# Alternative Groundwater Supply Assessment

City of Airway Heights Water System Airway Heights, Washington

for Century West Engineering Corporation

March 1, 2021



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March 1, 2021

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### **EXECUTIVE SUMMARY**

This report presents results of our hydrogeologic analyses related to the development of an alternative groundwater supply for the City of Airway Heights (City) in Spokane County, Washington. The City operates a municipal water supply system (Water System ID No. 006502) sourced by a series of water supply wells located within the West Plains portion of Spokane County. Per- and polyfluoroalkyl substances (PFAS) contamination has been observed in City wells. Because of the difficulty in sustainably operating a municipal water system within the West Plains, the City is interested in developing a groundwater source that targets a more sustainable aquifer situated outside of the West Plains. The results of the assessment summarized herein are intended to assist in evaluating the feasibility of developing an alternative City groundwater supply within the Spokane Valley/Rathdrum Prairie (SVRP) Aquifer.

Using groundwater path line analysis from existing City well locations, GeoEngineers delineated an Alternative Groundwater Supply Study Area that is downgradient of locations where pumping of existing City wells impacts SVRP Aquifer recharge. The Alternative Groundwater Supply Study Areas consists of part or all of Sections 17, 18, 20, 21 and 28 of Township 26 North, Range 42 East.

Based on the data and analyses presented in this report, development of a new City groundwater supply within the SVRP Aquifer in the Alternative Groundwater Supply Study Area appears feasible. This conclusion is based on the following:

- Water Well Reports associated with existing wells completed in the SVRP Aquifer within the Alternative Groundwater Supply Study Area indicate the presence of permeable sand and gravel deposits that potentially could support the development of a municipal groundwater supply.
- Because pumping of existing City production wells reduces West Plains aquifer system discharge to the SVRP Aquifer, transfer of City water rights to the Alternative Groundwater Supply Study Area should ultimately be water budget neutral with respect to the SVRP Aquifer.
- Transport pathways for each of the hydrogeologic units targeted by existing City wells are at or upgradient of the Alternative Groundwater Supply Study Area. Therefore, operation of one or more new groundwater supply wells in the Alternative Groundwater Supply Area should not impact the SVRP Aquifer (or Spokane River) upgradient of the zone of impact associated with existing City wells.

Impact to SVRP Aquifer recharge from historic pumping of existing City production wells persists years to decades after cessation of pumping. Therefore, the cumulative impact of historic and proposed City pumping on the SVRP Aquifer water budget could exceed the City's water right allocation if this is not accounted for in the City's operational plans. Using a simplified methodology based on historic groundwater usage and groundwater travel times, an adjusted Qa is proposed in this report that incrementally increases maximum annual pumping volumes from 1,205.4 acre-feet in 2021 to 2,328 acre-feet in 2029. Use of a travel-time-based methodology is more conservative (generally results in a longer period of residual impact) than analytical or numerical methodologies that are based on recovery of a groundwater flow field following cessation of well pumping.

This summary is provided for general informational purposes and should not be solely relied upon.

## **1.0 INTRODUCTION AND BACKGROUND**

This report presents results of our hydrogeologic analyses related to the development of an alternative groundwater supply for the City of Airway Heights (City) in Spokane County, Washington. The City operates a municipal water supply system (Water System ID No. 006502) sourced by a series of water supply wells (herein designated existing City wells) located within the West Plains portion of Spokane County. The West Plains is an elevated plateau situated west of the Spokane River valley that is underlain by a relatively complex aquifer system consisting of Columbia River Basalt Group (CRBG) and paleochannel (sand and gravel) aquifers. Per- and polyfluoroalkyl substances (PFAS) contamination has been observed in City wells.

Because of the difficulty in sustainably operating a municipal water system within the West Plains, the City is interested in developing a groundwater source that targets a more sustainable aquifer situated outside of the West Plains. The results of the assessment summarized herein are intended to assist in evaluating the feasibility of developing an alternative City groundwater supply within the Spokane Valley/Rathdrum Prairie (SVRP) Aquifer. The location of the City with respect to the western portion of the SVRP Aquifer is presented in the Vicinity Map, Figure 1.

In a March 11, 2020 meeting with the Washington State Department of Ecology (Ecology), Ecology personnel indicated that transfer of City rights to the SVRP Aquifer could potentially achieve regulatory approval. However, the City is required to estimate where pumping of the City's existing wells diminish SVRP Aquifer recharge and to locate new City wells within the SVRP Aquifer at or down-gradient of these recharge locations. Also, the City is required to develop an operational scenario for new City wells that accounts for the lag in time between existing (West Plains) well shutdown and the cessation of impact from those wells to the SVRP Aquifer. Ecology requested that the cessation of impact analyses be based on simplified groundwater travel time calculations (as described in this report). Use of a travel-time-based methodology is more conservative (generally results in a longer period of residual impact) than analytical or numerical methodologies that are based on recovery of a groundwater flow field to cessation of well pumping.

## **2.0 SCOPE OF SERVICES**

Our hydrogeologic services were conducted in accordance with our proposal dated March 13, 2020. Written authorization for our services was provided on April 29, 2020. The primary purpose of our assessment was to evaluate the timing and magnitude of the impact of existing City well pumping on SVRP Aquifer recharge as a basis for developing an operational scenario for developing an alternative City groundwater supply.

Our specific scope of services consisted of the following:

### Aquifer and Water Right Mapping for Existing Wells

- 1. Reviewed well logs associated with existing City water supply wells and the City's water right portfolio.
- 2. Identified the aquifer(s) that the existing wells are completed in and the aquifers that individual water rights pertain to.
- 3. Mapped existing City water supply well locations and water right points of withdrawal.

## **Alternative Groundwater Supply Study Area**

- 1. Reviewed readily-available information in the literature to identify previously identified or suspected discharge areas for the basalt aquifer system and the Airway Heights Paleochannel aquifer.
- 2. Updated hydrostratigraphic interpretations from our previously compiled conceptual hydrogeologic model (GSI Water Solutions, et al. 2015) that are pertinent to the groundwater transport and travel time analyses associated with this study.
- 3. Constructed three conceptual-level cross sections showing groundwater pathways between West Plains aquifers and the SVRP Aquifer.
- 4. Based on the anticipated transport pathways, identified an Alternative Groundwater Supply Study Area.
- 5. Compiled and reviewed water well reports on file with Ecology for the Alternative Groundwater Supply Study Area.
- 6. Conducted a hydrogeologic reconnaissance of the identified discharge areas and Alternative Groundwater Supply Study Area.
- 7. Mapped existing water well locations within the Alternative Groundwater Supply Study Area.
- 8. Identified six existing wells that, if sampled by the City for groundwater quality parameters, could inform the City regarding groundwater quality conditions within the SVRP Aquifer in the Alternative Groundwater Supply Study Area.

### **Hypothetical Streamflow Depletion**

1. Conducted hydrogeologic analyses to estimate the streamflow depletion impact to the Spokane River that could result from operation of a hypothetical well-constructed within the Alternative Groundwater Supply Study Area.

## **Groundwater Travel Timed and Operational Scenario**

- 1. Based on the hydrogeologic information compiled above, preliminarily delineated the anticipated transport pathways for groundwater originating at existing City water supply well locations.
- 2. Mapped existing City water supply locations, the western portion of the SVRP Aquifer, the Spokane River, and the anticipated groundwater transport pathways delineated above.
- 3. Preliminarily estimated travel times from existing water supply locations to discharge locations associated with the SVRP Aquifer.
- 4. Developed an operational scenario for new City well(s) within the SVRP Aquifer that would mitigate for the lag in time between existing City well shutdown and cessation of existing City well impact on SVRP Aquifer recharge.
- 5. Developed conclusions regarding the feasibility of developing a new City groundwater source within the Alternative Groundwater Supply Area.



# **3.0 REVIEW OF EXISTING INFORMATION**

### 3.1. Sources

This report uses existing data and information to make interpretations about groundwater travel pathways and inter-aquifer groundwater exchange. The data and information used to develop these interpretations were obtained from existing databases and reports, such as those listed below.

# **3.2. Area Reports, Maps and Datasets**

GeoEngineers reviewed the following existing information pertinent to West Plains hydrogeology.

- Geologic maps of the Airway Heights area by Griggs (1966), Joseph (1990), Derkey et al. (2003; 2004), and Derkey and Hamilton (2007; 2008), as well as Washington Department of Natural Resources interactive online geologic mapping.
- A report by Budinger & Associates, Inc. (2001) entitled Results of Seismic Refraction Survey, Paleo-Channel Investigation, Airway Heights, WA.
- A report by CH2M Hill (2003) entitled Craig Road Landfill, Fairchild Air force Base, 2001 Fourth Quarter and Annual Report, Optimization, Operations, and Maintenance.
- A report by Deobald and Buchanan (1995) entitled *Hydrogeology* of the West Plains Area of Spokane County, Washington.
- A report by GeoEngineers, Inc. (2007a) entitled Revision 2, Hydrogeologic Evaluation, Proposed Water Reclamation Plant, City of Airway Heights, Airway Heights, Washington.
- A report by GeoEngineers, Inc. (2007b), Supplemental Hydrogeologic Exploration, Proposed Water Reclamation Plant, City of Airway Heights, Airway Heights, Washington.
- A report by GeoEngineers, Inc. (2010) entitled Hydrogeologic System Description to Conform to WAC 173-157-120, Water Reclamation Plant, City of Airway Heights, Washington.
- A report by GeoEngineers, Inc. (2014) entitled Groundwater Monitoring Program Evaluation, Water Reclamation Plant, City of Airway Heights, Washington.
- A report by GeoEngineers, Inc. (2015) entitled Report, Phase 2 Hydrogeologic Investigation, Water Reclamation Plant, Airway Heights, Washington.
- A technical memorandum by GeoEngineers, Inc. (2017) entitled Data Review City of Airway Heights Recovery Well and Nearby Wells.
- A report by GSI Water Solutions, Inc. and GeoEngineers, Inc. (GSI et al. 2015) entitled Hydrogeologic Framework and Conceptual Groundwater Flow Model, Review of Groundwater Conditions in the West Plains Area, Spokane County, Washington.
- A technical memorandum by McCollum and Hamilton (2012) entitled West Plains Delineation of Aquifer Zones Within the Basalt Formations Project, WRIA 54 Lower Spokane.
- A technical memorandum by McCollum and Pritchard (2012) entitled WRIA 54 delimiting geologic structures affecting water movement and flow direction of the CRBG West Plains aquifer.
- A report by Northwest Land and Water, Inc. (2012) entitled West Plains (WIRA 54) & Lower Hangman Creek Watershed (WIRA 56) Hydrogeologic Characterization & Monitoring Well Drilling Final Report.



- A report by Northwest Land and Water, Inc. (2014) entitled Results for West Plains and Lower Hangman Creek sampling and analysis of groundwater samples to supplement the previous WRIA 54/56 hydrogeologic investigations.
- A report by Pritchard (2013) entitled Subsurface projection of the stratigraphy of the Columbia River Basalt Group and paleodrainages in the West Plains area.
- A report by Pritchard, C.J. et al. (2020) entitled Role of Quaternary glacial-outburst megaflood paleochannel deposits in a basalt-dominated aquifer system in the West Plains area of eastern Washington, USA.
- A report by Science Applications International Corporation (1992) entitled Installation Restoration *Program (IRP), Remedial Investigation Report, Craig Road Landfill, Fairchild AFB, Washington.*
- A database file by Spokane County Water Resources et al. (2011) entitled West Plains Hydrogeologic Database.
- A report by Spokane County Water Resources and Ecology (2013a) entitled West Plains Hydrogeology, Deep Creek and Coulee Creek Groundwater/Surface Water Interaction.
- A report by Spokane County Water Resources and Ecology (2013b) entitled West Plains Hydrogeology, West Plains Groundwater Elevation Monitoring and Mapping.
- A report by Spokane County Water Resources and Ecology (2013c) entitled West Plains Hydrogeology, Groundwater Recharge Estimate.

# **3.3. City Production Wells and Water Rights**

GeoEngineers reviewed the following information regarding City production wells and water rights:

- The Washington State Department of Health's (DOH's) Sentry database for Source Information related to the City water system.
- Ecology's Washington State Well Report Viewer database for Water Well Reports associated with City production wells.
- Ecology's Water Resources Explorer database for water right information related to the City water system.

## 4.0 PHYSIOGRAPHY, CLIMATE AND SURFACE WATER

## 4.1. Physiography

Airway Heights is located within the West Plains, an elevated plateau west of the City of Spokane and within the northeast part of the Columbia Plateau physiographic province. The topography of the Airway Heights area, commonly referred to as "channeled scablands," developed during the Pleistocene Epoch (about 1.5 million to 10,000 years ago). During the latter part of this time period, a sequence of catastrophic flood events, generated by the failure of ice dams in western Montana and northern Idaho, stripped away much of the overlying sediments in the Airway Heights area, leaving erosional features in the underlying basalt surface (Whiteman et al. 1994). The area contains numerous small lakes with little or no natural surface drainage systems. Deeply incised canyons occupied by Coulee Creek and Deep Creek originate north and



east of the City and trend northeast until merging with the Spokane River valley. These canyons are up to several hundred feet deep.

Ground surface ranges from about 2,200 feet in elevation in the lowlands to more than 2,400 feet in elevation atop adjacent hills or steptoes. (Elevations in this report refer to the North American Vertical Datum [NAVD] of 1988). Adjacent to the West Plains, the Spokane River valley ranges from about 1,600 to 1,700 feet in elevation.

Vegetation within the West Plains is characterized by semi-arid shrub steppe grasslands, sparse mixed conifer forest and shrub steppe, barren rock surfaces, actively farmed ground, and urban and semi-urban uses (GSI et al. 2015). The developed areas associated with the City of Medical Lake, City of Airway Heights, Fairchild Airforce Base (FAFB), and Spokane International Airport contain abundant impermeable surfaces and stormwater collection infrastructure is common.

## 4.2. Climate

Precipitation within the West Plains ranges from less than 10 inches per year to more than 22 inches per year, averaging approximately 16.9 inches per year (Spokane County Water Resources and Ecology, 2013c). Much of the precipitation occurs during the fall and winter months of November through March. As a result, much of this precipitation occurs as snow. Fall and winter rainfall, when it occurs, frequently falls on frozen ground or snow resulting in rapid runoff and minimal infiltration. Spokane County Water Resources and Ecology (2013c) estimates that approximately 85 percent of West Plains area precipitation is lost to evaporation, evapotranspiration and runoff. As a result, little precipitation infiltrates and recharges groundwater (GSI et al. 2015).

## 4.3. Surface Water

Surface water in the area surrounding the City generally occurs as: (1) east- and northeast-flowing streams that discharge to the Spokane River valley; and (2) dispersed ponds and wetlands without laterally continuous drainage systems. Deep Creek and Coulee Creek are intermittent streams that originate north and east of the City and flow northeast until discharging to the Spokane River valley. Spokane County Water Resources and Ecology (2013a) report flow ranges in these creeks from zero to 8.9 cubic feet per second (cfs), depending on the reach. Late summer flows in Deep and Coulee creeks range from zero to 2.15 cfs (Spokane County Water Resources and Ecology 2013a). Surface flow from the West Plains rarely reaches the Spokane River valley during summer months (GSI et al. 2015).

## **5.0 GEOLOGIC FRAMEWORK**

Surficial geologic conditions in the area surrounding existing City wells are presented in the Surficial Geologic Map, Figure 2. Geologic units can be divided into, in order of decreasing age: basement rocks; the CRBG and intercalated sediments; and Quaternary-age (less than about 2.6 million years in age [MA]) sediments.

## **5.1. Basement Rocks**

Basement rocks in the West Plains generally consist of metasedimentary rocks of the Precambrian (greater than about 570 MA) Belt Supergroup. These rocks were intruded by granitic plutonic rocks during the

Mesozoic (245 to 65 MA) and Tertiary (65 to 1.5 MA) (Stoffel et al. 1991). These rocks outcrop within the steptoes and some of the deeper canyons within and surrounding the West Plains.

GSI et al. (2015) used borehole geologic information and driller's well log descriptions to delineate a number of northeast-trending basement highs (ridges of basement rock that were buried by younger lithologic units) beneath the West Plains. Because of the low permeability of basement rocks, these ridges form important boundaries to the groundwater flow system in younger lithologies. As shown in Figure 9 of GSI et al. (2015), the City generally is bounded by two of these structures. The Medical Lake-Airway Heights Ridge originates near the City of Medical Lake and trends northeast beneath FAFB and beneath the northwest portion of the City of Airway Heights. The Needham Hills Ridge originates southeast of the City of Four Lakes and trends northeast toward the intersection of Interstate 90 and State Route 2.

### 5.2. Columbia River Basalt Group

Basement rocks are stratigraphically overlain by basalt flows associated with the CRBG. The CRBG is a thick sequence of continental basalt flows that was deposited during an extended period of Miocene (23 to 5 MA) volcanism. The lava flowed from north-northwest trending fissures as much as 90 miles long which were located primarily in northeastern Oregon and southeast Washington (Hooper 1982). The resulting basalt deposits are hundreds to thousands of feet thick and extend throughout the Columbia Plateau. Within the Columbia Plateau, the CRBG has been subdivided into four formations that include, from oldest to youngest, the Imnaha Basalt, Grande Ronde Basalt, Wanapum Basalt and Saddle Mountains Basalt. Two of these formations, the Grande Ronde and Wanapum, have been identified within the Airway Heights area (Kahle et al. 2011). These formations have been further subdivided into members based on unique physical, geochemical and paleomagnetic characteristics.

The Grande Ronde Basalt Formation underlies the entire area except where the elevations of pre-Miocene basement rocks were higher than the top of the formation; generally, this occurred at steptoes and basement ridges. The Grande Ronde Basalt is exposed within deeply incised drainageways, such as Deep Creek and Coulee Creek (Stoffel et al. 1991). The Wanapum Basalt Formation comprises about 6 percent of the total volume of the CRBG (Tolan et al. 1989, Whiteman et al. 1994). It occurs throughout the area except where it pinches out at steptoes or has been removed by erosion within drainages. Surface exposures are abundant (Stoffel et al. 1991). Unpublished research conducted by Ecology in conjunction with Dr. John Buchanan of the Eastern Washington University Department of Geology has identified the contact between the Wanapum and Grande Ronde Basalts at about Elevation 2,200 in western Spokane County. This correlates to an approximate Wanapum Basalt Formation thickness of about 175 to 200 feet at existing City well locations completed within the CRBG.

Vertical exposures of CRBG flows generally demonstrate a three-part internal arrangement of intraflow structures. These structures originated either during the emplacement of the flow or during lava cooling and solidification and include the flow top, flow interior and flow bottom. Flow tops generally consist of glassy to fine-grained vesicular basalt that is, in places, rubbly or brecciated. Flow interiors are dense, non-vesicular, glassy to crystalline basalt with abundant cooling joints that frequently manifest as columnar structures. Physical characteristics of flow bottoms vary. Flow bottoms can be thin, vesicular and glassy if the flow was extruded onto land. Alternatively, if the flow was extruded into water, pillow complexes predominate (GSI et al. 2015). Mapping by McCollum and Hamilton (2012) indicate that pillow complexes are common within the West Plains.



Numerous sedimentary interbeds exist between specific basalt units within the CRBG. Within the West Plains and surrounding area, sedimentary interbeds within the CRBG are collectively referred to as the Latah Formation. Near the City, Latah Formation sediments are primarily alluvial in origin and are variably composed of clay, silt, sand and gravel. Latah Formation interbeds are generally thicker and more frequently encountered near contacts with pre-Miocene basement rocks and are abundant within the CRBG stratigraphic section near the City.

# **5.3. Quaternary Sediments**

The CRBG is overlain by Pleistocene-age glaciofluvial (flood) deposits that consist of unsorted mixtures of silt, sand, gravel, cobbles and boulders. These flood deposits are frequently interbedded with glaciolacustrine sediments that were deposited in low-energy depositional environments between flood events. The top of the CRBG surface is incised and undulatory, creating a relatively complex distribution in overlying sediment thickness. Geologic investigations within the West Plains area (Deobald and Buchanan 1995; Budinger and Associates 2001; Derkey and Hamilton 2008; Pritchard 2013; and Pritchard et al. 2020) have delineated a total of five primary paleochannels, commonly designated the Airway Heights Paleochannel, Airport Paleochannel, the East Deep Creek Paleochannel, the West Deep Creek Paleochannel and the Marshall Paleochannel. These paleochannels are up to 400 feet in depth and interpreted to represent past drainage features, or paleochannels, that were filled primarily by permeable flood deposits during the Pleistocene. The roughly north-south trending Airway Heights Paleochannel underlies much of the City, approximately as shown in the Paleochannel Boundary Map, Figure 3.

Younger Quaternary sediments overly Pleistocene sediments and, in some areas, directly overly the CRBG. These sediments include loess (wind-blown clay, silt and fine sand), alluvium (stratified silt, sand, gravel, with minor clay deposited by modern rivers and streams), and landslide deposits (unsorted rock debris and sediment generally occurring adjacent to CRBG slopes).

# 6.0 HYDROGEOLOGIC FRAMEWORK

## 6.1. Aquifer Systems

The Airway Heights area generally is underlain by three aquifer systems. These aquifers occur within: (1) basement rocks; (2) the CRBG; and (3) paleochannel sediments. City municipal wells are completed within aquifers hosted within both paleochannel sediments and the CRBG.

## **6.2. Basement Rock Aquifers**

Groundwater occurs in basement rocks in fractured and/or weathered zones. Porosity and permeability are generally low within these units. The yield of water wells penetrating into the basement rock aquifer system generally is low, typically on the order of several gallons per minute or less. Recharge to the basement rock aquifer system primarily occurs from infiltration of precipitation within steptoes and other areas of exposed basement rock and, where hydraulic conditions allow, through leakage from the overlying Grande Ronde Basalt. Discharge occurs as leakage to adjacent geologic units, along gaining reaches of streams and to (primarily residential) water wells.



### 6.3. CRBG Aquifers

#### 6.3.1. General Characteristics

The CRBG consists of a series of individual basalt flows. Groundwater is primarily transmitted through the fractured and vesicular interflow zones that characterize the top of each flow. The interflow zones are separated by the less porous and less transmissive entablature and colonnade, which comprise 90 to 95 percent of the total flow volume (Whiteman et al. 1994). The flows are locally interlayered with sedimentary deposits of the Latah Formation. This system of multiple flows and interlayered sedimentary deposits creates multiple stacked confined to semi-confined aquifers which can yield significant volumes of groundwater to wells.

Regionally, the CRBG aquifer system is associated with the network of CRBG flows that extend throughout the Columbia Plateau. However, the basement highs and ridges present in the West Plains area compartmentalize the CRBG aquifer system, creating aquifer boundaries that separate West Plains CRBG water-bearing zones from the regional system (Spokane County Water Resources and Ecology 2013b). As a result, CRBG aquifers within the West Plains have limited storage capacity and are prone to over-pumping and declines in potentiometric levels over extended pumping periods. The basement ridges also effectively create no-flow hydraulic boundaries that influence groundwater flow direction within the CRBG. Consistent with the northeast-trending orientation of the basement ridges, the general CRBG groundwater flow direction in the West Plains generally trends northeast, towards the Spokane River (Spokane County Water Resources and Ecology 2013b).

Within West Plains wells open to the CRBG, depth to groundwater ranges from less than 50 to several hundred feet below ground surface (bgs). Depth to static potentiometric level generally increases with the depth of the open portion of the well.

The CRBG is overlain, in places, by sediments. In other locations, the CRBG directly crops out on the surface. Recharge to the CRBG generally occurs through infiltration of precipitation and irrigation water, vertical leakage from the overlying Quaternary sediments, and lateral recharge from basement rock highs (Deobald and Buchanan 1995; SAIC 1992). Discharge from the CRBG occurs through leakage to adjacent aquifers, (such as the paleochannel aquifers), along gaining reaches of streams, and to water supply wells.

Groundwater age dating in the West Plains (Northwest Land and Water 2014) suggests that the rate of recharge to the CRBG aquifer system is relatively slow. Groundwater more than a few hundred feet deep in this aquifer system within the West Plains commonly displays geochemical characteristics indicative of residence time in the subsurface of hundreds to thousands of years.

### 6.3.2. CRBG Aquifer Units

Kahle et al. (2011) divided the CRBG aquifer system into three primary aquifer units, including the Saddle Mountains Unit, the Wanapum Unit, and the Grande Ronde unit. Of these, the Wanapum and Grande Ronde Units occur in the West Plains. The Wanapum Unit consists of the Wanapum Basalt Formation and intercalated sediments. Similarly, the Grande Ronde Unit consists of the Grande Ronde Formation and intercalated sediments.

Potentiometric elevations in the Wanapum Unit within the West Plains generally range between approximately 2,300 and 2,450 feet (Spokane County Water Resources and Ecology 2013b). Groundwater



flow generally trends to the northeast towards discharge locations associated with the SVRP Aquifer (Spokane County Water Resources and Ecology 2013b). Locally, the Wanapum Unit discharges groundwater to both paleochannels (where fully or partially truncated by the paleochannel) and modern stream drainages.

Potentiometric elevations within the Grande Ronde Basalt Formation (Spokane County Water Resources and Ecology 2013b) range from about 2,200 to 2,300 feet within the West Plains. Groundwater flow in the Grande Ronde Unit also generally trends to the northeast towards discharge locations associated with the SVRP Aquifer (Spokane County Water Resources and Ecology 2013b). Potentiometric elevations in the Grande Ronde Basalt Formation generally are not influenced by paleochannels or modern stream drainages (GSI et al. 2015).

### 6.3.3. Hydrogeologic Parameters

Hydrogeologic parameters within the CRBG vary widely and have been reported by numerous researchers including Lum et al. (1990), Hansen et al. (1994), Whiteman et al. (1994), Drost et al. (1997), Golder and Associates (2004), Reidel et al. (2002), Kahle et al. (2011), and others. Selected ranges include the following:

- Whiteman et al. (1994) analyzed well specific capacity data to develop ranges in CRBG horizontal hydraulic conductivity (K). For the Wanapum Unit, horizontal K ranged from 0.007 to 5,244 feet per day with a median value of 5.2 feet per day. For the Grande Ronde Unit, horizontal K ranged from 0.005 to 2,522 feet per day, with a median value of 4.9 feet per day.
- Reported vertical hydraulic conductivity values generally are two to three orders of magnitude lower than horizontal hydraulic conductivity (Whiteman et al., 1994). Hansen et al. (1994) reported ranges in CRBG vertical K from 5 x 10<sup>-5</sup> to 7 feet per day, with a median value of 0.001 feet per day.
- Based on aquifer thickness and horizontal hydraulic conductivity ranges, Whiteman et al. (1994) provided a range in CRBG transmissivity of 0.5 to 114 million square feet per day, with a median value of 17,000 feet per day.
- Kahle et al. (2011) tabulated ranges in CRBG storage coefficient from 6 x 10<sup>-6</sup> to 0.01.

## **6.4. Paleochannel Aquifers**

## 6.4.1. General Characteristics

Glaciofluvial deposits host aquifers within paleochannels and outside of paleochannel boundaries where these deposits overly relatively shallow basalt. Glaciofluvial aquifers generally are unconfined. Saturated aquifer thickness is generally less than 10 feet outside of the boundaries of the paleochannels, resulting in low aquifer transmissivity and limited reliability as a long-term groundwater supply (Buchanan 1992). Within paleochannel boundaries (Figure 3), paleochannel aquifer thickness can exceed 200 feet, resulting in relatively high aquifer transmissivity and capacity for high-yield production wells.

Paleochannel sediments consist primarily of glaciofluvial and glaciolacustrine deposits. The glaciofluvial deposits typically consist of relatively free-draining sand and gravel with relatively high hydraulic conductivity. Previous studies of glaciofluvial sediments within Spokane County (Bolke and Vaccaro 1981 and CH2M Hill 1998) estimate hydraulic conductivity to range from about 100 to 6,000 feet per day.



Recharge to paleochannel aquifers is primarily from precipitation, applied irrigation, septic systems and potentially through leakage from the underlying CRBG. Paleochannel aquifers discharge to gaining reaches of streams, to the SVRP Aquifer, and to water supply wells. In all areas, water quality within this system of unconfined aquifers is relatively susceptible to degradation from point and non-point sources of contamination because of the frequent lack of a continuous overlying confining unit.

#### 6.4.2. Airway Heights Paleochannel Geology and Hydrogeology

#### 6.4.2.1. Aquifer Geometry

The Airway Heights Paleochannel aquifer is the target aquifer for four City production wells, and therefore is of particular interest to this study. The Airway Heights Paleochannel is the longest of the five paleochannels, extending a distance of about 12 miles, as shown in Figure 3. It originates east of Fairchild Air Force Base and generally trends north through the City towards its discharge area at the east margin of the Spokane River valley. Maximum sediment thickness increases from about 50 feet at its southern origin to over 300 feet within the northern portion of the paleochannel (Derkey and Hamilton 2008).

#### 6.4.2.2. Geology

Airway Heights Paleochannel boundaries were delineated by SAIC (1992) and refined by Deobald and Buchanan (1995), GeoEngineers (2007a), Derkey and Hamilton (2008), and Pritchard et al. (2020). SAIC (1992) depicted the paleochannel as a closed depression that terminates south of State Route 2. Deobald and Buchanan (1995), Derkey and Hamilton (2008), and Pritchard et al. (2020) used additional data to interpret the Airway Heights Paleochannel as an ancestral drainageway that extends northeast from State Route 2 to a suspected discharge area to the Spokane River Valley south of the confluence of the Spokane River and Deep Creek. Well logs have penetrated up to 349 feet of glaciofluvial material within the Airway Heights Paleochannel without encountering in-place rock. In the vicinity of City Wells 1, 4 and 11, the Airway Heights Paleochannel is at least 255 feet thick.

#### 6.4.2.3. Hydrogeology

Within the Airway Heights Paleochannel, unconfined aquifer thickness is a minimum of about 89 feet at City 4 and a minimum of 125 feet at City Well 11, but has not been well defined throughout much of the paleochannel. SAIC (1992) measured groundwater levels in several Airway Heights Paleochannel wells in September 1991. Based on their analysis, groundwater flow direction in the vicinity of City Wells 1, 4 and 11 was to the northwest, under a hydraulic gradient of about 0.004 feet per foot (about 21 feet per mile). The unconfined aquifer within the Airway Heights Paleochannel aquifer, because of its relatively high permeability and low head, acts as a drain resulting in subsurface discharge from the Wanapum Unit into the paleochannel with subsequent groundwater flow within the paleochannel aquifer to downgradient discharge areas (SAIC 1992).

### 6.4.2.4. Hydrogeologic Parameters

GeoEngineers compiled hydrogeologic information from previous GeoEngineers reports that provide testing results for hydrogeologic parameters within the Airway Heights Paleochannel aquifer. These are summarized in Table 1 and include the following parameters:

- Transmissivity (units of length squared divided by time): The rate at which water is transmitted through a unit width of aquifer under a unit hydraulic gradient.
- Hydraulic conductivity (units of length divided by time): The volume of water that is transmitted in unit time under a unit hydraulic gradient through a unit area measured perpendicular to flow.



Storage coefficient (unitless): The volume of water released from storage in a unit prism of aquifer when the head is decreased by a unit distance.

Source	Type of Test	Transmissivity (square feet/day)	Hydraulic Conductivity (feet/day)	Storage Coefficient
	Grain-Size Distribution	NA	590 (Unsaturated Zone)	NA
GeoEngineers (2007a)	Grain-Size Distribution	NA	770 (Saturated Zone)	NA
	Pumping Test	34,000	570	0.0021
GeoEngineers (2015)	Pumping Test	73,000	490	NA

TABLE 1. AIRWAY HEIGHTS PALEOCHANNEL AQUIFER HYDRAULIC PROPERTIES

Note: NA = Not Available

# 7.0 CITY WATER SOURCES

DOH lists a total of 12 City sources in the Sentry database. Of these, a total of eight sources are listed as active wells. The remaining four sources are comprised of two City of Spokane interties, one inactive well, and one well field that is a combination of two of the active wells. City sources are summarized in Table 2. Discrepancies in the numbering of City wells have emerged over time between the City, DOH, and Ecology. The well designations provided in this report conform to the numbering designated by Ecology (2012) for current and future use.

DOH Source No.	City Designation	DOH Status <sup>1</sup>	Township	Range	Section	<sup>1</sup> /4- <sup>1</sup> /4 Section	Туре
1	Well 1	Active	25 N	41 E	26	SE of SE	Well
2 <sup>2</sup>	Well 2	Inactive	25 N	41 E	25	SE of NW	Well
3	Well 3	Active	25 N	41 E	26	SE of NE	Well
4	Well 4	Active	25 N	41 E	26	SE of SE	Well
5	Well 5	Active	25 N	41 E	25	SE of SW	Well
6	83100K/ Spokane, City of	Active	25 N	41 E	25	NE of NE	City of Spokane Intertie
7	Well 7	Active	25 N	41 E	36	NW of NW	Well
8	WF/S01,S04	Active	25 N	41 E	26	SE of SE	Well Field
9	Well 9 (Park West Well)	Active	24 N	41 E	02	NW of SW	Well
10	Well 8	Active	25 N	41 E	25	SE of NW	Well
11	Well 11	Active	25 N	41 E	26	NW of SE	Well

### **TABLE 2. CITY WATER SOURCE SUMMARY**



DOH Source No.	City Designation	DOH Status <sup>1</sup>	Township	Range	Section	<sup>1</sup> ⁄4- <sup>1</sup> ⁄4 Section	Туре
12	83100K/ Spokane, City of, #2	Active	Not Assigned	Not Assigned	Not Assigned	Not Assigned	City of Spokane Intertie

Notes: <sup>1</sup> DOH status refers to the source status provided in DOH's Sentry database. These designations do not necessarily reflect well shutdowns by the City in response to water quality or water rights conditions. <sup>2</sup> Well 2 is an inactive source and has been decommissioned.

The City's DOH sources include a total of 9 production well locations, as listed in Table 3. With the exception of Well 2 (which has been decommissioned), each of these production wells is an authorized point of withdrawal under the City's water right portfolio, as described by Ecology (2012).

Water Well Reports are available for 8 of the production wells; these are provided in Appendix A. City production well locations are presented in the City Production Well Map, Figure 4.

Existing City production wells range in depth to first open interval from 80 feet (Well 3) to 480 feet (Well 8). The range in well bottom depth is 192 feet (Well 1) to 830 feet (Well 8). DOH lists well capacities for a total of seven of the production wells; well capacities range from 60 gallons per minute (gpm) (Well 3) to 2,315 gpm (Well 11).

Two primary aquifers provide groundwater to the City water system; these include the Airway Heights Paleochannel aquifer and the CRBG aquifer system. Based on lithologic information in the respective Water Well Reports, three existing wells (Well 1, Well 4 and Well 11) are known to be completed within the Airway Heights Paleochannel aquifer. Well 3 is presumed to be completed within the Airway Heights Paleochannel aquifer based on its location and reported well construction. Based on Water Well report information, three existing wells (Well 7, Well 8 and Well 9) are known to be completed within the CRBG aquifer system. Well 5 is presumed to be completed within the CRBG aquifer system. Well 5 is presumed to be completed within the CRBG aquifer system. Well 5 is presumed to be completed within the CRBG aquifer system. Well 5 is presumed to be completed within the CRBG aquifer system. Well 5 is presumed to be completed within the CRBG aquifer system.

Well No.	Authorized Point of Withdrawal? <sup>1</sup>	Well ID No.	Water Well Report Available? <sup>2</sup>	Well Depth <sup>2, 4</sup> (feet bgs)	Well Bottom Depth <sup>3</sup>	Well Capacity <sup>4</sup> (gpm)	Aquifer System
Well 1	Yes	AGG 477	Yes	175	192	177	Airway Heights Paleochannel
Well 2 <sup>5</sup>	No	AGG 476	Yes	170	170	Not Assigned	CRBG – Wanapum (Presumed)
Well 3	Yes	Not Assigned	Yes	80	200	60	Airway Heights Paleochannel (Presumed)
Well 4	Yes	AGG 479	Yes	180	200	271	Airway Heights Paleochannel

## TABLE 3. CITY PRODUCTION WELL SUMMARY



Well No.	Authorized Point of Withdrawal? <sup>1</sup>	Well ID No.	Water Well Report Available? <sup>2</sup>	Well Depth <sup>2, 4</sup> (feet bgs)	Well Bottom Depth <sup>3</sup>	Well Capacity⁴ (gpm)	Aquifer System
Well 5	Yes	ABR 585	No	2002013	Not Available	65	CRBG – Wanapum (Presumed)
Well 7	Yes	AGG 478	Yes	380	440	Not Assigned	CRBG- Grande Ronde
Well 8	Yes	AKA 185	Yes	480	830	300	CRBG – Grande Ronde
Well 9 (Park West Well)	Yes	AGG 475	Yes	152	301	1,200	CRBG – Wanapum and Grande Ronde
Well 11	Yes	BCF 554	Yes	200	440	2,315	Airway Heights Paleochannel

Notes: <sup>1</sup> Authorized points of withdrawal under the City's water right portfolio, as described by Ecology (2012).

<sup>2</sup> Well depth refers to the depth to the first open interval and was obtained from DOH's Sentry database.

<sup>3</sup> Well bottom depth refers to the bottom of the well and was obtained from the respective Water Well Reports.

<sup>4</sup> The well depths and capacities listed in this table are derived from DOH's Sentry database. These data might not reflect current well condition and/or performance.

 $^{\rm 5}$  Well 2 has been decommissioned.

## **8.0 CITY WATER RIGHTS**

The City maintains a water right portfolio consisting of six water right certificates, which are summarized in Table 4. This summary is based on Ecology's Record of Examination (ROE) for Water Right Change to Certificate 6321-A (Ecology 2012).

Under these six water right certificates, the City holds a total instantaneous quantity (Qi) of 2,315 gpm and a total annual quantity (Qa) of 2,328 acre-feet.

Certificate No.	Priority Date	Use	Instantaneous Quantity (gpm)	Annual Quantity (af per year)
6321-A	6/21/1968	Municipal Supply	350	224
G3-23465C	6/27/1974	Municipal Supply	65	2
G3-26657C	9/4/1980	Municipal Supply	500	800
G3-27427C	12/21/1982	Municipal Supply	65 <sup>2</sup>	102
G3-29249P(A)	8/4/1992	Municipal Supply	761	652.5
G3-29249P(B)	8/4/1992	Industrial Supply	639	547.5
Total			2,315	2,328

#### TABLE 4. CITY WATER RIGHT SUMMARY 1

Notes: <sup>1</sup> This City Water Right Summary is adapted from Ecology (2012)

<sup>2</sup> The Qi associated with Certificate No. G3-27427C is non-additive.

af per year = acre-feet per year.



Ecology (2012) authorizes the development of seven additional points of withdrawal (hypothetical Wells 11 through 17) that the City can implement. These additional points of withdrawal are located within Sections 13, 22, 23 and 26 of Township 25 North, Range 41 East. None of these have been developed as additional points of withdrawal at the time of this report.

### 9.0 GROUNDWATER TRANSPORT

### 9.1. Conceptual Pathways

Groundwater pathways originating at City production well locations and migrating to the SVRP Aquifer take substantially different routes depending on whether the production well is completed within the Airway Heights Paleochannel aquifer, the Wanapum Unit, or the Grande Ronde Unit. GeoEngineers created conceptual cross-sections that show potential pathways, as summarized below:

- Figure 5. Conceptual Groundwater Pathways within Paleochannel Aquifer: This schematic diagram shows a hypothetical production well screened within an upgradient portion of a West Plains paleochannel. Existing City wells that roughly correlate with this well setting are Wells 1, 3, 4 and 11. The upgradient portion of the paleochannel is recharged by the adjacent CRBG formation and, seasonally, infiltration of precipitation and snowmelt. As shown in Figure 5, groundwater originating at these well locations flows under unconfined conditions before discharging to the SVRP Aquifer.
- Figure 6, Conceptual Groundwater Pathways within Wanapum Unit: This schematic diagram shows a hypothetical production well completed within the Wanapum Unit. Existing City wells that roughly correlate with this hypothetical well setting are Wells 5 and 9. The upgradient portion of the Wanapum Unit is recharged at the basement rock contact and, seasonally, infiltration of precipitation and snowmelt. As shown in Figure 6, groundwater originating at these well locations flows under unconfined to confined conditions before discharging to the SVRP Aquifer.
- Figure 7, Conceptual Groundwater Pathways within Grande Ronde Unit: This schematic diagram shows a hypothetical production well completed within the Grande Ronde Unit. Existing City wells that roughly correlate with this hypothetical well setting are Wells 7,8, and 9. The upgradient portion of the Grande Ronde Unit is recharged at the basement rock contact and, potentially, through leakage from the Wanapum Unit. As shown in Figure 7, groundwater originating at these well locations primarily flows under confined conditions before discharging to the SVRP Aquifer.

Each of the hydrogeologic units depicted in Figures 5 through 7 (paleochannel aquifer, Wanapum Unit, and the Grande Ronde Unit) are fully truncated by and fully discharge to the SVRP Aquifer.

### **9.2. Transport Pathways**

The City is considering the cessation of pumping in its existing production wells and the development of an alternative groundwater supply within the SVRP Aquifer. Each of the West Plains aquifers that provides water to City wells (the Airway Heights Paleochannel aquifer, the Wanapum Unit, and the Grande Ronde Unit) discharges to the SVRP Aquifer. As a result, a cessation in pumping of existing City production wells will increase discharge from the West Plains aquifer system to the SVRP Aquifer.

During our March 11, 2020 meeting with Ecology, Ecology indicated that an alternative City groundwater supply within the SVRP Aquifer should be sited at or down-gradient of the locations where pumping of



existing City wells impact SVRP Aquifer recharge. To identify these locations, GeoEngineers preliminarily delineated the anticipated transport pathways for groundwater originating at existing City water supply well locations and discharging to the SVRP Aquifer, as summarized below.

- Figure 8, Groundwater Transport in Paleochannel Wells: Wells 1, 3, 4 and 11 are screened within the Airway Heights Paleochannel. As shown in Figure 8, groundwater originating at these well locations is assumed to flow down-gradient within the Airway Heights Paleochannel before discharging to the SVRP Aquifer in approximately Section 29 of Township 26 North and Range 42 East (northeast of intersection of West Marchand Road and North Old Trails Road). Note that this pathway neglects leakage, if any, from the Airway Heights Paleochannel aquifer to adjacent CRBG units.
- Figure 9, Groundwater Transport in Wanapum Unit Wells: Wells 5 and 9 are open to the Wanapum Unit. As shown in Figure 9, groundwater originating at these well locations is estimated to flow northeast before discharging to the SVRP Aquifer in approximately Section 4 of Township 25 North and Range 42 East (in the vicinity of West Trails Road and North Aubrey White Park Drive). This pathway is based on groundwater flow that is assumed to be perpendicular to the orientation of potentiometric contours for the Wanapum Unit during an October 2011 groundwater monitoring event conducted by Spokane County Water Resources and Ecology (2013b).
- Figure 10, Groundwater Transport in Grande Ronde Unit Wells: Wells 7, 8 and 9 are open to the Grande Ronde Unit. As shown in Figure 10, groundwater originating at these well locations is estimate to flow east-northeast before discharging to the SVRP Aquifer in approximately Section 14 of Township 25 North and Range 42 East (in the vicinity of West Greenwood Road and West Government Way). This pathway is based on groundwater flow that is assumed to be perpendicular to the orientation of potentiometric contours for the Grande Ronde Unit during October 2011 (Spokane County Water Resources and Ecology 2013b).

## 9.3. Groundwater Travel Times

GeoEngineers conducted simplified groundwater transport calculations based on the Darcy Velocity equation (Domenico and Schwartz 1990) provided in Equation 1.

$$v = -(K./n_e)*(dh/dl)$$
 Equation 1

where v = groundwater velocity, K = horizontal hydraulic conductivity,  $n_e =$  effective porosity, and dh/dl = hydraulic gradient.

Groundwater travel times were calculated using Equation 2.

T = v \* L

Equation 2

where T = groundwater travel time and L = pathway length.

For each of the pathways shown in Figures 8 through 10, results are summarized below in Table 5.

Groundwater Pathway	K (feet per day)	Average dh/dl (feet per foot)	n <sub>e</sub> (unitless)	v (feet per day	L (feet)	T (years)			
Airway Heights Paleochannel Aquifer									
Wells 1 and 4	490	0.017	0.30	28	41,924	4.1			
Well 3	490	0.017	0.30	28	38,468	3.7			
Well 11	490	0.015	0.30	25	41,660	4.5			
Wanapum Unit									
Well 5	70	0.023	0.145	11	29,364	7.4			
Well 9	70	0.017	0.145	8.3	40,769	13			
Grande Ronde	Unit								
Well 7	70	0.010	0.145	5.0	30,519	17			
Well 8	70	0.013	0.145	6.3	27,013	12			
Well 9	70	0.016	0.145	7.6	40,817	15			

#### TABLE 5. GROUNDWATER VELOCITY AND TRAVEL TIMES

Assumptions underpinning the analyses summarized in Table 5 include the following:

- K: For the Airway Heights Paleochannel aquifer, K was estimated based on aquifer testing data and analyses provided by GeoEngineers (2015). For the Wanapum and Grande Ronde units, K was adapted from the median CRBG value estimated from specific capacity data compiled by Kahle et al. (2011).
- <u>Average dh/dl</u>: For each well location, hydraulic gradient was estimated by: (1) subtracting the approximate groundwater level at the SVRP Aquifer discharge location from the reported static potentiometric level at the well; and (2) dividing by the linear distance between the well and the SVRP Aquifer discharge location.
- <u>ne:</u> ne of the Airway Heights Paleochannel aquifer was adapted from typical values for sand and gravel presented by Domenico and Schwartz (1990). ne of the Wanapum and Grande Ronde Units was obtained from the representative value for CRBG flow tops provided by Whiteman et al. (1994).

These calculations suggest that groundwater velocity within the Airway Heights Paleochannel aquifer (25 to 28 feet per day) is approximately two to six times higher than the CRBG units (5.0 to 11 feet per day). This velocity difference primarily is caused by the higher assumed hydraulic conductivity for the Airway Heights Paleochannel aquifer.

Travel times for groundwater from City production well locations to respective discharge locations to the SVRP Aquifer are lower for the Airway Heights Paleochannel aquifer than for the CRBG units. Airway Heights Paleochannel aquifer travel times range from 3.7 years for Well 3 to 4.5 years for Well 11. Wanapum Unit travel times range from 7.4 years for Well 5 to 13 years for Well 9. Grande Ronde Unit travel times range from 12 years for Well 8 to 17 years for Well 7.

# 10.0 ALTERNATIVE GROUNDWATER SUPPLY STUDY AREA

Each of the groundwater path lines from Figures 8 through 10 is shown in Alternative Groundwater Supply Study Area, Figure 11. Regulatory considerations dictate that point(s) of withdrawal for an alternative City groundwater supply in the SVRP Aquifer should be at or downgradient of the discharge locations associated with the groundwater path lines. Therefore, GeoEngineers identified an Alternative Groundwater Supply Study Area within the following portions of Township 26N, Range 42 East:

- Section 17
- The northeast quarter of Section 18
- Section 20
- The southwest quarter of Section 21
- The northwest quarter of Section 28

The Alternative Groundwater Supply Study Area is shown in Figure 11.

We downloaded Water Well Reports compiled within Ecology's Washington State Well Report Viewer database for the above area. These Water Well Reports are provided in Appendix B. Each well in Appendix B was given a unique designation and mapped based on location information provided in the Water Well Reports. Approximate well locations are shown in Alternative Groundwater Supply Study Area Existing Wells, Figure 12. Location information generally consists of township-range-section, well address, and/or parcel number and only wells that can be located to the nearest quarter-quarter section (or more precisely) were included in Figure 12 and Appendix B.

Before investing in the infrastructure required to develop an alternative groundwater supply, the City is interested in evaluating the groundwater quality of the SVRP Aquifer within the Alternative Groundwater Supply Area. GeoEngineers reviewed the Water Well Reports in Appendix B and selected six existing wells that could inform the City regarding groundwater quality conditions within the SVRP Aquifer in the Alternative Groundwater Supply Area. These potential groundwater sampling locations are tabulated in Table 6 and designated with a red well symbol in Figure 12.

Well Designation	Location <sup>1</sup>	Year of Installation	Owner <sup>2</sup>	Total Depth (feet bgs)	Screen Depth (feet bgs)	Formation Opposite Screen
20A1	Parcel No. 26201.9038	2017	Anne Marie McLellan	100	91 to 96	Sand with Gravel
20A6	Parcel No. 26201.0923 <sup>3</sup>	2007	Nelson Antoniuk	82	75 to 80	Sand and Gravel
20A8	Parcel No. 26201.0922	2010	Stephen Mayne	80	75 to 80	Sand and Gravel
20B2	9426 N. Riverside State Park Drive	1988	Jackie McClellan	88	88 (Open Casing)	Gravel

## TABLE 6. POTENTIAL GROUNDWATER SAMPLING LOCATIONS



Well Designation	Location <sup>1</sup>	Year of Installation	Owner <sup>2</sup>	Total Depth (feet bgs)	Screen Depth (feet bgs)	Formation Opposite Screen
20B3	Parcel No. 26201.9053	2001	Jason & Holly McLellan	80	75 to 80	Gravel with Sand
21N1	N. 8132 Rivermere Drive	1991	Andy Mahaffy	60	51 to 56	Gravel and Sand

Notes: <sup>1</sup>The most specific location information provided in the respective Water Well Report is tabulated in this table.
<sup>2</sup>The reported owner at the time of drilling is tabulated in this table.
<sup>3</sup>The parcel number provided on the Water Well Report (26201.0923) for Well 20A6 is not a valid number and appears to be in error. Based on property owner information on file with Spokane County, the suspected correct parcel number is provided in this table.

The wells in Table 6 were prioritized based on the following considerations:

- Certainty of location information: Wells with precise location information, such as a parcel number or address, were prioritized.
- Position with respect to Spokane River: Wells on the west side of the Spokane River were prioritized.
- Age: Newer wells were prioritized.
- Apparent permeability: Wells that appeared to be constructed within high-permeability sediment that have a high likelihood of supporting a municipal well were prioritized.
- Screen depth: Wells that are screened at a depth (generally greater than 50 feet bgs) that is consistent with a potential municipal well installation were prioritized.

## **11.0 HYPOTHETICAL STREAMFLOW DEPLETION**

### **11.1.** Method and Assumptions

Multiple analytical methods for estimating the depletion in streamflow resulting from groundwater pumping have been developed by researchers (Barlow and Leake 2012). These solutions generally assume the following:

- The aquifer is homogeneous, isotropic and extends infinitely away from the stream.
- The aquifer is confined, although the solutions have been extended to unconfined aquifers with the assumption that drawdown caused by pumping will be small compared to aquifer thickness.
- Water is released instantaneously from storage (that is, the effect of delayed yield is negligible).
- The stream is straight, of infinite length, and flowing at all times.
- The groundwater level in the aquifer at the stream remains above the streambed, such that the stream does not become disconnected from the underlying aquifer.
- The well is fully penetrating and pumping at a constant rate.



The most widely-used streamflow depletion solution simulates a stream penetrating the full thickness of the aquifer, with no streambed hydraulic resistance between the stream and the aquifer (Glover and Balmer 1954), and has been designated the Glover solution. Because the Spokane River does not fully truncate the SVRP Aquifer in the vicinity of the Alternative Groundwater Supply Area, we selected an adaptation of the Glover solution introduced by Hunt (1999) which accounts for partial penetration of the aquifer by the stream and also accounts for streambed hydraulic resistance.

We calculated streamflow depletion rate using the Hunt (1999) solution contained within U.S. Geological Survey code STRMDEPL08 (Reeves 2008). Model assumptions included the following:

- A new City production well is completed within the SVRP Aquifer and sited within the Alternative Groundwater Source Study Area.
- Distance from the hypothetical City production well to the Spokane River is 2,000 feet.
- The SVRP aquifer is unconfined and composed of sand and gravel with minor silt content.
- In the vicinity of the hypothetical production well, SVRP Aquifer thickness is 100 feet (Kahle and Bartolino 2007).
- Hydraulic conductivity of the SVRP Aquifer is 1,650 feet per day, based on single well specific capacity data analysis presented by CH2M Hill (1998) for a production well located near the Alternative Groundwater Supply Area.
- Streambed conductance is less than the hydraulic conductivity of the SVRP Aquifer by a factor of 10.
- Storage coefficient (specific yield) of the aquifer is 0.2, based on typical values for unconfined aquifers provided by Driscoll (1986).
- The pumping rate is equal to the City's total Qi of 2,315 gpm (5.16 cfs).
- The pumping period is continuous for a period of approximately 3 months.

The specific parameter values assumed for each analytical scenario are listed in Assumptions for Streamflow Depletion Analysis, Table C-1 of Appendix C.

# **11.2.** Model Results

Results are provided in tabular form in Results of Streamflow Depletion Analysis, Table C-2, provided in graphical form in Streamflow Depletion Percentage, Figure C-1. Streamflow depletion percentage (S<sub>DP</sub>) is calculated using Equation 3.

$$S_{DP} = Q / S_D$$

where Q = well pumping rate and  $S_D$  = the rate of streamflow depletion that results from well pumping.

Equation 3

Model results are summarized by the following:

- The depletion in Spokane River streamflow resulting from groundwater pumping in a hypothetical City production well sited 2,000 feet from the river increases with duration of pumping.
  - After a pumping period of 10 days, estimated S<sub>DP</sub> was about 37 percent (1.92 cfs).



- After a pumping period of 30 days, estimated SDP was about 59 percent (3.02 cfs).
- After a pumping period of 90 days, estimated S<sub>DP</sub> was about 74.7 percent (3.84 cfs), at which point the well was shut down.
- Streamflow depletion decreases gradually after well shutdown.
  - After a shutdown period of 10 days, estimated SDP reduced to about 39 percent (1.99 cfs).
  - After a shutdown period of 30 days, estimated S<sub>DP</sub> reduced to about 19 percent (1.00 cfs).

### **12.0 OPERATIONAL SCENARIO**

### **12.1.** Complicating Factors

The simplified groundwater transport calculations described herein suggest that, in the absence of pumping, the time required for groundwater to migrate from existing City production well locations to the SVRP Aquifer requires 3.7 to 66 years, depending on the well location and associated hydrogeologic unit. Once an existing production well is shutdown, therefore, it takes time for the impact of previous pumping on SVRP recharge rates to dissipate. The lag in time between existing well shutdown and cessation of existing well impact on SVRP Aquifer recharge is less for wells completed in the Airway Heights Paleochannel aquifer than for the CRBG aquifers.

Developing a new well operational scenario that accounts for the above-described time lag is complicated by the following factors:

- City production wells are completed in different hydrogeologic units (Airway Heights Paleochannel aquifer, Wanapum Unit and/or Grande Ronde Unit). These units have varying groundwater transport times, as described above.
- The City's water right portfolio provides the City flexibility regarding the annual volumes that are extracted from respective production wells. As a result, the annual volumes extracted from individual wells has historically varied from year to year.
- City production wells currently are fully or partially shut down for reasons ranging from nitrate contamination (Well 3), water rights issues (Well 9), well performance (Wells 5, 7 and 8), and PFAS contamination (Wells 1, 4 and 11). Shut down timing varies by well location.
- A significant portion of the City's water usage is not consumed by processes (for example, evapotranspiration) that remove the water from the hydrogeologic system that recharges the SVRP Aquifer. Since 2012, water has been returned to the Airway Heights Paleochannel aquifer through discharge from the City's Water Reclamation Plant.
- The timing of the dissipation of impact to SVRP Aquifer recharge resulting from City production well shutdown is not precisely determined by the groundwater transport and travel time estimates described herein. However, our March 11, 2020 meeting with Ecology reached a consensus that groundwater transport and travel time estimates provide a reasonable basis for which to develop a new well operational scenario.

Acknowledging these complications, GeoEngineers developed an operational scenario, described below, that describes a path forward for developing an alternative groundwater supply for a new City groundwater supply.



# 12.2. City Groundwater Use and Water Reclamation Plant Discharge

The operational scenario is based, in part, on historic City groundwater use. GeoEngineers reviewed the following data, provided by Century West: (1) monthly City groundwater use for the period from 2000 to 2014; and (2) annual groundwater use for the period from 2015 to 2019.

A significant percentage of the City's groundwater use is returned to the Airway Heights Paleochannel aquifer through subsurface discharge at the City's Water Reclamation Plant, the approximate location of which is shown in Figure 2. GeoEngineers reviewed discharge volumes to the Water Reclamation Plant percolation beds for the period from 2012 to 2019.

Groundwater use data and water reclamation plant discharge for the period from 2000 to 2019 are summarized in Table 7.

	Pu	Imping Volum	Water	Net Removal from		
Year	Airway Heights Paleochannel Aquifer <sup>1</sup>	Wanapum Unit <sup>2</sup>	Grande Ronde Unit <sup>3</sup>	Total	Reclamation Plant Discharge (acre-feet)	Airway Heights Paleochannel <sup>4</sup> (acre-feet)
2000	609.98	15.53	26.18	651.69	0.00	606.98
2001	598.42	22.17	18.98	639.58	0.00	598.42
2002	542.57	13.89	296.63	853.09	0.00	542.57
2003	530.82	0.00	620.94	1,151.76	0.00	530.82
2004	601.16	0.00	562.30	1,163.46	0.00	601.16
2005	543.89	0.00	465.90	1,009.79	0.00	543.89
2006	459.00	0.00	509.00	968.00	0.00	459.00
2007	480.80	0.00	364.21	845.01	0.00	480.80
2008	337.69	0.00	970.33	1,308.02	0.00	337.69
2009	307.62	0.00	1,035.24	1,342.87	0.00	307.62
2010	343.29	0.00	896.40	1,239.69	0.00	343.29
2011	545.08	0.00	581.97	1,127.05	0.00	545.08
2012	554.29	0.00	449.19	1,003.48	321.55	232.74
2013	1,131.37	0.00	165.83	1,297.20	566.22	565.15
2014	1,458.70	0.00	56.72	1,515.42	558.84	899.86
2015	1,255.35	0.00	0.00	1,255.35	580.32	675.03
2016	1,400.88	0.00	0.00	1,400.88	644.57	756.31
2017	55.21	0.00	0.00	55.21	756.29	-701.08
2018	198.36	0.00	0.00	198.36	781.47	-583.11
2019	638.04	0.00	0.00	638.04	816.55	-178.51

### TABLE 7. CITY GROUNDWATER USE AND WATER RECLAMATION DISCHARGE

Notes: <sup>1</sup> Airway Heights Paleochannel aquifer pumping volumes are associated with Wells 1, 4, and 11.

<sup>2</sup> Wanapum Unit pumping volumes are associated with Well 5.

<sup>3</sup> Grande Ronde Unit pumping volumes are associated with Wells 7, 8, and 9. Well 9 is open to both the Wanapum and Grande



Ronde Units but is assigned entirely to the Grande Ronde Unit to be conservative with respect to travel time. <sup>4</sup> Net removal from the Airway Heights Paleochannel aquifer is assumed to be equal to the Airway Heights Paleochannel aquifer pumping volume minus water reclamation plant discharge. Negative values indicate a net increase to the Airway Heights Paleochannel aquifer as a result of City water use and reclaimed water discharge.

### **12.3.** Historic Groundwater Use

In developing the summary provided in Table 7, GeoEngineers reviewed City water use data for the period from 2000 to 2019, which equates to a dataset of 20 years. However, the groundwater travel time estimates provided in Table 5 for Wanapum Unit and Grande Ronde Unit well locations average approximately 38.5 and 56.7 years, respectively. The timing of the cessation of impact to SVRP Aquifer recharge from City production well shutdown is complex, influenced by aquifer hydraulics, aquifer geometry, and other factors, and most precisely approximated by numerical groundwater flow modeling. However, in the absence of groundwater modeling and considering the groundwater travel time estimates provided herein, it is reasonable to interpret that the impact of historic City production well pumping on SVRP Aquifer recharge could persist for a number of decades after cessation of pumping in CRBG wells.

To support our analysis of the potential magnitude of the impact of historic City groundwater pumping on SVRP Aquifer recharge, we estimated City groundwater use over the past 60 years (to 1960). City water use data prior to the year 2000 were not available. To project City water use estimates back to 1960, we used the 2000 City water use data as a reference and modified those data based on population estimates provided by Population.us (2020) for the period from 1960 to 2000. These water use estimates, as well as the 2000 reference data, are averaged by decade in Table 8.

		Estimated Annual Pumping Volume (acre-feet)			
Year	Estimated Population <sup>1</sup>	Airway Heights Paleochannel Aquifer <sup>2</sup>	Wanapum Unit <sup>2</sup>	Grande Ronde Unit <sup>2</sup>	Total
1960-1970	726	98.5	2.5	4.2	105.3
1970-1980	1,237	167.9	4.3	7.2	179.3
1980-1990	1,843	250.1	6.4	10.7	267.2
1990-2000	3,226	437.8	11.1	18.8	467.7
2000 <sup>2</sup>	4,495	609.98	15.53	26.18	651.69

#### **TABLE 8. ESTIMATED HISTORIC WATER USE**

Notes: <sup>1</sup> Population estimates were adapted from Population.us (2020).

<sup>2</sup> The 2000 pumping data represent actual pumping volumes and were used as a reference to pumping estimates for previous decades.

## **12.4.** Operational Scenario

With these historic groundwater use estimates, we are now positioned to consider an operational scenario for new city production well(s) completed in the Alternative Groundwater Supply Study Area. The scenario described below is intended to be straightforward in concept and conservative with respect to the SVRP Aquifer water budget. The first steps, summarized in Table 9, are to identify the approximate year that impact to SVRP Aquifer recharge from historic existing City well water use will terminate for each hydrogeologic unit. To do so, we identified the following:

- 1. <u>Average Groundwater Transport Time:</u> The average of the values presented in Table 5 for well locations associated with the respective hydrogeologic units.
- 2. <u>Base Year</u>: Base year was calculated by subtracting groundwater transport time from the current year (2020). For groundwater currently discharging to the SVRP Aquifer from a respective hydrogeologic unit, this represents the approximate time that the water was in the vicinity of existing City wells.
- 3. <u>Termination Year:</u> The last year that City wells have pumped from the respective hydrogeologic unit. For the Airway Heights Paleochannel, the termination year is assumed to be 2020.
- 4. <u>Projected Year</u>: The year that impact to the SVRP Aquifer from City production well pumping is estimated to end. The projected year was estimated by adding the average groundwater transport time to the termination year.

Based on these parameters and as summarized in Table 9, the projected year is 2024 for the Airway Heights Paleochannel aquifer and 2029 for the Grande Ronde Unit. Impact from Wanapum Unit pumping is estimated to have ended during 2013.

Parameter	Airway Heights Paleochannel Aquifer	Wanapum Unit	Grande Ronde Unit	
Average Groundwater Transport Time	4.1 years	10.2 years	14.7 years	
Base Year	2016	2010	2005	
Termination Year	2020	2003	2014	
Projected Year	2024	Ended in 2013	2029	

## TABLE 9. TIMING OF IMPACT

Once the timing of impact is estimated, the second step is to estimate the magnitude of the impact that City wells have had on SVRP recharge in each hydrogeologic unit during the period of impact. Because pumping rates varied widely in individual wells over time, estimating temporal variation in recharge impact over time is complex, and would be most precisely accomplished through numerical flow modeling. To simplify, we calculated the average groundwater use for the period from the base year to the termination year in each hydrogeologic unit. Results are summarized in Table 10. The average annual impact is 573.1 acre-feet for the Airway Heights Paleochannel aquifer, 0 acre-feet for the Wanapum Unit and 549.5 acre-feet for the Grande Ronde Unit.

For the Airway Heights Paleochannel aquifer, the magnitude of impact is complicated by return flow of reclaimed water to the Airway Heights Paleochannel through Water Reclamation Plant discharge. Net removal from the Airway Heights Paleochannel aquifer is presented in Table 7. Anticipating regulatory preference and in the interest of being conservative, however, we used gross Airway Heights Paleochannel groundwater use to develop this operational scenario and neglected reclaimed water discharge.



#### TABLE 10. MAGNITUDE OF IMPACT

Parameter	Airway Heights Paleochannel Aquifer (acre-feet per year)	Wanapum Unit (acre-feet per year)	Grande Ronde Unit (acre-feet per year)	
Average Annual City Impact to Aquifer	573.1	0	549.5	

The final step is to develop an operational scenario for a well or wellfield developed within the Alternative Groundwater Supply Study Area that accounts for the timing and magnitude of City production well impact on SVRP Aquifer recharge. This operational scenario is summarized in Table 11.

	Impact to SVRP Aquifer Recharge (acre feet per year)				
Parameter	Airway Heights Paleochannel Aquifer	Wanapum Unit	Grande Ronde Unit	Total Impact	Adjusted Qa <sup>1</sup> (acre-feet)
2021 to 2024	573.1	0	549.5	1,122.6	1,205.4
2025 to 2029	0	0	549.5	549.5	1,778.5
After 2029	0	0	0	0	2,328

Note: <sup>1</sup> Adjusted Qa is estimated by subtracting the total impact in recharge from the City's total Qa (2,328 acre-feet per year).

Under this scenario, the City is able to incrementally increase annual pumping volume from the SVRP Aquifer in the Alternative Groundwater Supply Study Area. From 2021 to 2024, the City would be limited to 1,205.4 acre-feet per year. From 2025 to 2029, maximum pumping volume would be 1,778.5 acre-feet per year. After 2029, the City could utilize its maximum water right allocation of 2,328 acre-feet per year.

## 13.0 CONCLUSIONS

Based on the data and analyses presented herein, development of a new City groundwater supply within the SVRP Aquifer in the Alternative Groundwater Supply Study Area appears feasible. This conclusion is based on the following:

- Water Well Reports associated with existing wells completed in the SVRP Aquifer within the Alternative Groundwater Supply Study Area indicate the presence of permeable sand and gravel deposits that potentially could support the development of a municipal groundwater supply. However, site-specific exploration and testing will be required to verify aquifer capacity in one or more proposed new well locations.
- Pumping of existing City production wells reduce discharge of CRBG and paleochannel aquifers to the SVRP Aquifer. The hydrogeologic conceptual model described herein suggests that each of the aquifers that existing wells are completed in are fully truncated by the Spokane River valley. Therefore, each of these aquifers fully discharge to the SVRP Aquifer. Transfer of City water rights to the Alternative Groundwater Supply Study Area should, in the long term, be water budget neutral with respect to the SVRP Aquifer.



Transport pathways for each of the hydrogeologic units targeted by existing City wells are at or upgradient of the Alternative Groundwater Supply Study Area. Therefore, operation of one or more new groundwater supply wells in the Alternative Groundwater Supply Area should not impact the SVRP Aquifer (or Spokane River) upgradient of the zone of impact associated with existing City wells.

Impact to SVRP Aquifer recharge from historic pumping of existing City production wells persists years to decades after cessation of pumping. Therefore, the cumulative impact of historic and proposed City pumping on the SVRP Aquifer water budget could exceed the City's water right allocation if this is not accounted for in the City's operational plans. Using a simplified methodology based on historic groundwater usage and groundwater travel times, an adjusted Qa is proposed that incrementally increases maximum annual pumping volume from 1,205.4 acre-feet in 2021 to 2,328 acre-feet in 2029. Use of a travel-time-based methodology is more conservative (generally results in a longer period of residual impact) than analytical or numerical methodologies that are based on recovery of a groundwater flow field following cessation of well pumping.

# **14.0 LIMITATIONS**

We prepared this report for use by Century West Engineering Corporation to assist in the assessment of an alternative groundwater supply for the City of Airway Heights, Washington.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted practices in the field of hydrogeology in this area at the time this report was prepared. No warranty or other conditions, expressed or implied, should be understood.

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

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#### Legend

- O City of Airway Heights Production Well Locations
  - City of Airway Heights
  - Approximate Airway Heights Paleochannel Boundary
- Spokane Valley/Rathdrum Prairie Aquifer  $\Box$

#### Notes:

 The locations of all features shown are approximate.
 This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication. 3. Paleochannel locations were adapted from Pritchard et. al. (2020).

- 4. Spokane Valley Rathdrum Prairie Aquifer from Spokane County GIS.

Data Source: Data from Spokane County GIS. ESRI Street Map.















O City Production Wells Completed within the Airway Heights Paleochannel Aquifer

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- Approximate Path of Groundwater Originating at City Production Well Location
- Approximate Airway Heights Paleochannel Boundary
- Spokane Valley/Rathdrum Prairie Aquifer
  - City of Airway Heights

#### Notes:

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4. Spokane Valley Rathdrum Prairie Aquifer from Spokane County GIS.

Data Source: Data from Spokane County GIS. ESRI Street Map.







### Legend

- City Production Wells Open to the Wanapum Unit
  - Approximate Path of Groundwater Originating at City Production Well Location
- Wanapum Unit Groundwater Elevation Contours (October 2011)<sup>4</sup>
- Spokane Valley/Rathdrum Prairie Aquifer
  - City of Airway Heights

#### Notes:

- The locations of all features shown are approximate.
   This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication. 3. Spokane Valley Rathdrum Prairie Aquifer from Spokane County GIS.
- 4. Wanapum Unit Groundwater Elevation Contours were obtained from Spokane County (2013b)
- Data Source: Data from Spokane County GIS. ESRI Street Map.







#### Legend

- O City Production Wells Open to the Grande Ronde Unit
  - Approximate Path of Groundwater Originating at City Production Well Location
- Grande Ronde Unit Groundwater Elevation Contours (October 2011)<sup>4</sup>
- ٦ Spokane Valley/Rathdrum Prairie Aquifer
  - City of Airway Heights

#### Notes:

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- 4. Wanapum Unit Groundwater Elevation Contours were obtained from Spokane County (2013b)
- Data Source: Data from Spokane County GIS. ESRI Street Map.





## Legend

Approximate Path of Groundwater Originating at City Production Well Location

Grande Ronde Unit Wells Paleochannel Wells Wanapum Unit Wells



Alternative Groundwater Supply Study Area

Spokane Valley/Rathdrum Prairie Aquifer

City of Airway Heights



#### Notes:

The locations of all features shown are approximate.
 This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file

is stored by GeoEngineers, Inc. and will serve as the official record of this communication. 3. Spokane Valley Rathdrum Prairie Aquifer from Spokane County GIS.

- 4. Wanapum Unit Groundwater Elevation Contours were obtained from Spokane County (2013b)

Data Source: Data from Spokane County GIS. ESRI World Imagery, USA Topo Map.







- Existing Well Designation and Approximate Location<sup>4</sup>
  - Potential Groundwater Sampling Location
- 17. Alternative Groundwater Supply Study Area
- $\Box$ Spokane Valley/Rathdrum Prairie Aquifer

## Notes:

1. The locations of all features shown are approximate.

- 2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
- Spokane Valley Rathdrum Prairie Aquifer from Spokane County GIS.
   Existing wells were identified using Water Well Reports on file with Ecology's Well Report Viewer database. Water Well Reports for existing wells are provided in Appendix B.
- Data Source: Data from Spokane County GIS. ESRI World Imagery, USA Topo Map.





# APPENDIX A Water Well Reports, City Production Wells

Application No. 63-2665; File Original and First Copy with Department of Ecology Second Copy — Owner's Copy Third Copy — Driller's Copy WATER WELL REPORT Permit No 63-266571 STATE OF WASHINGTON (1) OWNER: Name City of Kint WA99001 arner Height Bop A, arwar Address Spokane. ?) LOCATION OF WELL' County 15 14 SET 14 Sec 26 T25 N B4/ WM wing and distance from section or subdivision corner 1950 ft South & 685 ft West from E & Corner (10) WELL LOG: -(3) PROPOSED USE: Domestic 🗆 Industrial 🗋 Municipal 🖌 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 penctrated, with at least one entry for each change of formation irrigation 🗌 Test Well 📄 Other (4) TYPE OF WORK: Owner's number of well (if more than one)..... MATERIAL FROM TO New well Method: Dug Bored Driven Ω There is no Deepened Cable Asilled well Reconditioned Rotary 🗌 Jetted an whom oridisally - info avail al (5) **DIMENSIONS**: Diameter of well 10 inches. whi were obtained le replacing Drilled ft. Depth of completed well 1.92 ft. May B the Pumps in (6) CONSTRUCTION DETAILS: bleve been told tood well Casing installed: 10 " Diam. from 0 ft. to 1 75 ft. seales was alleged "Diam. from ..... ft. to ..... ft. Threaded 🗅 consite artur 72 Welded P douni aring Perforations: Yes D No B mark substantiate Type of perforator used..... This. SIZE of perforations ..... in. by . .... in. records search des eneral Cione ni ad Screens: Yes & No ( 30' Stamber Steel Sorum ) this well formation Manufacturer's Name ...... Type Use Model No... Dlam. .... Slot size .. ...... from ...... ft. to ...... ft. MILL Gravel packed: Yes [] No [] Size of gravel. Gravel placed from ...... ft. to ....... ft. istribution Mar Surface scal: Yes No D To what depth? Unke ft. Material used in seal unknown 2.5 • **D** Did any strata contain unusable water? No 🗋 Yes 🗍 -li Tati Ja-Type of water? ...... Depth of strata Method of sealing strata off . 771231 (7) PUMP: Manufacturer's Name Type: Submersible нр 20 (8) WATER LEVELS; Land-surface elevation 2300 1 above mean sea level.... Static level 11.9 ...... ft. below top of well Date 1.2. May 82-Artesian pressure lbs. per square inch Date Artesian water is controlled by. (Cap, valve, etc.) Drawdown is amount water level is lowered below static level (9) WELL TESTS: Work started.. Completed. . 19 Was a pump test made? Yes 📑 No 🔲 If yes, by whom? .... WELL DRILLER'S STATEMENT: Yield: gal/min. with ft. drawdown after hrs. ... ., ... 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 (Person, firm, or corporation) Water Lovel | Time | Water Lovel | Time Time Water Level (Type or print) ...... Address..... [Signed].....(Well Driller) Date of test Artesian flow License No...... 19. Temperature of water... 📖 Was a chemical analysis made? Yes 🔲 No 🗍 1/83 (USE ADDITIONAL SHEETS IF NECESSARY)

Well Tag	ging Form
ASHINGTON STATE EPARTMENT OF COLOGY Unique Well Tag No:	AGG 477
<b>RECORD VERIFICATION (</b>	check 🗸 one)
Well Report available (please attach this form to the well report a	nd submit it to the Ecology Regional Office near
Verification inconclusive       Well Report not available	
WELL OWNERSHIP, IF DIFFERENT	FROM WELL REPORT
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eet Address:	· · ·
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LOCATION OF WELL, IF DIFFERENT	FROM WELL REPORT
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Il Address:   N. R.   W.M. Sec.   FOR AGENCY USE itude 48.481 o 6.650 evation at land surface feet/meters (circle one) dditional information, if available: Location marked on topographic map (please attach)	Spikane 
ell Address:   ty:   N. R   W.M. Sec.   FOR AGENCY USE For AGENCY USE Ititude 48.481	Spikane 

WELL CHARACTERISTICS         Physical Description of well (size of casing, type of well, housing, etc.)         IZ       54wl         Location of Well identification Tag:	POR AGENCY USE ONLY         WELL CHARACTERISTICS         "hysical Description of well (size of casing, type of well, housing, etc.)         IZ* 544         peation of Well identification Tag:         gestion of Well identification Tag:         CMMY         Was supplemental tag needed for case of identifying well?         Yes, where was tag placed?         D       C         B       A         Scale 1:24,000 (1*=2,000)         Indicate the location of the well within the Section by drawing a dot at that point         SECTION         M       L         K       J         N       P         Q       R         OMMENTS:       FWS       0.0655         Source       D1         FOR ECOLOGY WATER RESOURCES PROGRAM ONLY         ater Right #       Date Issued         irde One       Application       Permit       Certificate       Claim       Exempt						and the second secon
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ecation of Well identification Tag:         CARMY_Empleimential tag needed for ease of identifying well?         Yes         No         yes, where was tag placed?         D       C         B       A         E       F         G       H         M       L         K       J         N       P         Q       R         SECTION         Det lasued         SECTION	coation of Well identification Tag:         CASMY_Emplane         Vas supplemential tag needed for ease of identifying well?       Yes         No         yes, where was tag placed?         D       C         B       A         E       F         M       L         K       J         M       L         K       J         N       P         Q       R         OMMENTS:       FWS         DOGESD       Source         DOMMENTS:       FWS         DOGESD       Source         Dote tasued         Indicate on the value of the section by drawing a dot at that point the section by drawing a dot	Physical Description of	well (size of cas	sing, type of well, t	nousing, etc.)	· .	······
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<ul> <li>(1) OWNER: Name C-TY CF Alternary Work Management of Alternary Wo</li></ul>	Department of Ecology Second Copy — Owner's Copy Third Copy — Driller's Copy	WATER WE State of V	ELL REPORT WASHINGTON	Application Notr 3-26657
*) LOCATION OF WELL: curry provement of the set of t	(1) OWNER: Name STTY OF	HIRWAY HER	HRAddress a Bot A. Arcunt H	FIGHTS WA DECOL
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Serveras: Yes II No II       Manufacturer's Name         Dum       Slot size       from       ft to       ft         Dim       Slot size       from       ft to       ft         Dim       Slot size       from       ft to       ft         Cravel packed: Yes II       No II       Size of gravel.       ft         Gravel packed: Yes II       No II       Size of gravel.       ft         Gravel packed: Yes II       No II       To what depth?       ft         Surface seal: Yes III       No III       To what depth?       ft         Type:       To what depth?       ft       ft         Matend to esting stata contant unusuble water?       Yes II       ft       ft         Method of esting stata contant unusuble water?       Yes III       ft       ft         Type:       Tradewater is controlled by       ft       ft       ft         State level       Attestate water is controlled by       ft       ft       ft       ft         (9) WELL TESTS:       Derived water in the of the ft       ft       ft       ft       ft       ft         Ted       data water is controlled by       ft       ft       ft       ft       ft       ft       ft	Perforations: Yes No P Type of perforator used SIZE of perforations from perforations from perforations from	in. by in. 	filed skeen do.	
Gravel packed: ves	Screens: Yes B No D Manufacturer's Name UNKNO Type Diam	ວພໍA Model No n /i to	(deces / li inite) / to	EIVED
Surface seal: yes go No D To what depth?       Control of the seal of the seal of the seal of the sealing strutus contain unusable water?       Yes D No D To what depth?       No D Strutu Control of Strutus Control of Str	Gravel packed: Yes D No [] So. Gravel placed from	ze of gravel	AN	61984
(7) PUMP: Manufacturer's Name (Ualt's yearbox) Type: 747454 //	Surface seal: Yes ビーNo ロー To W Material used in seal しんしん Did only strata contain unusable w Type of water? . Dep Method of sealing strata off	hat depth? UNK ft. /ater? Yes [] No [] oth of strata	SPRKANE R	CHARL-OFFICE
(8) WATER LEVELS:       Land-suifage elevation       23200, ft.         State level       .ft. below top of well Date         Artesian prisoure       .bs per square meb Date         Artesian water is controlled by       (Cap, valve, etc.)         (9) WELL TESTS:       Drawdown is anount water level is lowered below state level         Was a pump test made? Yes []       Ba []         Was a pump test made? Yes []       Ba []         Was a pump test made? Yes []       Ba []         Was a pump test made? Yes []       Ba []         Ba []       Ba (/m, with if drawdown after invest of)         Weth DRILLER'S STATEMENT:       This well was dralled under my jurisdiction and this reporting to the best of my knowledge and behet.         Recovery data time taken as zero when pump turned of) (water level measure from well top to water level)       Time Water Level []         Time       Water Level []       Time         Address       []       Address         ate of test       gal/min with ft. drawdown after hrs.       []         Ebmer tet gal/min with ft. drawdown after hrs.       []       []         Address       []       []       []         It eof test       []       []       []         Boll       []       []       []       []         <	(7) PUMP: Manufacturer's Name Walk by Type: TURBAN	HP 7.5	······································	
(9) WELL TESTS:       Drawdown is amount water level is lowered below state level         Was a pump ted made? Yes []       No [] If yes, hy whan?         Yield       (a) /min_with       (f) drawdown after       hrs.         Well DRILLER'S STATEMENT:	(8) WATER LEVELS: Land-surface above mean so Static level	elevation 2370 ft. ea level 2370 ft. twell Date inch Date	· · · · · · · · · · · · · · · · · · ·	- · · · · · · · · · · · · · · · · · · ·
Was a pump test made? Yes [] So [] If yes, by whom?       Work starten       19 Completed       19         Was a pump test made? Yes [] So [] If yes, by whom?       Well drawdown after       hrs.       Well DRILLER'S STATEMENT:       19         Well drawdown after       hrs.       """"""""""""""""""""""""""""""""""""	(9) WELL TESTS. Drawdown is an	nount water level is		· · · ·
Itecovery data (time taken as zero when pump turbed off) (water level       This well was draffed under my jurisdiction and this report true to the best of my knowledge and behet.         Itecovery data (time taken as zero when pump turbed off) (water level       NAME         Time       Water Level       Time         Water Level       Time       Water Level         Time       Water Level       Time         At exits       Time       Water Level         Siller text       g.p.m. Date       (Well Driller)         Temperature of water       Was a chemical analysis made? Yes D No Date       Date       19	Was a pump test made? Yes []     No []     If yes, t       Yield     gal/min_with     it draw	static level by whome wdown alter hrs.	Work starten . 19 WELL DRILLER'S STAT	Completed 19
measured from well top to water level)       Time       Water Level       Time       Water Level       NAME       (Person. firm, or corporation)       (Type or print)         ate of test	Recovery data (time taken as zero when our)	turbed off (water level	This well was drilled under true to the best of my know	er my jurisdiction and this report ledge and behet.
ate of test     Address       Siller test     g.p.m. Date       Sartesian flow     g.p.m. Date       Temperature of water     Was a chemical analysis mane? Yes I No I       License No.     Date       19	measured from well top to water levely Time Water Level   Time Water Level	Time Water Level	NAME (Person firm, or	r corporation) (Type or print)
Artesian flow	ate of test		Address	
	Artesian flow	e	License No.	(well Driller) Date

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WELL LOC	04/0 1	-	
Record by	Driller	!	
<u>Source</u>	priller's Record		
ocation: Si	ate of WASHINGTON	_	
County.	Spokane		e
Area			ł
Map			0
SE¼ S	E 4 sec. 26 T. 25 N. R 41 E		
rilling Co	Holman Drilling Corp	istagram d	- Section
Address	E. 3410 - 9th, Spokane, War	sh.	
Method	of Drilling Cable Date Oct	tober 6	19 6
wnerT	own of Airway Heights		
Address.	Airway Heights, Wash.		•••••
	datum A abuve		
and surface			
WL: 43	7. Date Oct. 6 1967		2"~200
WL: 43.	7'	Dims.:1	2''x200
WL: 43.	Nate Oct, 6	Dim <u>s.:1</u>  From	2''x200
WL: 43.	MATERIAL	Dims.: 1	2''x200
CORRE- (Transcribe material wate	driller's terminology interaity but a suppringents in the	Dims.:1 From (feet)	2 <sup>11</sup> x200
(Transcribe mak-rial wate (Transcribe mak-rial wate vensible, Follo	driller's terminology hieraity but a traphrase as a state and record state level of report education unless otherwise indicated. Correlate wing log of materials, is a state casing, so state state state level of report state level of report states and record state level of report states and record states level of reports and states level of reports and states and records at the states and records at the states are states at the state	From (feet)	2"x200 To (feet)
ORRE- (Transcribe material wate ow land-surfu (ensible, Follo	driller's terminology literaity but a traphraise as a bearing, so state and record state level of report e datum unless otherwise indicated. Correlate wi wing log of materials, is tall casures, corforations, inficipal	From (feet)	2"x200 To (feet) Parentheses epithes in (co table column
ORRE- (Transcribe mat-rial watto (Transcribe mat-rial watto (ensible, Follo Mu	driller's terminology hieraily but a traphrase as a recent state and record state level of report reduction unless otherwise indicated. Correlate wi wing log of materials, it all casings, perforations, inicipal avel & boulders	From (feet)	2"x200 (feet) parenth see pha in fee pha column
(Transcribe material wate ow land-surfa feasible, Follo Gr	Material     It below       Material     It below       driller's terminology interaity but a traphrase as a record state level of report redation unless otherwise indicated level of report wing log of materials, is tall casings, perforations, inicipal       take boulders       avel & boulders       avel & sand	From (feet) (feet) (feet) (for the strategy (for the strategy) (for th	2."x200 (feet) parenth se opths in (ec phic column ) 31
(Transcribe material water (Transcribe material water (ensible, Follo Gr Gr	MATERIAL MATERIAL driller's terminology interaity but a maphrise as a r-bearing, so state and record state level if report reduction unless otherwise indicated. Correlate we wing log of materials, is talk casings, perforations, inicipal ravel & boulders ravel & sand avel & sand avel & sand (water bearing)	From (feet) (feet) (feet) (five d (five d (five d (five d (five d (five d)) (five d)) (five d) (five d	2"x200 (feet) parenth-sec pare
(Transcribe material water own indesurial estimates for the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of the formation of t	Material         driller's terminology hieraily but, unphrase as mechaning, an state and record state level of report state level of report state level of reports         inicipal         avel & boulders         avel & sand	Dims.:1 From (feet) Unit. Give d th strature 0 31 136 160	2."x200 (feet) parenth-se: counts in (ex- counts in (ex- counts) 31 136 160
(Transcribe material wate own land-surfu feasible, Follo Gr Gr Gr Gr Ha	MATERIAL       driller's terminology interaits but a traphrase as a state and record state level if reported st	Dims.:1 From (feet) tot. five d th stratign 5 forths, etc 0 0 0 136 160 175	2"x200 (feet) Parenth-se opths in (ec opths in (ec)opths in (ec opths in (ec)opths
Ind surface WL: 43. ORRE- (Transcribe matorial wate with and surface Mu Gr Gr Gr Sa Ha Sa	MATERIAL         driller's terminology interaity but a traphrase as a rebearing, so state and record state level of reported state level of r	Dims.:1 From (feet) including for a start of the stratum of the	2"x200 (feet) parenth-sec cobhs in fee the column 31 136 160 175 180 200
Ind surface WL: 43. (Transcribe material wate ow land-surfa feasible, Fully Gr Gr Gr Gr Sa Ha Sa Ca	Attentation       Attentation	Dims.:1 From (feet) Ottalsarv, in that, trive d th straturn o, recharger 0 31 136 160 175 180	2"x200 (feet) parenth-ser exths in (e- the column ) 31 136 160 175 180 200
(Transcribe WL: 43. (Transcribe material wate ow land-surfu easible, Follo Gr Gr Gr Gr Sa Ha Sa Ca Sc	Antenna il bolow 7' Date Oct, 6 MATERIAL driller's terminology literally but a traphrase as a r-bearing, so state and record state level if report e datum unless otherwise indicated. Correlate wi wing log of materials, it tall carones performances inicipal avel & boulders ayel & sand avel & sand (water bearing) nd w/clay layers rdpan nd (coarse)(water bearing) sing: 12" from +1' to 181' reens: from 180' to 200'	Dims.:1 From (feet) interations interation	2"x200 (feet) Parenth-sec opths in fee opths
Ind surface WL: 43. ORRE- (Transcribe material surfa- reasible. Follow Gr Gr Gr Gr Sa Ha Sa Ca Sc Se	Artental MATENTAL driller's terminology interaity but a traphrase as a r-bearing, we state and record state level of report re datum unless otherwise indicated. Correlate withing log of materials, it all casings, perforations, inficipal avel & boulders avel & sand avel & sand avel & sand (water bearing) ad w/clay layers rdpan nd (coarse) (water bearing) sing: 12" from +1' to 181' reens: from 180' to 200' aled with Bentonite	Dims.:1 From (feet) total. five d th strature 0 31 136 160 175 180	2"x200 (feet) parenth-sec obtain fee the column 31 136 160 175 180 200
Ind surface WL: 43. (Transcribe material wate ow land-surfa feasible, Fully Gr Gr Gr Gr Sa Ha Sa Ca Sc Se Y11	Artenal         Artenal         driller's terminology hieraits but a traphrase as a state and record state level of report edation unless otherwise indicated. Correlate witing to of materials, is tall casings, perforations, inficipal         avel & boulders         avel & sand         avel & sand         avel & sand         ind (coarse) (water bearing)         sing: 12" from +1' to 181'         reens: from 180' to 200'         aled with Bentonite	Dims.:1 From (feet) Otodisary, in the strature 0 31 136 160 175 180	2 "x200 (feet) parenth-ser exths in (e- the column ) 31 136 160 175 180 200
(Transcribe WL: 43. (Transcribe material wate ow land-surfu easible, Follo Gr Gr Gr Gr Sa Ha Sa Ca Sc Se Y 10	Antenna in the low         7'       Date QCt, 6         MATERIAL         driller's terminology interaits but a traphrase as a state and record state level of reported state level of reported state level of metering, so state and record state level of reported state level of metering, so state and record state level of reported state level of metering, so state and record state level of reported state level of metering in the state level of reported state level of metering in the state state and record state level of reported state level of metering in the state state state indicated of the state state state state indicated state level of reported state level of metering indicated by the state st	Dims.:1 From (feet) tot. five d th strature 0 31 136 160 175 180 hrs.	2"x200 (feet) Parenth-sec opths in fee opths
Ind surface WL: 43. (Transcribe material warfa- easible, Follow Gr Gr Gr Gr Sa Ha Sa Ca Sc Se Yin 300	MATERIAL         driller's terminology interaits but a traphrase as a rebearing, so state and record state level of reported state level of r	Dims.:1 From (feet) Covessory, in total, freed th strature 0 31 136 160 175 180 hrs. hrs.	2"x200 (feet) parenth-sec coths in (co the column 31 136 160 175 180 200

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	MATERIAL	· · · · · · · · · · · · · · · · · · ·	From (feet)	To (fest)	
_		Depth forward	03.5'		
120	<u>sec 93.3'</u>	<u>150 sec</u>	95.5	<u>                                      </u>	
180	<u>sec 93.5</u>	1 1 5 196	<u>↓</u>	<u> </u>	<u>A-</u>
Date	<u>of Test: O</u>	<u>ctoper 5, 190</u>	<u></u>		10
Temp	<u>, ; 50°</u>	corless V.H.	<u>s.</u>		
Pump	<u>5: 30 H.P., F</u>	eer resay			
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					_ <b>1</b> %
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#### WATER WELL ידפחפפ

\* corrected copy W047033 Card No. Ctaxt

3612 WATER WEL	L REPORT Start Card No. <b>W047033</b> Unique Well I.D. <b># ABJ619</b> ASHINGTON Water Right Permit No.
(1) OWNER: Name CUTY OF AIRWAY HEIGHTS Address PO BO	x 969 AIRWAY HBIGHTS, WA 99001-
<ul> <li>(2a) STREET ADDRESS OF WELL (or nearest address) ,</li> </ul>	- NW 1/4 NW 1/4 Sec 36 T 25 N., R 41E WM
(3) PROPOSED USE: MUNICIPAL	(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 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.
(5) DIMENSIONS: Diameter of well 12 inches Drilled 440 ft. Depth of completed well 440 ft.	MATERIAL   FROM   TO
<pre>(6) CONSTRUCTION DETAILS: Casing installed: 12 " Dia. from +2 ft. to 140 ft. WELDED 10 " Dia. from 120 ft. to 440 ft. " Dia. from ft. to ft.</pre>	I TOPSOIL03GRAVEL COBBLES320LARGE BOULDERS COBBLES20130BASALT BLACK HARD130143BASALT BROKEN143160BASALT BLACK HARD143
Perforations: YES Type of perforator used TORCH SIZE of perforations 3/8 in. by 12 in. perforations from 380 ft. to 440 ft. perforations from ft. to ft. perforations from ft. to ft. Screens: NO	BASALT BLACK HARD         160         210           BASALT BROKEN BROWN         210         220           SHALE CLAY BROWN         220         240           BASALT BLACK HARD         240         290           VOID         290         295           BASALT BLACK HARD         295         410           BROKEN BASALT W/WATER         410         435           CLAY GREEN         440         440
Manufacturer's NameTypeModel No.Diam.slot sizefromDiam.slot sizefromGravel packed:NOSize of gravelGravel placed fromft. toft.	
Surface seal: 255 To what depth? 140 ft. Material used in seal BENTONITE Did any strata contain unusable water? YES Type of water? CASCADING Depth of strata 145 ft. Method of sealing strata off PACKER (7) PUMP: Manufacturer's Name	
<pre>(8) WATER LEVELS: Land-surface elevation</pre>	
Artesian water controlled by CAP	
<pre>(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. Becovery data</pre>	WELL CONSTRUCTOR 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 knowledge and belief.
Time Water Level Time Water Level Time Water Level	NAME FOGLE FUMP & SUPPLY, INC. (Person, firm, or corporation) (Type or print)
Date of test / / Bailer test gal/min. ft. drawdown after hrs. Air test 100+ gal/min. w/ stem set at 360 ft. for 4 hrs. Artesian flow g.p.m. Date Temperature of water Was a chemical analysis made? NO	ADDRESS 316 W STH [SIGNED] Batt Moor Model (Ambicense No. 2169 Contractor's Registration No. POGLEPS09514 Date 01/27/97
**********	DEPARTMENT OF ECOLOGY

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S. Ash Street

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WASHINGTON STATE 341233		aging Form	<b>۲</b>
		heck√one)	
	attach this form to the well report and	submit it to the Ecology Regional Office near	]
you)			
Well Report not available			
WELL OWNERSHIP	, IF DIFFERENT F	ROM WELL REPORT	
rst Name: Air way Heights,	City of Last Name:	· · · · · · · · · · · · · · · · · · ·	<u> </u>
treet Address:	(		<del></del>
		· · · · · · · · · · · · · · · ·	
		FROM WELL REPORT	
IOCATION OF WEL	State: L, IF DIFFERENT County:	FROM WELL REPORT Spokene	
IN R	State: L, IF DIFFERENT County:	FROM WELL REPORT	
Ity:N_R MN_R	State: L, IF DIFFERENT County: W.M. Sec. RAGENCY USE	FROM WELL REPORT	
IDCATION OF WEL	County:	FROM WELL REPORT	
ity:N_R Ity:N_R atitude7°37 / / 7°7 U	State: L, IF DIFFERENT County: W.M. Sec RAGENCY USE 40.246 54 877	FROM WELL REPORT	
ity:N_R Jell Address:N_R ity:N_R FO atitude7^*37_ ongitude7^M34_	State:	FROM WELL REPORT	
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ity:N_R Jell Address:N_R ity:N_R N_R FO atitude47°37_ ongitude7 Elevation at land surface Additional information, if available:	State: L, IF DIFFERENT County: W.M. Sec. RAGENCY USE 40.246 54.877 feet/meters (circle one)	FROM WELL REPORT	
ity:N_R Vell Address:N_R ity:N_R RN_R for atitudeA7°A7_ ongitudeA7°A7_ ongitudeA7°A7_ Elevation at land surface Additional information, if available:	State: L, IF DIFFERENT County: W.M. Sec. RAGENCY USE 40.246 54.877 feet/meters (circle one)	FROM WELL REPORT	
ity:N_R Additional information, if available: Location marked on topographic	State: L, IF DIFFERENT County: W.M. Sec RAGENCY USE 40.246 54.877 feet/meters (circle one) c map (please attach)	FROM WELL REPORT	

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	WELL CHARACTERIST	ICS	
Physical Description of well (size of c	asing, type of well, housing, etc.)		
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Location of Well identification Tag:	y Slange		
Was supplemental tag needed f	or ease of identifying well? Yes		] No
f yes, where was tag placed?	· · · · · · · · · · · · · · · · · · ·		<u>.</u>
D C B A	Scale 1:24,000 (1"=2,000')	,	· · ·
E F G H	Indicate the location of the well within th	e Section by dra	wing a dot at that point.
MLKJ			
N P Q R		1	
COMMENTS: PWS O	0650 Source 07		
			· · · · · · · · · · · · · · · · · · ·
FOR ECOLOG	Y WATER RESOURCES	PROGR	AM ONLY
Vater Right #	Date Issued		
Circle One Application	Permit Certificate	Claim	Exempt
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State of Washington Date Printed: 03-Oct-2005 Log No.	Notice of Intent No.: W181172 Unique Ecology Well I.D. No AKA185
Construction / Decommission: Original 45505	Water Right Permit Number: G329249P
Construction Construction Notice	
YPE OF WORK: Owners's Well Number: (If more than one well) 1PG1 #7	ARMAI REIGHTS, WA 55001
NEW WELL Method: ROTARY	City: Ainvey Heights WA 99901
DIMENSIONS Diameter of well: 12 inches	Location: SE 1/4 NW 1/4 Soc 25 T 25 D 44 EW
Drilled 438 ft. Depth of completed well 438 ft.	
	(s, t, r still
42 " Dia from ±2 ft to 192 7	REQUIRED) Long Deg Long Min/Se
Liner installed: "Dia from fL to	
" Dia from ft. to ft. " Dia from ft. to	CONSTRUCTION OR DECOMMISSION PROCEDURE
Perforations: No Used In:	thickness of aquifiers and the kind and nature of the material in each stratum
Type of perforator used	penetrated. Show at least one entry for each change in formation.
SIZE of perforations in. b in.	Material From To
Perforation from ft. to ft.	BASALT BLACK MED 20 25
Perforation from ft. to ft.	BASALT GRAY HARD 25 54
	BASALT BLACK BROWN SOFT W/WATER 54 67
Screens: No K-Pac Location	BASALT BROKEN BROWN BLACK 72 80
Manufacture's Name	BASALT BLACK MED 80 83
Type: Model No	BASALT BROKEN BLACK 83 87
Diam. Sid size from it, to it.	BASALT BLACK MED FRACTURED 91 94
	BASALT BLACK MED W/FRAC. 94 11
Gravel/Filter packed: No Size of Gravel	BASALT BLACK MED 116 13
Nateriar placed into It. 10 It.	CONTINUED D.C. P.C. P.C. 147 14
Seal method: Material used in seal CEMENT	DECEVEN.
Did any strata contain unusable water Yes	Notes:
Type of water SURFACE WATER Depth of strata 7	ID OCT 2 6 2005
Method of sealing strata off CASE/CEMT/OVB Overbore	
PUMP: Manufacture's name	
Type: H.P. 0	Work starte 06/20/2005 Complete 08/11/2005
WATER LEVELS Land-surface elevation above mean sea level: 0 ft.	WELL CONSTRUCTION CERTIFICATION:
Static level 300ft.below top of wellDate08/11/2005Artesian PressureIbs per square inchDate	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 are true to my best knowledge and belief.
Artesian water controlled by	🖌 Driller 📋 Engineer 🔲 Trainee
WELL TESTS: Drawdown is amount water level is lowered below static level	Name: TODD LIVERY
Was a pump test made No If ves. by whom	Signature:
Yield gal/min with ft drawdown after	
Yield gal/min with ft drawdown after	
Yield gal/min with ft drawdown after	Licensed Driller Signature
Recovery data (time taken as zero when pump turned off)(water level measured from wel top to water level	Drilling Company:
Time: Water Level Time: Water Level Time: Water Level	NAME: FOGLE PUMP & SUPPLY, INC. Shop: AIRWAY HEI
	ADDRESS: PO BOX 1450
	Airway Heights, WA 99001
	Phone: (509) 244-0846 Toll Free: (888) 343-9355
Jale of test:	E-Mail: akk@foglepump.com
Darences yarmin it urawdown after firs. Air test 100 gal/min w/ stem set at 480 ff for 4 houre	FAX: (509) 244-2875 WEB Site: WWW.FOGLEPUMP.COM
Artesian flow gpm Date	Contractorio
<b>*</b> • <b>•</b> • • • • • • • • • • • • • • • • •	

State of Washington       Date Printed: 03-Oct-2005       Log No.         Construction / Decommission:       Original       45505         Construction       Construction Notice       45505	Unique Ecology Well I.D. No AKA185 Water Right Permit Number: OWNER: CITY OF AIRWAY HEIGHTS,
PROPOSED USE: OTHER USE	OWNER ADD PO BOX 969
TYPE OF WORK:         Owners's Well Number: (If more than one well)         1PG2           NEW WELL         Method:         ROTARY	AIRWAY HEIGHTS, WA 99001 Well Add GARFIELD/ LYONS City: Airway Heights, WA 99001 County: Spokane
DIMENSIONS Diameter of well: 12 inches Drilled 483 ft. Depth of completed well 483 ft.	Location: SE 1/4 NW 1/4 Sec 25 T 25 R 41 EW
CONSTRUCTION DETAILS:       Casing installed       WELDED         Liner installed:       12 " Dia from       +2 ft. to 122         " Dia from       ft. to	(s, t, r still REQUIRED) Long Deg Long Min/Se 17 ft. Tax Parcel No.:
" Dia from     ft. to     ft.     " Dia from     ft. to       Perforations:     No     Used In:       Type of perforator used	ft. CONSTRUCTION OR DECOMMISSION PROCEDURE Formation: Describe by color, character, size of material and structure. Show thickness of aquifiers and the kind and nature of the material in each stratum penetrated. Show at least one entry for each change in formation.
SIZE of perforations in. b in. Perforation from ft. to ft.	Material From To
Perforation from ft. to ft.	BASALT BLACK SOFT FRAC 147 178
Perforation from ft. to ft.	BASALT BLACK MED 178 195
Screens: No K-Pac Location	BASALT BLACK SOFT FRAC 195 210
Manufacture's Name	BASALT BLACK MED W/ FRAC 210 227
Type: Model No	BASALT BLACK SOFT FRAC 227 244 BASALT BLACK MED W/ FRAC 248 286
Diam slot size from ft to ft	BASALT GRAY HARD 286 346
Diam slot size from ft to ft	BASALT BLACK/BROWN VERY FRACTURED 346 409
	W/GREEN SHALE W/WATER.SAND 409 409
Gravel/Filter packed: No Size of Gravel	SANDSTONE FRACTURED.TAN W/SOME CLAY 419 426
material placed fro tt. to tt.	BASALT HARD BLACK W/FRACTURES 426 480
Surface seal:         Yes         To what depth         1422.         tt.           Seal method:         Material used in seal CEMENT         Did any strata contain unusable water         Yes	
Type of water SURFACE WATER Depth of strata 7 Method of sealing strata off CASE/CEMT/OVB Overbore	
PUMP: Manufacture's name	DEPARTMENT OF ECOLOGY
Type: H.P. 0	Work starte
WATER LEVELS Land-surface elevation above mean sea level: 0	ft. WELL CONSTRUCTION CERTIFICATION:
Static level 300ft.below top of well Date08/11/2005Artesian PressureIbs per square inch Date	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 are true to my best knowledge and belief.
Artesian water controlled by	✓ Driller 🗌 Engineer 🗌 Trainee
WELL TESTS: Drawdown is amount water level is lowered below static level.	Name: TODD LIVELY License No.: 2321
Was a pump test made No If yes, by whom	Signature:
Yield gal/min with ft drawdown after	If trainee, Licensed driller is: License No.:
Tielo gai/min with It drawdown after	Liconsed Oriller Signature
recovery data (lime taken as zero when pump turned off)(water level measured from top to water level	Drilling Company:
Time: Water Level Time: Water Level Time: Water Level	NAME: FOGLE PUMP & SUPPLY, INC. Shop: AIRWAY HEI
	ADDRESS: PO BOX 1450
	Airway Heights, WA 99001
	Phone: (509) 244-0846 Toll Free: (888) 343-9355
Date of test:	E-Mail: akk@foglenump.com
Bailer test gal/min ft drawdown after hrs.	
Air test 100 gal/min w/ stem set at 480 ft. for 4 hours	PAA: (509) 244-2875 WEB SIIE: WWW.FOGLEPUMP.COM
Arresian flow gpm Date	Contractor's
Temperature of water Was a chemical analysis made No	Registration No.: FOGLEPS095L4 Date Log Created: 09/30/200

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# Silver Well Report

Contactor & hzoweshine Date:	Articast gamming
	Bailer Teet of normal readown office
CSPL License No: 1472	
Drilling Company:	level Time Level Time Level Time
	Recovery data (time taken as zero when pump tumed off) (water level measured from well top to water level)
Type or Print Name LOUIE HANNER License No: 1472	
Well Construction 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	(9) Well Tests Drawdown is amount water level is lowered below static Was a pump Test performed? □ Yield Drawdown Pumping Level Hours
	(a) water severs
	Blave FrateW (8)
0007 O IMM	Pump Type: H.P.
	(7) Pump Pump Manufacturer:
	Method of sealing strats off:
	Type of water: Depth of strata:
	Surface seal used 💌 To what depth: 480 ft
	Gravel/Filter packed Size of gravel/send.
810 830 Sand w/ Clay some water	
765 810 Clay Dark Brown	K-Pac Location:
691 765 Clay Ligwn wy wood med - Biue seems	Screen Type:
667 686 Clay Med Light Brown	Type of Perforator Used
545 667 Basalt Hard	
mdg +005 W Passat Son Fractured W/ 300+ gpm	
480 517 Basalt Black Med	METDED 10 +7 \$/8
435 480 Basalt Fractured Soft	Casing Installed Diameter From To
From To Remarks: Lithology, Water Quality, Temperature	elisted notioutianoO (8)
	Drilled: 350 feet Depth of completed well: 830
	(5) Dimensions Diameter of well: 12 inches
	Drilling Method: ROTARY more than one):
une king and nature of the material in each stratum penetrated, with at least one entry for each change of information. Indicate all water encountered.	
Formation: Describe by color, character, size of material and structure, and	
	(3) Proposed Use MUNICIPAL
	C.Y. :88910DA
I Report Unique Well ID: AKA 185	State of Washington Water Wel

Original & 1 <sup>st</sup> copy – Ecology, 2 <sup>nd</sup> copy – owner, 3 <sup>rd</sup> copy – driller	CURRENT		
Construction/Decommission ("r" in circle)	Notice of Intent No. <u>WE11947</u>		
$\propto$ Construction $10.000$	Unique Ecology Well ID Tag No. AKA-185 / BBH-491		
Decommission ORIGINAL INSTALLATION	Water Right Permit No		
Notice of Intent Number			
PROPOSED USE:  Domestic DeWater Irrigation Test Well Other	Property Owner Name <u>CITY OF AIRWAY HEIGHTS</u> Well Street Address Garfield (Lyons		
TYPE OF WORK: Owner's number of well (if more than one) 2	City Ainyou Heishta County Snekene		
□ New well	Location SE1/4-1/4 NW1/4 Sec 25 Twn 25 R 41	ewm 🛛	
DIMENSIONS: Diameter of well 8 inches, drilled	(s, t, r Still REQUIRED)	Or	
ft. Denth of completed well 613ft.		WWM 🗆	
CONSTRUCTION DETAILS	Lat/Long Lat Deg Lat Min/Sec		
Casing     X Welded     8" Diam. from <u>451</u> ft. to <u>613</u> ft.       Installed:     X Liner installed"     Diam. fromft. toft.       Threaded     " Diam. Fromft. toft.	Long Deg Long Min/Sec Tax Parcel No. (Required)		
Perforations: X Yes INO	CONSTRUCTION OR DECOMMISSION PROCED		
Type of perforator used Arc .	Formation: Describe by color, character, size of material and structure,	and the kind a	
SIZE of perfs 6in. by 1/2 in. and no. of perfs 80 from 573ft. to 613ft.	of information. (USE ADDITIONAL SHEETS IF NECESSARY.)	y for each chan	
Screens: Yes X No X K-Pac Location 451 & 483	MATERIAL	ROM   TO	
Manufacturer's Name	Backfilled with Pea Gravel 8	30 613	
Type Model No			
Diam. Slot size from f. to ft.			
Crovel/Ritter nacked: X Yes No Size of gravel/sand 3/8			
Materials placed from <u>613</u> ft. to <u>830</u> ft.			
Surface Seal: Yes X No To what deoth? ft.	·		
Material used in seal			
Did any strata contain unusable water?			
Type of water? Depth of strata			
Method of sealing strata off			
PUMP: Manufacturer's Name			
Туре: Н.Р			
WATER LEVELS: Land-surface elevation above mean sea levelft.			
Static level <u>412</u> ft. below top of well Date <u>9/3/2010</u>			
Artesian pressure lbs, per square inch Date			
Artesian water is controlled by (cap, valve, etc.)		<del>_</del>	
WELL TESTS: Drawdown is amount water level is lowered below static level			
Was a number test made? $\Box$ Yes $\boxtimes$ No If ves hy whom?			
Vield: gal/min with fl. drawdown after hrs			
Yield:gal./min. withft. drawdown afterhrs.			
Yield:gal./min, withft. drawdown afterhrs.		<u>ŀ</u>	
Recovery data (time taken as zero when pump turned off) (water level measured from well on to water level)		<u> </u>	
Fine Water Level Time Water Level Time Water Level	NUV 0 8 2010		
·······	DEPARTMENT OF ECOLOGY		
Tate of test	EASTERN HEGIONAL OFFICE		
Bailar test ral /min with A drawdown after here			
And the set of the set			
Alless and galling with stem set atht, forhts.			
	Start Date 0/2/10 Completed Date 0/2/	210	

WELL CONSTRUCTION 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.

Driller Engineer Trainee Name (Print ) Jim McLeslie	Drilling Company H2O WELL SERVICE INC	2
Driller/Engineer/Trainee Signature	Address 582 W. HAYDEN AVE.	
Driller or trainee License No. 2871 /	City State Zin HAYDEN	ID 83835
IF TRAINEE: Driller's License No:	Contractoria	, 10, 00000
Driller's Signature:	Registration No. <u>H2OWESI101DW</u>	Date

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

Report.	File Original and First Copy with Department of Ecology Second Copy — Owner's Copy Third Copy — Driller's Copy	<b>#</b> 3
œ		

## WATER WELL REPORT STATE OF WASHINGTON

,

Application No.

Permit No. ....

(1) OWNER: Name G and 1 Delegans	Addres 2912 Raymond Cr. Spokane Was	hingto	n. 002
LOCATION OF WELL: Country Spokane	_ SW 1/ SW 1/ Sec 2 T 2	4 N B	
Bearing and distance from section or subdivision corner		N., R	
			,
(3) PROPOSED USE: Domestic [] Industrial [] Municipal []			
irrigation in test went of Other	show thickness of aquifers and the kind and nature of states	the materi	cture, and al in eaci
(4) TYPE OF WORK: Owner's number of well (if more than one)	MATERIAL	FROM	то
New well 🛛 K Method: Dug 🗋 Bored 🗋	sand & clay	0	Δ
Deepened 🗋 Cable 🗌 Driven 🗋 Beconditioned 🗋 Rotary 🕅 Jetted 🗖	Bolders & gravel	4	19
	gravel and clay	19	· 26
(5) DIMENSIONS: Diameter of well	red_claydamp	26	42
Drined	<u>clay_basalt_gravel</u>	42	
(6) CONSTRUCTION DETAILS:	<u>broken basalt</u>	- 67	69
Casing installed: 16 Diam. from +1 ft. to 67.1. 2"ft.		69	120
Threaded Diam. from ft. to ft.	basalt with blue clay	120	139
Welded [] Diam. from ft. to ft.	broken basalt	139	147
Perforations: Yes 🗆 No KK	firm basalt porous water	147	161
Type of perforator used	<u>blue clay seams</u> water	161	170
SIZE of perforations in. by in. by in. ft. to	firm basalt	+170	175
perforations from ft. to ft.	broken basait	1/5	182
perforations from	hvokon	182	210
Screens: Yes 🗆 No 🗴	firm basalt	210	249
Manufacturer's Name		249	268
Type	porous_basaltwater	268	273
Diam	broken_basaltwater	273_	294
Grovel necked:	hard	294	- 301
Gravel placed from		<b></b>	
Surrace seal: Yes X No C To what depth?			
Did any strata contain unusable water? Yes 🗋 No 😰	JI all al		
Type of water? Depth of strata	A AN IC	······	 
Method of sealing strata on	DECEN	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
(7) PUMP: Manufacturer's Name	RECEN	┟╒╶┟	<b>}</b>
Туре:	MAY 2 4 19	79	
(8) WATER LEVELS: Land-surface elevation 2400 ft.			
Static level 50	DEPARIMENT OF	ECOLOGY	
Artesian pressure	SPUKANE REGIONA	<u>L. OFFICI</u>	<u> </u>
(Cap, valve, etc.)		┟━╍────┙┙	<u>.</u>
(9) WELL TESTS: Drawdown is amount water level is lowered below static level	Werk stands 4/5/ 1079 Completed 5	/4/	79
Was a pump test made? Yes 🗋 No 📋 If yes, by whom?	work started	<u></u>	193
Yield: gal./min. with ft. drawdown after hrs.	WELL DRILLER'S STATEMENT:		
· · · · · · · · · · · · · · · · · · ·	This well was drilled under my jurisdiction true to the best of my knowledge and belief.	and this	report
Recovery data (time taken as zero when pump turned off) (water level			
measured from well top to water level)	NAMEAmerican Drilling & Developme	nt Inc	
a most trater deven a time trater deven a time writer deven	(Person, firm, or corporation) (*	Type or p	rint)
	Address P.O. Box 14977 Spokane, Wa	<u>, 992</u>	14
	RING M	J .	
Date of test	[Signed] Otto S // Walt	L.	·
Artesian flow	(Wen Driffer)	J. –	
Temperature of water CO. d Was a chemical analysis made? Yes 🗆 No 🕅	License No. 0322 Date V 5/	22/	, 1 <u>979</u>
e , Br	· · ·		
5/24/19 (USE ADDITIONAL SH	EETS IF NECESSARY)		-
EGT 050-1-20 / / / //			
Well 11

WATER WELL REPORT	CURRENT Notice of Intent No. <u>WE</u> 157	159	
$\mathcal{E} \subset \mathcal{O} \sqcup \mathcal{O} \subset \mathcal{O}$	Unique Ecology Well ID Tag No	CF 554	
Construction	Water Right Permit No G-3-2924	9P(B)	
O Decommission ORIGINAL INSTALLATION Notice	Property Owner Name City of	Atomas 4	<u>ہ</u> ' م
of Intent Number	Wall Street Address / 4 A Stars	The we fit	-77
PROPOSED USE:  Domestic Industrial  Municipal	weil Street Address <u>warts how</u> , a	K	<u> </u>
DeWater IIrngation Test Well Other	City <u>Airwoy Heights</u> County <u>Jo</u>	onaue . 2	2
TYPE OF WORK: Owner's number of well (if more than one)	$- \operatorname{Location} = \frac{1}{4} - \frac{1}{4} \frac{1}{4} \frac{1}{4} \operatorname{Sec} = \frac{1}{4} \operatorname{Twn} \frac{3}{4}$		one
New well Careconditioned Method Dug Bored Dorven	Lat/Long (s.t.r Lat Deg La	at Min/Sec	•
DIMENSIONS: Diameter of well 1/inches_dolled 2555 ft			
Depth of completed wellft	Long Deg Lo	ong Min/Sec	
CONSTRUCTION DETAILS	Tax Parcel No. 15264003/		
Casing Welded 10 " Diam from 71 ft to 2002 ft Installed D i uppr installed " Diam from ft to ft			
Threaded Diam from ft to ft	CONSTRUCTION OR DECOMMISSIO	ON PROCEDURE	ام مع
Perforations I Yes I No	nature of the material in each stratum penetrated, with at least	st one entry for each ch	u and lange o
SIZE of perfs in by in and no of perfs from ft to ft	Information (USE ADDITIONAL SHEETS IF NECH	ESSARY)	
Screens: $2^{\circ}$ Yes $\Box$ No $\Box$ K-Pac Location $2^{\circ}$ $2^{\circ}$ $2^{\circ}$ $2^{\circ}$ $2^{\circ}$	MATERIAL	FROM	<u>TO</u>
Manufacturer's Name	- Cropped Small	7 2	4
Type Model No	Brown clay	24 2	2
Diam 14" Slot size 40 from 220 ft to 2.00 ft	Small Errel	28 7	Ô
Gravel/Filter packed:  Yes No Size of gravel/sand	Brown sitt / Gravel	70 7	4
	Small Gravel	74 9	5_
Surface Seal. Tyes I No To what depth? <u>*</u>	Small Gravel Brown Blay Seems	$\frac{75}{120}$	$\frac{20}{3\pi}$
Did any strata contain unusable water?	Course Soud Med Grouds	185 2	5
Type of water? Depth of strata	Charles Charle		
Method of sealing strata off			
PUMP. Manufacturer's Name			
			_
Static level 130.5 BGS ft below top of well Date 1/3/17/12	· · · · · · · · · · · · · · · · · · ·		
Artesian pressure ibs per square inchr Date	· · · · · · · · · · · · · · · · · · ·	++	
Artesian water is controlled by			••
(cap, varye, etc.)			
Was a pump test made? I Yes I No If yes, by whom? Swestar		<u></u>	
Yield 1970 gal/min with 10 ft drawdown after 112 hrs			
Yield 2500 gal/min with 14 ft drawdown after 172 hrs	F D		
Recovery data (time taken as zero when pump turned off) (water level measured from well			
Time Water Level Time Water Level Time -Water Level			
1 152-	JUL 1 0 2013		
2 1317		ek	
$\frac{2}{3}$ $\frac{13}{1.7}$ $\frac{13}{1.7}$ $\frac{13}{1.7}$ $\frac{13}{1.7}$ $\frac{13}{1.7}$ $\frac{13}{1.7}$	DEPARTMENT OF ECOLO	- I -	
$\frac{2}{3} + \frac{131}{121} + \frac{131}{12}$ Date of test $\frac{12}{12} + \frac{171}{12}$	DEPARTMENT OF ECOLO EASTERN REGIONAL OFF		
$\frac{2}{3} + \frac{13}{1.7}$ Date of test $\frac{12}{1.7} + \frac{1}{1.7}$ Bailer test gal/min with ft drawdown after hrs Autent 12802 gal/min with stem set at 7.52 ft for 1.7 hrs	DEPARTMENT OF ECOLO EASTERN REGIONAL OFF		
2       131.7         3       131.7         Jate of test       10/17/12         Bailer test       gal/min with         gal/min with stem set at       202         ft for / 2       hrs         Artesian flow       g p m Date	EASTERN REGIONAL OFF		
2       131.7         3       131.7         Date of test       10/17/12         Bailer test       gal /min with         ft drawdown after       hrs         Airtest       200 gal /min with stem set at       200 ft for         Artesian flow       g p m Date         Temperature of water       43 Was a chemical analysis made?       Y es	DEPARTMENT OF ECOLO EASTERN REGIONAL OFF		
$\frac{2}{3} \frac{13}{1.7}$ Date of test $\frac{12}{12} \frac{17}{12}$ Bailer test gal /min with ft drawdown after hrs Airtest $\frac{280}{280}$ gal /min with stem set at $\frac{252}{16}$ ft for $\frac{12}{12}$ hrs Artesian flow g p m Date Temperature of water $\frac{43}{12}$ Was a chemical analysis made? Fres $\square$ No	DEPARTMENT OF ECOLO EASTERN REGIONAL OFF	ated Date/// 8.	-12
2       131.7         3       131.7         Date of test       10/17/12         Bailer test       gal /min with         ft drawdown after       hrs         Airtest       200 gal /min with stem set at       200 ft for         Artesian flow       g p m Date         Temperature of water       48 Was a chemical analysis made?       Yes         VELL CONSTRUCTION CERTIFICATION: I constructed and/or action	DEPARTMENT OF ECOLO EASTERN REGIONAL OFF Start Date 2-29-/2 Comple cept responsibility for construction of this well. ar	ated Date // / 8 ·	- <u>//</u> with
2       131.7         Date of test       10/17/12         Bailer test       gal/min with         Bailer test       gal/min with         Bailer test       gal/min with stem set at         ZZO       ft for         Airtestan flow       gpm Date         Temperature of water       48         Was a chemical analysis made?       Yes         VELL CONSTRUCTION CERTIFICATION: I constructed and/or act/ashington well construction standards       Materials used and the information	Start Date 2-29-/2 Comple cept responsibility for construction of this well, ar on reported above are the to my best/knowledge	eted Date // 78. nd its compliance v and belief	-//
2       131.7         3       131.7         Date of test       12/17/12         Bailer test       gal/min with         Bailer test       gal/min with stem set at         ZDO       gp m Date	DEPARTMENT OF ECOLO         EASTERIN REGIONAL OFF         EASTERIN REGIONAL OFF         Start Date 20-29-12         Complete         Start Date 20-29-12         Complete         Complete         Complete         Dubling Company         Dubling Company	and belief	-/: with
2       131.7         3       131.7         Date of test       10/17/12         Bailer test       gal/min with         Bailer test       gal/min with         ft       drawdown after         hrs       hrs         Airtest       200 gal/min with stem set at       200 ft for         Airtestan flow       g p m Date         Femperature of water       48         Was a chemical analysis made?       Yes       No         //ELL CONSTRUCTION CERTIFICATION: I constructed and/or act/ashington well construction standards       Materials used and the information         Driller       Engineer       Trainee Name (Print)       Torrest         Hier/Engineer/Trainee Signature       Yes       Thompest	DEPARTMENT OF ECOLO         EASTERN REGIONAL OFF         EASTERN REGIONAL OFF         Start Date 2 ~ 29 ~ / 2         Completion of this well, at on reported above are the to my best/knowledge         Doubling Company         Address         20 9         Start Lor	eted Date / 1/8. and its compliance and belief Parallel	-/2 with

If TRAINEE, Driller's Licensed No	
Driller's Signature	

City, State, Zip	NC		an		What.		7/-	- 7	
Contractor's	21			$\boldsymbol{o}$	UD DM			• ·	1-
Registration Not	<u>)[u</u>	Ľ	en	7	721511	Date	10-2	16	- <u>/_</u>
	-			1	Ecology is an	Equal	Opportunity	Empl	loyer
	-	+		Ā.	-	-			-

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The Department of Ecology does NOT warranty the Data and/or Information on this Well Report. ECY 050-1-20 (Rev 3/05)

**APPENDIX B** Water Well Reports, Alternative Groundwater Supply Study Area

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

Abandoned 🗔

Drilled 120

Welded 🛛 🕅 Liner installed 🗋 Threaded 🔄

Perforations: Yes 🛄 Type of perforator used SIZE of perforations

Screens: Yes 🔀

Manufacturer's Name

Diam. \_\_\_\_ Slot size \_\_

Gravel placed from

Surfaçe acal; Yes 🕱

Method of sealing strate off

PUMP: Manufacturer's Name

60

Artesian water is controlled by

Material used in seal

Type of water? \_

(8) WATER LEVELS:

Artesian pressure

Static level

(7)

Type:

Gravel packed: Yes

\_ perforations from \_ \_\_\_ perforations from \_\_ \_ perforations from \_

Type <u>Stainless steel</u> Diam. <u>5</u> Slot size <u>16</u>

Did any strata contain unusable water? Yes 📒

No 🗌

(5) DIMENSIONS: Diameter of well \_\_\_\_

(6) CONSTRUCTION DETAILS: Casing installed:

New well

Deepened

Reconditioned 🗔

<u>\_6m</u> •

\_:

No 🛣

\_teet. Depth of completed w

(2)

(2a)(3)

(4)

WATER WELL REPOR	L REPOF	ELL	W	TER	WA1
------------------	---------	-----	---	-----	-----

8ored 🗆

17A1

UNIQUE WELL I.D. #

NE 1/4 NE 1/4 Sec\_ 17 T 26 N. H 42 WM.

Water Right Permit No.

<u>3 8 Nine Nile Fass JA</u>

Start Card No. \_\_\_\_\_ 57455

21.6

nd Copy — Owner's Co I Copy — Driller's Copy				
	Mike Wast		^	danna i O Bo:
LOCATION OF WE	LL: County	Spoka	ne	
STREET ADDRESS	OF WELL (or nearest	addrees)	Nine Mile H	Rd. #291
PROPOSED USE:	Domestic Imgation DeWater	Industrial 🗌 Test Well 🔲	Municipal 🗆 Other 🗂	(10) WELL L
TYPE OF WORK:	Owner's number of we (If more than one)		<u>.</u>	change of informatic

Method: Dug 🗋

<u>Johnson</u>

No 🗴

<u>Bentonite</u>

No 🗋

Land-surface elevation

above mean sea level

WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION mation: Describe by color, character, size of material and structure, and show thickness of aquifers the kind and nature of the material in each stratum penetrated, with at least one entry for each inge of information.				
MATERIAL	FROM	TO		
Topsoil	0	1		
Sand-grave_ w/c_ay grey	1	34		
Sand-water	34	120		

	Driven 🗆	Topsoil 0	1
- Rotary 🖾 -	Jetted 🗖	Sand-gravel w/clay grey 1	34
6	inchee.	Sand-water 34	120
completed well1 20	ft.		<u> </u>
Diam. from <u>+1</u> tt. to <u>1</u>	<u>14     </u> *  [		+
Diam, fromft. to			+
Diam. tromft. to	ft.		
	ŀ		<u> </u>
in. by	h.		<b></b> -
ft. to	ħ. [		<u>†</u>
ft. to	<u>n.</u> [		
ft. to	n		<u> </u>
hnson	F		<u> </u>
	-		<b></b>
	╧╝──╬┟		
	······		
Size of gravel			┢────
r. to	───* ┝		ļ
To what depth? 18+	ħ -		<b> </b>
onite		<u> </u>	<u> </u>
Yes No 👳			<u> </u>
Depth of strata			<u> </u>
			Į
	——  -		<u> </u>
			]
ievebon ielievel		Work Started <u>1/17/95</u> , 19. Completed <u>1/18/95</u>	19
ft. below top of well Date	<u>187 95</u>		
ibs. per equare inch Date			
(Cap, valve, etc.)		I constructed and/or accept responsibility for construction of this we	H, and its
int water lovel is inwered below stati		the information reported above are true to my best knowledge and belie	useu and A.

(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: <u>15+</u> gal./min. with ft. drawdown after \_hns. ... \*\* Air test approx. 15+-G.F.M. ... m .. Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level) Water Level Time Water Level Time Time Water Level

Date of test Bailer test \_gal./min. with \_ ft. drawdown after hns. Airtest \_gal./min. with stem set at \_ \_ ft. for hre. Artesian flow \_\_g.p.m. Date \_ Was a chemical analysis made? Yee 🗔 No 🗌 Temperature of water

NAME J& J DRILLING INC (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT) Address<u>S 5613 Linke Rd. Greenacres. WA 9:016</u> (WELL DRILLER) 7A License No. 1447 (Signed) \_\_\_\_\_ Contractor's

Registration No. <u>JJDRII=177KU</u> Date <u>1/20/</u> \_\_\_. 19<u>\_9</u>5

(USE ADDITIONAL SHEETS IF NECESSARY)

Ecology is an Equal Opportunity and Affirmative Action employer. For special accommodation needs, contact the Water Resources Program at (206) 407-6600. The TDD number is (206) 407-6006.



The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

1



# WELL LOG CHANGE FORM

**Instructions:** Record any change made to the well log record on this form. Then always append this form to the well log image. File with the original

WCL Log ID (Required)	Well Log ID
Regional Office: CRO ERO NWRO [	_]SWRO
Type of Well: Water Resource Notice of Intent: Ecology Well II Property (Well) Owner's Name Well Street Address	D Tag No ABV 532-
City County	Zip Code
Location 1/4-1/4 1/4 Sec Twn	R E or W (Circle One)
Lat /Long: (Required) Lat. Deg Lat. M	Min/Sec
Long. Deg Lon	g Min/Sec
Horizontal Collection Me	thod Code
Tax Parcel No	
Type of Work: New Well Reconditioned	Deepened LI Decoviting stort
Well Log Received Date _/_/_	
Well Diameter (in inches) Well Depth	(in feet) Well Completed Date _/_/
Trainee's Ecology License No.	-
Reason/Source of Change (Required)	rect Start land #
	SEE NOI # Below
Signature of Well Log Tracker (Required)	Plummer Date 1/6/03
ECY-WR-WLCF Rev. 10/02/02	W062428

		17F2 (Pc	ssibly Mislocated)
File Original and First Copy with Department of Ecology Second Copy — Owner's Copy Third Copy — Driller's Copy STATE OF V	LL REPORT	Арріц	ation No
(1) OWNER: Eric Youngstron	Boute 1	Box 462 Loop	
	Address	DOX 402, DOON	Lake, WA 99148
ing and distance from section or subdivision corner	of SW±, Sec.3	14 NW 14 Sec 17	т.26 <sub>м. к</sub> 42E <sub>w м</sub>
(3) PRODOCED LICE.		<u></u>	<u></u>
(3) <b>FROFUSED USE:</b> Domestic <b>T</b> Industrial (3) Municipal [3]	(10) WELL LUG:	· ·	······································
intgation [] fest well [] Other []	Formation Describe by co show thickness of aquifers	olor, character, size of n i and the kind and natu	onterial and structure, and ire of the material in each
(4) TYPE OF WORK: Owner's number of well (if more than one)	stratum penetralea, with	at least one entry for	each change of formation.
New well 🖄 Method: Dug 🗆 Bored 🗖		I BRIAL	FROM TO
Deepened	Top soil		· · · · · · · · · · · · · · · · · · ·
Reconditioned D Rotary 🕅 Jetted 🗖	<u>Sand &amp; Boulde</u>	ers	<u> </u>
(5) DIMENSIONS: Diameter of well 6 inches.	Brown Silt	·	<u> </u>
Drilled 707 ft Depth of completed well 106	Sand	···· •	. 25' 47'
	Clay_urey	_ ·· · · ·	<u>+ 47' - 62'</u>
(0) CONSTRUCTION DETAILS:	Basalt, sand,	CIay	⊥ 62' / 3'
Casing installed: 6 Diam. from +1. ft. to 10.7., ft.	<u>Urey clay</u>		73' 85'
Threaded 🗌 👘 👘 Diam. from	<u>Dasalt, Sand,</u>	gravel	<u>85'</u> <u>95'</u> .
weited 12 Diam. from ft. to	Basalt and an		<u> </u>
Perforations: Yes 🗋 No Xi	<u> </u>		<u>- 96</u> 100
Type of perforator used.	<u> </u>	<b></b>	
SIZE of perforations	<u> </u>		<u>U(</u> '
perforations from	·····		···
ft. to ft. to		<b>—</b> ——— <b>—</b> —————————	·
Screens: Yes 🕅 No 🗔		· · ·	
Manufacturer's Name JointSon			
$\frac{5}{100} = \frac{5}{100} = \frac{100}{100} = 10$			• - + +
Diam, Slot size , from to to the			
		<b>-</b>	
Gravel packed; Yes □ No [2] Size of gravel:			
			·
Surface seal: Yes D No To what depth?	+	······································	
Did any strate contain liqueable instant. Yes D			
Type of water?			· ·
Method of scaling strata off			
	··	·	
Type:		• • • • • • • • • • • • • • •	
HP	· · · · · · · · · · · · · · · · · · ·		
8) WATER LEVELS; Land-surface elevation above mean sea level			·····
static levelft. below top of well Date July 185	/		· · · · · · · · · · · · · · · · · · ·
rtesian pressure		<b></b>	
Artesian water is controlled by			
0) WELL TREAMS. Drawdown is amount water level is		·····	
blawdown is amount water level is lowered below static level	Work started June 27	1985 Completed	June 28 10 85
Vas a pump test made? Yes No If yes, by whom?			B.0110 . CO
a gut and what it drawbown after Arb.	WELL DRILLERS ;	STATEMENT:	
	This well was drilled	l under my jurisdict	ion and this report is
Recovery data (time taken as zero when pump turned off) (water lawal	in the the me beat of my	monicale and fell	L1.
measured from well top to water level)	NAME Bartholome	V Drill <b>ž</b> ing Tr	1C.
Time water Level Time Water Level Time Water Level	(Person, )	firm, or corporation)	(Type or pr细t)
	Address N. 11525 Ni	ine Mile Rd N	Vine Mile Frails
	Audress.	,,,,,,,	the post of
Jate of test	10 M		99026
mex test 100+ gal/min. with	[Signed].	(Well Driller)	tomen
rtesian flow		/	
emperature of water Was a chemical analysis made? Yes 🗋 No 🗖	License No	L Date Au	1 <b>g</b> .7, 19.85.
0/12/25 W/1			
CY 050-1-20 (USE ADDITIONAL SHE	ETS IF NECESSARY)		~

• •

**- ()** - :

WA	TER WELL REPORT
DEPARTMENT OF ECOLOGY Constru	a + copy = Ecology, 2 + copy = which, 3 + copy = a mich
State of Washington Construction	
Decommission	ORIGINAL INSTALLATION
	Notice of Intent Number
PROPOSED USE: D DeWater In	omestic
TYPE OF WORK: Owner	r's number of well (if more than one)
New well Reco	nditioned Method : Dug Bored Driven Cable Rotary Detted
DIMENSIONS: Diameter of Depth of c	of well <u>6</u> inches, drilled <u>100</u> ft. completed well <u>96</u> ft.
CONSTRUCTION DETAIL	ILS
Casing Welded Installed: Liner install Threaded	<u>6</u> " Diam. from <u>+2</u> ft. to <u>90</u> ft. led <u>"</u> " Diam. from <u>ft. to</u> <u>ft.</u> <u>"</u> Diam. From <u>ft. to</u> <u>ft.</u>
Perforations: I Yes D	NO NO
sype of perforator used	
SIZE of pertsin. by	In. and no. or peris from it. toft.
Manufacturar's Manu	
	Model No
Diam. <u>5"</u> Slot size <u>20</u> fr	om <u>91</u> ft. to <u>96</u> ft. from ft. to ft.
Gravel/Filter packed:	Yes 🛛 No Size of gravel/sand
Materials placed from	ft. toft.
Surface Seal: 🛛 Yes 🗌	No To what depth? <u>18 ft</u> .
Material used in seal	
Did any strata contain unusat	ble water? 🔲 Yes 🖾 No
Type of water?	Depth of strata
Method of sealing strata off	
PUMP: Manufacturer's Nan	ne
Туре:	H.P
WATER LEVELS: Land-s	urface elevation above mean sea level ft.
Static level 22 ft. below top	p of well Date 2/8/2017
Artesian pressure lbs	s, per square inch Date
Artesian water is controlled b	(cap, valve, etc.)
WELL TESTS Desurdance	is amount water level is lowered below static level
Wesserver to the standown	
was a pump test made?	res I No If yes, by whom?
Yield: gal/min. with	I. drawdown afterhrs.
Yield:gal/min. with	ft. drawdown after hrs.
Recovery data (time taken as well top to water level)	zero when pump turned off) (water level measured from
Time Water Level	Time Water Level Time Water Level
·	
Date of test	
Bailer test gal./min. v	withft. drawdown afterhrs.
Airtest _25_gal./min. with s	stem set atft. for 2_hrs.
Airtest 25 gal./min. with s Artesian flowg.p.m.	stem set atft. for <u>2</u> hrs. Date

#### CURRENT

Notice of Inte	nt No. WE26	6715	***
Unique Ecolo	gy Well ID Tag	g No. <u>BIO - 082</u>	
Water Right P	ermit No		
Property Own	er Name <u>Anne</u>	e Marie McLellan	
Well Street Ad	ldress <u>N. Riv</u>	erside State Park Dr.	13 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -
City Spokane		County Spokane	
Location <u>NE</u> I (s, t, r Still R	/4-1/4 <u>NE</u> 1/4 EQUIRED)	Sec 20 Twn 26N R 42	EWM 🖾 Or WWM 🗖
Lat/Long	Lat Deg Long Deg	Lat Min/Sec	

20A1

		Long Dug_	Long Will
Tax	Parcel No.	(Required)	26201 9038

MATERIAL	FROM	TO
Top Soil	0	3
Gravels & Sand	3	21
Brown Sand w/ h2O	21	35
Gray Sand w/ Clay	35	75
Brown Sand w/ Gravels & h2O	75	100
		-
	4- -	
APR 26 2017		
Deperiment of Fool	- 71	
Eccloninite lonal Of		
· · · · · · · · · · · · · · · ·		
		-
e en entremente en la contra en en	L	

WELL CONSTRUCTION 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.

Drilling Company H2O Well Service Inc	2
Address 582 W. Hayden Ave.	
City, State, Zip Hayden	, ID, 83835
Contractor's	
Registration No. H2OWESI101DW	Date 2/10/17
	Drilling Company H2O Well Service Ind Address 582 W. Hayden Ave. City, State, Zip Hayden Contractor's Registration No. <u>H2OWESI101DW</u>

ECY 050-1-20 (Rev 02/10) If you need this document in an alternate format, please call the Water Resources Program at 360-407-6872. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

File Original and First Copy with Department of Ecology With Second Copy - Warrer's Copy Warrer's Copy		ELL REPORT	۲	Application	No	
Third Copy — Driller's Copy	STATE OF 1	STATE OF WASHINGTON		Permit No		
(1) OWNER: Name Ed. (N)	aloh	Term (D+ 1	Nine Mile	20000		<u>a</u> an
LOCATION OF WELL: County St	offon :	Address C.A	A12 A12			
Buring and distance from section or subdivision co	orner		- / NIC 34 INC- 34 Se	сQU. Т9	200 N., R.	HOLW.
(3) PROPOSED USE: Domestic EX Indu	strial D Municipal C	(10) WELL L				
Irrigation [] Test	Well Other	Formation: Describ	e hu color chamater =	Te of materi		
(A) TVPE OF WORK. Owner's number of	well	show thickness of a stratum penetrated	quifers and the kind at, with at least one entr	nd nature of by for each of	the materi change of	al in ea formativ
(1) III I OF WORK. (if more than one). New well Method:			MATERIAL		FROM	то
Deepened []	Cable Driven	and.	gravel		0	90
Reconditioned	Rotary Jetted	Land	, gravel		80	-81
(5) DIMENSIONS: Diameter of we Drilled 81 ft Depth of completed	i well 81 inches.					
(A) CONSTRUCTION DEMAN		[ <del></del>				
Casing installad. (a		·			<u></u> †	
Threaded [] "Diam. from	the to	·····			<u>†                                    </u>	
Walded Gran Diam. from						
Perforations: Yes D No RC						
Type of perforator used			<u>_</u>		<b>├</b> ───	<b></b>
SIZE of perforations in.	by in.		· · · · · · · · · · · · · · · · · · ·			
perforations from	ft. to ft.		<u> </u>			
perforations from	ft. to ft.					
Manufacturer's Name OMNOOT	7					<u> </u>
Type 35 Mo	del No					
Diam						
Gravel necked: w a w						
Gravel placed from	gravel:					
	19				<b> </b>	
Material used in seat. O.C. To what d	lepth?					
Did any strata contain unusable water	Yes No D	R	ECEIVE	ED		
Type of water?	f strate					
			001 1 3 1977			
7) PUMP: Manufacturer's Name.		DE	PARTMENT OF ECO	LOGY		
- Type:		SPC	KANE REGIONAL C	FFICE	└───┼	
8) WATER LEVELS: Land-surface eleva above mean sea le	tion vel <b>ft</b> .					
tatic level	Date					
Artesian water is controlled by						
(C	ap, valve, etc.)					
WELL TESTS: Drawdown is amoun lowered below static	t water level in level	Wast starter X -	- 19	<b>\$</b>	- 19	<u> </u>
as a pump test made? Yes No If yes, by wi	hom?	THE PARTY AND AND A			<u>k</u>	, 19
r is u	n arter bre.		ITS STATEMEN	1.		
»	H	true to the best of	drilled under my ju of my knowledge an	risdiction a d belief.	ind this r	eport i
acovery data (time taken as zero when pump tur- measured from well top to water level)	ned off) (water level	Ъ. —		<b>N</b> • •		、
Time Water Level Time Water Level T	ime Water Level	NAME DOLL	erson, firm, or corporat		700 ) ( 700 pri	) <u>nc.</u> nt)
		Address NUNX	1/ tole stall	o,yza	<u>. 990</u>	96
		<u> </u>	S/Kai	H.L	<u> </u>	
		[Simod] HILL	IN XUM	nga		$\mathcal{D}$
mir test 70 gal/min. with ft. drawdo	wn afterhrs.					
the test 70 gal/min. with ft. drawdo	vn after		(Well I		· 10	

File Original and First Copy with
Department of Ecology
Second Copy - Owner's Copy
rand Copy - Drifter's Copy

#### WATER WELL REPORT STATE OF WASHINGTON

Application No.

20A3

Permit No.

·	ing and distance from section or subdivision corner			
(3)	PROPOSED USE: Domestic X Industrial  Municipal	(10) WELL LOG:	-	
		Formation: Describe by color, character, size of ma show thickness of aquif : and the kind and natur stratum penetrated, with at least one entry for ea	iterial and stru e of the materi ich change of ;	cture, a al in ea formatic
(4)	IIFE OF WORK: (if more than one)	MATERIAL	FROM	то
	Deepened D Cable Driven	<u>Gravel cobbles</u>	0	3
	Reconditioned 🗌 Rotary 🖾 Jetted 🗖	<u>Cobbles boulders</u>	3	26
(5)	DIMENSIONS: Dimension 6 to be	Sand	26	47
(•)	Drilled 60 ft. Depth of completed well 59.6 ft.	Sand and clay	47	52
		Sand clean	52	59.
(6)	CONSTRUCTION DETAILS: 53			
	Casing installed:6 Diam. from1. ft. to			<u> </u>
	Threaded []			
	Welded []			
	Perforations: Yes 🗆 No 🕞			
	Type of perforator used			
	SIZE of perforations in. by in.			
	perforations from ft. to ft.			
	perforations from $\pi$ to $\pi$			
				_
	Screens: Yes IV No D			
	Manufactufer's Name Sofilisoff			
	Diam Sint size()15 Aratim 53 64 to 59 64			
	Diam. Slot size from ft. to ft.	001 <u>5</u> 1983		
	Gravel packed: Yes No KK Size of gravel;	DEPARTMENT OF ECOLOGY	,	
	Gravel placed from ft. to ft.	SPOKANE_REGIONAL_OFFIC	Ε	
	Surface seal: Yes No To what depth? 18 ft.			
	Material used in seal. Bentonite			
	Did any strata contain unusable water? Yes 🗋 No 🗋			
	Method of scaling strate of			· <u> </u>
	DY GAD			
(7)	PUMP: Manufacturer's Name			_
	Type:			
(8)	WATER LEVELS: Land-surface elevation 700 tt			
Static	level	· · · · · · · · · · · · · · · · · · ·		
\rtes	dan pressurelbs. per square inch Date			
	(Cap, valve, etc.)	••··		
(Q)	WELL TESTS. Drawdown is amount water level is			
	lowered below static level	Work started	4/29	, 198
(ield	: gal./min. with ft. drawdown after hrs.	WELL DRILLER'S STATEMENT:		
••	11 H H	This well use drilled under my insidict	ion and this .	
.,	13 11 16	true to the best of my knowledge and belie	ef.	eport
lecov	very data (time taken as zero when pump turned off) (water level		_	
п Тin	ne Water Level   Time Water Level   Time Water Level	NAME Bartholomew Drilling	g, Inc.	
		(Person, firm, or corporation)	(Type or pr	int)
		Address N. 11525 Nine Mile Rd.	Nine Mi	le F
		Wa, 99026 A	0	
ريب	ate of test	[Simed] Mary Barch	lone.	)
H (19)	K test	(Well Driller)		
	erature of water Was a chemical analysis made? You D. You D.	License No 0051 Date	0/14/00	10
carp			·0+··IÐ/·ØJ····	., 19

		20A4	
File Original and First Copy with Department of Ecology Second Copy—Owner's Copy Third Copy—Driller's Copy	WATER WE STATE OF	LL REPORT	No056524
(1) OWNER: Nama_ Kathy Marker	C	Address W. 2707 Dalton, Spok	ane, WA 99205
LOCATION OF WELL: County	Spokane	NE % NE % sec. 2	20 <u>t 26 <sub>N, R</sub> 42 w.</u>
(2a) STREET ADDDRESS OF WELL (or not	parent addrese)		
(3) PROPOSED USE: Domestic Irrigation DeWater	Industrial Aunicipal Test Well Other	(10) WELL LOG or ABANDONMENT PR Formation: Describe by color, character, size of m thickness of equifers and the kind and nature of the mi	OCEDURE DESCRIPTIO naterial and structure, and sho sterial in each atratum penetrate
(4) TYPE OF WORK: Owner's number of v (if more than one) _	<b></b>	with at least one entry for each change of information.	FROM TO
Abandoned Deepened Deepened Reconditioned D	ethod: Dug 🗌 Bored 🗍 Cable 🗔 Driven 💭 Rotary 🖄 Jetted 🗌	Top Soil Sand, Coarse	<u> </u>
(5) DIMENSIONS: Diameter of well Drilled80_feet. Depth of co	6 inches.	Sand, Gravel	70 80
Weided       Year       Diam. fr         Liner installed       * Diam. fr         Threaded       * Diam. fr         Perforations:       Year         Type of perforation used       SiZE of perforations         SiZE of perforations	omft. toft. omft. toft. ft. toft. toft. ft. toft. toft. toft.	6" Drive Shoe Utilized 5" K-Packer	7 1908
Did any strate contain unusable water? Yes Type of water? Method of seeing strate off	Depth of strate		

H.P.

(Cep, valve, etc.))

Time

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

ft. for

\_ ft. drawdown after .

...

tt.

. hra.

\_ hra.

\_ hrs.

Water Level

14

11

Work started.

(7)

(8)

(9)

Type:

Static level \_

Yield: \_\_\_\_\_

Bailer test .

Artesian flow .

Airteat

н

....

Time

Artesian pressure \_

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 here being and helicit. knowledge and belief. r Ponderosa Drilling & Development The

5-19-93

NAME PODDETOSA JF1 LLING & DEVELOTIENT, LL (PERSON, FIRM, OR CORPORATION) (TYPE OR	PRINT)
Address E. 6010 Broadway, Spokane, WA 9921	2
(Planat) Brok Form - License No. 210	υ
(MELL DRILLER) (Brad For Man)	
Registration No. PO-ND-EI*248JE Date May 24	, 1 <u>9 93</u>

19. Con sleted.



5-21-93

\_, 19\_

Water Level

Date of test.

PUMP: Manufacturer's Name

55

Artesian water is controlled by .....

\_ gel./min. with \_\_\_\_\_

....

Time

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

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

WATER LEVELS:

Land-surface elevation above mean sea level

WELL TESTS: Drawdown is amount water level is lowered below static level Was a pump test made? Yes No A Hyes, by whom?\_\_\_\_\_\_

ESTIMATED AIRLIFT "

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

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

Water Level

\_\_g.p.m. Date \_

\_\_\_\_ It, below top of well. Date

\_ lbs. per aquere inch Date \_

20A5

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

# WATER WELL REPORT

009984 Start Card No ....

Secor Third	d Capy—Owner's Copy STATE OF V Copy—Driller's Capy	Water Right Permit No
(1)	OWNER: Name_John Figg	Address Rt. 1, Box 46, Reardan, WA 99029
_	LOCATION OF WELL: County Spokane Ta	ах percel #20631- <u>NE sec 20</u> т <u>26 N. в 42Е</u> ж.м 9022
(2a)	STREET ADDDRESS OF WELL (or nearest address)	
(3)	PROPOSED USE: XX Domestic Industrial I Municipal I	(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION Formation: Describe by color, character, size of material and structure, and show
		thickness of aquifers and the kind and nature of the material in each stratum penetrated with at least one entry for each change of information.
(4)	TYPE OF WORK: (if more than one)	MATERIAL FROM TO
	Abandoned New well 🕉 Method: Dug 🔲 Bored 🗍 Deepened 📋 Cable Driven 🗆 Reconditioned 🗆 Rotary 🗘 Jetted 🗌	Sand& Gravel / some boulders018Sand & silt1827
/E)		Sand & gravel / some clay 27 38
(3)	Diameter of weil	Clay white
	Drilled reet. Depth of completed westh.	• • • • • • • • • • • • • • • • •
(6)	CONSTRUCTION DETAILS:	
	Casing installed; • Diam. from +  ft. to3.3ft.	
	Weided 🛛* Diam. fromtt. tott.	
	Threaded* Diam. fromft. toft.	
	Perforations: Yes No K	
	Type of perforator used	
	SIZE of perforations in. by In.	
	#. to #.	
	perforations from ft. to ft.	
	perforations from ft. to ft.	
	Screens: Yes X No	
	Manufacturer's NameCook	
	Type Stainless Steel Model No	
	Diam. <u>5</u> Slot size .0.18 from <u>3.3 ft. to 30</u> ft.	
	Diam Slot sizefromft. toft.	
	Gravel packed: Yes No KX Size of gravel	
	Gravel placed fromft. toft.	
	To what depth? 20 th	
	Surface seal: Yes A Not Townardepint	
	Material used in seal	
	Did any strate contain unused to water? Yes No 29	
	Type of water/	
<u>(7</u> )	PUMP: Menufacturer's Name	
	Type:H.P	
(8)	WATER LEVELS: Land-surface elevation	
	Static levelft. below top of well. Date	
	Artesian pressure ibs. per square inch. Date	
	Artesian water is controlled by(Cap. valve, etc.))	E (20 (20 E
	WENT TERTS, Development water lavel is lowered below static level	Work started 5/29/89 19 Completed 5/29/89 19
( <del>A</del> )	Wes a sums test made? Yes No. If yes by whom?	
	Vield:	WELL CONSTRUCTOR CENTIFICATION.
	и и и и	and its compliance with all Washington well construction standards
	11 () II (II (II (II (II (II (II (II (II (	Materials used and the information reported above are true to my bei
	Recovery data (time taken as zero when pump turned off) (water level measured	knowledge and bellet.
	Time Water Level Time Water Level Time Water Level	Bartholomew Drilling Inc.
		(PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)
		- N. 11525 Nine Mile Rd. Nine Mile Falls
		- WA 99026
	Date of test	(Since Hang Bertholomere anso No. 0051
	Bailer teat gal. / min. with ft, drawdown after hra	(WELL DRILLER)
	Airtest ft. for hre	Registerions 6/27/80
	Artesian flow g.p.m. Date	No. DARINI 24903 Date 0/27/09
	Temperature of water Was a chemical analysis made? Yes No	

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

State of Washington Date Printed: 27-Aug-2007 Log No.	CURRENT Notice of Intent No.: W179174 Unique Ecology Well I.D. No APC470
Construction / Decommission:       Original Construction       0         Construction       Notice of Intent #:       W179174	Water Right Permit Number: OWNER: ANTONIUK, NELSON
PROPOSED USE: DOMESTIC	OWNER ADD 315 E. 22NE
TYPE OF WORK: Owners's Well Number: (If more than one well) 1 NEW WELL Method: ROTARY	SPOKANE, WA 99203 Well Add: RIVERSIDE PARK DR.
DIMENSIONS: Diameter of well: 6 inches Drilled 82 ft. Depth of completed well 80 ft	Location: 1/4 NE 1/4 Sec 20 T 26 R 42E EW
CONSTRUCTION DETAILS:       Casing installed       WELDED         Liner installed:       6 " Dia from +2 ft. to 73 ft         " Dia from ft. to ft.       5 " Dia from 70 ft. to 75 ft	Lat Deg     Lat Min/Sec       (s, t, r still     Long Deg     Long Min/Se       Tax Parcel No.:     26201.0932       CONSTRUCTION OR DECOMMISSION PROCEDURE
Perforations: No Used In: Type of perforator used	<ul> <li>Formation: Describe by color, character, size of material and structure. Show thickness of aquifiers and the kind and nature of the material in each stratum penetrated. Show at least one entry for each change in formation.</li> </ul>
SIZE of perforations     in.     by     in.       Perforations from     ft. to     ft.       Perforations from     ft. to     ft.       Perforations from     ft. to     ft.	MaterialFromToTOPSOIL W/SAND GRAVEL01SAND GRAVEL COBBLES117BOULDER1721
Screens: Yes       K-Pac Location: 69         Manufacture's Name       JOHNSON         Type:       SLOTTED         Model No       STAINLESS         Diam.       5         slot size:       16         from       ft.         Oravel/Filter packed:       No         Size of Gravel	SAND GRAVEL COBBLE 21 45 SANDY GRAY CLAY W/WATER 45 54 SAND GRAVEL W/WATER 54 82 RECEIVE
Material placed from       ft. to       ft.         Surface seal:       Yes       To what depth       23       ft.         Seal method:       Material used in seal BENTONITE         Did any strata contain unusable water       No         Type of water       Depth of strata         Method of sealing strata off       Depth of strata	Notes: EASTERN DEPRESENCE SHOE
PUMP: Manufacture's name Type: H.P. 0	Work started 06/19/2007 Complete 06/20/2007
WATER LEVELS:       Land-surface elevation above mean sea level:       0 ft.         Static level 30       ft.       below top of well Date       06/20/2007         Artesian Pressure       Ibs per square inch Date       Date	WELL CONSTRUCTION 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 are true to my best knowledge and belief. Driller Fingineer Trainee
WELL TESTS: Drawdown is amount water level is lowered below static level. Was a pump test made? No If yes, by whom	Name: FORREST TENNANT II License No.: 2687
Yield:       gal/min with       ft drawdown after	If trainee, Licensed driller is:License No.:Licensed Driller Signature
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	Drilling Company: NAME: FOGLE PUMP & SUPPLY, INC. Shop: AIRWAY HEI ADDRESS: PO BOX 1450 Airway Heights, WA 99001 Phone: (509) 244-0846 Toll Free: (888) 343-9355
Bailer test     gal/min     ft drawdown after     hrs.       Air test     20     gal/min w/ stem set at     78     ft. for 1     hours       Artesian flow     gpm     Date	E-Mail: jackie@foglepump.com FAX: (509) 244-2875 WEB Site: WWW.FOGLEPUMP.COM
Temperature of water Was a chemical analysis made No	Registration No.: FOGLEPS095L4 Date Log Created: 6/29/2007

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

Fil-	Original and First Copy with
Dep	artment of Ecology
Sec	ond Copy Owner's Copy
Thi	d Copy - Driller's Copy

WATER WELL	REPORT
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-

(1)	OWNER: Name Penny Moore Adv	West 7802 7-Mile rd.Nine Mil	e Fal	ls.W
21			26	42
. <del>~/</del> (20)		1/2 1/4 Sec 2/0 1 2	<u>.                                     </u>	<u>42</u> .
		······································		
3)	PROPOSED USE: A Domestic Industrial 🔄 Municipal 🛄	(10) WELL LOG or ABANDONMENT PROCEDURE D	ESCRIPTI	
	DeWater Test Well C Other	Pormation: Describe by color, character, size of material and structure, and and the kind and nature of the material in each stratum penetrated, with	i show thickne: at least one e	SE of aqui Intry for -
4)	TYPE OF WORK: Ox let's number of well (If note than one)			
	Abandoned 🗌 New 🗤 🕌 Method: Dug 🗖 Bored 🗆	sand and gravel		10
	Reconditioned C Rotary CX Jetted C	gravel with boulders	10	28
5)	DIMENSIONS: Diameter of well 6" inches.	sand	28	75
	Drilled 80' feet. Depth of completed well 80' %	gravel	75	80
3)	CONSTRUCTION DETAILS:			
	Casing installed:6" - Diam, from +2 * 1, 10 78 *			
	Weided the Diam. from the to the term term term term term term term ter	<u>b" drive shoe installed</u>		
	Threaded 🔲 Diam, fromft. toft,			
_	Perforations: Yes No 🔀	open bottom completion		
	Ty: a of periorator used	Open bottom completion		
	SIZE of perforations in. byin.			
	perforations from h, toh,			- · <u>-</u>
	perforations fromft. toft.			
-	periorations morn t. tot.			
	Screens: Yes			
	Diamo Sinterra trom theo th			
	Diam. Slot size from the			
	Gravel claced from			-
	Surface seal: Yes () No () To what depth? <u>20</u> t.			
	Old any strate contain voluence weter? Yes Alo			
	Type of water? Depth of strate			
	Method of sealing strate off	In Land		
")	PUMP: Manufacturer's Name	III NG/ 20	har	
		<u> </u>		
i)	WATER LEVELS: Land-aurtage elevation above mean see level			_
	Static level 35 th below top of well. Data 11-9-95			
	Anasysh pressure the per equare inch Date			
	(Cap. velve. etc.)	Work Started 11-8-95 10 Company 11-9-	95	
)	WELL TESTS: Drawdown is amount water level is lowered below static level		<u> </u>	_ :9 _
	Was a pump test made? Yes 🔲 No 🛄 If yes, by whom?	WELL CONSTRUCTOR CERTIFICATION:		
	Yield:gal./mm. withht. drawdown afterhtra.	I constructed and/or accept responsibility for construction	of this well,	and in
	air test is "approximate" at time of "	compliance with all Washington well construction standards the information reported above are true to my best knowledge	Materials u	ise an
	drilling ""			
1	Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)	NAME Vermillion Well Drilling,	Inc.	
Tir	ne Water Level Time Water Level Time Water Level	Adam 6403 North Perry Spokano	147 -	001
		ADDRESS VIUS NOT CH FEITY SPOKAHE	, wa.	222
		(Signed) filecone Ten and Loanse	No. 212	10
	Date of test		-	
E	Baller test gel./min, with ft. drswdown efter hrs.	Contractor's		
	Aintest <u>IUU+ gal</u> ./min. with stem set at <u>851</u> t. for <u>1</u> hrs.	No. VERMIWD126D3 Date 11-13-95	i	19

W067573

1010 1NE W067513

20A7

Notice of Intent Namber       Unique Ecology Well ID Tay No. <u>BCL633</u> Decomstruction       Notice of Intent Number         Decomstruction       Notice of Intent Number         Decomstruction       Notice of Intent Number         Device       Revel Bard         Device       Revel Bard         Device       Revel Bard         Device       Revel Bard         Device       Device         Device       Revel Bard	Original & 1" copy - Ecology, 2" copy - owner, 3" copy - driller	CURRENT	
Construction       Notice of Intert Number         Profering Sister Constraints in the Analysis       Notice of Intert Number         Property Owner Neuric State Park Orige       Observed         Devolutions Structure Stru	E ( 0 ) 0 6 i Construction/Decommission ("r" in circle)	Notice of Intent No. WE09900	
Image: Construct Links of Direct Number of Chinese Nu	$\boxtimes$ Construction	Unique Ecology Well ID Tag No. BCL633	
Notice of interviting       Notice of interviting         PROPOSED USE:       Domain       Municipal         PROPOSED USE:       Domain       Interviting         PROPOSED USE:       Domain       Domain       Municipal         PROPOSED USE:       Domain       Domain       Proposed         PROPOSED USE:       Domain       Domain       Domain       Proposed         Proposed	Decommission ORIGINAL INSTALLATION 29	Water Right Permit No.	
Impairs	Notice of Intent Number     Notice of Intent Number     Numicinal	Property Owner Name Stephen Mayne	
TYPE OF WORK:       Ower signature of well (frames han ore)	DeWater Inrigation Test Well Other	Well Street Address Riverside State Park Drive	
Image New Yeal       Image	TYPE OF WORK: Owner's number of well (if more than one)	City Spokane County Spokane	
DIMENSIONS: Danator of well § index, diske@ it       or         Owned       6, t, r Still REQUIRED)       or         With       CONSTRUCTION DEFAILS /       wwith         CONSTRUCTION DEFAILS /       Dama from file 41 (to 72 it.       Ital Min/Sec	Deepened Deepened Detroit Dug Cable Rotary Detted	Location NE1/4-1/4 NE1/4 Sec 20 Twn 26N R 42E	EWM '
CONSTRUCTION DETAILS       Served       G         Chaing       M Welded       G* Diam. from ±1 ft. to 72 ft.         analhet:       Discritation that form ft. to 72 ft.       Diam. from ±1 ft. to 72 ft.         Simalhet:       Discritation that form ft. to 72 ft.       Diam. from ±1 ft. to 72 ft.         Simalhet:       Discritation that form ft. to 72 ft.       Diam. from ±1 ft. to 72 ft.         Size of performance medic       Diam. form ft. to 74 ft.       Diam. form ft. to 74 ft.         Size of performance medic       Diam. form ft. to 74 ft.       Diam. form ft. to 74 ft.         Size of performance medic       Diam. form ft. to 74 ft.       Diam. form ft. to 74 ft.         Size of performance medice between by color, elarger, size of metarial and structure, and ft and matter of differentian color metarial and structure, and ft.       Diam. file ft.         Size of performance metarial and structure, and ft.       Diam. file ft.       Diam. ft.         Size of performance metarial and structure, and ft.       Diam. ft.       Diam. ft.         Size of performance metarial and structure, and ft.       Diam. ft.       Diam. ft.         Size of performance metarial and structure, and ft.       Diam. ft.       Diam. ft.         Size of performance metarial and structure, and ft.       Diam. ft.       Diam. ft.         Size of performance metarial and structure, and ft.	DIMENSIONS: Diameter of well 6 inches, drilled80 ft.	(s, t, r Still REQUIRED)	Or
Chaing       EX       Wolded       C       Diam from 1.ft to 7.ft.         Installistic       Lister Mutual of Diam from f. ft to 7.ft.       Diam from f. ft to 7.ft.       Diam from f. ft to 7.ft.         Type of performator used       "Diam from f. ft to 7.ft.       Tax Parcel No. (Required) 28201 0922       Diam from f. ft to 7.ft.         Strees:       EV to 100 B. Krbs       Lootion 69.       Diam from f. ft to 7.ft.       Diam from f. ft to 7.ft.         Menufacturer's Name John       Model No.       Diam for ft	CONSTRUCTION DETAILS	4	WWM
Instanties:       Line mailed       Dam. fromR.toR.t	Casing Welded 6" Diam. from +1 ft. to 72 ft.	Lat/Long Lat Deg Lat Min/Sec	
Performinants       I Yes       No         Type of performant used       State of yes in the y in and no. of perfs from is to ft       Tax Parcel No. (REQUIRED) 26201 0922         State of yes in the y in and no. of perfs from is to ft       In to ft       Tax Parcel No. (Required) 26201 0922         Manufacture's Name John       No       State Statum percental and structures, and the kin and of information. (USE ADDITIONAL SHEETS IF NEESSARY.)         Manufacture's Name John       Model No	anstalled: Li Liner installed "Diam. from fl. to fl.	Long Deg Long Min/Sec _	
Type of performance         CONSTRUCTION OR DECOMMENSION PEOCEDIMEE.           SUES of perfs. in. hy in. and no. of perfsfrom in. b         Formation: Describe by color, classes, since of subtractive, since subtractive, sin	Perforations: 🗍 Yes 🖾 No	Tax Parcel No. (Required) <u>26201.0922</u>	
12/12:01 peris jm. hyin. and no. of perisfto ft.       fto ft.         Screess: By YesN By E-NawLocation £9       in advance of the matter is and street were, and the is an over the period. Construct, size of the matter is and street were, and the is an over the period. Construct, size of the matter is and street were, and the isomethy for each of information. Userset with a less on external in a statis street were information. Userset were period. Construct, size of the matter is and street were information. Userset were period. Construct, size of the matter is and street were information. Userset were period. Construct, size of the matter is and street were information. Userset were period. Construct, size of the matter is and street were information. Userset were period. Construct, size of the matter is and street were information. Userset were period. Construct, size of the matter is and street were information. Userset were period. Construct, size of the matter is and street were street. The matter is and street were street. St	Type of perforator used	CONSTRUCTION OR DECOMMISSION PROCE	DURE
Manufacture's Name John       of information. (USE ADDITIONAL SHEPTS IF NECESSARY.)         Manufacture's Name John       model No.         Dran. §Stor size 20 from 25 ft. fo 90 ft.       ft. to	SIZE of perfs_in. byin. and no. of perfsfromft. to_ft.	nature of the material in each stratum penetrated, with at least one ent	ry for each cl
Type SS       Model No.       MATERIAL       FROM         Dam.       Skits size 20 from Z5 ft. to 90 ft.       Boulders, Sand & Gravel       0         Carwell/Filter packed:       Yes       No. ft.       Boulders, Sand & Gravel       4         Gravell/Silter packed:       Yes       No. ft.       Boulders, Sand & Gravel       4         Boulders, Sand & Yes       No. ft.       Boulders, Sand & Gravel       61         Waterial such seal Barrol Casing Seal       No. ft.       Sand, Very Conse & Gravel       61         Waterial such seal Barrol Casing Seal       No. ft.       Sand, Very Conse & Gravel       61         Waterial such seal Barrol Casing Seal       Depth of strata       250+gpm       250+gpm       250+gpm         Wethod of sealing strata off       Depth of strata       1       250+gpm       250+gpm       250+gpm         Water Reserver       No trype of valer?       Depth of strata       1       250+gpm	Manufacturer's Name John	of information. (USE ADDITIONAL SHEETS IF NECESSARY.)	EDOLA LA
Diam.       Site size 20 foor 15 ft op 20 ft.         Diam.       Site size 20 foor 15 ft op 20 ft.         Diam.       Site size of from ft. to ft.         GraveVIII repeated:       Vest [20] No         Site size of from ft.       ft.         Material used from is all Barrol Gesing Seal       Sand. Very Coarse & Grave!         Did any strate costain unusable water?       IVest [20] No         Did any strate costain unusable water?       IVest [20] No         Type       HP.         Wethod of scaling strate off       P.         Type       HP.         Type       HP.         Work Site is per square inch Date       ft.         Attesian water is controlled by       (cap. valve, etc.)         Wetted state.       [20] No ff yes, by whon?         Yield       gal/min. with       ft. drawdown after _nrs.         Yield       gal/min. with       ft. drawdown after _nrs. <td>Type SS Model No.</td> <td>Boulders, Sand &amp; Gravel</td> <td></td>	Type SS Model No.	Boulders, Sand & Gravel	
Data       Stat 522       Intim       It definition         Data       Stat 522       Intim       It definition         Crave/Filter       BX       Size of gave/filter       San 522       San 4.8       14         Crave/Filter       BX       Size of gave/filter       San 522       San	Diam. 6Slot size 20 from 75 ft. to 80 ft.	Cobble & Sand	4
Materials placed fromR toRRR	Crawel/Filter nacked: T Ves M No. Size of gravel(and	Boulders, Cobble, Sand &	14
Surface Seal: Ø Yes □ No       To what depth? 18±ft.         Material used in seal Barroid Casing Seal	Materials placed from ft. to ft.	Sand, Very Coarse & Gravel	61
Material used in seal Barroid Casing Seal       250+gpm         Did any strate contain unusable water?       Depth of strate         Dype of water?       Depth of strate         Method of sealing strate off	Surface Seal: X Yes INO To what depth? 18+ft.	Water Bearing 34 to 80 feet	
Did any strata contain unusable water? Use X No   Type of water? Depth of strata   Method of sealing strata off   PUMP: Manufacturer's Name   Type:   Type:   HP.      WATER LEVELS: Land-surface elevation above mean sea levelf.  Static level 34ft, below top of well Date 10/7/2010  Artesian vater is controlled by	Material used in seal Barroid Casing Seal	250+gpm	
Pipe of water i       Depth of strata         Method of sealing strata off	Did any strata contain unusable water?  Yes X No		
PUMP: Manufacturer's Name         PUMP: Manufacturer's Name         Type:         HP.         WATER LEVELS: Land-surface clevation above mean sea level	Stype of water / Depth of strata		
Type:       HP.         WATER LEVELS: Land-surface plevation above mean sea level	PIIMP- Manufacturer's Name		
WATER LEVELS: Land-surface elevation above mean sea levelft         Static level 34ft. below top of well       Date 10/7/2010	Туре: Н.Р		
Static level 34ft. below top of well       Date 10/7/2010	WATER LEVELS: Land-surface clevation above mean sea level ft.		
Artesian pressureibs. per spare inchDate	Static level 34ft. below top of well Date 10/7/2010		
Artesian water is controlled by	Artesian pressure lbs. per square inch Date	Recommended pump depth	
WELL TESTS: Drawdown is amount water level is lowered below static level         Was a pump test made?       Yes         Yield:       gal/min. with         ft. drawdown after       hrs.         Precovery data (time taken ås zero when pump turned off) (water level measured from well         inoj ro woter level)       NOV 0.4. 2010         Trine       Water Level         Time       Water Level         Jate of test	Artesian water is controlled by (cap, valve, etc.)		
Was a pump test made?       Yes       W non?         Yield:       gal/min. with       ft. drawdown afterhrs.         Recovery data (time taken ås zero when pump turned off) (water level measured from well top is water level)       NUV 0 4 2010         Trine       Water Level       Time         Water Level       Time       Water Level         Date of test	WELL TESTS: Drawdown is amount water level is lowered below static level		
Incl.	Was a pump test made? [] Yes [X] No If yes, by whom?		
Yield:       gal/min. with       ft. drawdown after hrs.         Recovery data (time taken ås zero when pump turned off) (water level measured from well top to water level)       Image: Construction of the set of the set of the set of test         Time       Water Level       Time       Water Level         Date of test	Yield hris. with ft. drawdown after hrs.		
Inter to be y date line take this 200 when painp annea by (nate level introducts) for water level       NOV 0.4.2010         Trime       Water Level       Time         Water Level       Time       Water Level         Department of est	Yield gal/min. with ft. drawdown after hrs.		
Time       Water Level       Time       Water Level         Time       Water Level       Time       Water Level         Department of test	top to water level)	NOV 0.4 2010	+
Date of test	Time Water Level Time Water Level Time Water Level		
Date of test			
Date of test			
Airtest 250+ gal/min. with stem set atfl. forhrs. Airtest an flowg.p.m. Date Temperature of water Was a chemical analysis made? [] Yes 🛛 No	Delice for test on lonin with the demonstration offer the	↓ ↓	<u>}</u>
Ariesian flow g.p.m. Date Ariesian flow g.p.m. Date Start Date 10/6/10 Completed Date 10/7/10	Dance rest gal/min. with the in Grawoown and me		
Temperature of water Was a chemical analysis made? [] Yes 🛛 No	Artesian flow on m Date		
	Temperature of water Was a chemical analysis made?  T Yes XI No	Start Date 10/6/10 Completed Date 10	<u>/7/10</u>
		<u>د</u>	

Addition in Langueer in Trainee Traine (The Fiber Fiber Son	Diming Company 7 as 1 Diming, mc.
Driller/Engineer/Traince Signature Don HT	Address 17313 East Linke Road
Driller or trainee License No. 1447	City State Zin Greenacres WA 99016
IF TRAINEE: Driller's License No:	Contractor's
Driller's Signature:	Registration No. JJDRIJ-177KU Date 10/8/10
ECY 050-1-20 (Rev 4/07)	Ecology is an Equal Opportunity Employer

File Original and First Copy with Department of Ecology Seco The

WATER	WELL	REPORT
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Start Card No. 028841

(USE ADDITIONAL SHEETS IF NECESSARY)

	Driller's Copy	Water Right Permit No		
OWN	ER: Name_ Dick Riggs	AddressN 9315 Riverside State Pk	<u>DR. 9_M</u> 5	<u>ile F</u>
- LOCA	TION OF WELL: County_Spokane	% <u>NE_</u> % Sec_20T_2	<u>,6</u> N., R4	<u>.2</u> w.м.
) STRE	ET ADDDRESS OF WELL (or nearest addreas)			
PROP	OSED USE: Domestic Industrial I Municipal I Irrigation Test Well Other I	(10) WELL LOG or ABANDONMENT PROCEDUR	E DESCRI	IPTION
		<ul> <li>thickness of aquifers and the kind and nature of the material in ea with at least one entry for each change of information.</li> </ul>	ich stratum pe	inetrated
TYPE	OF WORK: Owner's number of weilt (if more than one)	MATERIAL	FRQM	TO
Aband	oned 🗌 New well 🔤 Method: Dug 🗀 Bored 🗔	Tensoil	0	2
	Reconditioned Rotary S Jetted	Big Cravel		5
DIALE		Loose gravel	5	12
DIME	60 biameter of well 60 michael	Two boulders	12	13
Drilled	feat. Depth of completed well 00	Gravel	13	15
CON	STRUCTION DETAILS:	Boulder	. 15	16
Casing	g installed: <u>56</u> · Diam. from <u>+1½ ft. to 55</u> f	Big gravel	16	28
Welded	1 021 Diam. fromft. teft	Brown sand water	28	49
Thread	ed 🔲* Diam. tromR. tef	Gray sand clay water	49	_50
Perfor		Grav sand water	50	60
Type of	perforator used		<b>└</b> ────────────────────────────────────	
SIZE of	perforations in. by in			
	perforations from ft. to ft	t.	<b></b>	
	perforations from ft. te t	I	<u> </u>	
	perforations from ft. to ft	t.	┢	
Scree			┢────┝	
Manufa	cturer's NameJohnson	-		
Туре _	Stainless Model No		┟╍──┼╸	
liam	<u>6</u> <u>Siciaize 10</u> <u>from 55 it. to 60</u>	t.	┟───┼╍	
Diem	Slot size fromN. 191	t	<u></u> <u>_</u>	
Grave	i packed: Yes No Size of gravel		+	<del>.</del>
Gravel	placed from R. to		<u> </u>	
	<b>57</b>		<u>↓</u>	
Surfa	Bentonite	······································	<b>└──</b> ·──┼	
Materi	ai yeed in seal	-		
Did any	y strata contain unuseble weter? Yes 🛄 No 🕰		-₩-13-1	⊦n¶—
Туре о	d water? Capto of		<b>──</b>	<u>                                      </u>
Metho				╷║╢╴
) PUM	P: Manyfecturer's Name	MAY 25	╇┹┹┻╼╌┼╵	Ľ٩-
Туре:_	HP	<b>_</b>	<u>                                      </u>	<u> </u>
) WAT	ER LEVELS: Land-surface elevation		ECOLOGY	<u> </u>
Static	level 23 ff. below top of well. Date 5-21-90	<u>35010</u>	NAL OFFICE	<b>───</b> ╋ <sub>7</sub>
Artesid	in pressure ibs. per square inch. Date		┿━╸─┼	
	Artesian water is controlled by (Cap. valve, etc.))		<u> </u>	9(
WEI	I TESTS: Drawdown is amount water level is lowered below static level	Work started <u>D=21</u> , 19. Completed	<u>J-61</u>	<u>_, 19 </u>
) WELL	pump test made? Yes No Hyes, by whom?	WELL CONSTRUCTOR CERTIFICATION:		
Yield:	18 gal./min. with ft. drawdown after ht	a. L constructed and/or accept responsibility for con	struction of	this we
	Bailer "	and its compliance with all Washington well com	natruction at	tandardi mv. boʻ
		<ul> <li>Materials used and the information reported above knowledge and belief.</li> </ul>	, și e live lu	. my D#1
Recov from w	ery data (time taken as zero when pump turned off) (water level measured rell top to water level)			
Time	Water Level Time Water Level Time Water Level	NAMEFogle Pump & Supply		
		(PERSON, FIRM, OR CORPORATION)	(TYPE OR	: PRINT)
		- Address 316 W 5th, Colville, Wa. 99	114	
<b>-</b> ·	Date of test	(Signed) Koz Jocker Mith License	No. 1194	<u> </u>
Beiler	test gal./min. with6 ff. drawdown after h	Contractor's		
	r	Registration polo (NT) 5-21		

Artesian flow .....

\_\_\_\_g.p.m. Date \_\_\_

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

2	0	р	2
2	U	Б	2

artment of Ecology ond Copy—Owner'	в Сору			WASHINGTON					
1 Copy-Driller's (	Сору		STATE OF		Water Right F	Permit No		·	
OWNER: Nen	· TACKie	Mª Clell	en	Address	9124 2. 6.146	Parte ST. PL	OR ULAR	. 101 F	العليمة. الما المناقعة
	OF WELL: County	SPOKANE			·	NE & Sec 2	<u>نە ، ، د</u>	e_N., R	<u> 2=</u> w.w
STREET ADD	DRESS OF WELL (or		علم ال علم	ESDE TT.	PK DR NI	Contra FA	مصحب	<u>9</u> 9	0.50
	LICE. M Domestic		Musicipal	(10) WELL			ROCEDUR	E DESC	RIPTIO
PROPUSED	USE: Irrigation	Test Well	Other 🗆	Formation: De	scribe by color, c	character, size of	material and	structure	, and sho
	Oper Owner's number	of well		thickness of aq with at least one	uiters and the kind entry for each cha	and nature of the r inge of information.			
	(if more than one	)	Bored []		MATE	RIAL		FROM	TO
				Son -	give gi	Avel Bo	Liges	. 11	30
	Heconomoned (.)			-30nd	Sparel - 6	421		30	83
	S: Diameter of well _			menul	- 2" mi	aus		73	89
Drilled	teet. Depth of		<b>.</b>	-Ø		· · _ · - · ·			<u> </u> <u>+</u> ·· −
CONSTRUC	TION DETAILS:	+ 1	 6e			· ··· ··· ···			· <del> </del> · ·
Casing installe	od: <u>(0</u> ' Dian	n. fromtt. t	toft.	<u> </u>					+
Liner installed	Dian	n. fromft.1	18						
Perforations:					· · · · · · · · · · · · · · · · · · ·				
Type of perforation	or used								+
SIZE of perforati	DN8	in. by	in.						+
	perforations from	ft. to	fi	·					-
	perforations from	fl. to	ft	·					-
	perforations from	n. 10		·					
Menufacturer's I				-					
Туре		Mod	lei No	-					- <b>-</b>
Diam	Slot size	tromtt.	toft	·	· · · - · · ·				
Diem	Slot size	fromft.	<u>toπ</u>	·					
Gravel packe	d:Yee Novel Si	ze of gravel							
Gravel placed fr		H. to	"	·					-l
Surface seal:	Yes No To	o what depth?	n	•		<u> </u>			-
Meterial used in					··	· · · · · · · · · · · · · · · · · · ·			-+
Type of water?_		Depth of	strata	_			1111		
Method of sealing	ng strate off			- · · · - ·			- <del></del>		
) PUMP: Man	ufacturer's Name	· · · · · · · · · · · · · · · · · · ·							
Туре:			H.P	<u> </u>		JAN 2	1988	<u> </u>	
WATER LE	VELS: Land-surface	ce elevation n sea level	ft		r	IFPIRE	3.0	Y	
Static level	1. bel	ow top of well Date 1=	16-80	-		BURANE BEBA	TALAL AFFE	¢F	
Artesian pressu	re ibi sian water is controlled b	e, per square inch. Date		- i		<u> </u>			
		(Cap, valve	, etc.))	Work starte	1-15-8	2, 19. Compl	eted	-16	. 19
) WELL TES	TS: Drawdown is amou	unt water level is lowered 7 1 If ves, by whom?	d below static leve			CERTIFICAT	ON:		
Yield:	gel,/min. with	ft. drawdown alto	er hr	L CONST	ructed and/or a	ccept responsibi	lity for con	truction	of this w
11				" and ite	compliance wi	th all Washingt	on well con orted above	atruction	to my b
	(time taken as zero when	pump turned off) (water	level measured	knowle	dge and belief.	··· ·····			
from well top to	water level) Level Time	Water Level Time	Water Level		1120.	Dac 1	2000		
					(DERION, FI	RM, OR CORPORATI	000 501	TYPE	OR PRINT)
				Address	4601 1	AlonRos	5 <b>- 51</b> 00		w <u>A.</u> 🗡
					1/	11-			~~~
Date of	1661			(Signed)-	Ale t	Tacksen	License	No.	009
Bailer test	gel,/min. with	ff. drawdown a	inter Ni loc Ni	Contracto	r'8 0n	*	/	-	(
Aintest	gai, / min. with stew	ישטופו (11.1 11.1 11.1 11.1 11.1 11.1 11.1 11.1 11.1		No. Shat	B-10-C1-48	Date	<u>/7</u>		19
Antonian Alassi		_ g.p.m. Dete 🔍 🗥							

\_\_\_\_

WATER W STATE OF	VELL REPORT 20B3 WASHINGTON		N1 201
91388	UNIQUE '	NELL ID	-AFQ-:
(1) OWNER:         NAME: Jason & Holly McLellan         ADDRESS:         93	324 Riverside State Park Dr.Spokane,	Na.99(	026
(2) LOCATION:COUNTY: Spokane NE 1/4	SEC. 20 TWP. 26 R. 42		
STREET ADDRESS OF WELL: 7 Mile & Riverside St. Pa	ark Parcel D 26201.9053		
(3) PROPOSED USE: DOMESTIC	(10) WELL LOG & ABANDONMENT PROCED	JRE	
(4) TYPE OF WORK: OWNER # OF WELLS NEW WELL ROTARY	MATERIAL F	ROM	Т0
<ul> <li>(5)DIMENSIONS: DIAMETER: 6"</li> <li>(5)DIMENSIONS: DIAMETER: 6"</li> <li>(6) CONSTRUCTION DETAILS: WELDED</li> <li>(6) CONSTRUCTION DETAILS: WELDED</li> <li>(75' CASING INSTALLED: 6" FROM: + 1-1/2' TO: 75'</li> <li>(75' LINER INSTALLED: 4" FROM: TO: 1000000000000000000000000000000000000</li></ul>	Top soil Sand; some small gravel Gravel, course W/ cobble & boulders Gravel, course W/ sand & cobbles Gravel, course W/med. sand	0 2 10 25 60	2 10 25 60 80
PERFORATIONS: TYPE: SIZE: LINER PERFORATIONS FROM' TO PERFORATIONS FROM' TO PERFORATIONS FROM' TO	6" drive shoe 1 hour development Excellent recovery		
SCREENS: MANUFACTURER: Alloy Steel TYPE: SS         DIAM:_6"_SLOT SIZE:020 FROM:75'TO:80'         DIAM:SLOT SIZE:FROM:TO:         GRAVEL PACKED: NO         SIZE:         GRAVEL FROM:         TO:         SURFACE SEAL:         YES         DEPTH: 20'         MATERIAL:         BENTONITE CASING SEAL	DEPARTMENT OF ECOLOGY EASTERN REGIONAL OFFICE		
ANY STRATA BEARING UNUSABLE WATER? NO METHOD OF SEALING OFF: (7) PUMP: MANUFACTURER: Aermotor type: submersible HP: 3/4 hp			
(8) WATER LEVELS:STATIC: 33 DATE: 3/8/01	WORK STARTED: 3/ //U1 COMPLET	ED: 3/8	8/01
(9) WELL TESTS: PUMP TESTED? YES BY Driller YIELD: 16 GAL/WITH 2' DRAWDOWN AFTER 4 HRS. CHEMICAL ANALYSIS MADE? YES COLIFORM & nitrate	WELL CONSTRUCTOR CERTIFICATION I CONSTRUCTED AND/OR ACCEPT RESPONSIBILITY FOR CONSTRUCTION OF ANCE WITH ALL WASHINGTON WELL CONSTRUCTION STANDARDS. MATERIA TION REPORTED ABOVE ARE TRUE TO MY BEST KNOWLEDGE AND BELIEF. NAME: VERMILLION WATER SYSTEMS, IN ADDRESS: 5309 N. LYNDEN RD. OTIS ORCHARDS, WA	THIS WELL, A NLS USED AND C. 99027	ND IT'S CL D THE INFO
AIR TEST: 75 + GAL/MIN. WITH STEM @ 80' FOR 1 HOURS.	SIGNED: Kuth Uumillion LI CONTRACTOR'S # VERMIWS04206 DATE: 3/	CENSE # 12/200	# 107 1

	⊌ATER Stat	VEL EOFV	L REPORT ASHINGTON	Start Card No. Unique Well I.D. # Water Right Permit	W05772 AB2023 No.	1
(1) OWNER: Name MCLELLAN, ROBERT & LOLA	Address	9324	RIVERSIDE PK DR	NINE MILE FALLS, WA 99026	- -	
(2) LOCATION OF WELL: County SPOKANE (2a) STREET ADDRESS OF WELL (or nearest addre	ss) <i>,</i>		- SW 1/4 SE 1	/4 Sec 20 T 26 N., R 42	WM	
(3) PROPOSED USE: DOMESTIC	######### <b>##</b> ## <b>#</b> ####################		(10) WELL LOG			
(4) TYPE OF WORK: Owner's Number of (1f more than one) NEW WELL Method: ROTARY	vell 1		formation: Descr and structure, a and nature of th	ribe by color, character, si and show thickness of aquife be material in each stratum (	ze of mater rs and the penetrated,	ial kind with
(5) DIMENSIONS: Diameter of Drilled 56 ft. Depth of completed	well 6 in well 56 ft	ches	MATERIAL	ry for each change in forma	   FROM	<u>T</u> O
(6) CONSTRUCTION DETAILS: Casing installed: 6 " Dia. from +2 WELDED " Dia. from " Dia. from	ft. to 51 ft. to ft. to ft. to	ft. ft. ft.	SAND SILT BOULDERS SAND GRAVEL SAND		0 6 14 25 56	6 14 25 56
Perforations: NO Type of perforator used SIZE of perforations in. perforations from ft. to perforations from ft. to perforations from ft. to	by i ft. ft. ft.	in.				
Screens: YES Manufacturer's Name H Type SLOTTED Model No. S Diam. 6 slot size .016 from 51 Diam. slot size from	OUSTON TAINLESS ft. to 56 ft. to	ft. ft,				
Surface seal: YES To what Material used in seal BENTONITE Did any strata contain unusable water? Type of water? Depth Method of sealing strata off CASING	ft. ft. t depth? 18 NO of strate	ft. ft.	DEPAR EASTER	TMENT OF ECOLOGY IN REGIONAL OFFICE		
(7) PUMP: Manufacturer's Name Type NONE	H.P.					
(8) WATER LEVELS; Land-surface el above mean sea Static level 15 ft. below top of Artesian Pressure lbs. per square i Artesian water controlled by CAP	evation Level well Date OB/ inch Date	ft. /31/95	l look stanted CB	/11 /05 (and at at	0.08 (31 /05	
			UCL CONSTRUCTO			
Vasa pump test made? NO If yes, by whom Yield: gal./min with ft. drawdo	n? Nwn after	hrs.	I constructe struction of Washington w and the info knowledge an	d and/or accept responsibili this well, and its complian ell construction standards. rmation reported above are t d belief.	ty for con- nce with all Materials rue to my b	used Dest
Recovery data Time Water Level Time Water Level	Time Water	Level	NAME FOGLE PUMP (Person, f	& SUPPLY, INC. irm, or corporation) (Type	or print)	
Date of test / / Bailer test gal/min. ft.drawdd Air test 40+ gal/min.w/stem set at 50 Artesian flow g.p.m. Temperature of water Was a chemical	own after ft. for 1 Date Lanalysis med	hrs. hrs. e? NO	ADDRESS 316 U 5 [SIGNED] Contractor's Registration No	TH Confi ( Compose M FOGLEPS095L4 Date	10. 1287 08/31 95 0 <del>7/05/9</del> 5	

20B4

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

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WATER W STATE OF	ZOB5 WASHINGTON	
91387	UNIQUE V PARCEL	VELL ID-AFQ-11 , NO-a6a01.90
(1) OWNER: NAME: Scott & Renee Kovolesky ADDRESS:932	4 N.Riverside Park Dr, Nine Mile Falls Wa.	99026
(2) LOCATION:COUNTY: Spokane NE 1/4 s	SEC. 20 TWP. 26 R. 42	
STREET ADDRESS OF WELL: 7Mile & Riverside St. Par	(10) WELL LOG & ABANDONMENT PROCEDU	
(4) TYPE OF WORK: OWNER # OF WELLS NEW WELL ROTARY	MATERIAL F	
(5)DIMENSIONS: DIAMETER: 6" DRILLED: 80' DEPTH OF COMPLETED WELL: 80' (6) CONSTRUCTION DETAILS: WELDED CASING INSTALLED: 6" EROM: ±1-1/2' TO: 75'	Gravel, sand, cobble, boulders Gravel, course w/sand & cobble Gravel, course w/sand, course	1 45 45 60 60 80
PERFORATIONS:	6" Drive Shoe Installed 1 hour development Excellent Recovery	
LINERPERFORATIONS FROM' TOPERFORATIONS FROM' TOPERFORATIONS FROM' TO SCREENS: MANUFACTURED: Alloy Steel TYPE: SS		
DIAM:_6"_SLOT SIZE:020_FROM:_75'TO:80' DIAM:SLOT SIZE:FROM:TO:		5
GRAVEL PACKED: NO SIZE: GRAVEL FROM: TO:	MAR 1 4 200	J
SURFACE SEAL: YES DEPTH: 20' MATERIAL: BENTONITE CASING SEAL ANY STRATA BEARING UNUSABLE WATER? NO METHOD OF SEALING OFF:	DEPARTMENT OF ECOLOGY EASTERN REGIONAL OFFICE	
(7) PUMP: MANUFACTURER: Aermotor type: submersible HP: 3/4 hp		
(8) WATER LEVELS:STATIC: 33' DATE: 3/9/01	WORK STARTED: 3/8/01 COMPLETE	D: 3/9/01
(9) WELL TESTS: PUMP TESTED? YES BY Driller/VWS YIELD:16 GAL/WITH 2' DRAWDOWN AFTER 4 HRS." CHEMICAL ANALYSIS MADE? Yes, coliform & nitrate	WELL CONSTRUCTOR CERTIFICATION I CONSTRUCTED AND/OR ACCEPT RESPONSIBILITY FOR CONSTRUCTION OF T ANCE WITH ALL WASHINGTON WELL CONSTRUCTION STANDARDS. MATERIAL TION REPORTED ABOVE ARE TRUE TO MY BEST KNOWLEDGE AND BELIEF. NAME: VERMILLION WATER SYSTEMS, INC ADDRESS: 5309 N. LYNDEN RD. OTIS ORCHARDS, WA. Keith D. Vermillion	HIS WELL, AND IT'S CON S USED AND THE INFOR C. 99027
IR TEST: <b>75</b> GAL/MIN. WITH STEM @ <b>80'</b> FOR 1 HOURS.	SIGNED: Kuthen J. J. Mullion LIC CONTRACTOR'S # VERMIWSO4206 DATE: 3/1	ENSE # 1079 2/2001

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

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## WATER WELL REPORT

STATE OF WASHINGTON

Application No.

20B6

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(1) OWNER, NAME OTHER ROOT OF T	Address 1. 1.1.2.1.2. HANNA MARE OF VIOLET	<u></u>	D
LOCATION OF WELL: County Spokane	N.W.H4 N.E. 14 Sec. 20. T.		.42w
g and distance from section or subdivision corner		- (g	
(3) PROPOSED USE: Domestic 🛛 Industrial 🗇 Municipal 🗆	(10) WELL LOG:		
Irrigation 🗋 Test Weil 🗋 Other 📃	Formation: Describe by color, character, size of materi shows thickness of aquifers and the kind and nature of strutum penetrated, with at least one entry for each	al and struc the materic change of j	cture, c al in e lormati
(4) TYPE OF WORK: Owner's number of well (if more than one)	MATERIAL	FROM	TO
Deepened	Gravel, Sand dirty, Boulders	0	1;
Reconditioned 🖂 🛛 Rotary 😭 Jetted 🗋	Sand	15	4(
(5) DIMENSIONS: Diameter of well 6 inches. Drilled 60 ft. Depth of completed well 58 ft.		40	
6) CONSTRUCTION DETAILS:			
Casing installed: 6 " Diam from +1 th to 53 th			
Threaded		+ +	
Welded 🗃			
Perforations: Yes 🗆 No 🍞		+ +	
Type of perforator wed.		1	
SIZE of perforations in, by in.			
Derforations from			
perforations from		-ll	
Screens: yes re No C		$\left  \right $	
Manufacturer's Name Johnson	- K CII. Ht.	b))_	
Type Stainless Steel Model No.	- 100 Ma (7/1/01/0	12	
Diam. 0			
- Gravel packed: Yes No D Size of gravel:			
Gravel placed from		. <b> </b>	
Surface seal: yes No D To what depth?		<b></b>	
Material used in seat		+ - +	
Type of water?		<u>;</u>	
Method of sealing strate off	RECE	IVE	D
(7) PUMP: Manufacturer's Name	MAD 0.4		
Туре:НР	MMR 4 4	13/8	
(8) WATER LEVELS: Land-surface elevation 72	DEPARTMENT O	F ECOLD	<del>GY -</del>
above mean sea level.	SPOKANE , REGIO	HAL OF	ICE
Artesian pressure		† †	
Artesian water is controlled by (Cap, valve, etc.)			
A) BUET I TESTS. Drawdown is amount water level to			
9) WELL IESIS: lowered below static level	Work started Mar. 6	- 7	19.7.
field: gal/min. with fi. drawdown after	WELL DRILLER'S STATEMENT:		
<i>n</i> n <b>h</b>	This well was drilled under my jurisdiction	and this a	renort
a a a a a a a a a a a a a a a a a a a	true to the best of my knowledge and belief.		poi -
lecovery 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 Bartholomew Drilling, In( (Person, firm, or corporation) (	Type or br	int)
	Address Name Mille Facts, WA 9902	<b>.</b>	
e of test	N/ Kallera ITha	an	211
ballow test	[Signed] f	V.KAL	
riesian flow	Linner No. 0027	48	
emperature or water	LACTURE NO		- 1¥7,1

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Third Copy — Driller's Copy

## WATER WELL REPORT STATE OF WAS

Application No.

20B7

MINUTUN
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Permit No.

(1) OWNER: Name Robert B. McLellan	Address Route 1. Box 47. Nine Mile 1	Falls N	A 9902
" LOCATION OF WELL; County Spokabe	1. NF - 20	<b>-</b>	102
ng and distance from section or subdivision corner	110 1/4 . 112 1/4 Sec. 5. M. T. 1	<u>40. n., r.</u>	ч∠Б, ₩.М.
(3) PROPOSED USE			
(J) INOPUSED USE; Domestic [] Industrial [] Municipal []	(10) WELL LOG:		
(4) TYPE OF WORK. Owner's number of well	Formation: Describe by color, character, size of materia show thickness of aquifers and the kind and nature of stratum penetrated, with at least one entry for each c	l and stru the materi hange of	cture, and ial in each formation.
(if more than one),	MATERIAL	FROM	то
Deepened 🗌 Cable 🖬 Driven 🗇	Top soil, brn silty sand & gravel	0'	41
Reconditioned 🗌 Rotary 🗖 Jetted 🗖	Boulders, sand & gravel, loose	4'	14'
(5) DIMENSIONS: 6	Sand, brn, silty, moist	14'	17'
Drilled 110 ft. Depth of completed well 109	Boulders, gravel & fine brn sand,		
	<u>loose (dirty brn water)</u>	<u>17'</u>	261
6) CONSTRUCTION DETAILS:	Sand fine to coarse brn silty, occ	as	<u> </u>
Casing installed: 6 " Diam, from +11 rt, to 109 rt.	rocks thin layers tan clay	261	<u>34'</u>
Threaded Diam, from ft, to ft,	Sand fine gray, wood chips, water		58'
Welded T	Sand line to coarse gray, occas.		
Perforations: Yes 🛣 No 🗆	Sand: fine: may some mayol	281	84
Type of perforstor used	Sand gray fine	04	88
SIZE of perforations	May moist white w/tan sooms of	00'	YI
100 perforations from	sand & gravel	011	001
perforations from	Gravel & coarse and unter	- 71	100
	Sand fine to compare water	- 70 -	102
Screens: Yes 🗋 No 👗	Jana, Inte Lo coarse, water	- 1021	110
Manufacturer's Name			
Diam. Slot size from the to			
Diam			
Convel reshed			<u> </u>
Uravel packed; Yes NoL Size of gravel:			
Gravel placed from			
Surface seal: Yes 🖉 No 🗋 To what depth?	RECEIVED		
Material used in scalBentinite		]	
Did any strate contain unusable water? Yes No	JUN 2 2 1302		
Method of sealing strata off	EPAPTMENT OF ECOLOGY		
	CONTANT REGIONAL OFFICE		
Tune:			
Lype:HP			
B) WATER LEVELS: Land-surface elevation /650 .			
atic level 19 ft. below top of well Date 5/11/82			<u> </u>
tesian pressurelbs. per square inch Date			
Artesian water is controlled by			
WELL TESTS. Drawdown is amount water level to			
lowered below static level	Work started June 7 19 82 Completed Jur	15	1.82
eld: gal/min, with # drawdown attan			
" " " "	WHELE DRILLER'S STATEMENT:		
1 11 11 11 11	This well was drilled under my jurisdiction at	n <b>d this</b> r	eport is
covery data (time taken as zero when pump turned off) (water level			
measured from well top to water level)	NAME ZINKGRAF'S WELL DRILLING CO		
A sine water Level I the water Level Time Water Level	(Person, firm, or corporation) (T	pe or pri	nt)
	Address P.O. Box 1.3/1 Snokane We C	0202	
		1006	
ate of test6/15/82	Istanti ( alt Kink and		
lier test 104 gal/min. with 3	[Signed]	•••••••••••••••••••••••••••••••••••••••	•••••
tesian flow	0513	01	<b>d A</b>
mperature of water	License No. 9745 Date June	21	, 19. 82
6/22/82 A	•		
	ETS IF NECESSARY)		_
	l de la companya de l		•••

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#### WATER WELL REPORT STATE OF WASHINGTON

20B8

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1) OWNER: Name Robert B. McLellan	Adverse Route 1, Box 47 Nine Mile P		. 000
LOCATION OF WELL: County Spokene	NW NE 20	26	1. 330
g and distance from section or subdivision corner		40 . N., R.	42 <u>6</u> w
, IROFOSED USE: Domestic 🔀 Industrial 🗆 Municipal 🗋	(10) WELL LOG:		
Irrigation   Test Well   Other	Formation: Describe by color, character, size of matern	al and stru	cture,
) TYPE OF WORK: Owner's number of well	stratum penetrated, with at least one entry for each of	the materi change of	iai in e formai:
New well D Method: Dug D Bored D	MATERIAL	FROM	ŤO
Deepened 🍇 Cable 🖧 Driven 🛛	DEEPEN WELL		
V Reconditioned  Rotary Jetted	Sand, fine to coarse	110'	
) DIMENSIONS:	Sand & coarse gravel, size 3/4 to		
Drilled 17 ft. Depth of completed well 127	2"	113'	123
	Clay, gray	123	125
) CONSTRUCTION DETAILS:	Sand, fine & coarse	125'	127
Casing installed: 6 Diam. from 110 ft to 126 .			
Threaded Diam. from ft. to ft.			
Welded 🕅 Ti Diam. from ft. to ft.			
Perforations: ver # ver =		İ	
Type of perforator used numeb		L]	-
SIZE of perforations 1/8 in by 11/4 in		. <u> </u>	
80 perforations from 115 ft. to 123 ft.		!	
perforations from ft. to ft.		<u> </u>	
perforations from ft. to ft.		<u> </u>	
Screens; yes 🗋 No 🛣			
Manufacturer's Name			
Type	· · · · · · · · · · · · · · · · · · ·		
Diam. Slot size from ft. to ft.			<u> </u>
Diam			
Gravel packed: Yes 🗆 No 🛱 Size of gravel			· <u> </u>
Gravel placed from ft. to ft.			
Surface cool X	·		•
Material used in sec.	·		
Did any strata contain unusable water? Ver 🗂 🗤 🗂		+	
Type of water? Depth of strats	· · · · · · · · · · · · · · · · · · ·	<u> </u>	
Method of sealing strate off	· · · · · · · · · · · · · · · · · · ·		
PUMP: Manufacturaria Nama		<b>_</b> _+	
Туре:			
WATER LEVELS	-		
WATER LEVELS: Land-surface elevation / USO above mean sea level.			
ic level			
Artesian water is controlled by		—·	
(Cap. valve, etc.)			-
WELL TESTS Drawdown is amount water level in			
lowered below static level	Work started Jan. 18 19 83 Completed Jan	a 25	108
a pump test mader zes No i If yes, by whom?			
Benny ministration in crawdown arter http:	WELL DRILLER'S STATEMENT:		
······································	This well was drilled under my jurisdiction a	nd this re	eport
overy data (time taken as zero when nump turned off) (mater level	a de to the best of my knowledge and belief.		
measured from well top to water level)	NAME ZINKGRAP'S WELL DRILLING CO	h	
me water Level Time Water Level Time Water Level	(Person, firm, or corporation) (T	VDE OF DE	nt)
	D Box /3/1 Contrary 174	00000	/
	Address I. U. DOI 4341, SPOKARE, WA.	99202	
- ate of text 1/21/83	Call 21 1		
r test 20+ gal/min, with None ft drawdown after 1	[Signed] WUG MMANA		
dan flow	(Well Driller)		
perature of water	License No. 0543 Data 1/28		1983
	Late		

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### WATER WELL REPORT STATE OF WA

Application No.

20G1

<b>8</b> H	NG'	TON	
_			 

Permit No.

(1) OWNER: Name Bob McLellan	Address 3626 W. Broad Spokane, W	1 99208	
) LOCATION OF WELL: County Spokane	- S.W. 1/2 N.E. 1/2 Sec. 20 T.2	26 N. R.	42 w
g 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 materi show thickness of aquifers and the kind and nature of strain penetrated with at least one even in the second	al and stru the matern	cture, a ial in eq
(4) TYPE OF WORK: Owner's number of well (if more than one)	MATERIAL		TO
New well 🛛 Method: Dug 🗆 Bored 🗍	Gravel, Sand		10
Beconditioned C Between C Internet C	Gravel With gand Bouldans 20		18
	Sand and Clay ton	18	40
(5) DIMENSIONS: Diameter of well 6 inches,	Sand and Clay, ten	40	60
Drilled 17.7. ft. Depth of completed weil	Sand and Clay, tan	60	80
	Sand Distan	80	100
(6) CONSTRUCTION DETAILS:	Sand, Dirty	100	140
Casing installed: 6 "Diam. from +1 th to 171 th	Sand, Dirty, water	140	160
Threaded []	Sand, water	160	177
Welded 🖄 " Diam. from			
Perforations:			
		$\downarrow$	
SIZE of perforations in bu		1	
perforations from the to			
perforations from			
perforations from			
Screens: Yes 2 No			
Manufacturer's NameJONNSONStainless Steel	· · · · · · · · · · · · · · · · · · ·		
Type 5 matrix 20 for 171 m 176 m			
_ dravel packed: yes 🗋 No 🖉 Size of gravel:			
Gravel placed from			
Surface cool: X 40	Augure there have		~
Surface seal: Yes [* No ] To what depth?	_ MITWOG ITEIGNIS		12-
Material used in seal		·	·
Type of water? Depth of state		ii	
Method of sealing strata off			
	DECEIN	ED	
7) PUMP: Manufacturer's Name			
Туре:НР1-74	MAD 0 4 101	o	
8) WATER LEVELS: Land-surface elevation 22/1		0	
above mean sea level.	DEPARTMENT OF E	OLOGY	
riesian pressure the ner source (neb Date	SPOKANE REGIONAL	OFFICE	
Artesian water is controlled by			
(Cap, valve, etc.)		1	
(Cap. valve, etc.) 9) WELL TESTS: Drawdown is amount water level is		1	
(Cap. valve, etc.) <b>9) WELL TESTS:</b> Drawdown is amount water level is lowered below static level	Work started Mar. 4 2 1978 Completed Mar	6	. 19 78
(Cap. valve, etc.) (Cap.	Work started Mar. 4 2 1978 Completed Mar	<b>6</b>	. 19.78
(Cap. valve, etc.)  9) WELL TESTS: Drawdown is amount water level is lowered below static level Tas a pump test made? Yes D No D If yes, by whom? ield: gal./min. with ft. drawdown after hrs.	Work started Mar. 4 2 19.78 Completed Mar.	I. 6	19.78
(Cap. valve, etc.)  9) WELL TESTS: Drawdown is amount water level is lowered below static level Fas a pump test made? Yes   No   If yes, by whom?  ield: gal./min. with ft. drawdown after hrs.	Work started Mar. 2. 19.78 Completed Mar. WELL DRILLER'S STATEMENT: This well was drilled under my jurisdiction a	nd this r	<u>. 19 78</u> eport i
(Cap. valve, etc.)  9) WELL TESTS: Drawdown is amount water level is lowered below static level Yas a pump test made? Yes D No D If yes, by whom?  Tield: gal/min. with ft. drawdown after hrs.  " " " " " " " " " " " " " " " " " "	Work started Mar. 2	nd this r	<u>19.78</u> eport i
(Cap. valve, etc.)  9) WELL TESTS: Drawdown is amount water level is lowered below static level Fas a pump test made? Yes D No D If yes, by whom?  ield: gal/min. with ft. drawdown after hrs.  " " " " " " " " " " " " " " " " " "	Work started Mar. 4 2	nd this r	19 78
(Cap. valve, etc.) 9) WELL TESTS: Drawdown is amount water level is lowered below static level 7as a pump test made? Yes D No D If yes, by whom? ield: gal./min. with ft. drawdown after hrs. """"""""""""""""""""""""""""""""""""	Work started Mar. 4.2 1978 Completed Mar. WELL DRILLER'S STATEMENT: This well was drilled under my jurisdiction a true to the best of my knowledge and belief. NAME Bartholomew Drilling, Inc.	nd this r	<u>19 78</u> eport i
(Cap. valve, etc.)  9) WELL TESTS: Drawdown is amount water level is lowered below static level  7as a pump test made? Yes D No D If yes, by whom?  1eld: gal/min. with ft. drawdown after hrs.  1   1  1  1  1  1  1  1  1  1  1  1  1	Work started Mar. 4.2 1978 Completed Mar. WELL DRILLER'S STATEMENT: This well was drilled under my jurisdiction a true to the best of my knowledge and belief. NAME Bartholomew Drilling, Inc. (Person, firm, or corporation) (T	nd this r	19 78 eport i nt)
(Cap. valve, etc.)  9) WELL TESTS: Drawdown is amount water level is iowered below static level Fas a pump test made? Yes D No D If yes, by whom?  ield: gal./min. with ft. drawdown after hrs.  " " " " " " " " " " " " " " " " " "	Work started Mar. 4 2 1978 Completed Mar WELL DRILLER'S STATEMENT: This well was drilled under my jurisdiction a true to the best of my knowledge and belief. NAME Bartholomew Drilling Inc. (Person, firm, or corporation) (T Address Nine Mar Fails, Ma 99025)	nd this r	. <u>19.78</u> eport i nt)
(Cap. valve, etc.) 9) WELL TESTS: Drawdown is amount water level is lowered below static level Yas a pump test made? Yes D No D If yes, by whom? Tield: gal./min. with ft. drawdown after hrs. """"""""""""""""""""""""""""""""""""	Work started Mar. 4.2 19.78 Completed Mar WELL DRILLER'S STATEMENT: This well was drilled under my jurisdiction a true to the best of my knowledge and belief. NAME Bartholomew Drilling Inc. (Person, firm, or corporation) (T Address Ning Mag Fails, Ma 99025)	nd this r	<u>, 19.78</u> eport i nt)
(Cap. valve, etc.)  9) WELL TESTS: Drawdown is amount water level is lowered below static level  Yas a pump test made? Yes D No D If yes, by whom?  Teld: gal./min. with ft. drawdown after hrs.  " " " " " " " " " " " " " " " " " "	Work started Mar. 4.2 19.78 Completed Mar WELL DRILLER'S STATEMENT: This well was drilled under my jurisdiction a true to the best of my knowledge and belief. NAME Eartholomew Drilling Inc. (Person, firm. or corporation) (T Address Nine 119 Fails, Ma 99025) (Signed)	nd this r	<u>19 78</u> eport i nt) -
(Cap. valve, etc.)  9) WELL TESTS: Drawdown is amount water level is lowered below static level Fas a pump test made? Yes D No D If yes, by whom?  'ield: gal/min. with ft. drawdown after hrs.  '' '' '' '' '' '' '' '' '' '' '' '' '	Work started Mar. 4.2 19.78 Completed Mar WELL DRILLER'S STATEMENT: This well was drilled under my jurisdiction a true to the best of my knowledge and belief. NAME Bartholomew Drilling, Inc. (Person, firm. or corportion) (T Address Nine Mig Parts, WA 99025 [Signed]	nd this r	<u>19 78</u> eport i nt) 
(Cap. valve, etc.)  9) WELL TESTS: Drawdown is amount water level is lowered below static level Fas a pump test made? Yes D No I If yes, by whom?  ield: gal/min. with ft. drawdown after hrs.  " " " " " " " " " " " " " " " " " "	Work started Mar. 4.2 19.78 Completed Mar WELL DRILLER'S STATEMENT: This well was drilled under my jurisdiction a true to the best of my knowledge and belief. NAME Bartholomew Drilling, Inc. (Person, firm, or corporation) (T Address Ning Mirs Paris, MA 99025 [Signed]	nd this r	<u>19 78</u> eport i nt) 

ECY 050-1-20

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<u>\1</u>	OWNER MAR PROVIDE MIDORE	Address Mile Mile FALLS		
<b>79</b> 1	LOCATION OF WELL: SPOKANE	-SE NE Sec 20 T)	4 N., R.	42
(2)	LOCATION OF WELD, County conten			
1	Ng and distance from section of subarvision come	(10) WETLLOG		
· ·	PROPOSED USE: Domestic P Industrial Municipal	(10) WELL LOG.	and stru	ctute
	Irrigation L' Test well U Other U	show thickness of aquifers and the kind and nature of stortum penetrated, with at least one entry for each of	the materi hange of	al in formu
(4)	TYPE OF WORK: Owner's number of well	MATERIAL	TROM	I
•	New well 🙀 Method: Dug 🗌 Bored 🗋	P.T. SANDAND BOLLONG	0	a
	Despend Cable U Driver U Reconditioned C Rotary M Jetted C	dirly SAND 3 GREVEL	24	4
		dirty Sand	40	5
(5)	DIMENSIONS Diameter of well inches.	clean coarse Sano	13-1	
	Drilledft. Depth of completed wellft			
(6)	CONSTRUCTION DETAILS:			
•••	Casing installed: 6" Diam. from Top at to 70 at			
	Threaded [] Diam. from ft. to ft.			<b>_</b>
	Welded # Tham. from ft. to ft.		_ <b>_</b>	<u> </u>
	Perforations: Yes D No g		- <del> </del>	
	Type of perforator used.	·	╋╼╌╼╸	
	SIZE of perforations In. by In.		+	
	perforations from ft. to ft.			
	perforations from ft. to ft.	DECEWED		
	Screens: ym M No D	KLUGNLU		_
	Manufacturer's Name John SON SS SCREEL		_ <u>_</u>	-
	Type I'm and the 30 mm BO to to 70 th	MAR 28 19/5	4	
	Diam Slot size		╺╁╌╌╌╸	É
		DEPARTMENT OF ECOLUGY		
	Gravel placed from ft to ft.	SPOKANE REGIUTAL OFFICE		
	201		_	<b> </b>
•	SULTIRCE SCALL: Yes & No Do To what depth? Inclusion		╺┾┈╍╴╌┙	+
	Did any strate contain unusable water? Yes 📑 No 🖻	T	╺╂─────	+
	Type of water? Depth of strate			
		6 7 7		
	Method of sealing strate of	5,1,2		
(7)	Method of sealing strate of PUMP: Manufacturer's Name Sears S	5,1,2		
(7)	Method of sealing strate of PUMP: Manufacturer's Name Segys S Type: Secies 20. HP 14. HS			
(7) (8)	Method of sealing strate of PUMP: Manufacturer's Name Seave S Type: Sectes 20' HP 14 HS WATER LEVELS: Land-surface elevation 1/275.	3		
(7) (8) Stati	Method of sealing strate of PUMP: Manufacturer's Name Seaves Type: Sectes 20" HP 14 HS WATER LEVELS: Land-surface elevation above mean sea level	$=\frac{5}{1}$		
(7) (8) Stati	Method of sealing strate of PUMP: Manufacturer's Name Seave S Type: Sectes 20' HP 14 Hf WATER LEVELS: Land-surface elevation 1679. ic level ft. below top of well Date stan pressure lbe, per square inch Date	3		
(7) (8) Stati Arte	Method of sealing strats of PUMP: Manufacturer's Name Sears Type: Secres 20" HP 14 H5 WATER LEVELS: Land-surface elevation above mean sea level	3		
(7) (8) Stati Arte (9)	Method of sealing strate of PUMP: Manufacturer's Name Sears Type: Secres 20" HP // HS WATER LEVELS: Land-surface elevation above mean sea level			
(7) (8) Stati Arte (9) Was	Method of sealing strats of PUMP: Manufacturer's Name Seave S Type: Secres 20' HP 14 H5 WATER LEVELS: Land-surface elevation 16, 75 m. above mean sea level	Work started.3/7/24, 19Completed.3/	5154	
(7) (8) Stati Arte (9) Was Yiel	Method of sealing strats of PUMP: Manufacturer's Name Stars Stars Type: Secres 20" HP // HS WATER LEVELS: Land-surface elevation // 75. WATER LEVELS: Land-surface elevation // 75. above mean sea level // 75. It below top of well Date sian pressure ibs. per square inch Date Artasian water is controlled by (Cap, valve, etc.) WELL TESTS: Drawdown is amount water level is lowward below static level a pump test made? Yes D No D If yes, by whom? d: gal/min. with ft. drawdown after hrs.	Work started.3/7/24, 19Completed.3/		
(7) (8) Stati Arte (9) Was Yiel	Method of sealing strate of PUMP: Manufacturer's Name Stars Stars Type: Sectes 20" HP // HS WATER LEVELS: Land-surface elevation // 75n above mean sea level // 75n ic level Ibe, per square inch Date ft below top of well Date ft below top of well Date Artesian water is controlled by (Cap, valve, etc.) WELL TESTS: Drawdown is amount water level is lowered below static level is a pump test made? Yes [] No [] If yes, by whom? d: gal/min. with ft. drawdown after hre #	Work started. 3/7/74, 19Completed.3/ Werk started.3/7/74, 19Completed.3/ WELL DRILLER'S STATEMENT: This well was drilled under my jurisdiction true to the best start knowledge and behor.	$\frac{1}{124}$	
(7) (8) Stati (9) Waa <u>''</u>	Method of sealing strats of PUMP: Manufacturer's Name Sears Type: Secces 20" HP // HF WATER LEVELS: Land-surface elevation above mean sea level	Work started. 3/7/24, 19Completed.3/ Well DRILLER'S STATEMENT: This well was defiled under my jurisdiction true to the best of my knowledge and behar.	$\frac{1}{5}$	
(7) (8) Stati (9) Waa <u>Yield</u> " Recc	Method of sealing strats of PUMP: Manufacturer's Name Starys Type: Secres 20" HP // HS WATER LEVELS: Land-surface elevation above mean sea level	Work started.3/7/74_19Completed.3/ Work started.3/7/74_19Completed.3/ WELL DRILLER'S STATEMENT: This well was defined under my jurisdicided true to the best of more knowledge and befor. NAME	r and this	
(7) (8) Stati Arte (9) Was <u>Yiel</u> Reco	Method of sealing strats of PUMP: Manufacturer's Name Stars Stars Type: Sectes 20" HP // HS WATER LEVELS: Land-surface elevation // 75n. ic level ft. below top of well Date ic level Ibs. per square inch Date Artesian water is controlled by (Cap, valve, etc.) WELL TESTS: Drawdown is amount water level is lowered below static level a pump test mader Yes [] No [] If yes, by whom? d: gal/min. with ft. drawdown after hre.  wery data (time taken as zero when pump turned off) (water level ime Water Level Time Water Level Time Water Level	Work started. 3/7/2-, 19	r and this	
(7) (8) Stati (9) Waa Yield	Method of sealing strats of PUMP: Manufacturer's Name Sears Type: Secces 20' HP // HS WATER LEVELS: Land-surface elevation above mean sea level	Work started.3/7/24, 19Completed.3/ Work started.3/7/24, 19Completed.3/ WELL DRILLER'S STATEMENT: This well was defined under my jurisdicident true to the best set mer knewledge and befor. NAME And the best set mer knewledge and befor. NAME And the best set of the se	r and this	
(7) (8) Stati (9) Waa <u>Yiel</u> 	Method of sealing strats of PUMP: Manufacturer's Name Stars	Work started. 3/7/7- 19 Work started. 3/7/7- 19 WELL DRILLER'S STATEMENT: This well was defined under my jurisdicities true to the best of more knowledge and befor. NAME NAME Address Address Address Address	i and this	
(7) (8) Stati (9) Was Yiel " " Recc	Method of sealing strate of PUMP: Manufacturer's Name Stars Stars Type: Sectest	Work started. 3/7/2-, 19	r and this	
(7) (8) Stati (9) Waa Record Ti	Method of sealing strats of PUMP: Manufacturer's Name Sears Type: Secces 20' HP H/ HS WATER LEVELS: Land-surface elevation above mean sea level	Work started. 3/7/24, 19Completed.3/ Work started.3/7/24, 19Completed.3/ WELL DRILLER'S STATEMENT: This well was drilled under my jurischeider true to the best start knewledge and befor. NAME	r and this	
(7) (8) Stati (9) Was Recc Tri Recc Tri	Method of sealing strats of PUMP: Manufacturer's Name Stars	Work started. 3/7/7/19	i and this	

(2) LOCATION OF WELL Comp. Div. M. 12 FHILS:       ST.4 NE 1; 20020 7:240.         ''ty and distance from section or nuberwaited enterney       (10) WELL LOG:         ''House for matches of build in the section of the sectin of the sectin of the section of the section of the sect	Address Nile Mile FALLS	
(c) DOCATON for material or mathematic entropy         PROPOSED USE:       Demastic of patiential O         (d) TYPE OF WORK:       Owner's multiple of owner's multiple of the state of material and a presential of the state of th	M. IP FALLS - SEUNENSEDOT	( N. R (/2
The Control USE:       Domestic (f) [ndurtial ]       Municipal []       (10) WELL LOG:         PROPOSED USE:       Domestic Test Well ]       Other       Imagination in the start of material and s		
PROPOSED USE: Domestic B' judicipal of thread of material of a manufactor of the Util Other of the Other of the Util Other of the Other of the Util Other of the Other		
(4) TYPE OF WORK: (transfer of well well well of the state of show of the show o		Land structure
(4) TYPE OF WORK: Over internet based of well       Normary internet based of well       Normary internet based of the interne	G Other G Formation: Describe of your of the kind and nature of show thickness of aquifers and the kind and nature of show thickness of aquifers and the kind and nature of	the material in hange of form
Norw will not statustic inter of well     Descend of the D bring D Print D San 26 Bounders D Print D San 26 Gravel D State D Print D San 20 Gravel D State D Print D San 20 Gravel D State D Print S San 26 Gravel D State D	MATERIAL	FROM
Despend       Cable       Drives	Bored D Destric Source & Rounders	0 2
Recentline     Recentline       (3) DIMENSIONS:     Diameter of well     Diameter of well<	Driven D Driven D Driven Son D St. Grantel	244
(5) DIMENSIONS: Dimense of will be the set of the se	y Jane L Savo	40 5
Defined       Stef	6 inches. CLEAN BOGYSE SAND	59 8
(9) CONSTRUCTION DETAILS:         Casing installe:::::::::::::::::::::::::::::::::::	86'_a	
(6) CONSTRUCTION DEFAILS: Casing installes: "Dum. from R. to R. Weided E "Dum. from R. to R. Dum. from R. to R. "Dum. from R. to R. "Dum. for A to R. to		
Casing installed: " Diam. from f. to f. n. Threaded f. Diam. from f. to f. n. Welded B. Diam. from f. to f. Type of petrostices from f. to f. perforations from f. to f. perforations from f. to f. perforations from f. to f. perforations from f. to f. Based for the form f. to f. Screensi Yas B. No D. Sch N Sch S. S. Screet Matutacturer N Name. Sch N Sch S. S. Screet Manual Screensing from f. to f. Dam. f. to f. f. Dam. f. to f. f. to f. Gravel packed: Yas J. No B. Sch N Sch S. Screet Manual Screensing from f. to f. f. to f. Based and for the form f. to f. f. to f. String faced from f. f. to f. f. to f. Material used in seal. IN Sch To f. to f. f. Type of water. Doph of strate. Material used in seal. IN Sch To f. f. to f. Type of water. Doph of strate. Material used in seal. IN Sch To f. f. to f. Type of water. Based servers: f. f. f. f. Type of water. Based servers f. (1) FUMP: Meanufacturer's Mean STALY - R. TE Type: f. f. based servers f. Material used in seal. IN Sch To f. f. f. f. (2) WATER LEVELS: Landemetres alergical, // f. Z. Sch Activate prosecuto f. B. per square inch. Date Activate a prosecuto from well for the f.		┝
Threaded B Partnerston The Barnerston R. to R. t	ft. to ft.	┟───╋──
Trained B       Data       An of State         Perforations:       No B         Type of perforations from       ft. to         maintecturer Name       ft. to         Screens:       Yes B         Manufacturer Name       Sore ft. to         Type       State and the state         Type       State and the state         Oravel packed:       Yes B         Gravel packed:       Yes B         Material used in seal       State of parts         Gravel packed:       Yes B         Material used in seal       State of parts         Type of water       Type of water         Material used in seal       State of parts         Type of water       Day otel: continu usuable water         Yes B       No B         State is continue water       Yes D         Material used in seal       State of water         But and strate continue usuable water       Yes D         Material water is controlled by:       State water         Material water is controlled by:       State water	n. 10 n.	┢╍╍╼┥──
Perforations: Yas D No B Type of perforations transmannes in by		╆┅┈┈┼─
Type of performance lise. by in performance from f. to f		┢╌━━┼┈
SIZE of performations in more in the initial initinitial initinitial initial initial initial i		╋━━━╋
performations from	to ft.	╋ <u>───</u> ╆╼─
partnerstions from       F. 10       R         Screetis: Yee B       No D Sch S S S Screets         Type       Type       R         Type       Biot size 30       from R to R to R         Diam.       Biot size 30       from R to R to R         Diam.       Biot size 30       from R to R to R         Ofravel packed:       Yee D       No B Size of gravel:         Ofravel packed:       Yee D       No B       Size of gravel:         Ofravel packed:       Yee D       No B       Size of gravel:         Surface seal:       Yee B       No B       Size of gravel:         Surface seal:       Yee B       No B       Size of gravel:         Surface seal:       Yee B       No D       Size of gravel:         Surface seal:       Yee B       No D       Size of gravel:         Surface seal:       Sea of gravel:       Boot sealing strate off.       Sea of gravel:         (1) FUMP:       Manufacturer's Name STH Y - R i TE       Training strate off.       Boot strate         (2) WATER LEVELS:       Land-surface seaverian Actes is sonther sealing strate is a strate is a sonther sealing strate is a strate is a strate is a strate is a sonther sealing is a strate sealing is a strate is a strate sealing is a	to ft. ]	┢╼─┼─
Screets: Yes B No Sch Sch Screet Manufacturer's Name Sch Sch Screet Type Manufacturer's Name Sch Sch Screet Type Manufacturer's Name Sch Sch Screet Dam. Blot size Sch Trom Sch to Screet The Surface scale: Yes D No B Size at gravel: Gravel placked: Yes D No B Size at gravel: Surface scale: Yes D' No B Size at gravel: Surface scale: Yes D' No D Size at gravel: Surface scale: Yes D' No D Size at gravel: Surface scale: Yes D' No D Size at gravel: Material used in seal SCN TON 162 Type: Manufacturer's Name STA Y - R: IE Type: (7) FUMP: Manufacturer's Name STA Y - R: IE Type: (8) WATER LEVELS: Lood-surface slevels in Actesian water is controlled by Cap, valve, sto.) (9) WELL TESTS: Drawdown is anount water level is forward balow takin level The sump test mader Yes D No D If yes, by whom Are: 	<u>to</u> <b>ft.</b>	╉───┼━
Media No       Modal No         Diam.       Stot size       Stot size         Diam.       Stot size       Trom         Diam.       Stot size       Stot size         Gravel packodi yes       No B       Size at as         Surface sealing store at       Stot size       Stot size         But dary store contain usuable water       Yes D       RgO         Type of water       Depth of strate       Stot size         Type of water       Depth of strate       Stot size         Type of water       Back size at as       Stot size       Stot size         (7) FUMF:       Manufacturer's Mame STA Y - R. IE       If       Stot size         Type of water is controlled by       (Cap. valve, sto)       Mode I beft       Stot size         (8) WELL TESTS:       Experiment water	J	╂ ┨
Type       Model No         Diam.       Stot size       Stom NO       ft to ILG         Diam.       Stot size       Stom NO       ft to ILG         Gravel packodi       Tree       Stom Sol size       Stom Sol size         Gravel packodi       Tree       No B       Size of gravel         Gravel packodi       Tree       No B       Size of gravel         Gravel packodi       Tom Sol size of gravel       Complete         Gravel packodi       No B       Size of gravel         Gravel packodi       Tom Sol size of gravel       Complete         Surface scaling strate controlled writer       Yes D       Rob         Type of water       Depth of strate       Rob         Method of sealing strate controlled writer       Name STA Y - R. IE       Rob         Type:       Ex Signal       Rob       Rob         (3) WATER LEVELS:       Land-surface state       Land-surface state       Name         (4) Well L TESTS:       Drawdown is amount water lavel is       No       No         (5) WELL TESTS:       Drawdown is amount water lavel is       No       No         """"""""""""""""""""""""""""""""""""	S Screed	╡╴╌┈┠╌
Diam. 6/// Biot size SJO. from KO. ft to KE. ft.         Diam.       Biot size       from	No	<u>†</u> †
Dam.       Blot size       from       R. to       R.         Gravel packed:       Yee       No b       Size of gravel:       A         Gravel packed:       Yee       No b       Size of gravel:       A         Gravel packed:       Yee       No b       Size of gravel:       A         Gravel packed:       Yee       No b       Size of gravel:       A         Gravel packed:       Yee       No b       Size of gravel:       A         Material used in seal       No b       To what depint       20'       R         Material used in seal       No b       To what depint       20'       R         Material used in seal       No b       To what depint       20'       R         (7) FUMP:       Manutacturer's Manue STA Y - R. IE       Yee       No       Yee       No         (8) WATEE LEVELS:       Land-surface sizestion       A       Zee       No	n to 1 12 n MAR 28-13/5	<u> </u>
Gravel packed: Yes D No B Size of gravel: Gravel packed: Yes D No B Size of gravel: Gravel packed: Yes D No B Size of gravel: Gravel packed: Yes B No D To what depth? 20' R Material used in seal DCN TO what depth? 20' R Material used in seal DCN TO what depth? 20' R D G No are stated out and use be water? Yes D 20' R (7) FUMP: Manufacturer's Mame S TH Y - R TE Type: Type: (8) WATEE LEVELS: Lead-eurises elevation //2 S. Attesian water is controlled by (Cap, valve, etc.) (9) WELL TESTS: Lead-eurises elevation for the state of balow state level is messured balow state level The gump test madef Yes D No D 12 yes, by whom? The gump test madef Yes D No D 12 yes, by whom? The drawdown after here! Mode there is on the state are stated of the state of th		
Grewei placed from       ft. to       ft. to         Sturface seal: yes gr       Not rate depthy       20'       ft.         Material used in seal       ISCN To what depthy       20'       ft.         Did any strets contain usuable watert       Yes I       \$20'       ft.         Type of variate       Depth of strate       100'       ft.         Material used in seal       ISCN TO what depthy       20'       ft.         Type of variate       Depth of strate       100'       ft.         Material used in seal       ISCN To what depthy       20'       ft.         Type of variate       Depth of strate       10'       ft.         (7) FUMP:       Manufacturer's Name STAY - R : TE       10'       ft.         Type:       Exponention       Exponention       ft.         (8) WATEEL LEVELS:       Land-surface elevation       ft.       ft.         Artesian water is controlled by       (Cap, value, etc.)       Work statted       19'         (9) WEILI TESTS:       Drawdorn is monoti water       krew       krew         """"""""""""""""""""""""""""""""""""	a:	
Surface seel: yes B NoT To what depth? 20' ft. Material used in seal ISEN TON 1 t C Did any strate contain unusable water Yes 1 290 Type of water? Depth of strate Method of sealing strate off. (7) FUMP: Manutacturer's Name STAY - R. TE Type:	CORMANE REGIONAL OFFICE	<b></b>
Outlander weiter is get style of Dets if the instance is a set of	. 20' /	<u>↓                                    </u>
Did any strate contain unusable water? Yes 1 290 Type of water?		<b>┟╌╶</b> ┈╎
Type of water       Depth of strata         Method of sealing strata off       Depth of strata         (7) FUMP:       Manufacturer's Name STAY - R ITE         Type:       EP 3/4-NP         (8) WATEEE LEVELS:       Land-surface slowsting         Artesian vater       Des per square inch Deta         Artesian vater is controlled by       (Cap, valve, sto.)         (9) WELL TESTS:       Drawdown is amount water level is informer of state level is gal/min. with the destart is controlled by         """"""""""""""""""""""""""""""""""""	Ye 0 10/0	╉∤
Method of sealing strate off         (7) PUMP: Manufacturer's Name STAY - R ITE         Type:         Type:         Type:         (8) WATER LEVELS: Land-surface elevention         Actestes pressure         Basement from water is controlled by         (Cap, valve, etc.)         (9) WELL TESTS:         Drawdown attra farmonn         Time         """"""""""""""""""""""""""""""""""""	rta [ [A	<u></u> <u></u>
(7) FUMP: Manufacturer's Name STAY-RITE Type:		╋╌╼╍╉╴
Type:       I P 34 NY         (3) WATER LEVELS: Land-surface elevation //275 et above mean sea leval. //275 et abov		╉╼╍┾╼
(8) WATER LEVELS: Land-surface elevation //275.c. Basis level 38 ft below top of well Data Artesian water is controlled by (Cap, valve, etc.) (9) WELL TESTS: Drawdown is amount water level is isoward below static level is """"""""""""""""""""""""""""""""""""		++
Static level       38       ft. below top of well Data         Ariseise pressure       Ibs. per square inch Data         (9) WELL TESTS:       Drawdown is amount water level is lowered below static level         Was a pump test mader Yee       No I if yes, by whom?         """"""""""""""""""""""""""""""""""""	1/25.	1
Artesian water is controlled by (Cap, valve, etc.) (3) WELL TESTS: Drawdown is amount water level is lowered below static level is mader Yes   No   If yes, by whom?. We a pump test mader Yes   No   If yes, by whom?. """"""""""""""""""""""""""""""""""""		
Artesian water is controlled by (Cap, valve, etc.) (9) WELL TESTS: Drawdown is amount water level is lowered below static level Work started 19.6, 19. Completed Work started 19.6, 19. Completed 19. Completed Work started 19.6, 19. Completed Work started 19. Completed Work started 19. Completed Work started 19. Completed Work started 1	ste	1
(9) WELL TESTS: Drawdown is amount water level is lowered below static level is water a pump test mader Yes D No D If yes, by whom? """"""""""""""""""""""""""""""""""""	valve, etc.)	
(9) WELL TESTS: Drawdown is shown water and a serie with a shown with level and a serie when the series and the		<u> </u>
Was a sump test made? Yes No I if yes, by whom?       Image: State made? Yes I No I if yes, by whom?         Yes a sump test made? Yes I no I if yes, by whom?       Image: State made? Yes I No I if yes, by whom?         Yes a sump test made? Yes I no I if yes, by whom?       Image: State made? Yes I No I if yes, by whom?         Image: Imag	Work started 1967 Completed	······
Theode:       gal/min. with       It. drawdown stor       inter         """"""""""""""""""""""""""""""""""""	WELL DRILLER'S STATEMENT:	
"     "	This wall use drilled under my inderid	and this re-
Beservery data (time taken as sero when pump turned off) (water level measured from well top to water level) Time Water Level Time Water Level NAME	<ul> <li>true to the best of my knowledge and belief.</li> </ul>	
Image: start of the start	off) (water level	roce
Time     Water Level     Address     Constrained and the set of	NAME MARCE CM	
Address all analysis model Yas [] No [] License No	(Person, arm, or corporation)	(The or him
(Weil Driller) (Weil Driller) (Weil Driller) (Weil Driller) (Weil Driller) License No	Address Well ounin	
(Weil Driller) (Weil Driller) (Weil Driller) (Weil Driller) (Weil Driller) (Weil Driller) (Weil Driller) (Weil Driller)		
(Weil Driller)	9 [Signed]	
Befinden dow	after_hrs. (Well Driller)	
	ndet Yes I No I License No Date	
1 Z N AK		

The Department of Ecology does NOT Warranty the Data and/or the Information on this Well Report.

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

COV 660 1 20 (9/83) \*\*\*

WATER	WELL	REPORT	•
et/	TE OF WARLIN	IGTON	

Start Card No. <u>W 079793</u> UNIQUE WELL I.D. # <u>AAJ818</u>

_		THERE CAN'T FETRIC INC	_
	OWNER: Name Steve Anderson Add	E. 1508 Bridgeport, Spokane Wa	<u>. 9920′</u>
2)	LOCATION OF WELL: CountySpokane	- SE 1/4 ΝΕ 1/4 Sec 20 τ 26 Ν.	#42E ww
(28)	STREET ADDRESS OF WELL (or new set attract) Aubrey White I	Drive & 7-Mile Road	
(3)	PROPOSED USE: 10 Domestic Industrial C Municipal C	(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION	NOIT
	DeWater Test Well D Other	Pometron: Describe by color, drugacter, size of material and structure, and show thip and the kind and nature of the material in each stratum penetrated, with at least or change of information	kness of aquifer te entry for eac
(4)	TYPE OF WORK: Owner's number of well (If more than one)	MATERIAL FROM	тр
	Abandoned C New weil 25: Method: Dug C Bored C Despend C Cable C Driven C	Topsoil 0	2
	Reconditioned Rotary D Jetlad D	Boulders 2	15
(5)	DIMENSIONS: Diameter of well6 inches.	Gravel, 1" Minus, Some clay 15	<u> 37</u>
	Drilled 00 feet. Depth of completed well 00 ft.	(Brown) Laid Thru It	
(6)	CONSTRUCTION DETAILS:	Sand With Brown Clay Laid 38	- 26
	Casing installed: 6 Diam. from Plus3 t. to 79 t.	Thru It	- / •
	Welded 25 * Diam. fromt. tot.	Med. Fine Sand 70%, Fine Sand 76	78_
	Threadedt. toft. toft.	30%	
	Perforations: Yes No 🕅	Fine Sand 30%, Med. Fine Sand 78	82 *
	Type of perforator used	40%, Very Fine Sand 30%	#
	or contractions from the horizontal from the h	50% Very Fine Sand 30%, Fine Sand 82	00
	perforations from ft. to ft.	Jow, very Fille Sallu 20%	
	perforations fromf. tof.		
	Screens: Yes 🗵 No 🗌		
	Menufacturer's Name Nagaoka	* Water Bearing Formation	
	Type O" Telescope Stainless Model No. 308		
	Diam. <u>O</u> ;; SioteizefromOft, 10ft, 10ft		
			-+
	Gravel placed from		
	Material used in seal <u>Bentonite</u> .		
	Did any strata contain unusable water? Yes No 🙀	L. • • • • • • • • • • • • • • • • • • •	<u>i                                     </u>
	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	Work Started 5-23	1997
	Static level 31: 1. below top of well Date 2-23-97	WELL CONSTRUCTOR CERTIFICATION	
	Artesian pressure lbs. per equare inch Date Artesian water a controlled by	Constructed and/or screen responsibility for construction of this	wall and its
	(Cap. valve, etc.)	compliance with all Washington well construction standards. Materi	als 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 b	C1161.
	Was a pump test made? Yes M No i If yee, by whom? <u>UCLTTSOI</u>	NAME CJ WARREN & SON DRILLING	- 99037
		S. 3005 Best Road Verada	le Ve
_	· · · · · · · · · · · · · · · · · · ·	Address	<u>10, 114</u>
	Recovery data (time taken as zero when pump turned of) (water level measured from well	(Signed) KATN WAM License No	2163
T	top to water level) Ime Water Level Time Water Level Time Water Level	Construction in the second sec	
		Registration	
		No. <u>C.IWAR9D0660P</u> Date <u>6-4</u>	<del>- 19 - 97</del>
		(USE ADDITIONAL SHEETS IF NECESSARY)	
	Date of test		
	Date of test		_
	Date of test	Ecology is an Equal Opportunity and Affirmative Action employ	er. For spe-

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

## WATER WELL REPORT

21K1

Application No

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<b>D</b> 1 J		
Address HT.	Nine Mile Falls, Wa. 9902	26
ine	_NE 14 SW 14 Sec. 21 T26 N.,	<sub>R</sub> 42 w
(II) WELL L	.0G:	
Other D Formation: Descrit show thickness of	be by color, character, size of material and s aquifers and the kind and nature of the mai	tructure, a
	MATERIAL FROM	I TO
Bored D sand, T	rel, boulders 0	12
Ary (X Jetted []	·el 12	2 18
gray sand	18	3 32
1 61 a Lan sand	32	2 40
coarse, ta	an send 40	)
<u>coarse sar</u>	d with water 50	227
. ft. to	······································	
ft. to ft		
·		<u> </u>
in.		
to ft.		
to ft.		
		1
No		
11. to 61 ft.		_
. ft. to ft.		
<b>n</b> .		
20		
······		
Yes C No D		
ң.Р		
ate 2/2/20	· · · · · · · · · · · · · · · · · · ·	
ate		-
valve, etc.)		
ater level is		
el Work started2/]	9/75, 19, Completed	قدر
tter hrs. WELL DRILL	ER'S STATEMENT:	
This well was	s drilled under my jurisdiction and thi	s report
true to the best	of my knowledge and belief.	
off) (water level Barth	nolomew Drilling	
Water Level MANE	Person, firm, or corporation) (Type or	print)
Addama	Mile Falls, Wa. 99026	
	AD AT	2
[Signed]	1 Banka oncen	<b>r</b> '
after fight hre.	(Well Brillef)	
	Date 4/28/75	
Jodi zhe 🗋 140 🗍 i racenne 140		
		-
	N0       (10) WELL L         Other       Stratum penetrate         Bored       stratum penetrate         Imp (K Jetted       stratum penetrate         Stratum penetrate       gray strate         Imp (K Jetted       gray strate         Imp (K Jetter       ft.         Imp (K Jetter <td< td=""><td>ne      NE       _is SN       _is sec. 21       _T26       N.         ne      NE       _is sec. 21       _T26       N.         ne      NE       _is sec. 21       _T26       N.         ne      Ne</td></td<>	ne      NE       _is SN       _is sec. 21       _T26       N.         ne      NE       _is sec. 21       _T26       N.         ne      NE       _is sec. 21       _T26       N.         ne      Ne

21K2

W103722 Start Card No. WELL REPORT WATER Unique Well I.D. # ACP633 Water Right Permit No. STATE OF WASHINGTON Address H \$606 AUBREY-MHITE PENY SPOKANE, MA 99026-(1) OWNER: Name SEIGLE, STEVE & CANDY - ME 1/4 SW 1/4 Sec 21 T 26 N., R 42E MM (2) LOCATION OF WELL: County SPOTANE (2a) STREET ADDRESS OF WELL (or nearest address) , (10) WELL LOG (3) PROPOSED USE: DOMESTIC | Formation: Describe by color, character, size of material Owner's Number of well (4) TYPE OF WORK: ] and structure, and show thickness of aquifers and the kind (If more than one) | and nature of the material in each stratum penetrated, with Mathod: ROTARY NEW WELL at least one entry for each change in formation. Diameter of well 6 inches (5) DIMENSIONS: DIMENSIONS: Drilled 98 ft. FROM TO ft. MATERIAL Depth of completed well 98 ] 0 17 SAND AND GRAVEL 17 AND AND GRAVEL (6) CONSTRUCTION DETAILS: 7 20 ft. ] ----- WITH BOULDERS ft. to 92 Casing installed: 6 \* Dia. from +2 | 33 20 ft. | SAMD AND GRAVEL " Dia. from ## ft. to 93 5 THEFADED 33 ft. SAND AND GRAVEL ft. to Dia. from | 50 1 33 WITE SILTY CLAY 50 80 SAND AND GRAVEL Perforations: NO 80 SAND AND GRAVEL Type of perforator used 1 80 1 98 ..... W/WATER in. by in. SIZE of perforations ft. ft. to perforations from ft. perforations from ft. to ft. to ft. perforations from -----Screens: YES JOBURGO Manufacturer's Name Model No. Type STATESS ft. ft. to 98 slot size .020 from 93 Diam. 5 ft. to ft. from slot size Diam. ·-------C K Ę avel packed: MO Size of gra Gravel placed from ft. to ft. Size of gravel Gravel packed: NO 10 -----DEC - 4 1997 To what depth? 18 ft. Surface seal: YES Material used in seal BERTONITE Did any strata contain unusable water? 30 ft. DEPARTMENT OF ECOLOGY EASTERN REGIONAL OFFICE Depth of strata Type of water? Method of sealing strata off (7) PUMP: Manufacturer's Name Type NONE H.P. Land-surface elevation (8) WATER LEVELS: above mean sea level ... ft. 75 ft. below top of well Date 11/19/97 Static level lbs. per square inch Date Artesian Pressure Artesian water controlled by Completed 11/19/97 | Work started 11/18/97 | WELL CONSTRUCTOR CERTIFICATION: (9) WELL TESTS: Drawdown is amount water level is lowered below I constructed and/or accept responsibility for constatic level. struction of this well, and its compliance with all Was a pump test made? NO If yes, by whom? Washington well construction standards. Materials use: ft. drawdown after hrs. gal./min with Yield: and the information reported above are true to my best knowledge and belief. Recovery data NAME FOGLE PUMP & SUPPLY, INC. Time Water Level Time Water Level Time Water Level (Person, firm, or corporation) (Type or print) ADDRESS POB 1450, AIEWAY HTS. WA. (SIGNED) Mile Robinson Mo License No. 1544 Date of test / / Bailer test gal/min. hrs. ft. drawdown after gal/min. w/ stem set at 98 ft. for 1 hrs. Air test 50 Contractor's Date g.p.m. Artesian flow Temperature of water Was a chemical analysis made? NO | Registration No. FOGLEPS095L4 Date 11/24/97 ------

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2		n	S.	

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

## WATER WELL REPORT

052009 67\*~ Start Card No. \_

STATE	OF	WASHINGTO	N
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Third Copy—Driller's Copy STATE OF	Water Right Permit No	
OWNER: Name Lando Curries	Address W 6806 PARKWAY RD, SPOKANE	WA
LOCATION OF WELL: CountySPOKANE 28) STREET ADDDRESS OF WELL (or nearest address)	NE SW Sec 21 7.26 N. 8.4	2M
3) PROPOSED USE: A Domestic Industrial Aunicipal I	(10) WELL LOG or ABANDONMENT PROCEDURE DESCR	
4) TYPE OF WORK: Owner's number of well	Pormation: Describe by color, character, size of material and structure, a thickness of aquifers and the kind and nature of the material in each stratum pr with at least one entry for each change of information.	and show enetrated
Abandoned 🗌 New well 🕱 Method: Dug 📑 Bored 📑	MATERIAL FROM	TO
Deepened Cable Driven Reconditioned Rotary X Jetted C	boulders & gravel/cemented 0	22
5) DIMENSIONS: Diameter of well 6 Inches.	sand & gravel 40	81
Drilled 81 feet. Depth of completed well 81 ft.		
CONSTRUCTION DETAILS:		
Casing installed: <u>O</u> · Diam. from +15 ft. to 785 ft. Welded		
Liner installed T Diam. fromT. toT. Threaded C Diam. fromT. toT.		
Type of perforator used		
SIZE of perforations in. by in.		
ft to ft.		
Manufecturer's Name		
Type Model No		
Diam		
Gravel packed: Yes No Size of gravel		
Gravel placed from ft. to ft.		• • • • • • • • • • • • • • • • • • • •
Surface east: Yes X No To what depth? 22 th		S ID
Material used in sear Dentonite		╩┓╢╢╢
Did any strata contain unusable water? Yes 🔲 Ng 🔀		-
Type of water?Depth of strate		-1-2
Туре: Н Р	DEPARIMENT OF SUILOG SPIKANE REGIONAL	
WATER LEVELS: Land-surface elevation		
Static level ft. below top of well. Date ft.		
Artesian preasure Ibs. per square inch. Date		
Artesian water is controlled by(Cep, velve, etc.))	6/7/00 6/8/00	
WELL TESTS: Drawdown is amount water level is lowered below static level		19
Visit     Yield:	WELL CONSTRUCTOR CERTIFICATION:	
	1 constructed and/or accept responsibility for construction of thi and its compliance with all Washington well construction atter	ia well, Inderde
Pacouary data (time takes as says when a says in the says as a says when a says in the says as a says when a says in the says as a says when a says in the says are says as a says when a says in the says are says as a says when a says are says as a says are says are says are says as a says are	Materials used and the information reported above are true to m	iy best
from well top to water level Time Water level Time The State and Time The State and Time The State and Time Time The State and Time Time Time Time Time Time Time Time	Allowiddyd eini bonai.	
Inne meter Level	NAME BARTHOLOMEW DRILLING, INC.	
	(PERSON, FIRM, OR CORPORATION) (TYPE OR PR	
	Address M 11323 NINE MILE KD. NINE MIL	<u>, E F</u>
	(Signed) Kin Minden Ligger No 971	,
Bailer test gal./min. with ff. drawdown after hrs.	Contractor's	
Artesian flow gal./min. with stem set at ft. for hre.	Registration No. <u>BARTHI</u> 24903 Data 6/29/90	19
Temperature of water Was a chemical analysis made? Vasi		

File Depa Seco Third	Driginal with urtment of Ecology ind Copy Owner's Copy Copy Driller's Copy 114552 STATE OF WASHINGTON	21K4 Notice of Intent <u>W/4830</u> UNIQUE WELL I D # <u>ACM 283</u> Water Right Permit No
(1)	OWNER Name MIKE FAIRBURN Ad	dress 322 E. COURTLAND, SPOKANE
(2) (2a)	LOCATION OF WELL County <u>SPOKANE</u> STREET ADDRESS OF WELL (or nearest address) <u>SEIGLE CT</u> TAX PARCEL NO <u>26213</u> 0203	NE 1/4 SW 1/4 Sec 21 T26 NR 42EWM NO SEVEN MILE RD, SPOKANE
(3)	PROPOSED USE         Domestic         Industrial         Municipal           Irrigation         Test Well         Other           DeWater         Industrial         Industrial	(10) WELL LOG or DECOMMISSIONING PROCEDURE DESCRIPTION Formation Describe by color character size of material and structure and the kind and nature of the material in each stratum penetrated, with at least
(4)	TYPE OF WORK       Owners number of well (if more than one)         New Well       Method         Deepened       Dug         Reconditioned       Cable         Decommission       Botary         Jetted	one entry for each change of information Indicate all water encountered           MATERIAL         FROM         TO           GRAVEL/SMALL ROULDERS         O         G
(5)	DIMENSIONS Diameter of well <u>C</u> (SZX) inches Drilled <u>86</u> feet Depth of completed well <u>86</u> ft	COURSE SAND/PEA GRAVEL 25 GI PEA GRAVEL/FINE SAND GI 86
(6)	CONSTRUCTION DETAILS         Casing Installed         X Weided          Diam from <u>+2</u> ft to         Liner installed          Threaded          Diam from          Threaded	
	Perforations       □ Yes XNo         Type of perforator used	WATER FIRST ENCOUNTER © SG FEET
	Screens       XYes       No       XK Pac Location       72''         Manufacturer's Name       COOK       COOK       304'         Type STATALES       TELESCOPING Model No       304'         Diam       Slot Size       14''       from       86''         Diam       Slot Size       from       ft to       86''         Gravel/Filter packed       Yes       XNo       Size of gravel/sand         Material placed from       ft to       ft       ft	
	Surface seal       XYes       No       To what depth?       18       ft         Material used in seal       BEDTODITE	
(7)	PUMP Manufacturer's Name	
(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	Work Started 5-18 02 Completed 5-23 02
(9)	(Cap valve etc.)         (Cap valve etc.)         WELL TESTS Drawdown is amount water level is lowered below static leve!         Was a pump test mada?       XYes □ No if yes by whom?       Dauto Huchtes         Yield       25 gal /min with       ft drawdown after hrs         Yield       25 gal /min with       ft drawdown after hrs         Yield       25 gal /min with       ft drawdown after hrs         Yield       25 gal /min with       ft drawdown after hrs         Yield       25 gal /min with       ft drawdown after hrs         Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)       Time         Time       Water Level       Time         Date of test       5-23-02	WELL CONSTRUCTION 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         Type or Print Name       DAUTO         JH16HES       License No         (Licensed Driller/Engineer)         Trainee Name       License No         Drilling Company       Huchtes         Materials       License No         Cilicensed Driller/Engineer)         Address       GHS         Structed Driller/Engineer)         Address       GHS         Structed Driller/Engineer)         Address       GHS         Contractors       Registration No         WARNEL+O/2DB       Date       S-23         (USE ADDITIONAL SHEETS IF NECESSARY)       Ecology is an Equal Opportunity and Affirmative Action employer For special accommodation needs context the Water Processon of (000)
ECY (	50 1 20 (11/98)	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

	21K5 277283
WATER WELL REPORT	Notice of Intent No.: W249481
State of W as hington Date Printed: 25-Oct-2007 Log No.	Unique Ec ology W ell I.D. No BAC940
Construction / Decommission: Original Construction 0	Water Right Permit Number:
Construction Notice of Intent #: W249481	OWNER: SEIGLE, STEVE & CANDY
PROPOSED USE: DOMESTIC	OWNER ADD 8506 N. SEIGLE CR.
TYPE OF WORK: Owners's Well Number: (if more than one well)	NINE MILE FALLS, WA 99026
NEW WELL Me thod : ROTARY	Well Add: SEIGLE CR.
DIMENSIONS. Diameter of well: 6 inches	Location: 1/4 SW 1/4 Sec 21 T 26 D 42E EW
Drilled 80 ft. Depth of c om pleted w ell 79 ft.	Location. 1/4 Sw 1/4 Sec 21 1 20 R 42E EW
CONSTRUCTION DETAILS: Cas ing installed WELDED	(s, t, r still
6 " Dia from +2ft to 73 ft	REQUIRED) Long Deg Long Min/Sec
Liner installed: CASING "Dia from ft. to ft	
5 " Dia from 69 ft. to 74 ft. " Dia from ft. to ft	CONSTRUCTION OR DECOMMISSION PROCEDURE
Perforations: No Used In:	thickness of aquifiers and the k ind and nature of the material in each stratum
Type of perforator used	penetrated. Show at least one entry for each change in formation.
SIZE of perforations in. by in.	Material From To
Perforations from ft. to ft.	COURSE SILTY SAND W/ GRAVEL COBBLE 0 11
Perforations from ft to ft.	BOULDER 11 13 COURSE SAND GRAVEL W/ COBBLES 13 26
	BOULDER 26 27
Screens: Yes K-Pac Location: 09	COURSE SAND GRAVEL 27 45
Type: SLOTTED Model No STAINLESS	COURSE SAND W/ GRAVEL W/WATER 45 80
Diam. 5 slot size: .12 from 74 ft. to 79 ft.	
Diam. slot size: from ft. to ft.	
Gravel/Filter pack ed : No Size of Gravel	
Material placed from ft. to ft.	
Surface seal: Yes To what depth 18 ft.	
Se al me thod: Material used in seal BENTONITE	NOV 26 71117
Did any strata cont ain unus ab le water No	1-6" DRIVE SHOE
Type of water Depth of s trata	DEPARTMENT OF ECOLOGY
DI IMD. Manufac ture's name	EASTERN REGIONAL OFFICE
Type: H.P. 0	Work started 09/11/2007 Complete 09/11/2007
WATER LEVELS: Land-surface elevation above mean sea level: 0 ft.	WELL CONSTRUCTION CERTIFICATION:
Static level 43 ft below top of well Date 00/11/2007	I constructed and/or accept responsi bility for construct on of this well and its com pliance with
Artes ian Press ure lbs per square inch Date	an washington went constructs on standards. M atternats used and the 1 information reported are true to my best know ledge and bell lef.
Artes ian water controlled by	☑ Driller □ Engineer □ Traince
WELL TESTS: Drawdown is amount water level is lowered below stat ic level.	Name: TODD LIVELY Licens e No.: 2321
Was a pump test made? No If yes, by whom	Sig na ture:
Yield: gal/m in with ft drawdown after	If trainee, Licensed drillers
Yield: gal/m in with ft drawdow n after	
Yield: gal/m in with ft drawdown after	Licens ed Driller Sig na ture
Recovery acta (tim e taken as z ero when pum p turned off)(w ater level m easured from well top to water level	Drilling Com pany :
Time: Water Level Time: Water Level Time: Water Level	NAME: FOGLE PUMP & SUPPLY, INC. Shop: AIRWAY HEI
	ADDRESS: PO BOX 1450
	Airway Heights, W A 99001
Date of tes t:	Phone: (509) 244-0846 Toll Free: (888) 343-9355
Bailer tes t gal/m in ft drawdown after hrs.	E-Mail: jackie@foglepum p.com
Air test 30+ gal/min w/ stem set at 79 ft. for 1.0 hours	FAX: (509) 244-2875 WEB Site: WWW.FOGLEPUMP.COM
Artes ian flow gpm Date	Contrac tor's
Tem perature of water Was a chemical analysis made No	Regis tration No.: FOGLEPS095L4 Date Log Created: 9/18/2007

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ile Original and First Copy with WATER WE	LL REPORT			Λı	plicatio	эн Хо		
econd Copy — Owner's Copy hird Copy — Driller's Copy STATE OF W	ASHINGTON			Pe	rmit N	0		
1) OWNER:	North	Lan	dfill				• •	
2) LOCATION OF WELL Spokane Spokane	NE	NE	, SW	1 5	21	,26	N 0	42 w k
e. ving and distance from section or subdivision corner			:4	the second	1	L	N., K	** .1*
	(10) WELL LO	)G:						
irrigation  Test Well X Other	Formation Describe	by col	 от, сћата	cter, size	of mat	erial a	nd stru	icture, an
A TRUPP OF WORK, Owner's number of well MJ F	show thickness of aq stratum penetrated,	with a	and the t least of	cina ana 1e en <b>tr</b> y -= - 1 =	for car	h cha	nge of	formatio
4) TYPE OF WORK: (if more than one).	Bood bogo	MAT	ERIAL				FROM	ТО 
Deepened [] Cable [] Driven []	Cobble stone	es					4'	8
Reconditioned 🗌 Rotary 🕅 Jetted 🗌	Boulders						8'	12'
5) DIMENSIONS: Diameter of well 6 inches.	Cobbles						121	16'
Drilled 81 ft Depth of completed well (\$ 4ft.	Boulders	. 1					16'	19'
6) CONSTRUCTION DETAILS:	Sand and gra	aver					191 681	58 70
Casing installed: 6 Diam. from +1 ft. to							00	. 17 
Threaded []						ţ		k 1. 1.
Welded 🕅								<u> </u>
Perforations: Yes 🗆 No 🖾		·			••••			r-
Type of perforator used in hy in				· <b>-</b> ···································				-
perforations from ft. to ft.	· · ·					4		
perforations from	<b>-</b>		• • •			· •		
perforations from			·					
Screens: yes 🖾 No 🗆	· · · · · · · · · · · · · · · · · ·							
Manufacturer's Name Model No.	· · · · · · · · · · · · · · · · ·					- +		L L
Diam. 5." Slot size 20 from 56 ft. to .78 ft.		<u> </u>	···				-	1
Diam. Slot size from ft. to ft.	·		• • • •			1		•
Gravel packed: Yes 🗆 No 🕅 Size of gravel.	•	•	-			İ		
Gravel placed from ft. to ft.								1
Surface seal: Yes X No D To what depth?	_ ·					·		
Material used in seal Bentonite								
Did any strata contain unusable water? Yes [ No K	· ·							
Method of sealing strata off				· · ·				
(7) PIIMP: Manufacturer's Name								
Type:	= + +					· ·		ļ
(9) WATER LEVELS. Land-surface elevation						-		1
above mean sea level								<u> </u>
Artesian pressure								
Artesian water is controlled by (Cap, valve, etc.)			÷					ļ
(9) WELL TESTS: Drawdown is amount water level is	2/	20		35		21	21	85
Was a pump test made? Yes 🗋 No 🗌 If yes, by whom?	Work started.			··· Con	pieteu n			. 13
Yield: gal /min. with ft. drawdown after hrs.	WELL DRILL	ERS	STAT	EMEN	1:			
	This well was	s drille of my	d unde knowl	rmyju edge an	risdict 1 belic	ion a M.	nd this	report
Benning data (time take) as zero when pump jurned off) (water level				U				
measured from well top to water level)	NAME Bartho	lome	w Dri]	ling,	Inc	•		orint)
Tune Water Level 11me Water Level 11me Water Level		Person.	nrm, or	corporat	י הס	CT:	Ne or	рниц о Бојј
	Address 8 N. 1	1525	Nine	Mife	на., WB	aan	26 26	e rail
1	1 l	_	E	3 _	1	1	<u>د</u> ں ۔	)
· · · · · · · · · · · · · · · · · · ·	[Signed]	an	1. E	art	riller)		ne	w
Date of test				CALCU 7				
Date of test P Rater test			1		. M.	anch	15	
Date of test <b>Gate</b> r test 50+ gal/min with ft. drawdown after hrs. Artesian flow Temperature of water Was a chemical analysis made? Yes No	License No.	005	1	. Da	te. Ma	arch	15	. , 19 8
Date of test Artesian flow Temperature of water <i>Gill (35)</i> <i>(1, drawdown after, hrs. hrs. hrs. hrs. hrs. hrs. hrs. hrs.</i>	License No.	005	1	. Da	te. Ma	arch	15	. , 19 ξ

	21L1
File Original and First Copy with WATER WE	LL REPORT Application No.
Second Copy — Owner's Copy Third Copy — Driller's Copy STATE OF W	ASHINGTON Permit No.
(1) OWNER: Name City of Spokane-CH2M Hill	Address North Landfill
?) LOCATION OF WELL: County Spokane	_ SE 1, NW 1, Sec 21 T 26 N., R42 W.M
eating and distance from section or subdivision corner	SE NW SW
(3) PROPOSED USE: Domestic [] Industrial [] Municipal [] Irrigation [] Test Well X Other []	(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 penetroid, with at least one entry for each change of formation
(4) TYPE OF WORK: Owner's number of well MW-E (if more than one) MW-E New well M Method: Dug December December Difference December December Difference Reconditioned Rotary M Jetted D	MATERIAL     FROM     TO       Top Soil     0     2'       Sand, cobbles and boulders     2'     19'
(5) DIMENSIONS: Diameter of well 6 inches. Drilled 121'6'' ft. Depth of completed well 121ft.	
(6) CONSTRUCTION DETAILS:	
Casing installed:         6         " Diam. from +1         ft. to         120 ft.           Threaded	
Perforations: Yes 🗋 No 🖾	
Type of perforator used	
Manufacturer's Name Type	
Diam. Slot sizefromft, toft,	
Gravel placed from ft. to ft.	
Surface seal: YES X No To what depth? 19 ft. Material used in seal Bentonite Did any strata contain unusable water? Yes No X 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	
Static level	
Artesian pressure	
(9) WELL TESTS: Drawfown is another level	Work started 2/18. 1985 Completed 2/19 1985
Yield: gal/min. with ft. drawdown after hrs.	WELL DRILLER'S STATEMENT:
	This well was drilled under my jurisdiction and this report i true to the best of my knowledge and beliet.
Recovery data (time taken as zero when pump turned off) (water level mensured from well top to water level) Time Water Level Tune Water Level Time Water Level	NAME Bartholomew Drilling, Inc. (Person, firm. or corporation) (Type or print)
	Address N. 11525 Nine Mile Rd., Nine Mile Falls 99026
Tr Date of test <b>EXCEPT</b> test 80. gal./min. with ft. drawdown afterhrs. Artesian flow	[Signed] (Weil Driller) (Weil Driller) 0051 March 15
Temperature of water. Was a chemical analysis made? Yes No D	License No
ECY 050-1-29 UU (USE ADDITIONAL S	

21L2

WATER WEL STATE OF W	L REPORT Start Card No. 4061900 Unique Well I.D. # AB2987 ASHINGTON Water Right Permit No.
(1) OWNER: Name BROADBENT, PHILLIP Address E.618	20TH SPOKANE, VA 99203-
(2) LOCATION OF WELL: County SPOKANE (2a) STREET ADDRESS OF WELL (or nearest address) ,	~ NW 1/4 SW 1/4 Sec 21 T 26 N., R 42E WM
(3) PROPOSED USE: DOMESTIC	(10) WELL LOG
(4) TYPE OF WORK: Owner's Number of well (If more than one) 1 NEW WELL Method: POTAPY	Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind
(5) DIMENSIONS: Diameter of well 6 inches Drilled 60 ft. Depth of completed well 59 ft.	and nature of the material in each stratum penetrated, with at least one entry for each change in formation.
<pre>(6) CONSTRUCTION DETAILS: Casing installed: 6 " Dia. from +1.5 ft. to 54 ft. WELDED " Dia. from ft. to ft, 5 " Dia. from 52 ft. to 54 ft.</pre>	SAND GRAVEL 0 23 SAND GRAVEL U/WATER 23 60 60
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.	
Screens: YES Manufacturer's Name HOUSTON Type SLOTTED Model No. STAINLESS Diam, 5 slot size .016 from 54 ft. to 59 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? 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 CASING	··· · · · · · · · · · · · · · · · · ·
7) PUMP: Manufacturer's Name Type NONE H.P.	
8) WATER LEVELS: above mean sea level ft. Static level 20 ft. below top of well Date 02/25/96 Artesian Pressure lbs. per square inch Date Artesian water controlled by CAP	
	Work started 01/29/96 Completed 02/05/96
<pre>%) WELL ItSIS: 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</pre>	WELL CONSTRUCTOR 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 knowledge and belief.
Time Water Level Time Water Level Time W <b>ater Level</b>	NAME FOGLE PUMP & SUPPLY, INC. (Person, firm, or corporation) (Type or print)
Date of test / / Bailer test gal/min. ft. drawdown after hrs. Air test 40 gal/min. w/ stem set at 52 ft for 1 how	ADDRESS 316 W 5TH [SIGNED] Machael Robe Som functionse No. 1544
Artesian flow g.p.m. Date Temperature of water Was a chemical analysis made? NO	در المعنى (۱۹ Contractor's معنى معنى معنى معنى (۱۹ Registration No. FOGLEPS095L4 Date <del>05/28/9</del> 5

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File Original and First Copy with Department of Ecology	It 3
Second Copy — Owner's Copy Third Copy — Driller's Copy	<i>₽</i> ₹J

## WATER WELL REPORT

#### 21L3

Application No

. . .

Third Copy — Driller's Copy	STATE OF	<b>VASHINGTON</b>	Permit No	••• ••	
(1) OWNER: Name fame	Brippin	Address			
") LOCATION OF WELL: County	Lacking.	Sulv.	v s. 2/ - 1	) 6 x n	117E.
g and distance from section or subdivisi	on corner		10 To	iezN., R.)	76.W.M.
(3) PROPOSED USE: Domestic	Industrial [] Municipal []	(10) WELL LOG:			
Irrigation 🗍	Test Well 🗌 Other	Formation: Describe by color,	character, size of materi	al and stru	cture, and
(4) TYPE OF WORK. Owner's numb	er of well	show thickness of aquifers and stratum penetrated, with at lo	d the kind and nature of east one entry for each	the materi change of	al in each formation.
New well '2 Met	one)	MATER	IAL	FROM	то
Despened	Cable 📋 Driven 🗍	Andril + Bau	iden-	$ \mathcal{O} $	36
	Rotary D Jetted D	and thank	the the	30	85
(5) DIMENSIONS: Diameter of	inches.		- noewo-		264
Drifted	pleted well a grant ft.	<u> </u>			
(6) CONSTRUCTION DETAILS:	1.0		·····	+/	
Casing installed: " Diam. fro	m :- 1 th. to 82 9 th.			+	
Threaded []" Diam. fro: Welded []" Diam. fro:	m ft. to ft.			<b>†</b>	
Type of perforator used				<u> </u>	
SIZE of perforations	. in. by in.				
perforations from		·		+	
perforations from					
Screens: Ver V No D					
Manufacturer's Name John	s.~~		· <u> </u>	<del> </del>	
Type SS	Model No			+	
Diam. Slot size fro	$\mathbf{m}$ $\mathbf{ft}$ to $\mathbf{ft}$	······································		+	
Gravel nacked: w					
Gravel placed from	ze of gravel:				
Surface seal: 14	70				
Material used in seal	hat depth?			<u> </u>	
Did any strata contain unusable w	vater? Yes 🗋 No 🙀	<b></b>			
Method of sealing strata off	pub of strate	<b></b> K	ECEIVE	<b>D</b>	
(7) PUMP: Manufacture to Manufacture			JUL 2 7 1979	<u>├──</u>	
Type:	HP				
(8) WATER LEVELS. Land-surface	elevation 11.70		ANE PERIONAL OF	1 <b>1</b>	
Static level 5 7 ft below top o	ea level		ANE REGIONAL UTT		
Artesian pressurelbs, per square	inch Date		L		<u> </u>
Artesian water is controlled by	(Cap, valve, etc.)		····		
(9) WELL TESTS: Drawdown is a	mount water level is				
Was a pump test made? Yes No If yes,	static level by whom?	Work started 5 - 7	19.2.9 Completed 5	<u>~//</u>	, 19.7.9
Yield: gal./min. with ft. dra	wdown after hrs.	WELL DRILLER'S ST	ATEMENT:		
······································	·· · · ·	This well was drilled u	nder my jurisdiction	and this r	eport is
Recovery data (time taken as zero when pum	p turned off) (water level	alle to the best of my kn	owiedge and benet.		
measured from well top to water level) Time Water Level   Time Water Leve	L Time Water Level	NAME SOOK 4.77	Drilling		
		(Person, firm	, or corporation) / ("	Type or pri	int)
		Address E. J. J.I.Q.	JAR/And	[	••••••
Bailer test HDT gal/min. with O ft. di	awdown afterhrs.	[Signed]	(Well Driller)		·····
Artesian flow		110000 10 0439	·		
A chemical at a	No 🕅		Date	•·	, 19
7/27/79	USE ADDITIONAL	EETS IF NECESSARY)			
ECY 050-1-20					•••••
File Original and First Copy w	ith				
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Second Copy — Owner's Copy Third Copy — Driller's Copy	Ħ	(مر.			

### WATER WELL REPORT STATE OF WASHINGTON

21L4

tion No.	•••	 ••	
No		 	

(1) OWNER: Name       Address         IOCATION OF WELL: County       Sec. 21. T 26. N. R. 42 W.         is and distance from section or subdivision corner       -542. 1/4       1/4 Sec. 21. T 26. N. R. 42 W.         (3) PROPOSED USE: Domestic X Industrial D Municipal Dirigation Test Well Other       Municipal Dirigation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in easing the structure of th
LOCATION OF WELL: County       Superior         If and distance from section or subdivision corner         (3) PROPOSED USE: Domestic A Industrial Difference         Irrigation Difference         (4) TYPE OF WORK: Owner's number of welli         (10) WELL LOG:         New well Difference         New well Difference         New well Difference         Deepened         Cable Difference         Reconditioned Difference
(3) PROPOSED USE:       Domestic X       Industrial I       Municipal I         Irrigation I       Test Well I       Other       Industrial I       Municipal I         (4) TYPE OF WORK:       Owner's number of well (if more than one).       Other       If more than one).       If more than one).         New well       Method:       Dug I       Bored I       MATERIAL       FROM       TO         Deepened       Cable I       Driven I       Sign of the Minicipal I       Sig
(3) PROPOSED USE: Domestic A Industrial A Municipal A Industrial A Industri
(4) TYPE OF WORK: Owner's number of well (4) TYPE OF WORK: Owner's number of well (1) more than one). New well Of Method: Dug Depend D Deepend D Reconditioned D Reconditi
(4) TYPE OF WORK: Owner's number of well (if more than one). New well Of Method: Dug Dered D Deepened Cable Driven D Reconditioned Rotary Jetted D Sign of the Strangel Sign of the Strangel Strangel Sign of the Strangel Sign of the Strangel Strangel Sign of the Strangel Sign of the Strangel
Reconditioned [] Botary [] Jetted [] Sand + Grand - Grand - Gibbon
Reconditioned Botary Jetted D Sand + Grand - 24 51
(5) DIMENSIONS: Diameter of well 6 inches. Sand, Anarch't 10atta: 01'6' 8'
(6) CONSTRUCTION DETAILS:
Cosing installed
Casing instanted; "Diam. from T ( th. to 2 d 2 ft.
Welded V
SIZE of perforations in by in
perforations from
perforations from
perforations from
Screens; Yes X No C
Manufacturer's Name Jahnson
Type
Diam. Slot size from ft to ft
Gravel packed: Yes No Size of gravel:
Gravel placed from
Surface seal: Yes No To what depth? 20 ft.
Did any strata contain unusable water? Yes No
Method of sealing strata off
(7) FUMIT: Manufacturer's Name
TYPE:
(8) WATER LEVELS: Land-surface elevation 1670
Static level 5
Artesian pressure
(Cap, valve, etc.)
(9) WELL TESTS: Drawdown is amount water level is
Was a pump test made? Yes No I If yes, by whom?
tield: gal./min. with ft, drawdown after hrs. WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report
" true to the best of my knowledge and belief.
Recovery data (time taken as zero when pump turned off) (water lavel measured from well top to water level)
Time Water Level Time Water Level NAME POKAMP URILL'NG
Address G. dllQ OaRland
Baller tert 40 Trai/min. with 0 ft drawdown after has [Signed].
sriedan flow
emperature of water
alasta MY

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7/27/77 (JUSE ADDITIONAL SHEETS IF NECESSARY)

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The Original and First Copy with WATER WE	LL REPORT	Application No.	
hird Copy – Driller's Copy #/ / STATE OF V	VASHINGTON	Permit No	
(1) OWNER: Name Salar Brichton	A J J		
LOCATION OF WELL: COUNTY SALARIA	Sul	<u> </u>	NA E
aring and distance from section or subdivision corner	- 200_1/4		<b>у</b>
3) PROPOSED LISE: Domestic I Industrial D Municipal	(10) WELL LOG:		<u></u>
Irrigation   Test Well   Other	Formation: Describe by color, chara	cter, size of material and st	ructure, and
(A) TYPE OF WORK. Owner's number of well	show thickness of aquifers and the l stratum penetrated, with at least or	cind and nature of the mate re entry for each change of	rial in each f formation.
New well Method: Dug Bored	MATERIAL	FROM	то
Deepened 🗍 Cable 🗌 Driven 🗌	Stranel + Boulden	$\nu \qquad o$	24
Reconditioned Rotary Jetted	Sand & Annal + 1	Matin - 51	26
5) DIMENSIONS: Diameter of well inches.	Suma su water 1 V	starter of 1	100
Drilled			
6) CONSTRUCTION DETAILS:	·		
Casing installed: 8/1/1 " Diam. from -1 ft. to 8/1/1 ft.			
Threadedft. to			
Perforations:	?		
Type of perforator used			
SIZE of perforations in. by in.			+
perforations fromft. toft.			
perforations from ft. to ft.			
Screens: Yes X No	······································		
Manufacturer's Name gehnson	· · · · · · · · · · · · · · · · · · ·		
Diam. 5	· · · · · · · · · · · · · · · · · · ·		
Diam			-
Gravel packed: Yes D No 🖌 Size of gravel:	· · · · · · · · · · · · · · · · · · ·		
Gravel placed from ft. to ft.			
Surface seal: Yes No D To what depth? 20 ft.	*		
Material used in seal-Bundonnulle			+
Type of water? Depth of strata			
Method of sealing strata off	RE(	CELVED	
7) PUMP: Manufacturer's Name	· · · · · · · · · · · · · · · · · · ·	0.021070	· · · · · ·
Type:		r s ( 18/8	
8) WATER LEVELS: Land-surface elevation above mean sea level	DEPARTN	IENT OF ECOLOGY	
tatic level	SPOKANE	REGIONAL OFFICE	
Artesian water is controlled by	••••		
A) WEIT TESTS. Drawdown is amount water level is	· · · · · · · · · · · · · · · · · · ·		1
as a nump test made? Yes No W If yes, by whom?	Work started a - 1	7 Completed G -11	
eld: gal./min. with ft. drawdown after hrs.	WELL DRILLER'S STATE	MENT:	
	This well was drilled under	my jurisdiction and this	report is
ecovery data (time taken as zero when pump turned off) (water level	a de to the best of my knowled	ige and bellel.	
measured from well top to water level) Time Water Level   Time Water Level   Time Water Level	NAME Spokene 1	relling Co.	
	(Person, firm, or c	orporation) (Type or p	orint)
X	Address G . 2110	garland.	••••••
Tate of test	[Simed]	*	
r test 407 gal/min. with O ft. drawdown after	[Signed]	(Well Driller)	
sian flow	License No. 0408	Date	19.
		•	<b>, -e</b>
7/27/79 Agose additional sh	EETS IF NECESSARY)		<i>.</i>
Y 050-1-20			and the second s

21M1 (Possibly M	islocat	ed)
Application Ne	د	
Permit No		
a second Aland	Calia	
Sul 21 0	Sparca	15
4 90 3 Sec. of 1 T 76	. N., R7	<u> . Cw-m</u>
r, character, size of material nd the kind and nature of th least one entry for each chi	and struct e materia	in each
RIAL	FROM	то
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Ζ	<u> </u>	30
	20	- n -
	50 4	00
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		, 19.9.0
TATEMENT:		
under my jurisdiction an nowledge and belief.	id this re	eport is
	, ·	
Well Dr. II.	19	
	pe or pru	nt)
m, or corporation) (Ty	10	10
m, or corporation) (Ty Depr Park W	A 9	9006
m, or corporation) (Ty Deer Park W M.	A 9	9006
m, or corporation) (Ty Deer Park W Mule (Well Driller)	A 9	9006
	21M1 (Possibly M Application No Permit No 1 <u>eenward Blud</u> 5 W 1, sec. 2.1 T.20 r, character, size of material nd the kind and nature of th least one entry for each chu RIAL 1989 1989 1989 1989 1989 1980 1	21M1 (Possibly Mislocat Application No Permit No 1 <u>eenward Blud</u> Spdta 5 W 1, Sec 2.1 T. 26 N., R4 r, character, size of material and struct nd the kind and nature of the material least one entry for each change of for RIAL FROM 0 1

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Notice of Intent W1564 UNIQUE WELL I.D. # _AI UNIQUE WELL I.D. # _AI UNIQUE WELL I.D. # _AI         STATE OF WASHINGTON         Water Right Permit No.         (1) OWNER: Name Matt & Debra James       Address 2528 West Lacrosse, Spokane, WA 99205         (2) LOCATION OF WELL: DATH & DEVRATE	12 GL-246 R 42 W SCRIPTION: rd and change TO 0 1
Department of coorgy       DCT       - 2 200       STATE OF WASHINGTON       Water Right Permit No.         (1) OWNER: Name, Matti & Debra James       Address 2528 West Lacrosse, Spokane, WA 99205         (2) LOCATION OF WELL TRANSKE Shift & DE FUCICE       - SW 1/4 SW 1/4 Sec 21 T 26 N.F         (2) LOCATION OF WELL TRANSKE Shift & OF FUCIE       - SW 1/4 SW 1/4 Sec 21 T 26 N.F         (2) LOCATION OF WELL TRANSKE Shift & OF FUCIE       - SW 1/4 SW 1/4 Sec 21 T 26 N.F         (2) LOCATION OF WELL TRANSKE Shift & Of FUCIE       - SW 1/4 SW 1/4 Sec 21 T 26 N.F         (2) LOCATION OF WELL TRANSKE Shift & Of FUCIE       - SW 1/4 SW 1/4 Sec 21 T 26 N.F         (3) PROPOSED USE:       Domestic       Industrial         Imagion       DeWater       Other         (4) TYPE OF WORK:       Owner's number of well (frome than one)       MATERIAL         [So DIMENSIONS: Diameter of well       6       onches         [So DIMENSIONS: Diameter of well       6       nches         [So DIMENSIONS: Diameter of well       6       nches         [So DIMENSIONS: Diameter of well       6       nches         [So DIMENSIONS: Diameter of well       96.5       ft         [So DIMENSIONS: Diameter of well       6       nches         [So DIMENSIONS: Diameter of well       96.5       ft         [So DIMENSIONS: Diamet	GL-246 R 42 W CRIPTION: rid and change TO 0 1
Third Copy - Driller's cont       Image: Control of the control of the	R         42         W           SCRIPTION:         nd and           Ichange         TO           0         1
(1) OWNER: Name Matti & Debra James       Address 2528 West Lacrosse, Spokane, WA 99205         (2) LOCATION OF WELL PARIMY SUCE LOUGO       - SW 1/4 SW 1/4 Sec _21 T _26 N.F         (2a) STREET ADDRESS OF WELL Concentration of the second state	R         42         W           SCRIPTION:         Ind and           Ind and         Ind and           Change         TO           0         1
(2) LOCATION OF WELL TRANTWE Spectrum       Construct Spectrum       Constend Spectrum       Construm       C	R 42 W SCRIPTION: rid and change TO 0 1
(2a) STREET ADDRESS OF WEFE (** meanest address)         TAX PARCEL NO.         (3) PROPOSED USE:       Domestic       Industrial       Municipal         (10) WELL LOG or DECOMMISSIONING PROCEDURE DES         Imgation       Test Well       Other         DeWater       Other       Formation Describe by color, character, size of material and structure, and the kinstume of the material in each stratum penetrated, with at least one entry for each of information Indicate all water encountered         (4) TYPE OF WORK:       Owner's number of well (if more than one)       MATERIAL       FROM         (4) TYPE OF WORK:       New Well       Method:       Matter encountered       Indicate all water encountered         (4) TYPE OF WORK:       Devened       Dug       Bored       Topsoil       Topsoil         (4) TYPE OF WORK:       Demeter of well       Dug       Bored       Sand, Gravel & Boulders       Indicate all water encountered         (5) DIMENSIONS:       Diameter of well       6       Inches       Sand Course Brown & Gravel       1         (6) CONSTRUCTION DETAILS:       Casing installed:       Sand Course Brown & Gravel       4         (a) Threaded       * Diam from       ft to       ft       Aquifer 91.5' to 96.5'       1         Yee of perforations:       Yee (XIN)       * Diam from       ft to </td <td>SCRIPTION: Indiand change TO 0</td>	SCRIPTION: Indiand change TO 0
TAX PARCEL NO.         (3) PROPOSED USE:       Domestic       Industrial       Municipal         (10) WELL LOG or DECOMMISSIONING PROCEDURE DES         Trigation       Test Well       Other         DeWater       DeWater       Formation Describe by color, character, size of material and structure, and the kin network the material in each stratum penetrated, with at least one entry for each of information. Indicate all water encountered         (4) TYPE OF WORK:       Owner's number of well (If more than one)       MATERIAL       FROM         (4) TYPE OF WORK:       Owner's number of well (If more than one)       MATERIAL       FROM         (b) Depenend       Dug       Bored       Dug       Sand. Gravel & Boulders       Sand. Gravel & Boulders         (5) DIMENSIONS:       Diameter of well       6       inches       Sand Fine Brown       3         (6) CONSTRUCTION DETAILS:       Sand Course Brown & Gravel       4         (6) CONSTRUCTION DETAILS:       Aquifer 91.5' to 96.5'       Aquifer 91.5' to 96.5'         (c) Threaded       Diam from       +1.5 ft to       91.5 ft         (c) perforations:       Yes XINo       The demonstructure       Aquifer 91.5' to 96.5'         (and for perforations in tow       in tow       in tow       In tow         (b) constreaded       Diam from       +1.5 ft	SCRIPTION: Ind and change TO 01
(3) PROPOSED USE:       Domestic       Industrial       Municipal         (10) WELL LOG or DECOMMISSIONING PROCEDURE DES         DebeVater       Conternation       Test Well         (4) TYPE OF WORK:       Owner's number of well (If more than one)       Formation         New Well       Method:       Method:         Deepened       Dug       Bored         Reconditioned       Cable       Driven         Sand, Gravel & Boulders       Sand, Gravel & Boulders         Dilled       100       feet         Depth of completed well       96.5       ft         (6) CONSTRUCTION DETAILS:       Casing Installed:         (2) Welded       6       Diam from         Threaded       " Diam from       ft to         Perforations:       Yes (X) No         Type of perforator used       "n. by       in         Stef of perforations from       ft. to       ft	SCRIPTION: Indiand I change TO 0 1
(4) TYPE OF WORK:       Owner's number of well (If more than one)       of information Indicate all water encountered         (4) TYPE OF WORK:       Owner's number of well (If more than one)       MATERIAL       FROM         (4) TYPE OF WORK:       Owner's number of well (If more than one)       MATERIAL       FROM         (4) TYPE OF WORK:       Deepened       Dug       Bored       MATERIAL       FROM         (5) DIMENSIONS:       Dameter of well       Cable       Driven       Sand, Gravel & Boulders       1         (5) DIMENSIONS:       Diameter of well       6       inches       Inches       Sand Fine Brown       3         (6) CONSTRUCTION DETAILS:       Sand Course Brown & Gravel       4         (6) CONSTRUCTION DETAILS:       Sand Course Brown & Gravel       4         (6) CONSTRUCTION DETAILS:       Sand Course Brown & Gravel       4         (6) CONSTRUCTION DETAILS:       Aquifer 91.5' to 96.5'       Image: Cable of the transmitter of the t	то 01
(+) FITE Of Workt.       X New Well       Method:	<u>то</u>
Deepened       Dug       Bored       Integration         Reconditioned       Cable       Driven       Sand. Gravel & Boulders       1         Sand. Course Brown & Gravel       1         (5) DIMENSIONS:       Diameter of well       6       inches       inches       nches       Sand. Course Brown & Gravel       1         (5) DIMENSIONS:       Diameter of well       6       inches       inches       Sand. Fine Brown       3         (6) CONSTRUCTION DETAILS:       Gasing Installed:       Sand. Course Brown & Gravel       4         (6) CONSTRUCTION DETAILS:       Sand Course Brown & Gravel       4         (6) CONSTRUCTION DETAILS:       Sand Course Brown & Gravel       4         Casing Installed:       " Diam from       +1.5 ft to       91.5 ft.         Liner installed       " Diam from       ft to       ft         Threaded       " Diam from       ft to       ft         Vel of perforations:       Yes XINo       m       m         Type of perforations from       in. by       in       m         perforations from       ft. to       ft       m	
Image: Decommission       Image: Rotary       Image: Jetted       Sand Course Brown & Gravel       1         (5) DIMENSIONS:       Diameter of well       6       inches       inches       inches       Sand Fine Brown       3         Dilled       100       feet       Depth of completed well       96.5       ft       Sand Course Brown       4         GO CONSTRUCTION DETAILS:       Sand Course Brown       Gasing Installed:       4         Image: Welded       6       " Diam from       +1.5       ft to       91.5       ft.         Aquifer 91.5'       to 96.5'       Image: Provide the tot of the tot	1 11
(5) DIMENSIONS:       Diameter of well       6       inches       Sand Fine Brown       3         Dnilled       100       feet       Depth of completed well       96.5       ft       Clay Firm Brown       4         (6) CONSTRUCTION DETAILS:	1 34
(b) Diffed 100       feet       Depth of completed well       96.5       ft       Clay Firm Brown       4         (6) CONSTRUCTION DETAILS:	<u>14 41 </u>
(6) CONSTRUCTION DETAILS:       Sand Course Brown & Gravel       4         (a) Construction Detailed:       Sand Course Brown & Gravel       4         (b) Construction Detailed:       Sand Course Brown & Gravel       4         (c) Construction Detailed:       Sand Course Brown & Gravel       4         (c) Construction Detailed:       Sand Course Brown & Gravel       4         (c) Construction Detailed:       Sand Course Brown & Gravel       4         (c) Construction State       Sand Course Brown & Gravel       4         (c) Construction Strom       Sand Course Brown & Gravel       4         (c) Construction Strom       Sand Course Brown & Gravel       4         (c) Construction Strom       Sand Course Brown & Gravel       4         (c) Construction Strom       Sand Course Brown & Gravel       4         (c) Construction Strom       Sand Course Brown & Gravel       4         (c) Construction Strom       (c) Strom       4         (c) Construction Strom       (c) Strom       (c) Strom       (c) Strom         (c) Construction Strom       (c) Strom       (c) Strom       (c) Strom         (c) Construction Strom       (c) Strom       (c) Strom       (c) Strom         (c) Construction Strom       (c) Strom       (c) Strom       (c) Strom	<u> 1 43</u>
(6) CONS I ROC FION DE TAILS:         Casing Installed:         X]Welded      fito	13 100
Standy inclusion       6       " Diam from       +1.5       ft to       91.5       ft.         Liner installed       " Diam from       ft to       ft       ft         Threaded       " Diam. from       ft to       ft         Perforations:       Yes XINo         Type of perforator used       in. by       in         SIZE of perforations from       ft. to       ft.	<u> </u>
Liner installed       " Diam fromft toft         Threaded       " Diam. fromft toft         Perforations:       Yes XNo         Type of perforator used      in         SIZE of perforations fromft. toft      in	
Image: Image:	
Perforations:         Yes XNo           Type of perforator used	
Type of perforator used	
SIZE of perforations in. by in in perforations from ft. to ft ft.	
···· perforations from fit to fit /	
perforations from fL to fL	
Screens: Yes X No K-Pac Location	
Manufacturer's Name	
This Slot size from the to the fit	<u> </u>
Diam Slot size from ft. to ft.	
Grave//Filter packed: 1 res kino	
	~~ <u> </u>
Surface seal: Xi Yes No To what depth? <u>18+</u> th	
Did any strata contain unusable water? Yes XINo	_
. Type of water? Depth of strata	
Method of sealing strata off	
(7) DI IMD. Manufacturer's Name	
HP	
the Work Started 9/20/2001 , 19 Completed 9/21/2001	, 19
Static level 56 ft below top of well Date WELL CONSTRUCTION CERTIFICATION.	····
Artesian pressure lbs. per square inch Date I constructed and/or accept responsibility for construction of this we	ell and its
Artesian water is controlled by (Concursion standards Mater	nals used
(Cap, valve, etc) and the information reported above are true to my best knowledge a	and belief
(9) WELL TESTS: Drawdown is amount water level is lowered below static level	740
Was a pump test made? Yes XNo If yes, by whom? (Licensed Driller/Engineer)	113
Yield gal /min with ft drawdown after hrs Trainee Name License No.	
Yield     gal /min     π grawdown after     hrs	
genzient wier is drawdown aller ins. Dilling Company Sams Drilling, Inc.	
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)  Time Mater License No 1  (Signed)	719
Address N 3600 Conklin Rd Fik Wa 2000	
• • • • • • • • • • • • • • • • • • •	·
Registration No SAMSDI 022JZ Date 9/27/01	, 19
Aintest 304 gai /min with stem set at fit for hrs Enclosed to a fit of the for hrs Enclosed to a fit of the for hrs Enclosed to a fit of the fi	
Artesian flow g p m Date Ecology is an Equal Opportunity and Affirmative Action employ	
Temperature of water Was a chemical analyses made? Yes XNo (360) 407-6600. The TDD number is (360) 407-6006	yer For Program of
	yer For Program at

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

## WATER WELL REPORT

054088 Start Card No

21N1

(USE ADDITIONAL SHEETS IF NECESSARY)

Third Copy-D	iller'a Copy	STATE OF	WASHINGTON		
1) OWNE	R: Name Andy Mahaffy		Address N.8132 RIVERMERE AVE	E. NIN	IE MIL
LOCAT	ION OF WELLS CAUNTY SPOKANE				
a) STREE	ADDDRESS OF WELL (or nearest address)			26N., R	<u>.42 w.</u> м.
B) PROPC	SED USE: Domestic Industrial	Municipal 🗆	(10) WELL LOG or ABANDONMENT PROCEDU	RE DES	CRIPTION
			Formation: Describe by color, character, size of material a thickness of aquifers and the kind and nature of the material in a	nd structure	, and show
) IVPE (	OF WORK: Owner a number of well (If more than one)		with at least one entry for each change of information.		
Abandon	d 🗌 New well 🔯 Method: Dug 🗌	Bored		FROM	TO
	Reconditioned Cable Cable	Jetted	VERY COURSE CRAVEL MED	0	18
) DIMEN	SIONS: Diameter of well 6	inches.	GRAVEL, SAND	18	60
Drilled_	<u>60</u> feet. Depth of completed well	<u>56 m</u> .		╀	
) CONST	RUCTION DETAILS:				<u> </u>
Casing in	stalled: Diam. fromft. to	<u>51 </u> #.		<u> </u>	
Welded Liner Instal	ed 🛄 —t Diam. fromtt. to	pft.		+	<u>                                     </u>
Threaded	* Diam. fromft. to	oft.			
Perforati	DNS: Yes No 🔀				
Type of per	forstor used			ļ •	
SIZE OF DEF	perforations from	in.		ļ	
	Deforations from ft. to	ħ.			
	perforations from ft. to	n.			
Screens:	Yes X No				
Manufactur	r's Name JOHNSON S.S.			· ·	
Туре	STEEL Model	No			
Diem	-5/8 Slot size_2056ft. to	<u>. 51 <del>n</del></u>			-
Diam	Slot sizefromft. to	nt.			
Gravel pa	cked: Yes No 🗶 Size of gravel				
Gravel plac	id from ft. to	<u> </u>			
Surface s	eal: Yee 🕅 No 🗌 To what depth?19	<del>n</del> .			
Material us	din seal GRANULAR BENTONITE	13_SACKS			
Did any stre	ta contain unusable water? Yes No				
Vype of wet	Depth of si	rata		┼╴╢╽	· · · · · · · · · · · · · · · · · · ·
PUMP:					
Time				<b>r</b>	1
WATED	Exercise Land-Burface elevation	Н.Р		·	
Static level	21 above mean sea level				
Artesian pre	n. below top of well. Date				<u></u>
	rtesian water is controlled by				
WELL T	Cap, valve, etc		Work started 9-18- 19 completed 9-19	) <u> </u>	
Wasapump	test made? Yes No Y if yes hy whom?	low static level			_, 19,464
Yield: <u>5</u>	D+gel./min. withft. drawdown atter		WELL CONSTRUCTOR CERTIFICATION:		
,,			+ constructed and/or accept responsibility for constr and its compliance with all Washington well constructed.	ruction of	this well,
Recovery de	te (time taken as zero uben nume tumo taket as t		Materials used and the information reported above a	re true to	my best
from well top	to water level)	n measured	הווטאופט <b>טס בווע טסוס</b> ו.		
inne W	an Laver I me Water Level Time	Water Lovel	NAME BARTHOLOMEW DRILLING. IN	IC.	
			(PERSON, FIRM, OR CORPORATION)	(TYPE OR	PRINT)
			Address W. 13712 LINCOLN RD, SPC	KANE.	WA 99
Date	of test		L Plin	}	
Bailer test _	gai./min. with It. drawdown after	hm	(Signed taut Cartholoutense N	<u>6 005</u>	1
Airtest	gal./min. with stem set at	hra.	Contractor's Registration		
Artesian flow	g.p.m. Dete		No.BARTHI*24903 Date 9/26/91		, 19

ECY 060-1-20 (10/87) -1329-

-		
	21N2	
CURRENT Notice of Intent No	161726	
Unique Ecology Well ID Tag No	AHJ473	
Water Right Permit No		
Property Owner NameBria	n & Edith St	ephens
Well Street Address 8116 N	Aubrey Whit	e Park
Cuty Nine Mile Fall	Eounty Spokan	е
Location $\frac{SE}{1/4} \frac{1}{4} \frac{SW}{1/4}$	Sec. 21 Twn 26 R	42 EWM cu
Lat/Long Lat Date		WWM
(strstili	Lat Min/Sec	
REQUIRED) Long Deg.	Long Min/Se	°C
Tax Parcel No		
CONSTRUCTION OR DEC	COMMISSION PROCED er size of material and stru	URE cture and the
kind and nature of the material in each	stratum penetrated with a	t least one
-fentry for each change of information (USE ADDITIONAL SHEETS IF NE	Indicate all water encounte CESSARY)	red
MATERIAL	FROM	то
Cobble, Sand	0	30
······································		
Sand	30	97
· · · · · · · · · · · · · · · · · · ·		<b>-</b>
•		
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	AUC 4 & 200	<b>9</b> 1
		<b>v</b>
		h i
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		1 1
Start Date 8-5-03	ompleted Date 8-5-(	
Start DateC	ompleted Date8-5-(	03
Start Date $8-5-03$ Constbility for construction of this we ported above are true to my best by	ompleted Date8-5-(	) 3 11th all
Start Date	ompleted Date8-5-( ell and its compliance w iowledge and belief pert_Drilling	D 3
Start Date 8-5-03 Constibility for construction of this was ported above are true to my best kither the start are start at a 34700 Teel	ompleted Date ell and its compliance w iowledge and belief oert Hill Rd N	) 3 1th all
Start Date	ompleted Date8-5-( ell and its compliance w towledge and belief Dert Drilling Hill Rd N	03 1th all
Start Date	ompleted Date8-5-( ell and its compliance w iowledge and belief Dert Drilling Hill Rd N ort WA 991:	) 3 1th all 9
	CURRENT W Notice of Intent No W Unique Ecology Well ID Tag No Water Right Permit No Property Owner Name_Bria Well Street Address 8116 N City Nine Mile Fall Location SE_1/4 1/4 SW_1/4 Lat/Long Lat Deg (s t r still REQUIRED) Long Deg Tax Parcel No CONSTRUCTION OR DEC Formation Describe by color charact kind and nature of the material in each entry for each change of information (USE ADDITIONAL SHEETS IF NE MATERIAL Cobble, Sand Sand	21N2         CURRENT       W161726         Notice of Intent No       AHJ473         Water Right Permit No

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

21N3

ile Original and First Copy with repartment of Ecology econd Copy — Owner's Copy hird Copy — Driller's Copy	WATER WELL REPORT	Application No.	• .
1) OWNED.		Permit No	
LOCATION OF WELL	Bank F.A. Address P. O. Box	345, Spokane, WA.99210	
COCATION OF WELL: County	Spokane	14 se21 T 26 N. R.	42Е <sub>W М</sub>
ig and distance from section or subdivision co	orner Lot 18, Block 1, Don Lemon Trad	cts. N.8224 Abbrey Whi	te Pl.
) PROPOSED USE: Domestic 🗄 Indus	ntrial [] Municipal [] (10) WELL LOG;		
Irrigation [] Test	Well D Other D Formation: Describe by color	, character, size of material and stri	ucture, and
TYPE OF WORK. Owner's number of	well	is the king and nature of the mater least one entry for each change of	ial in each formation
(if more than one). New well I Method:	MATE	RIAL FROM	то
Deepened	Cable Driven Heavy sand & grav	els,large boulder 0'	32'
Reconditioned	Rotary X Jetted D Heavy sand & grav	el,occas boulders 32'	
) DIMENSIONS: Diameter of well	Heavy sand & grave	els,large rocks	
Drilled	well 90 ft Rea eraust	38'	62'
	Fea gravel, coarse	<u>sands &amp; gravel</u>	
) CONSTRUCTION DETAILS:	Heavy sand and ar	avela occess Tooks	/4:
Casing installed: 6 Diam. from	+1 n to 90 n. water 20 GPM	74'	90 '
Welded	ft. to ft. to ft.		
Pertorations: Yes No Dunch			
SIZE of perforations 1 1/4 in	by 1/8 to		
135 perforations from 75	ft. to 84 ft.		 
perforations from	ft. to ft.		<u> </u>
perforations from	ft. to		<b></b>
Screens: Yes 🗆 No 🖍			
Manufacturer's Name			1
Type Mo Diam Slot size from	del No	- COLCONE	
Diam	ft. to	UT OFFICE	
Casual analysis	DEPENDE PEU	10:1MC	
Gravel packed: Yes No4 Size of	gravel:		 
Surface seal: Yes M No D To what c	1epth? <u>18</u>		¦
Material used in seal			
Type of water?	f strata		•
Method of sealing strata off			i
) PUMP: Manufacturer's Name			<u> </u>
	HP		
WATED I EVELS. Land-surface eleve	ation 1/278		
above mean sea le	Vel. 5/0/83		ļ
tic level .4.2	Date		<u> </u>
Artesian water is controlled by			
(C	ap, valve, etc.)		<b> </b>
) WELL TESTS: Drawdown is amoun lowered below static	t water level is work started ADT11 29	10 83 Completed May 9	
a a gran test made? Yest No 🗋 If yes, by w	hom? driller	, North Completed	19
eld: 20 gal/min. with 25 ft. drawdow	vn after 1 hrs.   WELL DRILLER'S ST	FATEMENT:	
	This well was drilled u	inder my jurisdiction and this	report is
covery data (time taken as zero when nump tur	med off) (water level	lowledge and bench.	
measured from well top to water level)	NAME ZINKGRAF'S W	ELL DRILLING CO.	
ume Water Level Time Water Level 7	Fime Water Level (Person, fir	m, or corporation) (Type or p	rint)
·····	Address P. O. Box 43	41, Spokane, WA. 99202	2
	[Simai] Sames A	Bentand - Farm	HGL
	own after hrs. [Signed] James J Zi	Benfang - Fare	HU L

ECY 050-1-20

**....**,

### APPENDIX C Streamflow Depletion Modeling

# Table C-1

Assumptions for Streamflow Depletion Analysis

Alternative Groundwater Supply Study Area

City of Airway Heights, Washington

Parameter	Symbol	Unit	Assumed Value	Source
Well Discharge Rate	Qw	gallons per minute	2315	Combined Qa of the City Water Right portfolio
		cubic feet per second	5.16	
Distance from Well to Stream	d	feet	2,000	Estimated
Storage Coefficient	s	dimensionless	2.0E-01	Typical value for the storage coefficient (specific yield) for an unconfined, coarse-grained sedimentary aquifer provided by Driscoll (1986).
Hydraulic Conductivity - Minimum	κ <sub>L</sub>	feet per day	1.65E+03	Single well specific capacity data analysis presented by CH2M Hill (1988)
		feet per second	1.9E-02	
Aquifer Thickness	b	feet	100	Estimated
Transmissivity	ΤL	square feet per day	1.65E+05	$T_L = K_L * b$
		square feet per second	1.9E+00	
Duration of Pumping	t	day	30	
Streambed Conductance	S <sub>cL</sub>	feet per second	1.9E-03	10 percent of the hydraulic conductivity estimate



### Table C-2

### **Results of Streamflow Depletion Analyses**

Alternative Groundwater Supply Study Area City of Airway Heights, Washington

Elapsed Time <sup>2</sup>	Well Pum	ping Rate	Streamflow Depletion Rate <sup>1</sup>		
(days)	(gpm)	(cfs)	(gpm)	(cfs)	(percent)
0	0	0	0	0	0.0
1	2315	5.16	60	0.13	2.6
2	2315	5.16	203	0.45	8.8
3	2315	5.16	334	0.75	14.4
4	2315	5.16	446	0.99	19.3
5	2315	5.16	542	1.21	23.4
6	2315	5.16	624	1.39	26.9
7	2315	5.16	695	1.55	30.0
8	2315	5.16	758	1.69	32.7
9	2315	5.16	814	1.81	35.1
10	2315	5.16	864	1.92	37.3
11	2315	5.16	909	2.03	39.3
12	2315	5.16	950	2.12	41.0
13	2315	5.16	988	2.20	42.7
14	2315	5.16	1022	2.28	44.2
15	2315	5.16	1054	2.35	45.5
16	2315	5.16	1084	2.42	46.8
17	2315	5.16	1112	2.48	48.0
18	2315	5.16	1138	2.53	49.1
19	2315	5.16	1162	2.59	50.2
20	2315	5.16	1185	2.64	51.2
21	2315	5.16	1206	2.69	52.1
22	2315	5.16	1226	2.73	53.0
23	2315	5.16	1246	2.78	53.8
24	2315	5.16	1264	2.82	54.6
25	2315	5.16	1281	2.85	55.3
26	2315	5.16	1297	2.89	56.0
27	2315	5.16	1313	2.93	56.7
28	2315	5.16	1328	2.96	57.4
29	2315	5.16	1342	2.99	58.0
30	2315	5.16	1356	3.02	58.6
31	2315	5.16	1369	3.05	59.1
32	2315	5.16	1382	3.08	59.7
33	2315	5.16	1394	3.11	60.2
34	2315	5.16	1406	3.13	60.7
35	2315	5.16	1417	3.16	61.2
36	2315	5.16	1428	3.18	61.7
37	2315	5.16	1438	3.20	62.1
38	2315	5.16	1448	3.23	62.6
39	2315	5.16	1458	3.25	63.0
40	2315	5.16	1467	3.27	63.4
41	2315	5.16	1476	3.29	63.8
42	2315	5.16	1485	3.31	64.2
43	2315	5.16	1494	3.33	64.5
44	2315	5.16	1502	3.35	64.9
45	2315	5.16	1510	3.36	65.2
46	2315	5.16	1518	3.38	65.6



Elapsed Time <sup>2</sup>	sed Time <sup>2</sup> Well Pumping Rate		Streamflow Depletion Rate <sup>1</sup>		
(days)	(gpm)	(cfs)	(gpm)	(cfs)	(percent)
47	2315	5.16	1525	3.40	65.9
48	2315	5.16	1533	3.41	66.2
49	2315	5.16	1540	3.43	66.5
50	2315	5.16	1547	3.45	66.8
51	2315	5.16	1554	3.46	67.1
52	2315	5.16	1560	3.48	67.4
53	2315	5.16	1567	3.49	67.7
54	2315	5.16	1573	3.50	67.9
55	2315	5.16	1579	3.52	68.2
56	2315	5.16	1585	3.53	68.5
57	2315	5.16	1591	3.54	68.7
58	2315	5.16	1596	3.56	69.0
59	2315	5.16	1602	3.57	69.2
60	2315	5.16	1607	3.58	69.4
61	2315	5.16	1613	3.59	69.7
62	2315	5.16	1618	3.60	69.9
63	2315	5.16	1623	3.62	70.1
64	2315	5.16	1628	3.63	70.3
65	2315	5.16	1633	3.64	70.5
66	2315	5.16	1638	3.65	70.7
67	2315	5.16	1642	3.66	70.9
68	2315	5.16	1647	3.67	71.1
69	2315	5.16	1651	3.68	71.3
70	2315	5.16	1656	3.69	71.5
71	2315	5.16	1660	3.70	71.7
72	2315	5.16	1664	3.71	71.9
73	2315	5.16	1668	3.72	72.1
74	2315	5.16	1672	3.73	72.2
75	2315	5.16	1676	3.73	72.4
76	2315	5.16	1680	3.74	72.6
77	2315	5.16	1684	3.75	72.7
78	2315	5.16	1688	3.76	72.9
79	2315	5.16	1692	3.77	73.1
80	2315	5.16	1695	3.78	73.2
81	2315	5.16	1699	3.78	73.4
82	2315	5.16	1702	3.79	73.5
83	2315	5.16	1706	3.80	73.7
84	2315	5.16	1709	3.81	73.8
85	2315	5.16	1712	3.82	74.0
86	2315	5.16	1716	3.82	74.1
87	2315	5.16	1719	3.83	74.3
88	2315	5.16	1722	3.84	74.4
89	2315	5.16	1725	3.84	74.5
90	2315	5.16	1728	3.85	74.7
91	0	0	1671	3.72	72.2
92	0	0	1532	3.41	66.2
93	0	0	1403	3.13	60.6
94	0	0	1294	2.88	55.9
95	0	0	1201	2.68	51.9
96	0	0	1122	2.50	48.5
97	0	0	1054	2.35	45.5
98	0	0	994	2.21	42.9
99	0	0	940	2.10	40.6

Elapsed Time <sup>2</sup>	sed Time <sup>2</sup> Well Pumping Rate			Streamflow Depletion Rate <sup>1</sup>		
(days)	(gpm)	(cfs)	(gpm)	(cfs)	(percent)	
100	0	0	893	1.99	38.6	
101	0	0	850	1.89	36.7	
102	0	0	812	1.81	35.1	
103	0	0	777	1.73	33.5	
104	0	0	744	1.66	32.2	
105	0	0	715	1.59	30.9	
106	0	0	688	1.53	29.7	
107	0	0	662	1.48	28.6	
108	0	0	639	1.42	27.6	
109	0	0	617	1.37	26.7	
110	0	0	597	1.33	25.8	
111	0	0	577	1.29	24.9	
112	0	0	559	1.25	24.2	
113	0	0	542	1.21	23.4	
114	0	0	527	1.17	22.7	
115	0	0	511	1.14	22.1	
116	0	0	497	1.11	21.5	
117	0	0	484	1.08	20.9	
118	0	0	471	1.05	20.3	
119	0	0	458	1.02	19.8	
120	0	0	447	1.00	19.3	

#### Notes:

<sup>1</sup> Streamflow depletion rate was calculated using the US Geological Survey code STRMDEPL08 (Reeves, 2008) based on the method introduced by Hunt (1999) for a partially penetrating stream with streambed resistance.

 $^{2}$  Elapsed time refers to the duration of continuous pumping in the hypothetical new production well.

cfs = cubic feet per second; K = hydraulic conductivity





### **APPENDIX D** Report Limitations and Guidelines for Use

### APPENDIX D REPORT LIMITATIONS AND GUIDELINES FOR USE<sup>1</sup>

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

### Hydrogeologic Services are Performed for Specific Purposes, Persons and Projects

This report has been prepared for use by Century West Engineering Corporation. This report may be made available in its entirety to others for information only. This report is not intended for use by others, and the information contained herein is not applicable to other sites.

GeoEngineers structures our services to meet the specific needs of our clients. For example, a hydrogeologic study conducted for a civil engineer or architect may not fulfill the needs of a construction contractor or even another civil engineer or architect that are involved in the same project. Because each hydrogeologic study is unique, each hydrogeologic report is unique, prepared solely for the specific client and project site. No one except Century West Engineering Corporation should rely on this report without first conferring with GeoEngineers. This report should not be applied for any purpose or project except the one originally contemplated.

### A Hydrogeologic Report is Based on a Unique Set of Project-Specific Factors

This report has been prepared for the water system operated by the City of Airway Heights, Washington. GeoEngineers considered a number of unique, project-specific factors when establishing the scope of services for this project and report. Unless GeoEngineers specifically indicates otherwise, do not rely on this report if it was:

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

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

### **Subsurface Conditions Can Change**

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

<sup>&</sup>lt;sup>1</sup> Developed based on material provided by ASFE, Professional Firms Practicing in the Geosciences; www.asfe.org.

### Most Hydrogeologic Findings Are Professional Opinions

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

#### A Hydrogeologic Report Could Be Subject to Misinterpretation

Misinterpretation of this report by other design team members can result in costly problems. You could lower that risk by having GeoEngineers confer with appropriate members of the design team after submitting the report. Also retain GeoEngineers to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a hydrogeologic report. Reduce that risk by having GeoEngineers participate in pre-bid and preconstruction conferences, and by providing construction observation.

#### **Read These Provisions Closely**

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



