
	perforations fromtt. tott.	
	perforations fromft. toft.	
_	perforations fromft. toft.	
	Screens: Yes No Manufacturer's Name	
	Type Model No	
	Diam. Slot eize from ft. to ft.	
	Diam. Slot size from ft. to ft.	The state of the s
	Gravel packed: Yes No Size of gravel	parate Comments of the Comment
	Gravel placed fromft. toft.	
	Surface seal: Yes To what depth? 70 th.  Material used in seal Sen fou I FE	The state of the s
	Did any strata contain unusable water? Yes No	The state of the s
	Type of water?Depth of strate	
	Method of sealing strata off.	
7)	PUMP: Manufacturer's Name	and the same of th
	Type:H.P	DEPARTMENT OF EXPLOSIVE
3)	WATER LEVELS: Land-surface elevation above mean sea level	CENTRAL REGION OFFICE
	Static level ft. below top of well Date 5-2490	3 NATIONAL STATES
	Artesian pressurelbs, per square inch Date	
	Artesian water is controlled by (Cap, valve, etc.))	5-4 90 -14
	WELL TESTS: Drawdown is amount water level is lowered below static level	Work started , 197 Sompleted , 19
	Was a purep test made? Yea No lift yes, by whom?hrs.	WELL CONSTRUCTOR CERTIFICATION:
	II II II II II	I constructed and/or accept responsibility for construction of this and its compliance with all Washington well construction stands
		Materials used and the information reported above are true to my
	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	NAME BACK DUING  (PERSON, FIRM, OR CORPORATION)  (TYPE OR PRIN
		(PERSON, FIRM, OR CORPORATION) (TYPE OR PRIN
-		Address Rts Box 1010 EllENSburg WA
	Date of test	2,0,00
	Bailer test gal./min. with ft. drawdown after hrs.	(Signed) Will Buch License No. 22
	Airtestgal./min. with stem set atft. forhrs.	Contractor's
	Artesian flow g.p.m. Date	Registration BDC 13304 Date 6-1 19.
	Temperature of water Was a chemical analysis made? Yes No	(USE ADDITIONAL SHEETS IF NECESSARY)

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Temperature of water \_\_\_\_\_ Was a chemical analysis made? Yes

# **WATER WELL REPORT**

Start Card No.	208	73	7
	_		

UNIQUE WELL I.D. #

STATE	OF WAS	HINGTON

Water Right Permit No.

}	DWNER: Name SAM FLEMING Address			
	LOCATION OF WELL: County	<u>SE 14 NW 1480 38 T.Z.</u>	<u>O_</u> N., R	(5 wm.
	STREET ADDRESS OF WELL (or nearest address)			<u> </u>
3)	PROPOSED USE: 🕱 Domestic Industrial 🗆 Municipal 🗅	(10) WELL LOG or ABANDONMENT PROCEDURE DE	ESCRIPTION	ON
_	☐ Irrigation ☐ Other ☐ ☐ DeWater Test Well ☐ Other ☐	Formation: Describe by color, character, size of material and structure, and and the kind and nature of the material in each stratum penetrated, with a change of information.	show thicknes it least one e	ss of aquifers ntry for each
4)	TYPE OF WORK: Owner's number of well (If more than one)	MATERIAL	FROM	то
	Abandoned  New well  Mac Method: Dug  Bored  Deepened  Cable Driven	Soil	0	6
	Reconditioned □ Rotary 🛣 Jetted □			
(5)	DIMENSIONS: Diameter of well inches.	Converted Gravel	6	60
	Drilled 220 feet. Depth of completed well 220 ft.		10	00
 (6)	CONSTRUCTION DETAILS:	L' +1 L' AT-1-	(2)	70
	Casing installed: 6 Diam. from 0 ft. to 280 ft.	Grey Silt + SAND	90	177
	Welded Diam. from ft. to ft.			
	Threaded	Grey SilT+Comented	177	190
{	Perforations: Yes No 🗆	GraveL	<b></b>	<del> </del>
	Type of perforator used	Grey Silt+Sand	190	210
l	SIZE of perforations in. by in. by in in ft. to ft. to ft.	( ) EY 5//145/1/2		
	perforations fromft. toft.	Grey SITLC/AY	210	220
1.	perforations from ft. to ft.		ļ <u>.</u>	
	Screens: Yes No		├	-
	Manufacturer's Name Model No		-	
	Diam. Slot size from ft. to ft.	an WE IN	· ·	
	Diam. Slot size from ft. to ft.	TO E G E		
-	Gravel packed: Yes No Size of gravel		ļ	
. ,	Gravel placed fromft. toft.	AN SEP 13		<del> </del>
_	Surface seal: Yes 🛛 No 🗌 To what depth? ?6 ft.	120 000 C	<del>                                     </del>	<del>                                     </del>
	Material used in seal	TETALTHE LEGION OFFICE		
,	Did any strata contain unusable water? Yes No Depth of strata	CE III III	<u> </u>	<u> </u>
i	Method of sealing strata off	1850	<del> </del>	<del>                                     </del>
-	DIMP		+	<del> </del>
(-)	PUMP: Manufacturer's Name		1	
1	WATER LEVELS: Land-surface elevation	Work Started 409 / 19. Completed AUG	3	19 <i>96</i>
,	Static level ft. below top of well Date AUS 5 96			
	Artesian pressure lbs. per square inch Date	! constructed and/or accept responsibility for construction	n of this w	all and ite
	Artesian water is controlled by(Cap, valve, etc.)	compliance with all Washington well construction standard	ds. Material:	s used and
(د,	WELL TESTS: Drawdown is amount water level is lowered below static level	the information reported above are true to my best knowled	ige and beil	eı.
	Was a pump test made? Yes No If yes, by whom?hrs.	NAME BACH DRILLING CY	R PRINT)	
_		Address 3340 WILSON CRE	EK	
	,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,, ,,			1007
	Recovery data (time taken as zero when pump turned off) (water level measured from well	(Signed) (WELL DRILLER) Licer	nse No. <u>Ø</u>	111
	top to water level) Time Water Level Time Water Level -	Contractor's		
	·	Registration No. MIKE BOC 13304 Date 85		.19 96
		(USE ADDITIONAL SHEETS IF NECES	SARVI	
-	Date of test	(USE ADDITIONAL SHEETS IF NECES.		
	Bailer testgal./min. with ft. drawdown after hrs.  Airtest 3 gal./min. with stem set at 80 ft. for hrs.	Ecology is an Equal Opportunity and Affirmative Action	n employe	r. For spe-
	Airtest gal./min. with stem set at ft. for hrs.  Artesian flow g.p.m. Date	cial accommodation needs, contact the Water Resource	es Progra	m at (206)
	Temperature of water Was a chemical analysis made? Yes No	407-6600. The TDD number is (206) 407-6006.		

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

# WATER WELL REPORT

Start	496/ Card No. —	109
_,		

STATE OF WASHINGTON

479

1)	OWNER: Name NC. 3 Corpick Div. II	Address		
*	LOCATION OF WELL: County	NE & SE & Sec 35	<u>г. 20 n., r</u> _	15_w.m.
a)	STREET ADDDRESS OF WELL (or nearest address)			
(3)	PROPOSED USE: Domestic Industrial   Municipal	(10) WELL LOG or ABANDONMENT PROCE	OURE DESC	RIPTION
	☐ Irrigation ☐ DeWater Test Well ☐ Other ☐	Formation: Describe by color, character, size of material thickness of aquifers and the kind and nature of the material with at least one entry for each change of information.	l and structure, in each stratum	, and show penetrated
(4)	TYPE OF WORK: Owner's number of well (if more than one)	MATERIAL	FROM	то
	Abandoned 🗆 New well 💹 Method: Dug 🔲 🛭 Bored 🛄 🖠	BLACK DIRT	0	4
	Deepened ♥□ Cable □ Driven □ □ Reconditioned □ Rotany ♥️ Jetted □			
(5)	DIMENSIONS: Diameter of well inches.	Cemented COBBLES	4	20
• •	Drilledfeet. Depth of completed wellft.			
		Cementeo SAND	7	100
(6)	CONSTRUCTION DETAILS:	(SRAVEL	20	700
	Casing installed:         Diam. fromft. toft.           Welded         Diam. fromft. toft.	END Lappe	100	120
	Liner Installed 4	SAND + GRAVEL	700	120
				<b>†</b>
	Perforations: Yes No No No No No No No No No No No No No			
	SIZE of perforations in. by in.			
	perforations fromft. toft.			
	perforations fromft. toft.			
	perforations fromft. toft.			<u> </u>
	Screens: Yes No.			<del> </del>
	Manufacturer's Name			
	Type Model No			-
	DiamSlot sizefromft. toft.			<del></del>
-	DiamSlot sizefromft. toft.			<del>                                     </del>
-	Gravel packed: Yes No Size of gravel	and the second s		
	Gravel placed fromft. toft.	100		1.
	Surface seal: Yes No To what depth?ft.			
	Material used in seal # 8 Bentonite	407 3 l		<u> </u>
	Did any strata contain unusable water? Yes No No	Min A 1		
	Type of water? Depth of strate			<del> </del>
	Method of sealing strata off		<del></del>	+
(7)	PUMP: Manufacturer's Name			<del> </del>
	Type: H.P. H.P.			<del> </del>
(8)	WATER LEVELS: Land-surface elevation above mean sea level		_	<del> </del>
	Static levelft. below top of well Date		<del> </del>	<b>†</b>
	Artesian pressure			
	(Cap, valve, etc.))	Work started 5 - 28, 197 completed	5-29	, 19 <b>_9</b>
(9)	WELL TESTS: Drawdown is amount water level is lowered below static level  Was a pump test made? Yes No If yes, by whom?	AND ADDICTOR OFFICIATION	į.	
	Yield: gal./min. with ft. drawdown after hrs.	WELL CONSTRUCTOR CERTIFICATION:	construction (	of thic wal
	0 0 0 0	I constructed and/or accept responsibility for and its compliance with all Washington well	construction	standard
		Materials used and the information reported al knowledge and belief.	ove are true	to my bes
	Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)	See Develop	1	
	Time Water Level Time Water Level Time Water Level	NAME DACOT DETECTION		OR PRINT)
		(PERSON, FIRM, OR CORPORATION)	<u>ج</u> ر" سي	יציו פיני ניני עציו פיני ניני
		Address Address	12	7
	Date of test	Colum & Eller ha lace	ense No. 08	36
•	Bailer test gal./min. with ft. drawdown after hrs.	(VELL DRILLER)	anse No.	7
_	Airtest 12-15 gal./min. with stem set at 10 ft. for 2 hrs.	Contractor's Killes	29	<i>.</i>
	Artesian flow g.p.m. Date	No. 35N Date		, 19

4962

Water Right Permit No.

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

## WATER WELL REPORT

(1)_	OWNER: Name Na 2 Corvick Ow. I	Address		
	LOCATION OF WELL: County	NE W SE W Sec 35 T 20	5 N. R 4	15 W.M.
(2a)				
(3)	PROPOSED USE: Domestic Industrial	(10) WELL LOG or ABANDONMENT PROCEDURE		
	☐ DeWater Test Well ☐ Other ☐	Formation: Describe by color, character, size of material and thickness of agulfers and the kind and nature of the material in each	structure,	and show
(4)	TYPE OF WORK: Owner's number of well	with at least one entry for each change of information.		
	Abandoned New well Method: Dug D Bored D	MATERIAL	FROM	10
	Deepened G Cable Driven D	1/121- BLACK	ري	4_
	Reconditioned Rotary Jetted	7 224 51 1 3	/	70
(5)	DIMENSIONS: Diameter of wellinches.	COBBLES + GRAVEL	-7	70
	Drilled 120 feet. Depth of completed well 120 ft.	Comenter SAND+CRAVER	20	117
(6)	CONSTRUCTION DETAILS:	COMPATED JAND T SKAULE	70	
(-,	Casing installed: Diam. from ft. to _/ 20_ft.	SAND + LADGE (LODIN)	112	120
	Welded Dlam. from ft. to ft.	WATER	7-2	-
	Liner installed U Threaded Diam. fromft. toft.			
	Perforations: Yes No.			
	Type of perforator used			
	SIZE of perforations in. by in.			
	perforations fromft. toft.			
	perforations fromft. toft.			
	perforations fromft. toft.			<del></del>
	Screens: Yes No.X			-
	Manufacturer's Name Model No			
. "	Diam. Slot size from ft. to ft.			
	Diamft. toft.		•	
	Gravel packed: Yes No X Size of gravel			
	Gravel placed fromft. toft.			
	Surface seal: Yes No To what depth?ft.	1		<del></del>
	Material used in seal			
	Did any strata contain unusable water? Yes No	Multi A i		<del></del>
	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			
(-,	Static level 60 ft. below top of well Date 5 6 6 9			
	Artesian pressure lbs. per square inch Date	· · · · · · · · · · · · · · · · · · ·		<del> </del>
	Artesian water is controlled by(Cap, valve, etc.))	24 9/	20	GI
(9)	WELL TESTS: Drawdown is amount water level is lowered below static level	Work started, 19/ 96mpleted	<u> </u>	
ν-,	Was a pump test made? Yes No If yes, by whom?	WELL CONSTRUCTOR CERTIFICATION:		
	Yield: gal./min. with ft. drawdown after hrs.	I constructed and/or accept responsibility for const	ruction o	f this well,
	0 0 0 0 0 0 0 0 0	and its compliance with all Washington well cons Materials used and the information reported above a	truction are true	standards. to my best
	Recovery data (time taken as zero when pump turned off) (water level measured	knowledge and belief.		7
	from well top to water level) Time Water Level Time Water Level Time Water Level	RACH DRILLING	(%	٠.
		NAME (PERSON, FIRM, OR CORPORATION)	(TYPE (	OR PRINT)
		Address K+ 5 Box 1010	F-	Surg
_		Null 000		021
А	Date of test	(Signathern M & Cockinda License N	10	836
	Baller test gal./min. with ft. drawdown after hrs.	I Contractor 8 201/25	٠.	
	Airteat gal./min. with stem set at ft. for hrs.	Registration	28_	
	Artesian flow g.p.m. Date	No DEC 15 3784 Date		
	Temperature of water Was a chemical analysis made? Yes No	(USE ADDITIONAL SHEETS IF NECESS	SARY)	

Start Card No. <u>4092888</u>	_
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OPY - Driller's Copy  AddressAddress			
- OF 1815 SCHWHD	7. 7		×
WNER: Name DENNIS SCHWAB Address	- NW 14 3E 14 Sec 35 T. C	<u>.⊙_</u> N., H1	<u> </u>
LOCATION OF WELL: County KITT LIFTS			
STREET ADDRESS OF WELL (or nearest address)	WELL LOG OF ABANDONMENT PROCEDURE D	E301111 111	- of aquifors
PROPOSED USE: Domestic Industrial I Municipal I Form	WELL LOG or ABANDONMENT  ation: Describe by coldr, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with	show micrones at least one e	ntry for each
[ ] [[[[[and the content of the cont	he kind and nature of the tilaterial in the second of the	FROM	то
TYPE OF WORK: Owner's number of well (If more than one)	MATERIAL	FROM	
Method: Dug Delver		0	10
Abandoned   New Well   Cable   Driven   Deepened   Reconditioned   Rotary   Jetted	MANUS SOIL		1
inches.	CEMENTED GRAVEL	10	140
fact Denth of completed well	CEMENIA	<del></del>	<del> </del>
Dimos			<del> </del>
CONSTRUCTION DETAILS:  Casing installed: Diam. from tt. to tt. to tt. to tt.		+	- <del> </del>
Casing installed: Dlam. from ft. to ft.			
Welded Diam. from ft. to ft. Threaded Diam. from ft. to ft.			
Integrated			
Perforations. 165 C			
	and the second s	\	
SIZE of perforationsft. toftft. toft.			
perforations fromft. toft.  perforations fromft. toft.			
perforations fromft. toft.	A CONTRACT OF STATE O		
Screens: Yes No No			
/pett. toft.		11	
Diam. Slot sizeft.	THE RESERVE TO THE PARTY OF THE	•	
Diam Glot oile			
	1 8 1998		
Gravei piaced fromft.		<del>-{-</del> }	
0011000			
Material No.   No.	THE REAL CO.	-	
Type of water?  Method of sealing strata off			
(7) PUMP: Manufacturer's NameH.P	19. Completed		
Type:turbase elevation to	Work Started		
(8) WATER LEVELS: Land-Surface sea level	WELL CONSTRUCTOR CERTIFICATION:		م المست د د
Static level ths. per square inch Date	and/or accept responsibility for con-	struction of tandards. M	tnis well, a aterials use
Artesian pressure	compliance with all Washington well construction s the information reported above are true to my best in	(nowledge a	nd belief.
	the information reported	. cº	_
(9) WELL TESTS: Drawdown is amount water level is lowered below static level  No No If yes, by whom?	NAME BACH (PERSON, FIRM, OR CORPORATION)	(TYPE OR PRI	NT)
Was a pump test made? Yes No If yes, by whom?hrs. Yield:gal./min. withft. drawdown afterhrs.	1 10 - 11 6(14)	()(2)	<u> </u>
Yield:gar./filint. Vital	Address 3340 WICSONO (Signed) MIKE MOREFIELD	(!	No 23
" " "	(Signed) MIKE MORETICE LI)	riceuse	
Recovery data (time taken as zero when pump turned off) (water level measured from well	(11000		
	Contractor's	1,0	
Time Water Level Time Water Level	Contractor's Registration No. MLKE BOC133N4Date 12	11.1	
	(USE ADDITIONAL SHEETS IF	NECESSA	HY)
			molovar
Date of test	FCOLOGY IS ALL EQUAL OPPORT	/e Action e Resources	mployer. I Program

translational year made? Yes

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# WATER WELL REPORT

Start Card No. *WO81424* 

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STATE OF WASHINGTON

UNIQUE WELL I.D. #\_\_\_\_\_

Water Right Permit No.

12) LOCATION OF WELL: COURSE KI HIT SEE 1/4 Sec 3	2.5 2-	
(2) LOCATION OF WELL: County K1 # 142 S CO WW 1/4 SC 1/4 Soc 3	35 t. 20 N, R	18 WM/
(2a) STREET ADDRESS OF WELL (or nearest address) 91 4pper Pas L. Point Cir. Elw	~, Wa 989	22
(3) PROPOSED USE: Domestic Industrial Municipal (10) WELL LOG or ABANDONMENT PROC	structure, and show thickne	ss of aquifers
and the kind and nature of the material in each stratum per change of information.	netrated, with at least one e	entry for each
(If more than one)MATERIAL	FROM	76
Deepened   Cable   Driven   O 10 Dri T	ww/ 10	10
702160 (2111411 97	100	190
(5) DIMENSIONS: Diameter of well		
(6) CONSTRUCTION DETAILS:		
Casing installed:       6       Diam. from       ft. to       # Diam. from       ft.         Welded       Image: Comparison of the comp		
Perforations: Yes No La No Type of perforator used  SIZE of perforations in. by in.		
SIZE of perforations in. by		<del> </del>
perforations from ft. to ft.		
perforations from ft. to ft.		
Screens: Yes No U		
Manufacturer's Name		<del></del>
Type Model No  Diam, Slot size from ft. to ft.	1 7 1997	7
Diam.         Slot size         from         ft. to         ft.           Diam.         Slot size         from         ft. to         ft.	1 1001	
	VI OF ECOLOGY	
	REGION OFFICE	
Surface seal: Yes No \( \text{No } \) To what depth? \( \text{\$\frac{1}{2}\$} \) ft.		<del> </del>
Material used in seal		
Did any strata contain unusable water? Yes No Type of water? Depth of strata Depth of strata		
Method of sealing strata off		
(7) PUMP: Manufacturer's Name		
(8) WATER LEVELS: Land-surface elevation	ed	19
above mean sea rever		
Artesian pressure ibs. per square inch Date WELL CONSTRUCTOR CERTIFICATION:		
Artesian water is controlled by(Cap, valve, etc.)   I constructed and/or accept responsibility fo compliance with all Washington well constructed.	ction standards. Material	ls used and
(9) WELL TESTS: Drawdown is amount water level is lowered below static level  Was a pump test made? Yes \( \text{No} \) No \( \text{If yes, by whom?} \)	best knowledge and bel  ( ) (1) (TYPE OR PRINT)	lef.
Yield:gal./min. withft. drawdown afterhrs. (PERSON, FIRM, OR CORPORATE	•	
" " Address 3340 Wilson	er. Rd. El	len 3 Dui
" " " (Signed) Mike More fresh	License No. 2	361
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 Time Water Level Contractor's Registration No		1997
(USE ADDITIONAL SHEETS	IF NECESSARY)	-
Date of test gal./min. with ft. drawdown after hrs.		
Airtest 15 gal./mln. with stem set at ft. for hrs. Ecology is an Equal Opportunity and Affirm	native Action employe ter Resources Progra	r. For spe- im at (206)
Artesian flow g.p.m. Date 407-6600. The TDD number is (206) 407-6	006.	(,

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### WATER WELL REPORT

STATE OF WASHINGTON

Notice of Intent W 10738 I
UNIQUE WELL I.D. # FFE 370

accommodation needs, contact the Water Resources Program at (360) 407

6600. The TDD number is (360) 407-6006.

HINGTON

Water Right Permit No.\_\_\_\_\_

1) OWNER: Name\_JAME MontGomery Address 1/4 5 W 1/4 Sec 3 KithTYS LOCATION OF WELL: County \_\_\_\_ (2a) STREET ADDRESS OF WELL: (or nearest address) TAX PARCEL NO.: (10) WELL LOG or DECOMMISSIONING PROCEDURE DESCRIPTION Domestic □ Industrial ☐ Municipal PROPOSED USE: Formation: Describe by color, character, size of material and structure, and □ Other ☐ Irrigation ☐ Test Well the kind and nature of the material in each stratum penetrated, with at least □ DeWater one entry for each change of information. Indicate all water encountered. Owner's number of well (if more than one) TYPE OF WORK: FROM TO MATERIAL New Well
Deepened Method: ☐ Bored Deepened □ Dug 750 SOIL □ Driven ☐ Cable □ Reconditioned CLAY SILT SAND & CAUL ☐ Decommission ☐ Jetted Rotary 120 inches **DIMENSIONS:** Diameter of well\_ 12 Drilled 120 \_ft. \_feet. Depth of completed well\_ CONSTRUCTION DETAILS Casing Installed: Diam. from + 4 ft. to //6 Diam. from Liner installed ft. to Diam. from ☐ Threaded ☐ Yes No Perforations: Type of perforator used \_in. SIZE of perforations \_in. by \_\_ ,\_\_ft. to\_\_\_\_\_ perforations from \_\_\_\_\_ Yes No K-Pac Location \_\_\_\_ Manufacturer's Name Slot Size \_\_\_ Diam. \_Slot Size \_\_ \_\_from\_\_\_ Gravel/Filter packed: ☐ Yes ☐ No ☐ Size of gravel/sand \_\_\_ \_ft. to \_\_ Material placed from\_ GATONITO WHO **₊**Tp what depth? \_\_ \_ft. Surface seal: Material used in seal\_ ☐ Yes 😾 No Did any strata contain unusable water? \_Depth of strata Type of water? \_\_ Method of sealing strata off\_ PUMP: Manufacturer's Name WATER LEVELS: Land surface elevation above mean sea level Completed \_ 9/9/97. (8) Date **9/8/**9 ft, below top of well Static level \_ \_lbs. per square inch Artesian pressure\_ Artesian water is controlled by WELL CONSTRUCTION CERTIFICATION: (Cap, valve, etc.) I constructed and/or accept responsibility for construction of this well, and its WELL TESTS: Drawdown is amount water level is lowered below static level compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief Was a pump test made? ☐ Yes ☐ No If yes, by whom? \_ \_\_\_\_\_ft. drawdown after\_ hrs. \_gal./min. with \_\_ Yield: Type or Print Name John PIEB License No. 6427 ft. drawdown after\_ hrs. \_gal./min. with \_ (Licensed Driller/Engineer) \_\_\_\_ft. drawdown after\_ \_gal./min. with \_ Recovery data (time taken as zero when pump turned off) (water level measured from License No. \_ Trainee Name well top to water level) Drilling Company PIRBE WEIL SAlling INC Water Level Time Water Level Water Level License No. 642 (Licensed Driller/Engineer) Address p.o. Bx 10866 Yakima, 64 98707 Date of test Contractor's Registration No. PWD 132 KI Date 9/10/17 \_ft. drawdown after\_\_ \_gal./min. with\_ Bailer test ft, drawdown after 2 hrs. \_gal./min. with\_ Airtest (USE ADDITIONAL SHEETS IF NECESSARY) \_g.p.m. Date Artesian flow\_ Temperature of water\_\_\_\_\_ Was a chemical analysis made? ☐ Yes Mr No Ecology is an Equal Opportunity and Affirmative Action employer. For specia File Original and First Copy with Department of Ecology

# WATER WELL REPORT

Start Card No.	WO	87	425

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

STATE OF WASHINGTON

UNIQUE WELL I.D. #

Seço: Third	d Copy — Owner's Copy Copy — Driller's Copy	ASHINGTON Water Right Permit No.
	OWNER: Name Ernest Croft. Addr.	850 Pease RI, Cle Elum, Wasks
(2)	LOCATION OF WELL: County KIHitas Co.	NE 14 3W 1/4 Sec 35 T 20 N, R 15 W.M.
(2a)	STREET ADDRESS OF WELL (or nearest address)	Peon toint Rd.
(3)	PROPOSED USE: Domestic Industrial  Municipal	(10) WELL LOG OF ABANDONMENT PROCEDURE DESCRIPTION
` '	☐ Irrigation ☐ Other ☐ DeWater Test Well ☐ Other ☐	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
(4)	TYPE OF WORK. Owner's number of well	change of information.
( ' '	Abandoned New well Method: Dug Bored	MATERIAL FROM TO
	Deepened	
		elment gravil 10 140
(5)	DIMENSIONS: Diameter of well inches.  Drilled 140 feet. Depth of completed well ft.	
(6)	CONSTRUCTION DETAILS:	
	Casing installed: 6 Diam. from 140 ft. to 140 ft.  Welded	
	Liner installed Threaded Diam. from ft. to ft.	
	Perforations: Yes No 🗵	
	Type of perforator used	
	SIZE of perforationsin. byin.	
	perforations from ft. toft.	g-vert ( c systems of the state
	perforations from ft. to ft.	
	Screens: Yes No No	NOV IT 627
es ;*	Manufacturer's Name Model No	I heart
	Diam. Slot size from ft. to ft.	DEPLOTMENT OF FOOL COV
	Diam. Slot size from ft. to ft.	DEPARTMENT OF ECOLOGY CENTRAL REGION OFFICE
	Gravel packed: Yes No Size of gravel	The second secon
	Gravel placed fromft. toft.	
	Surface seal: Yes No D To what depth? 2.0 ft.	
	Material used in seal Bentonite	
	Did any strata contain unusable water? Yes No Depth of strata	
	Method of sealing strata off	
	House of county state on	
(7)	PUMP: Manufacturer's NameH.P	
<del></del>	And the second s	Work Started 9 - 2 , 19. Completed 9 - 5 , 19 9
(8)	static level	
	Artesian pressure lbs. per square inch Date	WELL CONSTRUCTOR CERTIFICATION:
	Artesian water is controlled by(Cap, valve, etc.)	I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and
<u>(0)</u>	WELL TESTS: Drawdown is amount water level is lowered below static level	the information reported above are true to my best knowledge and belief.
(5)	Was a pump test made? Yes No If yes, by whom?	NAME Bach Drilling (PERSON, FIRM, OR CORPORATION) (CYPE OR PRINT)
	Yield:gal./min. withft. drawdown afterhrs.	1
_	11 11 11 11	Address 3340 W/30n Cr. Rd. Ellers b
	11 11 11 11	(Signed) Miste Montal License No. 23 6 1
	Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)	(WELL DB/(LER)
	Time Water Level Time Water Level Time Water Level	Contractor's
		Registration 13 DC 133 NU Date
		(USE ADDITIONAL SHEETS IF NECESSARY)
_	Date of test	
	Bailer testgal./min. withft. drawdown afterhrs.  Airtestgal./min. with stem set atft. forhrs.	Feology is an Equal Opportunity and Affirmative Action employer. For spe-
	Artesian flow g.p.m. Date	cial accommodation needs, contact the Water Resources Program at (206) 407-6600. The TDD number is (206) 407-6006.
	Temperature of water Was a chemical analysis made? Yes No	407-0000. The TDD Humber is (£00) 407 0000.

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### WATER WELL REPORT

Start Card No. 34/22

Wet	ar I	Riaht	Permit	Nο				13
_	Ξ.	_						-/V
-								ΛΛ

	OWNER: Name Kenny Shombing	Address Pease Read Cle Elum
r <sub>ie</sub> i)	LOCATION OF WELL: County Kittitas	NW & SW & Sec 35 T. 20 N. R LSEW.M.
(2a) ——	STREET ADDDRESS OF WELL (or nearest address)	
(3)	PROPOSED USE:  ☐ Irrigation ☐ DeWater Test Well ☐ Other ☐	(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,
(4)	TYPE OF WORK: Owner's number of well (If more than one)	with at least one entry for each change of information.
	Abandoned New well Method: Dug Bored	MATERIAL FROM TO
	Deepened ☐ Cable ☐ Driven ☐	Overburden 0 4
	Reconditioned □ Rotary 🗷 Jetted □	Gravel Santy 26 130
(5)	Drilled 140 feet. Depth of completed well 140 ft.	Gravel Small water bearing 130 140
(6)	Construction details:  Casing Installed: 6 Diam. from 0 ft. to 140 ft.  Weided Iner installed Diam. from ft. to ft.  Diam. from ft. to ft.	
	Perforations: Yes No No	
	Type of perforator used	
	perforations fromft. toft.	
	perforations fromft. toft.	
	perforations fromft. toft.	
	Screens: Yes No No	
	Manufacturer's Name	
-	Type Model No	
	Diam	3 50 6 4 5 6 6 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5
s <u>/</u>	DiamSlot sizefromft. toft.	
	Gravel packed: Yes No Size of gravel	## 1 2 2 W \$ 16 MAN
	Gravel placed fromft. toft.	
	Surface seal: Yes No To what depth? 18 ft.	17 A F 1 V F
	Did any strata contain unusable water? Yes No X	The second secon
	Type of water?Depth of strata	
	Method of sealing strate off	
(7)	PUMP: Manufacturer's Name	Mari 16.70
	Type:H.P	DEFAMILICATION FOR THE PROPERTY OF THE PROPERT
(8)	WATER LEVELS: Land-surface elevation 2100 ft.	CONTINUE DE CONTIN
	Static level 120 ft. below top of well Date 3/16/9/	
	Artesian pressureibs. per square inch Date	
	Artesian water is controlled by(Cap, valve, etc.))	Work started March 12, 1991Completed 3/16, 1991
(9)	WELL TESTS: Drawdown is amount water level is lowered below static level Was a pump test made? Yes No No If yes, by whom?	
	Yield: gal./min. with ft. drawdown after hrs.	WELL CONSTRUCTOR CERTIFICATION:  I constructed and/or accept responsibility for construction of this well,
	0 0 0	and its compliance with all Washington well construction standards.
	Recovery data (time taken as zero when pump turned off) (water level measured	Materials used and the information reported above are true to my best knowledge and belief.
	from well top to water level) Time Water Level Time Water Level Time Water Level	NAME American Drilling
		(PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)
		Address PO BX 89 Cleglum WA 98922
	Date of test	May Do . Ices
	Bailer test gal./min. with ft. drawdown after hrs.  Airtest ft. for 2 \frac{7}{2} hrs.  Artesion flow new Date 3/15/9/	Contractor's (WELL DRILLER) Registration No. AMERI (%) 10W Date March 18, 1991
	Artesian flow	
	1000 Indian indian indian indian indian indian indian indian indian	(USE ADDITIONAL SHEETS IF NECESSARY)

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### WATER WELL REPORT STATE OF WASHINGTON

Application	No.	
Application	110.	

mJ 37

Third	Copy — Driller's Copy STATE O	F WASHINGTON	Permit No	11 3-1-11	
(1)	OWNER: Name Torry Wait	Address Ritty	Box #105B.C	ic Eli	<u> 2011 [</u> 7
1	LOCATION OF WELL: County Kittitis	_5.4	14 St. 14 Sec. 3 42 T.26		Ew.m.
ari	ing and distance from section or subdivision corner 100 E	of House			
(3)	PROPOSED USE: Domestic A Industrial  Municipal			<del></del>	
	Irrigation [] Test Well [] Other	Formation: Describe by c	olor, character, size of materia s and the kind and nature of t at least one entry for each c	l and stru he materi hange of	cture, and al in each formation.
(4)	TYPE OF WORK: Owner's number of well (if more than one)		TERIAL	FROM	TO
•	New well	$=$ 1 $\sim$ 140 $\times$ 10/ $\sim$	706501	()	4-
	Deepened □ Cable □ Driven Reconditioned □ Rotary(€ Jetted	A-2 2 3/2 - 1 - 1 - 2	Wgraue	4	16-
(5)	DIMENSIONS: Diameter of well	Les. BRIU SAIVITY	<u>1990 4 EKANEL</u> PRANEL	415	57
(-)	Drilled tt. Depth of completed well			= 7	C2 C
(6)	CONSTRUCTION DETAILS:				
(4)	Casing installed: Diam. from ft. to	ft.		<del> </del>	
	Threaded Tiam. from ft. to	ft.		<del>                                     </del>	
	Welded 🔯 " Diam. from ft. to	ft.			
	Perforations: Yes □ No ☑				<u></u>
	Type of perforator used				<del> </del>
	perforations from ft. to	ft.			<del> </del>
	perforations from ft. to				
	Screens: Yes No K				<del> </del>
	Type Model No Model No				-
~ .	Diam. Slot size from ft. to ft				
المر				<u></u>	<del> </del>
	Gravel placed from ft. to	·	<del>{LUL VLU</del>	<del> </del>	<del></del>
	Surface seal: Yes No D To what depth?	<del>-</del>			
	Material used in seal	. 11.	DEC 1 3 1979		
		o M	EDADTACTACT OF ECONOCY	<del> </del>	<del> </del>
	Type of water? Depth of strata		<u>epartment of Ecology</u> Inthwest regional offici		·
(7)	PUMP: Manufacturer's Name		J11111 C21 11 11 C11 11 11 11 11 11 11 11 11 11 1		
(•)	Type:			<del> </del>	<del> </del>
(8)	WATER LEVELS: Land-surface elevation above mean sea level	ft			<del> </del>
Stat	ic levelft. below top of well Date	79			
Arte	esian pressure			<del> </del>	-
	Artesian water is controlled by (Cap, valve, etc.)				
(9)	WELL TESTS: Drawdown is amount water level is lowered below static level.	Work started/C/F	, 19.7.7. Completed //	1/10	, 19.7.7
	is a pump test made? Yes No I If yes, by whom?	hrs. WELL DRILLER'			
Yiel	d: 1,71 gal./min. with ft. drawdown after	<del></del>	lled under my jurisdiction	and this	report is
	п п	" true to the best of r	ny knowledge and belief.		_
Rec	overy data (time taken as zero when pump turned off) (water I measured from well top to water level)	NAME ( IF AK	E DRILLING	Cio.	
<b>T</b>	ime Water Level   Time Water Level   Time Water Le	(Perso	on, firm, or corporation)	(Type or	print)
•••••		Address 724-4/4	FAR NE Ping	21/21	149
			(1) 10 m	•	•
Dai	Date of testgal./min. withft. drawdown after	hrs. [Signed]	(Well Driller)	<u> </u>	
Art	esian flowg.p.m. Date		170 - 111	13	10 7 /
Ten	nperature of water	To 🗆 License No	Date	1	, 19//
	ISE ADDITION	AL SHEETS IF NECESSARY)	12 my	•	•
	(OSE ADDITION	DIEMETO IN HEICEGRANT)	· · · · · · · · · · · · · · · · · · ·		mu = 3

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# WATER WELL REPORT STATE OF WASHINGTON

Application	No.	<b>A</b> /
Permit No.		<u> </u>

(1) OWNER: Name Ed Mc'KEAN	Address 327 LINCOLN C/ELUM
LOCATION OF WELL: County KI # 175	SUN JUN Sec 35 T. ZON., R/5 W.M
ocaring and distance from section or subdivision corner	
(3) PROPOSED USE: Domestic   Industrial   Municipal	(10) WELL LOG:
Irrigation  Test Well Other	Formation: Describe by color, character, size of material and structure, an 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
(4) TVPF OF WORK. Owner's number of well	
(if more than one)	MATERIAL FROM TO
New well	Clay-gravel CEMENTED 0 130
Reconditioned Rotary Jetted	GRAVEL (WATER BEARING) 130 132
(5) DIMENSIONS: Diameter of well	GRAVEL (WATER BEARING) 130 132
Drilled 145 ft. Depth of completed well 146 ft.	blue c/AY /32 /45
	The State
(6) CONSTRUCTION DETAILS:	
Casing installed: 6 " Diam. from O ft. to 130 ft.	
Threaded   Diam. from ft. to ft. Welded   Diam. from ft. to ft. to ft.	
Perforations: Yes 🗆 No 🗗	
Type of perforator used	
perforations from ft, to ft,	
perforations from ft. to ft.	
perforations from ft. to ft.	
Screens: Yes   No	4
Manufacturer's Name	
Type	
Diam. Slot size from ft. to ft.	
Crowd maked	
Gravel placed from ft. to ft.	
Surface seal: Yes No D To what depth? 25 ft.  Material used in seal BENTONITE	
Did any strata contain unusable water? Yes \( \) No \( \)	I I
Type of water? Depth of strata	
Method of sealing strata off	MEGEUVE III
(7) PUMP: Manufacturer's Name	
Туре: Н.Р	
(8) WATER LEVELS: Land-surface elevation	
(8) WAIER LEVELS: above mean sea level	A CONSEST OF ECOLOGY
Artesian pressurelbs. per square inch Date	CENTRAL REGION CO
Artesian water is controlled by(Cap, valve, etc.)	
lowered below static level	Work started 5 3 19.82. Completed 5 5 19.8
Was a pump test made? Yes No If yes, by whom?  Yield: gal./min. with ft. drawdown after hrs.	I THE TOTAL TRIBLE OF A PRIMITATION.
11 II II II II II	This well was drilled under my jurisdiction and this report
11 11 10 10	true to the best of my knowledge and belief.
Recovery data (time taken as zero when pump turned off) (water level	Prod D. Hora Co
measured from well top to water level)  Time Water Level   Time Water Level   Time Water Level	NAME BACK Dr. IIING Co. (Person, firm, or corporation) (Type or print)
27-14	
Date of test gal/min. with ft. drawdown afterhrs	[Signed] (Well Driller)
Artesian flowg.p.m., Date	1
Temperature of water Was a chemical analysis made? Yes [] No	License No. 22 Date 5 - 5 19.8

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### WATER WELL REPORT

5747 Start Card No. 28708

STATE OF WASHINGTON

Water Right Permit No. .

1	OWNER: Name CANdido Frietas	Address PEASE ROAD	<u> </u>
 (2)	LOCATION OF WELL: County Katt 14 45	5 KSW K Sec 35 T 20 N, R 15 W	/.M.
	STREET ADDDRESS OF WELL (or nearest address)		
	Competio	(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION  Formation: Describe by color, character, size of material and structure, and a thickness of aquifers and the kind and nature of the material in each stratum penetra	how
(4)	TYPE OF WORK: Owner's number of well	with at least one entry for each change of information.	<del>_</del>
	Abandoned New well Method: Dug D Bored D		<u> </u>
	Deepened Cable Driven L	SAND - 9 PAUE O 135  GRAVE WHY WATER 135 14	-
	THE STATE OF THE S	7 x x 2 x 1 x 2 x 1 x 2 x 1 x 1 x 2 x 1 x 1	_
(5)	DIMENSIONS: Diameter of well inches.  Depth of completed well ft.		
	Dilliedicot. Depth of complete		
(6)	CONSTRUCTION DETAILS:  Casing Installed: 6 Diam. from O ft. to 140 ft.		
	Welded		
	Perforations: Yes No No		
	Type of perforator used		
	SIZE of perforationsin. byin.		—
	perforations fromft. toft.	I BEVEN	<u>·</u>
	perforations fromft. toft.		
	Screens: Yes No 4	[LL] JUL 3   1990	
	Manufacturer's Name		<del>.</del>
-	Type         Model No.           Diam.         Slot size         from.         ft. to.         ft.	DEPARTMENT OF ECOLOGY CENTRAL REGION OFFICE	
٠.	Diam. Slot size from 1. to 1.	GENTRAL REGION OFFICE	<del>.</del>
	Gravel packed: Yes No Size of gravel	9	
	Gravel placed fromft. toft.	100	
	Surface seal: Yes No To what depth? 20 tt.		
	Material used in seal BENTONAG		
	Did any atrata contain unusable water? Yes No		
	Type of water?		
(7)	PUMP: Manufacturer's Name		
(8)	WATER & EVELS. Land-surface elevation		
(0)	Static level 115 ft. below top of well Date	· Women & Company of the company	
	Artesian pressure lbs. per square inch Date		
	Artesian water is controlled by(Cap, valve, etc.))	Work started 6- 14 , 19. Completed 6- 15 , 19	90
(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.	WELL CONSTRUCTOR CERTIFICATION:	wall
	и и и и	I constructed and/or accept responsibility for construction of this and its compliance with all Washington well construction stands	ards.
	II II II II II	Materials used and the information reported above are true to my knowledge and belief.	Dest
	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	NAME BACK Dr. III NG (PERSON, FIRM, OR CORPORATION) (TYPE OR PRIN	
			,'' -
		Address Rts BOX 1010 EllENShun	ž
	Date of test	(Signed) Trillo Beech License No. 22	
	Baller test gal./min. with ft. drawdown after hrs.	(WELL DRILLER)  Contractor's	
	Airtest gal./min. with stem set at ft. for hrs.	Registration No. MIKE BDC 133N4 Date 6-21 19	90
	Artesian flowg.p.m. Date		-
	Temperature of water Was a chemical analysis made? Yes No	(USE ADDITIONAL SHEETS IF NECESSARY)	

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# WATER WELL REPORT

Start Card No. 28706

/E7)		1
		入人
trans Diebs Donnis No.		-/\

	AA W. C Juck	Address PEASE		
)_	OWNER. Name 17 VI INC.			
(2)	LOCATION OF WELL: County KIHITAS	5 4 SW 8 Sec 35 T 26	<u>^</u> N., R_	<u>15</u> _w.m.
(2a)	STREET ADDDRESS OF WELL (or nearest address)			
(3)	PROPOSED USE: Domestic Industrial I Municipal I	(10) WELL LOG or ABANDONMENT PROCEDURE Formation: Describe by color, character, size of material and		
	Deviate:	thickness of squifers and the kind and nature of the material in each with at least one entry for each change of information.	stratum	penetrated,
(4)	TYPE OF WORK: Owner's number of well (if more than one)		FROM	TO
	Abandoned New well New Well New Well Cable Direct Driven	DIRT	0	8
	Reconditioned			
(5)	DIMENSIONS: Diameter of wellinches.	GRAVEL + CLAY	_8	60_
	Drilledfeet. Depth of completed wellft.	Comented SAND + GRAVEL	10	120
(6)			ı	
	Casing installed: Diam. from tt. to ft.	LOOSE SAND + GRAVEL	120	137
	Welded Diam from the fit.			
	Threaded Diam. from ft. to ft.			
	Perforations: Yes No			
	Type of perforator usedin. byin.			
	perforations fromft. toft.			
	perforations fromft. toft.			
	perforations fromft. toft.			<b></b>
	Screens: Yes No			
	Manufacturer's Name Model No			
	Diam. Slot size from ft. to ft.			
	DiamSlot sizefromft. toft.	CONTROL COSTA		
	Gravel packed: Yes No Size of gravel	277		<del> </del>
	Gravel placed fromft. toft.	The state of the s		<del> </del>
	Surface seal: Yes No To what depth?ft.			
	Material used in seal	FOR BONDE	Rid P	
	Did any strata contain unusable water? Yes No Depth of atrate	IN BUBIVE	₩	ļ
	Type of water? Depth of atrate		₩	<del> </del>
(7)		<u>                                       </u>	<del>                                     </del>	<del> </del>
			1	
(8)	Land-surface elevation	DEPARTMENT OF ECOLOGY		
(0)	Static levelft. below top of well Dateft.	CENTRAL REGION DIFICE	. ;	ļ
	Artesian pressure  bs. per square inch   Date			+
	Artesian water is controlled by (Cap, valve, stc.))	Work started 5 - 28 , 1970 mpleted	<u> </u>	1 1991
(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.	WELL CONSTRUCTOR CERTIFICATION:		alula
	n n n		truction	standards.
	n n n n		re true	to my best
	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	NAME BACH Drilling (PERSON, FIRM, OR CORPORATION)		OR PRINT)
		Address Ats Box 1010 EllENSba	7,0	UA,
	Date of test	(Signed) Wille Back License N	. 17	<u>_</u>
	Baller test gal./min. with ft. drawdown after hrs	(WELL DRILLER)	U. <u>v</u>	
	Airtest gal./min. with stem set at ft. for hrs	Registration BPC 133N4 Date 6-1-		19 90
	Artesian flow g.p.m. Date	1		
	Temperature of water Was a chemical analysis made? Yes No	(USE ADDITIONAL SHEETS IF NECESS	SARY)	

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

### WATER WELL REPORT

Application	No.	
		•

	2 1 de la companya de		·····
(1) OWNER: Name Charles Forey pohar	Address R+#4-Cle Elumiun.	989	<u> </u>
(2) LOCATION OF WELL: County Kittitas	5W 4 SW 4 Sec 35 T 2		
aring and distance from section or subdivision corner 20 N	House		
(3) PROPOSED USE: Domestic 🔀 Industrial 🗆 Municipal 🗆	(10) WELL LOG:		
Irrigation Test Well Other		l and stru	cture and
Triguitor - Total - Omite -	Formation: Describe by color, character, size of materia show thickness of aquifers and the kind and nature of i stratum penetrated, with at least one entry for each c	he materi	al in each
(4) TYPE OF WORK: Owner's number of well (if more than one)	MATERIAL	FROM	TO
New well 🔯 Method: Dug 🗌 Bored 🗅	BROZUM SIIT	(7)	7
Deepened ☐ Cable ☐ Driven ☐ Reconditioned ☐ Rotary ☐ Jetted ☐	READ SITTY, SAncies Grown Out	3	8.7
Reconditioned Rotary Jetted	0000190	54	
(5) DIMENSIONS: Diameter of well inches.	Claan Loose Sand Gravel	8/7	133
Drilled 201 ft. Depth of completed well 201 ft.	Blue Silty Clay	133	195
(6) CONSTRUCTION DETAILS:	FINE SAND-Winater	196	201
Casing installed: 6 "Diam. from 6 ft. to 194 ft.			
Threaded Diam. from ft. to ft.			
Welded [5] Diam. from ft. to ft.			<u></u>
Perforations: Yes   No   M			
Type of perforator used	<del></del>		
SIZE of perforations in. by in.			
perforations from ft. to ft.		<del>                                     </del>	<del> </del> -
perforations from ft. to ft.	<del></del>	ļ	
perforations from ft. to ft.		<del> </del>	
Screens: Yes 💢 No 🗆			
Manufacturer's Name			
Type Stolinks 5 5766/ Model No.  Diam. & Slot size 1010 from 196 ft, to 201 ft.			
Diam. Slot size from ft, to ft,			
· V			
Gravel packed: Yes □ No ♥ Size of gravel:			
Gravel placed from ft. to ft.	DECEIVED		
Surface seal: Yes No D To what depth? ft.	KEULIN		<b></b> _
Material used in seal fall like a lang		<b></b>	
Did any strata contain unusable water? Yes ☐ No ☑	DEC 13 tata	<del> </del>	·
Type of water?	or contogy	<del>                                     </del>	ļ
	DEPARTMENT OF ECOLOGY SOUTHWEST REGIONAL OFFICE	<del> </del>	<del></del>
(7) PUMP: Manufacturer's Name	SOUTHWEST MENTIONAL	<del> </del>	
Туре: Н.Р			
(8) WATER LEVELS: Land-surface elevation above mean sea levelft.			
Static levelft. below top of well Date b/9/79			
Artesian pressure			
Artesian water is controlled by(Cap, valve, etc.)		,	
(9) WELL TESTS: Drawdown is amount water level is			
lowered below static level	Work started 10/4 1974. Completed	0/9	19/5
Was a pump test made? Yes No If yes, by whom?  Yield: gal./min. with ft. drawdown after hrs.	WELL DRILLER'S STATEMENT:	-	
11 11 11 11	This well was drilled under my jurisdiction	and this	nanont ia
11 11 11	true to the best of my knowledge and belief.	and this	report is
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	NAME () ELKE ) K' 1 LL 1 A G (Person, firm, or corporation) (	(روس	
		- 7	
	Address 701-41 4 150	anolle	45. 983
		, U	y ·
Date of test	[Signed] // wee Oelk		
Sailer test Jul gal/min, with ft, drawdown after hrs.	(Well Driller)	,	
Artesian flow	License No. 0379 Date 10	129	19. 7
110m - 1.5		Δ	,
	ieets if necessary)	1	
ECY 050-1-20	1 V 1 1 V		3
•			

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

### **WATER WELL REPORT**

Start Card No. W 109573
UNIQUE WELL I.D. # #Fm 683

STATE OF WASHINGTON

Water Right Permit No.

(1)	OWNER: Name CLIFFORD WINFREY Adden	6025 maltby ra Woodinville wa98
2.	LOCATION OF WELL: COUNTY HITCH	. 52 1/4 SW/4 50036 T20 N. 16 W.M.
, (2a)	STREET ADDRESS OF WELL (or nearest address)	P
(3)	PROPOSED USE:  Domestic Industrial  Municipal	(10) WELL LOG OF ABANDONMENT PROCEDURE DESCRIPTION
	☐ Irrigation ☐ Other ☐ ☐ DeWater Test Well ☐ Other ☐	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
(4)	TYPE OF WORK: Owner's number of well (If more than one)	change of information.  MATERIAL FROM TO
	Abandoned ☐ New well	TOP Sail R6 m 0 2
	Reconditioned	Clay oracel BR MH 2 11
(5)	DIMENSIONS: Diameter of well 10 X 6 Inches.	sand graral CoBBL BR My 11 31
•	Drilled 395 feet. Depth of completed well 395 ft.	clay grand BR MH 31 36
(6)	CONSTRUCTION DETAILS:	(lay gray n 56 336
(0)	Casing installed: b Diam. from 3 ft. to 3 94 ft.	Clay grand orny at 336 355
	Welded 39 Diam. from ft. to ft.	sink sand 1 grapel gray m 355 395
	Liner installed Threaded Diam. from ft. to ft.	-
	Perforations: Yes No 🛣	
	Type of perforator used	
	SIZE of perforationsin. byin.	
	perforations from ft. toft.	
	perforations from ft. to ft ft ft. to ft	
_		
	Screens: Yes No No	PROPERTY CONTROL OF THE PROPERTY OF THE PROPER
	Manufacturer's Name Model No	1111 111 22 1000
	Slot size from ft. to ft.	
	Diam. Slot size from ft. to ft.	The same of the sa
	Gravel packed: Yes No Size of gravel	DE ARTMENT OF ECUL OF CONTRAL REGION OFFICE
	Gravel placed fromft. toft.	CATTIVILATE CONTROL OF THE CONTROL O
_	Surface seal: Yes 🖟 No 🗌 To what depth?ft.	
	Material used in seal Rentunite	
	Did any strata contain unusable water? Yes No No	
	Type of water? Depth of strata	
	Method of sealing strata off	
(7)	PUMP: Manufacturer's Name	
_	Туре: Н.Р	
(8)	WATER LEVELS: Land-surface elevation above mean sea level the	Work Started 7-6-99 19. Completed 7-13- 19.99
	Static level ft. below top of well Date	WELL CONSTRUCTOR CERTIFICATION:
	Artesian pressure ibs. per square inch Date Artesian water is controlled by	I constructed and/or accept responsibility for construction of this well, and its
_	Ariesian water is controlled by (Cap, valve, etc.)	compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.
(9)	WELL TESTS: Drawdown is amount water level is lowered below static level	
	Was a pump test made? Yes No If yes, by whom?hrs.	NAME WATER MAN WELL DY ILLOW INC. INC.
_		Address 106 Berriman In Selah Wa 98'
	" qîk Li <i>j</i> " " "	Address OB ICTITION OCCUR VOS
_	Recovery data (time taken as zero when pump turned off) (water level measured from well	(Signed) Chris Haller License No. 1908
	top to water level) Time Water Level Time Water Level Time Water Level	( CHRT'S HOYES)
_	1110	Contractor's Registration TERWDO22 DB 7/19/19/19 NAW FTERWDO22 DB 7/19/19/19
_	<u></u>	
	Date of test	(USE ADDITIONAL SHEETS IF NECESSARY)
	Date of test ft. drawdown after hrs.	
	Airtest gal./min. with stem set at ft. for hrs.	Ecology is an Equal Opportunity and Affirmative Action employer. For special accommodation needs, contact the Water Resources Program at (206)
	Artesian flowg.p.m. Date  Temperature of water	407-6600. The TDD number is (206) 407-6006.
	Temperature of water Was a chemical analysis made? Yes	1

(1) OWNER: Name FABIAN, GEORGE Address 27820	NE 141ST PLACE DUVALL, WA 98019-
(2) LOCATION OF WELL: County KITTITAS (2a) STREET ADDRESS OF WELL (or nearest address) ,	- N 1/4 NE 1/4 Sec 30 T 20 N., R 16 KM
(2) PROPOSED USE: DOMESTIC	! (10) VELL LOS
(4) TYPE OF WORK: Owner's Number of rell (If more than one) 1 NEW WELL Method: ROTARY	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 constrated, with
(5) DIMENSIONS: Discreter of well 6 inches Orilled 80 ft. Depth of completed well 90 ft.	at least one entry for each change in formation. 
(6) CONSTRUCTION BETRILS: Casing installed: 6 " Die. from 42 ft. to 23 ft.	! CLAY BROWN ! @ ! 10 ! CLAY BRAY SANDY ! 10 ! 18 ! CLAY SANDY ! 18 ! 58 ! SANDSTONE GRAY WITH WATER ! 59 ! 80 ! 80 !
Perforations: YES Type of perforator used SKILL SAW SIZE of perforations 1/8 in. by 6 in. 106 perforations from 62 ft. to 80 ft. perforations from ft. to ft. perforations from ft. to ft.	
Screens: NO Manufacturer's Name Type Model No. Diam. slot size from ft. to ft. Diam. slot size from ft. to ft.	
Gravel packed: NO Size of pravel Gravel placed from ft. to ft.	DEGELVE
Surface seal: YES To what depth? 20 ft. Material used in seal BENTONITE Did any strata contain unusable water? NO Type of water? Depth of strata ft. Method of sealing strata off OVERBORE	01-A11-A11-01 E-1007
(7) PUMP: Manufacturer's Mass Type H.P.	CONTRAL REGION OFFICE
(8) WATER LEVELS: Land-surface elevation above mean sea level ft. Static level 45 ft. below top of well Date 05/25/94 Artesian Proseure lbs. per square inch Date Artesian water controlled by	 
(9) MELL TESTS: Drawdown is amount water level is lowered bolow static level.  Has a gump test made? NO	WELL COMPTRICTOR CERTIFICATION:   I constructed and/or accept responsibility for con- ! struction of this well, and its compliance with all ! Washington well construction standards. Materials used ! and the information reported above are true to my best ! Unewledge and belief.
Time Mater Lovel Time Mater Lovel Time Mater Level	! NOME <b>PONDEROSA DRILLING</b> ! OPerson, fire, or corporation) (Type or print)
Date of test / / Bailer test gal/sin. ft. drawdown after hrs. Air test 15 gal/sin. m/ stee set at 79 ft. for 1 hrs. Artesian flow g.p.m. Date Temperature of water Mas a chesical analysis gade? NO	! Contractor's

Start Card No. W37259 Unique Well I.D. # ABL090 Water Right Perait No.

### STATE OF WASHINGTON

. (1) DWNER: Name FRAKER, TERRY N. Address 320 19T AVENUE ME ISSAGUAH, WA 98027-LOCATION OF WELL: County KITTITAS - 1/4 NE 1/4 Sec 30 T 20 M. R 16 MM (2a) STREET ADDRESS OF WELL for meanest address? (3) PROPOSED LISE: DOMESTIC 1 (18) 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 (4) TYPE OF WORK: Owner's Number of well (If more than one) NEW WELL Methed: ROTARY (5) DIMENSIONS: Discreter of well 6 inches | Drilled 140 ft. Depth of completed well 140 ft. | MOTERIOL TORSOIL ! 10 ! 35 ! 45 (5) CONSTRUCTION DETAILS: : ! CLOY BROWN
6 " Dia, from +2 ft. to 56 ft. ! CLOY DARK GRAY
4 " Dia, from -7 ft. to 140 ft. ! SANDSTONE CLAY
" Dia, from ft. to ft. ! SANDSTONE WITH WATER 10 35 45 100 Casing installed: 6 100 130 ! PLUE CLAY 140 Perforations: YES Type of perforator used SKILL SAW SIZE of perforations 1/8 in. by 6 104 perforations from 122 ft. to 140 ft. perforations from ft. to ft. perforations from / ft. to Screens: NO Manufacturer's Name Model No. Tues clot size slot size fro**z** fro**z** Diez. ft. to Dies. ft. to Gravel cacked: ND avel cacked: NO Size of pravel Gravel placed from ft. to ft. Material used in seal BENTONITE
Did any strate contain Surface seal: YES Did any strata contain unusable water? NO Tope of water? Depth of strata ft. Method of sealing strata off OVERBORE (7) PUMP: Manufacturer's Name Tube (8) WATER LEVELS: Land-surface elevation Static level 90 ft. below top of well Date 05/25/94
Artesian Pressure lbs. per square inch Date Artesian water centrelled by 1 Work started **05/25/94** Completed 05/25/94 (9) MELL TESTE: Drawdown is amount water level is lemened below ! MELL CONSTRUCTOR CEPTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all ft. drawdown ofter Washington well construction standards. Materials used and the information reported above are true to my best hnewledge and belief. Receivery data Time Water Level Time Water Level Time Water Level ! NAME PONDEROSA DRILLING (Borson, fire, or corporation) (Type or crint) l ADDRESS **E GOLO BROADWAY** Date of test / / Haller test gal/ein. ft. drawdown after Air test 7 gal/ein. W/ stee cet at 139 ft. for 1 Artesian flow E. D. E. hrs. SSIEMENT Roger Kelly License No. 2004 hrs. ! Artesian flow g.p.m. Date ! Contractor's
Temperature of water Was a chemical analysis made? NO ! Registration No. PO-NO-EI\*248JE Date 05/27/94 ----

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

Start Card No. \_

		Water right Fernit No.
(1)	OWNER: Name BOB Daniels	Address 10921 Rd 658 Meses LARE
	LOCATION OF WELL: County Kittatas	10 rth 1/2 1/2 Sec 30 T 20N, R/6 W.M.
(2a)	STREET ADDDRESS OF WELL (or nearest address)	
(3)	PROPOSED USE: ☐ Irrigation ☐ DeWater ☐ DeWater ☐ Industrial ☐ Municipal ☐ Test Well ☐ Other ☐	(10) WELL LOG OF ABANDONMENT PROCEDURE DESCRIPTION
(4)	TYPE OF WORK: Owner's number of well	Formation: Describe by color, character, eize 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.
· · /	Abandoned  New well  Method: Dug  Bored	MATERIAL FROM TO
	Deepened 🗆 Cable 🗀 Driven 🗀	Sandy Clay 6 60
	Reconditioned Rotary A Jetted	100 Clay 60 80 80 80 110
(5)	DIMENSIONS: Diameter of well inches.	B/901 Shi 40 110
	Drilled //O feet. Depth of completed well //O ft.	Breen Sheep
(6)	CONSTRUCTION DETAILS:	
	Casing Installed: Dlam. from 6 tt. to ft. to ft.	
	Welded         ☑           Liner installed         ☐           Threaded         □           Dlam. from         ft. to           tt.	
	Perforations: Yes No X	
	Type of perforator used	
	SIZE of perforations in. by in.	
	perforations fromft. toft.	
	perforations fromft. toft.	
	perforations from ft. to ft. to ft.	
	Manufacturer's Name	
	Type Model No	
-4.	Diamft. toft.	
	DiamSlot sizefromft. toft.	
	Gravel packed: Yes No Size of gravel	
	Gravel placed fromft. toft.	
	Surface seal: Yes No No To what depth? 93 tt.	13 6 6
	Material used in seal Bentonik	
	Did any strata contain unusable water? Yes No No No Depth of strata Depth of strata	
	Method of sealing strata off	
(7)	PUMP: Manufacturer's Name	4 199
	Туре:	ARIMEN
(8)	WATER LEVELS: Land-surface elevation above mean sea level ft.	The state of the s
	Static level 93 tt. below top of well Date	The state of the s
	Artesian pressure ibs. 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 lifyes, by whom?	
	Yield: gal./min. with ft. drawdown after hrs.	WELL CONSTRUCTOR CERTIFICATION:
	и и и п	I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards.
	Page 1977 data (time taken as many upon as many data (ti) (upon taken as many upon as many data (ti) (upon taken as many upon as many u	Materials used and the information reported above are true to my best knowledge and belief.
	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	2 / -
	Time Water Level Time Water Level Time Water Level	NAME DATE (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)
		73 - 2011
		Address 245 137412 1716365 X 4722
	Date of test	(Signed) (Let / E License No. 0116
	Bailer test gal./min. with ft. drawdown after hrs.	Contractor's (WELL DRILLER)
	Altest gal./min. with stem set at ft. for hrs.  Artesian flow g.p.m. Date	Registration No. DF Dr. (18) L Date, 19
	Temperature of water Was a chemical analysis made? Yes No	(LISE ADDITIONAL SHEETS IE NECESSARY)

ECY 050-1-20 (10/87) -1329- 0 18

### WATER WELL REPORT

Start	Card	Nο	22610	

UNIQUE	WELL	I.D.	#

Third	Copy—Driller's Copy	Water Right Permit No.		
(1)	OWNER: Name Fred Rourke	Address 3329 S. 248th Place, Ken	t, WA	98032
,	LOCATION OF WELL: County Kittitas	NE , NE , sec 30 T. 2	0N., R_	<u> 16Е <sub>w.м.</sub></u>
(2a)	STREET ADDDRESS OF WELL (or nearest address)			
(3)	PROPOSED USE:  ☐ Irrigation ☐ DeWater	(10) WELL LOG or ABANDONMENT PROCEDUI Formation: Describe by color, character, size of material an	d structure	, and show
(4)	TYPE OF WORK: Owner's number of well	thickness of aquifers and the kind and nature of the material in ea with at least one entry for each change of information.		
	Abandoned ☐ New well 💆 Method: Dug ☐ Bored ☐	MATERIAL	FROM	70
	Deepened ☐ Cable _☐ Driven ☐	Sandy Clay	0	34
	Reconditioned □ Rotary <sup>X</sup> □ Jetted □	Clay, Dk Brown, Soft	34	37
(5)	DIMENSIONS: Diameter of well 6 inches.	Sandstone, Clay Lt. Gray	37_	53
	Drilled 260 feet. Depth of completed well 260 ft.	Sandstone, Clay, Brown	53	90
<u></u>		Sandstone, Lt. Gray	90	95
(6)		Sandstone, Brown, Medium	95	110
	Casing installed: 6 Diam. from +2 ft. to 132 ft.	Clay, DK Brown, Soft	110	116
	Welded PVC 4 Diam. from 9 ft. to 260 ft.	Shale, Green, Medium	116	119_
	Threaded Digital from N. to N.	Shale, Gray, Clay	119	131
	Perforations: Yes No PVC Liner	Sandstone, Gray, Hard	131	198_
	Type of perforator used <u>Skill Saw</u>	Coal, Black	198_	204
	SIZE of perforations 1/8 In. by 6 in.	Sandstone, Lt. Gray, Medium Hard	204	260
	perforations fromft. toft.	**************************************		<u> </u>
	perforations fromft. toft.			<u> </u>
	Screens: Yes No X			<u> </u>
	Manufacturer's Name			
	Type Model No			<u> </u>
4	DiamSlot sizefromft. toft.			
	Diamft. toft.	GP		
	Gravel packed: Yes No X Size of gravel	Andrew G		<u> </u>
	Gravel placed fromft. toft.		<u> </u>	<del> </del>
	Surface seal: Yes No To what depth? 20 ft.  Material used in seal Bentonite	6" Drive Shoe Utilized		
	Did any strata contain unusable water? Yes No X			ļ
	Type of water?Depth of strata			<del>                                     </del>
	Method of sealing strata off			
(7)	PUMP: Manufacturer's Name			<u> </u>
	Type:H.P	·	<del> </del>	<del> </del>
(8)	WATER LEVELS: Land-surface elevation above mean sea level ft.		<del> </del>	<del> </del>
	Static level ft. below top of well Date lbs. per aquare inch Date		<u> </u>	<del>                                     </del>
			<del> </del>	·
	(Cap, valve, etc.))	Work started 9-29-93 , 19. Completed 9-3	30-93	19
(9)	WELL TESTS: Drawdown is amount water level is lowered below static level	Work chartes		
	Was a pump test made? Yes No X If yes, by whom?	WELL CONSTRUCTOR CERTIFICATION:		
	Yield: 8+ gal./min. with ft. drawdown after hrs.	I constructed and/or accept responsibility for cons		
	ESTIMATED AIRLIFT "	and its compliance with all Washington well con Materials used and the information reported above		
	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	knowledge and belief.  NAME Ponderosa Drilling & Developm (PERSON, FIRM, OR CORPORATION)		
		Address E. 6010 Broadway, Spokane	_ WA 9	7717
	Date of test	1	No. 206	ก
	Baller test gal./min. with ft. drawdown after hrs.	WELL DRILLERY (Date Di ga	10 <u>, 400</u> rd1	<u> </u>
	Airtest gai./min. with stem set at ft. for hrs.	Contractor's (Davented		00
	Arteelan flow g.p.m. Date	Registration No. PO-ND-EI*248JE Date September	<u>c 30</u>	, 19 <u>93</u>
	Temperature of water Was a chemical analysis made? Yes No	(USE ADDITIONAL SHEETS IF NECES	SSARY)	A

Start Card No. W 087259
UNIQUE WELL I.D. # A CX 586

Depa Seco	original and First Copy with rement of Ecology Ind Copy — Owner's Copy Copy — Driller's Copy STATE OF W/	L REPORT UNIQUE WELL I.D. # ACASHINGTON Water Right Permit No	× 6	586
(1)	· · · · · · · · · · · · · · · · · · ·	10633 347 AVE S.W. SEATTLE	WA.	98146
	LOCATION OF WELL: County K 277 \$ 7AS	_ NW 1/4 DE 1/4 Sec 30 T 20	) <sub>N, R</sub> /	<u>6€</u> w.m.
(2a)	STREET ADDRESS OF WELL (or nearest address) 91 BUEPA V	NEW RP. CLE ELUM, WA		
(3)	PROPOSED USE: Domestic Industrial   Municipal   DeWater   Test Well   Other	(10) WELL LOG or ABANDONMENT PROCEDURE DES Formation: Describe by color, character, size of material and structure, and sh and the kind and nature of the material in each stratum penetrated, with at it	ow thickness	s of agulfers
(4)	TYPE OF WORK: Owner's number of well (If more than one)	change of information.	FROM	то
	Abandoned	BROWN HARD CLAY	0	26
(5)	DIMENSIONS: Diameter of well 6 Inches.	GRAY CLAY, BROKEU BASALT	26	47
(6)	Drilled	BROWNISH GRAY CLAY	47	54
(0)	Casing installed: Diam. from + 1/2 ft. to 67/2 ft. Welded Plam from + 1/2 ft. to 21/2 ft.	STACKY SHALE	54.	66
<u></u>	Liner installed Threaded Dlam. from ft. to ft.	GRAY CLAYSTONE SAND STONE	66	78
	Perforations: Yes No SKIL SAW  Type of perforations in. byin.	SHALE 3-54PMO 82+87'	78	87
	12   perforations from   159   ft. to   179   ft. to   179   ft. to   179   ft.	BROWN CUAY SHALE	87	95
	perforations from 199 ft. to 219 ft.	GRAY SAPOSTEDE E VE DI	95	99
	Screens: Yes No Manufacturer's Name Model No.	BROWN CUM JUN 3 0 1998	99	100
	Olam. Slot size from ft. to ft.	GRAY CLAY SHALE	100	108
	Gravel packed: Yes No Size of gravel	DEPARTMENT OF ECOLOGY CENTRAL REGION OFFICE	108	110
_	Gravel placed fromft. toft.  Surface seal: Yes X No □ C To what depth?	CRAY CLAY SHALE	110 144	152
	Material used in seal SENTURTE	SHALE MAX	<b>15</b> \	174
	Did any strata contain unusable water? Yes No No Depth of strate	GRAY SANDSTONE, 1-3 WM	174	178
	Type of water? Depth of strate  Method of sealing strata off	HARD CRAY (BLUE), CLAY	178	182
		GHALE	<u>187</u> 214	214
(7)	PUMP: Manufacturer's Name			
(8)	WATER LEVELS: Land-surface elevation above mean sea level ft. below top of well Date 5-21-98	Work Stated	<u> </u>	9 <u></u>
•	Artesian pressure ibs. per square inch Date	WELL CONSTRUCTOR CERTIFICATION:  I constructed and/or accept responsibility for construction	of this w	ell, and its
<u></u>	(Cap, vaive, etc.)	compliance with all Washington well construction standards the information reported above are true to my best knowledge	s. Materiais	s usea ana
(9)	WELL TESTS: Drawdown is amount water level is lowered below static level  Was a pump test made? Yes No If yes, by whom?	NAME TUMW ATER DET LINE (PERSON, FIRM, OR CORPORATION) (TYPE OR		Twe,
_	11 11 15 15 15	Address LEAVENWORTH W	<del></del>	
_	Recovery data (time taken as zero when pump turned off) (water level measured from well	(Signed) (WELLEN WELLEN STATE )	se No	249
_	top to water level) Time Water Level Time Water Level Time Water Level	Contractor's Registration No. TWWWANT 1330 C Date 5 ~ 3	12_	. 19 <b>98</b>
-		(USE ADDITIONAL SHEETS IF NECESS	ARY)	_, 10
	Date of test  Baller test gal./min. with ft. drawdown after hrs.		- -	r Forens
	Airtest gal./min. with stem set at ft. for hrs.  Artesian flow g.p.m. Date needs No.	Ecology is an Equal Opportunity and Affirmative Action cial accommodation needs, contact the Water Resource 407-6600. The TDD number is (206) 407-6006.	es Progra	m at (206

### WATER WELL REPORT

Start Card No. 34141

STATE OF WASHINGTON Third Copy-Dritter's Copy Water Right Permit No. . PenKins Stere OWNER: Name. Address Kittilai NIN & NE & Sec. 30 T. 20 N. R. LOCATION OF WELL: County\_ Sprin STREET ADDDRESS OF WELL (or nearest address). Domestic Irrigation PROPOSED USE: Industrial | Municipal (10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION Test Well ☐ DeWater Other 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, TYPE OF WORK: Owner's number of well (if more than one) \_\_\_\_ with at least one entry for each change of information. Method: Dug MATERIAL Abandoned New well Bored D O Cable 🔲 Deepened Driven [] Reconditioned Rotary Dc Jetted □ 21 DIMENSIONS: Diameter of well. inches. 180 feet. Depth of completed well\_ **CONSTRUCTION DETAILS:** Casing installed: . Diam. from\_ Welded \* Diam, from. Liner installed 🗌 Threaded Diam. from. Perforations: Yes No D Type of perforator used . \_ in. by \_ SIZE of perforations \_ \_ perforations from \_ ft. to ft to . perforations from . perforations from \_\_\_ No S Screens: Yes Manufacturer's Name Туре \_ \_ft. to\_ ft. Dlam.\_\_ Sint size \_from\_ Gravel packed: Yes ... No Size of gravel Gravel placed from No To what depth?. Surface seal: Yes Benonite Material used in seal \_ Did any strata contain unusable water? Yes Type of water? DEFANTS OF Method of sealing strata off. CENTARIA REBIDA (7) PUMP: Manufacturer's Name Type:\_ Land-surface elevation (8) WATER LEVELS: above mean sea level ft. below top of well Date \_ Artesian pressure \_ ....lbs. per square inch Date. Artesian water is controlled by .\_\_\_ (Cap, valve, etc.)) 9-20 Work started. 19. Completed. 19 WELL TESTS: Drawdown is amount water level is lowered below static level Was a pump test made? Yes No If yes, by whom?\_ **WELL CONSTRUCTOR CERTIFICATION:** Yield: \_ \_\_ gal./min. with \_\_ ft, drawdown after 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. Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level) Time Water Level Water Level narican ican Priblic (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT) Bailer test \_\_ gal./min. with \_\_\_\_ \_\_\_\_\_ft. drawdown after \_\_\_ Contractor's \_\_\_gal./min. with stem set at \_\_\_183 Registration . Jak 12 10 W Date 10 -\_\_\_\_\_ g.p.m. Date .

Temperature of water\_

4 S

\_ Was a chemical analysis made? Yes 🔲 🛛 No 🔲

# WATER WELL REPORT

Water Right Permit No. \_\_\_\_

STATE OF WASHINGTON

Start	Card	No. M	<u> </u>	107	0	$oldsymbol{\perp}$
		- •			180	

.(1)	OWNER: Name Boyce + Brooke Heiden	reichodress 3002 Sahalee DR. W.R.	edn
٠,	LOCATION OF WELL: County KA THITZ)	NW NE 1 Sec 30 120 N R 16	Ev.
(2)	1 state of	~ Soring 1 #20 (le Elun WA	-
(28)	STREET ADDDRESS OF WELL (or nearest address)		<u> </u>
(3)	PROPOSED USE: M Domestic Industrial ☐ Municipal ☐ Irrigation ☐ DeWater Test Well ☐ Other ☐	(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION Formation: Describe by color, character, size of material and structure, and	
(4)	TYPE OF WORK: Owner's number of well (if more than one)	thickness of aquifers and the kind and nature of the material in each stratum pene with at least one entry for each change of information.	
	Abandoned New well Method: Dug Dored	MATERIAL FROM TO	<u>~</u>
	Deepened □ Cable □ Driven □	Clay Drown Downary of 3	<u> </u>
	Reconditioned  Rotary Jetted	Sougstone Drown 52 4	7
(5)	DIMENSIONS: Diameter of well inches.	15 m/a/4/2	4
	Drilled 260 feet. Depth of completed well 260 ft.	Clay Duc 1/640 april 155	
(6)	CONSTRUCTION DETAILS:	tan puew ragers printing 2	18
<b>\</b> -,	Casing installed: 10 Diam. from 0 ft. to 40 M	Jana Stans Wife land	(37
	Welded $\mathbf{M}$ Sign from $\mathbf{M}$ to $\mathbf{M}$ to $\mathbf{M}$	Cond Stone What his alt 11271	¥t,
	Liner installed Threaded Diam. from ft. to ft.	Philalite Brown Blech Soft 5 1-1	<del>53</del>
-	Perforations: Yes No X	Flow Blue Trees Ohile lite 551	ŽŽ
	Type of perforator used	Sand tone a ray low & 821	8-8
	SIZE of perforations in. byin.	Clas Blue True Phiclite 18801	95
	perforations fromft. toft.	Kand Stone acan best 195/2	33
	perforations fromft. toft.	Clar Rhu trans Philatin 2332	57
	perforations fromft. toft.	Sand group white 2572	60
	Screens: Yes No No	satis bearing	
	Manufacturer's Name		
	Type Model No		<u> </u>
	Diam,ft. toft.		
	DiamSlot sizefromft. toft.		
	Gravel packed: Yes No Size of gravel		
	Gravel placed from ft. to ft.		
	Surface seal: Yes No To what depth? On the Waterial used in seal Sento with the Waterial used in seal Sento with the water the	NOV 1.7 994	<del></del>
	Did any strata contain unusable water? Yes No X		
	Type of water?Depth of strata	· · · · · · · · · · · · · · · · · · ·	
	Method of sealing strata off	<u> </u>	
(7)	PUMP: Manufacturer's Name		
	Type:H.P		
(8)	WATER LEVELS: Land-surface elevation 200 0 ft		
(0)	Static levelft. below top of well Date (2)/10/94		
	Artesian pressureIbs. per square inch Date		
	Artesian water is controlled by(Cap, valve, etc.))	1,3/41/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1	·
(0)	WELL TESTS: Drawdown is amount water level is lowered below static level	Work started 6/9/99, 19. Completed 6/10/99, 1	19
(0)	Was a pump test made? Yes No No If yes, by whom?	WELL CONSTRUCTOR CERTIFICATION:	
	Yield: gal./min. with ft. drawdown after hrs.	I constructed and/or accept responsibility for construction of this	e wall
-	11 11 11 11	and its compliance with all Washington well construction stand	dards.
	" " " " " " " " " " " " " " " " " " "	Materials used and the information reported above are true to my knowledge and belief.	y best
	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	Mark Blech	
	<u> </u>	NAME (PERSON, FIRM, OR CORPORATION) (TYPE OR PR	INT)
		DO V Sof Cho Clu WA	-5x
		Address Address	
	Date of test	(Signed) License No.	7
	Bailer test gal./min. with ft. drawdown after hrs.	Contractor's (WELL DRILLER)	
	Airtest	Registration and was seen ( / / )	2.
	Artesian flow g.p.m. Date	No. A-MERIDIO Date Q/12/, 1	7
	Temperature of water Was a chemical analysis made? Yes No	(USE ADDITIONAL SHEETS IF NECESSARY)	45

3

### File Original and First Copy with Department of Ecology

Temperature of water

ECY 050-1-20 (7/97)

Was a chemical analysis made? 

Yes

### **WATER WELL REPORT**

STATE OF WASHINGTON

Start Card No.	113151
UNIQUE WELL I.D. #	ABA1674

Ecology is an Equal Opportunity and Affirmative Action employer. For special accommodation needs, contact the Water Resources Program at (360) 407-6600. The TDD number is (360) 407-6006.

Water Right Permit No.

Second Copy - Owner's Copy Third Copy - Driller's Copy

,	OWNER: Name	SII Rain	VILLIA	Ad	tress_3407	34th ave	5.	u Sao	Hewa
(2)	LOCATION OF WELL	L: County	itas		VW 1/4 NY	21/4 Sec3O_T	ac	2 <sub>N.R</sub> ↓6	<u>,                                    </u>
(2a)	STREET ADDRESS	OF WELL: (or neare	st address)					L, A	
(3)	PROPOSED USE:	Domestic Irrigation DeWater	☐ Industrial☐ Test Well	☐ Municipal ☐ Other	Formation: Desc and the kind and	OG or ABANDONMENT cribe by color, character nature of the material in	, size of ma	aterial and st	ructure,
(4)	TYPE OF WORK:	New well Deepened	f well (if more than one Method : □ Dug	□ Bored	To P Soil	MATERIAL  12 (2)	nation.	FROM	ТО
		☐ Reconditioned	Rotary	☐ Driven ☐ Jetted	CLAY	Tan	m	1	9
(5)	Diffed 275	Diameter of well feet. Depth of con	noleted well 7.7	inch	t Clay	Vrange 74	1 m	19	-19 27
,	CONSTRUCTION DE	<del></del>	ተኃ	2 ft. to 703	Sand Stone	Clay grave) A	m	27 57	57
	■ Welded ■ Liner installed ■ N □ 36/e3ded	<u> </u>	Diam. from Diam. from Diam. from	15 ft. to 2.25 ft. to	tt. Cemented	gravel Mclay	7		94
Seived	Perforations:  Type of perforator use SIZE of perforations	X Yes No		V <sub>0</sub>		Melay Coal gray Bluck	n4	110	141
Received	SIZE of perforations	90 perfor	rations from 175	ft. to 215 ft. to 255	t. Sandstone	BLUE green	734	141	158 167
_	Screens:	perfo	rations from	ft. to	sandstands	Bruggerenge	n m	167	187
	Manufacturer's Name Type Diam.		Model I	No		e & Coal BZu			201
						gray white	my	206	-211
	Gravel packed: Gravel placed from	☐ Yes <b>56</b> No	Size of gravel _ ft. to		n. Jankstu	e gray Brown		216	275
	Surface seal: Material used in seal Did any strata contain Type of water? Method of sealing stra	unusuable water?		<u>.                                    </u>	- C Luy	STUM		F 13	
• •	PUMP: Manufacturer	's Name		н.р					
. ,	WATER LEVELS: La Static level Artesian pressure Artesian water is cont	140	ft. below top of well lbs. per square incl	Date <u>24-7.6-9</u>	<del>-</del>	<u> 21 - , 19 99</u> . c		476	<u>r</u> , 19 <u><b>4</b></u>
	<del></del>		(Cap, valve, etc.)			LUCTION CERTIFICATI			مغالمين وأما
	Yield:	le? D Yes D No gal./min. with gal./min. with gal./min. with	o If yes, by whom? tt. drawdou tt. drawdou ft. drawdou ft. drawdou		compliance with and the informations.	and/or accept responsible that all Washington well of ation reported above are (Person, Firm, or Core)	e true to m	standards. y best knowle	Materials used edge and belief
	Time Water Le	vel Time	Water Level	Time Water Leve	(Signed) Contractor's f Registration	HUS'HUSE FIERWOO	10.5 H	License No	190/ 1/28/c
	Date of test Bailer test Airtest Atesian flow	gal./min. with gal./min. with st	ft. dr	awdown afterh		(USE ADDITIONAL S	HEETS IF	NECESSAR	Y)

**€**No

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

### WATER WELL REPORT

Star

rt Card No	080527	_
•		17
		- 1 1

Third	Copy—Driller's Copy	Water Right Permit No.		
(1)	OWNER: Name_Bill_Rainville	Address 3407 34th Ave S.W. Se	attle	Wa
2)	LOCATION OF WELL: County Kittitas		20 <sub>N., R</sub>	26 <sub>W.M.</sub>
(2a)				
(3)	PROPOSED USE: Domestic Industrial Municipal	-	<del></del>	PIDTION
(0)	Irrigation   DeWater   Test Well   Other	(10) WELL LOG or ABANDONMENT PROCEDU		
	D DOTTALO	Formation: Describe by color, character, size of material and thickness of aquifers and the kind and nature of the material in e	ach structure	, and snow penetrated,
(4)	TYPE OF WORK: Owner's number of well (if more than one)	with at least one entry for each change of information.  MATERIAL	FROM	то
	Abandoned New well Method: Dug Depend Cable Driven Driven		0	70
	Reconditioned Rotary L Jetted	Er.clay Candstone	70	168
(5)	DIMENSIONS: Diameter of well 6 inches.	Bn. rock	168	_ 100
ν-,	Drilled 492 feet. Depth of completed well 492 ft.	Sandstone & rock	170	195
	The state of the s	Gray sandrock	195	243
(6)	CONSTRUCTION DETAILS:	Gray sandstone	243	270
	Casing installed: 6 Diam from +2 ft. to 180 ft.  Welded \( \sqrt{1} \) Diam from +2 ft. to 492 ft.	Phyillite, sandrock & water	270	2 <b>8</b> 5
	Liner installed (A)	Sandstone	285	363
.—	Threaded U Diam. fromft. toft.	Brown rock	363₹	365
	Perforations: Yes 🔀 No	Gray sandstone	365	393
	Type of perforations 3/8 in. by in.	Sand rock and gray clay	393	410
	SIZE of perforations       3/8       in. by       in.         100       perforations from       220       ft. to       240       ft.	Sandstone, shale, clay & water	410	41.5
	100 perforations from 360 ft. to 380 ft.	Gray sandstone	415	478
	100 perforations from 470 ft. to 492 ft.	Gray sandrock	478	492
	Screens: Yes No X		<del> </del>	
	Menufacturer's Name		<del> </del>	
	Туре Model No		·	
	Diamft. toft.		<del></del>	-
	Diamft. toft.	,	-	
	Gravel packed: Yes Nox Size of gravel	17-12-12-12-12-12-12-12-12-12-12-12-12-12-		
	Gravel placed fromft. toft.	Un F P P		
	Surface seal: Yes No To what depth? 30 ft.		T'	
	Material used in seal Bentonite		Inii	
	Did any strata contain unusable water? Yes No.	MAR - 6 Igo	<b>     </b>	
	Type of water?Depth of strata	3.39	الع	
	Method of sealing strata off	DEPARTMENT OF FOR		
(7)	PUMP: Manufacturer's Name	GENTRAL MEGION SCHOOL	<del>                                     </del>	<del></del>
	Type:H.P			
(8)	WATER LEVELC. Land-surface elevation		<del>                                     </del>	
(0)	Static level 220 ft. below top of well Date 1/31/91		<del> </del>	
	Artesian pressure lbs. per square inch Date		<u> </u>	ļ
	Artesian water is controlled by(Cap, valve, etc.))			ļ
<del>(0)</del>		Work started 12/13/90 , 19. Completed 2 1	/27/91	
(9)	WELL TESTS: Drawdown is amount water level is lowered below static level Was a pump test made? Yes No 12 If yes, by whom?			
	Yield: gal./min. with ft. drawdown after hrs.	WELL CONSTRUCTOR CERTIFICATION:		
	" " " " " "	I constructed and/or accept responsibility for cons and its compliance with all Washington well con		
	0 0 0 0	Materials used and the information reported above knowledge and belief.		
	Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)	Kilowiedge and belief.		
	Time Water Level Time Water Level Time Water Level	NAME Water Wells Drilling		
		(PERSON, FIRM, OR CORPORATION)	(TYPE O	R PRINT)
		Address 5503 Ahtanum Rd., Yakima,	Wa	
	Date of test	1 1 1 1		
	Bailer test gal./min. with ft. drawdown after hrs.	(Signed) West DRILLER)	No. 08	54
	Airtest = gal./min. with stem set at292 _ft. for3hrs.	Contractor's		
	Artesian flow g.p.m. Date	Registration No. WATER WP 111 Q Boate 2/7/	<u> </u>	, 19
	Temperature of water Was a chemical analysis made? Yes NoX	•		
		LISE ADDITIONAL SHEETS IE NECES	~~~~·	

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

ECL 050-1-20 (2/93) \*\*1

# WATER WELL REPORT

Start Card N	o. <u>W 3</u>	927	z./

UNIQUE WELL I.D. #\_

Thire	STATE OF W.	ASHINGTON Water Right Permit No.		
(1)	OWNER: Name CHARLE PARKS Addr	985 2727 303 SE FAU. CITY	WAS	780 <u>2</u>
(ک)	LOCATION OF WELL: County KITT ITAS	NW 114 NW 114 Sec 30 T. &	<u>о</u> <sub>N. R</sub> _	16 W.M.
	STREET ADDRESS OF WELL (or nearest address) LANGON 5	PRINES		
(3)	PROPOSED USE: Domestic Industrial Municipal	(10) WELL LOG or ABANDONMENT PROCEDURE D	ESCRIPTI	ON
	DeWater Test Well Other	Formation: Describe by color, character, size of material and structure, and and the kind and nature of the material in each stratum penetrated, with	show thickne at least one e	es of aquifers entry for each
(4)	TYPE OF WORK: Owner's number of well (if more than one)	change of information.		
• •	Abandoned New well Method: Dug . Bored .	MATERIAL	.FROM	то
	Deepened ☐ Cable ☐ Driven ☐		<u> </u>	<u> </u>
	Reconditioned ☐ Rotary ✓ Jetted ☐	50K	0	5
(5)	DIMENSIONS: Diameter of well inches.	SANDSTONE, BROWN G-RAVEL	5	125
	Drilled 380 feet. Depth of completed well 380 ft.	SANDSTONE, BLUE, CLAY	125	130
(6)	CONSTRUCTION DETAILS:	COAL	/30	260
• •	Casing installed: 6 Diam. from 0 ft. to 40 ft.	SANDSTONE, BLUE; CLAY	260	268
	Welded 9 9 Diam. from 5 ft. to 380 ft.	SANDSTONE, BLUE, CLAY	268	320
	Threaded Diam. from ft. to ft.	COAL	320	325
	Perforations: Yes 🗹 No 🗌	SANDSTONE, BLUE; CLAY	325	360
	Type of perforator used SKILSA(A)	COAL	360	365
	SIZE of perforations 1/8 in. by 71/4 in.	SANDSTONE BLUEICLAY	365	380
	<b>60</b> perforations from 320 ft. to 360 ft.	SAMOSI CICE , BEEZ , EL TI	0-5	
	perforations from ft. to ft.			<u> </u>
	perforations fromft. toft.			
	Screens: Yes No 🗹			1
	Manufacturer's Name	Marine.		
1	Type Model No			
	Diam. Slot size from ft. to ft.			
	Diam Slot size from ft. toft.	3 572 845		
	Gravel packed: Yes No Size of gravel	DEC 1 1883		
	Gravel placed fromft. toft.	330		
	Surface seal: Yes No To what depth? 20 ft.	The state of the s	8	
	Material used in seal BENTONITE			
	Did any strata contain unusable water? Yes No No	The state of the s		
	Type of water? Depth of strata			
	Method of sealing strata off		<u> </u>	
			<b> </b>	<b></b>
(7)	PUMP: Manufacturer's Name		-	<u> </u>
			ļ ·	<u> </u>
(8)	WATER LEVELS: Land-surface elevation above mean sea level		<del> </del>	<del> </del>
	Static level /35 tt. below top of well Date ///18 93		<del> </del>	<del> </del>
	Artesian pressure ibs. per square inch Date Artesian water is controlled by		<del>                                     </del>	<del> </del>
	(Cap, valve, etc.)	Work Started ////3 ,19. Completed //	116	11 93 . 19 93
(9)	WELL TESTS: Drawdown is amount water level is lowered below static level		•	
	Was a pump test made? Yes No If yes, by whom?	WELL CONSTRUCTOR CERTIFICATION:		
	Yield:gal./min. withft. drawdown afterhrs.	I constructed and/or accept responsibility for construction		
	11 11 11 11	compliance with all Washington well construction standard the Information reported above are true to my best knowled		
	31 11 11 11		•	
	Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)	NAME BACH DELLCING CO. (TYPE'O	O DOINT	<u> </u>
	Time Water Level Time Water Level Time Water Level	, , , , , , , , , , , , , , , , , , , ,	n Franti,	
	<del></del>	Address <u>27 5 Boy 1010</u>		<del></del> .
		(Signed) Licer	se No. <u>/</u>	778
	Date of test	(WELL DRIJKER)		
	Baller test gal./mln. with / ft. drawdown after hrs.	Contractor's		
	Airtest 11/2 gal./mln. with stem set atft. forhrs.	Registration No. MIKE BOC 13.3N4 Date 11/16		_ 19_ <del>9</del> 3
	Artesian flow g.p.m. Date	(USE ADDITIONAL SHEETS IF NECESS	ARV\	
	Temperature of water Was a chemical analysis made? Yes No.	(ODE NODITIONAL SHEETS IT MECESS	ent i J	

File Original and First Copy with Department of Ecology

ECY 050-1-20 (9/93) \* \* f

## WATER WELL REPORT

Start Card No.	4308	73	4/	

Second Copy — Owner's Copy
Third Copy — Driller's Copy
STATE OF WAS

**I** UNIQUE WELL I.D. #\_\_

Thire	I Copy — Driller's Copy STATE OF W	ASHINGTON Water Right Permit No.		
	OWNER: Name MIKE SHEA Addi	ess		
(2)	LOCATION OF WELL: County KITT 17AS	- NW 1/4 NW 1/4 Sec 30 T. 20	O N.R	/6 w.m.
	STREET ADDRESS OF WELL (or nearest address)			<u> </u>
(3)	PROPOSED USE: Domestic Industrial  Municipal	(10) WELL LOG or ABANDONMENT PROCEDURE DE	SCRIPT	ION
	☐ Irrigation ☐ Other ☐	Formation: Describe by color, character, size of material and structure, and show thickness of a and the kind and nature of the material in each stratum penetrated, with at least one entry fo		
(4)	TYPE OF WORK: Owner's number of well (if more than one)	change of information.	-	·
	Abandoned ☐. New well 💢 Method: Dug ☐ Bored 🗇	C/AV SOIL	FROM	TO / C
	Deepened ☐ Cable ☐ Driven ☐ Reconditioned ☐ Rotary 🕅 Jetted ☐	UAY 3012	_0	18
(5)	DIMENSIONS: Diameter of well inches.	Clay SUL + ROCKS	18	30
- ,4	Drilled 320 feet. Depth of completed well 320 ft.	Rhank		1157
(6)	CONSTRUCTION DETAILS:	Brown Cenerted GraveL	30_	48
	Casing installed: 6 Diam. from 0 ft. to 4 ft. Welded Diam. from 0 ft. to 320 ft.	WHITE GARRITE + WHITE	48	150
	Weided Diam. from tt. to 320 ft. Liner installed Threaded Diam. from ft. to ft.	SANDROCK	34.0-	12.5
	Perforations: Yes No No	WHITE SANDROCK DECOMPOSED	150	160
	Type of perforator used	VHITE WATER WHITE SANDROCK	160	255
	SIZE of perforations         in. by         in.           perforations from         ft. to         ft.			
	perforations from ft. to ft ft. to ft.	Brown SANDROCK	253	275
	perforations from ft. to ft.	WHITE SANDROCK	275	320
	Screens: Yes No No			
	Manufacturer's Name Model No			-
	Diam. Slot size from ft. to ft.			<del> </del>
	Diam. Slot size from ft. to ft.			<del> </del>
	Gravel packed: Yes No Size of gravel	S B I V E I		
	Gravel placed fromft. toft.		<del></del>	
	Surface seal: Yes No To what depth?ft.  Material used in seal	131 691 3 1996		
	Did any strata contain unusable water? Yes No V	35		
	Type of water? Depth of strata	DEPARTMENT OF FCOLOGY		
	Method of sealing strata off	C. Mish. Ri-Gion V		
(7)	PUMP: Manufacturer's Name			
/O\	WATER LEVELS: Land-surface elevation	a /s		
(0)	Static levelft. below top of well Date AUG 20 90	Work Started <u>8/5</u> , 19. Completed <u>8/1/</u>		19 <u> <i>9</i> 6</u>
	Artesian pressure lbs. per square inch Date	WELL CONSTRUCTOR CERTIFICATION:		
	Artesian water is controlled by(Cap, valve, etc.)	I constructed and/or accept responsibility for construction compliance with all Washington well construction standards.	. Materials	used and
(9)	WELL TESTS: Drawdown is amount water level is lowered below static level	the information reported above are true to my best knowledge	and belie	ef.
	Was a pump test made? Yes No If yes, by whom?  Yield:gal./min. withft, drawdown afterhrs.	NAME BACH DRILLING (PERSON, FIRM, OR CORPORATION) (TYPE OR F	DINT	
	11 11 11 11	Address 3340 WILSON CRE	•	
	H 11 11 11	0 1011		607
	Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)	(Signed) License	) No. <u>U</u>	997
1	ime Water Level Time Water Level Time Water Level	Contractor's		
		Registration No. MIKE BOC 133-9 Date 8/10		_ 19 <i>_96</i>
	Date of test	(USE ADDITIONAL SHEETS IF NECESSA	ιRY)	-
	Bailer test gal./min. with ft. drawdown after hrs.			_
	Airlest 45 gal./min. with stem set at 300 ft. for hrs.  Artesian flowg.p.m. Date	Ecology is an Equal Opportunity and Affirmative Action e cial accommodation needs, contact the Water Resources		
	Temperature of water Was a chemical analysis made? Yes No	407-6600. The TDD number is (206) 407-6006.		(200)

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# WATER WELL REPORT

Application No.

STATE OF W			
(1) OWNER: Name RUSSELL Q. LAMPHEAR	AddressWHITE ROAD, CLE ELUM, WASH.	7	
LOCATION OF WELL: County KITTITAS WITHIN THE	IE W1/2 N.W.1/4 $_{14}$ $_{14}$ $_{16}$ Sec 30 $_{17}$ 20	) <sub>N, R</sub> 1	.6E <sub>w.м</sub>
Laring and distance from section or subdivision corner		· · · · · · · · · · · · · · · · · · ·	
(3) PROPOSED USE: Domestic 🗽 Industrial 🗆 Municipal 🗆	(10) WELL LOG:		
Irrigation   Test Well   Other	Formation: Describe by color, character, size of materia show thickness of aquifers and the kind and nature of t stratum penetrated, with at least one entry for each cl	l and strue he materi hange of i	cture, and al in each lormation.
(4) TYPE OF WORK: Owner's number of well 1 (if more than one)	MATERIAL	FROM	то
New well	TOP SOIL & ROCK BR. MED.	0	3
Reconditioned [ Rotary T Jetted [	BR. SHALE HD.	3	14
(5) DIMENSIONS	BR. BLDRS. & CLAY HD.	14	41
(5) DIMENSIONS: Drilled 247  ft. Depth of completed well 247  ft.	BR. CLAY & SHALE HD. (TRACE OF WATE		79.
Diffied Tephn of completed well	BLUE SHALE HD.	79	88
(6) CONSTRUCTION DETAILS:	LAYERS OF SANDSTN & CLAY HD. BLUE	88	127
Casing installed: 6" Diam. from 11 tt. to 204 tt.	GREY HD. SANDSTONE	127	167
Threaded []	BROWN SANDSTONE HD.	167	174
Welded [] 1t ft. to ft.	GREY SANDSTONE & STREAKS OF SHALE	HD174	186_
Perforations: Yes X No D.		W.186	197
Type of perforator used TORCH	GREY SNDSTN & STREAKS OF SHALE BROWN SANDSTONE HD.	197	228
SIZE of perforations 1/8. in by 65 4 in in in in in in in in in in in in in	BROWN SANUSTONE HU.	228	247
perforations from	SMALL TRACES OF WATER FROM 197 TH	BH 5/12	, •
perforations fromft. toft.	APROX. 6 GPM.		
<del></del>			
Screens: Yes No 💢			
Manufacturer's Name			
Diam. Slot size from ft. to ft.			
Diam Slot size from ft. to ft.			
Gravel packed: Yes   No   Size of gravel;			
Gravel placed from			
Surface seal: Yes X No To what depth? 30 ft.  Material used in seal CEMENT		<del></del>	
Did any strata contain unusable water? Yes Tr No	· · · · · · · · · · · · · · · · · · ·		
Type of water? COAL Depth of strata 10			
Method of sealing strata off CASED			· <del></del>
(7) PUMP: Manufacturer's Name			
Type: HP			
(8) WATER LEVELS. Land-surface elevation			·
above mean sea level ft.			<del>-</del>
Static level 51		ļ	
Artesian water is controlled by		<b></b>	
(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?	Work started6/28/78, 19 Completed.7/1	3/78	, 19
Yield: gal./min. with ft. drawdown after hrs.	WELL DRILLER'S STATEMENT:		
" 7 GPM (G) 247' " "	This well was drilled under my jurisdiction a	and this	report is
0 11 0	true to the best of my knowledge and belief.		
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)	NAME RIEBE WELL DRILLING (R.R.BR	T ጥጥረ እ፣ \	
Time Water Level   Time Water Level   Time Water Level	111111111111111111111111111111111111111	Type or pr	rint)
	YAKTMA, WASH.		-
	Address		
Date of test	Lesing Vol C 1) in		
Bailer testgal./min. withtt. drawdown afterhrs.	[Signed] (Well Driller)		
Artesian flow	License No. 421 Date 7/13/	78	40

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## **WATER WELL REPORT**

Start Card No. W 093841

UNIQUE WELL I.D. # ACL-653

eco hird	nd Copy — Owner's Copy Copy — Driller's Copy STATE OF W.	ASHINGTON Water Right Permit No		
_	OWNER: Name DON NYMEN Addr	905 PO, BOX 148 CLEEN WOOD	<u> 1890</u>	D C
 2)	LOCATION OF WELL: County KITTLAS	- 5W14 NW1/4 Sec 30 T. 2	D <sub>N,R</sub> [	<u> </u>
2a)	STREET ADDRESS OF WELL (or nearest address)		<u>-E</u>	
3)	PROPOSED USE: Domestic Industrial   Municipal	(10) WELL LOG or ABANDONMENT PROCEDURE DE	ESCRIPTI	ON
, 	☐ Irrigation ☐ Other ☐ ☐	Formation: Describe by color, character, size of material and structure, and and the kind and nature of the material in each stratum penetrated, with a change of information.	show thickne it least one e	ss of aquifers entry for each
4)	TYPE OF WORK: Owner's number of well (If more than one)	MATERIAL MATERIAL	FROM	то
	Abandoned   New well 'Sa' Method: Dug   Bored   Deepened   Cable   Driven	Clay-base Topsoil	0'	21
	Deepened ☐ Cable ☐ Driven☐ Reconditioned ☐ Rotary ☐ Jetted ☐	clay-brown	7	15'
5)	DIMENSIONS: Diameter of well 1011 X 6" inches.	clay tamvel brown	15'	36
	Drilled 85' feet. Depth of completed well 69' ft.	Shale-brown + Sandstone	36'	43'
(6)	CONSTRUCTION DETAILS:	Sandstone - blue gray + coal	43'	46,
υ,	Casing Installed: 6 Diam. from +2. ft. to 43 ft.	Sandstone-gray + clay	59'	62'
	Maldad	Clay-5 ray	621	65
	Weided Uner installed Σ. Threaded Diam. from ft. to ft.	Sandstone - 1 3064 (with water)		
	Perforations: Yes No 🗌	Shale-derk syay	651	76'
		Clay -Sing-broken	701	721
	SIZE of perforationsin. byin.	Shale - crey	721	25
	40 perforations from 69 ft. to 49 ft.	3 1		
	perforations from ft. to ft.			ļ
	perforations from ft. to ft.			<u> </u>
	Screens: Yes No No		<del>                                     </del>	
	Manufacturer's Name Model No	70 Fd 3	<del></del>	<u> </u>
	Type Model No Dlam Slot size from ft. to ft.	TO EGET VE	-	<del>                                     </del>
	Diam. Slot size from ft. to ft.	1015	<del></del>	
	Gravel packed: Yes No Size of gravel	101 21 1098		<del>                                     </del>
	Gravel placed fromft. toft.	JUL 3   1998		<u> </u>
	Surface seal: Yes No To what depth? 23 tt.  Material used in seal  But ovitage.	DEPARTMENT OF ECOLOGY CENTRAL REGION OFFICE	i	
	Did any strata contain unusable water? Yes No	CENTRAL MEGIS	·	
	Type of water? Depth of strata			ļ
	Method of sealing strata off		<u> </u>	<u> </u>
			<del> </del>	<del> </del>
(7)	PUMP: Manufacturer's Name		<del>                                     </del>	<u> </u>
(8)	WATER LEVELS: Land-surface elevation	Work Started	24	19 <i>¶8</i>
ν-,	above mean sea level  Static level ft. below top of well Date ft.	WELL CONSTRUCTOR CERTIFICATION:		
	Artesian pressure lbs. per square inch Date	•	n of thin u	oll and its
	Artesian water is controlled by(Cap, valve, etc.)	I constructed and/or accept responsibility for construction compliance with all Washington well construction standard	is. Material	s used and
(9)	WELL TESTS: Drawdown is amount water level is lowered below static level	the information reported above are true to my best knowled	ge and beli	ef.
•	Was a pump test made? Yes No No If yes, by whom?	I NAMELADIER MAN WELL UNILLA	ain	
	Yield:gal./min. with ft. drawdown after hrs.	(PERSON, FIRM, OR CORPORATION) (TYPE &	R PAINT)	110 a
	11 11 11 11	Address Ublerr Man In St	aan	Way
	n n n n	Colonell Kelle Alersa Licen	nse No. 🥒	217
	Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)	(Signed) (WEXT DRILLER) Licer	100 110	
	Time Water Level Time Water Level Time Water Level	Contractor's		٠.
		Registration TERWDO 20203	7/211	192
			CADV	
_	Date of test	(USE ADDITIONAL SHEETS IF NECESS	omnt)	
	Bailer test gal./min. with ft. drawdown after hrs.	Forlow is an Equal Considering and Affirmation Assista	 Lemploye	r Enrene
	Airtest gal./min. with stem set at ft. for hrs.	Ecology is an Equal Opportunity and Affirmative Action clal accommodation needs, contact the Water Resource	es Progra	m at (206)
	Artesian flowg.p.m. Date Temperature of water Was a chemical analysis made? Yes \ No \	407-6600. The TDD number is (206) 407-6006.	•	
	remperature of water was a chemical analysis made? Tes NO	1		

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UNIQUE WELL I.D. # ACC

Thir	1 Copy — Driller's Copy	Water Right Permit No.	
(1)	TWNER: Name Hugh Strok Add	ross660 Power Line rd Cle Eliam	, Wa 98°
— (2)	LOCATION OF WELL: County CHT 765	5W14he 1480030 T. 20	L, R 1 (W.M.
(2a)	STREET ADDRESS OF WELL (or nearest address)		<u> </u>
(3)	PROPOSED USE: Domestic Industrial   Municipal	(10) WELL LOG or ABANDONMENT PROCEDURE DESCR	RIPTION
	☐ Irrigation ☐ Cther ☐ ☐ DeWater Test Well ☐ Cther ☐	Formation: Describe by color, character, size of material and structure, and show the and the kind and nature of the material in each stratum penetrated, with at least	
(4)	TYPE OF WORK: Owner's number of well (If more than one)	change of information.	
	Abandoned   New well   Method: Dug   Bored	MATERIAL FRO	
	Deepened ☐ Cable ☐ Driven☐ Reconditioned ☐ Rotany 20 Jetted ☐	Topsoil Brown m C Vay + Gravels TAN m Z	
<u></u> (5)	DIMENSIONS: Diameter of well 10 x 6 inches.	Clay Cobbles + gravel Brown MH 8	
ν-,	Drilled 665 feet. Depth of completed well 440 ft.	Clay gravel +AN MH 28	
		Clay gray m 56	
(6)	CONSTRUCTION DETAILS:	Jahdstone white m 6:	3 83
	Welded PVC Diam. from -5 ft. to -440 ft.	Chy shell Blue green m 8.	
	Wedged Diam. from 5 ft. to -940 ft.  Threaded Diam. from ft. to ft.	Clay + Coal, Blue green Black M 8	9 ///
		Clay + blue gray m III	119
	Perforations: Yes No  Type of perforator used  SKILSAW	Sandstone Bluegray MI+ 119	9 /33
	SIZE of perforations 7/4 in. by // in.		33 164
	$\frac{227}{2}$ perforations from $\frac{260}{2}$ ft. to $\frac{420}{2}$ ft.	Sandstone Bluegreen MH 16	
	perforations from CIL 107 D DIZ 12 ft.	Dandstone WClay leases Blue gray MH /	71 192
	perforations from 2 Gr. td2 V E	Coal BIK 19	
	Screens: Yes No V		28 209 29 Z3/
	Manufacturer's Name		31 250
	Vpe Model No.		250 3/2
	Jiam. Slot size from ft. to tt	Sandstone MChyt Coal lenses Bluegray BIK MH 2 Sandstone WClay lenses gray mH 3/2	
	Diam. Slot size from DETARTMENT OF ECCLUGY ft	Frechuld Soundstone Brown MH 32	
	Gravel packed: Yes No Size of gravel	Sandstone Wylan lenses aren MIT 34	<del></del>
	Gravel placed fromtt. tott.	Sandstone Why shales Brown Blk MH 35	
	Surface seal: Yes X No To what depth? 20 ft.	Sandstones Willy lenses Blue gray MH 34	
	Material used in seal Benton : Te	Squestones willey knows white mH 41	16 451
	Did any strata contain unusable water? Yes No	Coal Black " M 45	1 456
	Type of water? Depth of strata	Sandstone grow MH 45	56 467
	Method of sealing strata off	Sandstone Millay Perses gray mit 40	67 548
<del></del>	Dino		
(7)	PUMP: Manufacturer's Name	Confinued on py. 2	
(8)	WATER I EVE S. Land-surface elevation	Work Started 9-8- 1978 completed 9-	-16,1998
ν-,	Static level	Ton Canto	. 12 13 10
	Artesian pressure tbs. per square inch Date	WELL CONSTRUCTOR CERTIFICATION:	
	Artesian water is controlled by(Cap, valve, etc.)	I constructed and/or accept responsibility for construction of thi compliance with all Washington well construction standards. Mate	is well, and its
(9)	WELL TESTS: Drawdown is amount water level is lowered below static level	the information reported above are true to my best knowledge and	
	Was a pump teşt, made? Yes ☐ No █ If yes, by whom?	NAME INTERMED WELL DOTTE	nalho
	Yield: /-//2 gal./min. with ft. drawdown after hrs.	(PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)	<del>you</del>
	" ESTIMPTED "AIRUFT "	Address Ob BCMMany Sela	h Wa
	n n n	10 m Ola visil on m	1920
	Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)	(Signed) License No.	1700
٦	ime Water Level Time Water Level Time Water Level	Contractor's (Chris Hayes	5)
		Registration 70 Plum 12 DR 9/10/10	1 8/10
_		Not In the second of the secon	19
	Date of test	(USE ADDITIONAL SHEETS IF NECESSARY)	
	Baller testgal./min. with ft. drawdown after hrs.	Factor to a Familia to the state of the stat	<b>-</b>
	Attacles flow gal./min: with stem set atft. forhrs.	Ecology is an Equal Opportunity and Affirmative Action emplo cial accommodation needs, contact the Water Resources Pro	
	Artesian flow g.p.m. Date	407-6600. The TDD number is (206) 407-6006.	אומוו מו (בטט)

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**WATER WELL REPORT** 

Start Card No.	004	7 <del>393</del>
	111	947

Second Copy — Owner's Copy

Start Card No.	<u> </u>	<u> </u>		
UNIQUE WELL I.D	.# /	4CL	940	)

Thire	Copy — Driller's Copy	Water Right Permit No.	
(1)~	OWNER: Name Hugh Stroh Add	tress (eleo power them cle Ellem	U
— (2)	LOCATION OF WELL: COUNTY L'HTTLS	5WANE AS 30 TOON, A 1C	w.m.
(2a)	STREET ADDRESS OF WELL (or nearest address)		
(3)	PROPOSED USE: Domestic Industrial   Municipal	(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION	
	☐ Irrigation ☐ Other ☐	Formation: Describe by color, character, size of material and structure, and show thickness of aq and the kind and nature of the material in each stratum penetrated, with at least one entry for	
(4)	TYPE OF WORK: Owner's number of well (If more than one)	change of information.  MATERIAL FROM TO	
	Abandoned   New well   Method: Dug   Bored   Deepened   Cable   Driven	MALENAL FROM II	
	Reconditioned Rotary Jetted J	Sandstone Black MH 548 55	56
(5)	DIMENSIONS: Diameter of well inches.	Sandstone W/C/ay lenses gray MH 556 56	
	Drilledfeet. Depth of completed wellft.	Sendstone Blue gray MH 561 57	
(6)	CONSTRUCTION DETAILS:		<u>07</u>
	Casing installed: * Diam. from ft. to ft.	Cay shell Bluegray Black My 107 6/ Sandstone willey Shell Bluegray Black MX 619 66	
	Welded Diam. from ft. to ft.	Course forth safety safety safety safety	
	Threaded Dlam. from ft. to ft.		
	Perforations: Yes No No		
	Type of perforation used in. by in.		
			—
_	perforations from ft. to ft.	greet in the control of the control	·
	Screens: Yes No No	EGENVE.	
	Manufacturer's Name	U T	
	Vpe         Model No.          iam.         Slot size         ft.		1
	Diam. Slot size from ft. to ft.	, tuli tuli tuli tuli tuli tuli tuli tuli	<u>}</u>
_	Gravel packed: Yes No Size of gravel	DEPARTMENT OF FCOLOGY	<del>:</del>
	Gravel placed fromft. toft.	CENTRAL REGION OFFICE	<u>}</u>
	Surface seal: Yes No To what depth? ft.  Material used in seal	1	<del></del>
	Did any strata contain unusable water? Yes No		
	Type of water? Depth of strata		
	Method of sealing strata off		<del></del>
(7)	PUMP: Manufacturer's Name		
(8)	WATER LEVELS: Land-surface elevation	Work Started 2-9-, 1978Completed 8-/6, 19.	97
`	above mean sea level		
	Artesian pressure lbs. per square inch Date	WELL CONSTRUCTOR CERTIFICATION:	
· 	Artesian water is controlled by(Cap, valve, etc.)	I constructed and/or accept responsibility for construction of this well, and compliance with all Washington well construction standards. Materials used	its and
(9)	WELL TESTS: Drawdown is amount water level is lowered below static level	the information reported above are true to my best knowledge and belief.	
	Was a pump test made? Yes No If yes, by whom?  Yield:gal./min. withft. drawdown afterhrs.	NAME (VOLKY) (PERSON, FIRM, OR CORPORATION) (TYPE OF PRINT)	
	11 11 11 11	Auditation of the state of the	_4
	" " " " " " " " " " " " " " " " " " "	(Signed) License No. / Co	<u>3</u>
-	top to water level) Time Water Level Time Water Level Time Water Level	(WELLER) (CAMS HAYES)	
		Contractor's Registration 76 PL 100-20 PR 9/22 100	/
-	<del></del>	NotWHICKWNO do band 7/30/989	
	Date of test	(USE ADDITIONAL SHEETS IF NECESSARY)	
	Bailer testgal./min. withft. drawdown after hrs.		
	Airtestgal./min. with stem set atft. forhrs.	Ecology is an Equal Opportunity and Affirmative Action employer. For s cial accommodation needs, contact the Water Resources Program at (2	
	Artesian flow g.p.m. Date Temperature of water Was a chemical analysis made? Yes No	407-6600. The TDD number is (206) 407-6006.	,
	110 C	1	

# File Original with Department of Ecology Second Copy - Owner's Copy Third Copy - Driller's Copy

### **WATER WELL REPORT**

Notice of Intent _	W	10	46	15	
UNIQUE WELL I.	D.#	ACX	<b>一</b>	<u>r 63</u>	2

	TIAGI III TO IT		
-		Motor Dight	Dormit A

$\overline{}$	OWNER: Name	Hugh				ross 660 Powerline ra CIE FIL	
	LOCATION OF WELL	•				1/4 DC 1/4 Sec 30 T 20 N.R. 16	12 day
(2a)	TAX PARCEL NO.: _	•	st address)		- — -	(-	5
(3)	PROPOSED USE:	Domestic Irrigation DeWater	☐ Industrial ☐ Test Well	☐ Municipal ☐ Other		(10) WELL LOG or DECOMMISSIONING PROCEDURE DESC Formation: Describe by color, character, size of material and struct the kind and nature of the material in each stratum penetrated, will one entry for each change of information. Indicate all water encount	ture, and h at least
(4)	TYPE OF WORK:	Owner's number of New Well	well (if more than one Method:	)	-	MATERIAL FROM	TO
	•	▼ Deepened	□ Dug	☐ Bored			166'
		☐ Reconditioned ☐ Decommission	☐ Cable ☐ Rotary	□ Driven □ Jetted		Sandstone + Shale - Sugg-avn." 160'	744
/ <u>5</u> \	DIMENSIONS:		10" × 6"X	111	inches		200'
(5)	Drilled 305'	feet. Depth of com	_	*. ,			.07
			pieteu weii			C04) -	
(6)	CONSTRUCTION DE Casing Installed:	ETAILS		7		alcles on with els M 207	251
	₩ Welded		Diam. from	ft. to	ft.	shale gray with white chan " 251'	228'
	Liner installed  Threaded	_ <b>4-</b> "	Diam. from	ft. to <u>305</u> ft. to	ft.	sandstone white with in 278'	290'
	- Illieaded		Diam. nom	1.10		gray shale -	<u></u>
				•		shele-stras with clay in 290'	298'
	Perforations:	Yes □ No					305'
	Type of perforator us	ed SKI	( <u>S</u> cu)in. by	7	<del></del>	4	<del></del>
	SIZE of perforations	14	in. by	. 0.2	in.	I I	
		perfora	ations from1 <b>45</b> '	ft. to	ft.		
	Screens:		-Pac Location				
-	Manufacturer's Name	) <u></u>	Model N				
	Nam G	Slot Size	Model N from	0		Prince Polymenton	
	Diam	Slot Size	from	ft. to	ft.		
_	<del></del>		Size of gravel/sand_				
	Material placed from		ft. to		ft.	SEP 2 2 1900	
	Surface seal:	☐ Yes ☐ No	To what depth?	<del></del>	ft		
	Material used in seal					DETARTMENT OF ECOLOGY CENTRAL REGION OFFICE	
	•	n unusable water?		n4a		CENTRAL REGION OFFICE	
	Method of sealing sta		Depth of stra	ala		Andrew Control of the	
_							
(7)	PUMP: Manufacture	r's Name	· · · · · · · · · · · · · · · · · · ·				
	Type:			1.P			)aa-
(8)	WATER LEVELS: L	and-surface elevation	above mean sea leve		ft.	9/19/199 9/60/	97
	Static levelAem Artesian pressure	K. 152.	ft. below top of well lbs. per square inch	Date Date		Work Started 4/49, 94. Completed 1/40.	<u>TI</u>
	Artesian water is con						
	·		(Cap, valve, etc.	)		WELL CONSTRUCTION CERTIFICATION:	
(9)	WELL TESTS: Draw	vdown is amount water	er level is lowered belo	w static level	•	I constructed and/or accept responsibility for construction of the	is well, and it
			If yes, by whom?			compliance with all Washington well construction standards. and the information reported above are true to my best knowled	Materials used doe and belie
			ft. drawdowr			Type or Print Name Kells Office License No. 12	•
-			ft. drawdowr ft. drawdowr				
			ump turned off) (water				
	well top to water leve	el)				Trainee Name License No.	
	Time Water I	_evel Time	Water Level	Time Wate	er Level		
						(Signed) Kelly Olim License No. (Picensed Driller/Engineer)	141
•		·				Address 106 Barrinan land S	clahlo
	Date of test						Q'i
	Bailer test		ft. draw		hrs.	Contractor's Registration No. WHTERM WOCOMO DC	<u></u>
	Airtest Artesian flow		ft. draw- g.p.m.		hrs.	,	
			g.p.m. nemical analysis made		<del></del>	(USE ADDITIONAL SHEETS IF NECESSARY)	
•	,					Ecology is an Equal Opportunity and Affirmative Action employ	er. For specia
ECY	′ 050-1-20 (11/98)					accommodation needs, contact the Water Resources Program 6600. The TDD number is (360) 407-6006.	at (360) 407

Fife Original and First Copy with

## **WATER WELL REPORT**

Start Card No.	W	000	139	37
- · · · · -		0	20	<u> </u>

Department of Ecology	
Second Copy — Owner's (	
Third Copy Driller's Cop	ру

ECY 050-1-20 (9/93) \* \* f

Start Card No	VV	U	<u> </u>	101
UNIQUE WELL I.D.	#	0	39	ACI

٠		Matel Light Letting Inc.		
	OWNER: Name Hugh Stroh Add	ress 660 Yowerlinerd Cless	um	wa
(2)	LOCATION OF WELL: COUNTY KIHITAS	- SWIANE 1/4 Sec 30 T.	70 H	1972
(2)		- <u>002/4//e, 1/4 Sec. 00 T. 2</u>	<u> </u>	7 <b>G</b> W.M.
(2a)			<del>(</del>	<u> </u>
(3)	PROPOSED USE: Domestic Industrial	(10) WELL LOG or ABANDONMENT PROCEDURE DI		
(4)	☐ DeWater Test Well ☐ Other ☐  TYPE OF WORK: Owner's number of well	Formation: Describe by color, character, size of material and structure, and and the kind and nature of the material in each stratum penetrated, with a change of information.	show thickness it least one e	ss of aquifers entry for each
(")	(If more than one)	MATERIAL	FROM	то
	Abandoned   New well   Method: Dug   Bored   Deepened   Cable   Driven	Topsoil Brown M	$\mathcal{D}$	.3
	Reconditioned ☐ Rotary  ✓ Jetted ☐	Clays Gravel Brown MH	3	12
(5)	DIMENSIONS: Diameter of well /OX6 Inches.	Clay Gravels Cobbles Brown MH	12	72
	Drilled 365 feet. Depth of completed well 365 ft.	Clay Gravels Copples Boulders Brown	22	
(6)	CONSTRUCTION DETAILS:	Multicolors H	119	48
	Casing installed: 6 Diam. from +2 ft. to -85 ft.	Sandstones Blue Gray Mit	48	<i>67</i>
	Welded Diam. from tt. to tt.	Coal Black m	87	90
	Threaded Diam. from ft. to ft.	Clay shell Blue green mH	90	92
	Perforations: Yes No No No No No No No No No No No No No	Clay Gray on	92	99
	Type of perforation sed in. by in. by	Coal Black m	99	100
	perforations from SP to 7 1300	Sandstone Bluegray MH	100	107
	perforations from ft. to ft.	Sandstones " Chy lenses white mit	135	135
	perforations fromt tot.	Dandstones white mit Sandstones Way lenses gray mit	149	171
	Screens: Yes LI No X	Sandstones Ple arowel arow mit	176	193
	Manufacturer's Name	Coal Black 0 ms	193	194
	Type Model No Diam Slot size from ft. to ft.	Clayshell Blue MH	194	211
	Diam. Slot size from ft. to ft.	Clay Willy shell blue in	21/	217
	Gravel packed: Yes No Size of gravel	Clay of Clay Shell gray mit Sandstone white my	230	241
	Gravel placed fromft. toft.	Krokstone arm m4	230	758
	Surface seal: Yes X No To what depth? 20 ft.	andstone white mis	283	266
	Material used in seal Bentonite	Coal Black Mo	266	267
	Did any strata contain unusable water? Yes No 🖾	Sandstone Bluegray MH	267	271
	Type of water? Depth of strata	Sandstone of Clay lenses Bluegray MH	27/	28/
	Method of sealing strata off	Myshell Blue grant "MH	28/	188
(7)	PUMP: Manufacturer's Name	Continued	<u> </u>	
	Type:H.P	7		
(8)	WATER LEVELS: Land-surface elevation above mean sea level	Work Started 9-1-985. Completed	9-8	19 <u>98</u>
	Static level	WELL CONSTRUCTOR CERTIFICATION:		
	Artesian water is controlled by	constructed and/or accept responsibility for construction	of this wo	ii and ite
<del></del>	(Cap, valve, etc.)	compliance with all Washington well construction standards the information reported above are true to my best knowledge	. Materials	used and
(9)	WELL TESTS: Drawdown is amount water level is lowered below static level  Was a pump test made? Yes \( \sum \) No \( \sum \) If yes, by whom?	(1) 24 to Man (1) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	e and belle	ı. ./
	Yield: 1/2 - 2 gal./min. with ft. drawdown after hrs.	NAME CULL IN USE OF OR PORATION OF OR		
	" FSTIMHTED GIRLIFT "	West Ob Borne Man		Onh
	" " " "	Address Of A (A)	<u>السيالة</u>	300/
	Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)	(Signed) Licens	- 5	108
Т	me Water Level Time Water Level Time Water Level	Contractor's Contractor's	125)	
_		Registration TO MANA A A A A A A A	9/10	lac
		No. WHI CIOWO October 1015	101	19 <u>2</u>
	Date of test	(USE ADDITIONAL SHEETS IF NECESSA	(RY)	
	Baller testgal./min. with ft. drawdown after hrs.	Ecology is an Equal Operation to a 4 400 - 100 - 4 10		Can
	Airtestgal./min. with stem set atft. forhrs.  Artesian flowg.p.m. Date	Ecology is an Equal Opportunity and Affirmative Action of cial accommodation needs, contact the Water Resources		
	Temperature of water Was a chemical analysis made? Yes No 50%	407-6600. The TDD number is (206) 407-6006.		

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

# **WATER WELL REPORT**

UNIQUE WELL I.D. # ACC

STATE OF WASHINGTON

Water Right Permit No.

(1)	OWNER: Name Hugh Stroh Add	*** \$440 technique (460 foinerline
(2)	LOCATION OF WELL: County KIHITOS	. 5W14 NC 1/4 Sec 30 T. 201, R 16 WM.
(2a)	STREET ADDRESS OF WELL (or nearest address)	Cos
(3)	PROPOSED USE: Domestic Industrial Municipal Industrial Other Delivers Test Well Other	(10) WELL LOG OF ABANDONMENT PROCEDURE DESCRIPTION  Formation: Describe by color, character, size of material and structure, and show thickness of aquifers
	Dewater	and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.
(4)	TYPE OF WORK: Owner's number of well (if more than one)	MATERIAL FROM TO
	Abandoned   New well   Method: Dug   Bored   Deepened   Cable   Driven	
	Reconditioned ☐ Rotary ☐ Jetted ☐	Continued from 14
(5)	DIMENSIONS: Diameter of well inches.	Sandstones Willay lenses Bluegray MH 288 303 Con 1 BIK MS 203 304
	Drilledfeet. Depth of completed wellft.	Coal BIK MS 203 304 Sandstones Bluegray MH 304 305
(6)	CONSTRUCTION DETAILS:	Sondstones W/Clay/Enset gray MH 305 309
	Casing installed: Diam. from tt. to tt. Welded  tt.	Sandstones white mit 309 334
	Welded         □         Diam. from         ft. to         ft.           Liner installed         □         □         Diam. from         ft. to         ft.           Threaded         □         □         ft.         ft.         ft.         ft.	Sandstones Blue MH 384 337
		Soundstones Fractures DEK Gray MH 337 339
	Perforations: Yes No Type of perforator used	Sundstones gray MH 345 365
	SIZE of perforationsin. byin.	50.43 ph 3 91.44
	perforations fromft. toft.	
	perforations fromft. toft.	
	Screens: Yes No Manufacturer's Name	
_	Manufacturer's Name  Type Model No	The state of the s
	Diam. Slot size from ft. to ft.	
	Diam. Slot size from ft. to ft.	A CONTRACT A CONTRACT AS CONTRACT.
	Gravel packed: Yes No Size of gravel	SEP 107 1999
	Gravel placed fromft. toft.	
•	Surface seal: Yes No To what depth?ft	DEL'ARTIMENT OF ECOLOGY
	Material used in seal  Did any strata contain unusable water? Yes \( \square\) No \( \square\)	CENTRAL REGION OFFICE
	Type of water? Depth of strata	To you.
	Method of sealing strata off	
(7)	PUMP: Manufacturer's Name	<del> </del>
(,,	Type:H.P	
(8)	WATER LEVELS: Land-surface elevation above mean sea level ft.	Work Started 9-1 ,190 Completed 9-8 ,1998
•	Static level ft. below top of well Date	WELL CONSTRUCTOR CERTIFICATION:
	Artesian pressure ibs. per square inch Date Artesian water is controlled by	
	(Cap, valve, etc.)	I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and
(9)		the information reported above are true to my best knowledge and belief.
	Was a pump test made? Yes No If yes, by whom?	NAME Water II an Wellength
	19 19 19 19 19 19 19 19 19 19 19 19 19 1	Address 10le Berryman, In Selah Wa
	9 9 9	Address WW AN AN AN AN AN AN AN AN AN AN AN AN AN
	Recovery data (time taken as zero when pump turned off) (water level measured from well	(Signed) License No. // U
	top to water level) Time Water Level Time Water Level Time Water Level	Contractor's (Chris HAYES)
_		Contractor's Registration TERWIOO23 DB 9/10/98
• • • • • • • • • • • • • • • • • • • •		•
•	Date of test	(USE ADDITIONAL SHEETS IF NECESSARY)
	Bailer test gal./min. with ft. drawdown after hrs.	Ecology is an Equal Opportunity and Affirmative Action employer. For spe-
	Alrtestgal./min. with stem set atft. forhrs.  Artesian flowg.p.m. Date	cial accommodation needs, contact the Water Resources Program at (206)
	Temperature of water Was a chemical analysis made? Yes No	407-6600. The TDD number is (206) 407-6006.
ECY	r 050-1-20 (9/93) * * f	lage 2

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## WATER WELL REPORT

Start Card No. 10164905\*
UNIQUE WELL I.D. # 456456

STATE OF WASHINGTON

Water Right Permit No.

(1)	OWNER: Name CUNT SAMPSON Addr	885 1701 Airport Ro. Cle Elim		
(2).	LOCATION OF WELL: County HITTI Tres	. FW 1/4 N E 1/4 Sec. 3 D T. 2	ک <sub>N., R</sub>	16 W.M.
		EASTON, WA- 98925		<u> </u>
(3)	PROPOSED USE: Domestic Industrial   Municipal	(10) WELL LOG or ABANDONMENT PROCEDURE DI		
<u></u>	DeWater Test Well Other TYPE OF WORK: Owner's number of well	Formation: Describe by color, character, size of material and structure, and and the kind and nature of the material in each stratum penetrated, with a change of information.	snow tnickner at least one e	ntry for each
(7)	(If more than one)	MATERIAL	FROM	TO
	Abandoned M New well M Method: Dug Bored Deepened Cable D Driven	SANDY LEARS YGIL	٥	12
	Reconditioned □ Rotary 💢 Jetted □	great CIAN H	12_	98
(5)	DIMENSIONS: Diameter of well 6 inches.	Grit in clay gray 14	980	104
	Drilled 224 feet. Depth of completed well 224 ft.	CLAY H.	104	110
		COATE GILL S. IT WB SAND FINE S	110	132
(6)	CONSTRUCTION DETAILS:	Soupy clay & SAND 50+ 6PM5	132	144
	Casing installed: 6 Dlam. from 13 ft. to 217 ft.	Will Not clean up 5	144	195
	Welded	HEAU, MY SAND GWL SILT 5	195	197
	Threaded Diam. from ft. to ft.	clay gray H	197	224
٠	Perforations: Yes No 🔀	<u> </u>		
٠	Type of perforator used			
	SIZE of perforationsin.			<u> </u>
	perforations fromft. toft.			
	perforations from ft. to ft. perforations from ft. to ft.			
	perforations fromft. toft.			·
	Screens: Yes No X	And the state of t		
	Manufacturer's Name	DECENTED	<b> </b> -	
,	Type Model No			
	Diam. Slot size from ft. to ft.		ļ	
	Dlam, Slot size from ft. to ft.			<u> </u>
	Gravel packed: Yes No Size of gravel			
	Gravel placed fromft. toft.	NE VENEUS OF POOL COV		
	Surface seal: Yes No To what depth?	DEJARTMENT OF ECOLOGY  CENTRAL REGION OFFICE		
	Material used in seal Comment Burton: he			ļ
	Did any strata contain unusable water? Yes 🔼 No 🗌		<u> </u>	ļ
	Type of water? SAND SILT CING Depth of strata 224		ļ <u>-</u>	
	Method of sealing strata off		<b> </b>	ļ
			<del> </del>	<u> </u>
(7)	PUMP: Manufacturer's NameH.P		<del> </del>	-
		611/98 611	1108	ـــــــــــــــــــــــــــــــــــ
(8)	WATER LEVELS: Land-surface elevation above mean sea level	Work Started 4/11/19, 19. Completed 4/1	0//0	, 19
	Static level	WELL CONSTRUCTOR CERTIFICATION:		
	Artesian pressure ibs. per square inch Date  Artesian water is controlled by	t constructed and/or accept responsibility for construction	n of this we	ell. and its
	(Cap, valve, etc.)	compliance with all Washington well construction standard	ls. Materials	used and
(9)	WELL TESTS: Drawdown is amount water level is lowered below static level	the information reported above are true to my best knowled	ge and belle	€τ.
	Was a pump test made? Yes No S If yes, by whom?	NAME NEEDE WED Dulling		
	Yield: gal./min. with ft. drawdown after hrs.	(PERSON, FIRM, OR CORPORATION) (TYPE OF		
	11 11 11	Address POBOX 10866 YAKIAN	4 14	7 8901
		] ~\nu_{\nu}		
	Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)	(Signed) (WELL DRILLER)	se NO. <u>C</u>	
	Time Water Level Time Water Level Time Water Level	Contractor's	_	
-		Registration No. Pub 132-11 Date	11.08	
	<del></del>	No. Dale		_, 19
	Pote of least	(USE ADDITIONAL SHEETS IF NECESS	SARY)	
	Date of test  Baller test gal./min. with ft. drawdown after hrs.	·		
	Airtest 30 gal./min. with stem set at 200 ft. for 4 hrs.	Ecology is an Equal Opportunity and Affirmative Action	employer.	For spe-
	Artesian flow g.p.m. Date	cial accommodation needs, contact the Water Resource	es Progran	n at (206)
	Temperature of water Was a chemical analysis made? Yes No 🔀	407-6600. The TDD number is (206) 407-6006.	-	

# WATER WELL REPORT STATE OF WASHINGTON

	168		
pplication	No.		

EPUKI		
GTON	Permit No	-

(1) OWNER: Name PON MOUNTJAY	Address CIEIUM		
COCATION OF WELL: County Kittitas	_ SW , NE , Sec 30 T 20	P.N., R.	6 w.м.
Bearing and distance from section or subdivision corner			
(3) PROPOSED USE: Domestic & Industrial  Municipal	(10) WELL LOG:		
Irrigation □ Test Well □ Other □		and struc	ture, and
(4) TYPE OF WORK. Owner's number of well	Formation: Describe by color, character, size of material show thickness of aquifers and the kind and nature of the stratum penetrated, with at least one entry for each characteristics.	ange of f	ormation.
(if more than one)	· MATERIAL	FROM	то
New well  Method: Dug  Bored  Deepened  Cable Driven	Clay	0	12
Reconditioned   Rotary / Jetted			
(5) DIMENSIONS: Diameter of well inches.	Clay - Gravel	12	30
Drilled 195 ft. Depth of completed well 185 ft.	Brown SANdstonE	30	80
	Brown SANdSTONE	30	
(6) CONSTRUCTION DETAILS:	Brown BrokEN BASALT	80	25-
Casing installed: 6 "Diam. from 5 ft. to 85 ft.		·	
Threaded	Brown SANdstonE	8-5	120
**************************************			·
Perforations: Yes   No	Gray SANdSTONE	120	180
Type of perforator used in. by in.	31 5 3/ 15		
perforations from ft. to ft.	BINE Shale	180	185
perforations from ft. to ft.			
perforations from ft. to ft.			<del></del> -
Screens: Yes 🗆 No 🕡			· ·
Manufacturer's Name			
Type			
Diam. Slot size from ft. to ft.		·	
Gravel packed: Yes No No Size of gravel:			
Gravel placed from			<del></del>
			<del></del>
Surface seal: Yes No To what depth? 20 ft.  Material used in seal			
Did any strata contain unusable water? Yes No			
Type of water? Depth of strata	Control Contro	7	
Method of sealing strata off	TO BELL E		
(7) PUMP: Manufacturer's Name			
Type:	1 1987 LL	<b>//</b>	
(8) WATER LEVELS: Land-surface elevation	001		
above mean sea level	DEPARTMENT OF ECOLOGY	-	
Artesian pressure	CENTRAL REGION OFFICE	Luni	<del></del>
Artesian water is controlled by(Cap, valve, etc.)			
(a) WELL TESTS. Drawdown is amount water level is			
lowered below static level	Work started 9-15 19.82. Completed 9	-17	, 19 <i>87</i>
Was a pump test made? Yes No If yes, by whom?	WELL DRILLER'S STATEMENT:		
и и и и	This well was drilled under my jurisdiction a	nd this	report is
0 0 0	true to the best of my knowledge and belief	Lac Liveto 1	THE REAL PROPERTY.
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)			one Loo
Time Water Level   Time Water Level   Time Water Level	NAME BACK Dr. 11 104 Co. (Person, firm, or corporation) (T	ype or p	rint)
	Address RT15, BOX 1010, ELL	ensk	wrg
	5. 12. 10. 10	,	$ \wedge $
Date of test	[Signed] Mille Bulk (Well Driller)		)
Artesian flowg.p.m. Date			GC
Temperature of water	License No. 22 Date 9-2	.F	, 19.8./

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

# WATER WELL REPORT

Start Card No

STATE OF WASHINGTON

Water Right Permit No. \_

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	<u>ک</u>	
حري	4.	
7	O N., R.	16_w.m.
	·.	
CEDUF	E DESC	RIPTION
	i structure, ch stratum	
	FROM	TO
	0	40
	40	85
	85-	200
		<u> </u>
PM	200	220
M	210	260
		i

1	OWNER: Name RON MOE	Address AZAAigan Prings	:	
_		500 NE 4 Sec 30 T 20	2 <sub>N., R</sub> _	16_w.м.
(2a)				
(3)	PROPOSED USE: Domestic Industrial Municipal	(10) WELL LOG OF ABANDONMENT PROCEDURE DESCRIPTION		
<u> </u>	☐ DeWater Test Well ☐ Other ☐	Formation: Describe by color, character, size of material and a thickness of aquifers and the kind and nature of the material in each with at least one entry for each change of information.	structure, stratum	penetrated,
(4)	TYPE OF WORK: Owner's number of well (if more than one)		ROM	TO
	Abandoned New well Method: Dug Depend Cable Driven Driven	DINT -91 AUEL	0	40
	Reconditioned		40	<u></u>
(5)	DIMENSIONS: Diameter of well 6 inches.	elay	90	85
	Drilled 260 feet. Depth of completed well 260 ft.	SANDSTONE (BILE) 8	75-	200
(6)	CONSTRUCTION DETAILS:			
	Casing installed: 6 Diam. from 6 ft. to 100 ft.	SANDSTONE (GrEEN) 34PM 2	200	220
	Welded	SUNSTONE (White) 7 SPAN 3	110	260
	Threaded Diam. from ft. to ft.	SANDSTONE (White) 7 9PM 2	(20	200
	Perforations: Yes No Type of perforator used			
	SIZE of perforationsin. byin.			
			•	-
	perforations fromft. toft.	- Annowable and Annoyable and		<del> </del>
	perforations fromft. toft.	n E C E I V E I	<del></del>	
	Screens: Yes No No Manufacturer's Name		•	
	Type Model No	JUL 3   1990   1		
	Diam. Slot eize from ft. to tt.	III 30L 3 1 1990		ļ
	Diam. Slot size from ft. to ft.	DEPARTMENT OF EQUICAL		<del> </del>
	Gravel packed: Yea No Size of gravel	DEPARTMENT OF ECOLOGY CENTRAL REGION OFFICE		
	Gravel placed from tt. to tt.	A CONTROL OF THE PROPERTY OF T		<del> </del>
	Surface seal: Yes No To what depth? 20 ft.			
	Material used in seal			· · · · · ·
	Did any strata contain unusable water? Yes No Depth of atrata			
	Type of water?Depth of atrate Method of sealing strate off			<del> </del>
(7)	PUMP: Manufacturer's Name			
\·,	Туре:	Species By & species where the	- imanga a	
(8)	Land-surface elevation	Street Street	East 1	
(0,	Static level	was to C	a terral F	
	Artesian pressureibs. per square inch Date			<del> </del>
	Artesian water is controlled by(Cap, valve, etc.))	Work started 6 1 , 19. Completed 6 -	3	19 50
(9)	WELL TESTS: Drawdown is amount water level is lowered below static level			
	Was a pump test made? Yes No If yes, by whom?	1		
	YIEIG:	and its compliance with all Washington well const	truction	standards.
	n u u		are true	to my best
	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	NAME BACH DA IIINY (PERSON, FIRM, OR CORPORATION)	(TYPE	OR PRINT)
		Address Kts Box 1010 Ellensbe		
1	Date of test	(Signed) Wiche Pach License N	102	ユ
	Bailer test gal./min. with ft. drawdown after hra	(WELL DRILLER)		
	Airtest 71 gal./min. with stem set at 260 ft. for / hrs	Registration BOC 133N 4 Date 6 - 3		, 19 <u>_</u> <b>20</b>
	Artesian flow q.p.m. Date Temperature of water Was a chemical analysis made? Yes No	(USE ADDITIONAL SHEETS IF NECESS		
		. , , , , , , , , , , , , , , , , , , ,		

File Original and First Copy with

# WATER WELL REPORT

Application	No	34	İ	8
	210.			L

second Copy — Owner's Copy	VASHINGTON Permit No	Н
OWNER: Name Wally Shear		<del></del>
4, LOCATION OF WELL: County Kittitas		
Bearing and distance from section or subdivision corner		W .IVI .
(3) PROPOSED USE: Domestic X Industrial  Municipal	(10) WELL LOG:	
Irrigation □ Test Well □ Other □	Formation: Describe by color, character, size of material and structus show thickness of aquifers and the kind and nature of the material i	re, and
(4) TYPE OF WORK: Owner's number of well	show thickness of aquifers and the kind and nature of the material is stratum penetrated, with at least one entry for each change of form	mation.
(4) IIIE OF WORK: (if more than one)		TO
Deepened	Over our den	22/
Reconditioned  Rotary  Jetted	how they arely 22/2	13
(5) DIMENSIONS: Diameter of well inches.	Clay lite bodun 23,	40
Drilled 238 ft. Depth of completed well 238 ft.	obtalite 40	76
(6) CONSTRUCTION DETAILS:	clay lite brown 46	48
Casing installed: 6 "Diam. from O ft. to 80 ft.	pmalite 48	55
Threaded Diam, from ft. to ft.	gravel small 55	65.
Welded M' Diam. from ft. to ft.	gravely clay grey 65	86
Perforations: Yes 🗆 No 🔯		897
Type of perforator used		93
SIZE of perforations	Elay grey hard 931	128
perforations from	Sandstend gray hard 128 1	130
perforations from ft. to ft.	Clay dark grey sandy 130	180
Screens: Yes No X	Clay grey Sandy 181	338
Manufacturer's Name		238
Type	herine	
Diam. Slot size from ft. to ft.		
Gravel packed: Yes No Y Size of gravel:		
Gravel placed from ft. to ft.	232 Sull at cons	
	1 - 235 YICIA & YPIN	
Surface seal: Yes No To what depth?	The state of the s	
Did any strata contain unusable water? Yes 🗍 No 🙀	F G E I V E	·
Type of water? Depth of strata		
(7) PUMP: Manufacturer's Name		
Type: H.P.	TO PROPERTY OF EGOLOGY	
(8) WATER LEVELS: Land-surface elevation above mean sea level. 200 6	GATRAL REGION OFFICE	
Static level		
Artesian water is controlled by		
(Cap, valve, etc.)		
(9) WELL TESTS: Drawdown is amount water level is lowered below static level	Work started 2/14 , 19.91. Completed 2/14 ,	19.9.
Was a pump test made? Yes ☐ No X If yes, by whom?	WELL DRILLER'S STATEMENT:	
n n n	This well was drilled under my jurisdiction and this re	mort is
n 0 0 2.2.2.2.0	true to the best of my knowledge and belief.	.port 15
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)	1 No. 1 No. 11	
Time Water Level Time Water Level Time Water Level	(Person, firm, or corporation) (Type or prin	 nt)
	PA R. 89 (10 El. 114 969	
	Address 1 5 DX 6 1 Cte Lium WM 13 /	<del></del>
Date of test	[Signed] What Black	
Bailer testgal./min, withft, drawdown afterhrs.	(Well Driller)	************
Artesian flow	License No. 1887 Date Feb 26	19.9.
The boltomina may be made and the boltomina		

3

Start Card No. 083769

STATE OF WASHINGTON

Water Right Permit No.

		772101 779111 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		
(1)	OWNER: NameCity_of_Cle_Elum			
2١	LOCATION OF WELL: County Kittitas	- NW % SE % Sec 30 T. 20	)_N., R_	16_w.m.
		Municipal Air Port		· ·
	PROPOSED USE: Domestic Industrial  Municipal	(10) WELL LOG or ABANDONMENT PROCEDURE	DESC	RIPTION
	☐ Irrigation ☐ Other ☐	Formation: Describe by color, character, size of material and thickness of aquifers and the kind and nature of the material in each with at least one entry for each change of information.	structure.	and show
(4)	TYPE OF WORK: Owner's number of well (if more than one)		FROM	то
	Abandoned New well Method: Dug Bored Deepened Cable Driven	Overburden and rock	0	12
	Reconditioned Rotary X Jetted	Br. clay, boulders, & rock	12	32
(5)	DIMENSIONS: Diameter of well 6 inches.	Small gravel and sand	32	<u> 56</u>
	Drilled 180 feet. Depth of completed well 180 ft.	Br. clay, sand and small grav		
			56	<u>75</u>
(6)	CONSTRUCTION DETAILS:	Blue clay	75	<u> 167</u>
	Casing installed: 6 Diam. from +1 ft. to 180 ft.	Sand, Gravel and water	167	180
	Welded Tt. Diam. fromft. toft.			
	TilreadedDialit. (1011)(t, to			
	Perforations: Yes No.			
	Type of perforator used		<del>  </del>	
	SIZE of perforations in. by in.			
	perforations fromft, toft.		+	<del></del>
	perforations fromft. toft.		<del></del>	
	perforations fromft. toft. Screens: Yes No.	<del> </del>		<del></del>
	Screens: Yes NoX	-	<del></del>	· · ·
	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 fromft. toft.			
	Surface seal: Yes X No To what depth? 20 ft.			
	Material used in seal Bentonite	ļ		
	Did any strata contain unusable water? Yes No X	The state of the s		
	Type of water? Depth of strata	Paragle of the Paragl		
	Method of sealing atrata off	granular construction of the first of the fi		
(7)	PUMP: Manufacturer's Name	100	-	
,		CT 1 6 1991 - 1233		
	Land ourface playation	7 LA SAN 3 4 4 1		
(8)	WAIER LEVELS: above mean sea level ft.	The state of the s		
	Static level 102 ft. below top of well Date 9/11/91  Artesian pressure lbs. per square inch_Date	The second secon		
	Artesian water is controlled by	May and American Control of the Control		
	(Cap, valve, etc.))	Work started 9/5/91 , 19. Completed 9/1	1/91	, 19
(9)	WELL TESTS: Drawdown is amount water level is lowered below static level Was a pump test made? Yes No 1 If yes, by whom?			
	Yield:gal./min. withft. drawdown afterhrs.	WELL CONSTRUCTOR CERTIFICATION:		
	n n n n	I constructed and/or accept responsibility for constructed and its compliance with all Washington well cons		
	11 11 11 11	Materials used and the information reported above a		
•	Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)	knowledge and belief.		
	Time Water Level Time Water Level Time Water Level	NAME Water Wells Drilling (PERSON, FIRM, OR CORPORATION)	(TYPE C	R PRINT)
		Address 5503 Ahtanum Rd., Yaki	ma, I	√a.
	Date of test			
	Baller test gal./min. with ft. drawdown after hrs.	(Signed) Werner J. Man License N	lo.085≤	1
	Baller test gal./min. with ft. drawdown after hrs.  Airtest10 gal./min. with stem set at180 _ ft. for4 hrs.	Contractor's		
		Registration No. WATERWD112QB Date 9/13/91	·	, 19
	Artesian flow g.p.m. Date  Temperature of water Was a chemical analysis made? Yes No	MICE ADDITIONAL SHEETS IE NECESS		ــــــــــــــــــــــــــــــــــــــ
	reinperature of water trae a crientical alialysis illader 1 to L. 190 LES	I DEC ADDITIONAL CLIEFTS IS NECES	~~~ V	

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# **WATER WELL REPORT**

Start Card No. WO 50380
UNIQUE WELL I.D. # 4CL - 120

STATE OF WASHINGTON

Water Right Permit No.

	OWNER: Name CIUDE EASTUDOOD Addr	IIO White rd Cle Clum wa 9896
(2)	LOCATION OF WELL: County Kittas.	-NW1/45E 1/4500 30T. 20 N. R. 6 W.M.
(2a)	STREET ADDRESS OF WELL (or nearest address)	K
(3)	PROPOSED USE: Domestic Industrial   Municipal	(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION
	☐ Irrigation ☐ DeWater Test Well ☐ Other ☐	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.
(4)	TYPE OF WORK: Owner's number of well (If more than one)	MATERIAL FROM TO
	Abandoned New well Method: Dug Bored Deepened Cable Driven	Sticky Sandy Clay ORANGE-BEN 0 14
<del></del>	Reconditioned Rotary Jetted	genual of clay w/cobbles gray 14 26
(5)	Drilled 365 feet. Depth of completed well 365 ft.	Boy/dels-multicolor / gener 26 28
451		Clay-sonds fore green grave 37 93
(6)	CONSTRUCTION DETAILS:	Sand Home - granals "y COAl - Phylotic 93 114
	Casing installed: Dlam. from Aft. to Af6 ft. Welded Dlam. from 25 ft. to 365 ft.	SANdstone WgRANKIS - grey shele 114 121
	Liner installed Transport Threaded Diam. from ft. to ft.	gley c/Ay W/SAN Stone m /d/ /29
	Perforations: Yes 🔀 No. 🗌	Clay-snale gray of pykith 129 152
	Type of perforator used SKISAW	Sandy Sandstone Why grey goings 146 152
	SIZE of perforations 18 in. by 6 in. by	grey sand stone w/c/ay m/H 152 202
	perforations from 303 ft. to 365 ft.	Sandy Clay grey By 7 shale 202 212
	perforations fromtt. tott.	C/AY gray MBRN Shanstone 232 214
	Screens: Yes No No	SANDE SANDROC MOINE GREE 230 230
	Manufacturer's Name	Sandstone gray RK white My 259 296
,	Type Model No	OK grey Sandston 1/1+ grey Clay 296 327
	Diam.         Slot size         from         ft. to         ft.           Diam.         Slot size         from         ft. to         ft.	Sandstone - Shale BIK - 9 Rey 327 331
_	Gravel packed: Yes No Size of gravel	OK grey Sandstone / H grey Clay 33/ 352 Sondroc Wary Shale Coal 352 365
	Gravel placed fromft. toft.	SMOROC MANY SMALE COAT 522 365
	Surface seal: Yes 🗸 No 🗆 ; To what depth? // O t.	
	Material used in seal BRN400146	1001
	Did any strata contain unusable water? Yes U No D	100 SURFACE SEAT
	Type of water?  Depth of strata  Method of sealing strata off	6" PRIOR Shore
(7)	PUMP: Manufacturer's Name  Type: H.P.	
(8)	WATER LEVELS: Land-surface elevation shows mean sea level	Work Started DEC 5 19. Completed DEC 13 19 96
(-/	Static level	
	Artesian pressure lbs. per square inch Date	WELL CONSTRUCTOR CERTIFICATION:
	Artesian water is controlled by(Cap, valve, etc.)	l constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and
(9)	WELL TESTS: Drawdown is amount water level is lowered below static level	the information reported above are true to my best knowledge and belief.
	Was a pump test made? Yes No If yes, by whom?  Yield: / J gal./min. withft. drawdown afterhrs.	NAME WOTER I DON WELL DI CILLO 9
	n n n n	106 Beriman lane Selah Wa
	n n n	Address
	Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)	(Signed) WELL DRILLER) Lidense No. 2060
T	ime Water Level Time Water Level Time Water Level	Contractor's
		Registration No. COATERDOW 064 Jan 6 199
		(USE ADDITIONAL SHEETS IF NECESSARY)
	Date of test ft. drawdown after hrs.	
	Airtestgal./min. with stem set atft. forhrs.	Ecology is an Equal Opportunity and Affirmative Action employer. For spe-
	Artesian flowg.p.m. Date	cial accommodation needs, contact the Water Resources Program at (206) 407-6600. The TDD number is (206) 407-6006.
	Temperature of water Was a chemical analysis made? Yes No	10. 100 100 100 100 100 (200) TO 10000.

Start Card No. 37133

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STATE OF WASHINGTON

Weter	Right	Permit	Nο

(1)	OWNER: Name Mike Slack	Address Cle Elun, Daveres Airstrip
	1/54.	NW SE 4 Sec 30 - 20N B 16 FWM
(2)	LOCATION OF WELL: County 1-101111	
(2a)	STREET ADDDRESS OF WELL (or nearest address) Deveres	Airstrip
(3)	PROPOSED USE: Domestic Industrial ☐ Municipal ☐ Irrigation ☐ DeWater Test Well ☐ Other ☐	(10) WELL LOG OF ABANDONMENT PROCEDURE DESCRIPTION
	C. DOTTALO	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
(4)	TYPE OF WORK: Owner's number of well (if more than one)	with at least one entry for each change of information.  MATERIAL FROM TO
	Abandoned New well Method: Dug Bored	Sandy Lone 0 2
	Deepened ☐ Cable ☐ Driven ☐ Reconditioned ☐ Rotary 🔀 Jetted ☐	Bouldary 21/01
	DIMENCIONE	Gravellaw/houlders + 10' 14-
(5)	DIMENSIONS: Diameter of well	trace of clay army
	Drilledfeet. Depth of completed wellft.	Clay Blue/arty trace of 14 45
(6)	CONSTRUCTION DETAILS:	Philitz /
	Casing installed:O	Clay Gray more phialite 45 52
	Welded Diam. from ft. to ft. to ft.	Clay gray, very sindy true 52 84.
	Threaded Diam, from ft. to ft.	C) Grid little - some water 84 1/2
	Perforations: Yes No X	Clay Gray
	Type of perforator used	Clay gray w/ a little graved 112 155
	SIZE of perforations in. by in.	Course said w/silt + trace of 155 / los
	perforations fromft. toft.	Sand stand white 169 215
	perforations fromft. toft.	2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1
	perforations fromft. toft. Screens: Yes No 🔀 /	Sandy clay green hard 215 211
	Manufacturar's Name	a Califity Liter Land
	Type Model No	white
	Diam. Slot size from ft. to ft.	1000
	Diam. Slot size from ft. to ft.	
	Gravel packed: Yes No Size of gravel	
	Gravel placed fromft. toft.	ye commenced the second
	Surface seal: Yes No To what depth? 10 ft.	prime, configuration and deliver to recommend and the second
	Did any strata contain unusable water? Yes No No	0 99 11
	Type of water?Depth of strata	0 :331
	Method of sealing strata off	TOOLOOV 7
(7)	PUMP: Manufacturer's Name	DEPARTMENT OF ECGLOGY CENTRAL REGION OFFICE
	Type:H.P	
(8)	WATER LEVELS: Land-surface elevation above mean sea level 1500 ft.	
	Static levelft. below top of well Dateft.	
	Artesian pressure lbs. per square inch Date	
	(Cap, valve, etc.))	Work started 8 / , 19.7 (Completed 8 / 8 , 19.7 /
(9)	WELL TESTS: Drawdown is amount water level is lowered below static level Was a pump test made? Yes No 1 if yes, by whom?	TOTAL CONTROL OF THE PARTY OF T
	Yield: gal./min. with ft. drawdown after hrs.	WELL CONSTRUCTOR CERTIFICATION:
	II II II II II II II II II II II II II	I constructed and/or accept responsibility for construction of this well and its compliance with all Washington well construction standards
	и и и	Materials used and the information reported above are true to my bes
,	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	knowledge and belief.
		NAME (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)
	•	Address PO Bx 89 de Ehm Wa 98
	Date of test	111. 100
	Bailer test gal./min. with ft. drawdown after hrs.	(Signed) // (WELL DOLLED) License No. 188
	Airtestgal./min. with stem set at/3/ ft. for/_ hrs.	Contractor's (WELL DRILLER)
	Artesian flow g.p.m. Date	Registration No. AMEKID XIVI Wate 7/20 , 19 7
	Temperature of water Was a chemical analysis made? Yes No	(USE ADDITIONAL SHEETS IF NECESSARY)
	· · · · · · · · · · · · · · · · · · ·	I (USE ADDITIONAL SHEETS IF NECESSARIT)

STATE OF WASHINGTON

Application No. .....

Permit	No.	 

(1) OWNER: Name Mike Willette	Address Rt 2, Box 16 Cle Elum
(2) LOCATION OF WELL: County Kitittas	
Bearing and distance from section or subdivision corner Airport	
(3) PROPOSED USE: Domestic 🖔 Industrial 🗆 Municipal 🗅	(10) WELL LOG:
Irrigation   Test Well   Other	<del></del>
	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.
(4) TYPE OF WORK: Owner's number of well (if more than one)	MATERIAL FROM TO
New well ☐ Method: Dug ☐ Bored ☐  Deepened ☐ Cable ☑ Driven ☐	Poured 5 gal. of gravel in hole,
Reconditioned Rotary Jetted	
(5) DIMENSIONS: Diameter of well inches.	329 ft. Run 5 gal of cement in bottom
(5) DIMENSIONS: Diameter of well inches.  Drilled ft. Depth of completed well ft.	of hole. Cut 6" casing off at 273.9"
	Gravel and cement keep settling down
(6) CONSTRUCTION DETAILS:	hole thru soupy silt. 8 hr.
Casing installed: 4/2 Policy from 0 tt. to 322 tt.	Sounded hole out bottom 322 ft.
Threaded ft. to ft. to ft.	Run 4½" PVC like 11' 6" getting it
Welded Diam. from ft. to ft.	down where we want it. Had to rig up
Perforations: Yes 🗆 No 🏡	and drill hole in cap on end of PVC and
Type of perforator used	try to get it down. Put several back
SIZE of perforations in. by in.	together and riged up and started
perforations from ft. to ft ft. to ft.	running 1½" in hole. 7 hrs.
perforations from ft. to ft.	
Canada A (	Jetted 42 PVC to 322 ft. pulled 12"
Screens: Yes No No TOP Johnson	and rigged up to drive 6" back . Can no
Type PUC Model No.	get 6" casing to slip over 42" PVC.
Diam. 40 Slot size 8 from 200 ft. to 205 ft.	PVC keeps comming up hole with 6". 8 H
Diam. Slot size from 249 ft. to 235 ft.	Cut dive back took off. Run trimmy pi
Gravel packed: Yes No No Size of gravel:	Cut dive back took off. Run trimmy pito 275 ft. Hole was pluged with clay
Gravel placed from ft. to ft.	at 273' Pumped 12 bags revert in hole
Surface seal: Yes No D To what depth? ft.	approx 500 gpm No return, Pulled trimm
Surface seal: Yes No To what depth?	pipe, tied on to casing to pull and be
Did any strata contain unusable water? Yes 🗌 No 🗍	drive on it with 6" hammer. Finally
Type of water? Depth of strata	worked casing back 28 ft. w/ 42 PVC
Method of sealing strata off	working up and down. 9 hrs.
(7) PUMP: Manufacturer's Name	
Туре:	Worked 6" casing back to 183 ft. Run
(8) WATER LEVELS: Land-surface elevation	1½ trimmy pipe with jetting tool and developed screen. There is very little
above mean sea level ft. Static levelft. below top of well Date	developed screen. There is very little water in screen at 250 ft. at 235 wha
Artesian pressure	fluid we had was mostly silt approx 3
Artesian water is controlled by(Cap, valve, etc.)	gpm. Screen at 200 to 205 is in good
	shape. But silt is comming in heavy
(9) WELL TESTS: Drawdown is amount water level is lowered below static level	wapnaka 2½ gpm total atm200 ft. 8 hris.
Was a pump test made? Yes ☐ No ☐ If yes, by whom?	WELL DRILLER'S STATEMENT:
Yield: gal./min. with ft. drawdown after hrs.	
n n n	This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Recovery data (time taken as zero when pump turned off) (water level	
measured from well top to water level)	NAME Riebe Well Drilling
Time Water Level   Time Water Level   Time Water Level	(Person, firm, or corporation) (Type or print)
10118 200	Address 1503 E. Nob Hill Blvd.
11111	^ (
Date of test	[Signed]
Bailer test gal/min, with ft. drawdown after hrs.	(Well Driller)
Artesian flow g.p.m. Date.	License No 0422 Date 11/28/84 19
Temperature of water Was a chemical analysis made? Yes No	Date

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# WATER WELL REPORT

	Application	No.	
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	Permit No
(1) OWNER: Name Mike Willette	Address Rt 2 Box 16 Cle Elum
(2) LOCATION OF WELL: County Kitittas	
Bearing and distance from section or subdivision corner	Airport Rd. Nw
(3) PROPOSED USE: Domestic M. Industrial   Municipal	(10) WELL LOG:
Irrigation ☐ Test Well ☐ Other ☐	Formation: Describe by color, character, size of material and structure and
	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.
(4) TYPE OF WORK: Owner's number of well (if more than one)	MATERIAL FROM TO
New well  Method: Dug  Bored	
Deepened Cable Driven	Brought up load of shot rock. Started
Reconditioned Rotary Jetted	back filling well and developing it.
(5) DIMENSIONS: Diameter of well inches.	Have approx 5 gpm developing at 185 ft.
Drilledft. Depth of completed wellft.	Back filled to 230 ft. gravel is still
	settling some. water is clearing. 6 h
(6) CONSTRUCTION DETAILS:	
Casing installed: 4/2 Piller from O tt. to 322 tt.	Keepback filling hole and developing
Threaded 15. Diam. from	until water cleared up fairly good.
Welded " Diam. from ft. to ft.	Back billed in to 190 ft.
<del></del>	
Perforations: Yes 🗆 No 🂢	We had 5 gals. of water in 40 seconds.
Type of perforator used	from 180 ft. Water is a little cloudy
SIZE of perforations in. by in.	S.W.L. 49' Top of gravel in hole is
perforations from ft. to ft.	at 190 ft. 5 hrs.
perforations from	
<del></del>	
Screens: Yes No D	
Manufacturer's Name UOP Johnson	
Type PUC Model No.	
Diam. 4/2 Slot size	
245 250. It. 10255 It.	
Gravel packed: Yes No Size of gravel:	
Gravel placed from	
0.6	
Surface seal: Yes & No   To what depth?ft.	
Material used in seal	
Did any strata contain unusable water? Yes No Type of water? Depth of strata	
Method of sealing strata off	
	The second secon
(7) PUMP: Manufacturer's Name	
Туре: Н.Р	
(8) WATER LEVELS: Land-surface elevation	1006
	AUG Z U 1989
Static level 49 ft. below top of well Date.  Artesian pressure lbs. per square inch Date.	
Artesian water is controlled by	100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
(Cap, valve, etc.)	TOOMTHAL MELTINES AND A STATE OF THE STATE O
(9) WELL TESTS: Drawdown is amount water level is	
lowered below static level	Work started 11/5/84, 19 Completed 11/16/8419
Was a pump test made? Yes \( \) No \( \) If yes, by whom?	
	WELL DRILLER'S STATEMENT:
	This well was drilled under my jurisdiction and this report is
	true to the best of my knowledge and belief.
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)	D4.1. W 77 D 4774
Time Water Level   Time Water Level   Time Water Level	NAME Riebe Well Drilling
	(Person, firm, or corporation) (Type or print)
	Address 1503 E. Nob Hill Blvd.
Date of test	[Signed] Olen A- Kuch
Baller testgal/min, withft. drawdown afterhrs.	(Well Driller)
Artesian flowg.p.m. Date	
Temperature of water Was a chemical analysis made? Yes 🗖 No 🎘	License No. 07.22 Date 11/28/84, 19

**3** 

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# WATER WELL REPORT

Application	No.	

	STATE OF W	ASHINGTON	Permit No.		
(1) OWNER: Name Mike Mckoy	:	Address LANNIGAN	Springs Cle	hem	WA,
LOCATION OF WELL: County K. H.	tas	Al = v	Su! v s 20 m	2622 7	16. 11.20
aring and distance from section or subdivision corner	,		i Zamani i Seconi T.	×N., R./	
(3) PROPOSED USE: Domestic ' Industrial Irrigation   Test Well		(10) WELL LOG:			
——————————————————————————————————————		Formation: Describe by color show thickness of aquifers ar stratum penetrated, with at	id the kind and nature of least one entry for each	the materi	cture, ana ial in each formation.
(4) TYPE OF WORK: Owner's number of well (if more than one)		MATE		FROM	то
	Bored 🗍	Pirt - grave	-/	0	15
Reconditioned [ Rota	ry 🗗 Jetted 🛘		<del>_</del>		
(5) DIMENSIONS: Diameter of well	inches.	SAVOSTONE WATER AT	130 FT - 180 f	15	180
(6) CONSTRUCTION DETAILS:				+	
	/2 -			<del> </del>	
Casing installed: 6 " Diam. from			· · · · · · · · · · · · · · · · · · ·	_	
Welded W					
Perforations: Yes   No			·		
Type of perforator used		<del></del>		··	
SIZE of perforations in. by			<del></del>		
perforations from ft.					
perforations from ft.				<del> </del>	
***	24				
Screens: Yes No Manufacturer's Name				·	
Type		<del></del>			
Diam, Slot size from	ft. to ft.		<del></del>	<del>                                     </del>	
Diam Slot size from	ft. to ft.				
Gravel placed from Size of grav					
Surface seal: Yes No To what depth  Material used in seal Reutouite	? 20 st.			-	
Did any strata contain unusable water?	Yes 🔲 No 🗀				
Type of water? Depth of stra		n E G	E D W E		
Method of sealing strata off		<u> </u>	EUVE,		
(7) PUMP: Manufacturer's Name			<del></del>		<del></del>
Type:	H.P		3 1 1988		
(8) WATER LEVELS: Land-surface elevation above mean sea level.			<del>-   -   -   -   -   -   -   -   -   -  </del>	+	
Static levelft. below top of well Da	ate		IENT OF ECOLOGY	<del>                                     </del>	
Artesian pressure		GENTRAL	REGION OFFICE		
Artesian water is controlled by(Cap, v	alve, etc.)				
(9) WELL TESTS: Drawdown is amount wa	ter level is	Work started 9-20	00 (	7-70	604
Was a pump test made? Yes [] No [] If yes, by whom?				7-25	, 19.08
Yield: gal./min. with ft. drawdown af		WELL DRILLER'S S	TATEMENT:		
0 0 0	. 11	This well was drilled	under my jurisdiction	and this	report is
Recovery data (time taken as zero when pump turned	·····	true to the best of my k	nowledge and belief.	6.33	The state of the s
measured from well top to water level)  Time Water Level   Time Water Level   Time	Water Level	NAME BACL Dr.	m, or corporation)	(Type or p	int)
	****	Address Robert Range	INIO Ellenet	11 صريد	10
		Address Rts, Box			<i></i>
Date of test		[Signed] Triels &	Zuel		
Bailer testgal./min. withft. drawdown	afterhrs.	[Digited]	(Well Driller)		
Artesian flowg.p.m. Dategrp.m. Date	de? Yes 🔲 No 🗀	License No. 21		5	1988
•			,		,

#### STATE OF WASHINGTON

(1) OWNER: Name DENEEN, PAT Address 1890 NELSON SIDING ROAD CLE ELUM, WA 98922-Sec 30 T 20 N. . R 16E WM SW 1/4 (2) LOCATION OF WELL: County KITTITAS (2a) STREET ADDRESS OF WELL (or nearest address) (3) PROPOSED USE: DOMESTIC I (10) HELL 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 (4) TYPE OF WORK: Owner's Number of well (If more than one) Method: ROTARY NEW WELL at least one entry for each change in foreation. (5) DIMENSIONS: Diameter of well 6 inches Drilled 250 ft. Death of completed well 250 HARD CLAY 8 22 55 | **@** | 8 COBBLES AND SILT
SAND GRAVEL LARGE
DARK GREY CLAY
GREY CLAY
BASALT BOULDERS HARD
SAND GRAVEL GREEN (6) CONSTRUCTION DETAILS: " Dia. from + 2 ft. to 200 " Dia. from 150 ft. to 250 Casino installed: HELDED " Dia. from 125 133 Perforations: YES SANDSTONE CLAY GREEN SANDY SANDSTONE GREEN SAND ROCK GRAY Type of perforator used SKILL SAW SIZE of perforations 1/8 in. by 6 ft. to 250 ft. perforations from 230 perforations from ft. SANDSTONE WHITE SHALE ft. to perforations from ft. te Screens: NO Manufacturer's Name Type Model No. Dias. slot size from ft. to Diam. slot size ft. to from Gravel packed: NO Size of gravel Gravel placed from To what depth? 20 Surface seal: YES Material used in seal BENTONITE Did any strata contain unusable water? NO Type of water? Depth of strata Method of sealing strata off OVERBORE (7) PUMP: Manufacturer's Name (8) WATER LEVELS: Land-surface elevation above mean sea level ... Artesian Pressure ft. below top of well Date @9/23/94
1bs. per square inch Date Artesian water controlled by I Work started 09/22/94 Completed 09/23/94 (9) WELL TESTS: Drawdown is amount water level is lowered below WELL CONSTRUCTOR CERTIFICATION: static level. I constructed and/or accept responsibility for con-Was a pump test made? NO If yes, by whom? struction of this well, and its compliance with all Yield: gal./gin with ft. drawdown after Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief. Recovery data Time Water Level Time Water Level Time Water Level | NAME PONDEROSA DRILLING (Person, firm, or corporation) (Type or print) ADDRESS E 6010 BROADWAY/ Date of test / / Bailer test gal/min. ft. drawdown after hrs. | [SIGNED] License No. 2060 Air test 30 gal/min. w/ stem set at ft. for hrs. I HIT test 30 gailmin. W/ stem set at 10. for nrs.(
Artesian flow g.p.m. Date | Contractor's
Temperature of water Was a chemical analysis made? NO | Registration No. PO-ND-E1\*248JE Date 09/30/94

#### STATE OF WASHINGTON

(1) OWNER: Name DENSEN, PAT Address 1890	NELSON SIDING ROAD CLE BLUK, WA 98922-
(2) LOCATION OF WELL: County KITTITAS (2a) STREET ADDRESS OF WELL (or nearest address), (3) PROPOSED USE: DOMESTIC	- N 1/4 SW 1/4 Sec 30 T 20 N., R 16E WH L/M
(3) PROPOSED USE: DOMESTIC	(10) WELL LOG
(4) TYPE OF WORK: Owner's Number of well. (If more than one) 1 NEW WELL Method: ROTARY	Formation: Describe by color, character, size of material
	and nature of the material in each stratum penetrated, with at least one entry for each change in formation.
(5) DIMENSIONS: Diameter of well 6 inches Drilled 250 ft. Depth of completed well 250 ft.	NATERIAL I FROM I FO
(6) CONSTRUCTION DETAILS: Casing installed: 6 "Dia. from + 2 ft. to 200 ft. NELDED 4 "Dia. from 150 ft. to 250 ft. "Dia. from ft. to ft.	COBBLES AND SILT   8   22
Perforations: YES Type of perforator used SKILL SAW SIZE of perforations 1/8 in. by 6 in. 102 perforations from 230 ft. to 250 ft. perforations from ft. to ft. perforations from ft. to ft.	BASALT BOULDERS HARD
Manufacturer's Name Type Model No. Diam. slot size from ft. to ft. Diam. slot size from ft. to ft.	
Gravel packed: NO Size of gravel Gravel placed from ft. to ft.	
Surface seal: YES To what depth? 20 ft. Haterial used in seal BENTONITE Did any strata contain unusable water? NO Type of water? Depth of strata ft.	OCT 1 7 1994
(7) PUMP: Manufacturer's Name Type H.P.	
(8) WATER LEVELS:  Land-surface elevation above mean sea level ft.  Static level N/A ft. below top of well Date 09/23/94 Artesian Pressure lbs. per square inch Date Artesian water controlled by	Work started 09/22/94 Completed 09/23/94
(9) WELL TESTS: Drawdown is amount water level is lowered below static level.  Was a pump test made? NO If yes, by whom? Yield: gal./min with ft. drawdown after hrs.  Recovery data	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.
Time Water Level Time Water Level Time Water Level	NAME PONDEROSA DRILLING (Person, firm, or corporation) (Type or print)
Date of test / /	ADDRESS & 6010 BROADWAY
Bailer test gal/min. ft. drawdown after hrs. Air test 30 gal/min. w/ stem set at ft. for hrs. Artesian flow g.p.m. Date	[SIGNED] License No. 2060 Contractor's
Temperature of water Was a chemical analysis made? NO	Registration No. PO-ND-EI*248JE Date 10/11/94

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

### WATER WELL REPORT

STATE OF WASHINGTON

Water Right Permit No.

UNIQUE WELL I.D. # ACL- 609

	OWNER: Name MIKE GOVID Addr	oss 21720 Nootka nd. Edmonas Wa	98Q
~ (2)	LOCATION OF WELL: County Kittitas	- 5W 1/4 SE 1/4 Sec 30 T. 20 N., R/	(0 w.m.
(2a)	STREET ADDRESS OF WELL (or nearest address)		
(3)	PROPOSED USE:  Domestic Industrial Domestic In	(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION  Formation: Describe by color, character, size of material and structure, and show thickness and the kind and nature of the material in each stratum penetrated, with at least one en	s of aquifers
(4)	TYPE OF WORK: Owner's number of well (If more than one)	change of information.	
	Abandoned New well Method: Dug Bored D	MATERIAL FROM	TO
	Deepened □ Cable □ Driven□ Reconditioned □ Rotary ✓ Jetted □	SAND-N- GRAVES COMENTED BIK 4	3
(5)	DIMENSIONS: Diameter of well 10 × 6 Inches.	grants robbles Bengrey MH 7	11
	Drilled 173 test. Depth of completed well 173 tt.	Clay / coal Stams Bloggy ms 11	90
(6)	CONSTRUCTION DETAILS:	Clay Blugay /coalgeations 90	103
• •	Casing Installed: 6 "Diam. from +2 ft. to 172 ft.	CHAY gry ms 103 SAND gray ms 155	155
	Welded Diam. fromft. toft.	SAND-N- 2RAIRS GREEMH 164	173
	Threaded Diam. from ft. to ft.		
	Perforations: Yes No 🗹 Type of perforator used		
	SIZE of perforations in. by in.	<del></del>	•
٠	perforations from ft. to ft.	general control of the control of th	
	perforations fromft. toft.		
	perforations from ft. to ft.	17 Paris	
	Screens: Yes No.	MAY 1 2 1997	
	Type Model No	, 12 feet 2	
	Diam. Slot size from ft. to ft.	12700 10	
	Diam. Slot size from ft. to ft.	United to the last	
	Gravel packed: Yes No Size of gravel		
	Gravel placed fromft. toft.		•
	Surface seal: Yes No To what depth? ft.  Material used in seal SEN FON 19 To.		
	Did any strata contain unusable water? Yes No		
	Type of water? Depth of strata Method of sealing strata off		
(7)	PUMP: Manufacturer's Name		
(8)	WATER LEVELS: Land-surface elevation	Work Started AFRI 29	.1995
(♥)	above mean sea level ft.  Static level ft. below top of well Date	work Started 777-77 19. Completed 777-77	. 19 2.7
	Artesian pressure lbs. per square inch Date	WELL CONSTRUCTOR CERTIFICATION:	
	Artesian water is controlled by CAF LATICE - 9USIGNE (Cap Valve, etc.)	l constructed and/or accept responsibility for construction of this well compliance with all Washington well construction standards. Materials	l, and its
(9)	WELL TESTS: Drawdown is amount water level is lowered below static level	the information reported above are true to my best knowledge and belief	
	Was a pump test made? Yes No If yes, by whom?	NAME Water Man Well Drilling	
	Yield: gal./min. with ft. drawdown after hrs.	(PERSON, FIRM, OR CORPORATION) (TYPE OR PAINT)	rau
	ARROX ARTIET 30 gpm "	Address Ob Berrimon Selah Wa 98	976
	Recovery data (time taken as zero when pump turned off) water level measured from well	(Signed) AMED DRILLER) Ricense No. 20	60
1	top to water level) īme Water Level Time Water Level Time Water Level		
		Contractor's Registration No. UNITERMUDGU Plate MAY 2.	07
	<del></del>	1 ' 0'	, 194/
	Date of test	(USE ADDITIONAL SHEETS IF NECESSĂRY)	
	Baller testgal./min. with ft. drawdown after hrs.	Ecology is an Equal Opportunity and Affirmative Action employer.	For spe-
	Airtestgal./min. with stem set atft. forhrs.           Artesian flowg.p.m.         Date	cial accommodation needs, contact the Water Resources Program	
	Temperature of water Was a chemical analysis made? Yes No	407-6600. The TDD number is (206) 407-6006.	

Start Card No. <u>WO 50993</u>
UNIQUE WELL I.D. # <u>ABL</u> 132

STATE OF WASHINGTON

Water Right Permit No.

			$\overline{}$	(M) 5=
(1) -	OWNER: Name Candy Giser Addr	**9619 166thSt Court CTeast Pulla	p wa	4837
 (ک)	LOCATION OF WELL: County Kittites	5W 1/4 SE 1/4 Sec 301. 6		160 W.
(2a)				
(3)		(10) WELL LOG OF ABANDONMENT PROCEDURE DE	SCRIPTI	ON
(0)	PROPOSED USE: → Domestic Industrial	Formation: Describe by color, character, size of material and structure, and s	show thickne	ss of aquife
(4)	TYPE OF WORK: Owner's number of well	and the kind and nature of the material in each stratum penetrated, with at change of information.	l least one e	entry for eac
( - /	(If more than one)	MATERIAL	.FROM	то
•	Deepened ☐ Cable ☐ Driven ☐	Shul Clay Gravel Brown In	0_	4
<del>(5)</del>	144 44	Sant Govel costels H Sant Groupel Clay Brown Into	B	8
(5)	Drilled 194 feet. Depth of completed well 194 ft.	Sand Groupe   Clipy Brown Into	<u> </u>	95
		Clay Grand costels Blue Gray met	95	104
(6)	CONSTRUCTION DETAILS:  Casing installed:6" Dlam. from _+ 2ft. to/94ft.	Clay Blue Gay m	106	116
	Casing installed: 6 Diam. from + 2 ft. to /94 ft.  Welded Diam. from ft. to ft.	Clay Gray In	:116	168
	Liner installed ☐	Sant Gay 5	168 175	196
<u> </u>	Perforations: Yes No 🛣	Sand Grand Gay m	7/3	//*
٠	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.	61 5		<del>                                     </del>
	Screens: Yes No 🔀		<del></del>	<del> </del>
	Manufacturer's Name		<u>-</u>	
_	Type Model No	JUI 27 1905		
	Diam.         Slot size         from         ft. to         ft.           Diam.         Slot size         from         ft. to         ft.	1930	· 	·
				<del></del>
	Gravel placed: Yes No Size of gravel			<del>                                     </del>
			-	1.
	Surface seal: Yes No To what depth? 29 ft.  Material used in seal Brodon + Censor			
	Did any strata contain unusable water? Yes \( \square\) No 🔀			
	Type of water? Depth of strata		ļ	
	Method of sealing strata off			<del> </del>
(7)	PUMP: Manufacturer's Name			
	Туре: Н.Р			
(8)	WATER LEVELS: Land-surface elevation above mean sea level ft.			<u> </u>
	Static level			
	Artesian water is controlled by Cap Valve.			
_	(Cap, valve, etc.)	Work Started 7//2/95 19. Completed 7//9	1/15	, 19
(9)	·	WELL CONSTRUCTOR CERTIFICATION:		
	Was a pump test made? Yes No R If yes, by whom?		af Abla	عالمسمال
_	11 21 H 11	I constructed and/or accept responsibility for construction compliance with all Washington well construction standards	s. Materials	used an
	U 0 11 11 11	the information reported above are true to my best knowledge	e and belie	ef.
	Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)	NAME (JO LET MON WELL VI	<u> </u>	5
٦	Inne Water Level Time Water Level Time Water Level	IN BOKKINGAN IN SOL	6	98
	- HPM 5 gfm	Address VO OCTITION TO OCIO		22.5
	Air Liff	(Signed)Licens	:e No	<u> بر در د</u>
	Date of test	Contractor's		
	Bailer testgal./mln. withft. drawdown afterhrs.  Airtestgal./mln. with stem set atft. forhrs.	Registration TERMWOGYJ Date 7/26/	19-	40
	Artesian flow			_, 19
	Temperature of water Was a chemical analysis made? Yes No	(USE ADDITIONAL SHEETS IF NECESSA	IHY)	
	and the second of the second o	I '		

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

STATE OF WASHINGTON

Start Card No. W	089	(000
UNIQUE WELL I.D.	-ŵAc	4870

	Copy — Driver's Copy	Water Right Permit No.	
	OWNER: Name Nick Coby Addr	280 Langan P.O. Box 5	44
(2)	LOCATION OF WELL: County	JE 1/4 5 C 1/4 800 30 T 30 N. B	16 W.M
• •	STREET ADDRESS OF WELL (or nearest address)		) ·····
	DDODOGED HOTE TO DESCRIPTION		$\leftarrow$
(3)	PROPOSED USE: Domestic Industrial Municipal Industrial Municipal Industrial I	(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION	
<u></u>	☐ DeWater Test Well ☐ Other ☐  TYPE OF WORK: Owner's number of well	Formation: Describe by color, character, size of material and structure, and show thickness and the kind and nature of the material in each stratum penetrated, with at least one en change of information.	s of aquifers
(4)	(If more than one)	MATERIAL FROM	то
	Abandoned	Tap Sail O	っ
	Reconditioned Rotary Jetted	Boulder BR Clay 2	17
(5)	DIMENSIONS: Diameter of well 11) - 6 inches.	DE ( 1011)	10
• •	Drilled 77 feet. Depth of completed well 77 ft.	GRay Clay	28
		Coa Harl	30
(6)	CONSTRUCTION DETAILS:	Grow Clay & Coal 32	35
	Casing installed: 6 Diam. from + 2 ft. to 58 ft. Welded P7 Piem from # to 58	Blue & Gray Clou 35	42
	Threaded	Shale & tran Clay, 42	71
		Sand Stone white without	75
	Perforations: Yes No C	Blue + Gray Shale 775	ブラ
	Type of perforations SIZE of perforations VS in. by 12 in.	0 10	
	110		
	perforations from 5' ft. to ft.		
	perforations fromft. toft.		
		The state of the s	
	Screens: Yes No No Manufacturer's Name		
	Type Model No.		
	Diam. Slot size from ft. to ft.		
·	Diam. Slot size from ft. to ft.	MIN 10 201	
_	Gravel packed: Yes No Size of gravel		<del></del>
	Gravel placed fromft. toft.	DE ACMENT OF ECOLOGY CENTRAL REGION OF FICE	
	Surface seal: Yes la No To what depth? 25 ft.		
	Material used in seal Benon # e		
	Did any strata contain unusable water? Yes No 🔑		
	Type of water? Depth of strata		
	Method of sealing strata off		<u></u> -
(7)	PUMP: Manufacturer's Name		
<u></u>	Туре:		
(8)	WATER LEVELS: Land surface elevation above mean sea level ft.	Work Started 10-22-19. Completed 10-2	<u>3.197</u>
	Static level	WELL CONSTRUCTOR CERTIFICATION:	•
	Artesian pressure fbs. per square inch Date  Artesian water is controlled by		
	(Cap, valve, etc.)	I constructed and/or accept responsibility for construction of this well compliance with all Washington well construction standards. Materials a	used and
(9)	WELL TESTS: Drawdown is amount water level is lowered below static level	the information reported above are true to my best knowledge and belief.	
	Was a pump test made? Yes No If yes, by whom?	NAME WA TUR MAIN DIR'LLI'NG (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)	
	Yield:gal./min. withft. drawdown afterhrs.		3000
	11 11 11 11 11	Address 106 Berriman in Selah Wa	1874°
	H (1) H (1) H (1) H	(Signed) Ody Carp in & License No. 1	9117
	Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)	(Signed) License No	
T	ime Water Level Time Water Level Time Water Level	Contractor's	
<del></del>		Registration TERMWOLHUA 10/24/9	<b>7.</b>
•			-19
_	Date of test	(USE ADDITIONAL SHEETS IF NECESSARY)	•
	Baller testgal./min. withft. drawdown afterhrs.	<u> </u>	
	Airtestgal./min. with stem set at \$ 1/2 ft. for hrs.	Ecology is an Equal Opportunity and Affirmative Action employer.	
	Artesian flowg.p.m. Date	cial accommodation needs, contact the Water Resources Program 407-6600. The TDD number is (206) 407-6006.	at (206) _

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

#### WATER WELL REPORT

Start Gard No. 6093573

UNIQUE WELL I.D. # STATE OF WASHINGTON Third Copy - Driller's Copy Water Right Permit No. VNER: Name\_ CECIL CARUETH (1) LOCATION OF WELL: County K ITT ITAS ROAP (2a) STREET ADDRESS OF WELL (or nearest address) AIRPORT **PROPOSED USE:** 14 Domestic WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION Municipal [ (10)Industrial Irrigation П Test Well □ Formation: Describe by color, character, size of material and structure, and show thickness of aquifers Other  $\Box$ ō DeWater and the kind and nature of the material in each stratum penetrated, with at least one entry for each Owner's number of well (if more than one) change of information. TYPE OF WORK: (4) MATERIAL FROM TO S. New well Abandoned | \( \) Method: Dug Bored Deepened п Cable □ Rotary ₩ Driven [] Reconditioned □ Jetted □ COBBLES 0 18 DIMENSIONS: Diameter of well inches. 36 Drilled 440 GRAVEL 18 \_feet. Depth of completed well **CONSTRUCTION DETAILS:** 38 Casing Installed: Welded 2 Liner installed 1 Threaded 1 Diam. from\_ ZO ft. to GRA4 Diam. from Perforations: Yes No 🗌 SHALE: COAL Z 18 240 Type of perforator used in. by 1/8 SIZE of perforations 240 BROKEN 420 120 perforations from ft. to ft. \_ perforations from ft. to ft. 254 perforations from ft. to \_ft. Screens: Yes 🔲 Manufacturer's Name Model No. ю 360 420 GRAY Siot size ft. Olam. Slot size \_ft. Gravel packed: Yes ... No 🔲 Size of gravel Gravel placed from ft. to ft. <u> 20</u> Surface seal: Yes 🔀 No 🔲 To what depth? ft. Material used in seal BENTON 1 TE Did any strata contain unusable water? Yes No 🗌 Type of water? Depth of strata Method of sealing strata off PUMP: Manufacturer's Name H.P. Type: Land-surface elevation **WATER LEVELS:** , 19. Completed 19 98 Static level ft. below top of well Date WELL CONSTRUCTOR CERTIFICATION: Artesian pressure lbs. per square inch. Date Artesian water is controlled by I constructed and/or accept responsibility for construction of this well, and its (Cap, valve, etc.) compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief. WELL TESTS: Drawdown is amount water level is lowered below static level NAME BACH DRILLING CS Was a pump test made? Yes If yes, by whom? gal./min. with ft. drawdown after hrs. " Address 3340 WILSON CREEK -License No. 1778 (Signed) = Recovery data (time taken as zero when pump turned off) (water level measured from well Time Water Level Water Level Time Water Level Contractor's Registration No. MIKE BOC 13304 Date 4/24 (USE ADDITIONAL SHEETS IF NECESSARY) Date of test gal./min. with \_ ft. drawdown after Ecology is an Equal Opportunity and Affirmative Action employer. For spe-Airtest 15-20 gal./mln. with stem set at 420 ft. for cial accommodation needs, contact the Water Resources Program at (206) g.p.m. Date 407-6600. The TDD number is (206) 407-6006. Temperature of water \_

\_\_\_ Was a chemical analysis made? Yes 🔲

#### Grafe of Washington

(1) OWNER: Name CARVETH, CECIL F. Address HC61 1	BUX 4096 CLE ELUM, WA 98922-
	- NE 1/4 NE 1/4 Sec 31 T 20 N., R 16 WM
(3) PROPUSED USE: DOMESTIC	(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
Drilled 210 ft. Depth of completed well 195 ft.	I MATERIAL I FROM I TU I SAND GRAUFI I & ! 12
(6) CONSTRUCTION DETAILS: Casing installed: 6 " Dia. from +2 ft. to 195 ft. WELDED " Dia. from ft. to ft. " Dia. from ft. to ft.	I GRAVEL COBBLES WATER I 12   14 I SAND GRAVEL BOULDERS I 14   16
Perforations: NO Type of perforator used SIZE of perforations perforations from ft. to ft. perforations from ft. to ft. perforations from ft. to ft.	I GREY CLAY GRAVEL 174 176
Screens: NO Manufacturer's Name Type Model No. Diam. slot size from ft. to ft. Diam. slot size from ft. to ft.	GREY CLAY
Gravel packed: YES Size of gravel 1/4" Gravel placed from 210 ft. to 168 ft.	NOTE: PULLED CASING BACK TO 195'
Gurface seal: YES fo what depth? 18 ft. Material used in seal BENTONITE Did any strata contain unusable water? YES Type of water? MUDDY Depth of strata ft. Method of sealing strata off OVERBURE	WATER IS STILL CLOUDY.  IF SET PUMP, JUST PUMP 8+10 GPM.  IT SHOULD CLEAN UP.
(7) PUMP: Manufacturer's Name Type H.F. DE	GRIVE
Static level 20 ft. below top of well Date 4727/95 Artesian Pressure lbs. per square inch Date	PARTMENT OF ECOLOGY WIRE REGION 63/16/95 Completed 03/21/95
static level.  Was a pump test made? NO 1f yes, by whom?  Yield: gal./min with ft. drawdown after hrs.	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.
Recovery data Time Water Level Time Water Level Time Water Level	NAME PONDEROSA DRILLING (Person, firm, or corporation) (Type or print)
Date of test / / Bailer test gal/min. ft. drawdown after hrs. Air test 30 gal/min. w/ stem set at 150 ft. for 2 hrs. Artesian flow g.p.m. Temperature of water Was a chemical analysis made? NO	Contractor's

Start Card No. UCI Y.J.

\* STATE OF WASHINGTON

ınıra	Copy—Driller's Copy	Water Right Permit No.			
(1)	OWNER: Name LOYO Greet	Address Or Elm,			
— (2)	LOCATION OF WELL: County Ki Hitas	NE WFE W Sec. 3/ T.	W N, R 16 50M		
-	STREET ADDDRESS OF WELL (or nearest address) Air part	Rd Tracts hot 4			
(3)	PROPOSED USE:  ☐ Irrigation ☐ DeWater Test Well ☐ Other ☐	(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIF			
(4)	TYPE OF WORK: Owner's number of well (if more than one)	thickness of aquifers and the kind and nature of the material in ea with at least one entry for each change of information.			
	Abandoned New well Mathod: Dug Bored Deepened Cable Driven Reconditioned Reconditioned Deepened Driven Rotary	Overburgen Boulders hard is great	FROM TO 5		
(5)	DIMENSIONS: Diameter of well	Blue Clay soft Gravel 16 + smell sandy,	15 178		
(6)	CONSTRUCTION DETAILS:	source of fine wester			
,	Casing installed:    Diam. from   Diam. from   H. to   S   H. to   H.				
	Perforations: Yee No 2				
	SIZE of perforations in. by in in ft. to ft.				
	perforations fromft. toft.				
	Screens: Yes No No				
	Type Model No	i i i			
	Diam.         Slot size         from         ft. to         ft.           Diam.         Slot size         from         ft. to         ft.				
	Gravel packed: Yes No Size of gravel	1/9V 2 9 1994			
	Gravel placed fromft. toft.				
	Surface seal: Yes No To what depth? It.  Material used in seal Butowite + Water				
	Did any strata contain unusable water? Yes No Depth of strata \$ -15				
(7)	PUMP: Manufacturer's Name				
	Туре:				
(8)	WATER LEVELS: Land-surface elevation above mean sea level 2000	· · ·			
	Static level ft. below top of well Date 1. below top of well Date 1. TTTTTTTTTTTTTTTTTTTTTTTTTTTTT		·		
	Artesian water is controlled by(Cap, valve, etc.))	C/10/190	111/00		
(9)	WELL TESTS: Drawdown is amount water level is lowered below static level Was a pump test made? Yes No If yes, by whom?	Work started 3/10/79, 19. Completed 3/	11/17,19		
	Yield:gal./min. withft. drawdown afterhrs.	I constructed and/or accept responsibility for cons and its compliance with all Washington well con Materials used and the information reported above	struction standards		
	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	NAME Mark Black			
		Address Po By F9 Ck Elu	(TYPE OR PRINT)		
	Date of test	(Signed) Mart Black	No 1867		
	Bailer test gal./min. with ft. drawdown after hrs.  Airtest 15 gal./min. with stem set at 160 ft. for 3 hrs.	(Signed) License Contractor's (WELL DRILLER) Registration RT D PUR 3 L S Date  5 //	7 . 9		
	Artesian flow g.p.m. Date Temperature of water Was a chemical analysis made? Yes No X	North (ISE ADDITIONAL SHEETS IF NECES	-/, 19		
		THE ADDITIONAL SHEETS IF MECES	SOURTI FE		

Start Card No. W049452

STATE OF WASHINGTON

UNIQUE WELL I.D. # ABL 620

		ALGIAL CIĞILI LALIHIR IAGİ		
`	OWNER: Name John Uribe Addr	885 POBOX 777. 2411 Hwy 970 CL	EFLUM	V4498
 2)	LOCATION OF WELL: County Kittitas	NW 1/4 NE 1/4 Sec 31 T Z	. <sub>N. B</sub>	16 W.M
	STREET ADDRESS OF WELL (or nearest address)			
3)	PROPOSED USE: Domestic Industrial   Municipal	(10) WELL LOG or ABANDONMENT PROCEDURE DE	SCRIPTI	ION
	☐ Irrigation ☐ DeWater Test Well, ☐ Other ☐	Formation: Describe by color, character, size of material and structure, and s and the kind and nature of the material in each stratum penetrated, with at change of information.	how thickne least one e	ss of aquifers entry for eacl
(4)	TYPE OF WORK: Owner's number of well (If more than one)	MATERIAL	FROM	то
	Abandoned   New well	top 501/ Grand 201	0	7
	Reconditioned □ Rotary 🙀 Jetted □	Saul Grant costels #	/	18
5)	DIMENSIONS: Diameter of well 10 6 6 " Inches.	G-ravel costate Brown Clay My	18	20
	Drilled 393 feet. Depth of completed well 393 ft.	Clay when small crown comes Gory In	20	128
(6)	CONSTRUCTION DETAILS:	Clay with small Grand leave Grang In	128	130
	Casing installed: 6 Diam. from +2 ft. to 231 ft.	Clay Plue Con 24	130	132
	Welded A 44" Dlam. from -5 ft. to 393 ft.	Gravel Sand Clay Blue Gay In	132	157
	Threaded Diam. from ft. to ft.	Grand Clay Obserging m	157	165
	Perforations: Yes ⊠ No ☐  Type of perforator used Skill Saw	Clay Blue Gray m	165	178
	Type of perforation Skill Saw in. by 5' will in.	Sand Clays Ms	178	193
	260 perforations from - 293 ft. to 373 ft.		193 197	197 203
	perforations from ft. to ft.	Sand Grant day Blue Gray 2	203	208
	perforations from ft. to ft.	Sand Grand Clay Blue Granz In	208	ZZY
	Screens: Yes No 🔀	Salstone whiteis blue H	224	276
	Manufacturer's Name Model No	Sandstone with each tene In	276	334
	Diam. Slot size from ft. to ft.	Variation Back	<i>334</i>	<i>387</i> <i>393</i>
	Diam. Slot size from ft. to ft.	Sandatone with Coal Leng In	<u>307</u>	2/3
	Gravel packed: Yes No 🔀 Size of gravel			
	Gravel placed fromft. toft.			<u> </u>
	Surface seal: Yes No To what depth? 20 ft.  Material used in seal Sealer			
	Did any strata contain unusable water? Yes No 🔀	FR BINE		
	Type of water? Depth of strata	TO E G E I V S		<u> </u>
	Method of sealing strata off			
(7)	PUMP: Manufacturer's Name	APR 1.3		
	Type: H.P			
(8)	WATER LEVELS: Land-surface elevation above mean sea level	DEPARTMENT OF ECOLOGY CENTRAL REGION OFFICE		
	Static levelft. below top of well Date Artesian pressure lbs. per square inch Date	CENTRAL		<u> </u>
	Artesian water le controlled by			
	(Cap, valve, etc.)	Work Started 4/3/95 19. Completed 9/7/9	15	, 19
(9)	WELL TESTS: Drawdown is amount water level is lowered below static level  Was a pump test made? Yes \( \text{No} \) No \( \text{If yes, by whom?} \)	WELL CONSTRUCTOR CERTIFICATION:		
	Yield:gal./min. with ft. drawdown after hrs.	I constructed and/or accept responsibility for construction	of this w	all and ite
	и и и п	compliance with all Washington well construction standards	. Materials	used and
	11 11 11 11	the information reported above are true to my best knowledg		
	Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)	NAME Water Man well of (PERSON, FIRM, OR CORPORATION) (TYPE OR	<u>^º//i/</u>	<del>5</del>
_ T _	ime Water Level Time Water Level Time Water Level	Address 106 Berrianan LN Selah wer	L 9K	7942
	Afrox 30 gfm — — — — — — — — — — — — — — — — — — —	Address 106 Berriman LN Selah was (Signed)Licens	<u> </u>	335
_	AM Ziff	(Signed) Licensi	a No	
	Date of test  Baller test gal./min. with ft. drawdown after hrs.	Contractor's		
	Airtest gal./min. with stem set at ft. for hrs.	Registration No. Watermwc64JZ Date 4/8/95	-	. 19
	Artesian flow g.p.m. Date	(USE ADDITIONAL SHEETS IF NECESSA		
	Temperature of water Was a chemical analysis made? Yes	ACCUPATIONAL OFFICE A MEDICAL	,	

Start Card No. W40117 Unique Well I.D. # ABV517 Water Right Permit No.

STATE OF WASHINGTON

8797 GAGE BLVD. BUITE A KENNEHICK, WA 99336-(1) OWNER: Name HOLTER, DEL (NWA DEVELOP). Address ------(2) LUCATION OF WELL: County KITTITAS
(2a) STREET ADDRESS OF WELL (or nearest address), Sec 31 7 20 N., R 16E WM NW 1/4 (10) WELL LUG (3) PROPOSED USE: DUMESTIC Uwner's Number of well Formation: Describe by color, character, size of material (4) TYPE OF WORK: and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with (If more than one) Method: RUTARY NEW WELL at least one entry for each change in formation. (3) DIMENSIONS: Diameter of well & inches | Depth of completed well 398 FRUM Drilled 398 5 TOPSUIL Ø (6) CONSTRUCTION DETAILS: COBBLES BOULDERS 18 Casing installed: " Dia. from +2 ft. to 396 GREY CLAY 18 " Dia. from GRAVEL COBBLES GRAVEL WATER ft. to ft. " Dia. from ft. to BAND WATER SAND GRAVEL WATER SAND WATER Perforations: NO 371 Type of perforator used SIZE of perforations GRAVEL WATER in. by ft. ft. to perforations from perforations from ft. to ft. perforations from ft. to Screens: NO Manufacturer's Name Type Model No. Diag. slot size tran ít. to slot size Dias. from ft. to Gravel packed: NO Size of gravel Gravel placed from ft. to ft. Surface seal: YES To what depth? 20 Material used in seal BENTONITE Did any strata contain unusable water? YES Type of water? OTHER Depth of st Method of sealing strata off OVERBURE Depth of strata 6-18 ft. (/) PUMP: Manufacturer's Name 22222222222222 (B) WATER LEVELS: Land-surface elevation above mean sea level ... tt. below top of well Date 04/06/95 lbs. per square inch Date Static level Artesian Pressure Artesian water controlled by 1 Work started 04/04/95 Completed 04/06/95 (9) WELL TESTS: Drawdown is amount water level is lowered below WELL CONSTRUCTOR CERTIFICATION: static level. I constructed and/or accept responsibility for con-Was a pump test made? NO 1f yes, by whom? Yield: gal./min with ft. drawdown after struction 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. Recovery data lime Water Level lime Water Level NAME PONDERUSA DRILLING Water Level (Person, firm, or corporation) (Type or print) ADDRESS E GOTT BRUADWAY Date of test gal/min. Lesticense No. 2154 Bailer test ft. drawdown after [SIGNED] hrs. I gal7min. w/ stem set at 390 ft. for 1 Air test 100 hrs. I Artesian flow Date Contractor's g. p. x. Temperature of water Date 04/10/95 Was a chemical analysis made? NO | Registration No. PO-ND-E1\*248JE

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

UNIQUE WELL I.D. # AEM 686

Thire	d Copy — Driller's Copy STATE OF V	VASHINGTON	Water Right Permit No.	<del></del>		
(1)	OWNER: Name Russell Stein Ad	tress <u>4312</u>	30th Ave	w Seath	iewa	9810
(2)	LOCATION OF WELL: COUNTY KI HITAS	·	-NW 1/4 NV	1/4 Seq 3   T.	300N, R	(O_W.M.
(2a)	STREET ADDRESS OF WELL (or nearest address)	·				
(3)	PROPOSED USE: Domestic Industrial	(10) WELL LO	OG or ABANDONME	NT PROCEDURE D	ESCRIPTION	ON
	□ DeWater Test Well □ Other □	and the kind and na	by color, character, size of ture of the material in each			
(4)	TYPE OF WORK: Owner's number of well (If more than one)	change of informatio	n. MATERIAL		FROM	то
	Abandoned New well Method: Dug Bored Deepened Cable Driven	Trosail	Brn	med	6	<del></del>
	Reconditioned □ Rotary 😿 Jetted □	SAND+GRAV		madiff	2	15
(5)	DIMENSIONS: Diameter of well 10x 6 inches.		LueGru	med H	15	40
	Drilled 412 feet. Depth of completed well 4/2 ft.	Silt stone	Bluegry	med	40	<u> 43</u>
(6)	CONSTRUCTION DETAILS:		lue gry	med	43	410
• •	Casing installed: 6 Diam. from + 3 ft. to -4/2 ft.	COURSE DANS	t Grabel mu	HCOVOY MED	410	4/2
	Welded Diam. from ft. to ft.			· <del>····</del>		
	Threaded Diam. from ft. to ft.		·			
	Perforations: Yes No 🔀					
	Type of perforator used					
	perforations from ft. to ft.	ļ				<del></del>
	perforations fromft. toft.		·	·		
	perforations fromft. toft.					
	Screens: Yes No X					
	Manufacturer's Name					
				CENTRIC		
	Diam. Slot size from ft. to ft.			- <del>                                     </del>		
-	Gravel packed: Yes No X Size of gravel	· · · ·	·-	<del>- 6 - 1</del>		
	Gravel placed fromft. toft.			O. C. S.		
_	Surface seal: Yes No . To what depth?ft.	<u>-</u>		WCF a		
	Material used in seal <u>Bertonite &amp; Cement</u>	<u> </u>				
	Did any strata contain unusable water? Yes No No Depth of strata	<del></del>		<u> </u>		
	Method of sealing strata off		<del></del>			
(7)	PUMP: Manufacturer's Name		<del> </del>		<u> </u>	
(8)	WATER LEVELS: Land-surface elevation	Work Started	Aug 3 ,19	7Completed	Aug 9	1999
	Static level 18 above mean sea level ft. below top of well Date 8-9-99	WELLOONS	<del>-                                    </del>		0	
	Artesian pressure tos. per square inch Date Artesian water is controlled by		RUCTOR CERTIFIC			
	(Cap, valve, etc.)	compliance	d and/or accept respon with all Washington well	construction standard	s. Materials i	used and
(9 <u>)</u>	WELL TESTS: Drawdown is amount water level is lowered below static level	the informati	on reported above are tr	ue to my best knowledg	ge and belief	•
	Was a pump test made? Yes No If yes, by whom?	NAMENCE	ev Man V	vellonili	ina li	<u> </u>
	in diamon, didi	1/2/	Derrimon	S Land S'	IA LA	r. 98
_	" ESTIMATED AIRUFT "	Addres Addres		1 mr X	<u> AUT M</u>	2.10
	Recovery data (time taken as zero when pump turned off) (water level measured from well	(Signed)	WELL DRIVERS	Licens	se No	108
Т	top to water level) ime Water Level Time Water Level Time Water Level	Contractor's		Chris Haye	·s)	
<del></del>		Contractor's	MAINE	SIM	199	
_		1 CAT I CAL		Date	4. V. C.	19
	Date of test	1	USE ADDITIONAL S	HEETS IF NECESS	ARY)	
	Baller testgal./min. with ft. drawdown after hrs.	Ecology is an	Equal Opportunity an	d Affirmative Action	– employer <sup>:</sup>	For ena.
	Airtestgal./min. with stem set atft. forhrs.  Arteslan flowg.p.m. Date	cial accommod	equal Opportunity an dation needs, contact	the Water Resource	s Program	at (206)
	Temperature of water Was a chemical analysis made? Yes No		TDD number is (206		-	

Start Card No. W 06/83

eco	nind Copy—Owner's Copy Copy—Driller's Copy STATE OF V	VASHINGTON	W06/83
		Water Right Permit No	Ehrn WA 985
1) —	OWNER: Name Loy & GW CETT	Noured The Noured Noure	
2)	LOCATION OF WELL: County Kittas	NW 4 NW 4, Sec 31	T. 20 N. R. 16 E.
2a)	STREET ADDDRESS OF WELL (or nearest address) Air port	Rd Tracts Lot 2	
3)	PROPOSED USE: Domestic Industrial   Municipal	(10) WELL LOG OF ABANDONMENT PROC	EDITE DESCRIPTION
3)	Irrigation   DeWater   Test Well   Other		<del></del>
	El Dottato.	Formation: Describe by color, character, size of mate thickness of aquifers and the kind and nature of the mater	
4)	TYPE OF WORK: Owner's number of well (if more than one)	with at least one entry for each change of information.  MATERIAL	FROM TO
	Abandoned New well Method: Dug Deepened Cable Depend Driven	Overburden	0 6
	Reconditioned  Reconditioned  Reconditioned  Reconditioned  Reconditioned  Reconditioned  Reconditioned  Reconditioned  Reconditioned	Gravel lange	6 23
 5)	DIMENSIONS: Diameter of wellinches.	Blue Clay, soft	23 157
	Drilled 160 feet. Depth of completed well 160 ft.	Gravel small w/ sand,	157 160
 6)	CONSTRUCTION DETAILS:	course + time water	
υ,	A 11.5	bearing	
	Welded        * Diam. fromft. toft.           Liner installed        * Diam. fromft. toft.		
	Perforations: Yes No		<del></del>
	Type of perforator used		
	SIZE of perforations in. by in.		
	perforations fromft. toft.		
	perforations fromft. to:ft.		
	perforations fromtt. tott.		
	Screens: Yes No W		
	Manufacturer's Name		<del></del>
	Type Model No  Diam Slot size from ft. to ft.		
	Diam. Slot size from ft. to ft.	9 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
	Gravel packed: Yes No Size of gravel		
	Gravel placed fromft. toft.		
		10V 29 C	
	Surface seal: Yes No To what depth?		
	Did any strata contain unugable water? Yes No.		
	Type of water? Swall Depth of strata 6 - 23		
	Method of sealing strata off Startene Sail + into 5 live clan		
7)	PUMP: Manufacturer's Name		
	Туре:		
8)	WATER LEVELS: Land-surface elevation 2000		
	Static levelft. below top of well Dateft.		
	Artesian pressurelbs. per square inch Date		
	Artesian water is controlled by(Cap, valve, etc.))	4/15	4)18
9)	WELL TESTS: Drawdown is amount water level is lowered below static level	Work started, 19. Completed	<del>-/</del>
	Was a pump test made? Yes No X If yes, by whom?	WELL CONSTRUCTOR CERTIFICATION:	•
	Treto	I constructed and/or accept responsibility for	
	0 0 0	and its compliance with all Washington we Materials used and the information reported a	
	Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)	knowledge and belief.	
	Time WaterLevel Time WaterLevel Time WaterLevel	NAME Wark Black	
		(PERSON, FIRM, OR CORPORATION)	(TYPE OR PRINT)
		Address POTSX 89 Che El	un WA 5652)
	Date of test	Not int.	1000
	Bailer test gal./min. with ft. drawdown after hrs.	(Signed) (WELL DIFFILLER) Lic	cense No
	Airtest 15 gal./min. with stem set at 1 60 ft. for 4 hrs.	Contractor's	11110 61
	Artesian flow g.n.m. Date	Registration RKYD PUGZLS No. LANDREY PUGZLS	4/19 19 7

(USE ADDITIONAL SHEETS IF NECESSARY)



Temperature of water \_\_\_\_\_ Was a chemical analysis made? Yes No 🛛

84407 Start Card No. \_\_\_

STATE OF WASHINGTON

Water Right Permit No. \_ WILLIAMS OWNER: Name Address LOCATION OF WELL: County KITT I TAS NW Nah sec 31 - ZON B **,z)** MC DONAL D (2a) STREET ADDDRESS OF WELL (or nearest address) Domestic Irrigation PROPOSED USE: Industrial 🔲 . Municipal (10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION Test Well □ Other ☐ DeWater 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, TYPE OF WORK: Owner's number of well with at least one entry for each change of information. (4) MATERIAL FROM Method: Dug 🛚 Abandoned New well Bored Deepened Cable | Driven | Reconditioned Jetted | Rotary 🖵 (5) DIMENSIONS: Diameter of well... inches. තීම \_\_\_feet. Depth of completed well. **CONSTRUCTION DETAILS:** Casing Installed: " Dlam. from\_ Welded Liner installed 
Threaded Diam, from\_ SKILSAW Perforations: Yes Type of perforator used \_ . perforations from. perforations from. perforations from. No J Screens: Yes Manufacturer's Name. Type \_\_\_ \_\_ Model No.\_ \_ Slot size\_ Gravel packed: Yes No Size of gravel Gravel placed from. Surface seal: Yes No To what depth? 20 Material used in seal <u>GENTOWITE</u> 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:\_ Land-surface elevation **WATER LEVELS:** above mean sea level \_ Static level\_ \_\_ ft. below top of well Date \_ Artesian pressure \_ \_\_\_Ibs. per square inch Date \_\_ Work started. WELL TESTS: Drawdown is amount water level is lowered below static level Was a pump test made? Yes No If yes, by whom?\_ WELL CONSTRUCTOR CERTIFICATION: Yield: \_ \_\_\_\_\_ gal./min. with \_\_\_ \_ ft. drawdown after \_ 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. Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level) Time Time Water Level Water Level Time Water Level BACH DRICCING (PERSON, FIRM, OR CORPORATION) Address Date of test \_\_\_ (Signed)\_\_C License No.\_ Bailer test \_\_\_\_ \_\_ gal./min. with \_\_\_ \_\_\_\_ ft. drawdown after \_ Contractor's Airtest \_\_\_\_\_ gal./min. with stem set at \_\_\_\_\_ ft. for \_\_\_\_ Registration
No. MIKC BOC 1334bate \_\_ g.p.m. Date \_ Artesian flow ..... \_ Was a chemical analysis made? Yes 🌙 No 📙 Temperature of water \_\_\_\_

Start Card No. 027257

STATE OF WASHINGTON

	-	T	~
		1,	,
later Dight	Dermit No.	-¥	_

(1)	OWNER: Name DENNIS HANKINS	Address R. MASTELSON	<del></del>	<del></del>
2)	LOCATION OF WELL: County KIHITAS	μω " Nω " sec 31 T. Z	0_N., R_	16 w.m.
(2a)	STREET ADDDRESS OF WELL (or nearest address)			
(3)	PROPOSED USE: Domestic   Industrial □   Municipal □   Irrigation   DeWater   Test Well □   Other □	(10) WELL LOG or ABANDONMENT PROCEDULE Formation: Describe by color, character, size of material an		
(4)	TYPE OF WORK: Owner's number of well (if more than one)	thickness of aquifers and the kind and nature of the material in ea with at least one entry for each change of information.		
``'	Abandoned New well Method: Dug Bored	MATERIAL	FROM	то
	Deepened □ Cable □ Driven □	DIRT	0	2
	Reconditioned Rotary 77 Jetted 🗆	Time (Paris)		10
(5)	DIMENSIONS: Diameter of well inches.	VIRT +GRAVEL		17
	Drilled 120 feet. Depth of completed well 220 ft.	Blue Blay	11	190
(6)		- Dave Co.	1-7-	7 7 0
	Casing installed: Diam. from ft. to 25> ft.  Welded Diam. from ft. to 1.	WATER SAND + Chay	190	200
	Threaded Diam. from ft. to ft.	HARD BLUE SHALE	200	210
	Type of perforator used	SAND + GRAVEL	210	2.20
	SIZE of perforations in. by in.			
	perforations fromft. toft.			
	perforations fromft. toft.			<del></del>
	perforations fromft. toft. Screens: Yes No X		-	
	Manufacturer's Name			
	Type Model No		-	
	Diamft. toft.			
	DiamSlot sizefromft. toft.			
	Gravel packed: Yes No Size of gravel			
	Gravel placed from ft. to ft.			<u></u>
	Surface seal: Yes No To what depth?ft.  Material used in seal	5 1991		
	Did any strata contain unusable water? Yes No			
	Type of water?Depth of strata	DEPARTMENT O		
<del>/7</del> \	Method of sealing strata off	CENTRAL REGION FOR		
(7)	PUMP: Manufacturer's Name			<del>_</del>
(8)	WATER LEVELS: Land-surface elevation above mean sea level ft.			
	Static level 5 ft. below top of well Date 8-6-9			
	Artesian pressurelbs. per square inch Date			
	Artesian water is controlled by(Cap, valve, etc.))	7-22 91 8	لسي	- 0
(9)	WELL TESTS: Drawdown is amount water level is lowered below static level	Work started	>	
	Was a pump test made? Yes No If yes, by whom?	WELL CONSTRUCTOR CERTIFICATION:		
	U U U U	I constructed and/or accept responsibility for cons and its compliance with all Washington well con-		
	0 0 0 n	Materials used and the information reported above knowledge and belief.		
	Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)	Kilowiedge alld belief.	10	•/
	Time Water Level Time Water Level Time Water Level	NAME DACH MILLIE	9	<i>(</i> 2) ;
		PERSON, FIRM, OR CORPORATION)	TYPE OI)	R PRINT)
		Address TOX 1010 L	=72	ung
•	Date of test	(Sinfare en en ME/Belondon.	09	330
	Bailer test gal./min. with ft. drawdown after hrs.	(Signed) License (Contractor's (FELL DRILLER)	vo	- Jan
	Airtest 5 0 gal./min. with stem set at 160 ft. for 1hrs.	Registration		, F
	Artesian flow g.p.m. Date	No	<del></del> :	, 19
	Temperature of water Was a chemical analysis made? Yes No	THE ADDITIONAL CHEETS IS NECES	CADVI	

(USE ADDITIONAL SHEETS IF NECESSARY)



STATE OF WASHINGTON

(i) UNNER: Name CAILLIER, JOE Address 2/81	HWY. 970 CLE ELUM, WA 98922-
(2) LUCATION OF WILL: County KITTITAS (2a) STREET ADDRESS OF WELL (or nearest address),	- SW 1/4 NE 1/4 Sec 31 7 20 N., N 16 WM
(3) PROPOSED USE: DOMESTIC	I (10) WELL LOG
(4) TYPE OF WORK: Owner's Number of well (If more than one) WELLIAM: Method: MITAIN	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
(3) OFMENSIONS: Diameter of well 6 inches Drilled 60 ft. Depth of completed well 60 ft.	MATERIAL   I RUM   TU   TOPSUIL   0   3
(6) CONSTRUCTION DETAILS: Casing installed: 6 " Dia. from +2 ft. to 28 ft. WELDED 4 " Dia. from 24 ft. to 60 ft. " Dia. from ft. to ft.	GRAVEL COBBLEG WATER
Perforations: YES	BROWN SHALE WATER 48 53 60 53 60 60
Screens: NO Manutacturer's Name Type Model No. Diam. slot size from ft. to ft. Diam. slot size from ft. to ft.	
Gravel packed: NO Gize of gravel bravel placed from ft. to ft.	DEGELVE
Surface seal: YES to what depth? 18 ft. Material used in seal BENTONITE Did any strata contain unusable water? NO Type of water? Depth of strata ft. Method of sealing strata off OVERBURE	DEPARTMENT OF ECULOR CENTRAL REGION OFFER
(/) PUMP: Manufacturer's Name Type H.P.	
(8) WATER LEVELS: Land surface elevation above mean sea level ft. Static level 18 ft. below top of well Date 03/13/95 Artesian Pressure lbs. per square inch Date Artesian water controlled by	
(%) WELL TESTS: Drawdown is amount water level is lowered below static level.  Was a pump test made? NO	I I constructed and/or accept responsibility for con- struction of this well, and its compliance with all
Recovery data Time Water Level Time Water Level Time Water Level	NAME PONDEROSA DRILLING (Person, firm, or corporation) (Type or print)
Date of test / / Bailer test gal/min. ft. drawdown after hrs. Air test 15 gal/min. w/ stem set at 60 ft. for l hrs. Artesian flow g.p.m. Date Temperature of water Was a chemical analysis made? NO	Contractor's

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

		Water night Permit No.
··•)	OWNER: Name Jery Mclane Add	1005,509 Butte Ave Pacific Wash 9804
(2)	LOCATION OF WELL: COUNTY KITTITAS	58.1/4 NE 1/4 Soc. 31 T. 20N. R.110 W.M
(2a)	STREET ADDRESS OF WELL (or nearest address)	H
(3)	PROPOSED USE: Domestic Industrial   Municipal	(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION
(4)	TYPE OF WORK: Owner's number of well	Formation: Describe by color, character, size of material and structure, and show thickness of aquifer and the kind and nature of the material in each stratum penetrated, with at least one entry for eac change of information.
(4)	(If more than one)	MATERIAL FROM TO
	Deepened ☐ Cable ☐ Driven ☐	Topsoil Brown m O 2
<del>/5</del> \	Reconditioned Rotary Jetted	si it sand gravel cobbels maly c. mit 2 9
(5)	Drilled 280 feet. Depth of completed well 280 ft.	sandamuel cophels maltycobe VIT 9 14 Chu w Grovel Brarau m 14 23
		sandstone our Gray my 33 35
(6)	CONSTRUCTION DETAILS:	Chy Gravel Cophes mH 35 54
	Casing installed: Diam. from 72 ft. to 98 ft. Welded Diam. from 7 ft. to 280 ft.	fine sand Gray MS 54 75
	Threaded Diam. from ft. to to ft.	Boulder Black gray VH 75 78
		Chay Grave Cobbels Billaray MH 1891
	Perforations: Yes X No Type of perforator used Skill SAW	clay-clayshale bigray m. 91 93
	SIZE of perforations 6" Come in. by #" wishe in.	substance sandstance array MH 93 97
		Siltstone sandstone Blackish Gray VIII 97 106
	perforations fromft. toft.	Sanstone who were surroum HICO 114
	perforations fromft. toft.	[COA] BLOCK MH 133 137
	Screens: Yes No 🔀	sanstone Oran my 137 14.
	Manufacturer's Name	Sandstone w Chulere hidraumh 143 174
٠.	Type Model No	sandstone white mit 176 211
	Diam. Slot size from ft. to ft.	coal Back m 214 215
	Dlam. Slot size from ft. to tt.	sandstone w Caylenes Gray Milas 23
	Gravel placed: Yes No Size of gravel	coal Black Brown in 1333 23
	Gravel placed from ft. to ft.	Sangston waay lens Gray MH 335 24K
	Surface seal: Yes S No D Jo what depth? 10 ft. Material used in seal Berry Nutt	Sandatone welaylenes Gray MH240 24' ISandatore welaylens higher MH244 24'
	Material used in seal	frac samston Gray m 247 25
	Type of water? Depth of strata	sandstone wormlenes blora miles 3 25
	Method of sealing strata off	sandstone Coal Black Brown M 258 26
		Sandstone w coal Blueis white M26426
(7)	PUMP: Manufacturer's Name	sandstone white m. 26028
<del>/0</del> \	WATER LEVELS: Land-surface elevation	
(8)	above mean sea level ft.	
	Static level	
	Artesian water is controlled by	
<u></u>	(Cap, valve, etc.)	Work Started 3 1 9 6 19. Completed 5 3 9 6 19
(9)	WELL TESTS: Drawdown is amount water level is lowered below an Edward OF (A) Was a pump test made? Yes \( \sigma \) No \( \sigma \) If yes, by whom? \( \sigma \) If \( \sigma \) If \( \sigma \) If yes, by whom?	LUGY WELL CONSTRUCTOR CERTIFICATION:
	Yield:gal./min. with ft. drawdown afterhrs.	
·-	n n n	I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and
	n n n	the information reported above are true to my best knowledge and belief.
	Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)	NAME VOLE MON VEN DTILLING  (PERSON, FIRM, OR CORPORATION)  (TYPE OR PRINT)
1	îme Water Level Time Water Level Time Water Level	PERSON, FIRM, OR CORPORATION (TYPE OR PRINT)
	— Afox — 50 gfm — — — —	Address 1001 Addre
_	Air Lift	(Signed) License No. 155
	Date of test	- (WELL DRILLERY)
	Baller testgal./min. with ft. drawdown after hrs.	Contractor's Registration
•	Airtestgal./min. with stem set at ft. forhrs.  Artesian flowg.p.m. Date	Registration TERMWOLLUD. 5/24/9619_
	Temperature of water Was a chemical analysis made? Yes No	(USE ADDITIONAL SHEETS IF NECESSARY)
		•

# WATER WELL REPORT STATE OF WASHINGTON

 $L/\Psi O$ Application No.

•	Pe	rmi	t 1	Vο	

M

(1) OWNER: Name 3ill Chark	Address Kinkland wish
) LOCATION OF WELL: County Kitatas	NW4 SW4 Sec 31 T 23N, R/6 WM.
Bearing and distance from section or subdivision corner	
(3) PROPOSED USE: Domestic D Industrial  Municipal	(10) WELL LOG:
Irrigation [ Test Well [ Other []	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.
(4) TYPE OF WORK: Owner's number of well (if more than one)	MATERIAL FROM TO
New well N Method: Dug Bored	ararch 5 90
Deepened	Sandy Chay 90 350
Reconditioned   Rotary 🗗 Jetted	380 390
(5) DIMENSIONS: Diameter of well inches.  Drilled 310 ft. Depth of completed well 1.	
(6) CONSTRUCTION DETAILS:	THE CENTER
Casing installed: 6 Diam. from t. 1. ft. to 380 ft.	general properties and the second an
Threaded Diam. from	
Welded Diam. from ft. to ft.	FEB 2 8 1990
Perforations: Yes No V	
Type of perforator used	DEPARTMENT OF ECOLOGY  CENTRAL REGION OFFICE
SIZE of perforations in, by in.	OLD THE STORY OF T
perforations from ft. to ft	
perforations from	
Screens: Yes   No 60  Manufacturer's Name	l
Type	
Diam Slot size from ft. to ft.	
Diam. Slot size from ft. to ft.	
Gravel packed: Yes   No   Size of gravel:	Prof. sc C. Table
Gravel placed from ft. to ft.	Sum Cold Cold Cold Cold Cold Cold Cold Cold
Surface seal: Yes No D To what depth? 20 ft.  Material used in seal B. A. C. A. 1 C.	Weer B 12 B Second B East Bad
Did any strata contain unusable water? Yes No [5]	
Type of water? Depth of strata	
Method of sealing strata off	
(7) PUMP: Manufacturer's Name  Type: 56 h	
above mean sea levelft.	
Static level	
Artesian water is controlled by	
(9) WELL TESTS: Drawdown is amount water level is lowered below static level	Work started June 25, 1989. Completed June 25, 1989.
Was a pump test made? Yes \( \sigma \) No \( \sigma \) If yes, by whom?	WELL DRILLER'S STATEMENT:
Yield: 60 gal./min. with ft. drawdown after hrs.	
" 91 + TesT " "	This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)	NAME Dick Poulin
Time Water Level Time Water Level Time Water Level	(Person, firm, or corporation) (Type or print)
	Address Po Bay 318 Che Chun
	, · · · · · · · · · · · · · · · · · · ·
Date of test	[Signed]
Bailer testgal./min, withft. drawdown afterhrs.  Artesian flowg.p.m. Date	_
Temperature of water Was a chemical analysis made? Yes [] No [	1 T 1 T 1 T 1 T 1 T 1 T 1 T 1 T 1 T 1 T



Phase I-Test Pits & Gw results 12/16 \$ 12/17/97

December 23, 1997

Gary Galloway Galloway Environmental, Inc. 3102 220th Place SE Issaquah, WA 98027

Re:

Analytical Data for Project 19735 Laboratory Reference No. 9712-070

Dear Gary:

Enclosed are the analytical results and associated quality control data for samples submitted on December 18, 1997.

The standard policy of OnSite Environmental Inc., is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister Project Chemist

**Enclosures** 

Date Extracted: Date Analyzed:

12-18-97 12-19-97

Matrix:

Soil

Units:

mg/Kg (ppm)

Client ID:	MW-1@15'	MW-2@10'	MW-2@15'
Lab ID:	12-070-01	12-070-02	12-070-03
Dilution Factor:	2.0	2.0	2.0
Gas:	ND ,	ND	ND
PQL:	23	23	23
Diesel Fuel:	ND	ND	ND
PQL:	58	57	58
Oil:	ND .	ND	ND
PQL:	116	114	116
Surrogate Recovery:	122%	130%	131%
o-Terphenyl			

#### **NWTPH-HCID**

Date Extracted:

12-18-97 12-19-97

Date Analyzed:

o-Terphenyl

Matrix:

Soil

Units:

mg/Kg (ppm)

Client ID:	MW-3@10'	MVV-3@15'	MW-4@5'
Lab ID:	12-070-04	12-070-05	12-070-06
Dilution Factor:	2.0	2.0	2.0
Gas:	ND	ND	ND
PQL:	24	23	22
Diesel Fuel:	ND	ND	ND
PQL:	60	57	55
Qil:	ND	ND	ND
PQL:	119	115	110
Surrogate Recovery:	102%	113%	120%

o-Terphenyl

#### NWTPH-HCID

Date Extracted:	12-18-97
Date Analyzed:	12-19-97

Matrix:		Soil	1.5
Units:		mg/Kg	(ppm)

Client ID:	MW-4@10'	MVV-4@15'	STP-15a
Lab ID:	12-070-07	12-070-08	12-070-09
Dilution Factor:	2.0	2.0	2.0
Gas:	ND	ND	ND
PQL:	23	22	24
Diesel Fuel:	ND	ND	ND
PQL:	57	56	61
Oil:	ND	ND	ND
PQL:	115	112	122
Surrogate Recovery:	103%	100%	110%

o-Terphenyl

#### **NWTPH-HCID**

NAMILLIFICID				
Date Extracted: Date Analyzed:	12-18-97 12-19-97			
Matrix: Units:	Soil mg/Kg (ppm)			
Client ID:	MW-4@10'	MW-4@15'	STP-15a	
Lab ID:	12-070-07	12-070-08	12-070-09	
Dilution Factor:	2.0	2.0	2.0	
Gas:	ND	ND	ND	
PQL:	23	22	24	
Diesel Fuel:	ND	ND	ND	
PQL:	57	56	61	
Oil:	ND	ND	ND	
PQL:	115	112	122	
Surrogate Recovery:	103%	100%	110%	

116

120%

Date of Report: December 23, 1997 Samples Submitted: December 18, 1997 Lab Traveler: 12-070

Project: 19735

#### **NWTPH-HCID**

Date Extracted: 12-18-97 12-19-97 Date Analyzed: Soil Matrix: mg/Kg (ppm) Units: STP-19a STP-15b STP-15c Client ID: 12-070-12 12-070-11 12-070-10 Lab ID: 2.0 2:0 2.0 Dilution Factor: ND ND -ND Gas: 25 21 23 PQL: ND ND ND Diesel Fuel: 53 58 PQL: 62 Heavy Oil ND ND Oil:

105

113%

123

138%

o-Terphenyl

Surrogate Recovery:

PQL:

o-Terphenyl

MAALLILIOID				
Date Extracted: Date Analyzed:	12-18-97 12-19-97			
Matrix: Units:	Soil mg/Kg (ppm)			
Client ID:	STP-19b	STP-19c	STP-20c	
Lab ID:	12-070-13	12-070-14	12-070-1	
Dilution Factor:	2.0	2.0	2.0	
			2 18	
Gas:	ND	ND	ND	
PQL:	26	22	21	
Diesel Fuel:	ND	ND	ND	
PQL:	66,	55	52	
Oil:	ND	ND	ND	
PQL:	132	110	104	
Surrogate Recovery:	80%	99%	113%	

Project: 19735

# NWTPH-HCID METHOD BLANK QUALITY CONTROL

12-18-97 Date Extracted: Date Analyzed:

12-19-97

Matrix:

Soil :

Units:

mg/Kg (ppm)

MB1218S1 Lab ID:

2.0 Dilution Factor:

NDGas:

20 PQL:

ND Diesel Fuel:

PQL: 50

ΝĎ Oil:

100 PQL:

104% Surrogate Recovery:

o-Terphenyl

#### NWTPH-Dx **DUPLICATE QUALITY CONTROL**

Date Extracted:

12-22-97

Date Analyzed:

12-22-97

Matrix:

Soil

Units:

mg/Kg (ppm)

Lab ID:

12-082-01 12-082-01 DUP

Diesel Fuel C12-C24:

104

115

PQL:

25

25

RPD:

10

Surrogate Recovery:

99%

89%

o-Terphenyl

Flags

01

#### **NWTPH-Dx** SB/SBD QUALITY CONTROL

Date Extracted: 12-22-97 12-22-97 Date Analyzed:

Matrix:

Soil

Units: Spike Level: mg/Kg (ppm)

100 ppm

SB1222S1 DUP SB1222S1 Lab ID:

79.5 78.5 Diesel Fuel C12-C24: 25 PQL: 25

80 79 Percent Recovery: RPD: 1.3

Surrogate Recovery:

93%

94%

o-Terphenyl

Flags



#### DATA QUALIFIERS AND ABBREVIATIONS

A - Due to high sample concentration, amount spiked insufficient for meaningful MS/MSD data recovery.
B - The analyte indicated was also found in the blank sample.
C - The duplicate RPD outside control limits due to analyte concentration within five times the quantitatio limit.
D - Data from 1: dilution.
E - Value reported exceeds the quantitation range. Value is an estimate.
F - Surrogate recovery data not available due to the high concentration in the sample.
G - Insufficient sample quantity for duplicate analysis.
J - The value reported was below the practical quantitation limit. The value is an estimate.
<ul> <li>K - Sample duplicate RPD outside control limits due to sample inhomogeniety. Sample re-extracted and re-analyzed with similar results.</li> </ul>
L - Quantitated from C7-C34 as diesel fuel #2.
M - Predominantly range hydrocarbons present in the sample.
N - Hydrocarbons in the gasoline range (C7-toluene) present in the sample. N1 - Hydrocarbons in the gasoline range (C7-toluene) present in the sample which are elevating the dies result.
O - Hydrocarbons in the heavy oil range (>C24) present in the sample. O1 - Hydrocarbons in the heavy oil range (>C24) present in the sample which are elevating the diesel result.
R - Hydrocarbons outside defined gasoline range present in the sample.
S - Surrogate recovery data not available due to the necessary dilution of the sample.
T - The sample chromatogram is not similar to a typical
U - Matrix Spike/Matrix Spike Duplicate RPD outside control limits due to matrix effects.
V - Matrix Spike/Matrix Spike Duplicate recoveries outside control limits due to matrix effects.
Z - Interferences were present which prevented the quantitation of the analyte below the detection limit reported.
ND - Not Detected
MRL - Method Reporting Limit
PQL - Practical Quantitation

# **Chain of Custody**

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## Chain of custody

% Moisture Follow up HeIDS as appropriate Laboratory No. Requested Analysis f EbH. НΔΛ COMMENTS: **LCLP Metals** Total RCRA Metals (8) PCB's by 8081/608 DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Report Copy Pink - Client Copy 7-18-93 PAHs by 8270/625 Project Chemist: OAB 36mivolatiles by 8270/625 1alogenated Volatiles by 8260 /olatiles by 8240/624/8260 DATE / DATE TIME xQ-HqTWV NWTPH-Gx/BTEX имтрн-нсгр # of Cont. Turn Around Requested □ Same Day (Check One) □ 24 Hours ☐ 48 Hours Standard X (other) Time Sampled Matrix 5 13:05 13:10 DATE REVIEWED RECEIVED BY Date Sampled FIRM Fax: (425) 885-4603 • Phone: (425) 883-3881 4924 NE 31st Circle • Redmond, WA 98052 **Environmental** DATE TIME Sample Identification アラク CALLOWAY 200 961-196 GALLOWAT 19735 Project Name: S TORE Y 978 **TELINQUISHED BY** RELINQUISHED BY Project Manager: REVIEWED BY FIRM Ġ Lab ID H

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METALS, VOLATILES/SEMI-VOLATILES

STP-19a {12/16/97]

January 7, 1998

**Gary Galloway** Galloway Environmental, Inc. 3102 220th Place SE Issaquah, WA 98027

Re:

Analytical Data for Project 19735 Laboratory Reference No. 9712-070

Dear Gary:

Enclosed are the analytical results and associated quality control data for samples submitted on December 18, 1997.

The standard policy of OnSite Environmental Inc., is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister **Project Chemist** 

**Enclosures** 

## VOLATILES by EPA 8260 page 1 of 2

Date Extracted: 12-24-97 1-05-98 Date Analyzed:

Soil Matrix:

Units: mg/Kg (ppm)

12-070-12 Lab ID: STP-19a Client ID:

Dilution Factor: 50

Compound	Resu	ılts Flags	PQL
Dichlorodifluoromethane	NI	<b>)</b>	0.058
Chloromethane	NE	)	0.058
Vinyl Chloride	NE	)	0.058
Bromomethane	NI	<b>כ</b>	0.058
Chloroethane	NI	).	0.058
Trichlorofluoromethane	NE	Ò	0.058
1,1-Dichloroethene	NI	)	0.058
Methylene Chloride	0.00	66	0.058
(trans) 1,2-Dichloroethene	NI	<b>)</b>	0.058
1,1-Dichloroethane	NI		0.058
2,2-Dichloropropane	NI	the second of th	0.058
(cis) 1,2-Dichloroethene	NI NI		0.058
Chloroform	NI		0.058
1,1,1-Trichloroethane	NI		0.058
Carbon Tetrachloride	NI	the state of the s	0.58
1,1-Dichloropropene	NI		0.058
Benzene	NI		0.058
1,2-Dichloroethane	NI		0.058
Trichloroethene	NI		0.058
1,2-Dichloropropane	N		0.058
Dibromomethane	NI		0.058
Bromodichloromethane	NI		0.058
(cis) 1,3-Dichloropropene	NI	**	0.058
Toluene	0.0		0.058
(trans) 1,3-Dichloropropene	NI		0.058
1,1,2-Trichloroethane	NI		0.058
Tetrachloroethene	, NI		0.058
1,3-Dichloropropane	Ni	D	0.058
			•

VOLATILES by EPA 8260 page 2 of 2

12-070-12 Lab ID: Client ID: STP-19a

Dilution Factor:

Compound	Results	Flags	PQL
Dibromochloromethane	ND		0.058
1,2-Dibromoethane	ND		0.29
Chlorobenzene	ND ,		0.058
1,1,1,2-Tetrachloroethane	ND		0.058
Ethylbenzene	ND		0.058
m,p-Xylene	0.20		0.12
o-Xylene	0.092		0.058
Styrene	ND		0.058
Bromoform	ND		0.058
Isopropylbenzene	ND		0.058
Bromobenzene	ND		0.058
1,1,2,2-Tetrachloroethane	ND		0.058
1,2,3-Trichloropropane	ND		0.058
n-Propylbenzene	ND		0.058
2-Chlorotoluene	ND		0.058
4-Chlorotoluene	ND		0.058
1,3,5-Trimethylbenzene	0.072		0.058
tert-Butylbenzene	ND .		0.058
1,2,4-Trimethylbenzene	0.18		0.058
sec-Butylbenzene	ND		0.058
1,3-Dichlorobenzene	ND		0.058
p-Isopropyltoluene	ND	2.5	0.058
1,4-Dichlorobenzene	ND		0.058
1,2-Dichlorobenzene	ND		0.058
n-Butylbenzene	ND		0.058
1,2-Dibromo-3-chloropropane	ND	4*	0.58
1,2,4-Trichlorobenzene	ND		0.058
Hexachlorobutadiene	ND		0.058
Naphthalene	ND	•	0.58
1,2,3-Trichlorobenzene	ND		0.058
	Percent		Control
Surrogate	Recovery		Limits
Dibromofluoromethane	63	*	80-120
Toluene-d8	73	*	81-117
4-Bromofluorobenzene	56	*	74-121

<sup>\*</sup> Surrogate recovery outside control limits.

## VOLATILES by EPA 8260 METHOD BLANK QUALITY CONTROL page 1 of 2

Date Extracted: Date Analyzed:

12-24-97 1-05-98

Matrix:

Soil

Units:

mg/Kg (ppm)

Lab ID:

MB1231S1

Dilution Factor:

50

Compound	Results	Flags	PQL
Di Allana diffusiana madda ma	ND		0.05
Dichlorodifluoromethane	A CONTRACTOR OF THE PROPERTY O		0.05
Chloromethane	ND	*, *	
Vinyl Chloride	ND		0.05
Bromomethane	ND		0.05
Chloroethane	ND		0.05
Trichlorofluoromethane	ND		0.05
1,1-Dichloroethene	ND		0.05
Methylene Chloride	ND		0.05
(trans) 1,2-Dichloroethene	ND		0.05
1,1-Dichloroethane	ND		0.05
2,2-Dichloropropane	ND		0.05
(cis) 1,2-Dichloroethene	ND		0.05
Chloroform	ND	en en en en en en en en en en en en en e	0.05
1,1,1-Trichloroethane	ND		0.05
Carbon Tetrachloride	ND .		0.50
1,1-Dichloropropene	ND		0.05
Benzene	ND		0.05
1,2-Dichloroethane	ND		0.05
Trichloroethene	ND		0.05
1,2-Dichloropropane	ND		0.05
Dibromomethane	ND		0.05
Bromodichloromethane	ND		0.05
(cis) 1,3-Dichloropropene	ND		0.05
Toluene	ND		0.05
(trans) 1,3-Dichloropropene	ND		0.05
1,1,2-Trichloroethane	ND		0.05
Tetrachloroethene	ND		0.05
1,3-Dichloropropane	ND		0.05

## VOLATILES by EPA 8260 METHOD BLANK QUALITY CONTROL page 2 of 2

Lab ID:

MB1231S1

Dilution Factor:

50

		-	er er greger er
Compound	Results	Flags	PQĻ
Dibromochloromethane	ND		0.05
1,2-Dibromoethane	ND	·	0.25
Chlorobenzene	ND		0.05
1,1,1,2-Tetrachloroethane	ND		0.05
Ethylbenzene	ND		0.05
m,p-Xylene	ND		0.10
o-Xylene	ND	•	0.05
Styrene	ND		0.05
Bromoform	ND		0.05
Isopropylbenzene	ND		0.05
Bromobenzene	ND		0.05
1,1,2,2-Tetrachloroethane	ND		0.05
1,2,3-Trichloropropane	ND		0.05
n-Propylbenzene	ND		0.05
2-Chlorotoluene	ND		0.05
4-Chlorotoluene	ND		0.05
1,3,5-Trimethylbenzene	ND	- 1	0.05
tert-Butylbenzene	ND		0.05
1,2,4-Trimethylbenzene	ND		0.05
sec-Butylbenzene	ND		0.05
1,3-Dichlorobenzene	ND		0.05
p-Isopropyltoluene	ND		0.05
1,4-Dichlorobenzene	ND		0.05
1,2-Dichlorobenzene	ND		0.05
n-Butylbenzene	ND		0.05
1,2-Dibromo-3-chloropropane	ND	; · ,	0.50
1,2,4-Trichlorobenzene	ND		0.05
Hexachlorobutadiene	ND		0.05
Naphthalene	ND		0.50
1,2,3-Trichlorobenzene	ND		0.05
	Percent		Control
Surrogate	Recovery		Limits
Dibromofluoromethane	69	*	80-120
Toluene-d8	85		81-117
4-Bromofluorobenzene	63	*	74-121

<sup>\*</sup> Surrogate recovery outside control limits.

## VOLATILES by EPA 8260 MS/MSD QUALITY CONTROL

Date Extracted:

12-15-97

Date Analyzed:

12-15-97

Matrix:

Soil

Units:

mg/Kg (ppm)

Dilution Factor:

50

Lab ID:

12-021-1 MS

	Spike		Percent		Percent	DDD
Compound	Amount	MS	Recovery	MSD	Recovery	RPD
1,1-Dichloroethene	2.50	2.40	96	2.71	108	12
Benzene	2.50	2.23	89	2.46	98	9.7
Trichloroethene	2.50	2.55	100	2.56	100	0.30
Chlorobenzene-d5	2.50	2.45	95	2.34	91	4.8
Ethylbenzene	2.50	2.47	99	2.51	100	1.6

## SEMIVOLATILES by EPA 8270 page 1 of 3

12-24-97 Date Extracted: Date Analyzed: 01-05-98

Soil -Matrix:

Units: mg/Kg (ppm)

12-070-12 Lab ID: Client ID: STP-19a

0.033 Dilution Factor:

Compound:	Results Flags	PQL
Aniline	ND	0.04
bis(2-Chloroethyl)ether	ND	0.04
Phenol	ND	0.04
2-Chlorophenol	ND	0.04
1,3-Dichlorobenzene	ND	0.04
1,4-Dichlorobenzene	ND	0.04
1,2-Dichlorobenzene	ND	0.04
Benzyl alcohol	ND	0.04
bis(2-chloroisopropyl)ether	ND	0.04
2-Methylphenol	ND	0.04
Hexachloroethane	ND	0.04
N-Nitroso-di-n-propylamine	ND	0.04
4-Methylphenol	ND	0.04
Nitrobenzene	ND	0.04
Isophorone	ND	0.04
2-Nitrophenol	ND	0.04
2,4-Dimethylphenol	ND	0.04
bis(2-Chloroethoxy)methane	ND	0.04
2,4-Dichlorophenol	ND	0.04
Benzoic acid	ND	0.58
1,2,4-Trichlorobenzene	ND	0.04
Naphthalene	ND	0.04
4-Chloroaniline	ND	0.04
Hexachlorobutadiene	ND	0.04
4-Chloro-3-methylphenol	ND	0.04
2-Methylnaphthalene	0.11	0.04

## SEMIVOLATILES by EPA 8270 page 2 of 3

12-070-12 Lab ID: Client ID: STP-19a

Dilution Factor: 0.033

Compound:	Results	Flags	PQL
Hexachlorocyclopentadiene	ND	r vi	0.04
2,4,6-Trichlorophenol	ND		0.04
2,4,5-Trichlorophenol	ND		0.04
2-Chloronaphthalene	ND		0.04
2-Nitroaniline	ND		0.04
Acenaphthylene	ND	**************************************	0.04
Dimethylphthalate	ND		0.04
2,6-Dinitrotoluene	ND		0.04
Acenaphthene	ND		0.04
3-Nitroaniline	ND		0.04
2,4-Dinitrophenol	ND		0.58
Dibenzofuran	0.068		0.04
2,4-Dinitrotoluene	ND		0.04
4-Nitrophenol	ND		0.04
Fluorene	ND		0.04
4-Chlorophenyl-phenylether	ND		0.04
Diethylphthalate	ND		0.04
4-Nitroaniline	ND		0.04
4,6-Dinitro-2-methylphenol	ND		0.15
n-Nitrosodiphenylamine	ND		0.04
4-Bromophenyl-phenylether	ND		0.04
Hexachlorobenzene	ND	et e e e	0.04
Pentachiorophenol	ND		0.58
Phenanthrene	0.42		0.04
Anthracene	0.40		0.04
Carbazole	ND		0.04
Di-n-butylphthalate	ND		0.04
Fluoranthene	ND		0.04
Benzidine	ND		0.04
Pyrene	ND		0.04

## SEMIVOLATILES by EPA 8270 page 3 of 3

12-070-12 Lab ID: STP-19a Client ID:

Dilution Factor: 0.033

Compound:	Results	Flags	PQL
Butylbenzylphthalate	ND		0.04
3,3'-Dichlorobenzidine	ND		0.04
Benzo[a]anthracene	ND		0.04
Chrysene	ND	1 1 3 4 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	0.04
bis(2-Ethylhexyl)phthalate	0.042		0.04
Di-n-octylphthalate	ND "		0.04
Benzo[b]fluoranthene	ND		0.04
Benzo[k]fluoranthene	ND		0.04
Benzo[a]pyrene	ND		0.04
Indeno[1,2,3-cd]pyrene	ND		0.04
Dibenz[a,h]anthracene	ND		0.04
Benzo[g,h,i]perylene	ND		0.04

Surrogate:	Percent	Control
	Recovery	Limits
2-Fluorophenol	40	25 - 121
Phenol-d6	55	24 - 113
Nitrobenzene-d5	49	23 - 120
2-Fluorobiphenyl	55	30 - 115
2,4,6-Tribromophenol	75	19 - 122
Terphenyl-d14	62	18 - 137

## SEMIVOLATILES by EPA 8270 METHOD BLANK QUALITY CONTROL

page 1 of 3

12-24-97 Date Extracted: 01-05-98 Date Analyzed:

Matrix: Soil

mg/Kg (ppm) Units:

MB1224S1 Lab ID:

0.033 Dilution Factor:

			1
Compound:	Results	Flags	PQL
	ND	e transfer of the second	0.00
Aniline	ND	*.	0.03
bis(2-Chloroethyl)ether	ND		0.03
Phenol	ND		0.03
2-Chlorophenol	ND		0.03
1,3-Dichlorobenzene	ND		0.03
1,4-Dichlorobenzene	ND		0.03
1,2-Dichlorobenzene	ND		0.03
Benzyl alcohol	ND		0.03
bis(2-chloroisopropyl)ether	ND		0.03
2-Methylphenol	ND		0.03
Hexachloroethane	ND	X 20	0.03
N-Nitroso-di-n-propylamine	ND -		0.03
4-Methylphenol	ND		0.03
Nitrobenzene	ND		0.03
Isophorone	ND		0.03
2-Nitrophenol	ND		0.03
2,4-Dimethylphenol	ND		0.03
bis(2-Chloroethoxy)methane	ND	and the control of	0.03
2,4-Dichlorophenol	ND		0.03
Benzoic acid	ND		0.50
1,2,4-Trichlorobenzene	ND		0.03
Naphthalene	ND		0.03
4-Chloroaniline	ND		0.03
Hexachlorobutadiene	ND		0.03
4-Chloro-3-methylphenol	ND		0.03
2-Methylnaphthalene	ND		0.03

## SEMIVOLATILES by EPA 8270 METHOD BLANK QUALITY CONTROL page 2 of 3

Lab ID:

MB1224S1

Dilution Factor:

0.033

Compound:	Results Flags	PQL
Hexachlorocyclopentadiene	ND	0.03
2,4,6-Trichlorophenol	ND	0.03
2,4,5-Trichlorophenol	ND	0.03
2-Chloronaphthalene	ND	0.03
2-Nitroaniline	ND	0.03
Acenaphthylene	ND	0.03
Dimethylphthalate	ND	0.03
2,6-Dinitrotoluene	ND	0.03
Acenaphthene	ND	0.03
3-Nitroaniline	ND	0.03
2,4-Dinitrophenol	ND	0.50
Dibenzofuran	ND	0.03
2,4-Dinitrotoluene	ND	0.03
4-Nitrophenol	ND	0.03
Fluorene	- ND	0.03
4-Chlorophenyl-phenylether	ND	0.03
Diethylphthalate	ND	0.03
4-Nitroaniline	ND `	0.03
4,6-Dinitro-2-methylphenol	ND	0.13
n-Nitrosodiphenylamine	ND	0.03
4-Bromophenyl-phenylether	ND	0.03
Hexachlorobenzene	ND	0.03
Pentachlorophenol	ND	0.50
Phenanthrene	ND	0.03
Anthracene	ND	0.03
Carbazole	ND	0.03
Di-n-butylphthalate	ND	0.03
Fluoranthene	ND	0.03
Benzidine	ND	0.03
Pyrene	ND	0.03

## SEMIVOLATILES by EPA 8270 METHOD BLANK QUALITY CONTROL page 3 of 3

Lab ID:

MB1224S1

Dilution Factor:

0.033

Compound:	Results	Flags		PQL
D. i. ili. and ili. lab alaka	ND			0.03
Butylbenzylphthalate 3,3'-Dichlorobenzidine	ND			0.03
S,3-Dichiolopenziume Benzo[a]anthracene	ND			0.03
Chrysene	ND			0.03
bis(2-Ethylhexyl)phthalate	ND	-	1	0.03
Di-n-octylphthalate	ND			0.03
Benzo[b]fluoranthene	ND			0.03
Benzo[k]fluoranthene	ND			0.03
Benzo[a]pyrene	ND			0.03
Indeno[1,2,3-cd]pyrene	ND			0.03
Dibenz[a,h]anthracene	ND			0.03
Benzo[g,h,i]perylene	ND			0.03

Surrogate:	Percent	Control
	Recovery	Limits
		05 404
2-Fluorophenol	52	25 - 121
Phenol-d6	68	24 - 113
Nitrobenzene-d5	61	23 - 120
2-Fluorobiphenyl	62	30 - 115
2,4,6-Tribromophenol	71	19 - 122
Terphenyl-d14	67	18 - 137

## SEMIVOLATILES by EPA 8270 MS/MSD QUALITY CONTROL

12-10-97 Date Extracted: 12-11-97 Date Analyzed:

Soil Matrix:

Units: mg/kg(ppm)

Lab ID: 12-036-3 MSD

Dilution Factor: 0.033

	Spike		Percent		Percent	
Compound:	Amount	MS	Recovery	MSD	Recovery	RPD
Phenol	3.30	2.62	79	2.50	76	4.4
2-Chlorophenol	3.30	2.12	64	2.01	61	5.7
1,4-Dichlorobenzene	1.65	1.05	64	0.960	58	9.0
N-Nitroso-di-n-propylamine	1.65	1.28	77	1.22	.74	4.3
1,2,4-Trichlorobenzene	1.65	1.16	70	1.06	64	8.9
4-Chloro-3-methylphenol	3.30	2.84	86	2.84	86	0.21
Acenaphthene	1.65	1.30	79	1.28	77	2.1
2,4-Dinitrotoluene	1.65	1.05	63	1.04	63	0.42
4-Nitrophenol	3.30	2.38	72	2.62	79	9.8
Pentachlorophenol	3.30	2.71	82	2.76	.84	1.7
Pyrene	1.65	1.50	81	1.63	89	9.0

### **TOTAL METALS** EPA 6010/7471

Date Extracted: 12-29-97 Date Analyzed: 12-29-97

Matrix:

Soil

Units:

mg/kg (ppm)

Lab ID:

12-070-12

Client ID:

STP-19a

Analyte	Method [	Dilution Factor	Result	PQL
Arsenic	6010	1.0	ND	12
Barium	6010	1.0	81	0.58
Cadmium	6010	1.0	ND	0.58
Chromium	6010	1.0	33	0.58
Lead	6010	1.0	7.3	5.8
Mercury	7471	1.0	ND	0.29
Selenium	6010	1.0	ND	12
Silver	6010	1.0	ND	0.58

## **TOTAL METALS** EPA 6010/7471 METHOD BLANK QUALITY CONTROL

Date Extracted:

12-29-97

Date Analyzed:

12-29-97

Matrix:

Soil

Units:

mg/kg (ppm)

Lab ID:

MB1229S1

Analyte	Method	Dilution Factor	Result	PQL
Arsenic	6010	1.0	ND	10
Barium	6010	1.0	ND	0.50
Cadmium	6010	1.0	ND	0.50
Chromium	6010	1.0	ND	0.50
Lead	6010	1.0	ND	5.0
Mercury	7471	1.0	ND	0.25
Selenium	6010	1.0	ND	10
Silver	6010	1.0	ND	0.50

## **TOTAL METALS** EPA 6010/7471 MS/MSD QUALITY CONTROL

Date Extracted: 12-29-97 Date Analyzed: 12-29-97

Matrix:

Soil

Units:

mg/kg (ppm)

Lab ID:

12-087-1

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flag
Arsenic	100	68.1	68	82.6	83	19	
Barium	100	138	83	149	93	12	
Cadmium	50	44.3	89	44.0	88	0.68	
Chromium	100	119	92	123	96	4.3	
Lead	250	217	82	215	81	0.98	
Mercury	2.5	2.30	92	2.14	85	7.4	
Selenium	100	74.4	74	72.5	73	2.6	
Silver	50	42.0	84	42.5	85	1.2	



## DATA QUALIFIERS AND ABBREVIATIONS

A - Due to high sample concentration, amount spiked insufficient for meaningful MS/MSD data recovery.
B - The analyte indicated was also found in the blank sample.
C - The duplicate RPD outside control limits due to analyte concentration within five times the quantitatio limit.
D - Data from 1: dilution.
E - Value reported exceeds the quantitation range. Value is an estimate.
F - Surrogate recovery data not available due to the high concentration in the sample.
G - Insufficient sample quantity for duplicate analysis.
J - The value reported was below the practical quantitation limit. The value is an estimate.
K - Sample duplicate RPD outside control limits due to sample inhomogeniety. Sample re-extracted and re-analyzed with similar results.
L - Quantitated from C7-C34 as diesel fuel #2.
M - Predominantly range hydrocarbons present in the sample.
N - Hydrocarbons in the gasoline range (C7-toluene) present in the sample. N1 - Hydrocarbons in the gasoline range (C7-toluene) present in the sample which are elevating the dies result.
O - Hydrocarbons in the heavy oil range (>C24) present in the sample. O1 - Hydrocarbons in the heavy oil range (>C24) present in the sample which are elevating the diesel result.
R - Hydrocarbons outside defined gasoline range present in the sample.
S - Surrogate recovery data not available due to the necessary dilution of the sample.
T - The sample chromatogram is not similar to a typical
U - Matrix Spike/Matrix Spike Duplicate RPD outside control limits due to matrix effects.
V - Matrix Spike/Matrix Spike Duplicate recoveries outside control limits due to matrix effects.
Z - Interferences were present which prevented the quantitation of the analyte below the detection limit reported.
ND - Not Detected
MRL - Method Reporting Limit
PQL - Practical Quantitation

## Chain of custody

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## Chain of custody

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PHASE I-Test Pits

12/10/97

December 16, 1997

Gary Galloway Galloway Environmental, Inc. 3102 220th Place SE Issaquah, WA 98027

Re:

Analytical Data for Project 19735

Laboratory Reference No. 9712-042

### Dear Gary:

Enclosed are the analytical results and associated quality control data for samples submitted on December 11, 1997.

The standard policy of OnSite Environmental Inc., is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister Project Chemist

**Enclosures** 

## **NWTPH-HCID**

Date Extracted: 12-11-97 Date Analyzed: 12-11-97

Matrix:

Soil

Units:

o-Terphenyl

mg/Kg (ppm)

Client ID:	STP-1a	STP-2b	STP-3c
Lab ID:	12-042-01	12-042-02	12-042-03
Dilution Factor:	2.0	2.0	2.0
Gas:	ND	ND	ND
PQL:	25	24	21
Diesel Fuel:	ND	ND	ND
PQL:	62	61	53
Oil:	ND	ND	ND
PQL:	123	122	106
Surrogate Recovery:	114%	122%	91%
•	¢		

## **NWTPH-HCID**

Date Extracted: 12-11-97 12-11-97 Date Analyzed:

Matrix:

Units:

Soil mg/Kg (ppm)

Client ID:	STP-4c	STP-5a	STP-6a
Lab ID:	12-042-04	12-042-05	12-042-06
Dilution Factor:	2.0	2.0	2.0
Gas:	ND	ND	ND
PQL:	21	23	23
		Discal Fuel #0	Diocal Fuel #2
Diesel Fuel:	, ND	Diesel Fuel #2	Diesel Fuel #2
PQL:	53	57	58
Oil:	ND	Heavy Oil	Heavy Oil
PQL:	105	115	116
		•	the second second

Surrogate Recovery:

115%

125%

125%

o-Terphenyl

Date	Extracted:
Date	Analyzed:

12-11-97 12-11-97

Matrix:

Soil

Units: mg/Kg (ppm)

Offits.	/Ng (ppili)		
Client ID:	STP-7b	STP-8a	STP-9c
Lab ID:	12-042-07	12-042-08	12-042-09
Dilution Factor:	2.0	2.0	2.0
Gas:	ND	ND	ND
PQL:	25	23	21
Diesel Fuel:	ND	Diesel Fuel #2	ND
PQL:	62	58	53
Oil:	Heavy Oil	Heavy Oil	ND
PQL:	123	116	105
Surrogate Recovery:	125%	112%	124%
o-Terphenyl			-

Date of Report: December 16, 1997 Samples Submitted: December 11, 1997

Lab Traveler: 12-042 Project: 19735

## NWTPH-HCID METHOD BLANK QUALITY CONTROL

Date Extracted: 12-11-97 Date Analyzed: 12-11-97

Matrix:

Soil

Units:

mg/Kg (ppm)

Lab ID: MB1211S1

Dilution Factor: 2.0

Gas: ND

PQL: 20

Diesel Fuel: ND

PQL: 50

Oil: ND

PQL: 100

Surrogate Recovery: 124%

o-Terphenyl

## NWTPH-Dx

Date Extracted:

12-12-97

Date Analyzed:

12-12-97

Matrix:

Soil

Units:

mg/Kg (ppm)

			•	
Client ID;	STP-5a	STP-6a	STP-7b	STP-8a
Lab ID:	12-042-05	12-042-06	12-042-07	12-042-08
Dilution Factor:	1.0	1.0	1.0	1.0
Diesel Fuel C12-C24:	140	490	40	60
PQL:	29	29	31	29
Oil C24-C34:	440	1300	ND	180
PQL:	57	58	62	58
Surrogate Recovery:	85%	96%	112%	108%
o-Terphenyl	•			
Flags	01	01		O1

Project: 19735

## NWTPH-Dx METHOD BLANK QUALITY CONTROL

Date Extracted:

12-12-97

Date Analyzed:

12-12-97

Matrix:

Soil

Units:

mg/Kg (ppm)

Lab ID:

MB1212S1

Dilution Factor:

1.0

Diesel Fuel C12-C24:

ND

PQL:

25

Surrogate Recovery:

89%

o-Terphenyl

Flags

Project: 19735

### **NWTPH-Dx DUPLICATE QUALITY CONTROL**

Date Extracted:

12-10-97

Date Analyzed:

12-10-97

Matrix:

Soil

Units:

mg/Kg (ppm)

Lab ID:

12-037-01 12-037-01 DUP

Diesel Fuel C12-C24:

105

130

PQL:

25

25

RPD:

21.3%

Surrogate Recovery:

84%

89%

o-Terphenyl

Flags

Project: 19735

## NWTPH-Dx SB/SBD QUALITY CONTROL

Date Extracted: 12-10-97 12-10-97 Date Analyzed:

Soil . Matrix:

mg/Kg (ppm) Units:

100 ppm Spike Level:

SB1210S1 SB1210S1 DUP Lab ID:

Diesel Fuel C12-C24: 78.7 78.6 PQL: 25 25

79% Percent Recovery: 79% RPD: 0.10%

Surrogate Recovery: 81% 72%

o-Terphenyl

Flags

Date Analyzed: 12-11-97

## % MOISTURE

Client ID		Lab ID	% Moisture
STP-1a		12-042-1	19
STP-2b		12-042-2	18
STP-3c		12-042-3	6.0
STP-4c	e e	12-042-4	5.0
STP-5a		12-042-5	13
STP-6a		12-042-6	14
STP-7b	en en en en en en en en en en en en en e	12-042-7	19
STP-8a		12-042-8	14
STP-9c		12-042-9	5.0



## DATA QUALIFIERS AND ABBREVIATIONS

A - Due to high sample concentration, amount spiked insufficient for meaningful MS/MSD data recovery.
B - The analyte indicated was also found in the blank sample.
C - The duplicate RPD outside control limits due to analyte concentration within five times the quantitation limit.
D - Data from 1: dilution.
E - Value reported exceeds the quantitation range. Value is an estimate.
F - Surrogate recovery data not available due to the high concentration in the sample.
G - Insufficient sample quantity for duplicate analysis.
J - The value reported was below the practical quantitation limit. The value is an estimate.
K - Sample duplicate RPD outside control limits due to sample inhomogeniety. Sample re-extracted and re-analyzed with similar results.
L - Quantitated from C7-C34 as diesel fuel #2.
M - Predominantly range hydrocarbons present in the sample.
N - Hydrocarbons in the gasoline range (C7-toluene) present in the sample.  N1 - Hydrocarbons in the gasoline range (C7-toluene) present in the sample which are elevating the diesersult.
O - Hydrocarbons in the heavy oil range (>C24) present in the sample. O1 - Hydrocarbons in the heavy oil range (>C24) present in the sample which are elevating the diesel result.
R - Hydrocarbons outside defined gasoline range present in the sample.
S - Surrogate recovery data not available due to the necessary dilution of the sample.
T - The sample chromatogram is not similar to a typical
U - Matrix Spike/Matrix Spike Duplicate RPD outside control limits due to matrix effects.
V - Matrix Spike/Matrix Spike Duplicate recoveries outside control limits due to matrix effects.
Z - Interferences were present which prevented the quantitation of the analyte below the detection limit reported.
ND - Not Detected
MRL - Method Reporting Limit
PQL - Practical Quantitation

## **Chain Of Custody**

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REVIEWED BY

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DATE REVIEWED



January 7, 1998

Gary Galloway Galloway Environmental, Inc. 3102 220th Place SE Issaquah, WA 98027

Re:

Analytical Data for Project 19735 Laboratory Reference No. 9712-042

Dear Gary:

Enclosed are the analytical results and associated quality control data for samples submitted on December 11, 1997.

The standard policy of OnSite Environmental Inc., is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister Project Chemist

**Enclosures** 

METALS, VOLATILES SCAN, SEMINOLATILES 12/10/95

(5.NOS. STP-5a) \$ STP-6a

## VOLATILES by EPA 8260 page 1 of 2

Date Extracted: Date Analyzed:

12-24-97 1-05-98

Matrix:

Soil

Units:

mg/Kg (ppm)

Lab ID:

12-042-5

Client ID:

STP-5a

Dilution Factor:

50

Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.057
Chloromethane	ND	and the second second	0.057
Vinyl Chloride	ND	3	0.057
Bromomethane	ND		0.057
Chloroethane	ND		0.057
Trichlorofluoromethane	ND		0.057
1,1-Dichloroethene	ND		0.057
Methylene Chloride	0.092		0.057
(trans) 1,2-Dichloroethene	ND	en en en en en	0.057
1,1-Dichloroethane	ND		0.057
2,2-Dichloropropane	ND		0.057
(cis) 1,2-Dichloroethene	ND		0.057
Chloroform	ND		0.057
1,1,1-Trichloroethane	ND		0.057
Carbon Tetrachloride	ND		0.57
1,1-Dichloropropene	ND		0.057
Benzene	ND		0.057
1,2-Dichloroethane	ND		0.057
Trichloroethene	ND		0.057
1,2-Dichloropropane	ND	-	0.057
Dibromomethane	ND		0.057
Bromodichloromethane	ND		0.057
(cis) 1,3-Dichloropropene	ND		0.057
Toluene	0.32		0.057
(trans) 1,3-Dichloropropene	ND		0.057
1,1,2-Trichloroethane	ND	•	0.057
Tetrachloroethene	ND		0.057
1,3-Dichloropropane	ND		0.057

## VOLATILES by EPA 8260 page 2 of 2

Lab ID: Client ID: 12-042-5

STP-5a

Dilution Factor:

50

Compound	Results	Flags	PQL
Dibromochloromethane	ND	•	0.057
1,2-Dibromoethane	ND		0.29
Chlorobenzene	ND		0.057
1,1,1,2-Tetrachloroethane	ND		0.057
Ethylbenzene	0.11		0.057
m,p-Xylene	0.34	e de la companya de la companya de la companya de la companya de la companya de la companya de la companya de	0.11
o-Xylene	0.19		0.057
Styrene	ND		0.057
Bromoform	ND		0.057
Isopropylbenzene	ND		0.057
Bromobenzene	ND		0.057
1,1,2,2-Tetrachloroethane	ND		0.057
1,2,3-Trichloropropane	ND		0.057
n-Propylbenzene	ND		0.057
2-Chlorotoluene	ND	La la la la la la la la la la la la la la	0.057
4-Chlorotoluene	ND		0.057
1,3,5-Trimethylbenzene	0.067	1	0.057
tert-Butylbenzene	ND		0.057
1,2,4-Trimethylbenzene	0.23		0.057
sec-Butylbenzene	ND		0.057
1,3-Dichlorobenzene	ND -	1	0.057
p-Isopropyltoluene	0.065		0.057
1,4-Dichlorobenzene	ND		0.057
1,2-Dichlorobenzene	ND		0.057
n-Butylbenzene	ND		0.057
1,2-Dibromo-3-chloropropane	ND		0.57
1,2,4-Trichlorobenzene	ND		0.057
Hexachlorobutadiene	ND		0.057
Naphthalene	ND		. 0.57
1,2,3-Trichlorobenzene	ND		0.057
	Percent		Control
Surrogate	Recovery	•	Limits
Dibromofluoromethane	64	*	80-120
Toluene-d8	74	*	81-117
4-Bromofluorobenzene	55	* '	74-121

<sup>\*</sup> Surrogate recovery outside control limits.

# VOLATILES by EPA 8260 page 1 of 2

12-24-97 Date Extracted: 1-05-98 Date Analyzed:

Soil Matrix:

mg/Kg (ppm) Units:

Lab ID: 12-042-6 STP-6a Client ID:

Dilution Factor: 50

		1 1	;
Compound	Results	Flags	PQL
Dichlorodifluoromethane	ND		0.058
Chloromethane	ND		0.058
Vinyl Chloride	ND		0.058
Bromomethane	ND	,	0.058
Chloroethane	ND		0.058
Trichlorofluoromethane	ND		0.058
1,1-Dichloroethene	ND .		0.058
Methylene Chloride	ND		0.058
(trans) 1,2-Dichloroethene	ND		0.058
1,1-Dichloroethane	ND		0.058
2,2-Dichloropropane	ND		0.058
(cis) 1,2-Dichloroethene	ND		0.058
Chloroform	ND		0.058
1,1,1-Trichloroethane	ND		0.058
Carbon Tetrachloride	ND		0.58
1,1-Dichloropropene	ND		0.058
Benzene	ND		0.058
1,2-Dichloroethane	ND		0.058
Trichloroethene	ND	*	0.058
1,2-Dichloropropane	ND	e de la companya del companya de la companya del companya de la co	0.058
Dibromomethane	ND		0.058
Bromodichloromethane	ND		0.058
(cis) 1,3-Dichloropropene	ND		0.058
Toluene	0.3		0.058
(trans) 1,3-Dichloropropene	ND		0.058
1,1,2-Trichloroethane	ND	•	0.058
Tetrachloroethene	ND		0.058
1,3-Dichloropropane	ND		0.058

### VOLATILES by EPA 8260 METHOD BLANK QUALITY CONTROL page 1 of 2

Date Extracted:

12-24-97

Date Analyzed:

1-05-98

Matrix:

Soil

Units:

mg/Kg (ppm)

Lab ID:

MB1231S1

Dilution Factor:

50

Compound		Results	Flags	PQL
Dichlorodifluoromethane		ND		0.05
Chloromethane		ND		0.05
Vinyl Chloride		ND		0.05
Bromomethane		ND	en de la companya de la companya de la companya de la companya de la companya de la companya de la companya de La companya de la companya de la companya de la companya de la companya de la companya de la companya de la co	0.05
Chloroethane		ND	•	0.05
Trichlorofluoromethane		ND	e e wa	0.05
1,1-Dichloroethene		ND		0.05
Methylene Chloride	- 1 × × × × × × × × × × × × × × × × × ×	ND		0.05
(trans) 1,2-Dichloroethene		ND	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	0.05
1,1-Dichloroethane		ND		0.05
2,2-Dichloropropane		ND -		0.05
(cis) 1,2-Dichloroethene		ND		0.05
Chloroform		ND		0.05
1,1,1-Trichloroethane		ND		0.05
Carbon Tetrachloride		ND		0.50
1,1-Dichloropropene		ND		0.05
Benzene	-	ND		0.05
1,2-Dichloroethane		ND	1.5	0.05
Trichloroethene		ND		0.05
1,2-Dichloropropane		ND		0:05
Dibromomethane	* 1	ND		0.05
Bromodichloromethane		ND		0.05
(cis) 1,3-Dichloropropene		ND		0.05
Toluene		ND -		0.05
(trans) 1,3-Dichloropropene	r v	ND.		0.05
1,1,2-Trichloroethane		ND		0.05
Tetrachloroethene		ND		0.05
1,3-Dichloropropane		ND		0.05

# VOLATILES by EPA 8260 METHOD BLANK QUALITY CONTROL page 2 of 2

Lab ID:

MB1231S1

Dilution Factor.

50

Compound	Results Flags	PQL
Dibromochloromethane	ND	0.05
1,2-Dibromoethane	ND	0.25
Chlorobenzene	ND	0.05
1,1,1,2-Tetrachloroethane	ND	0.05
Ethylbenzene	ND	0.05
m,p-Xylene	ND	0.10
o-Xylene	ND	0.05
Styrene	ND	0.05
Bromoform	ND	0.05
Isopropylbenzene	ND	0.05
Bromobenzene	ND	0.05
1,1,2,2-Tetrachloroethane	ND	0.05
1,2,3-Trichloropropane	ND	0.05
n-Propylbenzene	ND	0.05
2-Chlorotoluene	ND	0.05
4-Chlorotoluene	ND	0.05
1,3,5-Trimethylbenzene	ND	0.05
tert-Butylbenzene	ND	0.05
1,2,4-Trimethylbenzene	ND	0.05
sec-Butylbenzene	ND	0.05
1,3-Dichlorobenzene	ND	0.05
p-Isopropyltoluene	ND	0.05
1,4-Dichlorobenzene	ND	0.05
1,2-Dichlorobenzene	ND	0.05
n-Butylbenzene	ND	0.05
1,2-Dibromo-3-chloropropane	ND	0.50
1,2,4-Trichlorobenzene	ND	0.05
Hexachlorobutadiene	ND	0.05
Naphthalene	ND	0.50
1,2,3-Trichlorobenzene	ND	0.05
	Percent	Control
Surrogate	Recovery	Limits
Dibromofluoromethane	69 *	80-120
Toluene-d8	85	81-117
4-Bromofluorobenzene	63 *	74-121
. =		

<sup>\*</sup> Surrogate recovery outside control limits.

### VOLATILES by EPA 8260 MS/MSD QUALITY CONTROL

Date Extracted:

12-15-97

Date Analyzed:

12-15-97

Matrix:

Soil

Units:

mg/Kg (ppm)

Dilution Factor:

50

Lab ID:

12-021-1 MS

	Spike	Percent			Percent		
Compound	Amount	MS	Recovery	MSD	Recovery	RPD	
1,1-Dichloroethene	2.50	2.40	96	2.71	108	12	
Benzene	2.50	2.23	89	2.46	98	9.7	
Trichloroethene	2.50	2.55	100	2.56	100	0.30	
Chlorobenzene-d5	2.50	2.45	95	2.34	91	4.8	
Ethylbenzene	2.50	2.47	99	2.51	100	1.6	

# SEMIVOLATILES by EPA 8270 page 2 of 3

12-042-5 Lab ID: STP-5a Client ID:

Dilution Factor: 0.033

Compound:	Results Flags	PQL
Hexachlorocyclopentadiene	ND	0.04
2,4,6-Trichlorophenol	ND	0.04
2,4,5-Trichlorophenol	ND	0.04
2-Chloronaphthalene	ND	0.04
2-Nitroaniline	ND	0.04
Acenaphthylene	ND	0.04
Dimethylphthalate	ND	0.04
2,6-Dinitrotoluene	ND	0.04
Acenaphthene	ND	0.04
3-Nitroaniline	ND	0.04
2,4-Dinitrophenol	ND	0.57
Dibenzofuran	ND	0.04
2,4-Dinitrotoluene	ND	0.04
4-Nitrophenol	ND	0.04
Fluorene	ND	0.04
4-Chlorophenyl-phenylether	ND	0.04
Diethylphthalate	ND	0.04
4-Nitroaniline	ND	0.04
4,6-Dinitro-2-methylphenol	ND	0.15
n-Nitrosodiphenylamine	ND	0.04
4-Bromophenyl-phenylether	ND	0.04
Hexachlorobenzene	ND	0.04
Pentachlorophenol	ND	0.57
Phenanthrene	0.22	0.04
Anthracene	ND	0.04
Carbazole	ND	0.04
Di-n-butylphthalate	ND.	0.04
Fluoranthene	0.04	0.04
Benzidine	ND	0.04
Pyrene	0.06	0.04
· • • • • • • • • • • • • • • • • • • •		

### **SEMIVOLATILES by EPA 8270** page 3 of 3

Lab ID: 12-042-5 STP-5a Client ID:

Dilution Factor: 0.033

Compound:	Results Flags	PQL
Butylbenzylphthalate	ND	0.04
3,3'-Dichlorobenzidine	ND	0.04
Benzo[a]anthracene	ND	0.04
Chrysene	ND	0.04
bis(2-Ethylhexyl)phthalate	0.16	0.04
Di-n-octylphthalate	ND	0.04
Benzo[b]fluoranthene	ND.	0.04
Benzo[k]fluoranthene	ND	0.04
Benzo[a]pyrene	ND	0.04
Indeno[1,2,3-cd]pyrene	ND	0.04
Dibenz[a,h]anthracene	ND	0.04
Benzo[g,h,i]perylene	ND	0.04

Surrogate:	Percent	Control
	Recovery	Limits
	40	`05 404
2-Fluorophenol	43	25 - 121
Phenol-d6	60	24 - 113
Nitrobenzene-d5	52	23 - 120
2-Fluorobiphenyl	57	30 - 115
2,4,6-Tribromophenol	74	19 - 122
Terphenyl-d14	62	18 - 137

### **SEMIVOLATILES by EPA 8270** page 1 of 3

12-24-97 Date Extracted: 01-05-98 Date Analyzed:

Matrix: Soil

Units: mg/Kg (ppm)

12-042-6 Lab ID: STP-6a Client ID:

0.033 Dilution Factor:

Compound:	Results Flags	PQL
Aniline	ND	0.04
bis(2-Chloroethyl)ether	ND	0.04
Phenol	ND	0.04
2-Chlorophenol	ND	0.04
1,3-Dichlorobenzene	ND	0.04
1,4-Dichlorobenzene	ND	0.04
1,2-Dichlorobenzene	ND	0.04
Benzyl alcohol	ND-	0.04
bis(2-chloroisopropyl)ether	ND	0.04
2-Methylphenol	ND	0.04
Hexachloroethane	ND	0.04
N-Nitroso-di-n-propylamine	ND	0.04
4-Methylphenol	ND	0.04
Nitrobenzene	ND	0.04
Isophorone	ND	0.04
2-Nitrophenol	ND ND	0.04
2,4-Dimethylphenol	ND	0.04
bis(2-Chloroethoxy)methane	ND	0.04
2,4-Dichlorophenol	ND	0.04
Benzoic acid	ND	0.58
1,2,4-Trichlorobenzene	ND	0.04
Naphthalene	0.097	0.04
4-Chloroaniline	ND	0.04
Hexachlorobutadiene	ND	0.04
4-Chloro-3-methylphenol	ND	0.04
2-Methylnaphthalene	0.22	0.04

# SEMIVOLATILES by EPA 8270 page 2 of 3

12-042-6 Lab ID: STP-6a Client ID:

Dilution Factor: 0.033

Compound:	Results	Flags	PQL
Hexachlorocyclopentadiene	ND		0.04
2,4,6-Trichlorophenol	ND		0.04
2,4,5-Trichlorophenol	ND		0.04
2-Chloronaphthalene	ND		0.04
2-Nitroaniline	ND		0.04
Acenaphthylene	ND		0.04
Dimethylphthalate	ND		0.04
2,6-Dinitrotoluene	ND		0.04
Acenaphthene	ND		0.04
3-Nitroaniline	ND		0.04
2,4-Dinitrophenol	ND .		0.58
Dibenzofuran	0.087		0.04
2,4-Dinitrotoluene	ND		0.04
4-Nitrophenol	ND		0.04
Fluorene	ND		0.04
4-Chlorophenyl-phenylether	ND		0.04
Diethylphthalate	ND		0.04
4-Nitroaniline	ND		0.04
4,6-Dinitro-2-methylphenol	ND		0.15
n-Nitrosodiphenylamine	ND		0.04
4-Bromophenyl-phenylether	ND		0.04
Hexachlorobenzene	ND		0.04
Pentachlorophenol	ND		0.58
Phenanthrene	0.42		0.04
Anthracene	ND		0.04
Carbazole	ND		0.04
Di-n-butylphthalate	ND		0.04
Fluoranthene	0.054		0.04
Benzidine	ND		0.04
Pyrene	0.087		0.04

## SEMIVOLATILES by EPA 8270 page 3 of 3

12-042-6 Lab ID: STP-6a Client ID:

0.033 Dilution Factor:

Compound:			Results	Flags	PQL
			ND		0.04
Butylbenzylphthalate			ND		0.04
3,3'-Dichlorobenzidine			ND		0.04
Benzo[a]anthracene	. <del>.</del>		ND		0.04
Chrysene			0.047	•	0.04
bis(2-Ethylhexyl)phthalate			0.12		0.04
Di-n-octylphthalate	 	, .	0.12	• .	0.04
Benzo[b]fluoranthene			ND		0.04
Benzo[k]fluoranthene			ND		0.04
Benzo[a]pyrene			ND		0.04
Indeno[1,2,3-cd]pyrene			ND		0.04
Dibenz[a,h]anthracene			ND		0.04
Benzo[g,h,i]perylene			ND		0.04

Surrogate :		Percent	Control Limits	
			Recovery	Limits
2-Fluorophenol			45	25 - 121
Phenol-d6			65	24 - 113
Nitrobenzene-d5			58	23 - 120
2-Fluorobiphenyl		1	60	30 - 115
2,4,6-Tribromoph	enol		82	19 - 122
Terphenyl-d14			69	18 - 137

# SEMIVOLATILES by EPA 8270 METHOD BLANK QUALITY CONTROL page 1 of 3

Date Extracted: 12-24-97 01-05-98 Date Analyzed:

Matrix: Soil

mg/Kg (ppm) Units:

MB1224S1 Lab ID:

Dilution Factor: 0.033

Compound:		Results	Flags		PQL
Aniline		ND			0.03
bis(2-Chloroethyl)ether		ND		-	0.03
Phenol		ND			0.03
2-Chlorophenol		ND			0.03
1,3-Dichlorobenzene		ND		٠.	0.03
1,4-Dichlorobenzene		ND			0.03
1,2-Dichlorobenzene		ND		:	0.03
Benzyl alcohol	· w	ND			0.03
bis(2-chloroisopropyl)ether		ND			0.03
2-Methylphenol		ND			0.03
Hexachloroethane		ND			0.03
N-Nitroso-di-n-propylamine		ND			0.03
4-Methylphenol		ND			0.03
Nitrobenzene		ND			0.03
Isophorone		ND		· ·	0.03
2-Nitrophenol		ND		٠.	0.03
2,4-Dimethylphenol		ND			0.03
bis(2-Chloroethoxy)methane		ND			0.03
2,4-Dichlorophenol		ND			0.03
Benzoic acid	* * * * * * * * * * * * * * * * * * *	ND	* *		0.50
1,2,4-Trichlorobenzene		ND			0.03
Naphthalene		ND		:	0.03
4-Chloroaniline		ND			0.03
Hexachlorobutadiene		ND			0.03
4-Chloro-3-methylphenol		ND			0.03
2-Methylnaphthalene		ND			0.03
	•				

# SEMIVOLATILES by EPA 8270 METHOD BLANK QUALITY CONTROL page 2 of 3

Lab ID:

MB1224S1

Dilution Factor:

0.033

Compound:	Results	Flags	PQL
Hexachlorocyclopentadiene	ND		0.03
2,4,6-Trichlorophenol	ND	•	0.03
2,4,5-Trichlorophenol	ND		0.03
2-Chloronaphthalene	ND		0.03
2-Nitroaniline	ND		0.03
Acenaphthylene	ND		0.03
Dimethylphthalate	ND		0.03
2,6-Dinitrotoluene	ND		0.03
Acenaphthene	ND		0.03
3-Nitroaniline	ND		0.03
2,4-Dinitrophenol	ND		0.50
Dibenzofuran	ND		0.03
2,4-Dinitrotoluene	ND		0.03
4-Nitrophenol	ND		0.03
Fluorene	ND	* 1	0.03
4-Chlorophenyl-phenylether	ND		0.03
Diethylphthalate	ND		0.03
4-Nitroaniline	ND		0.03
4,6-Dinitro-2-methylphenol	ND		0.13
n-Nitrosodiphenylamine	ND		0.03
4-Bromophenyl-phenylether	ND		0.03
Hexachlorobenzene	ND		0.03
Pentachlorophenol	ND		0.50
Phenanthrene	ND		0.03
Anthracene	ND	territoria de la compansión de la compan	0.03
Carbazole	ND		0.03
Di-n-butylphthalate	ND	•	0.03
Fluoranthene	ND	•	0.03
Benzidine	ND		0.03
Pyrene	ND		0.03

### SEMIVOLATILES by EPA 8270 METHOD BLANK QUALITY CONTROL page 3 of 3

Lab ID:

MB1224S1

Dilution Factor:

0.033

Compound:		Results	Flags	PQL
Butylbenzylphthalate		ND		0.03
3,3'-Dichlorobenzidine		ND		0.03
Benzo[a]anthracene		NĎ		0.03
Chrysene		ND		0.03
bis(2-Ethylhexyl)phthalate	·	ND	:	0.03
Di-n-octylphthalate		 ND		0.03
Benzo[b]fluoranthene		ND		0.03
Benzo[k]fluoranthene		ND		0.03
Benzo[a]pyrene		ND		0.03
Indeno[1,2,3-cd]pyrene	*	ND .		0.03
Dibenz[a,h]anthracene		ND		0.03
Benzo[g,h,i]perylene		ND		0.03
			• .	` .

Surrogate :	Percent	Control
	Recovery	Limits
2-Fluorophenol	52	25 - 121
Phenol-d6	68	24 - 113
Nitrobenzene-d5	61	23 - 120
2-Fluorobiphenyl	62	30 - 115
2,4,6-Tribromophenol	71	19 - 122
Terphenyl-d14	67	18 - 137

## SEMIVOLATILES by EPA 8270 MS/MSD QUALITY CONTROL

Date Extracted: 12-10-97 Date Analyzed: 12-11-97

Soil Matrix:

mg/kg(ppm) Units:

12-036-3 MSD Lab ID:

0.033 Dilution Factor:

	Spike		Percent		Percent	2
Compound:	Amount	MS	Recovery	MSD	Recovery	RPD
Phenol	3.30	2.62	79	2.50	76	4.4
2-Chlorophenol	3.30	2.12	64	2.01	61	5.7
1,4-Dichlorobenzene	1.65	1.05	64	0.960	58	9.0
N-Nitroso-di-n-propylamine	1.65	1.28	77	1.22	74	4.3
1,2,4-Trichlorobenzene	1.65	1.16	70	1.06	64	8.9
4-Chloro-3-methylphenol	3.30	2.84	86	2.84	86	0.21
Acenaphthene	1.65	1.30	79	1.28	77	2.1
2,4-Dinitrotoluene	1.65	1.05	63	1.04	63	0.42
4-Nitrophenol	3.30	2.38	72	2.62	79	9.8
Pentachlorophenol	3.30	2.71	82	2.76	84	1.7
Pyrene	1.65	1.50	81	1.63	89	9.0

### TOTAL METALS EPA 6010/7471

Date Extracted: 12-29-97 Date Analyzed: 12-29-97

Matrix:

Soil

Units:

mg/kg (ppm)

Lab ID:

12-042-5

Client ID:

STP-5a

Analyte	Method	Dilution Factor	Result	PQL
Arsenic	6010	1.0	ND	11
Barium	6010	1.0	140	0.57
Cadmium	6010	1.0	1.1	0.57
Chromium	6010	1.0	38	0.57
Lead	6010	1.0	180	5.7
Mercury	7471	1.0	ND	0.29
Selenium	6010	1.0	ND	11
Silver	6010	1.0	ND	0.57

#### **TOTAL METALS** EPA 6010/7471

Date Extracted: 12-29-97 Date Analyzed: 12-29-97

Matrix:

Soil

Units:

mg/kg (ppm)

Lab ID:

12-042-6

Client ID:

STP-6a

Analyte	Method	Dilution Factor	Result	PQL
Arsenic	6010	1.0	ND	12
Ldum	6010	1.0	120	0.58
Cadmium	601ر <sup>/</sup>	1.0	1.9	0.58
Chromium	6010	1.0	49	0.58
Lead	6010	1.0	310	5.8
Mercury	7471	1.0	ND	0.29
Selenium	6010	1.0	ND	12
Silver	6010	1.0	4.3	0.58

### EPA 6010/7471 METHOD BLANK QUALITY CONTROL

Date Extracted:

12-29-97

Date Analyzed:

12-29-97

Matrix:

Soil

Units:

mg/kg (ppm)

Lab ID:

MB1229S1

Analyte	Method	Dilution Factor	Result	PQL
Arsenic	6010	1.0	ND	10
Barium	6010	1.0	ND	0.50
Cadmium	6010	1.0	ND	0.50
Chromium	6010	1.0	ND	0.50
Lead	6010	1.0	ND	5.0
Mercury	7471	1.0	ND	0.25
Selenium	6010	1.0	ND	10
Silver	6010	1.0	ND	0.50

### EPA 6010/7471 **DUPLICATE QUALITY CONTROL**

Date Extracted: 12-29-97 Date Analyzed: 12-29-97

Matrix:

Soil

Units:

mg/kg (ppm)

Lab ID:

12-087-1

Analyte	Dilution	Sample Result	Duplicate Result	RPD	Flags	PQL
Arsenic	1.0	ND	ND	NA		10
Barium	1.0	55.7	62.5	11		0.50
Cadmium	1.0	ND	ND	NA		0.50
Chromium	1.0	26.4	29.1	9.7		0.50
Lead	1.0	11.9	11.5	3.9		5.0
Mercury	. 1.0	ND	ND	NA		0.25
Selenium	1.0	ND	ND	NA		10
Silver	1.0	ND	ND	NA		0.50

### TOTAL METALS EPA 6010/7471 MS/MSD QUALITY CONTROL

Date Extracted: 12-29-97 Date Analyzed: 12-29-97

Matrix:

Soll

Units:

mg/kg (ppm)

Lab ID:

12-087-1

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	68.1	68	82.6	83	19	
Barium	100	138	83	149	93	12	
Cadmium	50	44.3	89	44.0	88	0.68	
Chromium	100	119	92	123	96	4.3	
Lead	250	217	82	215	81	0.98	
Mercury	2.5	2.30	92	2.14	85	7.4	
Selenium	100	74.4	74	72.5	73	2.6	
Silver	50	42.0	84	42.5	85	1.2	en Joseph

Project: 19735

#### **NWTPH-HCID**

Date Extracted: 1-16-98 1-16-98

Date Analyzed:

Matrix:

Water

mg/L (ppm) Units:

Client ID: MW-4 MW-23 MW-24

01-045-06 01-045-05 Lab ID: 01-045-04

ND Gasoline Gasoline Gas: 0.25 0.25 0.25 PQL: ND ND Diesel Fuel: ND 0.50 PQL: 0.63 0.50 ND. ND ND Oil:

0.63

84% 101% 87% Surrogate Recovery:

o-Terphenyl

PQL:

#### **NWTPH-HCID**

1-16-98 Date Extracted: 1-16-98 Date Analyzed:

Water Matrix:

mg/L (ppm) Units:

Client ID: MW-25

01-045-07 Lab ID:

Gas: ND

0.25 PQL:

Diesel Fuel: ND

0.63 PQL:

ND Oil:

0.63 PQL:

Surrogate Recovery: 95%

o-Terphenyl

#### **NWTPH-HCID**

Date Extracted:

1-16-98

Date Analyzed:

1-16-98

Matrix:

Soil

Units:

mg/Kg (ppm)

Client ID:

SS-1 East

SS-2 West

Lab ID:

01-045-08

01-045-09

Gas:

ND

ND

PQL:

24

- 26

Diesel Fuel:

NĎ

Diesel Fuel #2

PQL:

61

65

Oil:

Heavy Oil

Heavy Oil

PQL:

122

130

Surrogate Recovery:

110%

93%

o-Terphenyl

**PQL** 

100

1.0

1.0

1.0

1.0

100

Date of Report: January 22, 1998 Samples Submitted: January 16, 1998

Lab Traveler: 01-045 Project: 19735

#### **NWTPH-G/BTEX**

Date Extracted: Date Analyzed:

1-19-98 1-19&20-98

Matrix: Water Units: ug/L (ppb)

Lab ID: Client ID: 01-045-05 MW-23 01-045-06 **MW-24** 

Flags **PQL** Result Flags Result D 5.0 480 71 Benzene 31 5.0 3.0 Toluene 5.0 39 Ethyl Benzene 79 5.0 16 m,p-Xylene 150 5.0 7.6 o-Xylene 29 500 630 TPH-Gas 2600 Surrogate Recovery: 83% 93% Fluorobenzene

Project: 19735

#### **NWTPH-Dx**

Date Extracted:

01-19-98

Date Analyzed:

01-19-98

Matrix:

Soil.

Units:

mg/Kg (ppm)

SS-2 West Client ID: SS-1 East 01-045-08 01-045-09 Lab ID:

280 Diesel Fuel C12-C24: 190 30 32 PQL: Oil C24-C34: 590 400 PQL: 65 61

Surrogate Recovery:

o-Terphenyl 92% 104%

#### **NWTPH-HCID** METHOD BLANK QUALITY CONTROL

1-16-98 Date Extracted: Date Analyzed: 1-16-98

Matrix: Water

mg/L (ppm) Units:

Lab ID: MB0116W1

ND Gas:

PQL: 0.25

Diesel Fuel: ND

0.63 PQL:

ND Oil:

0.63 PQL:

85% Surrogate Recovery:

o-Terphenyl

#### **NWTPH-HCID** METHOD BLANK QUALITY CONTROL

Date Extracted:

1-16-98

Date Analyzed:

1-16-98

Matrix:

Soil

Units:

mg/Kg (ppm)

Lab ID:

MB0116S1

Gas:

ND

PQL:

20

Diesel Fuel:

ND

PQL:

50 c

Oil:

ND

PQL:

100

Surrogate Recovery:

106%

o-Terphenyl

#### **NWTPH-G/BTEX** METHOD BLANK QUALITY CONTROL

Date Extracted: 1-19-98 1-19-98 Date Analyzed:

Matrix: Water Units: ug/L (ppb)

MB0119W1 Lab ID:

**Dilution Factor** 1.0

Flags **PQL** Result 1.0 Benzene ND 1.0 ND Toluene 1.0 Ethyl Benzene ND 1.0 m,p-Xylene ND 1.0 o-Xylene ND 100 **TPH-Gas** ND

Surrogate Recovery: Fluorobenzene 85%

Flags

D

C

Date of Report: January 22, 1998 Samples Submitted: January 16, 1998 Lab Traveler: 01-045 Project: 19735

#### NWTPH-G/BTEX **DUPLICATE QUALITY CONTROL**

Date Extracted: Date Analyzed:

1-19-98

1-19-98

Matrix: Water Units: ug/L (ppb)

Lab ID	01-045-06 <b>Original</b>	01-045-06 <b>Duplicate</b>	RPD
Dilution Factor	1.0	1.0	
Benzene	480	474	2.4
Toluene	2.97	4.30	37
Ethyl Benzene	38.8	38.4	1.0
m,p-Xylene	15.5	17.2	10
o-Xylene	7.63	8.05	5.4
TPH-Gas	628	637	1.4
Surrogate Recovery:			
Fluorobenzene	93%	86%	

#### **NWTPH-G/BTEX** SPIKE BLANK QUALITY CONTROL

Date Extracted: 1-19-98 Date Analyzed: 1-19-98

Matrix: Water Units: ug/L (ppb)

Lab ID Spiked @ 50 ppb	Spike Blank	Percent <b>D</b> Recovery	uplicate	Percent Recovery	
Dilution Factor	1.0		1.0		RPD
Benzene	43.1	86%	38.4	77%	12
Toluene	43.3	87%	38.7	77%	11
Ethyl Benzene	43.6	87%	39	78%	. 11.
m,p-Xylene	43	86%	38.3	77%	12
o-Xylene	43.3	87%	38.5	77%	12

Surrogate Recovery:

Fluorobenzene 84% 78%

#### NWTPH-Dx **METHOD BLANK QUALITY CONTROL**

Date Extracted:

01-19-98

Date Analyzed:

01-19-98

Matrix:

Soil

Units:

mg/Kg (ppm)

Lab ID:

MB0119S1

Diesel Fuel C12-C24:

ND

PQL:

25

Oil C24-C34:

ND

PQL:

50

Surrogate Recovery:

o-Terphenyl

105%

#### **NWTPH-Dx DUPLICATE QUALITY CONTROL**

Date Extracted:

01-16-98

Date Analyzed:

01-19-98

Matrix:

Soil

Units:

mg/Kg (ppm)

Lab ID:

01-043-01

01-043-01DUP

Diesel Fuel C12-C24:

11500

11100

PQL:

250

250

RPD:

3.5

Surrogate Recovery:

o-Terphenyl

Project: 19735

#### **NWTPH-Dx** SB/SBD QUALITY CONTROL

Date Extracted:

01-15-98

Date Analyzed:

01-15-98

Matrix:

Soil

Units:

mg/Kg (ppm)

Spike Level:

100 ppm

Lab ID:

SB0115S1

SBD0115S1

Diesel Fuel C12-C24:

98.1

93.5

Percent Recovery:

98%

94%

RPD:

4.8

Surrogate Recovery:

o-Terphenyl

103%

90%

Date Analyzed: 1-16-98

#### % MOISTURE

Client ID		• .	Lab ID	-	% Moisture
		•	÷ .	*	
SS-1 East			01-045-08		23
SS-2 West	r r		01-045-09		18



#### **DATA QUALIFIERS AND ABBREVIATIONS**

- A Due to high sample concentration, amount spiked insufficient for meaningful MS/MSD data recovery. B - The analyte indicated was also found in the blank sample. C - The duplicate RPD outside control limits due to analyte concentration within five times the quantitation D - Data from 1:100 dilution. E - Value reported exceeds the quantitation range. Value is an estimate. F - Surrogate recovery data not available due to the high concentration in the sample. G - Insufficient sample quantity for duplicate analysis. J - The value reported was below the practical quantitation limit. The value is an estimate. K - Sample duplicate RPD outside control limits due to sample inhomogeniety. Sample re-extracted and re-analyzed with similar results. L - Quantitated from C7-C34 as diesel fuel #2. \_\_ range hydrocarbons present in the sample. M - Predominantly \_ N - Hydrocarbons in the gasoline range (C7-toluene) present in the sample. N1 - Hydrocarbons in the gasoline range (C7-toluene) present in the sample which are elevating the diesel O - Hydrocarbons in the heavy oil range (>C24) present in the sample. O1 - Hydrocarbons in the heavy oil range (>C24) present in the sample which are elevating the diesel R - Hydrocarbons outside defined gasoline range present in the sample. S - Surrogate recovery data not available due to the necessary dilution of the sample. T - The sample chromatogram is not similar to a typical U - Matrix Spike/Matrix Spike Duplicate RPD outside control limits due to matrix effects. V - Matrix Spike/Matrix Spike Duplicate recoveries outside control limits due to matrix effects. Z - Interferences were present which prevented the quantitation of the analyte below the detection limit
- MRL Method Reporting Limit

ND - Not Detected

reported.

PQL - Practical Quantitation

Page \_\_\_\_ of \_\_\_

Chain of custody

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WATER AND SEDIMENT SAMPLES 6/4/98

June 22, 1998

Gary Galloway Galloway Environmental, Inc. 3102 220th Place SE Issaquah, WA 98027

Re:

Analytical Data for Project 19735.1 Laboratory Reference No. 9806-038

Dear Gary:

Enclosed are the analytical results and associated quality control data for samples submitted on June 4, 1998.

The standard policy of OnSite Environmental Inc., is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister Project Chemist

Enclosures<sup>2</sup>

Date of Report: June 22, 1998 Samples Submitted: June 4, 1998

Lab Traveler: 06-038 Project: 19735.1

#### **NWTPH-HCID**

Date Extracted:

6-9-98

Date Analyzed:

6-9-98

Matrix:

Water

Units:

mg/L (ppm)

Client ID:

MW-1

MW-2

MW-3

Lab ID:

06-038-01

06-038-02

06-038-03

Gas C7-C12:

ND

Gasoline

ND

PQL:

0.25

0.25

0.25

Diesel Fuel C12-C24:

ND

ND

ND

PQL:

0.63

0.63

0.63

Heavy Oil C24-C34:

ND 0.63 ND 0.63 ND 0.63

Surrogate Recovery: o-Terphenyl

80%

66%

75%

Flags:

PQL:

Lab Traveler: 06-038 Project: 19735.1

#### **NWTPH-HCID**

Date Extracted:

6-9-98

Date Analyzed:

6-9-98

Matrix:

Water

Units:

mg/L (ppm)

Clie	'nt	ID:	
l ah	ır	١٠	

MW-4

MW-25

MW-24 06-038-06

06-038-04

06-038-05

Gas C7-C12:

NĎ 0.25

ND 0.25 Gasoline 0.25

PQL:

ND

Diesel Fuel

PQL:

ND 0.63

0.63

0.63

Diesel Fuel C12-C24:

ND

Heavy Oil C24-C34: PQL:

ND 0.63 ND 0.63

0.63

Surrogate Recovery:

o-Terphenyl

78%

91%

89%

#### **NWTPH-HCID**

Date Extracted:

6-9-98

Date Analyzed:

6-9-98

Matrix:

Water

Units:

mg/L (ppm)

Client ID:	MVV-23	4C-UP	4C-DOWN
Lab ID:	06-038-07	06-038-08	06-038-09
Gas C7-C12:	Gasoline	ND	ND
PQL:	0.25	0.25	0.25
Diesel Fuel C12-C24:	Diesel Fuel	ND	ND
PQL:	0.63	0.63	0.63
Heavy Oil C24-C34:	ND	ND	ND
PQL:	0.63	0.63	0.63
Surrogate Recovery:			
o-Terphenyl	76%	90%	92%

Project: 19735.1

#### **NWTPH-HCID** METHOD BLANK QUALITY CONTROL

Date Extracted:

6-9-98

Date Analyzed:

6-9-98

Matrix:

Water

Units:

mg/L (ppm)

Lab ID:

MB0609W1

Gas C7-C12:

ND

PQL:

0.25

Diesel Fuel C12-C24:

ND

PQL:

0.63

Heavy Oil C24-C34:

ND.

PQL:

0.63

Surrogate Recovery:

o-Terphenyl

76%

Project: 19735.1

#### **NWTPH-HCID**

Date Extracted: 6-5-98 6-8-98 Date Analyzed:

Matrix:

Soil

Units:

mg/Kg (ppm)

SS-3 EAST SS-4 WEST Client ID: 06-038-11 06-038-10 Lab ID:

Gas C7-C12: ΝD ND 30 38 PQL: Diesel Fuel C12-C24: ND ND 61 76 PQL: ND ND Heavy Oil C24-C34: 120 150 PQL:

Surrogate Recovery:

o-Terphenyl

101%

103%

#### **NWTPH-HCID** METHOD BLANK QUALITY CONTROL

Date Extracted:

6-5-98

Date Analyzed:

6-8-98

Matrix:

Soil

Units:

mg/Kg (ppm)

Lab ID:

MB0605S1

Gas C7-C12:

ND

PQL:

25

Diesel Fuel C12-C24:

ND

PQL:

50

Heavy Oil C24-C34:

ND

PQL:

100

Surrogate Recovery:

o-Terphenyl

100%

Flags

Date of Report: June 22, 1998 Samples Submitted: June 4, 1998 Lab Traveler: 06-038 Project: 19735.1

#### NWTPH-G/BTEX **DUPLICATE QUALITY CONTROL**

Date Extracted: Date Analyzed: 6-12-98

6-15-98

Matrix: Water Units: ug/L (ppb)

Lab ID:	06-085-07 <b>Original</b>	06-085-07 <b>Duplicate</b>	RPD
Benzene	ND	ND	NA
Toluene	ND	ND	NA
Ethyl Benzene	ND	ND	NA
m,p-Xylene	ND	ND	NA
o-Xylene	ND	ND	NA
TPH-Gas	100	106	5.8
Surrogate Recovery:			
Fluorobenzene	86%	88%	

#### NWTPH-G/BTEX MS/MSD QUALITY CONTROL

Date Extracted: Date Analyzed: 6-12-98 6-12-98

Matrix: Water Units: ug/L (ppb)

Units. ug	(r (bbb)	
Spike Le	vel: 50.0 p <sub>l</sub>	ρb
LELIÓ.		

Lab ID:	06-085-07 <b>MS</b>	Percent Recovery	06-085-07 <b>MSD</b>	Percent Recovery	RPD
Benzene	45.7	92	44.3	89	3.3
Toluene	48.7	98	47.5	95	2.7
Ethyl Benzene	51.0	102	49,3	99	3.4
m,p-Xylene	50.1	100	48.4	97	3.4
o-Xylene	49.8	100	48.2	96	3.3

Surrogate Recovery:

Fluorobenzene

90%

Lab Traveler: 06-038 Project: 19735.1

#### **NWTPH-Dx**

Date Extracted: 6-9-98
Date Analyzed: 6-9-98

Matrix: Water Units: mg/L (ppm)

Client ID: MW-24 MW-23 06-038-06 06-038-07 Lab ID: 1.70 1.40 Diesel Fuel C12-C24: 0.25 0.25 PQL: Oil C24-C34: 0.52 0.54 PQL: 0.50 0.50

Surrogate Recovery:

o-Terphenyl 89% 76%

Flags: P P

#### **NWTPH-Dx** METHOD BLANK QUALITY CONTROL

Date Extracted:

6-9-98

Date Analyzed:

6-9-98

Matrix:

Water

Units:

mg/L (ppm)

Lab ID:

MB0609W1

Diesel Fuel C12-C24:

ND

PQL:

0.25

Oil C24-C34:

ND

PQL:

0.50

Surrogate Recovery:

o-Terphenyl

76%

Lab Traveler: 06-038 Project: 19735.1

### NWTPH-Dx DUPLICATE QUALITY CONTROL

Date Extracted:

6-9-98

Date Analyzed:

6-9-98

Matrix:

Water

Units:

mg/L (ppm)

Lab ID:

05-129-04

05-129-04 DUP

Diesel Fuel C12-C24.

2.94

2.73

PQL:

0.25

0.25

RPD:

7.4

Surrogate Recovery:

o-Terphenyl

58%

66%

#### **NWTPH-Dx SB/SBD QUALITY CONTROL**

Date Extracted:

6-9-98

Date Analyzed:

6-9-98

Matrix:

Water

Units:

mg/L (ppm)

Spike Level:

1.00 ppm

Lab ID:

SB0609W1

SB0609W1 DUP

Diesel Fuel C12-C24:

0.747

0.800

PQL:

0.25

0.25

Percent Recovery:

75

80

RPD:

6.9

Surrogate Recovery:

o-Terphenyl

75%

81%

Date Analyzed: 6-5-98

#### % MOISTURE

Client ID		Lab ID		% Moisture
SS-4 West	·	06-038-10		18
SS-3 East		06-038-11		34



#### DATA QUALIFIERS AND ABBREVIATIONS

A - Due to high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
B - The analyte indicated was also found in the blank sample.
C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
D - Data from 1: dilution.
E - The value reported exceeds the quantitation range, and is an estimate.
F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
G - Insufficient sample quantity for duplicate analysis.
J - The value reported was below the practical quantitation limit. The value is an estimate.
K - Sample duplicate RPD is outside control limits due to sample inhomogeniety. The sample was re- extracted and re-analyzed with similar results.
L - Quantitated from C7-C34 as diesel fuel #2.
M - Predominantly range hydrocarbons present in the sample.
N - Hydrocarbons in the gasoline range (C7-toluene) are present in the sample which are elevating the diesel result.
O - Hydrocarbons in the heavy oil range (>C24) are present in the sample which are elevating the diesel result.
P - Hydrocarbons in the diesel range (C12-C24) are present in the sample which are elevating the oil resul
Q - The RPD of the results between the two columns is greater than 25.
R - Hydrocarbons outside the defined gasoline range are present in the sample and are elevating the gasoline result.
S - Surrogate recovery data is not available due to the necessary dilution of the sample.
T - The sample chromatogram is not similar to a typical
U - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
Y - Acid Cleaned.
Z - Interferences were present which prevented the quantitation of the analyte below the detection limit reported.
ND - Not Detected MRL - Method Reporting Limit POL - Practical Quantitation

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Laboratory No.	Requested Analysis	((	100	by 808 Wetals	PCB's									X	X	COMMENTS:	Copropriete - fat	results to	• 628-883 (52h)	BAdded on Hell. Do	110001
Turn Around Project Chemist:		928 <b>y</b> d	TEX	s py 82	IYTPI IYTPI Volatile Haloge Haloge	× m	×       ×       ×       ×       ×       ×       ×       ×       ×     ×     ×     ×   ×     ×		2.5			 0/	7 35:8/	5 25.2/	8		TIME 5.00		<b>JIMI</b>	IEWED	Volum Bood Com Girls Ones Com Salum Bood Com Birk - Client Com
7	14924 NE 31st Circle • Redmond, WA 98052 Fax: (425) 885-4603 • Phone: (425) 883-3881	1	Project Name:	Project Manager:	Date amole Identification Samoled	MW-1	2- 2	4	7 7	5	21,		4C - DOLM	4 West	East	RELINQUISHED BY 6/4/5% BECENED BY 6/4/5%	FIRM FIRM (7:00)	RECEIV	FIRM TIME FIRM	REVIEWED BY DATE REVIEWED	Communications



PHASE II - Test Pits

6/10/98

June 24, 1998

Gary Galloway Galloway Environmental, Inc. 3102 220th Place SE Issaquah, WA 98027

Re:

Analytical Data for Project 19824 Laboratory Reference No. 9806-105

#### Dear Gary:

Enclosed are the analytical results and associated quality control data for samples submitted on June 15, 1998.

The standard policy of OnSite Environmental Inc., is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister Project Chemist

**Enclosures** 

### **NWTPH-HCID**

6-15-98 6-15-98 Date Extracted: Date Analyzed:

Matrix:

Soil

Units:

mg/Kg (ppm)

Client ID: Lab ID:	STP-10c 06-105-01	STP-11b 06-105-02	STP-11c 06-105-03
Gas C7-C12:	ND	ND	ND
PQL:	31	30	26
			NID.
Diesel Fuel C12-C24: PQL:	ND 62	ND 60	ND 53
T GC,			
Heavy Oil C24-C34:	ND	Heavy Oil	ND
PQL:	120	120	110
Surrogate Recovery:		4000	4000/
o-Terphenyl	106%	106%	108%

Date Extracted: 6-15-98 Date Analyzed: 6-15-98

Matrix:

Soil

Units:

mg/Kg (ppm)

Client ID:	STP-12b	STP-13a	STP-14c
Lab ID:	06-105-05	06-105-07	06-105-11
Gas C7-C12:	ND	Gasoline	ND
PQL:	33	28	27
•			
Diesel Fuel C12-C24:	ND	ND	ND
PQL:	67	57	54
Heavy Oil C24-C34:	ND	ND	ND
PQL:	130	110	110
Surrogate Recovery:			
o-Terphenyl	110%	115%	110%

and the second s	5-98 5-98		
Matrix: Soi Units: mg	l /Kg (ppm)		
		0-70-40-	STP-21d
Client ID: Lab ID:	STP-16c 06-105-12	STP-18c 06-105-13	06-105-17
Gas C7-C12: PQL:	ND 26	Gasoline 31	ND 27
PQL.	20		
Dic /Fuel C12-C24:	ND	Diesel Fuel #2 62	Diesel Fuel #2 54
PQL:	53	02	34
Heavy Oil C24-C34:	ND ·	ND	ND
PQL:	110	120	110
Surrogate Recovery:			
o-Terphenyl	111%		
Flags:		<b>F</b>	<b>F</b>

Lab Traveler: 06-105 Project: 19824

Flags:

#### **NWTPH-HCID**

Date Extracted: 6-15-98 Date Analyzed: 6-15-98 Soil, Matrix: mg/Kg (ppm) Units: STP-23d STP-23a Client ID: STP-22d 06-105-19 06-105-22 Lab ID: 06-105-18 Gas C7-C12: ND ND Gasoline 28 27 PQL: 27 Diesel Fuel #2 ND Diesel Fuel #2 Diesel Fuel C12-C24: 54 57 PQL: 54 Heavy Oil Heavy Oil Heavy Oil C24-C34: ND-110 110 110 PQL: Surrogate Recovery: 110% o-Terphenyl

Lab Traveler: 06-105 Project: 19824

#### **NWTPH-HCID**

Date Extracted:

6-17-98

Date Analyzed:

6-17-98

Matrix:

Soil

Units:

mg/Kg (ppm)

Client ID:

STP-12a

STP-12c

Lab ID:

06-105-04

06-105-06

Gas C7-C12:

Gasoline

Gasoline

PQL:

29

27

Diesel Fuel C12-C24:

Unidentified

Diesel Fuel # 2

PQL:

57

54

Heavy Oil C24-C34:

ND

ND

PQL:

110

110

Surrogate Recovery:

o-Terphenyl

113%

118%

Lab Traveler: 06-105 Project: 19824

### NWTPH-HCID METHOD BLANK QUALITY CONTROL

Date Extracted: 6-15-98
Date Analyzed: 6-15-98

Matrix: Soil

Units: mg/Kg (ppm)

Lab ID: MB0615S1

Gas C7-C12: ND PQL: 25

-QL. 23

Diesel Fuel C12-C24: ND

PQL: 50

Heavy Oil C24-C34: ND

PQL: 100

Surrogate Recovery:

o-Terphenyl 104%

Project: 19824

### NWTPH-HCID METHOD BLANK QUALITY CONTROL

Date Extracted:

6-17-98

Date Analyzed:

6-17-98

Matrix:

Soil

Units:

mg/Kg (ppm)

Lab ID:

MB0617S1

Gas C7-C12:

ND

PQL:

25

Diesel Fuel C12-C24:

ND

PQL:

50

Heavy Oil C24-C34:

ND

PQL:

100

Surrogate Recovery:

o-Terphenyl

116%

### NWTPH-G/BTEX

6-17-98 Date Extracted: 6-18-98 Date Analyzed:

Matrix: Soil

Units: mg/Kg (ppm)

06-105-13 06-105-07 Lab ID: STP-18c STP-13a Client ID:

	Result	Flags	PQL	Result	Flags	PQL
Benzene	ND		0.28	0.70		0.31
Toluene	0.46		0.28	0.94		0.31
Ethyl Benzene	ND		0.28	1.1		0.31
m,p-Xylene	1.2		0.28	5.3		0.31
o-Xylene	1.1		0.28	2.7		0.31
TPH-Gas	82		28	580		31
Surrogate Recovery: Fluorobenzene		S			S	

### **NWTPH-G/BTEX** METHOD BLANK QUALITY CONTROL

Date Extracted:

6-17-98

Date Analyzed:

6-17-98

Matrix: Soil

Units: mg/Kg (ppm)

Lab ID:

MB0617S2

	Result Flags	PQL
Benzene	ND	0.050
Toluene	ND	0.050
Ethyl Benzene	ND	0.050
m,p-Xylene	ND	0.050
o-Xÿlene	ND	0.050
TPH-Gas	ND	5.0
Surrogate Recovery: Fluorobenzene	118%	

#### NWTPH-G/BTEX **DUPLICATE QUALITY CONTROL**

Date Extracted: Date Analyzed: 6-17-98 6-18-98

Matrix: Soil Units: mg/Kg (ppm)

Lab ID:	_	6-127-02 Original	06-127-02 <b>Duplicate</b>	RPD	Flag
				· · · · · · · · · · · · · · · · · · ·	
Benzene		ND	ND	NA	
Toluene		ND	ND	NA	
Ethyl Benzene		ND	ND	NA	
m,p-Xylene		ND	ND	NA	· · · · · · · · · · · · · · · · · · ·
o-Xylene		ND	ND	NA	
TPH-Gas		ND	ND	NA	
Surrogate Recovery: Fluorobenzene		107%	98%		

RPD

0.88

0.86

1.3

1.1

1.1

Date of Report: June 24, 1998 Samples Submitted: June 15, 1998 Lab Traveler: 06-105

Project: 19824

#### **NWTPH-G/BTEX** MS/MSD QUALITY CONTROL

Date Extracted: Date Analyzed:

6-17-98 6-18-98

Matrix: Soil

Units: mg/Kg (ppm)

Fluorobenzene

Spike Level: 1.00 ppm

	4				
Lab ID:	06-127-02 <b>MS</b>	Percent Recovery	06-127-02 <b>MSD</b>	Percent Recovery	÷
Benzene	0.974	97	0.965	97	13
Toluene	1.05	105	1.04	104	•••
Ethyl Benzene	1.12	112	1.10	110	
m,p-Xylene	1.08	108	1.07	107	
o-Xylene	1.09	109	1.08	108	
Surrogate Recovery:					
Fluorobenzene	110%		109%		٠.

#### **NWTPH-Dx**

Date Extracted:

6-17-98

Date Analyzed:

6-18-98

Matrix:

Soil

Units:

mg/Kg (ppm)

Client ID:	STP-11b	STP-12a	STP-12c
Lab ID:	06-105-02	06-105-04	06-105-06
		en en en en en en en en en en en en en e	
Diesel Fuel C12-C24:	120	310	430
PQL:	30	29	27
Oil C24-C34:	170	220	61
PQL:	60	57	54
Surrogate Recovery:			
o-Terphenyl	95%	96%	96%
The state of the s			
Flags:	0	0	P,N

Lab Traveler: 06-105 Project: 19824

**NWTPH-Dx** 

Date Extracted:

6-17-98

Date Analyzed:

6-18-98

Matrix:

Soil:

Units:

mg/Kg (ppm)

Client ID:

STP-23a

STP-23d

Lab ID:

06-105-19

06-105-22

Diesel Fuel C12-C24:

40

4500

PQĹ:

27

140

Oil C24-C34:

140

360

PQL:

54

110

Surrogate Recovery:

o-Terphenyl

97%

Flags:

0.

S,P

Lab Traveler: 06-105 Project: 19824

## NWTPH-Dx METHOD BLANK QUALITY CONTROL

Date Extracted: 6-17-98
Date Analyzed: 6-17-98

Matrix: Soil

Units: mg/Kg (ppm)

Lab ID: MB0617S2

Diesel Fuel C12-C24: ND

PQL: 25

Oil C24-C34: ND

PQL: 50

Surrogate Recovery:

o-Terphenyl 102%

Lab Traveler: 06-105 Project: 19824

### NWTPH-Dx DUPLICATE QUALITY CONTROL

59.5

25

Date Extracted: 6-17-98
Date Analyzed: 6-17-98

Matrix:

Soil

Units:

mg/Kg (ppm)

Lab ID: 06-105-02 06-105-02 DUP

Diesel Fuel C12-C24: 105
PQL: 25

RPD: 55

Surrogate Recovery:

o-Terphenyl 95% 88%

Lab Traveler: 06-105 Project: 19824

### NWTPH-Dx DUPLICATE QUALITY CONTROL

Date Extracted:
Date Analyzed:

6-17-98

6-17-98

Matrix:

Soil

Units:

mg/Kg (ppm)

Lab ID:

06-128-03

06-128-03 DUP

Diesel Fuel C12-C24:

37.9

39.4

PQL:

25

25

RPD:

3.9

Surrogate Recovery:

o-Terphenyl

92%

90%

Lab Traveler: 06-105 Project: 19824

#### NWTPH-Dx SB/SBD QUALITY CONTROL

Date Extracted:
Date Analyzed:

6-17-98 6-17-98

Matrix:

Soil

Units:

mg/Kg (ppm)

Spike Level:

100 ppm

Lab ID:

SB0617S2

SB0617S2 DUP

Diesel Fuel C12-C24:

85.6

84.6

PQL:

25

25

Percent Recovery:

86

85

RPD:

1.2

Surrogate Recovery:

o-Terphenyl

108%

106%

Project: 19824

## TOTAL METALS EPA 6010B/7471A

Date Extracted: 6-17-98 Date Analyzed: 6-17&18-98

Matrix:

Soil

Units:

mg/kg (ppm)

Lab ID:

06-105-02

Client ID:

STP-11b

Analyte	Method	Result	PQL
Arsenic	6010B	ND	12
Barium	6010B	78	0.60
Cadmium	6010B	ND	0.60
Chromium	6010B	55	0.60
Lead	6010B	7.0	6.0
Mercury	7471A	ND	0.30
Selenium	6010B	ND	12
Silver	6010B	ND	0.60

Project: 19824

#### **TOTAL METALS** EPA 6010B/7471A

Date Extracted: 6-17-98 Date Analyzed: 6-17&18-98

Matrix:

Soil

Units:

mg/kg (ppm)

Lab ID:

06-105-19

Client ID:

STP-23a

Analyte	Method	Res III	PQL
Arsenic	6010B	ND	11
Barium	6010B	67	0.54
Cadmium	6010B	ND	0.54
Chromium	6010B	36	0.54
Lead	6010B	6.5	5.4
Mercury	7471A	ND	0.27
Selenium	6010B	ND	11
Silver	6010B	ND	0.54

# TOTAL METALS EPA 6010B/7471A

Date Extracted: 6-17-98 Date Analyzed: 6-17&18-98

Matrix:

Soil

Units:

mg/kg (ppm)

Lab ID:

06-105-22

Client ID:

STP-23d

Analyte	Method	Result	PQL
Arsenic	6010B	ND	11
Barium	6010B	34	0.57
Cadmium	6010B	ND	0.57
Chromium	6010B	22	0.57
Lead	6010B	7.6	5.7
Мегсигу	7471A	ND	0.28
Selenium	6010B	ND	11
Silver	6010B	ND	0.57

### TOTAL METALS EPA 6010B/7471A **METHOD BLANK QUALITY CONTROL**

Date Extracted: Date Analyzed: 6-17-98 6-17&18-98

Matrix:

Soil

Units:

mg/kg (ppm)

Lab ID:

MB0617S1

Analyte	Method	Result	PQL
Arsenic	6010B	, ND	10
Barium	6010B	ND	0.50
Cadmium	6010B	ND	0.50
Chromium	6010B	ND	0.50
Lead	6010B	ND	5.0
Mercury	7471A	ND	0.25
Selenium	6010B	ND	10
Silver	6010B	ND	0.50

### **TOTAL METALS** EPA 6010B/7471A **DUPLICATE QUALITY CONTROL**

Date Extracted: 6-17&98 Date Analyzed: 6-17&18-98

Matrix:

Soil

Units:

mg/kg (ppm)

Lab ID:

06-108-05

Analyte	Sample Result	Duplicate Result	RPD Flags	PQL
Arsenic	ND	ND	NA	10
Barium	10.9	11.9	8.8	0.50
Cadmium	ND	ND	NA	0.50
Chromium	10.2	11.2	8.9	0.50
Lead	ND	ND	NA .	5.0
Mercury	ND	, ND	NA .	0.25
Selenium	ND	ND	NA	10
Silver	ND	ND	NA .	0.50

### **TOTAL METALS** EPA 6010B/7471A MS/MSD QUALITY CONTROL

Date Extracted: 6-17-98 Date Analyzed: 6-17&18-98

Matrix:

Soil

Units:

mg/kg (ppm)

Lab ID:

06-108-05

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Arsenic	100	68.5	69	75.9	76	10	
Barium	100	84.8	74	94.0	83	10	
Cadmium	50	37.7	75	40.9	82	8.2	
Chromium	100	87.4	77	98.6	88	12	
Lead	250	180	72	187	75	3.9	
Mercury	1.0	0.876	88	0.894	89	2.0	
Selenium	100	75.3	<b>75</b>	75.7	76	0.53	
Silver	50	35.5	· / <b>. 71</b>	39.9	80	12	

Date Analyzed: 6-15&17-98

Client ID	Lab ID	% Moisture
STP-10c	06-105-01	19
STP-11b	06-105-02	16
STP-11c	06-105-03	5.0
STP-12a	06-105-04	13
STP-12b	06-105-05	25
STP-12c	06-105-06	7.0
STP-13a	06-105-07	12
STP-14c	06-105-11	7.0
STP-16c	06-105-12	5.0
STP-18c	06-105-13	19
STP-21d	06-105-17	8.0
STP-22d	06-105-18	7.0
STP-23a	06-105-19	7.0
STP-23d	06-105-22	12



### DATA QUALIFIERS AND ABBREVIATIONS

A - Due to high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
B - The analyte indicated was also found in the blank sample.
C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
D - Data from 1: dilution.
E - The value reported exceeds the quantitation range, and is an estimate.
F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
G - Insufficient sample quantity for duplicate analysis.
J - The value reported was below the practical quantitation limit. The value is an estimate.
K - Sample duplicate RPD is outside control limits due to sample inhomogeniety. The sample was re- extracted and re-analyzed with similar results.
L - Quantitated from C7-C34 as diesel fuel #2.
M - Predominantly range hydrocarbons present in the sample.
N - Hydrocarbons in the gasoline range (C7-toluene) are present in the sample which are elevating the diesel result.
O - Hydrocarbons in the heavy oil range (>C24) are present in the sample which are elevating the diesel result.
P - Hydrocarbons in the diesel range (C12-C24) are present in the sample which are elevating the oil result
Q - The RPD of the results between the two columns is greater than 25.
R - Hydrocarbons outside the defined gasoline range are present in the sample and are elevating the gasoline result.
S - Surrogate recovery data is not available due to the necessary dilution of the sample.
T - The sample chromatogram is not similar to a typical
U - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
Y - Acid Cleaned.
Z - Interferences were present which prevented the quantitation of the analyte below the detection limit reported.
ND - Not Detected MRL - Method Reporting Limit PQL - Practical Quantitation

## Chain of Custody

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# Chain of Custody

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PHASE II - Test Pots 6/10/98

July 1, 1998

Gary Galloway Galloway Environmental, Inc. 3102 220th Place SE Issaquah, WA 98027

Re:

Analytical Data for Project 19824 Laboratory Reference No. 9806-105

Dear Gary:

Enclosed are the analytical results and associated quality control data for samples submitted on June 15, 1998.

The standard policy of OnSite Environmental Inc., is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister Project Chemist

**Enclosures** 

### **NWTPH-G/BTEX**

6-24-98 Date Extracted: Date Analyzed: 6-26-98

Matrix: Soil

Units: mg/Kg (ppm)

Lab ID: 06-105-04 Client ID: STP-12a

06-105-06 STP-12c

	Result Flag	js PQL	Result	Flags	PQL
Benzene	0.079	0.057	ND		0.27
Toluene	1.0	0.057	0.27		0.27
Ethyl Benzene	0.28	0.057	0.38		0.27
m,p-Xylene	2.0	0.057	15		0.27
o-Xylene	0.90	0.057	9.7		0.27
TPH-Gas	55	5.7	2300		27
Surrogate Recovery: Fluorobenzene	116%			S	

### **NWTPH-G/BTEX** METHOD BLANK QUALITY CONTROL

Date Extracted:

6-24-98

Date Analyzed:

6-26-98

Matrix: Soil

Units: mg/Kg (ppm)

Lab ID:

MB0624S1

	Result	Flags	PQL
Benzene	ND		0.050
Toluene	ND		0.050
Ethyl Benzene	ND		0.050
m,p-Xylene	ND		0.050
o-Xylene	ND		0.050
TPH-Gas	ND		5.0
Surrogate Recovery: Fluorobenzene	132%		

### NWTPH-G/BTEX DUPLICATE QUALITY CONTROL

Date Extracted: Date Analyzed:

6-24-98 6-26-98

Matrix: Soil

Units: mg/Kg (ppm)

Lab ID:	06-105-04 <b>Original</b>	06-105-04 <b>Duplicate</b>	RPD	Flags
Benzene	0.0685	0.0655	4.5	
Toluene	0.888	0.857	3.6	
Ethyl Benzene	0.241	0.241	0.39	
m,p-Xylene	1.72	1.66	3.0	
o-Xylene	0.786	0.771	1.9	
TPH-Gas	47.6	44.9	5.8	
Surrogate Recovery: Fluorobenzene	116%	111%		

### **NWTPH-G/BTEX** MS/MSD QUALITY CONTROL

Date Extracted: Date Analyzed: 6-24-98 6-27-98

Matrix: Soil

Units: mg/Kg (ppm)

Spike Level: 1.00 ppm

Lab ID:	06-105-04 <b>MS</b>	Percent Recovery	06-105-04 <b>MSD</b>	Percent Recovery	RPD
Benzene	1.04	97	1.03	97	0.77
Toluene	1.71	82	1.69	81	2.1
Ethyl Benzene	1.20	96	1.22	98	1.6
m,p-Xylene	2.32	60	2.31	60	0.50
o-Xylene	1.55	76	1.57	78	2.1

Surrogate Recovery:

Fluorobenzene

102%

101%



### DATA QUALIFIERS AND ABBREVIATIONS

A - Due to high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
B - The analyte indicated was also found in the blank sample.
C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
D - Data from 1: dilution.
E - The value reported exceeds the quantitation range, and is an estimate.
F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
G - Insufficient sample quantity for duplicate analysis.
J - The value reported was below the practical quantitation limit. The value is an estimate.
K - Sample duplicate RPD is outside control limits due to sample inhomogeniety. The sample was re- extracted and re-analyzed with similar results.
L - Quantitated from C7-C34 as diesel fuel #2.
M - Predominantly range hydrocarbons present in the sample.
N - Hydrocarbons in the gasoline range (C7-toluene) are present in the sample which are elevating the diesel result.
O - Hydrocarbons in the heavy oil range (>C24) are present in the sample which are elevating the diesel result.
P - Hydrocarbons in the diesel range (C12-C24) are present in the sample which are elevating the oil result
Q - The RPD of the results between the two columns is greater than 25.
R - Hydrocarbons outside the defined gasoline range are present in the sample and are elevating the gasoline result.
S - Surrogate recovery data is not available due to the necessary dilution of the sample.
T - The sample chromatogram is not similar to a typical
U - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
Y - Acid Cleaned.
Z - Interferences were present which prevented the quantitation of the analyte below the detection limit reported.
ND - Not Detected MRL - Method Reporting Limit PQL - Practical Quantitation

### Chain of Lustody

BADDED GIPTER POUT HOD + 6.6. COMMENTS. Q Follow of Added 6/22/98 x40 % Moisture -48 how FOT Laboratory No. 0 6 - 1 0 5 ( Her mother. **Requested Analysis** Hd3 НdΛ TCLP Metals 8 Total AROR Metals (8) CB/s by 8081/608 229/07S8 yd 2HA9 Semivolatiles by 8270/625 080 Halogenated Volatiles by 8260 Olatiles by 8240/624/8260 Project Chemist: 8 **⊗ ⊗ ⊗ ⊗** C LL DATE Ø DATE 4040 **~** ∀ **UWTPH-HCID** # of Cont. Turn Around Requested □ Same Day (Check One) 女 Hours ☐ 48 Hours ☐ Standard (other) Time Sampled Matrix 15:40 54:51 16:55 15:30 00:9/ 50:91 16:30 17:00 04:9/ 17:10 01:91 54:31 DATE REVIEWED RECEIVED BY RECEIVED BY Date Sampled FIRM FIRM 01/2 14924 NE 31st Circle • Redmond, WA 98052 Fax: (425) 885-4603 • Phone: (425) 883-3881 Environmental Inc. 11:58 DATE TIME Phase I Sample Identification 万グス <u>OnSite</u> 14 a 140 13 5 13 a 129 42 V 01 GALLOWAY GALLOWAY ţ RELINQUISHED BY RELINQUISHED BY STORE 786 Project Manager: REVIEWED BY Project Name: Project No.: Company: Lab ID FIRM  $\varphi$ 3 00 5



NEW CONCRETE

Tank FARM CONTAINMEN

AREA - Surface Sumple.

(prior to pud placement)

11/9/98

November 10, 1998

Gary Galloway Galloway Environmental, Inc. 3102 220th Place SE Issaquah, WA 98027

Re:

Analytical Data for Project Storey Laboratory Reference No. 9811-054

Dear Gary:

Enclosed are the analytical results and associated quality control data for samples submitted on November 9, 1998.

The standard policy of OnSite Environmental Inc., is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Ba<del>ume</del>lster Project Chemist

**Enclosures** 

ND

110

96%

Date of Report: November 10, 1998 Samples Submitted: November 9, 1998

Lab Traveler: 11-054 Project: Storey

### **NWTPH-HCID**

Date Extracted: 11-09-98 11-09-98 Date Analyzed: Matrix: Soil mg/Kg (ppm) Units: SC-1 SC-2 SC-3 Client ID: 11-054-03 11-054-01 11-054-02 Lab ID: ND ND ND Gasoline: 27 27 26 PQL: ND ND ND Diesel Fuel: 53 54 52 PQL:

ND -

100

110%

ND

110

100%

o-Terphenyl

Flags:

Surrogate Recovery:

Heavy Oil:

PQL:

Date of Report: November 10, 1998 Samples Submitted: November 9, 1998

Lab Traveler: 11-054 Project: Storey

### **NWTPH-HCID**

Date Extracted:

11-09-98

Date Analyzed:

11-09-98

Matrix:

Soil

Units:

mg/Kg (ppm)

Client ID:

SC-4

Lab ID:

11-054-04

Gasoline:

·ND

PQL:

26

Diesel Fuel:

ND

PQL:

52

Heavy Oil:

ND

PQL:

100

Surrogate Recovery:

o-Terphenyl

96%

Flags:

Date of Report: November 10, 1998 Samples Submitted: November 9, 1998

Lab Traveler: 11-054

Project: Storey

### NWTPH-HCID METHOD BLANK QUALITY CONTROL

Date Extracted:

11-09-98

Date Analyzed:

11-09-98

Matrix:

Soil

Units:

mg/Kg (ppm)

Lab ID:

MB1109S2

Gasoline:

ND

PQL:

25

Diesel Fuel:

ND

PQL:

50

Heavy Oil:

ND

PQL:

100

Surrogate Recovery:

o-Terphenyl

106%

Flags



### DATA QUALIFIERS AND ABBREVIATIONS

A - Due to high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
B - The analyte indicated was also found in the blank sample.
C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
D - Data from 1: dilution.
E - The value reported exceeds the quantitation range, and is an estimate.
F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
G - Insufficient sample quantity for duplicate analysis.
J - The value reported was below the practical quantitation limit. The value is an estimate.
K - Sample duplicate RPD is outside control limits due to sample inhomogeniety. The sample was re-extracted and re-analyzed with similar results.
M - Predominantly range hydrocarbons present in the sample.
N - Hydrocarbons in the gasoline range (C7-toluene) are present in the sample.
O - Hydrocarbons in the heavy oil range (>C24) are present in the sample.
P - Hydrocarbons in the diesel range (C12-C24) are present in the sample which are elevating the oil result
Q - The RPD of the results between the two columns is greater than 25.
R - Hydrocarbons outside the defined gasoline range are present in the sample; NWTPH-Dx recommended
S - Surrogate recovery data is not available due to the necessary dilution of the sample.
T - The sample chromatogram is not similar to a typical
U - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.
V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
X - Sample underwent silica gel cleanup procedures.
Y - Sample underwent acid cleanup procedures.
Z - Interferences were present which prevented the quantitation of the analyte below the detection limit

ND - Not Detected MRL - Method Reporting Limit PQL - Practical Quantitation

## Chain of Custody

			Turn Around Requested	pa; pun	Projec	ڪ چ	Project Chemist:					abo	rato	Laboratory No.	9						
•	14924 NE 31st Circle • Redmond, WA 98052 Fax: (425) 885-4603 • Phone: (425) 883-3881	8052 -3881	(Check One)	ne) Oay							Requ		id Ar	Requested Analysis	<u>s</u>						
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### SOURCE AREA REMOUNIS 9/1/99

September 14, 1999

Gary Galloway Galloway Environmental, Inc. 3102 220th Place SE Issaquah, WA 98027

Re:

Analytical Data for Project 19904

Laboratory Reference No. 9909-043

Dear Gary:

Enclosed are the analytical results and associated quality control data for samples submitted on September 8, 1999.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister **Project Manager** 

**Enclosures** 

Lab Traveler: 09-043

Project: 19904

### **NWTPH-HCID**

Date Extracted: 9-8-99 9-8-99 Date Analyzed: Matrix: Soil . mg/Kg (ppm) Units: 9/7-SP3 9/7-SP2 Client ID: 9/7-SP1 09-043-03 09-043-02 Lab ID: 09-043-01 Gasoline Range Gasoline Range Gasoline Range Gasoline: Hydrocarbons Hydrocarbons Hydrocarbons 27 27 PQL: 28 Diesel Fuel #2 Diesel Fuel #2 Diesel Fuel #2 Diesel Fuel: 55 55 PQL: :56 Heavy Oil Heavy Oil Heavy Oil: Heavy Oil 1-10 110 PQL: 110

Surrogate Recovery:

o-Terphenyl 103% --- 103%

Flags:

Date Extracted:

9-8-99

Date Analyzed:

9-8-99

Matrix:

Soil

Units:

Flags:

mg/Kg (ppm)

Client ID:	9/7-PI1@6	9/7-PI2@10		9/7-PI3@9.5
Lab ID:	09-043-04	09-043-05		09-043-06
		•		
e e e e e e e e e e e e e e e e e e e		· ·		
Gasoline:	ND	ND		ND
PQL:	30	27		26
Diesel Fuel:	ND <sub>2</sub>	Diesel Fuel #2		ND
PQL:	60	53		52
		en en en en en en en en en en en en en e		
Heavy Oil:	ND	ND		ND
PQL:	120	110	i de la companya de l	100
Surrogate Recovery:				-
o-Terphenyl	108%			112%

### **NWTPH-HCID**

Date Extracted: Date Analyzed: 9-8-99 9-8-99

Matrix:

Soil

Units:

Flags:

mg/Kg (ppm)

Client ID:	9/7-PI4@6	9/7-PI5@9.5	9/7-PI6@9.5
Lab ID:	09-043-07	09-043-08	09-043-09
Gasoline:	ND	Gasoline Range	ND
		Hydrocarbons	
PQL:	30	27	26
			•
Diesel Fuel:	ND	Diesel Fuel #2	ND
PQL:	60	53	52
Heavy Oil:	ND	Heavy Oil	ND
PQL:	120	110	100
· QZ.	,		
Sumanata Basayan			
Surrogate Recovery:			4440/
o-Terphenyl	114%		111%

Flags:

### **NWTPH-HCID**

•	INVVIENT	TOID	
Date Extracted: Date Analyzed:	9-8-99 9-8-99		
Matrix: Units:	Soil mg/Kg (ppm)		
Client ID:	9/7-PI7@6	9/7-PI8@9.5	9/7-PI9@6
Lab ID:	09-043-10	09-043-11	09-043-12
Gasoline:	ND	ND	ND
PQL:	30	27	26
Diesel Fuel:	Diesel Fuel #2	Diesel Fuel #2	Diesel Fuel #2
PQL:	60	53	52
Heavy Oil:	ND	ND	ND
PQL:	120	110	100
Surrogate Recovery: o-Terphenyl	119%		116%

Flags:

### **NWTPH-HCID**

Date Extracted: Date Analyzed:	9-8-99 9-8-99		
Matrix: Units:	Soil mg/Kg (ppm)		
Client ID: Lab ID:	9/7-PI10@9.5 09-043-13	9/7-PI11@9.5 09-043-14	9/7-1@9.5 09-043-15
Gasoline:	ND	ND	ND
PQL:	28	26	26
Diesel Fuel:	Diesel Fuel #2	Diesel Fuel #2	Diesel Fuel #2
PQL:	56	52	53
Heavy Oil:	ND	ND	ND
PQL:	110	100	110
Surrogate Recovery o-Terphenyl		, <del></del>	112%

### **NWTPH-HCID**

Date Extracted: 9-8-99 Date Analyzed: 9-8-99

Matrix:

Soil

Units:

mg/Kg (ppm)

Client ID: Lab ID:	9/7-2@6 09-043-16	9/7-3@11 09-043-17	9/7-4@6 09-043-18
Gasoline:	ND	ND	ND
PQL:	26	28	27
Diesel Fuel:	ND .	ND	Diesel Fuel #2
PQL:	52	56	53
Haarin Olle	ND	ND	Heavy Oil
Heavy Oil: PQL:	100	110	110
Surrogate Recovery:			
o-Terphenyl	101%	112%	108%

Flags:

### **NWTPH-HCID**

Date Extracted:

9-8-99

Date Analyzed:

9-8-99

Matrix:

Soil

Units:

Flags:

mg/Kg (ppm)

Client ID:	9/7-5@9.5	• *	9/7-6@6	9/7-7@9.5
Lab ID:	09-043-19		09-043-20	09-043-21
Gasoline:	ND	11.	ND	Gasoline Range Hydrocarbons
PQL:	25		31	26
Diesel Fuel:	Diesel Fuel #2		ND	Diesel Fuel #2
PQL:	50		62	53
Heavy Oil:	ND		ND	ND
PQL:	100		120	110
Surrogate Recovery:				
o-Terphenyl			102%	

Lab Traveler: 09-043 Project: 19904

### **NWTPH-HCID**

Date Extracted:

9-8-99

Date Analyzed:

9-8-99

Matrix:

Soil

Units:

mg/Kg (ppm)

Client ID:

9/7-8@11

9/7-9@6

9/7-10@9.5

Lab ID:

09-043-22

09-043-23

09-043-24

Gasoline:

Gasoline Range Hydrocarbons

ND

Gasoline Range Hydrocarbons 29

PQL:

30

30

Diesel Fuel #2

Diesel Fuel:

Diesel Fuel #2

ND

58

PQL:

PQL:

60

60

Heavy Oil:

ND 120

ND 120

ND 120

Surrogate Recovery:

o-Terphenyl

128%

117%

Flags:

Lab Traveler: 09-043 Project: 19904

Flags:

### **NWTPH-HCID**

9-8-99 Date Extracted: 9-8&9-99 Date Analyzed: Matrix: Soil mg/Kg (ppm) Units: 9/7-12@9.5 9/7-13@6 9/7-11@6 Client ID: 09-043-27 09-043-25 09-043-26 Lab ID: . ND Gasoline Range ND Gasoline: Hydrocarbons 30 26 29 PQL: Diesel Fuel #2 ND Diesel Fuel: Diesel Fuel #2 53 60 PQL: 59 ND Heavy Oil ND Heavy Oil: 120 110 120 PQL: Surrogate Recovery: 107% 106% o-Terphenyl

F

Lab Traveler: 09-043 Project: 19904

### **NWTPH-HCID**

Date Extracted: 9-8-99
Date Analyzed: 9-8-99

Matrix:

Soil

Units:

Flags:

mg/Kg (ppm)

9/7-QÁ2 9/7-QA1 Client ID: 9/7-14@9.5 09-043-30 09-043-29 Lab ID: 09-043-28 Gasoline Range Hydrocarbons ND ND Gasoline: 27 27 PQL: 27 Diesel Fuel #2 ND Diesel Fuel #2 Diesel Fuel: 53 54 PQL: 54 ND ND ND Heavy Oil: 110 110 110 PQL: Surrogate Recovery: 117% o-Terphenyl

F

Project: 19904

### **NWTPH-HCID** METHOD BLANK QUALITY CONTROL

Date Extracted:

9-8-99

Date Analyzed:

9-8-99

Matrix:

Soil

Units:

mg/Kg (ppm)

Lab ID:

MB0908S1

Gasoline:

ND

PQL:

25

Diesel Fuel:

ND

PQL:

50

Heavy Oil:

ND

PQL:

100

Surrogate Recovery:

o-Terphenyl

108%

Flags

Lab Traveler: 09-043 Project: 19904

### NWTPH-HCID METHOD BLANK QUALITY CONTROL

Date Extracted: 9-8-99
Date Analyzed: 9-8-99

Matrix: Soil

Units: mg/Kg (ppm)

Lab ID: MB0908S2

Gasoline: ND PQL: 25

Diesel Fuel: ND PQL: 50

Heavy Oil: ND PQL: 100

Surrogate Recovery:

o-Terphenyl 102%

Flags

### **NWTPH-G/BTEX**

9-10-99 Date Extracted: 9-10&13-99 Date Analyzed:

Matrix: Soil

Units: mg/Kg (ppm)

**9/7-7@9.5** 09-043-21 Client ID: Lab ID:

**9/7-8@11** 09-043-22

			· ·	
	Result Flags	PQL	Result Flags	PQL
Benzene	ND	0.26	ND	0.30
Toluene	16	0.26	ND	0.30
Ethyl Benzene	9.3	0.26	ND	0.30
m,p-Xylene	43	1.1	0.76	0.30
o-Xylene	18	0.26	ND	0.30
TPH-Gas	870	26	ND	30
Surrogate Recovery: Fluorobenzene	106%		78%	

Lab Traveler: 09-043

Project: 19904

### **NWTPH-Dx**

9-10-99 Date Extracted: 9-10-99 Date Analyzed: Matrix: Soil mg/Kg (ppm) Units: 9/7-SP3 9/7-SP2 Client ID: 9/7-SP1 09-043-03 09-043-02 Lab ID: 09-043-01 110 1000 Diesel Fuel: 57 28 28 28 PQL: 87 470 290 Heavy Oil: 55 55 PQL: 56

Surrogate Recovery:

o-Terphenyl

69%

134%

138%

Flags:

9-10-99 9-10-99 Date Extracted: Date Analyzed:

Matrix:

Soil

Units:

Flags:

mg/Kg (ppm)

Client ID: Lab ID:	9/7-Pl2@10 09-043-05	9/7-PI5@9.5 09-043-08	9/7-PI7@6 09-043-10
		440	52
Diesel Fuel:	1200	440 27	53 30
PQL:	27	21	30
Heavy Oil:	ND	120	ND
PQL:	53	53	60
Surrogate Recovery: o-Terphenyl			98%

Date Extracted:

9-10-99 9-10**-**99

Date Analyzed:

Matrix:

Soil

Units:

Flags:

mg/Kg (ppm)

Client ID: Lab ID:	9/7-PI8@9.5 09-043-11	9/7-PI9@6 09-043-12	9/7-PI10@9.5 09-043-13
Diesel Fuel:	4100	220	9600
PQL:	130	26	280
Heavy Oil:	ND	ND	ND
PQL:	110	52	220
Surrogate Recovery:			
o-Terphenyl	<del></del>	108%	

# **NWTPH-Dx**

Date Extracted:

9-10-99

Date Analyzed:

9-10-99

Matrix:

Soil-

Units:

mg/Kg (ppm)

Client ID: Lab ID:	9/7-PI11@9.5 09-043-14	9/7-1@9.5 09-043-15	9/7-4@6 09-043-18
Diesel Fuel:	5800	130	440
PQL:	260	26	27
Heavy Oil:	ND	70	230
PQL.	210	53	53
Surrogate Recovery:			

o-Terphenyl

72%

Project: 19904

Flags:

# **NWTPH-Dx**

9-10-99 Date Extracted: 9-10-99 Date Analyzed: Matrix: Soil mg/Kg (ppm) Units: 9/7-8@11 9/7-7@9.5 9/7-5@9.5 Client ID: 09-043-21 09-043-22 09-043-19 Lab ID: 92 1600 3600 Diesel Fuel: 30 130 26 PQL: ND ND ND Heavy Oil: 53 60 PQL: 100 Surrogate Recovery: 143% o-Terphenyl

S

	NWT	PH-Dx			
Date Extracted: Date Analyzed:	9-10-99 9-10-99				
Matrix: Units:	Soil mg/Kg (ppm)				
Client ID: Lab ID:	9/7-10@9.5 09-043-24		9/7-11@6 09-043-25	9/7-12@ 09-043	
Diesel Fuel:	5600	•	64	3500	) -
PQL:	290		29	130	,
Heavy Oil:	ND		170	ND	
PQL:	230		59	110	
Surrogate Recovery o-Terphenyl			85%		٠,

Date of Report: September 14, 1999 Samples Submitted: September 8, 1999

Lab Traveler: 09-043

Project: 19904

# **NWTPH-Dx**

Date Extracted: 9-10-99 Date Analyzed: 9-10-99

Matrix:

Soil

Units:

mg/Kg (ppm)

 Client ID:
 9/7-14@9.5
 9/7-QA2

 Lab ID:
 09-043-28
 09-043-30

 Diesel Fuel:
 2200
 12000

 PQL:
 130
 270

 Heavy Oil:
 ND
 ND

 PQL:
 110
 210

Surrogate Recovery:

o-Terphenyl --- --

Flags: S S

Date of Report: September 14, 1999 Samples Submitted: September 8, 1999

Lab Traveler: 09-043 Project: 19904

# NWTPH-Dx METHOD BLANK QUALITY CONTROL

Date Extracted: 9-10-99
Date Analyzed: 9-10-99

Matrix: Soil

Units: mg/Kg (ppm)

Lab ID: MB0910S1

Diesel Fuel: ND PQL: 25

Heavy Oil: ND PQL: 50

Surrogate Recovery:

o-Terphenyl 82%

Project: 19904

# NWTPH-Dx **DUPLICATE QUALITY CONTROL**

Date Extracted:

9-10-99

Date Analyzed:

9-10-99

Matrix:

Soil

Units:

mg/Kg (ppm)

Lab ID:

09-043-02

09-043-02 DUP

Diesel Fuel:

1010

798

PQL:

25

25

RPD:

24

Surrogate Recovery:

o-Terphenyl

134%

115%

Date of Report: September 14, 1999 Samples Submitted: September 8, 1999

Lab Traveler: 09-043 Project: 19904

# NWTPH-Dx **DUPLICATE QUALITY CONTROL**

Date Extracted:

9-10-99

Date Analyzed:

9-10-99

Matrix:

Soil

Units:

mg/Kg (ppm)

Lab ID:

09-043-10

09-043-10 DUP

Diesel Fuel:

43.9

34.7

PQL:

25

25

RPD:

24

Surrogate Recovery:

o-Terphenyl

98%

102%

Date Analyzed: 9-8-99

# % MOISTURE

Client ID	Lab ID	% Moisture
9/7-SP1	09-043-01	11
9/7-SP2	09-043-02	9.0
9/7-SP3	09-043-03	9.0
9/7-PI 1@6	09-043-04	16
9/7- PI 2@10	09-043-05	6.0
9/7- PI 3@9.5	09-043-06	4.0
9/7- PI 4@6	09-043-07	14
9/7- PI 5@9.5	09-043-08	6.0
9/7- PI 6@9.5	09-043-09	4.0
9/7- PI 7@6	09-043-10	17
9/7- PI 8@9.5	09-043-11	6.0

Date Analyzed: 9-8-99

# % MOISTURE

Client ID		Lab ID		% Moisture
9/7- PI 9@6		09-043-12		3.0
9/7- PI 10@9.5		09-043-13		10
9/7-11@9.5		09-043-14	***	4.0
9/7-1@9.5		09-043-15		5.0
9/7-2@6		09-043-16		3.0
9/7-3@11		09-043-17		11
9/7-4@6	± 1.58	09-043-18		6.0
9/7-5@9.5		09-043-19		0
9/7-6@6		09-043-20		19
9/7-7@9.5		09-043-21		5.0
9/7-8@11		09-043-22		16

Date Analyzed: 9-8-99

# % MOISTURE

Client ID	Lab ID	% Moisture
9/7-9@6	09-043-23	16
9/7-10@9.5	09-043-24	14
9/7-11@6	09-043-25	15
9/7-12@9.5	09-043-26	5.0
9/7-13@6	09-043-27	16
9/7-14@9.5	09-043-28	7.0
9/7-QA1	09-043-29	7.0
9/7-QA2	09-043-30	6.0



## DATA QUALIFIERS AND ABBREVIATIONS

DATA QUALIFIERS AND ABBREVIATIONS
A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.
B - The analyte indicated was also found in the blank sample.
C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.
D - Data from 1; dilution.
E - The value reported exceeds the quantitation range, and is an estimate.
F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.
G - Insufficient sample quantity for duplicate analysis.
H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.
I - Compound recovery is outside of the control limits.
J - The value reported was below the practical quantitation limit. The value is an estimate.
K - Sample duplicate RPD is outside control limits due to sample inhomogeniety. The sample was re-extracted and re-analyzed with similar results.
L - The RPD is outside of the control limits.
M - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.
O - Hydrocarbons outside the defined gasoline range are present in the sample; NWTPH-Dx recommende
P - The RPD of the detected concentrations between the two columns is greater than 40.
Q - Surrogate recovery is outside of the control limits.
S - Surrogate recovery data is not available due to the necessary dilution of the sample.
T - The sample chromatogram is not similar to a typical
U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.
M. Matrix Spike/Matrix Spike Duplicate RRD are outside control limits due to matrix effects.

ND - Not Detected

**Z** -

MRL - Method Reporting Limit

PQL - Practical Quantitation Limit

X - Sample extract treated with a silica gel cleanup procedure.Y - Sample extract treated with an acid cleanup procedure.

RPD - Relative Percent Difference

# **Chain of Eustody**

% Moisture M 70 ı Chromatographs with final report □ BAJJUS 91918. D.S. တ Ove MONDAY Laboratory No. Requested Analysis Нط∃ Hd/ **ICLP Metals** (8) AHOR Metals (8) COMMENTS 1808 yd sebioitee<sup>c</sup> CB's by 8082 DISTRIBUTION LEGEND: White - OnSite Copy Yellow - Report Copy Pink - Client Copy O07S8 yd aHA9 Semivolatiles by 8270C Ŕ 48109enated Volatiles by 8260B Q 40028 yd selitslo Project Chemist: 0  $\mathscr{B}$  $\varnothing$ 8 DATE ⊗ √ √ Ø Ø (8) TIME DATE TIME X Ø  $\mathcal{B}$ Ø **1MTPH-GX/BTEX** ×  $\mathbf{k}$ V имтрн-нсір (Hydrocarbon analyses: 5 days, ☐ 3 Day # of Cont. All other applyses: 7 days) Turnaround Request (in working days) Matrix (Check One) (other) 15.45 6.45 16:45 15:35 5:50 5:53 15:30 14:50 12,00 15:20 15:05 16:10 Sampled Same Day DATE REVIEWED RECEIVED BY ☐ 2 Day Date Sampled RECE! FIRM FIRM 941 14648 NE 95th Street • Redmond, WA 98052 Fax: (425) 885-4603 • Phone: (425) 883-3881 **Environmental Inc.** 3:10 DATE TIME 3 @ 9.5 869.5 2010 Sample Identification 706 DE 100 4-PI509. 9 8 × 18 - -Envl. Inc Gary Gallenon -583 7-5PA Nylan Gallewer 17 79 - PI 7.5P Ges 1 Galloway 4/2 7 RELINQUISHED BY 4066 Claha Project Manager: a D Ò REVIEWED BY Project Name: Project No.: Company: ab ID  $\overline{\varphi}$ 0 FIRM S. 5 8  $\supset$ 9

# Chain of custody

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SOURCE AREA REMOVALS

Excavation samples

9/15 & 9/16/1999

September 30, 1999

Gary Galloway Galloway Environmental, Inc. 3102 220th Place SE Issaquah, WA 98027

Re:

Analytical Data for Project 19904 Laboratory Reference No. 9909-119

Dear Gary:

Enclosed are the analytical results and associated quality control data for samples submitted on September 17, 1999.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister Project Manager

**Enclosures** 

# **NWTPH-HCID**

Date Extracted: 9-21-99 9-23&24-99 Date Analyzed:

Matrix:

Soil

Units:

mg/Kg (ppm)

9/15-3@10 9/15-2@8 9/15-1@6 Client ID: 09-119-03 09-119-01 09-119-02 Lab ID:

ND ND ND Gasoline: 29 26 PQL: 30

Diesel Fuel:	Diesel Fuel #2	Diesel Fuel #2	Diesel Fuel #2
PQL:	60	53	57
Heavy Oil:	ND	ND	ND
PQL:	120	110	110
		en en en en en en en en en en en en en e	
Surrogate Pecovery:			

Surrogate Recovery:

111% 122% 111% o-Terphenyl

# **NWTPH-HCID**

Date Extracted: Date Analyzed: 9-21-99 9-23&24-99

Matrix:

Soil

Units:

Flags:

mg/Kg (ppm)

Client ID:	9/15-4@10	9/15-5@6	9/15-6@10
Lab ID:	09-119-04	09-119-05	09-119-06
Gasoline:	ND	ND	ND
PQL:	30	29	27
Diesel Fuel:	Diesel Fuel #2	ND	Diesel Fuel #2
PQL:	60	57	54
Heavy Oil:	Heavy Oil	ND	ND
PQL:	120	110	110
Surrogate Recovery	r		
o-Terphenyl	114%	115%	

Date Extracted:

9-21-99

Date Analyzed:

9-23&24-99

Matrix:

Soil

Units:

mg/Kg (ppm)

	•		
Client ID:	9/15-7@10	9/15-8@10	9/15-9@6
Lab ID:	09-119-07	09-119-08	09-119-09
Gasoline:	ND	ND	ND
PQL:	27	27	29
Diesel Fuel:	ND	ND	ND
PQL:	54	55	59
Heavy Oil:	ND	ND	ND
PQL:	110	110	120
Surrogate Reco	overy:		
o-Terphenyl	130%	111%	98%

# **NWTPH-HCID**

Date Extracted: Date Analyzed:

9-21-99 9-23&24-99

Matrix:

Soil

Units:

mg/Kg (ppm)

Client ID:	9/15-10@10	9/15-11@6	9/15-12@9.
Lab ID:	09-119-10	09-119-11	09-119-12
•			
Gasoline:	Gasoline Range	ND	ND
PQL:	Hydrocarbons 28	29	26
, QL.			
Diesel Fuel:	Diesel Fuel #2	ND	ND
PQL:	57	58	52
Heavy Oil:	ND	ND	ND
PQL:	110	120	100
Surrogate Recovery:			
o-Terphenyl	133%	101%	93%

Project: 19904

## **NWTPH-HCID**

9-21-99 Date Extracted: 9-23-99 Date Analyzed:

Matrix:

Soil

Units:

mg/Kg (ppm)

9/16-1@11 9/16-2@9.5 9/15-QA1 Client ID: 09-119-14 09-119-15 09-119-13 Lab ID:

ND. ND ND Gasoline: 28 29 28 PQL: Diesel Fuel #2 Diesel Fuel #2 ND Diesel Fuel: 57 58 56 PQL: ND ND Heavy Oil: ND .110 120 PQL: 110

Surrogate Recovery:

106% 97% 105% o-Terphenyl

9-21-99 Date Extracted: 9-23&24-99 Date Analyzed:

Matrix:

Soil

Units:

mg/Kg (ppm)

Client ID:	9/16-3@11	9/16-4@	9/16-5@
Lab ID:	09-119-16	09-119-17	09-119-18
e e e e e e e e e e e e e e e e e e e			
Gasoline:	ND	ND	ND
PQL:	27	31	26
Diesel Fuel:	Diesel Fuel #2	Diesel Fuel #2	ND
PQL:	55	62	53
Heavy Oil:	ND	ND	ND
PQL:	110	120	110
•			
Surrogate Recov	very:		
o-Terphenyl	119%	103%	122%

Project: 19904

# **NWTPH-HCID**

Date Extracted: 9-21-99 9-23-99 Date Analyzed:

Soil Matrix:

mg/Kg (ppm) Units:

9/16-8@ 9/16-7@ 9/16-6@ Client ID: 09-119-20 09-119-21 09-119-19 Lab ID:

ND. ND ND Gasoline: 26 29 27 PQL:

Diesel Fuel #2 ND Diesel Fuel: Diesel Fuel #2 55 58 PQL: 53 ND ND Heavy Oil: ND PQL: 120 110 110

Surrogate Recovery:

83% 126% o-Terphenyl

9-22-99 Date Extracted: 9-23&24-99 Date Analyzed:

Matrix:

Soil

Units:

mg/Kg (ppm)

	040.00	0/46 40@	9/16-11@
Client ID:	9/16-9@	9/16-10@	_
Lab ID:	09-119-22	09-119-23	09-119-24
Gasoline:	ND	ND	ND
PQL:	28	26	26
Diesel Fuel:	Diesel Fuel #2	ND	ND
PQL:	57	51	52
Heavy Oil:	ND	ND	ND ND
PQL:	110	100	100
		-	
Surrogate Recovery:			
o-Terphenyl	123%	97%	89%

Date of Report: September 30, 1999 Samples Submitted: September 17, 1999

Lab Traveler: 09-119 Project: 19904

# **NWTPH-HCID**

Date Extracted:

9-22-99

Date Analyzed:

9-23&24-99

Matrix:

Soil

Units:

mg/Kg (ppm)

Client ID:

9/16-12@6

9/16-13@9.5

9/16-14@6

Lab ID:

09-119-25

09-119-26

09-119-27

Gasoline:

ND

Gasoline Range

ND

PQL:

26

Hydrocarbons 30

28

Diesel Fuel: PQL:

Diesel Fuel #2

Diesel Fuel #2 60

ND 57

53

ND

Heavy Oil: PQL:

Heavy Oil 110

ND 120

110

Surrogate Recovery:

o-Terphenyl

135%

136%

104%

# **NWTPH-HCID**

Date Extracted:

9-22-99

Date Analyzed:

9-23-99

Matrix:

Soil

Units:

Flags:

mg/Kg (ppm)

Client ID:		9/16-15@9.5		9/16-16@9.5		9/16-SP1
Lab ID:		09-119-28		09-119-29		09-119-30
Gasoline:	•	ND		ND		ND
PQL:		27		28		27
		* * * * * * * * * * * * * * * * * * * *				,
Diesel Fuel:		ND		ND		Diesel Fuel #2
PQL:		54	•	57		53
		· · · · · · · · · · · · · · · · · · ·			;	
Heavy Oil:	*	ND		ND		Heavy Oil
PQL:		110		110	. *	110
			-	· ·		
Surrogate Reco	overy:					
o-Terphenyl		89%		97%		110%

9-22-99 Date Extracted: Date Analyzed: 9-23-99

Matrix:

Soil

Units:

mg/Kg (ppm)

			•
Client ID:	9/16-SP2	9/16-SP3	9/16-SP4
Lab ID:	09-119-31	09-119-32	09-119-33
Gasoline:	ND	ND	ND
PQL:	28	31	27
Diesel Fuel:	Diesel Fuel #2	ND	ND
PQL:	56	63	55
	•	•	
Heavy Oil:	Heavy Oil	ND	ND
PQL:	110	130	110
Surrogate Recovery:			
o-Terphenyl	99%	65%	96%

Date of Report: September 30, 1999 Samples Submitted: September 17, 1999

Lab Traveler: 09-119 Project: 19904

## **NWTPH-HCID**

Date Extracted:

9-22-99

Date Analyzed:

9-23-99

Matrix:

Soil

Units:

mg/Kg (ppm)

Client ID:

9/16-QA1

9/16-QA2

Lab ID:

09-119-34

09-119-35

Gasoline:

ND

Gasoline Range Hydrocarbons

PQL:

26

28

Diesel Fuel:

Diesel Fuel #2

ND

PQL:

53

56

Heavy Oil:

ND

ND

PQL:

110.

110

Surrogate Recovery:

o-Terphenyl

112%

107%

Date of Report: September 30, 1999 Samples Submitted: September 17, 1999

Lab Traveler: 09-119 Project: 19904

# NWTPH-HCID METHOD BLANK QUALITY CONTROL

Date Extracted:

9-21-99

Date Analyzed:

9-24-99

Matrix:

Soil

Units:

mg/Kg (ppm)

Lab ID:

MB0921S1

Gasoline:

ND

PQL:

25

Diesel Fuel:

ND

PQL:

50

Heavy Oil:

ND

PQL:

100

Surrogate Recovery:

o-Terphenyl

113%

# NWTPH-HCID METHOD BLANK QUALITY CONTROL

Date Extracted:

9-22-99

Date Analyzed:

9-23-99

Matrix:

Soil

Units:

mg/Kg (ppm)

Lab ID:

MB0922S1

Gasoline:

ND

PQL:

25

Diesel Fuel:

ND

PQL:

50

Heavy Oil:

ND

PQL:

100

Surrogate Recovery:

o-Terphenyl

85%

Project: 19904

# **NWTPH-HCID**

9-21-99 **Date Extracted:** 9-21-99 Date Analyzed:

Water Matrix: mg/L (ppm) Units:

9/16-MW3 9/16-MW2 Client ID: 9/16-MW1 09-119-37 09-119-38 09-119-36 Lab ID: ND ND ND Gasoline: 0.25 0.25 0.25 PQL: ND ND Diesel Fuel: ND 0.63 PQL: 0.63 0.63 ND Heavy Oil: ND ND 0.63 0.63 PQL: 0.63 Surrogate Recovery: 104% 82% 93% o-Terphenyl

# **NWTPH-HCID**

Date Extracted:

9-21-99

Date Analyzed:

9-21-99

Matrix:

Water

Units:

mg/L (ppm)

Client ID:

9/16-MW4

Lab ID:

09-119-39

Gasoline:

ND

PQL:

0.25

Diesel Fuel:

ND

PQL:

0.63

Heavy Oil:

ND

PQL:

0.63

Surrogate Recovery:

o-Terphenyl

82%

Date of Report: September 30, 1999 Samples Submitted: September 17, 1999

Lab Traveler: 09-119 Project: 19904

# NWTPH-HCID METHOD BLANK QUALITY CONTROL

Date Extracted:

9-21-99

Date Analyzed:

9-21-99

Matrix:

Water

Units:

mg/L (ppm)

Lab ID:

MB0921W1

Gasoline:

ND

PQL:

0.25

Diesel Fuel:

ND

PQL:

0.63

Heavy Oil:

ND

PQL:

0.63

Surrogate Recovery:

o-Terphenyl

89%

# **NWTPH-G/BTEX**

Date Extracted: Date Analyzed:

9-28-99 9-28&29-99

Matrix: Soil

Units: mg/Kg (ppm)

Client ID: Lab ID:

9/15-10@10 09-119-10

9/16-13@9.5 09-119-26

	Result	Flags	PQL	Result	Flags	PQL
Benzene	ND		0.28	ND		0.30
Toluene	0.33		0.28	0.80		0.30
Ethyl Benzene	ND		0.28	0.33		0.30
m,p-Xylene	1.3		0.28	8.9	· · · · · · · · · · · ·	0.30
o-Xylene	0.59		0.28	5.9		0.30
TPH-Gas	87	0	28	480		30
Surrogate Recovery: Fluorobenzene	85%			75%		-

# **NWTPH-G/BTEX**

9-28-99 Date Extracted: 9-28-99 Date Analyzed:

Matrix: Soil

Units: mg/Kg (ppm)

Client ID: 9/16-QA2 09-119-35 Lab ID:

•	Result	Flags	PQL
Benzene	ND		0.28
Toluene	ND		0.28
Ethyl Benzene	ND		0.28
m,p-Xylene	6.5		0.28
o-Xylene	3.5		0.28
TPH-Gas	170		28
Surrogate Recovery:			
Fluorobenzene	81%		

# **NWTPH-G/BTEX** METHOD BLANK QUALITY CONTROL

Date Extracted:

9-28-99

Date Analyzed:

9-28-99

Matrix: Soil

Units: mg/Kg (ppm)

Lab ID:

MB0928S1

	Result	Flags	PQL
Benzene	ND		0.050
Toluene	ND		0.050
Ethyl Benzene	ND		0.050
m,p-Xylene	ND		0.050
o-Xylene	ND		0.050
TPH-Gas	ND		5.0
Surrogate Recovery: Fluorobenzene	93%		

# NWTPH-G/BTEX DUPLICATE QUALITY CONTROL

Date Extracted: Date Analyzed:

9-28-99

9-29-99

Matrix: Soil

Units: mg/Kg (ppm)

Lab ID:	09-196-01 <b>Original</b>	09-196-01 <b>Duplicate</b>	RPD	Flag
			•	
Benzene	ND	ND	NA	
Toluene	ND	ND	NA	
Ethyl Benzene	ND	ND	NA	
m,p-Xylene	ND	ND	NA	· · · · · · · · · · · · · · · · · · ·
o-Xylene	ND	ND	NA	
TPH-Gas	260	306	16	
Surrogate Recovery: Fluorobenzene	63%	50%		

# **NWTPH-G/BTEX** SB/SBD QUALITY CONTROL

Date Extracted: Date Analyzed: 9-28-99

9-29-99

Matrix: Soil

Units: mg/Kg (ppm)

Spike Level: 1.00 ppm	SB0928S1	Percent	SB0928S1 DUP	Percent	
Lab ID:	Spike Blank	Recovery	Duplicate	Recovery	RPD
					•
Benzene	0.877	88	0.860	86	2.0
Toluene	0.905	91	0.859	86	5.2
Ethyl Benzene	0.895	90	0.871	87	2.7
m,p-Xylene	0.879	88	0.863	86	1.9
o-Xylene	0.880	88	0.878	88	0.23

Surrogate Recovery:

93% Fluorobenzene

88%

Date of Report: September 30, 1999 Samples Submitted: September 17, 1999 Lab Traveler: 09-119 Project: 19904

## **NWTPH-Dx**

Date Extracted:

9-27-99

Date Analyzed:

9-28-99

Matrix:

Soil

Units:

Flags:

mg/Kg (ppm)

Client ID:	9/15-1@6	9/15-2@8	9/15-3@10
Lab ID:	09-119-01	09-119-02	09-119-03
	*.		
Diesel Fuel:	1900	1700	51
PQL:	150	130	29
Heavy Oil:	ND	ND	ND
PQL:	120	110	57
	•		
Surrogate Recovery:			
o-Terphenyl	* <u></u> *	international designation of the second	104%
			•

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Date of Report: September 30, 1999 Samples Submitted: September 17, 1999 Lab Traveler: 09-119 Project: 19904

Date Extracted: Date Analyzed:

9-27-99 9-28-99

Matrix:

Soil

Units:

Flags:

mg/Kg (ppm)

Client ID:	9/16-1@11	9/16-2@9.5	9/16-3@11
Lab ID:	09-119-14	09-119-15	09-119-16
<del></del>			• .
Diesel Fuel:	570	380	2800
PQL:	29	28	140
			•
Heavy Oil:	ND	ND	ND
PQL:	58	57	110
Surrogate Recovery:			
o-Terphenyl	71%	108%	<del></del>

Flags:

# NWTPH-Dx

	MAALLI-DY	
Date Extracted: Date Analyzed:	9-27-99 9-28-99	
Matrix: Units:	Soil mg/Kg (ppm)	
Client ID: Lab ID:	9/16-4@ 9/16-6@ 09-119-17 09-119-19	9/16-8@ 09-119-21
Diesel Fuel: PQL:	660 2400 31 130	460 27
Heavy Oil: PQL:	ND ND 62 110	ND 55
Surrogate Recovery: o-Terphenyl	94%	92%
C (Cipilon).		

92%

Date of Report: September 30, 1999 Samples Submitted: September 17, 1999

Lab Traveler: 09-119 Project: 19904

## **NWTPH-Dx**

Date Extracted: 9-27-99 Date Analyzed: 9-28-99

Matrix: Soil

Units: mg/Kg (ppm)

9/16-12@6 9/16-13@9.5 9/16-9@ Client ID: 09-119-25 09-119-26 Lab ID: 09-119-22 300 2400 68 Diesel Fuel: 30 140 26. PQL: 200 Heavy Oil: 170 ND 60 53 PQL: 110 Surrogate Recovery:

122%

Flags: S

o-Terphenyl

# **NWTPH-Dx**

Date Extracted: Date Analyzed:	9-27-99 9-28-99		1		
					•
Matrix: Units:	Soil mg/Kg (ppm)				· · · · ·
Client ID:	9/16-SP1		9/16-SP2	•	9/16-QA1
Lab ID:	09-119-30		09-119-31		09-119-34
					·
Diesel Fuel:	380		1100		600
PQL:	27	÷	28	-	26
Heavy Oil:	560	•	520		ND
PQL:	53		56		53
		A.			
Surrogate Recovery:			*		· · · · · · · · · · · · · · · · · · ·
o-Terphenyl	107%		· , · · · · · · · · · · · · · · · · · ·		113%

Project: 19904

## **NWTPH-Dx** METHOD BLANK QUALITY CONTROL

Date Extracted:

9-28-99

Date Analyzed:

9-28-99

Matrix:

Soil

Units:

mg/Kg (ppm)

Lab ID:

MB0928S1

Diesel Fuel:

ND

PQL:

25

Heavy Oil:

ND

PQL:

50

Surrogate Recovery:

o-Terphenyl

88%

Project: 19904

## **NWTPH-Dx** METHOD BLANK QUALITY CONTROL

Date Extracted:

9-27-99

Date Analyzed:

9-28-99

Matrix:

Soil

Units:

mg/Kg (ppm)

Lab ID:

MB0927S2

Diesel Fuel:

ND

PQL:

25

Heavy Oil:

ND

PQL:

50

Surrogate Recovery:

o-Terphenyl

60%

Project: 19904

# NWTPH-Dx **DUPLICATE QUALITY CONTROL**

Date Extracted:

9-27-99

Date Analyzed:

9-28-99

Matrix:

Soil

Units:

mg/Kg (ppm)

Lab ID:

09-119-30

09-119-30 DUP

Diesel Fuel:

361

315

PQL:

25

25

RPD:

13.6

Surrogate Recovery:

o-Terphenyl

107%

121%

Date of Report: September 30, 1999 Samples Submitted: September 17, 1999

Lab Traveler: 09-119 Project: 19904

Flags:

# NWTPH-Dx DUPLICATE QUALITY CONTROL

F

9-27-99 Date Extracted: 9-28-99 Date Analyzed: Soil Matrix: mg/Kg (ppm) Units: 09-119-31 DUP 09-119-31 Lab ID: 953 987 Diesel Fuel: 25 25 PQL: 3.5 RPD: Surrogate Recovery: o-Terphenyl

Date Analyzed: 9-21-99

# % MOISTURE

Client ID	Lab ID	% Moisture
9/15 - 1@6	09-119-01	16
9/15 - 2@8	09-119-02	5.0
9/15 - 3@10	09-119-03	13
9/15 - 4@10	09-119-04	17
9/15 - 5@6	09-119-05	13
9/15 - 6@10	09-119-06	7.0
9/15 - 7@10	09-119-07	7.0
9/15 - 8@10	09-119-08	8.0

Date Analyzed: 9-21-99

# % MOISTURE

Client ID	Lab ID	% Moisture
9/15 - 9@6	09-119-09	15
9/15 - 10@10	09-119-10	22
9/15 - 11@6	09-119-11	14
9/15 - 12@9.5	09-119-12	4.0
9/15 – QA1	09-119-13	11
9/16 - 1@11	09-119-14	14
9/16 - 2@9.5	09-119-15	22
9/16 - 3@11	09-119-16	8.0

Date Analyzed: 9-21-99

Client ID		Lab ID	% Moisture
9/16 - 4@		09-119-17	19
9/16 - 5@		09-119-18	5.0
9/16 - 6@		09-119-19	5.0
9/16 - 7@		09-119-20	4.0
9/16 - 8@		09-119-21	9.0
9/16 - 9@		09-119-22	12
9/16 - 10@	<b>D</b>	09-119-23	2.0
9/16 - 11@	<u> </u>	09-119-24	4.0

Date Analyzed: 9-21-99

Client ID		Lab ID		% Moisture
9/16 - 12@6		09-119-25		5.0
9/16 - 13@9.5		09-119-26		17
9/16 - 14@6	`	09-119-27		12
9/16 - 15@9.5		09-119-28	,	8.0
9/16 - 16@9.5		09-119 <b>-</b> 29		12
9/16 – SP1		09-119-30		6.0
9/16 - SP2		09-119-31		10
9/16 – SP3		09-119-32		20
9/16 – SP4		09-119-33		9.0
9/16 – QA1		09-119-34		5.0
9/16 – QA2		09-119-35		11

# Invironments 14648 NE 95th Street • Redmo Fax: (425) 885-4603 • Phone: (

**Chain of Custody** 

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Volatiles by 8260B  Halogenated Volatiles by 8260B  Semivolatiles by 8270C  PAHs by 8270C  PCB's by 8082  Pesticides by 8081  Total RCRA Metals (8)  TCLP Metals  VPH  EPH					1	N - 1									X	X	7		
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# APPENDIX E

# **PHOTOS**



Photo 1 - Photo of the Site during Phase I Test Pits (view from the SE)



Photo 2 - Photo of the Site during Phase I Test Pits (vicinity of Younger Creek)





Photo 3 - Photo of the MW-1 well Development & Sampling (January 1998)



Photo 4 - Photo of the MW-1 Water Sampling (June 1998)



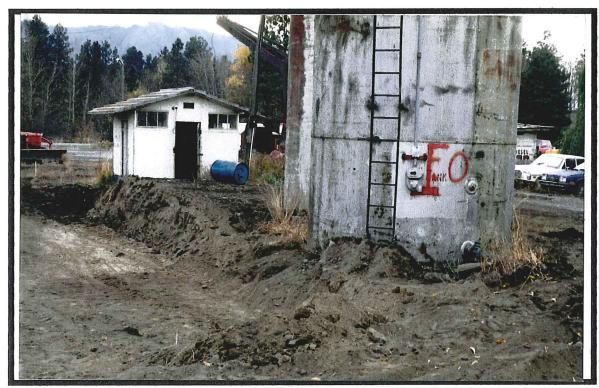


Photo 5 - Photo of Source Area 4 Removals & Containment Pad Preparation (November 1998)

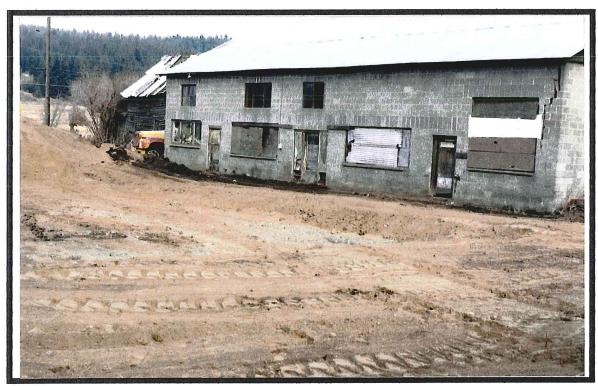


Photo 6 - Photo of the AST Containment Pad Preparation , November 1998 (view from the SW)





Photo 7 - Photo of Source Area 2 (USTs) Removals, September 7, 1999 (view from the NE)

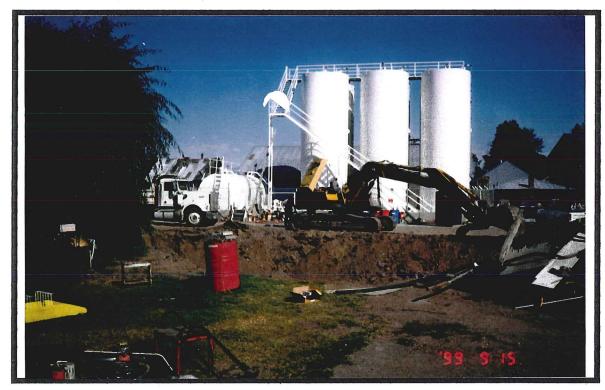


Photo 8 - Photo of Source Area 2 (USTs) Removals, September 15, 1999 (view from the west)





Photo 9 - Photo of Source Area 3 (Pump Islands) Removals, September 7, 1999 (view from the SW)



Photo 10 - Photo of Source Area 3 (Pump Islands) Removals, September 16, 1999 (view from the west)



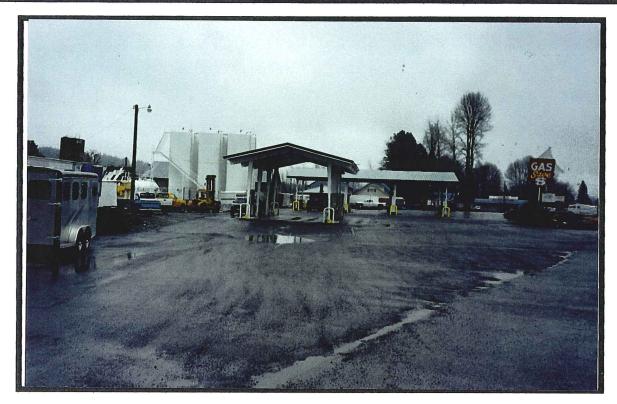


Photo 11 - Photo of Station, March 18, 2000 (view from the west)



Photo 12 - Photo of Station, March 18, 2000 (view from the SE)

