Yakima River Basin Study

Groundwater Infiltration Appraisal-Level Study Technical Memorandum

U.S. Bureau of Reclamation
Contract No. 08CA10677A ID/IQ, Task 4.13

Prepared by

Golder Associates Inc.
HDR Engineering, Inc.

U.S. Department of the Interior
Bureau of Reclamation
Pacific Northwest Region
Columbia-Cascades Area Office

State of Washington
Department of Ecology
Office of Columbia River

March 2011

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1.0 Introduction

This technical memorandum describes results of an appraisal-level study of the potential for groundwater infiltration in two study areas within the Yakima River Basin. The objective of the proposed groundwater infiltration program is to divert water prior to storage control into designed infiltration systems (ponds, canals, galleries, or spreading areas), and allow the infiltrated water to be used or credited in lieu of reservoir releases. The expected outcome of the infiltration program is higher streamflows in the Yakima River during spring out-migration of salmon, reduced reservoir releases during storage control, and higher carryover storage in the reservoir system at the end of an irrigation season.

Two study areas were selected for appraisal-level assessment – Kittitas Reclamation District (KRD) and Wapato Irrigation Project (WIP). Although only two areas were chosen for this appraisal-level study, there are other areas where this concept may have applicability. Other areas with large potential include the Moxee Valley and South Slope of Rattlesnake Ridge. After initial Pilot testing, other project areas may be added to the program.

This report also includes background on the hydrogeology, a hydregeologic analysis in each study area describing groundwater flow conditions and potential groundwater mound build-up, and initial RiverWare modeling of basin operations that include the estimated effects groundwater infiltration on flow, reservoir levels, and water deliveries in the Yakima Basin.

For purposes of RiverWare modeling conducted for the Yakima River Basin Study, a groundwater infiltration volume of 100,000 acre-feet per year was selected. At full scale, it is anticipated that between 160 and 500 acres of total infiltration area will be necessary to achieve a total infiltration capacity of 100,000 acre feet. Based on an initial analysis prior to any pilot testing, individual infiltration ponds are not likely to exceed 10 acres in size, and will more likely be in the range of 2 to 5 acres. Therefore multiple smaller infiltration areas should be anticipated rather than a few large facilities. Construction of ponds is anticipated to be straightforward and simple using basic earthworks and conveyance. However, full-scale implementation on the KRD system will be dependent on construction of the Thorp Pump Station.

RiverWare simulations show that total infiltration volumes will vary from year to year depending on snowpack conditions, runoff, and reservoir re-fill requirements, but that on average, approximately 100,000 acre-feet of water can be made available for groundwater infiltration purposes prior to storage control (when reservoirs stop filling and start drawing down). Refinement of the volume for infiltration can be carried out at a later stage of project evaluation.

Infiltrated water can be used or credited to water supply in lieu of reservoir releases in two ways: active withdrawal and passive return flow. Active withdrawal of infiltrated water could be achieved using a combination of shallow wells, canals or drains. Passive return flow will occur at various locations and timings along the Yakima River and tributaries, depending on the location of individual infiltration areas. Pilot testing of infiltration ponds and more detailed modeling of withdrawal and return flow scenarios will be necessary to determine actual “wet water” benefits to specific water users and streamflow from groundwater infiltration.

For the RiverWare modeling described in this report, it was assumed that the majority of the infiltrated water was “used” in the same year that it was infiltrated, and that the use was simulated as return flow to RiverWare’s operational control points in the Yakima River. Flows at these control points are important determinants for reservoir releases.

In the WIP study area, depths to groundwater are generally shallow; hydraulic conductivity is generally high; there is a large saturated thickness; and there is a strong possibility that lateral drains will be able

to effectively capture return flows from applied infiltration. Ponds that produce moderate mound heights will cause a convergence of flow toward existing drains, lateral canals, or shallow trenches, which could be effective systems to capture applied infiltration for use in lieu of reservoir releases. In a regional context, applying infiltration to the WIP study area during the winter and spring months could restore the groundwater hydrograph to a more normal condition (where the highest water levels are present during the winter and spring). By recharging the groundwater system earlier and improving capture efficiency of canals, the need for reservoir releases early in the season could be reduced.

In the KRD study area (as compared to the WIP study area), depths to groundwater are somewhat deeper; hydraulic conductivity is generally lower; there is a lower saturated thickness; and there are fewer large interconnected main lateral canals to capture returns from applied infiltration using existing infrastructure. Ponds that produce small to moderate mound heights will need to be managed using shallow wells, and an effective regulatory mechanism will need to be developed to track and operate them. The potential for longer-term, measurable improvements to base flow are greater in the KRD study area because of the overall convergence of flow toward the Yakima River above Umtanum. Over the long term, essentially all water that is infiltrated but not actively withdrawn will accrue as a steady state (i.e., year-round) increase in base flow to the Yakima River at Umtanum.

Pilot testing is necessary to verify design features of specific groundwater infiltration systems and determine the benefits and potential reduction in demand for specific water users. Pilot testing is proposed in both the KRD and WIP study areas. The most promising general locations for infiltration have been identified in each study area. In the KRD, the vicinity of Naneum Creek and Badger Pocket have been targeted. In the WIP, an area between the WIP Main Canal and Marion Drain has been delineated based on groundwater flow directions recently published by the USGS.

In each study area, two pilot-scale infiltration systems would be constructed – each between one and two acres in size. Hydrogeologic characterization and installation of monitoring systems would take place as part of final site selection and permitting in each area. After construction, each facility would be operated for two irrigation seasons and monitoring data would be collected to characterize water-level and water quality responses to infiltration. Final analysis and reporting of the pilot test program would include groundwater modeling of infiltration using a combination of regional USGS models and local scale models. In addition, a regulatory management approach will be needed that can be used to monitor and balance groundwater storage inflows and outflows in the basin. The report is organized as follows:

- Section 2 describes the study areas evaluated for groundwater infiltration.
- Section 3 presents a hydrogeologic overview of the groundwater infiltration issues, and a hydrogeologic analysis for each study area
- Section 4 presents the initial RiverWare simulations of groundwater infiltration.
- Section 5 presents an outline of the proposed pilot-testing program and expected costs.

2.0 Study Areas

The Yakima Basin Project provides irrigation water for approximately 465,000 irrigable acres of land within the Yakima Basin. The project delivers water to six divisions: Kittitas (59,123 acres), Tieton (27,271 acres), Sunnyside (103,562 acres), Roza (72,511 acres), Kennewick (19,171 acres), and Wapato. The Wapato Division is operated by the Bureau of Indian Affairs (BIA), but receives most of its water supply from the project for irrigation of 136,000 acres of land (Reclamation 2002).

While the overall project includes the entire Yakima Basin, two specific study areas were chosen for this assessment to evaluate some specific aspects of groundwater storage:

- The Kittitas Reclamation District (KRD) was chosen because of the potential Thorp Pump Station concept, which would deliver piped water to the uppermost canals of the KRD North Branch. Having the ability to pump water to these higher portions of the sub-basin, particularly in the early spring (March-May) is well aligned with the infiltration concept described previously.
- The Wapato Irrigation Project (WIP) was chosen because of : 1.) the magnitude of allowable water deliveries to the WIP system (some of which could be replaced with artificially recharged groundwater ; 2) the presence of a large shallow alluvial aquifer area downslope from irrigation works; and 3) A main canal with a high delivery capacity that it could be operated most of the time during the winter.

The two study areas are shown on Figure 1. The KRD study area (Figure 2) extends from just north of Thorp to south of Ellensburg on the eastern side of the Yakima River. Land within the KRD study area is used to grow hay, and there are also some fallow areas. Major structures in the KRD system are the Easton Diversion Dam, the Main Canal, the North Branch Canal, and the South Branch Canal. The North Branch Canal conveys water from the Yakima River for 36 miles and provides irrigation water for much of the Kittitas Valley. Most irrigation occurs south of the canal and the project area. Approximately 90 percent of the KRD canal system is composed of unlined earthen canals and the other 10 percent consists of concrete-lined canals (Montgomery Water Group 2002). This study area is above the Parker gage and reductions in demand or increases in return flow to the Yakima River would be expected to affect reservoir releases and carry-over storage in the reservoir system.

The WIP study area (Figure 3) includes the Wapato Division and extends from just south of Parker to Granger on the western side of the Yakima River. The WIP is located within Yakama Nation lands and is bounded by the Highline canal to the north, the Yakima River to the east, and the Satus Pump Canal and the Unit 1 and 2 Pump Canals to the south and west. Approximately 100,000 to 120,000 acres of the 142,000 potential acres of irrigated land are actively irrigated. Water is diverted from the Yakima River at the Wapato Diversion Dam to the Main Canal and then delivered to the Wapato Unit through Laterals 1, 2, 3, and 4. The Bench Unit also receives water from the Main Canal through the Unit 1 Pump Canal and the Main Canal Extension.

Water from Toppenish Creek is pumped by the Unit 2 Pump Plant to the Unit Pump Canal. Return flows from the Wapato and Bench Units currently supply almost all of the water used by the Satus Unit (plans are under Interior Department review for a pump station on the Yakima River to serve the Satus Unit). Most of the return flows from the Satus Unit return to the Yakima River without reuse on WIP, but are part of the water supply for downstream irrigators e.g. KID. (Montgomery Water Group 2002). The WIP diversion is above Parker, but the return flows are generally above Prosser. Thus, return flows of increased groundwater infiltration from KRD would become part of TWSA, whereas WIP would need to capture diversions at Parker (by using artificially stored groundwater) in order to reduce reservoir releases and benefit TWSA.

The USGS has been studying and characterizing the hydrogeology of the Yakima Basin since 2000. The background hydrogeology information provided below is from the USGS reports developed as part of the Yakima Basin studies (Jones, et al. 2006; Vaccaro, et al. 2009). Figures 4, 5 and 6 are maps from these reports showing the basic hydrogeology of the Yakima Basin. A groundwater flow model of the basin-fill deposits in the Yakima Basin is in final development by the USGS. The model has not been used in this assessment, but it is anticipated that it would be a component of any future analysis and refinement of infiltration and delivery scenarios in the basin.

Preliminary results of the model, presented by the USGS in September 2010, were focused on the impacts of groundwater pumping on river flows. The preliminary results indicated that, on average, groundwater pumping reduces flows by 200 cubic feet per second (cfs) by the time the Yakima River

drains into the Columbia River. The model characterizes the connection between surface and groundwater, and can be used to evaluate the dynamics and net effects of infiltration and subsequent capture.

3.0 Hydrogeologic Assessment

The hydrogeology of the two study areas is characterized using information from the previous basin-scale assessment of groundwater storage prepared by Golder Associates (2009) with refinements and additional site-specific analysis from recent USGS studies (Jones, et al. 2006; Vaccaro, et al. 2009), a review of Ecology's online well inventory database (Ecology 2010), and limited field reconnaissance. The hydrogeologic assessment of the shallow, unconsolidated deposits includes an overview of the unconfined aquifer, groundwater levels, and aquifer properties. The potential aquifer response to surface infiltration is evaluated through a groundwater mounding analysis. The groundwater mounding analysis evaluates the potential magnitude and duration of groundwater mounding on top of the water table below potential infiltration ponds, based on the design infiltration rates and soil properties.

3.1 Basic Infiltration Parameters

There are four basic questions that need to be addressed for the infiltration system:

1. How much water can be infiltrated?
2. Once the water reaches the groundwater table, how does the recharge mound evolve over time and where does the groundwater discharge?
3. How much water can be withdrawn (actively or passively) and where?
4. What are the net benefits (in a given year and year-over-year) to TWSA, streamflow, and groundwater levels?

Groundwater Storage and Down-valley Flow

Groundwater levels are well characterized, and groundwater flow directions in the basin-fill deposits are known in each of the study areas. Figures 7 and 8 show the depth to groundwater, groundwater equipotentials, and generalized groundwater flow directions in the KRD study area and WIP study area, respectively.

For an individual infiltration basin or area, there are three graphical perspectives to consider, as shown on Figures 9, 10, and 11. Figure 9 is a generalized depiction of the infiltration concept, where water is directed to a pond and infiltrated, with recovery via downstream shallow wells or canals.

When water is infiltrated into the subsurface, it will increase groundwater levels beneath the infiltration area and then co-mingle with the existing groundwater flow regime. Figure 10 shows, in schematic form, a groundwater mound beneath an infiltration pond. The height that the mound reaches above the pre-existing static groundwater level and the time it takes for a mound to build up and decay is a function of the rate and duration of infiltration, the size of the infiltration area, and the hydraulic properties of the underlying aquifer. In general, larger mounds are formed for larger infiltration areas, higher infiltration rates, lower aquifer permeability, and thinner aquifer thickness.

The infiltration rate from the ground surface to the water table is a function of the properties of the soil/unsaturated zone and the design/maintenance of the infiltration system. If a mound reaches the ground surface, the ability to infiltrate is reduced. Conversely, if there is little mounding, distinguishing between infiltrated and co-mingled groundwater becomes difficult.

Once infiltration has reached the water table, it will flow downgradient. In some cases, flow paths may be changed (at least locally) as a result of infiltration. Figure 11 is a second schematic showing the effect

of mounding along a groundwater flow path. The greatest change in groundwater levels occurs directly adjacent to the infiltration area, with progressively smaller changes downgradient from the infiltration area. This is important to consider because detection and physical monitoring of groundwater-level changes from mounding becomes more difficult further from the infiltration area. In addition, the co-mingling of infiltrated and natural groundwater can affect the physical and regulatory aspects of capturing the infiltration for use in-lieu of reservoir releases. This is discussed further in Section 3.1.2.

Groundwater Capture (Active and Passive)

For the infiltration concept to succeed, the rate and volume of available withdrawal needs to be commensurate with a withdrawal that would otherwise come from a reservoir. Two forms of withdrawal are considered – active and passive:

- An "active" withdrawal would be specifically designed to capture infiltration from a pond or canal. A well is the best example, but in some cases a canal or drain could also be designed to capture infiltration. Active withdrawals are easily measured, but require additional infrastructure compared to current conditions, and may create regulatory difficulties because the water is co-mingled to some extent with existing groundwater.
- A "passive" withdrawal would be based on allowable withdrawals from an existing canal or stream, based on the presumption that infiltration has increased the flow in that canal or stream above what would otherwise exist under normal operational conditions. In many respects, it is effectively a credit. Passive withdrawals can utilize existing infrastructure, but are harder to measure (they can really only be modeled) and may create operational complexity because the water is co-mingled with reservoir releases.

For active withdrawals (wells in particular), Figure 12 shows two key areas to consider:

- The area nearest the infiltration area would be the most "active" and would experience the greatest change in water level and, potentially, water quality from infiltration. In this area, any water withdrawn would primarily be the same water that was infiltrated.
- The area furthest from the infiltration area represents the ultimate discharge area for the entire groundwater flow path to which the infiltration contributes. In this area, the infiltrated water is co-mingled with existing groundwater and is providing additional volume (base flow) to the discharge area as a function of the net inflow and withdrawal from the infiltration system.

The characterization and classification of withdrawals (or credits), as they would be used in lieu of reservoir releases, is an important conceptual and regulatory issue.

3.2 KRD Hydrogeology

Stratigraphy

The Kittitas sub-basin is a broad, roughly southeast-northwest trending valley within the Yakima River Basin, which covers an area of approximately 270 square miles in the central portion of Kittitas County (Jones et al 2006, Vaccaro et al 2009). The major structural feature within the sub-basin is the Kittitas Valley Syncline, which is bounded to the north by the Naneum Ridge Anticline and to the southwest by the Ainsley Canyon and Manashtash Anticlines. Within the sub-basin, the Yakima River approximately follows the axis of this syncline, located on the southwestern border of the City of Ellensburg.

Jones et al (2006) classifies the geology within the Kittitas sub-basin into three main hydrogeologic units:

- Unit 1 (Alluvium) – An unconfined aquifer that includes the alluvial deposits and Yakima River deposits. This aquifer is limited to the extents of the Yakima River floodplains. The reported thickness of this unit ranges from 0 to 100 feet.
- Unit 2 (Thorp Gravel and Fan Deposits) – An unconfined to semi-confined aquifer consisting of unconsolidated alluvial fan deposits, loess, terrace deposits, and gravels of the Thorp Formation; ranges in thickness from 0 to 790 feet.
- Unit 3 (Ellensburg Formation) – A confined aquifer consisting of consolidated deposits of the Ellensburg Formation and similar undefined continental sedimentary deposits. The thickness of this unit ranges from 0 to 2,040 feet with an average thickness of 600 feet.

The alluvium (Unit 1) and Thorp gravel (Unit 2 outcrop at the ground surface) sustain some agricultural pumping. Most of the larger production wells in the Kittitas Valley, however, are screened in the deeper Ellensburg Formation (Unit 3).

Well logs from profile line A1 to A5 (Figure 7) are included in Appendix A. Golder reviewed information provided by the USGS and select well logs from the Ecology database (Ecology 2010). The well logs from Ecology were selected based on well depth and type. Drillers' information for all water wells within a 2,000-foot buffer of the cross-section line was reviewed.

In general, the thickness of the basin-fill deposit (i.e., Unit 2 and Unit 3) decreases from west to east, with the greatest thickness observed in the area west of Wilson Creek and Naneum Creek where the depth to basalt averages over 200 feet deep. The depth to basalt in the area of Wilson Creek and Naneum Creek is less than 25 feet, which likely represents a subsurface basalt ridge. With the exception of the area immediately to the east of Naneum Creek, the basin-fill deposits east of this subsurface basalt ridge are generally about 50 to 100 feet thick. Most of the basin-fill east of Naneum Creek is interpreted to be consolidated Ellensburg formation (Unit 3).

Most (64 percent) of the wells along profile line A1 to A5 were ultimately completed in basalt or basalt-derived deposits, while the remaining wells were completed in what was described as gravels, cemented gravels, sandstone, or a mixture of clay-silt-sand-gravels. The highest well yields (e.g., 60 to 100 gpm) were reported for wells completed in basalt. The maximum well yield observed in the wells not completed in basalt was 45 gpm for a well completed in sandstone. Overall, the range in well yield for basalt was 7 to 100 gpm; the overall range in well yield for a non-basalt well was 2.5 to 45 gpm.

Groundwater Depths and Flow Directions

Figure 7 is the KRD study area groundwater contour and depth to water map for the Kittitas sub-basin. Depth to groundwater in the valley ranges from less than 20 feet to more than 200 feet below ground surface. Groundwater elevations range from over 2,200 feet above mean sea level (amsl) to less than 1,450 feet amsl. The groundwater flow direction is generally toward the longitudinal axis of the Kittitas Valley Syncline from the margins of the valley, and eventually flows to the south. The groundwater flow paths in the Kittitas sub-basin converge in the area where the Yakima River flows out of the valley and into the Yakima sub-basin (i.e., just north of Umtanum).

Hydraulic Properties

The lateral hydraulic conductivity of the basin-fill units in the Yakima River Basin (including the Kittitas sub-basin) ranges from less than 0.1 to more than 17,000 feet per day (ft/d) with a mean of 182 ft/d and a median of 6 ft/d (Vaccaro et al, 2009). The high range in values is due to the large variation in grain sizes and degree of consolidation of the basin-fill material.

The specific capacity of a well is sometimes reported on a well log and is a measure of the yield per unit of drawdown in a well. Specific capacity is dependent on aquifer properties and the quality of well

construction. In general, aquifers of low permeability will have lower values of specific capacity, whereas aquifers of high permeability will have higher values of specific capacity. A typical rule of thumb is that a well with a specific capacity of less than 10 gpm/ft is considered to be completed in an aquifer of moderate to low permeability.

For cross-section A, a total of four well logs contained drawdown information that was used to calculate the specific capacity; the range in specific capacity for these wells was 0.02 to 1.5 gpm/ft. Two of the wells were completed in fractured basalt. One was completed in a unit described as "rock and caliche." The lowest specific capacity was observed in a well completed in clay. Based on the specific capacity data and the yield information, the basin-fill material and basalt in the north KRD area is of moderate to low permeability.

Surface Conditions

The KRD study area encompasses the portion of the KRD service area that is on the east side of the Yakima River. Land cover within the KRD study area consists of irrigated agriculture (primarily used to grow hay), non-irrigated agriculture, fallow land, and natural vegetation (Figure 13). The City of Ellensburg is located just west of the study area boundary, between the boundary and the Yakima River. An extensive canal system provides irrigation water to landowners within the service area.

The North Canal, which is the primary canal that serves the area, generally follows the eastern boundary of the study area, with smaller canals branching from the North Canal. It also crosses a number of creeks that run through the study area, including Jones Creek, Currier Creek, Wilson Creek, Naneum Creek, Coleman Creek, and Caribou Creek. Badger Pocket is located in the southern-most portion of the study area.

3.3 WIP Hydrogeology

Stratigraphy

The Toppenish sub-basin is a broad, east-west trending valley within the Yakima River Basin that covers approximately 440 square miles in the Yakima Valley (Jones et al 2006, Vaccaro et al 2009). The Hydrogeologic Framework study of the Yakima River Basin (Jones et al 2006, Vaccaro et al 2009) classified the geology within the Toppenish sub-basin into five distinct hydrogeologic units:

- Unit 1 – An unconfined aquifer that includes the alluvial deposits, terrace deposits, loess deposits, and Touchet Bed deposits. The reported thickness of this unit ranges from 0 to 80 feet with average thickness of 10 feet.
- Unit 2 – An unconfined to semi-confined aquifer consisting of unconsolidated coarse-grained sand and gravel deposits. This unit ranges in thickness from 0 to 270 feet with an average thickness of 90 feet.
- Unit 3 – A confined aquifer consisting of consolidated deposits of the Ellensburg Formation and similar undefined continental sedimentary deposits. The thickness of this unit ranges from 0 to 970 feet with an average thickness of 350 feet.
- Unit 4 – An aquitard consisting of fine-grained deposits of the top of the Rattlesnake Ridge unit of the Upper Ellensburg Formation. The thickness of this unit ranges from 0 to 520 feet with an average thickness of 170 feet.
- Unit 5 – A confined aquifer consisting of coarse-grained deposits of the base of the Rattlesnake Ridge unit within the Upper Ellensburg Formation. The thickness of this unit ranges from 0 to 140 feet with an average thickness of 20 feet.

The Yakima River enters the Yakima Valley from the north through the Union Gap in Rattlesnake Ridge and flows southeast near the Town of Zillah before leaving the valley and entering the Benton sub-basin near the Town of Granger. Toppenish Creek is a significant tributary to the Yakima River and enters the Yakima Valley from the southwest and flows generally east to west eventually meeting the Yakima River to the east of Granger in the Benton sub-basin.

Well logs for profile lines B1 to B4 and C1 to C2 (Figure 8) are included in Appendix B. Golder reviewed information provided by the USGS and select well logs from the Ecology database (Ecology 2010). The well logs from Ecology were selected based on well depth and type. Drillers' information for all water wells within a 2,000-foot buffer of the cross-section line was reviewed. Due to the high variability in detail and interpretation among drillers, the geology was lumped into general stratigraphic units consistent with the USGS cross-sections (i.e., Unit 1, Unit 2, Unit 3, and Basalt).

Based on the well logs, the basin-fill deposits in the Toppenish sub-basin increase in thickness to the south to over 200 feet. Bedrock (e.g., sandstone or basalt) was not encountered within the upper 200 feet along profile B1 to B4. Along profile C1 to C2, the basin-fill deposits are greater than 200 feet in the south, but decrease in thickness to the north with an estimated average thickness of less than 100 feet.

About 61 percent of the wells examined were completed in loose, unconsolidated sands and gravels. The majority of the remaining wells were completed in sandstone. These wells were completed in the northern half of the area along profile C. The average well yield for well logs along profiles B and C was 179 gpm, with an overall range in yield of between 10 to 3,000 gpm.

Unlike the Kittitas study area, many of the wells in the Toppenish sub-basin are completed with screens, since the basin-fill deposits within the upper 200 feet of this sub-basin are loose and unconsolidated. This suggests that the basin-fill deposits in the Toppenish sub-basin are not as "tight" as the basin-fill deposits in the Kittitas sub-basin and would likely have higher infiltration rates.

The southwestern portion of the study area (western half of profile B) appears to be more fine-grained, with more silts and clays, or interbedded mixtures of coarse-grained and fine-grained materials. However there is limited availability of the well logs along this transect.

Drains, tile drains and streams are locations where the groundwater discharges from the basin-fill deposits (Vaccaro et al. 2009). Drains are unlined canals or laterals that can capture groundwater when the water table intersects the bottom of the drain. A number of drains on the east side of the study area may passively capture groundwater as the water table rises with surface infiltration. Therefore, these drains could be considered as an extraction / withdrawal location for the groundwater recharge. They would likely need to be retrofitted with check structures to slow the rate of discharge of artificially storage groundwater.

Groundwater Depths and Flow Directions

Figure 8 is a groundwater contour and depth to water map for the Toppenish sub-basin. Depth to groundwater in the valley ranges from less than 20 feet to more than 200 feet below ground surface. Groundwater elevations range from over 1,000 feet amsl to less than 700 feet amsl. Groundwater elevations are highest in the topographic highlands to the western and northern margins of the sub-basin near Rattlesnake Ridge, and lowest in the southeast near the Town of Granger. The groundwater flow direction is generally east-southeast from the area south of Union Gap and western margins of the valley toward the Yakima and Toppenish Rivers. Compared to the Kittitas study area, groundwater flow is generally more divergent.

Flow originating in the area south of Union Gap flows to the south-southeast discharging to the Yakima River. Flow originating along the Main Canal area, however, discharges in a more southerly direction toward Marion Drain and the Toppenish River. This portion of the flow system is also likely influenced by the main canal laterals (2, 3 and 4) that run east-west across the study area and from rill irrigation of

the fields (Ring, 2011, personal communication). Flow originating in the far western portion of the sub-basin generally discharges in the upper-reaches of the Toppenish River.

Because of the divergent flow pattern and the likely influence of the main canal laterals, the area shown on Figure 14 with a highlighted "hourglass" shape is identified as a focus area for potential infiltration.

Hydraulic Properties

The specific capacities of wells on cross-sections B and C range from less than 1 gpm/ft to greater than 75 gpm/ft, with an overall average of 14 gpm/ft. Compared to the KRD study area, wells in the Toppenish sub-basin have, on average, higher well yields and are completed with well screens due to the loose, unconsolidated basin-fill sediments. The basin-fill material in the WIP area, as a whole, is expected to be of moderate to high permeability.

Surface Conditions

The WIP study area encompasses the WIP service area on the west side of the Yakima River. The cities of Wapato and Toppenish are located on the eastern side of the study area. Irrigation agriculture in this area consists primarily of row crops with some orchards and vineyards in the northern part of the study area (Figure 15). There is also fallow land, natural vegetation, and some non-irrigated agriculture within the study area.

3.4 Groundwater Mounding

A groundwater mounding analysis was conducted to evaluate the potential magnitude and duration of groundwater mounding on top of the water table below infiltration ponds, based on the design infiltration rates and soil properties. The mounding analysis was conducted using the Hantush (1967) mounding solution in the aquifer test software program AQTESOLV 4.02.

The mounding analysis was conducted independently from the RiverWare modeling described in Section 4, but is important to determining the feasibility of infiltration. There is insufficient information at this time to determine site-specific infiltration parameters, and additional field testing is necessary. The analysis presents a range of possible aquifer characteristics and infiltration configurations based on the information described in Section 3.3. The input parameters include the following:

- Aquifer Properties:
  - Hydraulic conductivity (K)
  - Specific yield (Sy)
  - Initial saturated thickness (h0)
- Recharge Area Properties:
  - Recharge rate (w)
  - Simulation time (t)
  - Time when recharge stops (t_0)
  - X coordinate at center of recharge area (X)
  - Y coordinate at center of recharge area (Y)
  - Length in x direction (l)
  - Length in y direction (a)

Table 1 shows the peak mound height after 90 days for different combinations of pond size, saturated thickness, and hydraulic conductivity. Figure 16 shows an example of how the mound height would be expected to change over time for a 5-acre and 10-acre pond. Appendix C includes details on all the various pond configurations.

In general, ponds that produce the highest mound heights could be problematic, since they would raise the groundwater level close to or above the ground surface. If the mound height exceeds the level of the ground surface, the efficiency of infiltration generally decreases and the impact to surrounding areas increases (e.g., water logging of soils and ground seepage). However, mound heights that approach ground surface could be efficiently captured using existing canals or shallow trenches.

Table 1. Mound Height Results

POND SIZE (ACRES)	SATURATED THICKNESS (FT)	HYDRAULIC CONDUCTIVITY (FT/D)	PEAK MOUND HEIGHT AFTER 90 DAYS (FT)
5	100	20	67
		50	36
		100	22
10	100	20	105
		50	59
		100	37
20	100	20	154
		50	92
		100	59
5	200	20	45
		50	23
		100	13
10	200	20	75
		50	39
		100	23
20	200	20	118
		50	65
		100	39

Note: Calculations assume a recharge rate of 2.5 feet/day for 90 days.
See Appendix C for further detail

In the WIP study area, depths to groundwater are generally shallow; hydraulic conductivity is generally high; there is a large saturated thickness; and there is likely a strong possibility that lateral drains will be able to effectively capture applied infiltration. Ponds that produce moderate mound heights and cause a convergence of flow toward existing drains, lateral canals, or shallow trenches could be effective systems to capture applied infiltration for use in lieu of reservoir releases.

In a regional context, applying infiltration to the WIP study area during the winter and spring months could re-time the groundwater hydrograph to a more “normal condition” (where the highest water-levels are present during the winter and spring). By recharging the groundwater system earlier and improving capture efficiency of canals, the need for reservoir flows early in the season could be reduced.

In the KRD study area (compared to the WIP study area), depths to groundwater are somewhat deeper; hydraulic conductivity is generally lower; there is a lower saturated thickness; and there are fewer large interconnected main lateral canals to capture applied infiltration using existing infrastructure. Ponds that produce small to moderate mound heights will need to be managed using shallow wells, and an effective regulatory mechanism will need to be developed to track and operate them. The potential for longer term, measurable improvements to base flow are greater in the KRD study area because of the overall convergence of flow toward the Yakima River above Umtanum. Over the long term, essentially all water that is infiltrated but not actively withdrawn will accrue as a steady state (i.e., year-round) increase in base flow to the Yakima River at Umtanum.

4.0 RiverWare Simulations

The hydrogeologic analysis presented in Section 3 describes what is expected to occur to the groundwater system if additional infiltration is applied. This section describes what is expected to occur to canal and return flows with a groundwater infiltration component included in the Non-Storage and Integrated Plan scenarios. There is no explicit linkage between the RiverWare simulations and the groundwater mounding and flow path analysis presented in Section 3, but both evaluations are needed to assess groundwater infiltration feasibility. The analysis in Section 3 confirms that acceptable hydrogeologic conditions exist in the WIP and KRD study areas for groundwater infiltration and that the fate of recharged water can be adequately described and measured. As described below, the RiverWare simulations show that sufficient pre-storage control releases for groundwater infiltration can be made available and that the use of stored infiltration, in conjunction with the other components of the plan, can improve reservoir and streamflow conditions in the basin.

Pre-storage control flows and uncontrolled natural flows and gains were modeled as being available for groundwater infiltration between the beginning of November and the end March at a daily discharge rate of between 0 and 595 cfs for each study area (KRD and WIP). The flow rate available on any given day was constrained by instream flow requirements. Diversion for infiltration occurred if river flows were above 1,000 cfs, and no more than 90 percent of the flow above 1,000 cfs was diverted (up to a maximum annual volume of 54,000 acre-feet per year for each study area). The 1,000 cfs and 54,000 AF constraints were set to keep the model logic simple. As the total infiltration capacity becomes more clear after pilot testing, higher flows, larger annual infiltration volumes, or more complex diversion rules may be appropriate.

Recovery of groundwater infiltration was simulated using a simple and constant seepage function. In reality, seepage will vary with time and distance between the infiltration pond and the discharge area. Because the hydrogeologic analysis suggested that many smaller ponds would be preferable to fewer large infiltration facilities, a detailed and complex seepage function for RiverWare could not be developed. Instead, a high rate of total return flow was used so the majority of the water infiltrated is "used" in the same year that it was infiltrated.

Infiltrated water was modeled as being stored in a simple "reservoir" that was assumed to leak out at a rate of 0.7 percent of the volume in storage per day (a maximum of 190 cfs). The seepage was simulated as a cumulative return flow at Roza, Parker and Prosser. Flows at these control points are important determinants for reservoir releases. Therefore, the benefits of infiltration accrue to the Yakima River at points that affect reservoir release decisions. Higher daily or monthly recovery volumes applied to specific water users, such as pumping or canal flows used for irrigation needs, are not currently incorporated in the RiverWare functions. In addition, carry-over groundwater storage and its effect on demand or base flow is not currently incorporated in the RiverWare functions. Adding these capabilities to the RiverWare model would require additional and more complex programming that would probably need to be linked to a groundwater model.

The results of the RiverWare scenarios are shown on Table 2. For the KRD system, inflows to groundwater infiltration ranged from approximately 4,000 to 54,000 acre-feet annually, with an average of 32,719 acre-feet per year over the 25-year simulation period. There was limited capacity for pre-storage control releases during low storage years, such as 1985, 1994, and 2001. Outflows (returning to the river) range from approximately 8,000 to 55,000 acre-feet on an annual basis. For the WIP system, inflows were consistently higher, with an average inflow and outflow near the assumed infiltration capacity of 54,000 acre-feet annually.

Over the entire 25-year simulation period, approximately 2.1 million acre-feet of water is diverted, infiltrated to groundwater, and "used" in the context of the RiverWare operational logic. Another way to conceptualize the infiltration simulation is to apply a banking analogy. On a 5-year basis, approximately

160,000 acre-feet of water could be "banked" and "used" in the KRD study area, with an additional 270,000 acre feet of water in the WIP study area. In other words, over a period of 5 years, a groundwater storage account could have a total value of 430,000 acre-feet. The annual "credits and debits" to that account (both to water users and to environmental benefits) could be managed in lieu of reservoir releases through careful allocation and monitoring of groundwater flow from the infiltration areas to the discharge areas. The integration of this aspect of groundwater storage should be examined in future updates to the RiverWare model.

Table 2. RiverWare Model Output – Predicted Inflows and Outflows to Groundwater Storage under Non-Structural and Integrated Plan Scenarios

WATER YEAR	NON-STRUCTURAL (ACRE-FT/YEAR)[1]				INTEGRATED PLAN (ACRE-FT/YEAR)[2]			
	KRD		WIP		KRD		WIP	
	INFLOW	OUTFLOW	INFLOW	OUTFLOW	INFLOW	OUTFLOW	INFLOW	OUTFLOW
1981	46,602	39,516	54,000	48,163	38,224	31,810	54,000	48,163
1982	38,889	38,524	54,000	53,468	38,889	37,903	54,000	53,468
1983	44,390	43,910	54,000	53,875	44,737	44,158	54,000	53,875
1984	47,437	47,321	54,000	53,952	52,822	51,836	54,000	53,952
1985	4,120	10,678	54,000	53,906	4,120	11,524	54,000	53,907
1986	29,713	26,086	54,000	54,288	29,776	26,209	54,000	54,287
1987	22,380	23,298	54,000	53,921	22,380	23,307	54,000	53,940
1988	11,095	12,813	54,000	52,741	9,779	11,707	54,000	53,253
1989	29,007	26,988	54,000	53,798	29,157	26,899	54,000	53,845
1990	45,194	42,121	54,000	53,881	45,194	42,148	54,000	53,892
1991	54,000	54,913	54,000	55,553	54,000	54,988	54,000	55,010
1992	41,038	40,497	54,000	54,082	41,811	41,031	54,000	54,040
1993	10,022	14,604	54,000	53,555	10,020	14,755	54,000	53,764
1994	7,057	7,995	54,000	52,276	7,057	8,006	54,000	51,854
1995	50,469	43,944	54,000	53,754	34,730	30,005	54,000	53,718
1996	54,000	55,546	54,000	56,319	54,000	53,760	54,000	56,545
1997	45,844	44,278	54,000	54,092	49,174	47,123	54,000	54,109
1998	43,187	44,046	54,000	53,924	45,081	45,739	54,000	53,925
1999	37,451	38,495	54,000	53,910	46,511	46,458	54,000	53,910
2000	42,893	42,850	54,000	53,954	42,973	44,007	54,000	53,954
2001	5,220	9,970	49,803	49,146	5,220	10,610	54,000	53,368
2002	33,378	29,708	53,955	53,448	13,648	12,457	54,000	53,856
2003	32,395	31,439	53,225	53,247	22,507	20,913	54,000	53,893
2004	27,582	28,822	53,489	53,499	27,582	27,171	54,000	53,947
2005	14,603	17,332	47,567	48,801	14,603	17,205	54,000	53,894
Average	32,719	32,628	53,522	53,262	31,360	31,269	54,000	53,695

Notes:

[1]Source : HDR (2010). Non-Structural includes groundwater recharge and enhanced conservation only.

[2]Integrated Plan includes the Non-Structural scenario, plus Keechelus to Kachess Pipeline, Kachess Inactive Storage, Enlargement of Bumping Lake, Enlargement of Cle Elum Reservoir, and Wymer Reservoir.

5.0 Pilot Test Plan

This section includes a description of the pilot testing necessary to develop infiltration projects in the KRD and WIP study areas. Preliminary costs for the pilot test plans are also presented.

An analogous pilot-scale infiltration project in Oregon is in the Walla Walla Basin where a pilot alluvial aquifer recharge project was built in 2004 by the Hudson Bay District Improvement Company (HBDIC). The pilot project initially consisted of three infiltration basins covering a total of 0.34 acres. The size of the infiltration basins was increased the following year (2004-2005 recharge season) to 1.1 acres. This total area increased to 1.4 acres during the 2007-2008 recharge season with the addition of a fourth

infiltration basin. The infiltration basins were used to infiltrate a total of 13,100 acre-feet during a total of 602 days over six recharge seasons (HBDIC 2010).

5.1 KRD

The proposed pilot testing for the KRD study area has two elements. The first focuses on characterizing and developing two infiltration ponds in the KRD study area. Because there are indications that hydraulic conductivity in the basin-fill deposits may be less than optimal in some areas, a second component of pilot testing focuses on the potential for using shallow basalts for infiltration.

Basin-Fill

The pilot test for the basin-fill materials would include geologic and hydraulic testing of the gravels, field testing of infiltration and mounding at the site, groundwater modeling, and developing a management model that tracks groundwater infiltration and extraction. Currently, the most promising areas appear to be in the vicinity of Naneum Creek (Figure 17) and in the areas around Badger Pocket (Figure 18).

Geologic and Hydraulic Testing

Testing of the gravels would be performed on existing wells and by installing up to 10 new wells for hydrogeologic characterization and monitoring. Testing of the wells would consist of geologic logging during drilling and pump tests to estimate the hydraulic properties of the gravels at that site. This information would be used to determine the infiltration rate and mounding that would occur beneath the pond during infiltration. Monitoring systems would be installed in new wells and in selected existing wells, subject to owner agreements.

Field Testing of Infiltration and Mounding

Field testing of the infiltration and mounding would be carried out on two 1-acre infiltration ponds (one at Naneum and one at Badger Pocket). Land agreements, permitting and design activities would need to be completed prior to beginning construction. Because the Thorp Pump Station project would not be in place prior to the pilot test, the source of water for a pilot test would likely not be the direct reservoir releases to the KRD North Branch canal, especially during the winter. Therefore, testing could occur at the very end of the irrigation season and at the very beginning of irrigation using reservoir releases to KRD, and/or during the winter using a well. It is important to try and conduct the testing during cold weather because the Walla Walla infiltration project found that low water temperatures can influence the infiltration rate (HBDIC 2010).

Pond infiltration rates and annual infiltration capacity would be calculated based on monitoring of inflow/outflow and monitoring of surrounding groundwater levels in monitoring wells. Water quality sampling, including temperature, microbiological constituents, and basic anion/cation balances would be conducted in each monitoring well and the infiltration pond.

Modeling

Modeling is necessary to demonstrate the fate of recharged water and to determine how to balance infiltration volumes (annually and year-over-year) with withdrawals and/or credits for accumulated groundwater storage. Initially, the data collected during the geologic, hydraulic, and field testing would be used to develop a simple flow path model that tracks the movement of the infiltrated water from the infiltration area through the groundwater system toward the discharge area at Umtanum. The build-up and decay of the mound would be modeled at a site scale and sub-basin-scale capacity in order to identify and confirm potential extraction and use scenarios.

The second component of the modeling would involve the recently developed regional USGS model. A sub-basin scale numerical model (MODFLOW) would be developed that uses the USGS regional groundwater flow model for the Yakima Basin as boundary condition. This is called "nesting" of a groundwater model. It will be important to perform transient multi-year modeling in order to identify how "in-year" and "year-over-year" groundwater conditions vary as a result of infiltration. This will also provide an indication of the cumulative steady-state base flow improvements that would occur near the Umtanum gage on the Yakima River. The results of the multi-year simulation would also be used to update the groundwater-related functions in the RiverWare Model.

Regulatory Management Approach

A regulatory management tool would need to be developed once the data have been collected and the potential recharge and extraction scenarios have been developed. This management approach would need to be approved by Ecology so it is consistent with the ASR rule (Chapter 173-157 WAC) and other pertinent groundwater regulations. The simplest approach would be to treat the aquifer like a "bucket" that assumes all the recharge water goes into a "bucket" and is then either withdrawn within a specified area or returns to the Yakima River above Umtanum. More complex approaches could include specific guidelines and rules based on groundwater modeling or other calculations.

Basalt Interbeds

The pilot test for the basalt interbeds would focus primarily on geologic flow path characterization of the shallowest basalts, with an objective of assessing the potential benefits of using basalts for infiltration. The reason for including basalts in the pilot test is that it appears, based on initial data review, that the permeability of the basin-fill deposits in the KRD study area may be lower than optimal in some areas. If some portions of the basalt are inter-bedded with the alluvial sediments, additional groundwater storage capacity could be developed in the basalts.

Geologic Characteristics and Hydraulics

Surface reconnaissance of basalt outcrops would be conducted along the perimeter of the Kittitas sub-basin. Additional compilation of wells completed in basalts would be conducted, and up to 10 basalt wells would be identified for testing. No new wells are planned for the characterization. Pump tests would be conducted to estimate the hydraulic properties of the basalts and determine near field boundary conditions (i.e., the connectivity between the basalts and the basin-fill deposits).

Flow Path Characterization

Using the field data and well-testing information, a conceptual characterization of the connectivity between the basalts and basin-fill deposits in the KRD study area would be completed. This would include estimating the capacity for infiltration; the likely build-up and decay of groundwater levels in the basalt; and the discharge locations for water infiltrated into basalt. The conceptual analysis would be carried out on a local/site scale in the upper portions of the sub-basin (near the KRD North Branch Canal) and at a regional scale in the lower portions of the sub-basin (i.e., Badger Pocket area and the potential down-valley effects of basalt infiltration).

Benefits Assessment

Based on the conceptual assessment, a determination of potential increases to TWSA using basalts for infiltration would be developed. Additionally, an assessment of down-valley improvements to base flow in the Yakima River from basalt infiltration (i.e., toward Umtanum) would be prepared.

5.2 WIP

Pilot testing for the WIP study area would include two 1-acre infiltration projects that recharge the basin-fill material.

Basin-fill

The pilot test for the basin-fill materials would include geologic and hydraulic testing of the gravels, field testing of infiltration and mounding at the site, groundwater modeling, and developing a management model that tracks groundwater infiltration and extraction. Currently, the most promising areas appear to be in the "hourglass" area between the WIP main Canal and Marion Drain (Figures 19 and 20). There are former gravel pits that WIP has used for groundwater infiltration in the past that might be used for pilot areas as well.

Geologic and Hydraulic Testing

Testing of the gravels would be performed by testing existing wells and installing up to 10 new wells for hydrogeologic characterization and monitoring. Testing of the wells would consist of geologic logging during drilling and pump tests to estimate the hydraulic properties of the gravels at that site. This information would be used to estimate the infiltration rate and potential mounding that would be expected to occur beneath the pond during infiltration. Monitoring systems would be installed in all new wells and in selected existing wells, subject to owner agreements.

Field Testing of Infiltration and Mounding

Field testing of the infiltration and mounding would be carried out on two 1-acre infiltration ponds – one in the north half of the hourglass shape and one in the south half of the hourglass shape (Figures 19 and 20). Land agreements, permitting and design activities would need to be completed prior to beginning construction. Testing would occur at the beginning of the irrigation season while canals are operational and groundwater levels are low.

Pond infiltration rates and total capacity would be calculated based on monitoring of inflow/outflow and monitoring of surrounding groundwater levels in monitoring wells. Water quality sampling, including temperature, microbiological constituents, and basic anion/cation balances would be conducted in each monitoring well and the infiltration pond.

Modeling

Two modeling approaches would be developed. Initially, the data collected during the geologic, hydraulic, and field testing would be used to develop a simple flow path model that tracks the movement of the infiltrated water from the infiltration area through the groundwater system toward the discharge areas (many of which could be downstream drains). The build-up and decay of the mound would be modeled at a larger full-scale capacity in order to identify and confirm potential extraction and use scenarios.

The second component of the modeling would involve the recently developed regional USGS model. A sub-basin scale numerical model (MODFLOW) would be developed that uses the USGS regional groundwater flow model for the Yakima Basin as boundary condition. This is called "nesting" of a groundwater model. It will be important to perform transient multi-year modeling to identify how "in-year" and "year-over-year" groundwater conditions vary as a result of infiltration.

Regulatory Management Approach

A regulatory management tool would need to be developed once the data have been collected and the potential recharge and extraction scenarios have been developed. This management approach would

need to be approved by Ecology so it is consistent with the ASR rule (Chapter 173-157 WAC) and other pertinent groundwater regulations. The simplest approach would be to treat the aquifer like a "bucket" that assumes that all the recharge water goes into a "bucket" and is then either withdrawn within a specified area or returns to the Yakima River. More complex approaches could include specific guidelines and rules based on groundwater modeling or other calculations.

5.3 Cost

The anticipated cost of the pilot tests and ultimate full-scale implementation of infiltration is summarized below.

Pilot Phase

The pilot-phase costs include hydrogeologic characterization, construction, testing/operations, reporting, and agency and contingency costs (Table 3). A more detailed engineering estimate for pond construction is provided in Appendix D.

Table 3. Pilot Testing Cost Estimate (Per Study Area)

ITEM	QUANTITY	UNIT COST	COST	TOTAL
Hydrogeologic Characterization	1	$50,000	$50,000	
Test Existing Wells	10	$5,000	$50,000	
Install/Test New Wells	10	$10,000	$100,000	
New Wells Drilling (feet)	1000	$50	$50,000	
Monitoring Equipment	20	$1,000	$20,000	
Baseline Water Quality Sampling	20	$2,500	$50,000	
Lab	200	$300	$60,000	
Subtotal – Characterization				$380,000
Permitting/Access	2	$50,000	$100,000	
Pond Construction	2	$50,000	$100,000	
Piping and Components	2	$20,000	$40,000	
Design/CQA/Mob	1	35%	$49,000	
Subtotal – Construction				$289,000
Testing Phase (2 years)	2	$100,000	$200,000	
Operations	2	$100,000	$200,000	
Lab	400	$300	$120,000	
Subtotal - Testing/Operations				$520,000
Data Management	1	$100,000	$100,000	
Modeling	1	$100,000	$100,000	
Reporting	1	$100,000	$100,000	
Subtotal – Reporting				$300,000
Contingency	1	25%	$372,250	
Agency Support	1	25%	$465,313	
Sub-total Contingency and Agency				$837,563
Sub-total (per Study Area)				$2,326,563
Grand Total (Two Study Areas)				$4,653,125

Full Scale

The costs for full-scale implementation of surface infiltration were presented previously (Golder 2009) and were based on empirical cost comparisons for large-scale infiltration projects in the Southwestern U.S. Costs were presented using average unit (per-acre) costs multiplied by the potential total area covered by ponds. Construction costs were estimated at $187,000 per acre, including land acquisition. Based on the analysis presented above, there are no changes to the expected total area of infiltration ponds necessary to infiltrate 100,000 acre-feet of water, but the total number of ponds is likely to be

higher than previously assumed. A total of between 160 and 500 acres of dedicated infiltration area is still expected to be required.

From a costing standpoint, we do not think it is necessary or practical to revise the unit costs of infiltration presented previously. Using smaller ponds may reduce the unit costs of some ponds, but may increase the unit costs of other ponds. Similarly, the unit costs for O&M used previously have not been changed. The previous O&M costs were for larger facilities, but, similar to construction costs, the per-acre O&M costs for smaller ponds may be higher in some cases and lower in others. Once pilot testing has been conducted, additional refinements can be made to the costs for full-scale implementation.

Table 4. Estimated Costs of Implementing Full-Scale Surface Infiltration

COMPONENT		RANGE IN COSTS		
		LOW	EXPECTED	HIGH
$/acre	Unit Construction Cost	$ 175,000	$ 175,000	$ 175,000
$/acre	Land Acquisition	$ 12,000	$ 12,000	$ 12,000
	Total Acres	166	300	500
	Construction Costs (@ $187,000/Acre)	$ 31,042,000	$56,100,000	$ 93,500,000
15%	Permitting	$ 4,656,300	$ 8,415,000	$ 14,025,000
30%	Engineering Design	$ 9,312,600	$ 16,830,000	$ 28,050,000
30%	Contingency	$ 9,312,600	$ 16,830,000	$ 28,050,000
	Total Construction	$ 54,323,500	$ 98,175,000	$ 163,625,000
$ 65	Fixed O&M (Annual Cost)	$ 2,145,000	$ 2,145,000	$ 2,145,000

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7.0 List of Preparers

NAME	BACKGROUND	RESPONSIBILITY
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Bob Anderson	Hydrogeologist	Lead Author
Alyssa Neir	Environmental Planner	Co-Author
HDR, Inc.		
Steve Thurin	Hydrologist	Hydrologic Modeling and QC Review

FIGURES

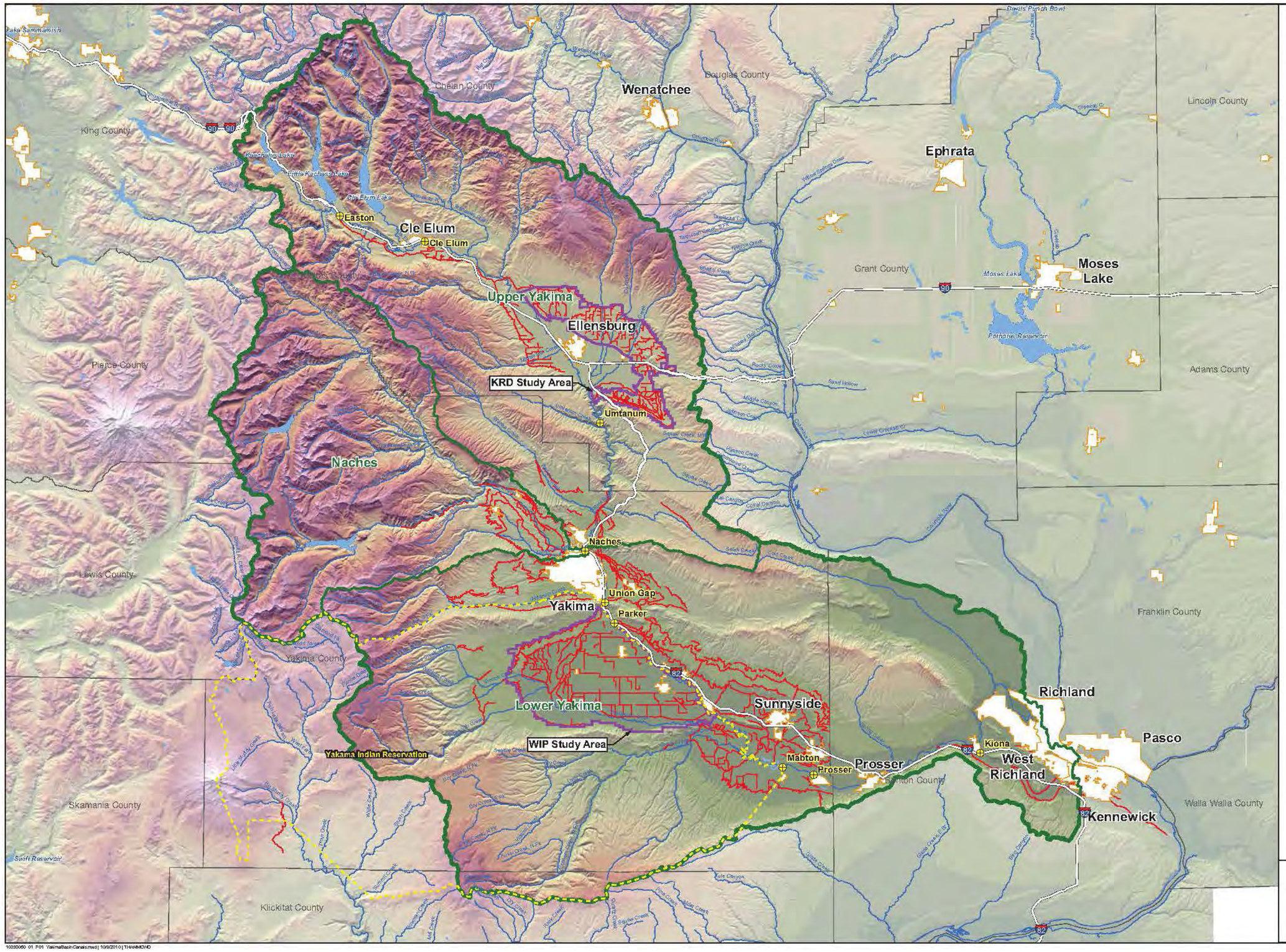
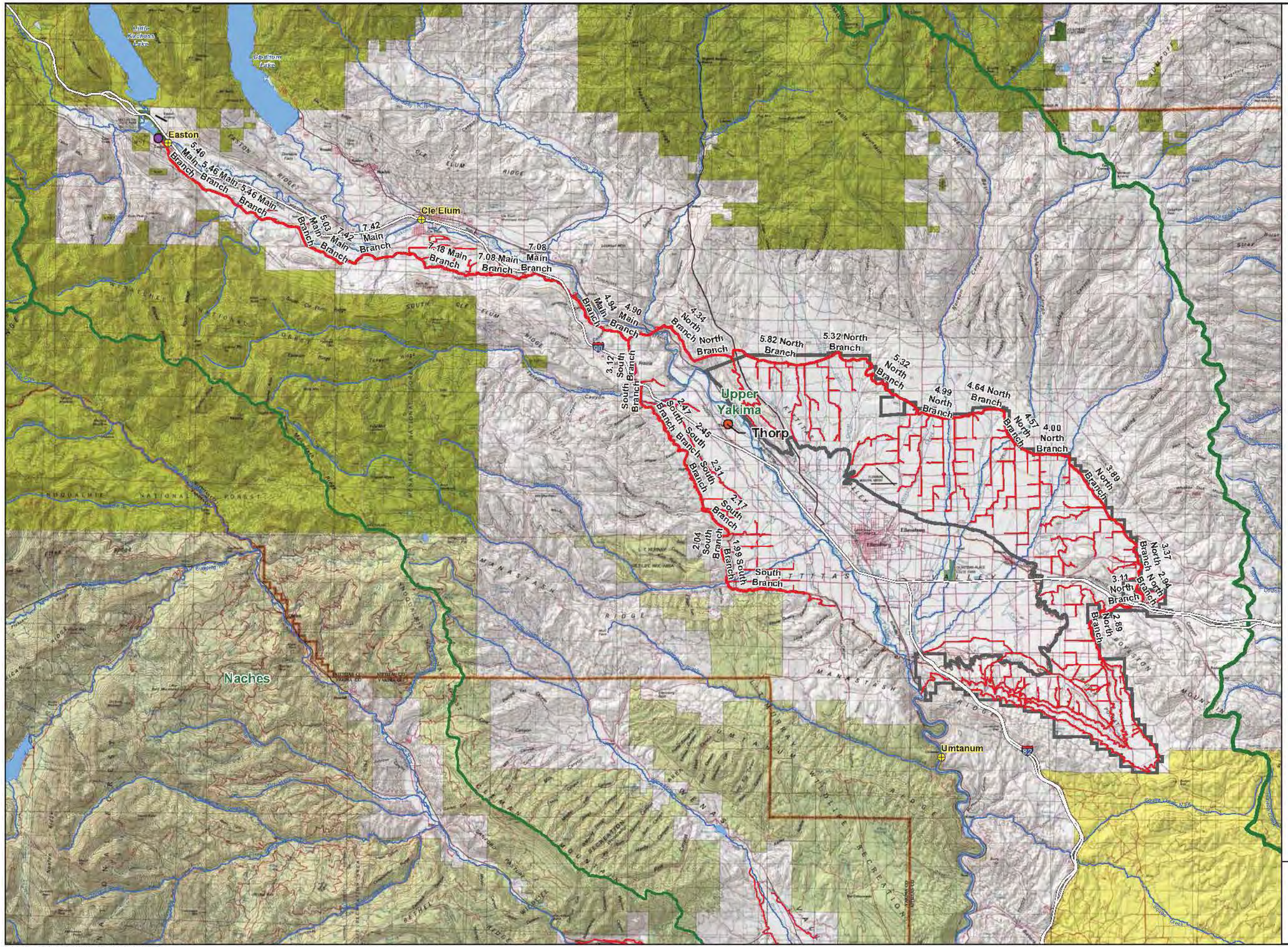


FIGURE 1
OVERVIEW MAP
YAKIMA BASIN GROUNDWATER STORAGE/WA

Golder Associates



LEGEND

- USGS Streamflow Gage
- Easton Diversion Dam
- Interstate Highway
- Major Canals
- Canals
- Water Course
- Water Resource Inventory Area Boundary
- Water Body
- KRD Study Area
- Yakima Basin

N

0 4 8

Scale in Miles

Map Projection:
Washington State Plane
South Zone NAD 1983

Source: WSDOE, WSDOT, USGS, Golder Associates Inc.

This figure was originally produced in color. Reproduction in black and white may result in loss of information.

FIGURE 2
KRD STUDY AREA
YAKIMA BASIN GROUNDWATER STORAGE/WA

Golder Associates

LEGEND

- USGS Streamflow Gage
- Wapato Diversion Dam
- Interstate Highway
- Water Course
- Major Canals
- Canal
- Water Resource Inventory Area Boundary
- Water Body
- WIP/Marion Drain Study Area
- Yakima Basin

N

0 2 4

Scale in Miles

Map Projection:
Washington State Plane
South Zone NAD 1983

Source: WSDOE, WSDOT, USGS, Golder Associates Inc.

This figure was originally produced in color. Reproduction in black and white may result in loss of information.

FIGURE 3
WIP/MARION DRAIN STUDY AREA
YAKIMA BASIN GROUNDWATER STORAGE/WA

Golder Associates

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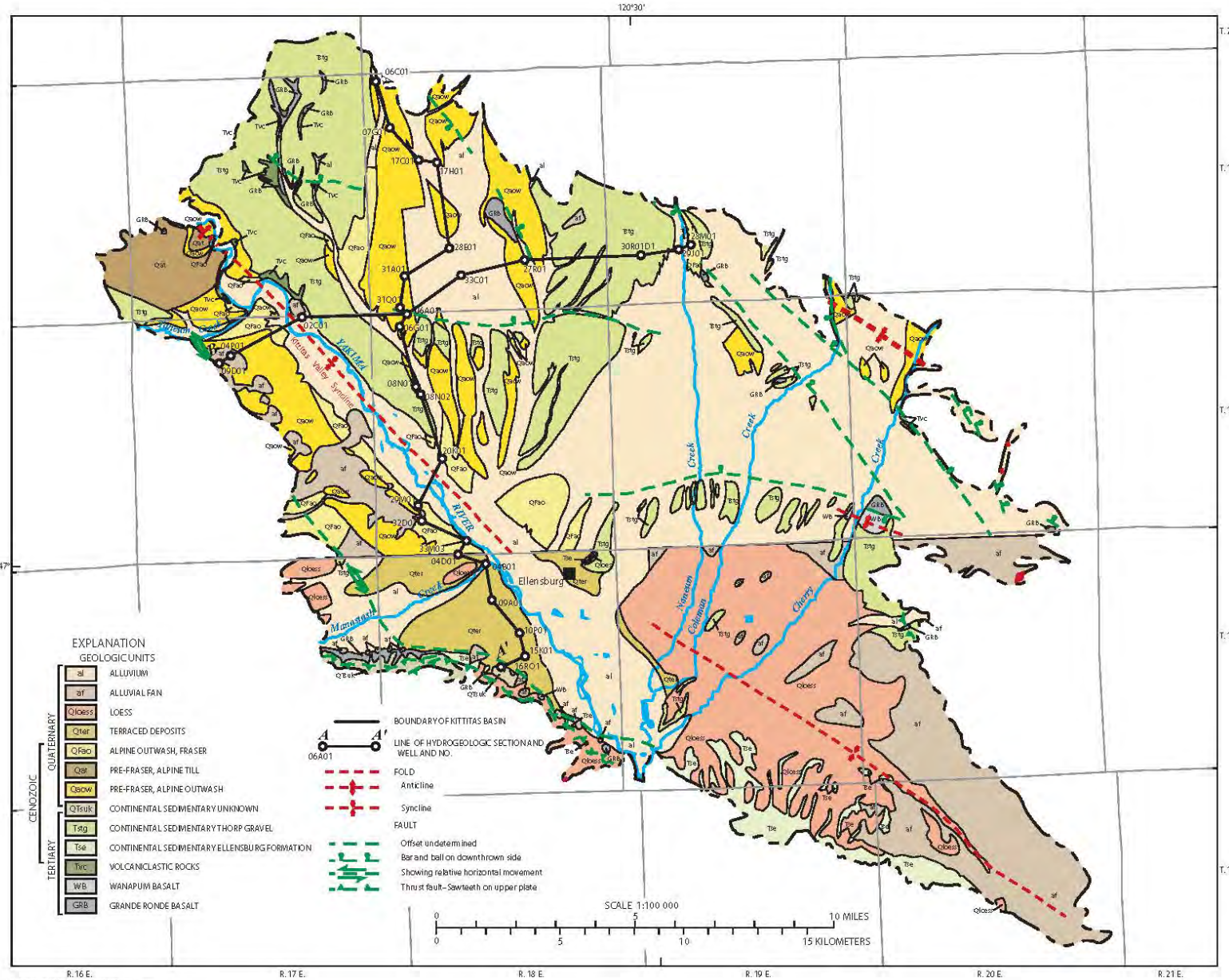
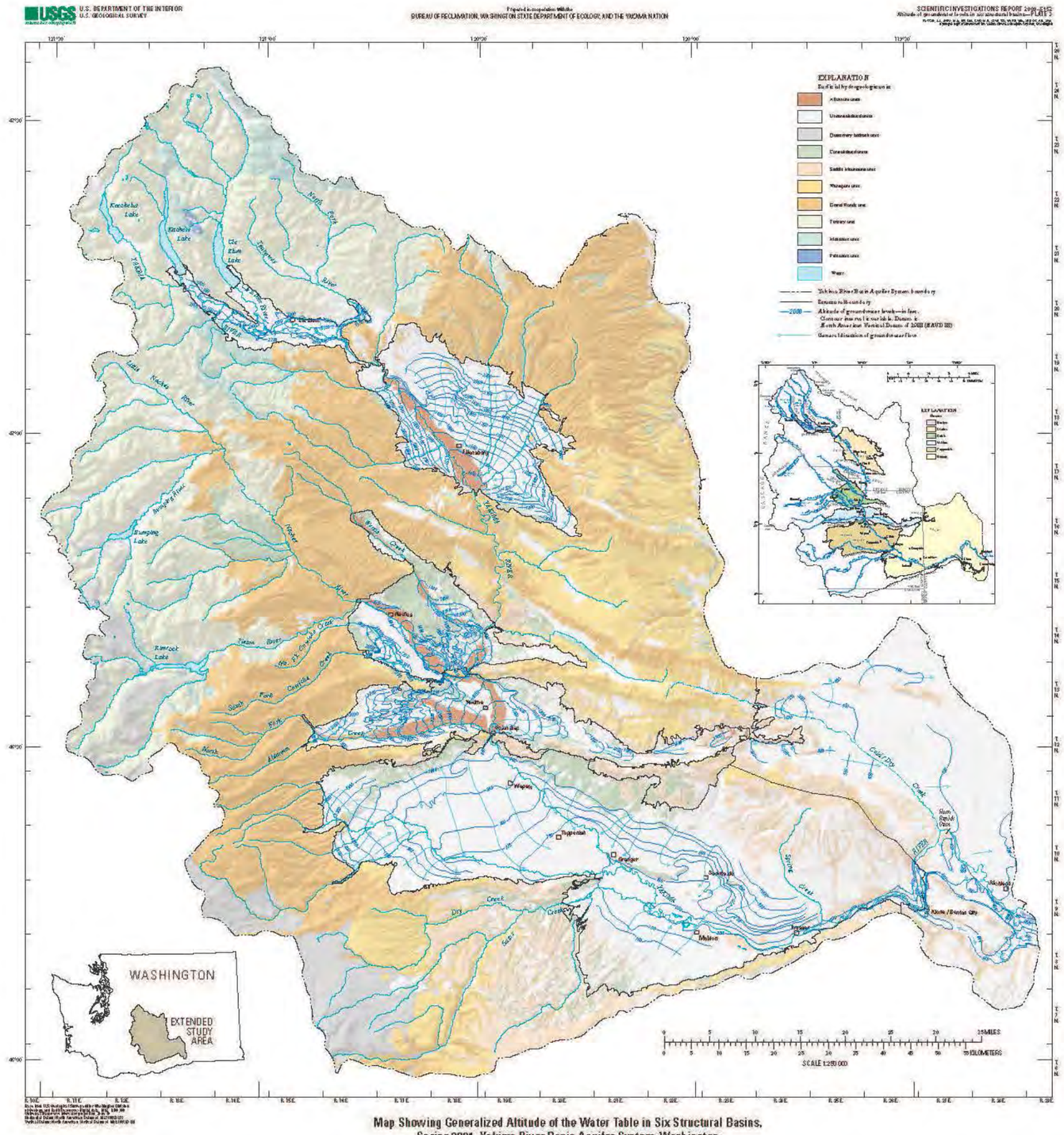


FIGURE **4**

HYDROGEOLOGIC UNITS IN THE KITTITAS SUB-BASIN

YAKIMA BASIN GROUNDWATER STORAGE/WA

Source. Jones et al (2006)



Source. Vaccaro, et al. (2009)

FIGURE **5**
YAKIMA RIVER BASIN AQUIFER SYSTEM
YAKIMA BASIN GROUNDWATER STORAGE/WA

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Golder Associates

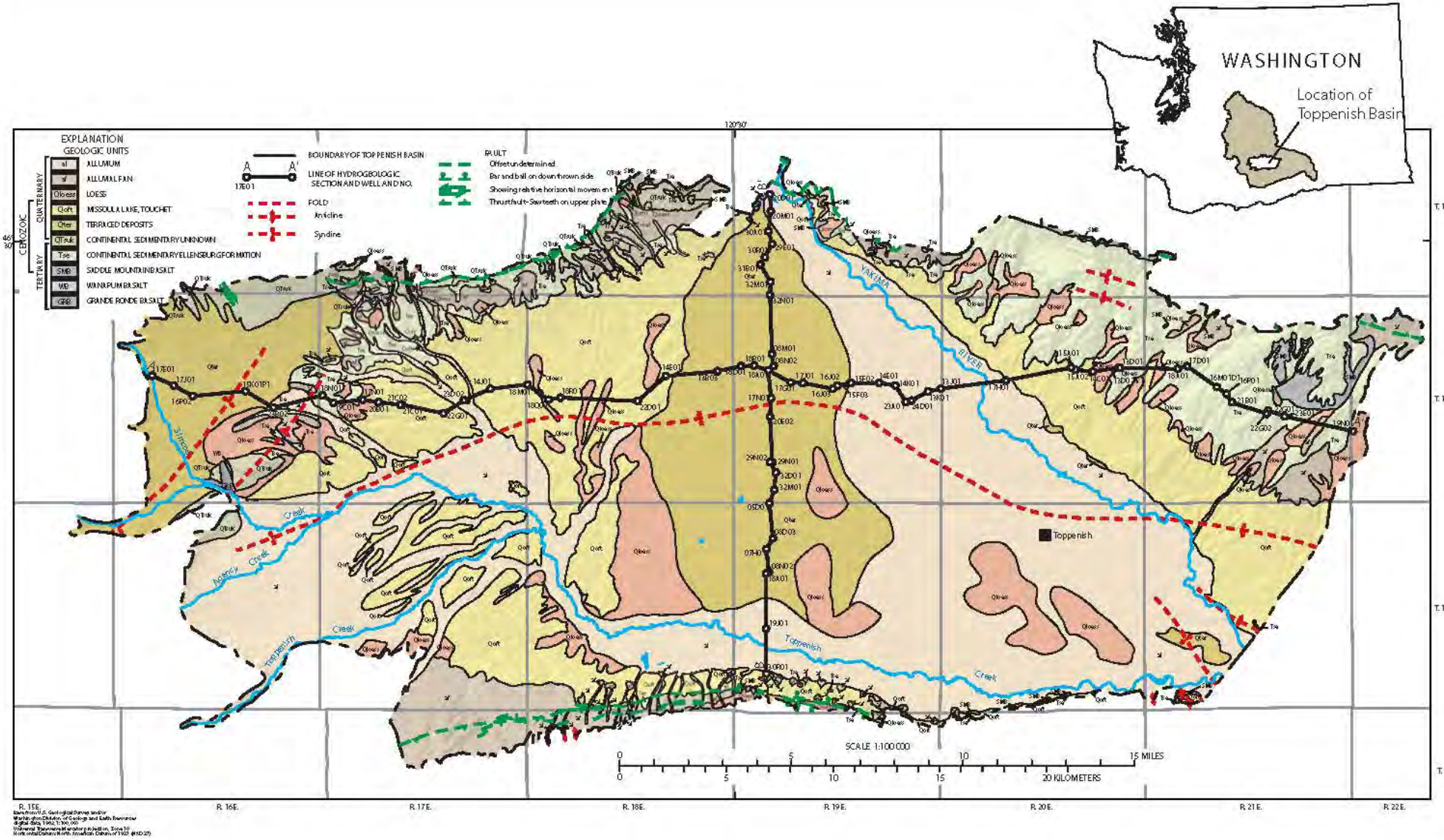
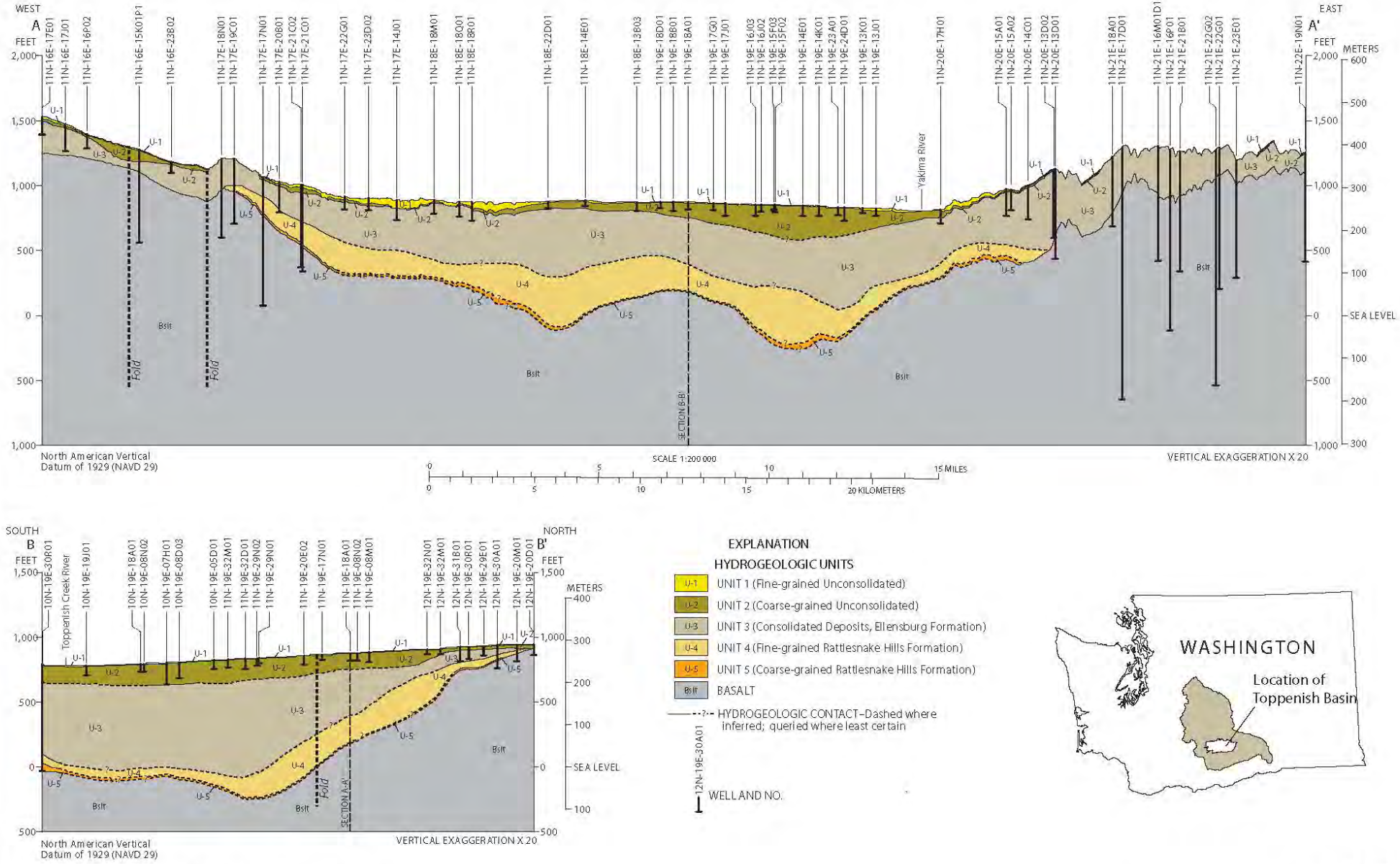


FIGURE **6-A**
HYDROGEOLOGIC UNITS IN THE TOPPENISH SUB-BASIN
YAKIMA BASIN GROUNDWATER STORAGE/WA

Source. Jones et al (2006)

Golder Associates



EXPLANATION

HYDROGEOLOGIC UNITS

- U-1 UNIT 1 (Fine-grained Unconsolidated)
- U-2 UNIT 2 (Coarse-grained Unconsolidated)
- U-3 UNIT 3 (Consolidated Deposits, Ellensburg Formation)
- U-4 UNIT 4 (Fine-grained Rattlesnake Hills Formation)
- U-5 UNIT 5 (Coarse-grained Rattlesnake Hills Formation)
- Bslt BASALT
- ---?--- HYDROGEOLOGIC CONTACT–Dashed where inferred; queried where least certain
- 12N-19E-30A01 WELL AND NO.

See Figure 6-A for the overview map.

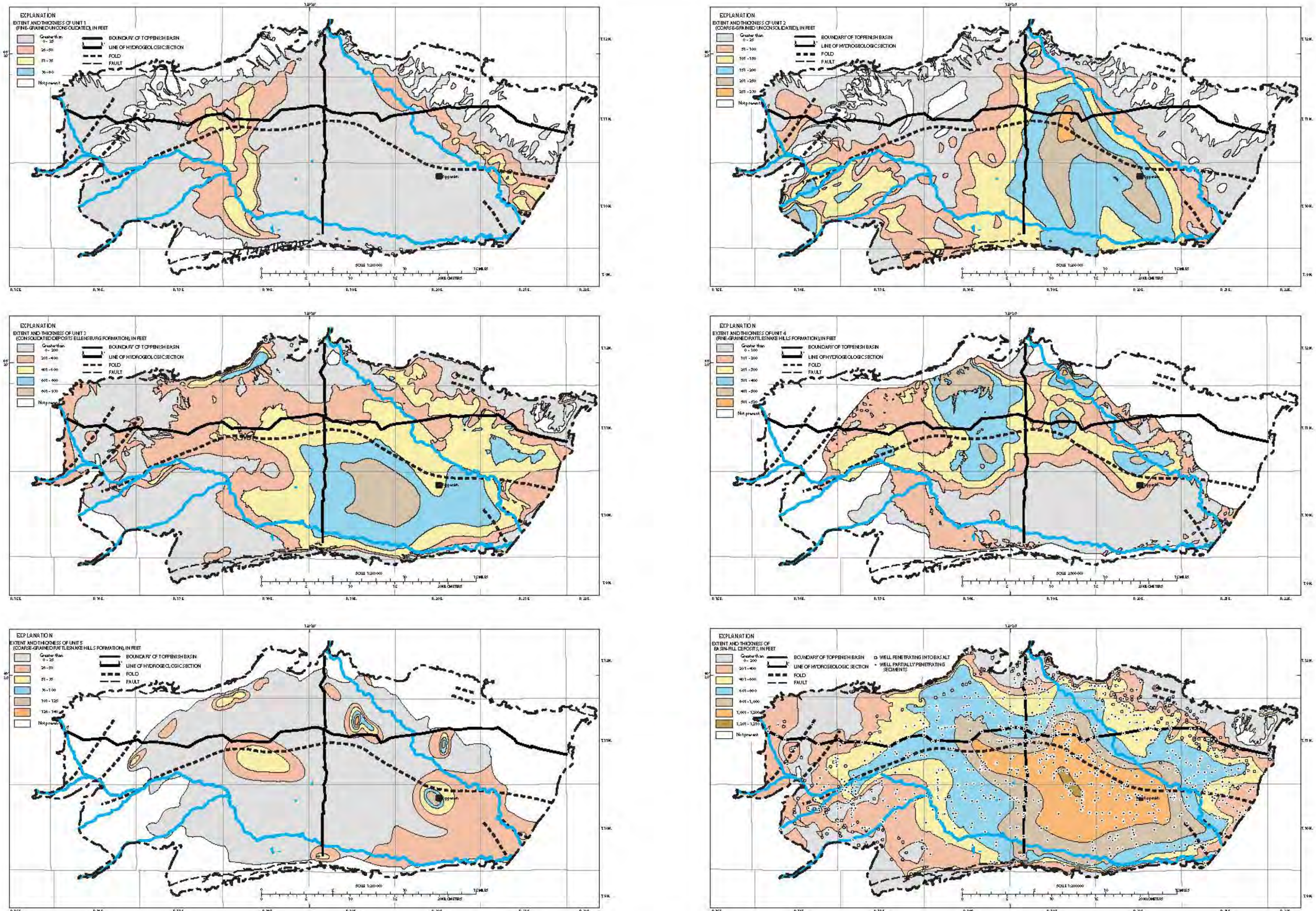
Source. Jones et al (2006)

FIGURE **6-B**

HYDROGEOLOGIC UNITS IN THE TOPPENISH SUB-BASIN

YAKIMA BASIN GROUNDWATER STORAGE/WA

Golder Associates



See Figure 6-A for the overview map.

Source. Jones et al (2006)

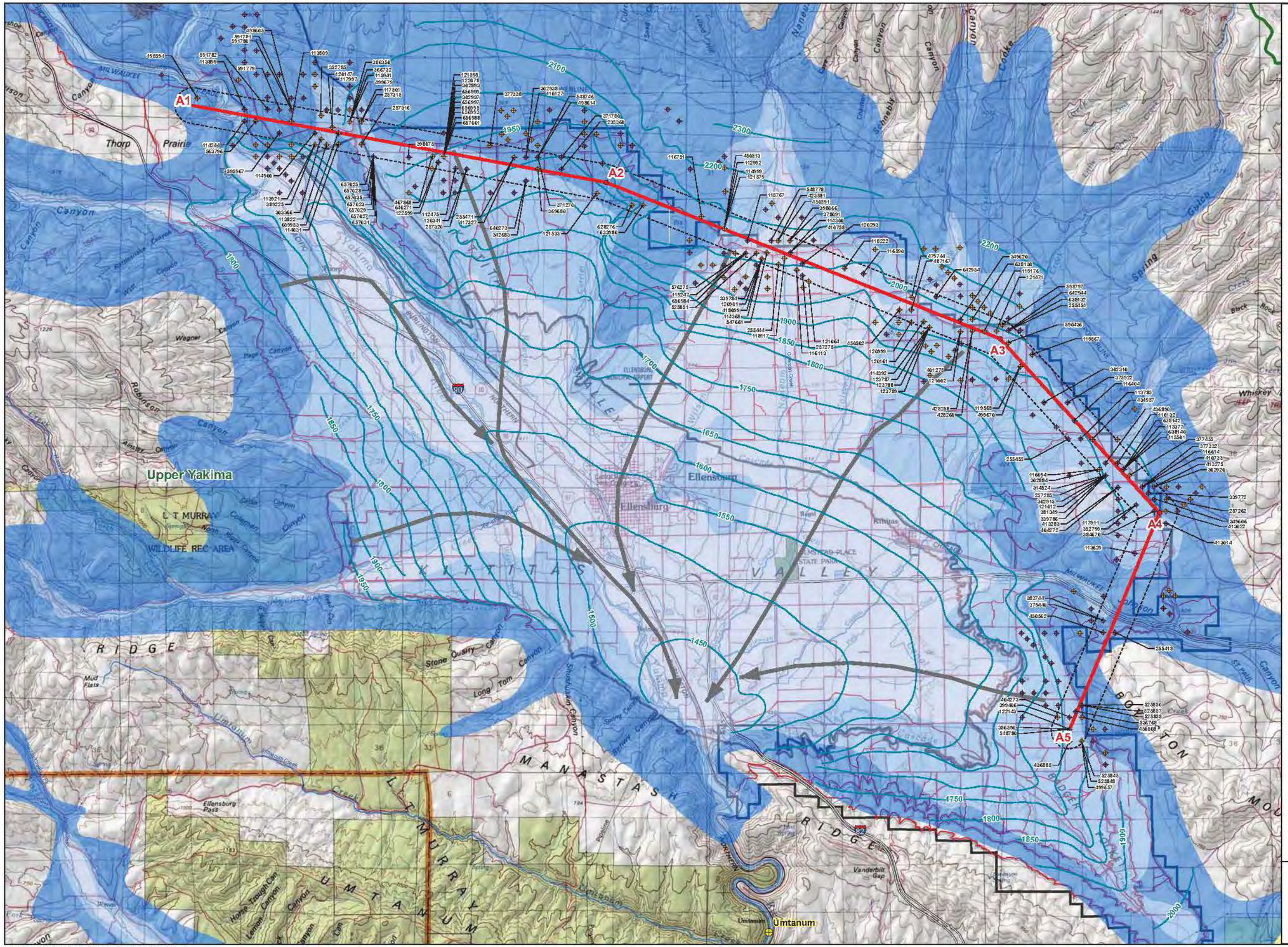
FIGURE **6-C**

HYDROGEOLOGIC UNITS IN THE TOPPENISH SUB-BASIN

YAKIMA BASIN GROUNDWATER STORAGE/WA

1039306001fig6-C.ai | Mod: 03/14/11 | AMP

Golder Associates



LEGEND

- Well Depth < or = 200 ft
- Well Depth > 200 ft
- USGS Streamflow Gage
- Cross-Section Point
- Cross-Section Line
- Altitude of Groundwater Levels (ft amsl)
- Groundwater Flow Direction
- 2000 ft Buffer of Cross-Section Line

Depth to Water Table (ft below land surface)

- > 200
- < 200
- < 80
- < 20

- Interstate Highway
- Canals
- Water Course
- Water Resource Inventory Area Boundary
- KRD Study Area
- Yakima Basin

NOTE: Only wells within a 2000 ft buffer of the cross-section line were labeled.

N

0 2 4

Scale in Miles

Map Projection:
Washington State Plane
South Zone NAD 1983

Source: WSDOE, WSDOT, USGS, Golder Associates Inc.

FIGURE 7

KRD GROUNDWATER CONTOURS AND DEPTH TO WATER

YAKIMA BASIN GROUNDWATER STORAGE/WA

Golder Associates

1023S060 01 P11 KRDGroundwaterContoursR0Z.mxd | 02/03/2010 | THANMOND

LEGEND

- Well Depth < or = 200 ft
- Well Depth > 200 ft
- USGS Streamflow Gage
- Cross-Section Line
- Altitude of Groundwater Levels (ft amsl)
- Groundwater Flow Direction
- 2000 ft Buffer of Cross-Section Line C

Depth to Water Table (ft below land surface)

- > 200
- < 200
- < 80
- < 20

- Interstate Highway
- Canals
- Water Course
- Water Resource Inventory Area Boundary
- WIP/Marion Drain Study Area
- Yakima Basin

NOTE: Only wells within a 2000 ft buffer of the cross-section line C were labeled.

N

0 2 4

Scale in Miles

Map Projection:
Washington State Plane
South Zone NAD 1983

Source: WSDOE, WSDOT, USGS, Golder Associates Inc.

FIGURE **8**

WIP GROUNDWATER CONTOURS AND DEPTH TO WATER

YAKIMA BASIN GROUNDWATER STORAGE/WA

Golder Associates

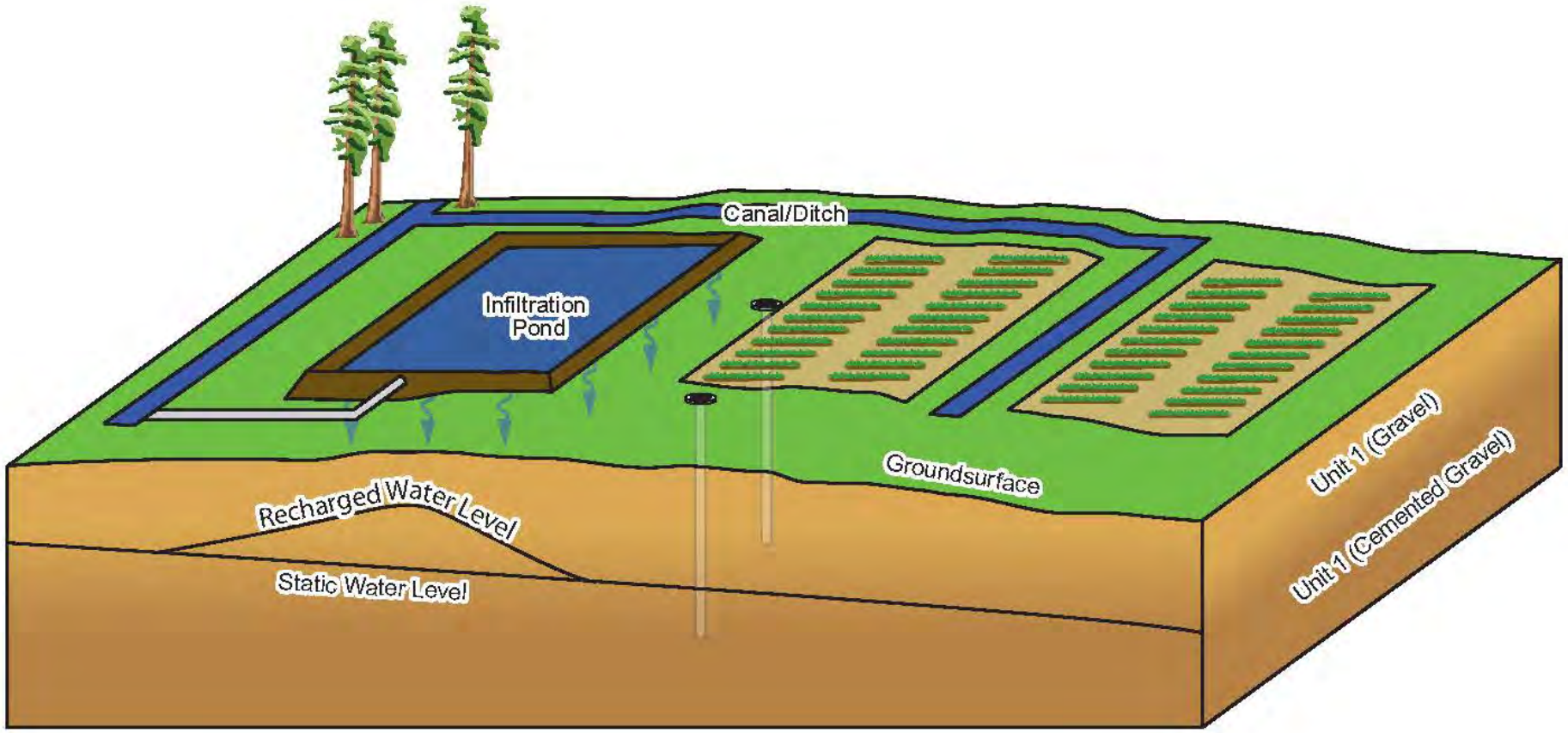


FIGURE **9**

GROUNDWATER INFLITRATION CONCEPT

YAKIMA BASIN GROUNDWATER STORAGE/WA

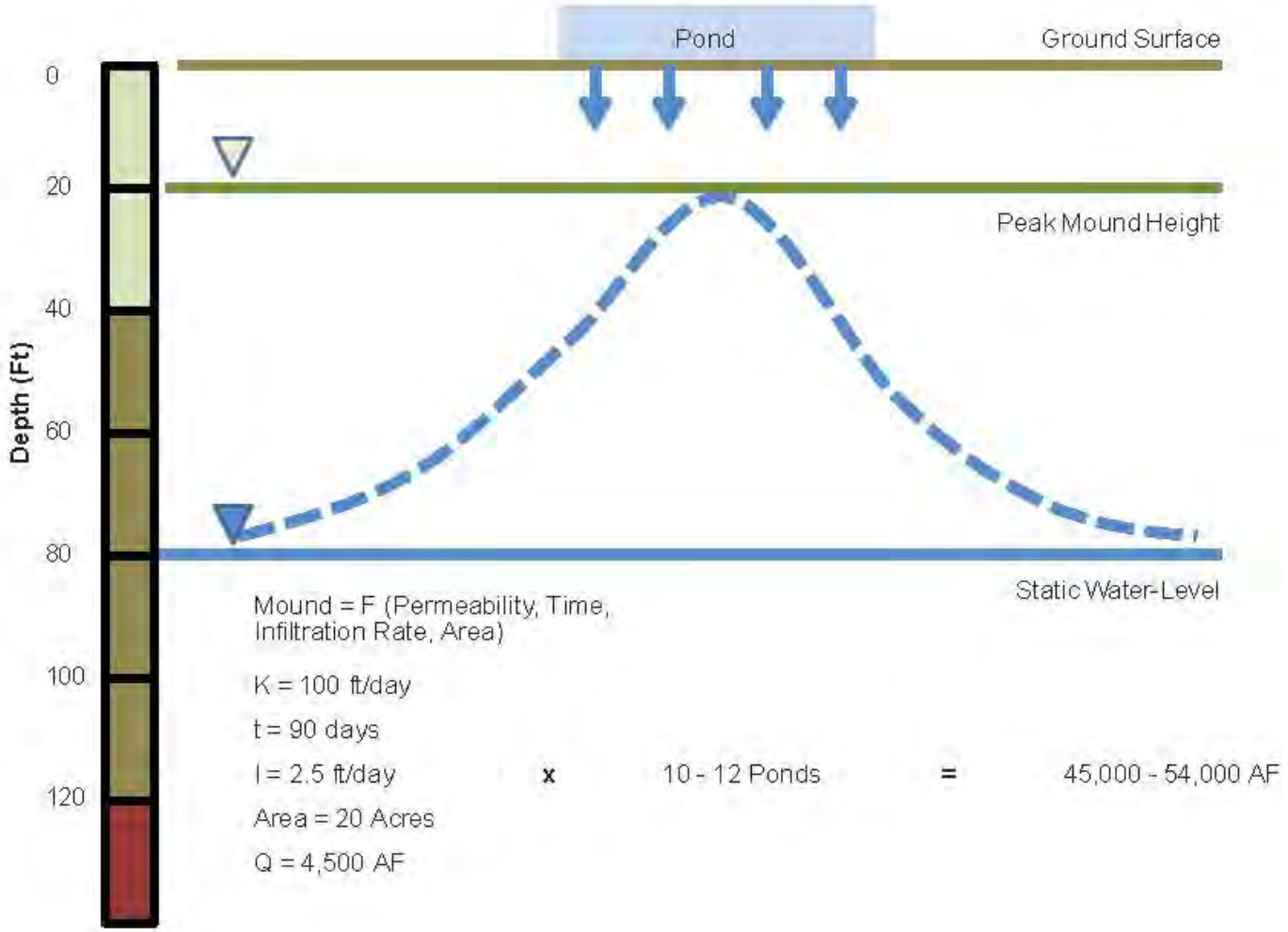
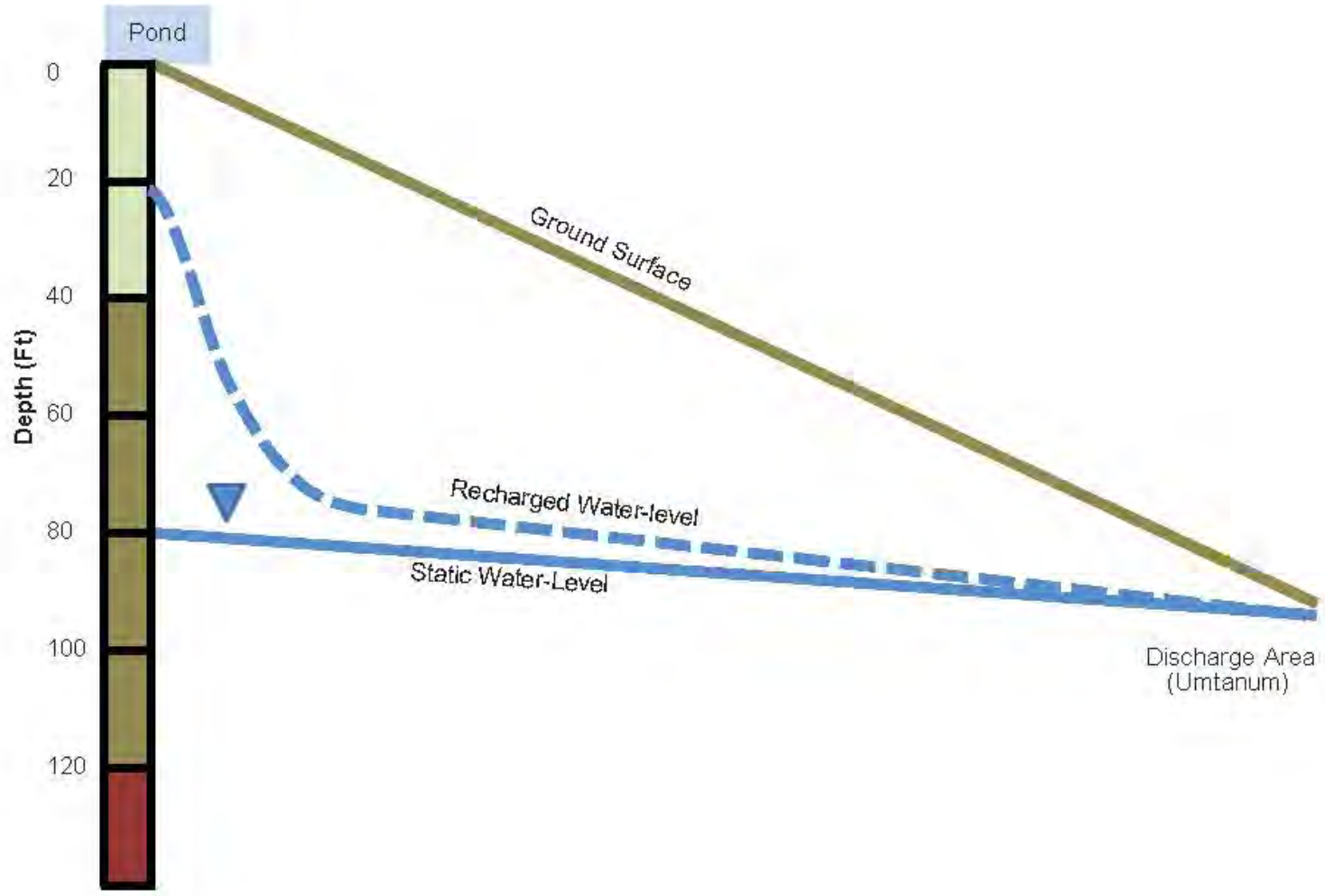


FIGURE 10

EXAMPLE IDEAL MOUND CONFIGURATION

YAKIMA BASIN GROUNDWATER STORAGE/WA

Golder Associates



LEGEND

Gravel, Sand, Clay

Cemented Gravel

Bedrock

Groundwater Mound

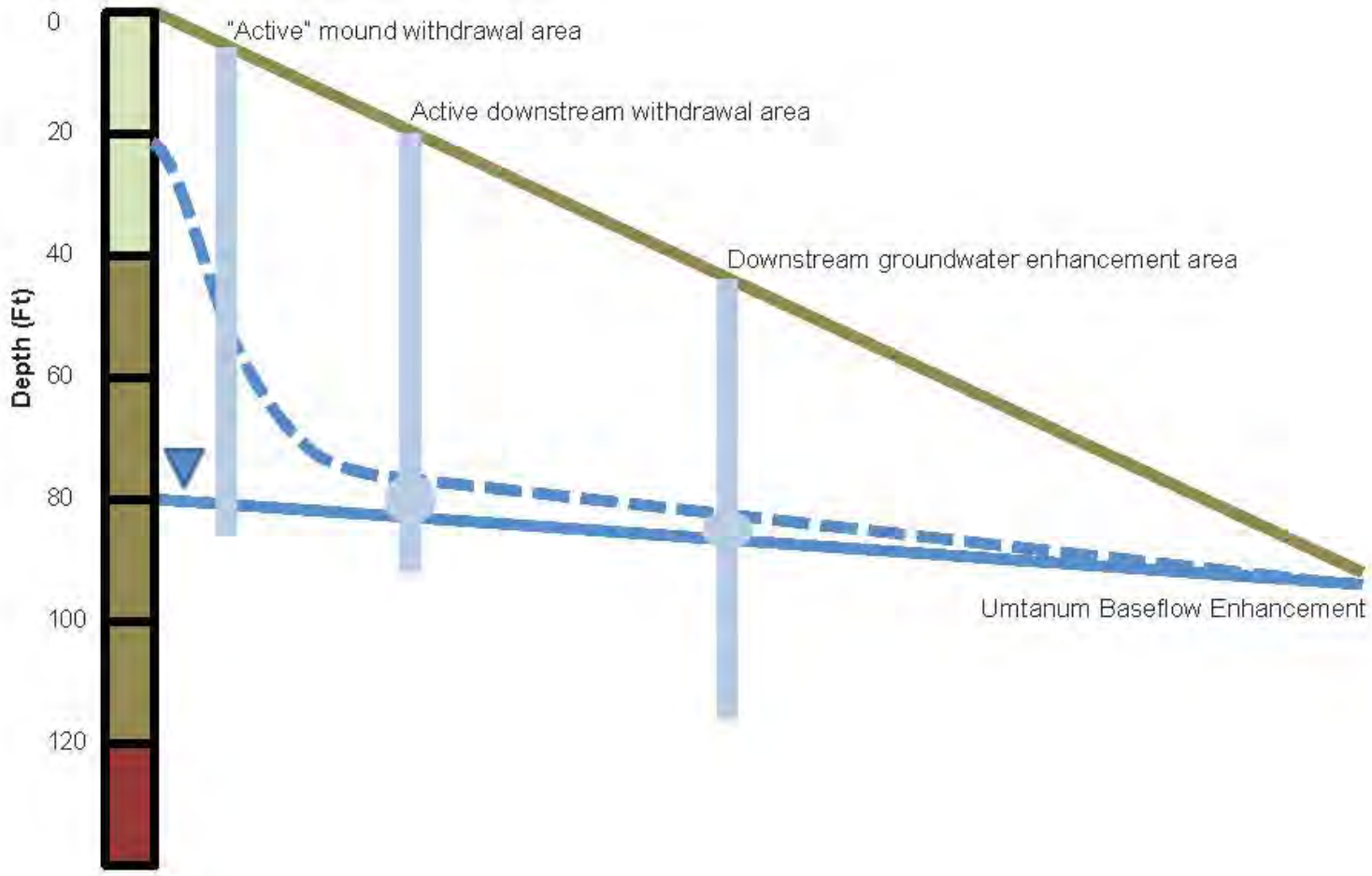
NOT TO SCALE

FIGURE 11

CONCEPTUAL DIAGRAM OF GROUNDWATER FLOW FROM AN INFILTRATION POND

YAKIMA BASIN GROUNDWATER STORAGE/WA

Golder Associates



LEGEND

Gravel, Sand, Clay

Cemented Gravel

Bedrock

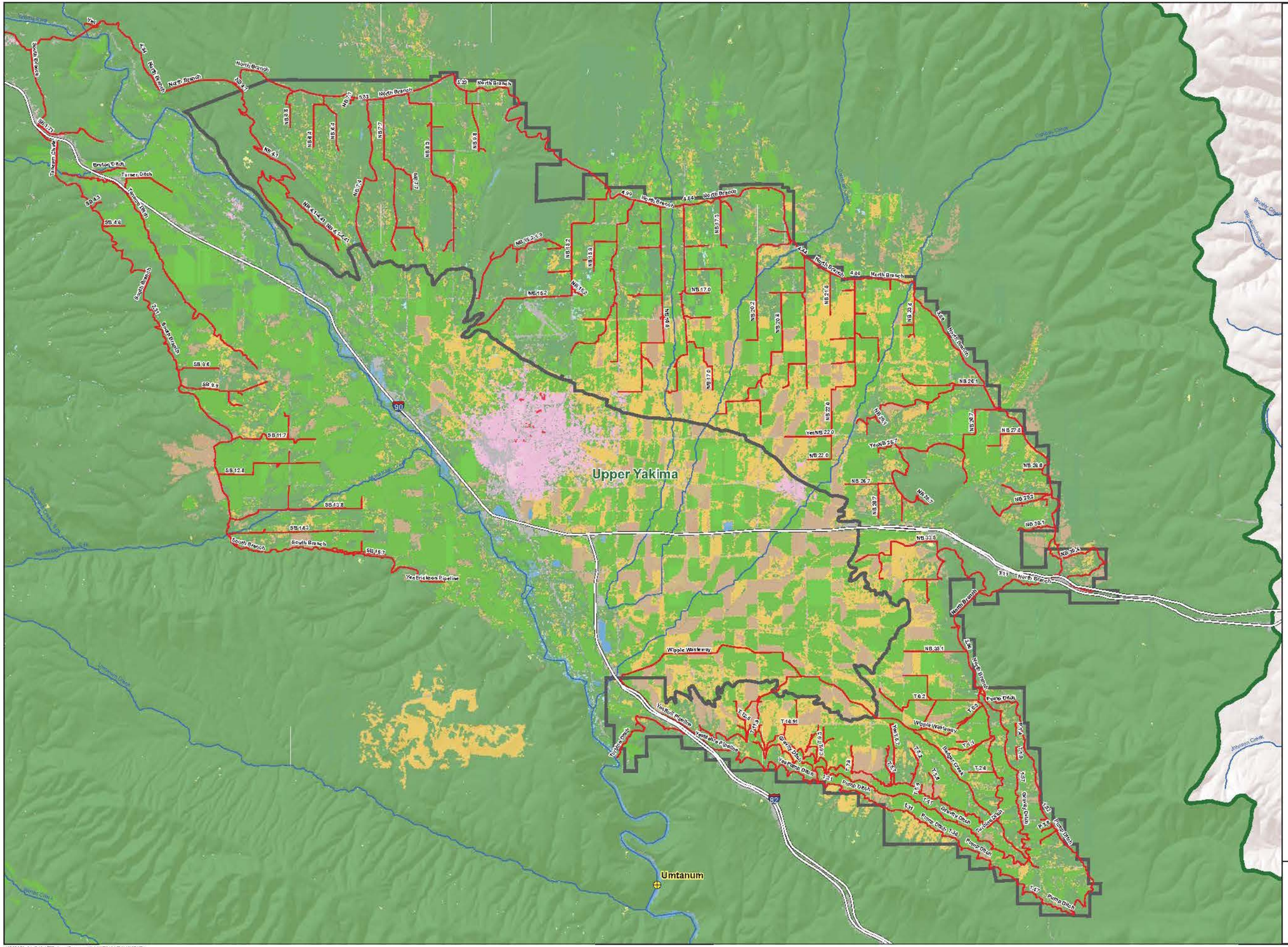
Groundwater Mound

NOT TO SCALE

FIGURE 12

CONCEPTUAL DIAGRAM OF WITHDRAWAL AREAS

YAKIMA BASIN GROUNDWATER STORAGE/WA



LEGEND

- USGS Streamflow Gage
- Interstate Highway
- Canals
- Water Course
- Water Body
- Water Resource Inventory Area Boundary
- KRD Study Area
- Yakima Basin

Land Cover

- Barren
- Commercial/Industrial/Transportation
- Fallow
- High Intensity Residential
- Low Intensity Residential
- Natural Vegetation
- Non-irrigated Agriculture
- Orchard/Vineyard
- Other Irrigated Agriculture
- Water
- Wetland

N

0 2 4

Scale in Miles

Map Projection:
Washington State Plane
South Zone NAD 1983

Source: WSDOE, WSDOT, USGS, Golder Associates Inc.

This figure was originally produced in color. Reproduction in black and white may result in loss of information.

FIGURE **13**

KRD LAND COVER

YAKIMA BASIN GROUNDWATER STORAGE/WA

Golder Associates

LEGEND

- Well Depth < or = 200 ft
- Well Depth > 200 ft
- USGS Streamflow Gage
- Cross-Section Line
- Possible Withdrawal Drains
- 2000 ft Buffer of Cross-Section Line C
- Altitude of Groundwater Levels (ft amsl)
- Groundwater Flow Direction
- Area for Potential Surface Recharge Sites

Depth to Water Table (ft below land surface)

- > 200
- < 200
- < 80
- < 20

- Interstate Highway
- Canals
- Water Course
- Water Resource Inventory Area Boundary
- WIP/Marion Drain Study Area
- Yakima Basin

NOTE: Only wells within a 2000 ft buffer of the cross-section line C were labeled.

N

0 2 4

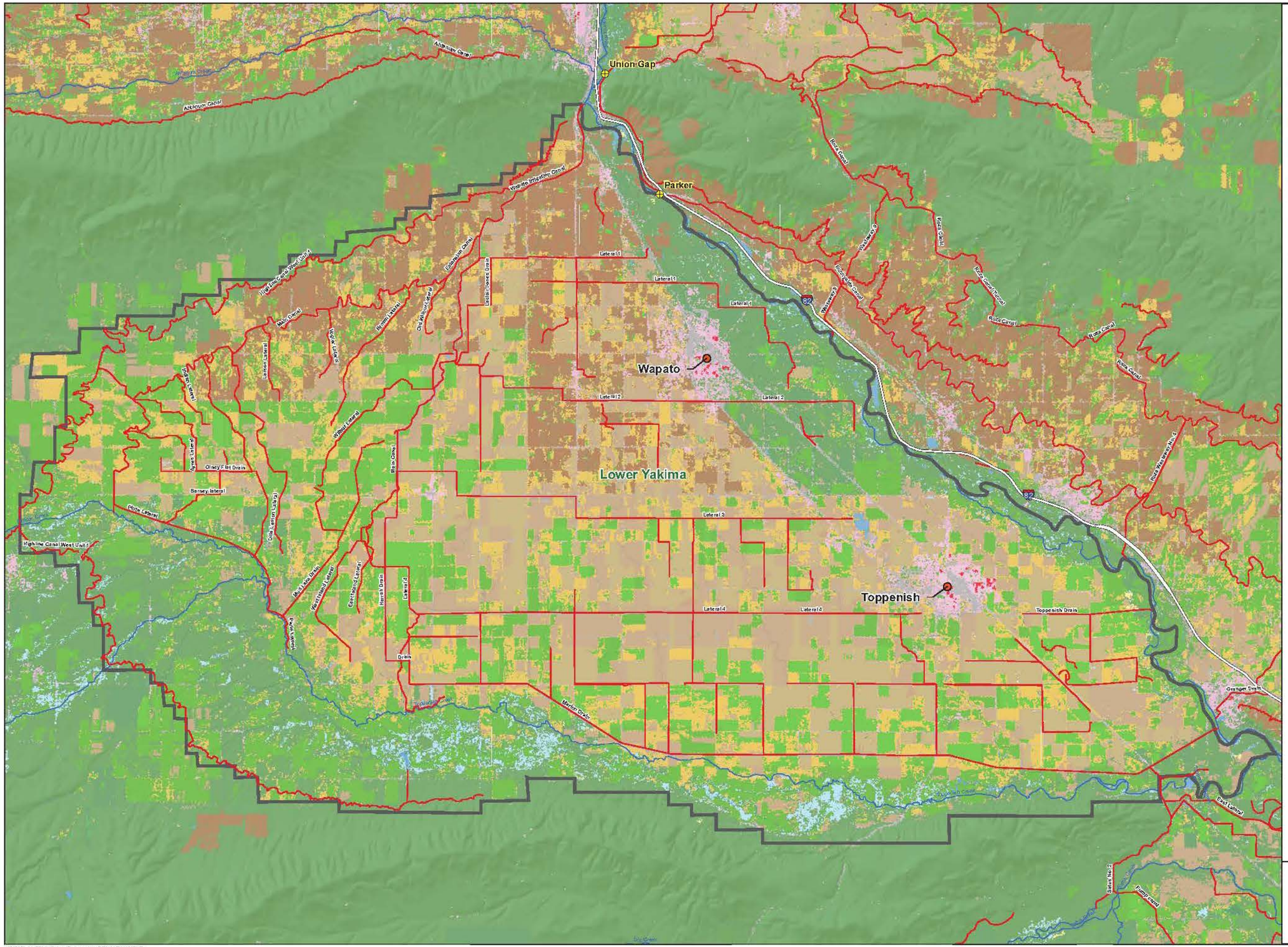
Scale in Miles

Map Projection:
Washington State Plane
South Zone NAD 1983

Source: WSDOE, WSDOT, USGS, Golder Associates Inc.

FIGURE 14
WIP POTENTIAL INFILTRATION AREA
YAKIMA BASIN GROUNDWATER STORAGE/WA

Golder Associates



LEGEND

- USGS Streamflow Gage
- Interstate Highway
- Canals
- Water Course
- Water Body
- Water Resource Inventory Area Boundary
- WIP/Marion Drain Study Area
- Yakima Basin

Land Cover

- Barren
- Commercial/Industrial/Transportation
- Fallow
- High Intensity Residential
- Low Intensity Residential
- Natural Vegetation
- Non-irrigated Agriculture
- Orchard/Vineyard
- Other Irrigated Agriculture
- Water
- Wetland

N

0 2 4

Scale in Miles

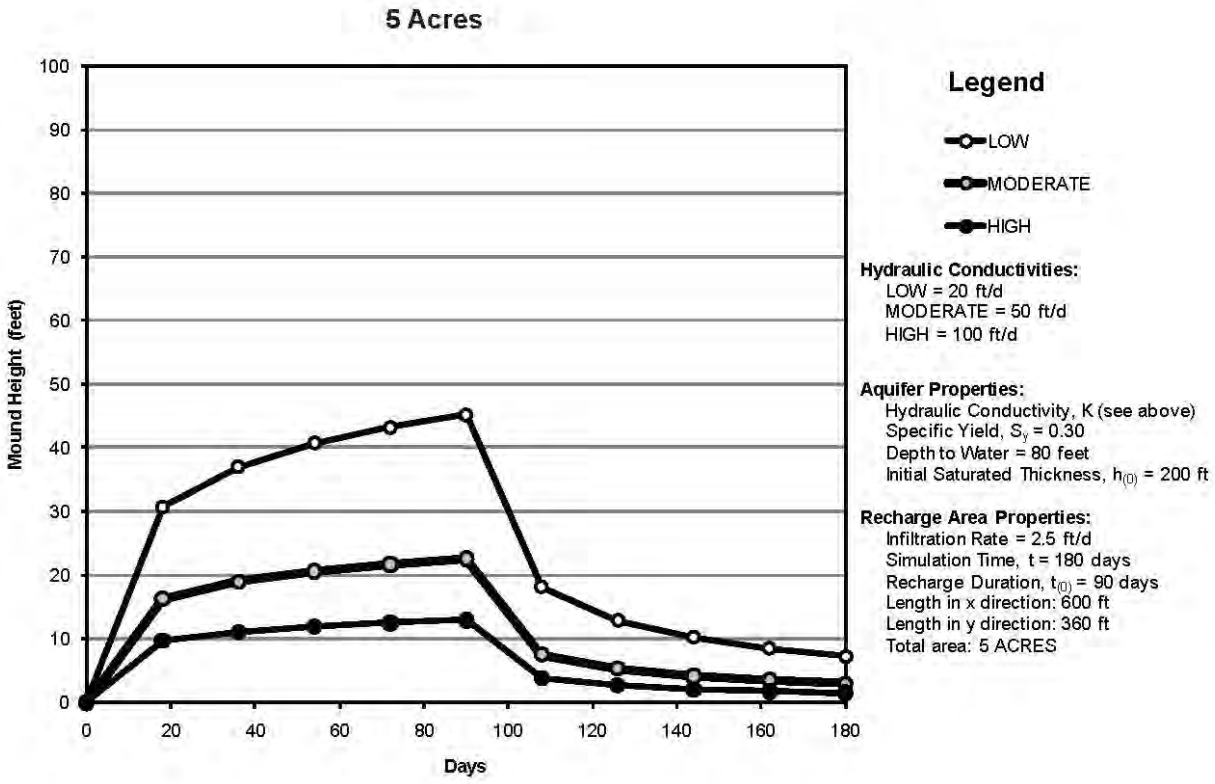
Map Projection:
Washington State Plane
South Zone NAD 1983

Source: WSDOE, WSDOT, USGS, Golder Associates Inc.

This figure was originally produced in color. Reproduction in black and white may result in loss of information.

FIGURE **15**
WIP/MARION DRAIN LAND COVER
YAKIMA BASIN GROUNDWATER STORAGE/WA

Golder Associates



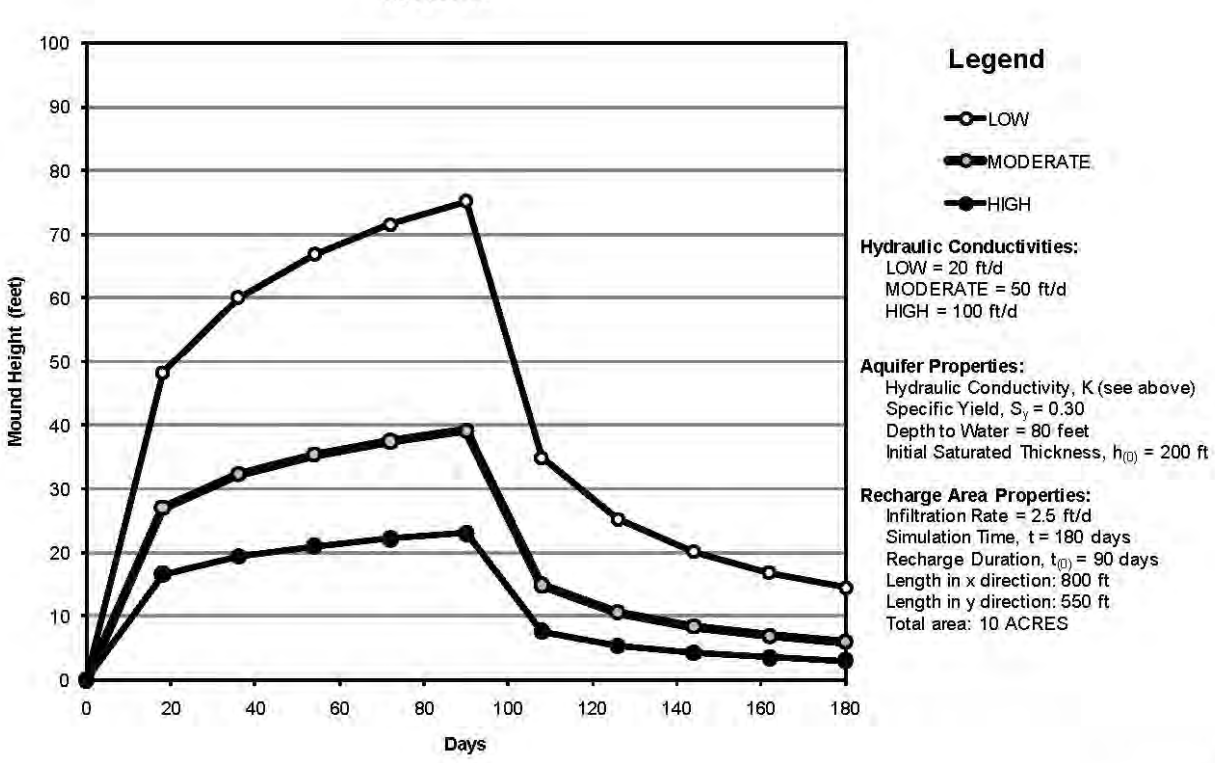
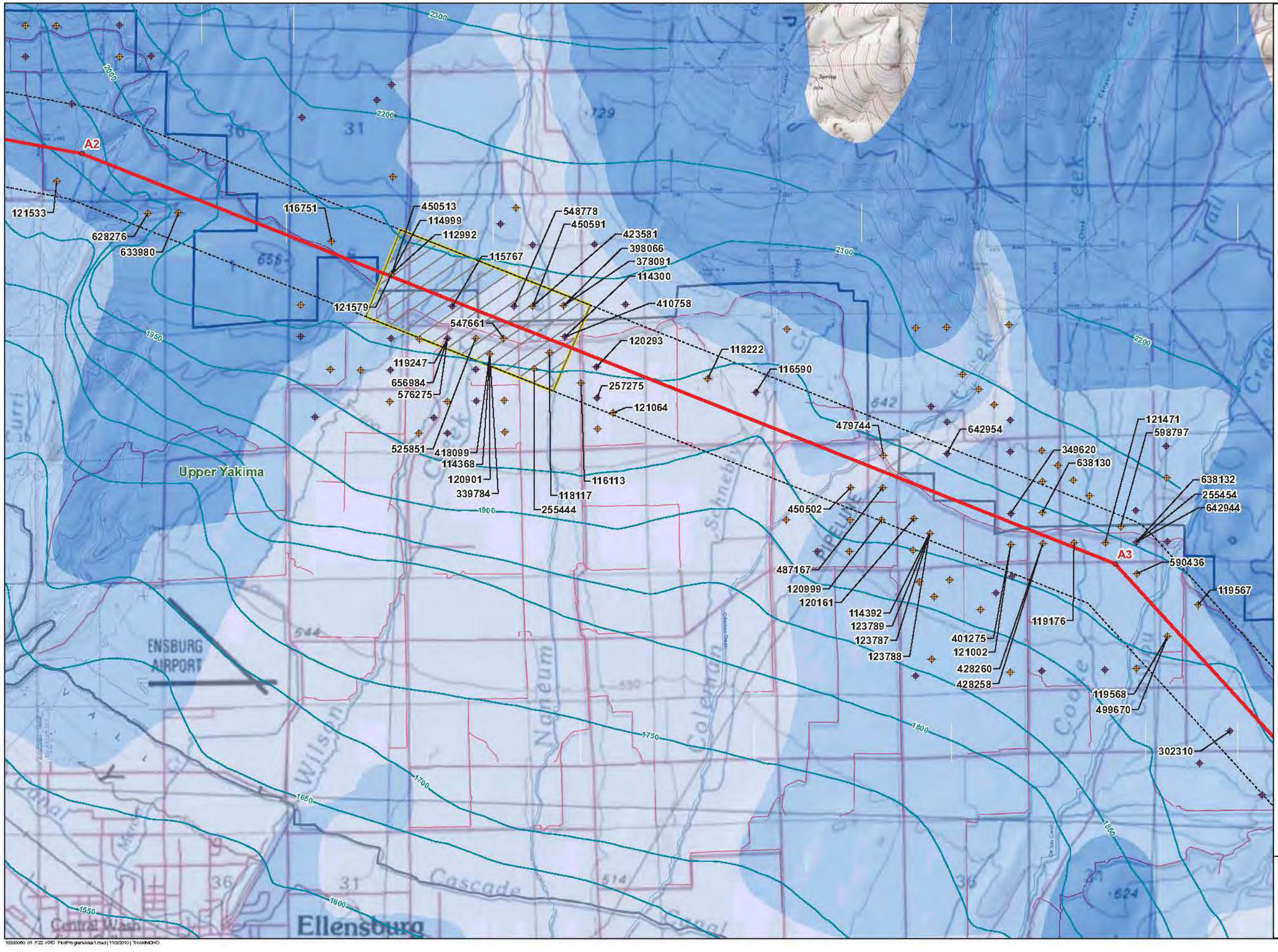


FIGURE **16**

EXAMPLE MOUNDING RESULTS FOR 5 AND 10-ACRE PONDS WITH 200 FEET SATURATED THICKNESS

YAKIMA BASIN GROUNDWATER STORAGE/WA



LEGEND

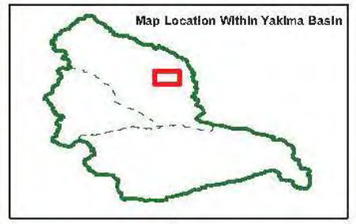
- Well Depth < or = 200 ft
- Well Depth > 200 ft
- USGS Streamflow Gage
- Cross-Section Point
- Cross-Section Line
- Altitude of Groundwater Levels (ft amsl)
- 2000 ft Buffer of Cross-Section Line
- Area for Potential Surface Recharge Site

Depth to Water Table (ft below land surface)

- > 200
- < 200
- < 80
- < 20

- Interstate Highway
- Canals
- Water Course
- Water Resource Inventory Area Boundary
- KRD Study Area
- Yakima Basin

NOTE: Only wells within a 2000 ft buffer of the cross-section line were labeled.



N

0 2,000 4,000
Feet

Map Projection:
Washington State Plane
South Zone NAD 1983

Source: WSDOE, WSDOT, USGS, Golder Associates Inc.

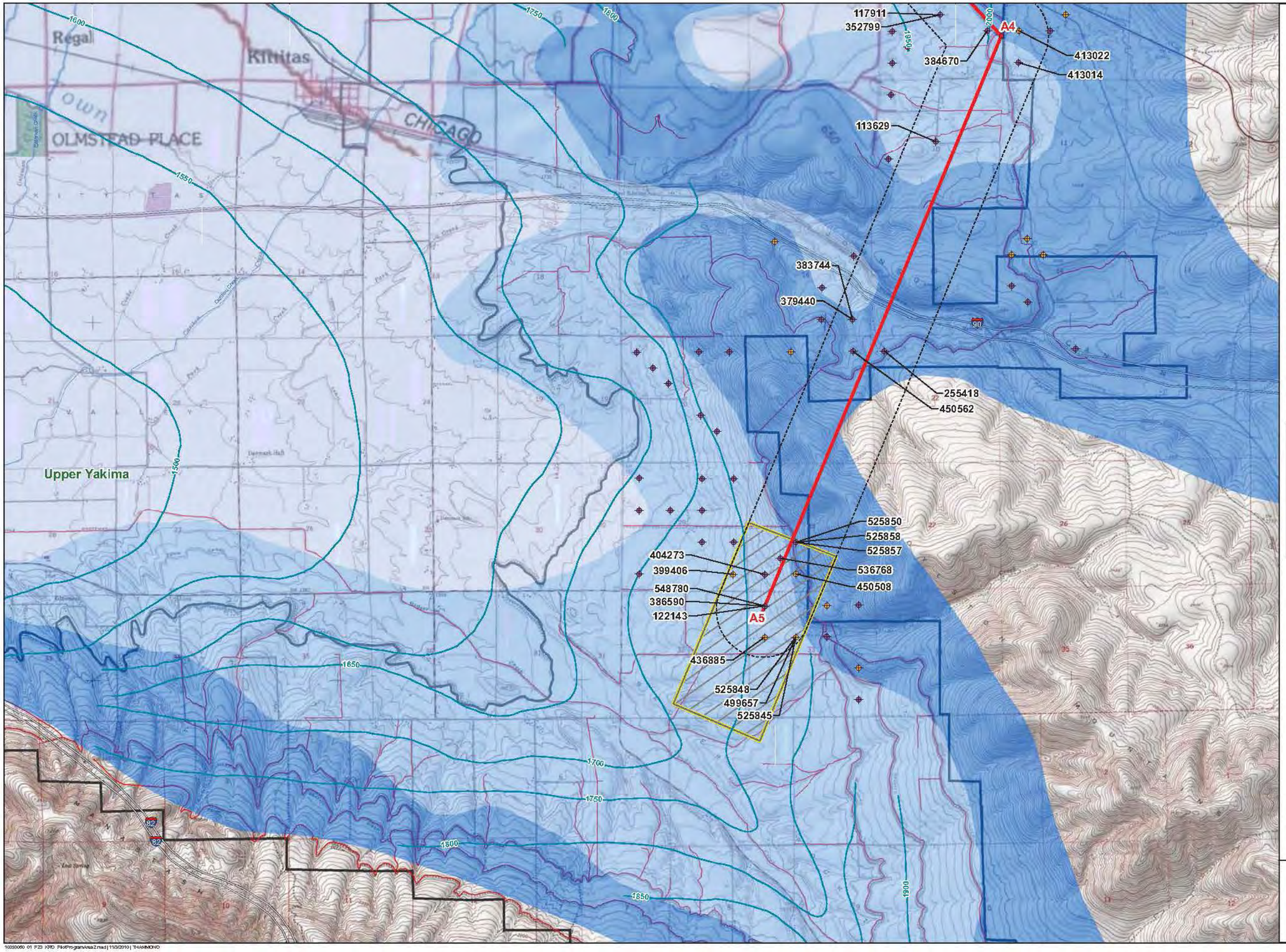
This figure was originally produced in color. Reproduction in black and white may result in loss of information.

FIGURE 17

KRD PILOT PROGRAM AREA - NANEUM CREEK

YAKIMA BASIN GROUNDWATER STORAGE/WA

Golder Associates



LEGEND

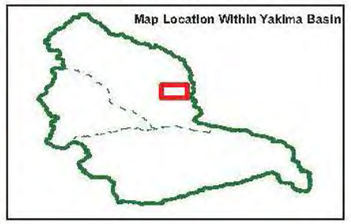
- Well Depth < or = 200 ft
- Well Depth > 200 ft
- USGS Streamflow Gage
- Cross-Section Point
- Cross-Section Line
- Altitude of Groundwater Levels (ft amsl)
- 2000 ft Buffer of Cross-Section Line
- Area for Potential Surface Recharge Site

Depth to Water Table (ft below land surface)

- > 200
- < 200
- < 80
- < 20

- Interstate Highway
- Canals
- Water Course
- Water Resource Inventory Area Boundary
- KRD Study Area
- Yakima Basin

NOTE: Only wells within a 2000 ft buffer of the cross-section line were labeled.



N

0 2,000 4,000
Feet

Map Projection:
Washington State Plane
South Zone NAD 1983

Source: WSDOE, WSDOT, USGS, Golder Associates Inc.

FIGURE **18**

KRD PILOT PROGRAM AREA - BADGER POCKET

YAKIMA BASIN GROUNDWATER STORAGE/WA

Golder Associates

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East Unit Highline Canal
Wapato Irrigation Canal
Extension Canal
Main Canal
Brown Lateral
Old Wilbur Lateral
Laclair Jones Drain
Wilbur Lateral
Mud Lake Drain
Sunnyside Canal
Parker
Rattlesnake Hills
Wapato
Lateral 1
Lateral 2
Lateral 3
Lower Yakima
C2
130779
355298
530638
115055
115557
113178
114108
117358
122567
116449
369199
119306
115380
113290
255029
466060
119305
485809
114156
120084
114157
1600
900
850
800

LEGEND

- Well Depth < or = 200 ft
- Well Depth > 200 ft
- USGS Streamflow Gage
- Cross-Section Line
- 2000 ft Buffer of Cross-Section Line C
- Altitude of Groundwater Levels (ft amsl)
- Area for Potential Surface Recharge Site
- Area Suitable for Surface Recharge

Depth to Water Table (ft below land surface)

- > 200
- < 200
- < 80
- < 20

- Interstate Highway
- Canals
- Water Course
- Water Resource Inventory Area Boundary
- WIP/Marion Drain Study Area
- Yakima Basin

NOTE: Only wells within a 2000 ft buffer of the cross-section line C were lableled.

Map Location Within Yakima Basin

N

0 2,000 4,000
Feet

Map Projection:
Washington State Plane
South Zone NAD 1983

Source: WSDOE, WSDOT, USGS, Golder Associates Inc.

This figure was originally produced in color. Reproduction in black and white may result in loss of information.

FIGURE **19**
WIP PILOT PROGRAM AREA - NORTH HALF OF HOURGLASS SHAPE
YAKIMA BASIN GROUNDWATER STORAGE/WA

Golder Associates

114156
120084
114157
Lateral 3
800
115064
302723
466039
303136
Lateral 4
775
Lateral 4
343277
117522
Marion Drain
117863
115420
118160
120345
408912
369208
Lower Yakima
116658
115544
116657
119268
590474
449995
449994
449997
Marion Drain
192039
331180
119762
331179
353834
303143
118599
118596
593206
343292
601156
255004
113764
115774
541751
352483
399712
593200
Toppenish Creek
123069
Toppenish Creek
517908
113186
117294
119111
118621
118620
352868
646148
118270
593202
850
900
RIDGE
TOPPENISH

LEGEND

- Well Depth < or = 200 ft
- Well Depth > 200 ft
- USGS Streamflow Gage
- Cross-Section Line
- 2000 ft Buffer of Cross-Section Line C
- Altitude of Groundwater Levels (ft amsl)
- Area for Potential Surface Recharge Site
- Area Suitable for Surface Recharge

Depth to Water Table (ft below land surface)

- > 200
- < 200
- < 80
- < 20
- Interstate Highway
- Canals
- Water Course
- Water Resource Inventory Area Boundary
- WIP/Marion Drain Study Area
- Yakima Basin

NOTE: Only wells within a 2000 ft buffer of the cross-section line C were labeled.

Map Location Within Yakima Basin

N

0 2,000 4,000
Feet

Map Projection:
Washington State Plane
South Zone NAD 1983

Source: WSDOE, WSDOT, USGS, Golder Associates Inc.

FIGURE **20**
WIP PILOT PROGRAM AREA - SOUTH OF HOURGLASS SHAPE
YAKIMA BASIN GROUNDWATER STORAGE/WA

Golder Associates

APPENDIX A
KRD AREA WELL LOGS

112475 5925

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

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. 086509

Water Right Permit No. E

(1) OWNER: Name Barbara Calkins Address Game Farm Rd Ellensburg

(2) LOCATION OF WELL: County Kittitas SW ¼ NW ¼ Sec. 32 T. 19 N., R. 18 W.M.

(2a) STREET ADDDRESS OF WELL (or nearest address)

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

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

(5) DIMENSIONS: Diameter of well 6 inches. Drilled 103 feet. Depth of completed well 103 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 6 " Diam. from +1 ft. to 80 ft.
Welded ☐ Liner installed ☐ Threaded ☐ " Diam. from ft. to ft.
" Diam. from ft. to ft.

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

Screens: Yes ☐ No ☑
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

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

Surface seal: Yes ☑ No ☐ To what depth? 18 ft.
Material used in seal Bentinite
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of strata
Method of sealing strata off

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

(8) WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level 18 ft. below top of well Date
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☐ If yes, by whom?
Yield: 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	Water Level	Time	Water Level	Time	Water Level

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

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
Gravel + Clay	0	21
Sandstone + Clay layers	21	103

Work started 12-3 19 Completed 12-3 19 91

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Rick Poulin Drilling (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address 2 N. 1st St Selah

(Signed) Rick Poulin (WELL DRILLER) License No. 911Z

Contractor's Registration No. POULIWD124P1 Date 12-10 19 91

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20 (10/87) -1328-

113899

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

WATER WELL REPORT
STATE OF WASHINGTON

Application No. .....
Permit No. .....

(1) OWNER: Name Dean Tonseth Address Rt 4 Box 277-O, Ellensberg, Wa.

(2) LOCATION OF WELL: County Kittitas NW ¼ NE ¼ Sec. 28 T. 19 N., R. 17 E.W.M.
Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic [X] Industrial [ ] Municipal [ ]
Irrigation [ ] Test Well [ ] Other [ ]

(4) TYPE OF WORK: Owner's number of well (if more than one) ....
New well [X] Method: Dug [ ] Bored [ ]
Deepened [ ] Cable [ ] Driven [ ]
Reconditioned [ ] Rotary [X] Jetted [ ]

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 84 ft. Depth of completed well 84 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 6 " Diam. from 0 ft. to 36 ft.
Threaded [ ] " Diam. from ft. to ft.
Welded [X] " Diam. from ft. to ft.

Perforations: Yes [ ] No [X]
Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes [ ] No [X]
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes [ ] No [X] Size of gravel:
Gravel placed from ft. to ft.

Surface seal: Yes [X] No [ ] To what depth? 18 ft.
Material used in seal bentonite clay
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 above mean sea level .... ft.
Static level 30 ft. below top of well Date 10-24-77
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

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

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test 30 gal./min. with 48 ft. drawdown after 1 hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes [ ] No [X]

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

MATERIAL	FROM	TO
Soil, Brn.	0	3
Gravel, Cemented	3	30
Basalt, Blk.	30	43
Basalt, Brn., Blk. Fractured WB	43	84

RECEIVED
DEC 5 - 1977
DEPARTMENT OF ECOLOGY
CENTRAL REGIONAL OFFICE

Work started 10-24-77 19 Completed 10-24-77 19

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME B & B Well Drilling (Person, firm, or corporation) (Type or print)
Address Rt 7 Box 600-A, Yakima, Wa. 98903
[Signed] Ken Blackman (Well Driller)
License No. 790 Date 11-1-77, 19

(USE ADDITIONAL SHEETS IF NECESSARY) OK

ECY 050-1-20

11244

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

WATER WELL REPORT
STATE OF WASHINGTON

Application No. 1
Permit No.

(1) OWNER: Name Earl Carlson Address 113 Warren Rd., Ellensberg, Wa.

(2) LOCATION OF WELL: County Kittitas — SW ¼ NE ¼ Sec. 28 T. 19 N., R. 17E. WM.
Bearing and distance from section or subdivision corner

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

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

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 142 ft. Depth of completed well 142 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 6 " Diam. from 0 ft. to 82 ft.
Threaded ☐ " Diam. from ft. to ft.
Welded ☒ " Diam. from ft. to ft.

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

Screens: Yes ☐ No ☒
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

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

Surface seal: Yes ☒ No ☐ To what depth? 20 ft.
Material used in seal bentonite clay
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? Depth of strata
Method of sealing strata off

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

(8) WATER LEVELS: Land-surface elevation above mean sea level.... ft.
Static level Flowing ft. below top of well Date Sept 7, 75
Artesian pressure 6 lbs. per square inch Date 9-7-75
Artesian water is controlled by Cap (Cap, valve, etc.)

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

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test 60 gal./min. with 122 ft. drawdown after 1 hrs.
Artesian flow 10 g.p.m. Date 9-7-77
Temperature of water Was a chemical analysis made? Yes ☐ No ☒

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

MATERIAL	FROM	TO
Soil, Brn.	0	2
Gravel, Coarse, Clay, Brn.	2	28
Clay, Brn.	28	38
Clay, Brn, Gravel, Med.	38	50
Clay, Grey, Gravel	50	76
Conglomerate	76	130
Basalt, Blk., FracturedWB	130	142

RECEIVED
DEC 9 - 1977
DEPARTMENT OF ECOLOGY
CENTRAL REGIONAL OFFICE

Work started 9-6-75, 19 Completed 9-7-75, 19

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME B & B Well Drilling (Person, firm, or corporation) (Type or print)
Address Rt. 7 Box 600-A, Yakima, Wa. 98903
[Signed] Danny Blackman (Well Driller)
License No. 0037 Date 10-4-75, 19

(USE ADDITIONAL SHEETS IF NECESSARY) OK

ECY 060-1-20

114900

4925

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

WATER WELL REPORT M

STATE OF WASHINGTON

Start Card No. 080387

Water Right Permit No. ______

(1) OWNER: Name GEORGE ANDERSON Address 701 Nanum, Ellensburg, WA 98926

2) LOCATION OF WELL: County Kittitas NW ¼ SW ¼ Sec. 26 T. 19 N., R. 17 W.M.

(2a) STREET ADDDRESS OF WELL (or nearest address) Parcel # 19172650.0050 & .0051

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

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

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 200 feet. Depth of completed well 195 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 6 " Diam. from +2 ft. to 150 ft.
Welded ☒ PVC 4 " Diam. from -2 ft. to 195 ft.
Liner installed ☒
Threaded ☐ ______ " Diam. from ______ ft. to ______ ft.

Perforations: Yes ☒ No ☐ PVC Liner
Type of perforator used skill saw
SIZE of perforations 3/32 in. by 6 in.
62 perforations from 155 ft. to 195 ft.
______ perforations from ______ ft. to ______ ft.
______ perforations from ______ ft. to ______ ft.

Screens: Yes ☐ No ☒
Manufacturer's Name ______
Type ______ Model No. ______
Diam. ______ Slot size ______ from ______ ft. to ______ ft.
Diam. ______ Slot size ______ from ______ ft. to ______ ft.

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

Surface seal: Yes ☒ No ☐ To what depth? 30 ft.
Material used in seal Bentonite slurry
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? ______ Depth of strata ______
Method of sealing strata off ______

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

(8) WATER LEVELS: Land-surface elevation above mean sea level ______ ft.
Static level 80-100 ft. below top of well Date ______
Artesian pressure ______ lbs. per square inch Date ______
Artesian water is controlled by ______ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☒ If yes, by whom? ______
Yield: 15-20 gal./min. with ______ ft. drawdown after ______ hrs.
" ESTIMATED AIRLIFT " "
" " " "

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test ______
Bailer test ______ gal./min. with ______ ft. drawdown after ______ hrs.
Airtest ______ gal./min. with stem set at ______ ft. for ______ hrs.
Artesian flow ______ g.p.m. Date ______
Temperature of water ______ Was a chemical analysis made? Yes ☐ No ☒

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
Top soil, brown, boulders	0	3
Boudlers, gravel, w/brown silt	3	68
Basalt, broken, & brown silt	68	146
Gravel cemented, silt w/water	146	157
Gravel cemented, brown	157	189
Gravel, cemented w/water	189	200
6" Drive Shoe Utilized		

Work started 5/24/91, 19. Completed 5/26/91, 19

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME PONDEROSA DRILLING & DEVELOPMENT INC. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address E. 6010 Broadway, Spokane, WA 99212

(Signed) Douglas E. Lane (WELL DRILLER) (Douglas E. Lane) License No. 1030

Contractor's Registration No. PONDEI*248JE Date May 31, 19 91

(USE ADDITIONAL SHEETS IF NECESSARY)

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

116127 6379

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

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. 010474

Water Right Permit No. B

(1) OWNER: Name KEN HUNT Address LOWER GREEN CANYON

LOCATION OF WELL: County Kittitas NW¼ NE¼ Sec. 33 T. 19 N., R. 18 W.M.

(2a) STREET ADDDRESS OF WELL (or nearest address)

(3) PROPOSED USE: [X] Domestic [ ] Industrial [ ] Municipal [ ] Irrigation [ ] Test Well [ ] Other [ ] DeWater

(4) TYPE OF WORK: Owner's number of well (if more than one)
Abandoned [ ] New well [X] Method: Dug [ ] Bored [ ] Deepened [ ] Cable [ ] Driven [ ] Reconditioned [ ] Rotary [X] Jetted [ ]

(5) DIMENSIONS: Diameter of well 6 inches. Drilled 200 feet. Depth of completed well 200 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 6" Diam. from 0 ft. to 160 ft.
Welded [X] Liner installed [ ] Threaded [ ] " Diam. from ft. to ft.
Perforations: Yes [ ] No [ ]
Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.
Screens: Yes [ ] No [ ]
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.
Gravel packed: Yes [ ] No [ ] Size of gravel
Gravel placed from ft. to ft.
Surface seal: Yes [X] No [ ] To what depth? 20 ft.
Material used in seal #8 BENTONITE
Did any strata contain unusable water? Yes [ ] No [ ]
Type of water? Depth of strata
Method of sealing strata off

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

(8) WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level 120 ft. below top of well Date 5-21-91
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes [ ] No [ ] If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
" " " "
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test gal./min. with ft. drawdown after hrs.
Airtest 20 gal./min. with stem set at 195 ft. for 2 hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes [ ] No [ ]

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
DIRT	0	2
HARD PAN	2	5
LARGE COBBLES CEMENTED	5	20
CLAY WHITE	20	35
SANDSTONE + CLAY WITH OCC. GRAVEL LAYERS	35	150
SANDSTONE + GRAVEL	150	200

[redacted]

Work started 5-20 19 91 Completed 5-21 19 91

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME BACH DRILLING CO. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)
Address Rt. 5 Box 1010 E-Burg
(Signed) (WELL DRILLER) License No. 0836
Contractor's Registration No. BDC.133NA Date 5-21 19 91

(USE ADDITIONAL SHEETS IF NECESSARY)

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

120341

369879

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. W36948
Unique Well I.D. # ABE681
Water Right Permit No.

(1) OWNER: Name KELLN, LORI Address P.O. BOX 627 CLE ELUM, WA 98922-

(2) LOCATION OF WELL: County KITTITAS - SE 1/4 NW 1/4 Sec 32 T 19 N., R 18 WM
(2a) STREET ADDRESS OF WELL (or nearest address) PARCEL #19 19 32510018,

(3) PROPOSED USE: DOMESTIC

(4) TYPE OF WORK: Owner's Number of well (If more than one) 1
NEW WELL Method: ROTARY

(5) DIMENSIONS: Diameter of well 6 inches
Drilled 100 ft. Depth of completed well 100 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 6 " Dia. from +2 ft. to 100 ft.
WELDED " Dia. from ft. to ft.
" Dia. from ft. to ft.

Perforations: NO
Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: NO
Manufacturer's Name
Type Model No.
Dia. slot size from ft. to ft.
Dia. 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? YES
Type of water? MUDDY Depth of strata 60 ft.
Method of sealing strata off OVERBORE

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

(8) WATER LEVELS: Land-surface elevation above mean sea level ... ft.
Static level 40 ft. below top of well Date 03/21/94
Artesian Pressure lbs. per square inch Date
Artesian water controlled by

(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 stratus penetrated, with at least one entry for each change in formation.

MATERIAL	FROM	TO
TOPSOIL	0	1
CLAY BOULDERS COBBLES	1	28
FRACTURED BASALT CLAY	28	42
FRACTURED BASALT	42	65
FRACTURED BASALT CLAY	65	90
FRACTURED BASALT	90	100
	100	

RECEIVED
MAR 29 1994

Work started 03/18/94 Completed 03/21/94

(9) WELL TESTS: Drawdown is amount water level is lowered below static level.
Was a pump test made? NO If yes, by Whom?
Yield: gal./min with ft. drawdown after hrs.

Recovery data
Time Water Level Time Water Level Time Water Level

Date of test / /
Bailer test gal/min. ft. drawdown after hrs.
Air test 15+ gal/min. w/ stem set at ft. for hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? NO

WELL CONSTRUCTOR CERTIFICATION:
I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

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

ADDRESS E 6010 BROADWAY

[SIGNED] [signature] License No. 2059

Contractor's Registration No. PO-ND-EI*248JE Date 03/22/94

121595

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

WATER WELL REPORT
STATE OF WASHINGTON

Start Card No. W086603
UNIQUE WELL I.D. # ACe 921
Water Right Permit No.

(1) OWNER: Name Jamie Mays Address PO Box 72 Orando Wa. 98843

(2) LOCATION OF WELL: County Kittitas NE 1/4 NE 1/4 Sec 31 T. 19 N., R. 18 E W.M.

(2a) STREET ADDRESS OF WELL (or nearest address) Howard Rd. A

(3) PROPOSED USE: [X] Domestic [ ] Industrial [ ] Municipal [ ] Irrigation [ ] Test Well [ ] Other [ ] DeWater

(4) TYPE OF WORK: Owner's number of well (if more than one)
Abandoned [ ] New well [X] Method: Dug [ ] Bored [ ] Deepened [ ] Cable [ ] Driven [ ] Reconditioned [ ] Rotary [X] Jetted [ ]

(5) DIMENSIONS: Diameter of well 6 inches. Drilled 160 feet. Depth of completed well 160 ft.

(6) CONSTRUCTION DETAILS:
Casing Installed: 6 " Diam. from +2 ft. to 160 ft.
Welded [ ] Liner installed [ ] Threaded [ ] " Diam. from ft. to ft.
" Diam. from ft. to ft.

Perforations: Yes [ ] No [X]
Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes [ ] No [X]
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes [ ] No [X] Size of gravel
Gravel placed from ft. to ft.

Surface seal: Yes [X] No [ ] To what depth? 18 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 above mean sea level
Static level 85 Ft ft. below top of well Date 5-25-96
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

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

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test gal./min. with ft. drawdown after hrs.
Airtest 16 gal./min. with stem set at 155 ft. for 1 hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes [ ] No [X]

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
Top Soil	0	1
Tightly Cemented gravel	1	12
Brown Clay & gravel	12	57
gravel & water	57	61
Yellow Clay	61	94
Brown Clay & gravel	94	147
gravel & water	147	160

RECEIVED
JUL 17
DEPARTMENT OF ECOLOGY
WATER RESOURCES SECTION

Work Started 5-24 19. Completed 5-25 19 96

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Mathews Drilling (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)
Address 9455 Stone Crest Rd Mt
(Signed) Mathew Mathews (WELL DRILLER) License No. 1267
Contractor's Registration No. MATHEDC117BC Date 5-25 19 96

(USE ADDITIONAL SHEETS IF NECESSARY)

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

ECY 050-1-20 (9/93)

122078

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WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. W089701
UNIQUE WELL I.D. # ACL-623
Water Right Permit No.

(1) OWNER: Name Sam + Mary Ahlwardt Address 1481 Mellergaard Ell. Wa 98926

(2) LOCATION OF WELL: County Kittitas ne 1/4 ne 1/4 Sec 31 T. 19 N., R 18 W.M.

(2a) STREET ADDRESS OF WELL (or nearest address) A

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

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

(5) DIMENSIONS: Diameter of well 10" 6" inches. Drilled 170 feet. Depth of completed well 170 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 6" Diam. from +2 ft. to 158' ft.
Welded ☒
Liner installed ☐ " Diam. from ft. to ft.
Threaded ☐ " Diam. from ft. to ft.

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

Screens: Yes ☐ No ☒
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

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

Surface seal: Yes ☒ No ☐ To what depth? 18' ft.
Material used in seal Bentonite
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? Depth of strata
Method of sealing strata off

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

(8) WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level 82 ft. below top of well Date
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

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

"	"	"	"
"	"	"	"

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

Time	Water Level	Time	Water Level	Time	Water Level
	Approx	30	G.P.M.		

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

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
Topsoil Brown m	0	3
Clay Brown m	3	7
Cemented Gravel Cob. Bl.Br. H	7	18
Clay Brown m	18	26
Cemented Gravel Cob bl.br H	26	64
Clay w sandstone lep Br. m	64	87
Cemented gravel Bl. Br. H	87	98
Sandstone Brown m	98	123
Cemented Gravel Cob bl.br H	123	140
Cemented Gravel Cob bl.br VH	140	157
Cemented gravel Cobbels bl br H	157	170

JUL 21 1997
DEPARTMENT OF ECOLOGY
CENTRAL REGIONAL OFFICE

Work Started 7/14/97 19. Completed 7/16/97 19

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Water Man Well Drilling (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)
Address 106 Berriman In Selah Wa 989
(Signed) Steve Mills (WELL DRILLER) License No. 1335
Contractor's Registration No. WATERMW0104J2 Date 7/16/97 19

(USE ADDITIONAL SHEETS IF NECESSARY)

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

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

122599

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

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. W091068

UNIQUE WELL I.D. # ACW-623

Water Right Permit No. _____

(1) OWNER: Name Jamie Gordon Address 1007 Okanogan Ellensburg WA 98926

(2) LOCATION OF WELL: County Kittitas 1/4 NE 1/4 Sec 31 T. 19 N. R 18 W.M.

(2a) STREET ADDRESS OF WELL (or nearest address) Smithson Rd. A B G H

(3) PROPOSED USE: [X] Domestic [ ] Industrial [ ] Municipal [ ] Irrigation [ ] Test Well [ ] Other [ ] DeWater

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

(5) DIMENSIONS: Diameter of well 6" inches. Drilled 160 feet. Depth of completed well 160 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 6" Diam. from +2 ft. to -156 ft. Welded [X]
Liner installed [ ] " Diam. from ft. to ft.
Threaded [ ] " Diam. from ft. to ft.

Perforations: Yes [ ] No [X]
Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes [ ] No [X]
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes [ ] No [X] Size of gravel
Gravel placed from ft. to ft.

Surface seal: Yes [X] No [ ] To what depth? 18 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 above mean sea level ft.
Static level 90 ft. below top of well Date
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

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

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test gal./min. with ft. drawdown after hrs.
Airtest 20 gal./min. with stem set at 158 ft. for 1 hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes [ ] No [ ]

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
Topsoil	0	3
Clay Brown & Gravels	3	48
Clay Brown	48	120
Clays & Gravels	120	140
Gravels Multi-Color W/Water	140	160

RECEIVED
NOV 14 1997
DEPARTMENT OF ECOLOGY
CENTRAL REGION OFFICE

Work Started 10/23/97 19. Completed 10/24/97 19

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME H2O WELL SVC INC 1-800-772-4901 (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address 582 W HAYDEN AVE HAYDEN LAKE ID 83835

(Signed) Jim McLeslie (WELL DRILLER) License No. 2257

(Jim McLeslie)

Contractor's Registration No. H2OWESI101DW Date 10/24/97 19

(USE ADDITIONAL SHEETS IF NECESSARY)

ECL 050-1-20 (2/93)

235360

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Second Copy — Owner's Copy
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WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. W092894

UNIQUE WELL I.D. # AEM516

Water Right Permit No. _____

(1) OWNER: Name KLAMPHER Address 9411 REECER CREEK

(2) LOCATION OF WELL: County KITTITAS SE 1/4 NW 1/4 Sec 34 T. 19 N, R. 18 W.M.

(2a) STREET ADDRESS OF WELL (or nearest address) REECER CREEK

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

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

(5) DIMENSIONS: Diameter of well 6 inches. Drilled 135 feet. Depth of completed well 135 ft.

(6) CONSTRUCTION DETAILS:
Casing Installed: 6" Diam. from 0 ft. to 120 ft.
Welded ☒ _____" Diam. from _____ ft. to _____ ft.
Liner installed ☐ Threaded ☐ _____" Diam. from _____ ft. to _____ ft.

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

Screens: Yes ☐ No ☒
Manufacturer's Name _____
Type _____ Model No. _____
Diam. ____ Slot size _____ from _____ ft. to _____ ft.
Diam. ____ Slot size _____ from _____ ft. to _____ ft.

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

Surface seal: Yes ☒ No ☐ To what depth? 20 ft.
Material used in seal BENTONITE
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

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

(8) WATER LEVELS: Land-surface elevation above mean sea level _____ ft.
Static level 55 ft. below top of well Date 11/4/96
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (Cap, valve, etc.)

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

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____
Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Airtest 15 gal./min. with stem set at 130 ft. for 2 hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water _____ Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
SOIL	0	25
CEMENTED GRAVEL	25	85
SANDSTONE; TAN CLAY	85	110
BROKEN BASALT, MED GRY.	110	135

RECEIVED
AUG 2 1999
DEPARTMENT OF ECOLOGY
CENTRAL REGION OFFICE

Work Started _____ 19 Completed 11/4 19 96

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME BACH DRILLING CO (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address 3340 WILSON CREEK

(Signed) _____ (WELL DRILLER) License No. 1778

Contractor's Registration No. MIKEBDC133K4 Date 11/4 19 96

(USE ADDITIONAL SHEETS IF NECESSARY)

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

ECY 050-1-20 (9/93) * * I

257320

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

WATER WELL REPORT
STATE OF WASHINGTON

Notice of Intent W 113176
UNIQUE WELL I.D. # AET-619
Water Right Permit No. _____

(1) OWNER: Name Ray ~~Chance~~ Dick simpson Address 1341 Ross Plymouth NJ 48170

(2) LOCATION OF WELL: County Kittitas SE 1/4 NW 1/4 Sec 32 T 19 N.R. 18 WM

(2a) STREET ADDRESS OF WELL: (or nearest address) _____

TAX PARCEL NO.: _____ F

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

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

(5) DIMENSIONS: Diameter of well 10" x 6" inches
Drilled 142' feet. Depth of completed well 142' ft.

(6) CONSTRUCTION DETAILS
Casing Installed:
☒ Welded 6" Diam. from +2 ft. to 139' ft.
☐ Liner installed _____" Diam. from _____ ft. to _____ ft.
☐ Threaded _____" Diam. from _____ ft. to _____ ft.

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

Screens: ☐ Yes ☒ No ☐ K-Pac Location _____
Manufacturer's Name _____
Type _____ Model No. _____
Diam. _____ Slot Size _____ from _____ ft. to _____ ft.
Diam. _____ Slot Size _____ from _____ ft. to _____ ft.

Gravel/Filter packed: ☐ Yes ☒ No ☐ Size of gravel/sand _____
Material placed from _____ ft. to _____ ft.

Surface seal: ☒ Yes ☐ No To what depth? 20+ ft.
Material used in seal Bentonite
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

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

(8) WATER LEVELS: Land-surface elevation above mean sea level _____ ft.
Static level 40ft x 55' ft. below top of well Date 4/30/00
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☐ No If yes, by whom? _____
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____
Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Airtest Aprox 20 gal./min. with _____ ft. drawdown after 1 hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water _____ Was a chemical analysis made? ☐ Yes ☐ No

ECY 050-1-20 (11/98)

(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 one entry for each change of information. Indicate all water encountered.

MATERIAL	FROM	TO
Topsoil	0'	2'
Basalt cobbles - clay	2'	19'
Clay & gravel - Brn	19'	47'
Clay & silt - red-brn	47'	52'
Clay - tan	52'	61'
Clay & gravel	61'	78'
cemented gravel	78'	142'

RECEIVED
MAY 17 2000
DEPARTMENT OF ECOLOGY
CENTRAL REGION OFFICE

Work Started 4/28, 00 Completed 4/30, 00

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 Kelly Olson License No. 1217
(Licensed Driller/Engineer)

Trainee Name _____ License No. _____
Waterman Well Drilling Inc
(Signed) Kelly Olson License No. 1217
(Licensed Driller/Engineer)
Address 106 Berriman ln Selah Wa 989
Contractor's Registration No. WATERWD022DB Date 5/4/00

(USE ADDITIONAL SHEETS IF NECESSARY)

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.

302893

File Original with Department of Ecology 90590
Second Copy - Owner's Copy
Third Copy - Driller's Copy

WATER WELL REPORT

STATE OF WASHINGTON

Notice of Intent W129613
UNIQUE WELL ID # AFE298
Water Right Permit No

(1) OWNER Name Ron Norton Address 9910 NE 34th Bellevue WA 98004

(2) LOCATION OF WELL County Kittitas NE 1/4 NE 1/4 Sec 31 T 19 N R 18 WM A

(2a) STREET ADDRESS OF WELL (or nearest address)

TAX PARCEL NO

(3) PROPOSED USE: [X] Domestic [ ] Industrial [ ] Municipal [ ] Irrigation [ ] Test Well [ ] Other [ ] DeWater

(4) TYPE OF WORK: Owner's number of well (if more than one)
[X] New Well Method [ ] Deepened [ ] Dug [ ] Bored [ ] Reconditioned [ ] Cable [ ] Driven [ ] Decommission [X] Rotary [ ] Jetted

(5) DIMENSIONS: Diameter of well 10X6 inches
Drilled 116 feet Depth of completed well 116 ft

(6) CONSTRUCTION DETAILS
Casing Installed
[X] Welded 6 " Diam from +1 ft to -114 ft
[ ] Liner installed " Diam from ft to ft
[ ] Threaded " Diam from ft to ft

Perforations [ ] Yes [X] No
Type of perforator used
SIZE of perforations in by in
perforations from ft to ft

Screens [ ] Yes [X] No [ ] K-Pac Location
Manufacturer's Name
Type Model No
Diam Slot Size from ft to ft
Diam Slot Size from ft to ft

Gravel/Filter packed [ ] Yes [X] No [ ] Size of gravel/sand
Material placed from ft to ft

Surface seal [X] Yes [ ] No To what depth? 18 ft
Material used in seal Bentonite
Did any strata contain unusable water? [ ] Yes [X] No
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP Manufacturer's Name
Type H P

(8) WATER LEVELS Land-surface elevation above mean sea level ft
Static level 55 ft below top of well Date 11/30/00
Artesian pressure lbs per square inch Date
Artesian water is controlled by (Cap, valve, etc)

(9) WELL TESTS Drawdown is amount water level is lowered below static level
Was a pump test made? [ ] Yes [X] No If yes, by whom?
Yield gal /min with ft drawdown after hrs
Yield gal /min with ft drawdown after hrs
Yield gal /min with ft drawdown after hrs
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
	ESTIMATED AIRLIFT				

Date of test
Bailer test gal./min with ft drawdown after hrs
Airtest 46 gal./min with ft drawdown after hrs
Artesian flow g p m Date
Temperature of water Was a chemical analysis made? [ ] Yes [X] No

(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 one entry for each change of information Indicate all water encountered

MATERIAL	FROM	TO
Cobbles Cemented Gravel	0	
Clay Brn MH		12
Clay Brn m	12	36
Cemented Gravel Clay Brn M	36	74
Cemented Gravel s/Sandstone Brn MH	74	116

DEPT OF ECOLOGY Received DEC 5 2000 CENTRAL REGION OFFICE

Work Started 11/28/00 Completed 11/30/00

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 Chris Hayes License No 1908
(Licensed Driller/Engineer)

Trainee Name License No
Drilling Company Waterman Well Drilling Inc
(Signed) License No 1908
(Licensed Driller/Engineer)
Address 106 Berriman In Selah Wa 98942
Contractor's Registration No WATERWD022DB Date 12/4/00

(USE ADDITIONAL SHEETS IF NECESSARY)

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

ECY 050-1 20 (11/98)

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

302937

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

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. WIO 48991

UNIQUE WELL I.D. #

Water Right Permit No.

(1) OWNER: Name PAUL KILLO Address

(2) LOCATION OF WELL: County KITTITAS SE 1/4 SE 1/4 Sec 31 T. 19 N. R/8 W.M. R

(2a) STREET ADDRESS OF WELL (or nearest address) HOWARD

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

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

(5) DIMENSIONS: Diameter of well 6" inches. Drilled 240 feet. Depth of completed well 240 ft.

(6) CONSTRUCTION DETAILS:
Casing Installed: 6" Diam. from 0 ft. to 190 ft. Welded ☑ Liner installed ☐ Threaded ☐ " Diam. from ft. to ft. " Diam. from ft. to ft.

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

Screens: Yes ☐ No ☑
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

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

Surface seal: Yes ☑ No ☐ To what depth? 20 ft.
Material used in seal BENTONITE
Did any strata contain unusable water? Yes ☐ No ☑
Type of water? Depth of strata
Method of sealing strata off

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

(8) WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level 60 ft. below top of well Date 5/1/96
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

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

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test gal./min. with ft. drawdown after hrs.
Airtest 15-20 gal./min. with stem set at 235 ft. for 2 hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
SOIL COBBLES	0	25
SANDSTONE, TAN CLAY	25	38
CEMENTED GRAVEL W/C/CLAY	38	240

RECEIVED
MAY 29
DEPARTMENT OF ECOLOGY
CENTRAL REGION OFFICE

Work Started 19. Completed 5/1 19 96

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME BACH DRILLING CO (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address 3340 WILSON CREEK

(Signed) (WELL DRILLER) License No. 1778

Contractor's Registration No. MIKE BOC137J4 Date 5/1 19 96

(USE ADDITIONAL SHEETS IF NECESSARY)

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

ECY 050-1-20 (9/93) * * I

398075

Please print, sign and return to the Department of Ecology

Water Well Report

Original – Ecology, 1st copy – owner, 2nd copy – driller

Construction/Decommission

☐ Construction

☐ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* 164376

Current Notice of Intent No. 177184

Unique Ecology Well ID Tag No. ALF-203

Water Right Permit No. D

Property Owner Name PAUL MAURER

Well Street Address 1542 SMITHSON RD

City E-BURG County KITTITAS

Location NW 1/4-1/4 NW 1/4 Sec 31 Twn 19 R 18 EWM or WWM (circle one)

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

Tax Parcel No. 19-18-31000-0014

PROPOSED USE: ☒ Domestic ☐ Industrial ☐ Municipal ☐ DeWater ☐ Irrigation ☐ Test Well ☐ Other

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

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

DIMENSIONS: Diameter of well 6 inches, drilled 142 ft. Depth of completed well 142 ft.

CONSTRUCTION DETAILS

Casing Installed: ☒ Welded 6" Diam. from 42 ft. to 66 ft.

☒ Liner installed 4½" Diam. from 42 ft. to 142 ft.

☐ Threaded _____" Diam. from _____ ft. to _____ ft.

Perforations: ☒ Yes ☐ No

Type of perforator used SKILSAW

SIZE of perfs ¼ in. by 6 in. and no. of perfs 100 from 42 ft. to 142 ft.

Screens: ☐ Yes ☐ No ☐ K-Pac Location _____

Manufacturer's Name _____

Type _____ Model No. _____

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel/Filter packed: ☐ Yes ☐ No ☐ Size of gravel/sand _____

Materials placed from _____ ft. to _____ ft.

Surface Seal: ☒ Yes ☐ No To what depth? 20 ft.

Material used in seal BENTONITE

Did any strata contain unusable water? ☐ Yes ☒ No

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

PUMP: Manufacturer's Name _____

Type: _____ H.P. _____

WATER LEVELS: Land-surface elevation above mean sea level _____

Static level 81 ft. below top of well Date 9/22/04

Artesian pressure _____ lbs. per square inch Date _____

Artesian water is controlled by _____ (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level

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

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____

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

Airtest 20 gal./min. with stem set at 140 ft. for 2 hrs.

Artesian flow _____ g.p.m. Date _____

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

CONSTRUCTION OR DECOMMISSION PROCEDURE

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 one entry for each change of information indicate all water encountered. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
DIRT	0	1
BOULDERS - GRAVEL	1	17
BROWN CLAY - GRAVEL	17	34
SANDSTONE & CLAY	34	64
BOULDERS & CLAY	64	69
CEMENTED GRAVEL	69	132
GRAVEL & WATER	132	142

DEPT OF ECOLOGY Received JAN 07 2005 CENTRAL REGION OFFICE

Start Date 9/20/04 Completed Date 9/22/04

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) CHRISTOPHER WAMSLEY

Driller/Engineer/Trainee Signature _____

Driller or trainee License No. 2488

Drilling Company HIDDEN RIVER DRILLING

Address P.O. BOX 993

City, State, Zip SELAH, WA 98942

Contractor's Registration No. HIDDERW008 Date 9/22/04

If TRAINEE,

Driller's Licensed No. _____

Driller's Signature _____

Ecology is an Equal Opportunity Employer. ECY 050-1-20 (Rev 2/03)

640271

369878

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. W089896
Unique Well I.D. # ACT818
Water Right Permit No.

(1) OWNER: Name **SMITH, DEAN** Address **9181 NANEUM RD ELLENSBURG, WA 98926-**

(2) LOCATION OF WELL: County **KITTITAS** - 1/4 **NE** 1/4 Sec **31** T **19** N., R **18W** WM

(2a) STREET ADDRESS OF WELL (or nearest address) ,

(3) PROPOSED USE: **DOMESTIC**

(4) TYPE OF WORK: Owner's Number of well (If more than one)
NEW WELL Method: **ROTARY**

(5) DIMENSIONS: Diameter of well **6** inches
Drilled **160** ft. Depth of completed well **160** ft.

(6) CONSTRUCTION DETAILS:
Casing installed: **6** " Dia. from **+2** ft. to **158** ft.
WELDED " Dia. from ft. to ft.
" Dia. from ft. to ft.

Perforations: **NO**
Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: **NO**
Manufacturer's Name
Type Model No.
Diam. slot size from ft. to ft.
Diam. slot size from ft. to ft.

Gravel packed: **NO** Size of gravel
Gravel placed from ft. to ft.

Surface seal: **YES** To what depth? **20** ft.
Material used in seal **BENTONITE**
Did any strata contain unusable water? **NO**
Type of water? Depth of strata ft.
Method of sealing strata off

(7) PUMP: Manufacturer's Name
Type **NONE** H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level ... ft.
Static level **100** ft. below top of well Date **09/03/98**
Artesian Pressure lbs. per square inch Date
Artesian water controlled by

(9) WELL TESTS: Drawdown is amount water level is lowered below static level.
Was a pump test made? **NO** If yes, by whom?
Yield: gal./min with ft. drawdown after hrs.

Recovery data
Time Water Level Time Water Level Time Water Level

Date of test / /
Bailer test gal/min. ft. drawdown after hrs.
Air test **15** gal/min. w/ stem set at **155** ft. for 1 hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? **NO**

(10) WELL LOG **A, B, G, H**

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.

MATERIAL	FROM	TO
TOPSOIL	0	3
CEMENTED COBBLES GRAVEL	3	28
CEMENTED GRAVEL WITH	28	
------- BROWN CLAY	28	77
CLAY BROWN WITH	77	
------- SOME GRAVEL	77	120
BASALT GRAVEL W/WATER	120	160

RECEIVED
SEP 16 1998

Work started **09/03/98** Completed **09/03/98**

WELL CONSTRUCTOR CERTIFICATION:
I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME **FOGLE PUMP & SUPPLY, INC.**
(Person, firm, or corporation) (Type or print)

ADDRESS **POB 1450, AIRWAY HTS. WA.**

[SIGNED] Todd Lively/me License No. **2321**

Contractor's Registration No. **FOGLEPSO95L4** Date **09/09/98**

112 992

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

WATER WELL REPORT
STATE OF WASHINGTON

Application No. .....
Permit No. .....

(1) OWNER: Name BRIAN DOWNEY Address RT 5 BX 726 ELLENSBURG, WA 98926

(2) LOCATION OF WELL: County KITTITAS — NE ¼ SE ¼ Sec. 6 T. 18 N., R. 19 E. W.M.
Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic [X] Industrial [ ] Municipal [ ]
Irrigation [ ] Test Well [ ] Other [ ]

(4) TYPE OF WORK: Owner's number of well (if more than one) .....
New well [X] Method: Dug [ ] Bored [ ]
Deepened [ ] Cable [X] Driven [ ]
Reconditioned [ ] Rotary [ ] Jetted [ ]

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 196 ft. Depth of completed well 196 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 6 " Diam. from +1 ft. to 130 ft.
Threaded [ ] " Diam. from ..... ft. to ..... ft.
Welded [X] " Diam. from ..... ft. to ..... ft.

Perforations: Yes [ ] No [X]
Type of perforator used .....
SIZE of perforations ..... in. by ..... in.
..... perforations from ..... ft. to ..... ft.
..... perforations from ..... ft. to ..... ft.
..... perforations from ..... ft. to ..... ft.

Screens: Yes [ ] No [X]
Manufacturer's Name .....
Type ..... Model No. .....
Diam. ..... Slot size ..... from ..... ft. to ..... ft.
Diam. ..... Slot size ..... from ..... ft. to ..... ft.

Gravel packed: Yes [ ] No [X] Size of gravel: .....
Gravel placed from ..... ft. to ..... ft.

Surface seal: Yes [X] No [ ] To what depth? 18 ft.
Material used in seal BENTONITE + CLAY
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 SEARS
Type: S46 H.P. ¾

(8) WATER LEVELS: Land-surface elevation above mean sea level ..... ft.
Static level 8 ft. below top of well Date 5-21-82
Artesian pressure ..... lbs. per square inch Date .....
Artesian water is controlled by ..... (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes [X] No [ ] If yes, by whom? .....
Yield: 2½ gal./min. with 110 ft. drawdown after 2 hrs.
" " " "
" " " "

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test 5-21-82
Bailer test 3 gal./min. with 110 ft. drawdown after 1 hrs.
Artesian flow ..... g.p.m. Date .....
Temperature of water ..... Was a chemical analysis made? Yes [ ] No [X]

(10) WELL LOG: J

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

MATERIAL	FROM	TO
SOIL FILL	0	4
BOULDERS	4	18
CLAY, BRN W/COARSE GRAVEL	18	50
SAND, BRN, FINE SOME H2O	50	51
CLAY, BRN W/BOULDERS	51	64
SAND, BRN, FINE SOME H2O	64	65
CLAY, BRN, 2nd BOULDERS	65	80
CLAY, GRY, DENSE W/BOULDERS	80	100
CLAY, TAN, STIFF	100	115
CLAY, GRY W/BOULDERS	115	137
CLAY, STONE, GREY	137	144
COARSE GRAVEL	144	149
CLAY, GRY, SOFT	149	161
CLAY, GRY, STICKY	161	196

NOTE: DIAMETER OF WELL REDUCED BELOW 130' DUE TO BOTTOM BLUE SHALE.

NO DISTINCT AQUIFER WAS LOCATED WATER ENTERS BETWEEN 130' AND 145'

PUMP SET AT 126'

RECEIVED
JUN 28 1982
DEPARTMENT OF ECOLOGY
CENTRAL

Work started 22 APR, 19 82 Completed 22 MAY, 19 82

WELL DRILLER'S STATEMENT:

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

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

Address RT 5 BX 381A, YAKIMA, WA

[Signed] C. Cain
(Well Driller)

License No. 01060 Date 22 MAY, 19 82

(USE ADDITIONAL SHEETS IF NECESSARY)

RJ 6-29-82

ECY 050-1-20

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

114300

WATER WELL REPORT

STATE OF WASHINGTON

Application No. RECEIVED

Permit No. SEP 22 1978

DEPARTMENT OF ECOLOGY
CENTRAL REGIONAL OFFICE

(1) OWNER: Name ED MILES Address ELLENSBERG, WA

(2) LOCATION OF WELL: County KITTITAS NE ¼ NW ¼ Sec. 8 T. 20N R. 17E W.M.

Bearing and distance from section or subdivision corner

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

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

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 75 ft. Depth of completed well 75 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6" Diam. from 0 ft. to 67 ft.
Threaded ☐ ." Diam. from ft. to ft.
Welded ☒ ." Diam. from ft. to ft.

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

Screens: Yes ☐ No ☒
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

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

Surface seal: Yes ☒ No ☐ To what depth? 18 ft.
Material used in seal [redacted] Grout
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of strata
Method of sealing strata off

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

(8) WATER LEVELS: Land-surface elevation above mean sea level.... ft.
Static level 2 ft. ft. below top of well Date
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

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

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

Time	Water Level	Time	Water Level	Time	Water Level

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

(10) WELL LOG:

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

MATERIAL	FROM	TO
DIRT	0	15
Boulders	15	20
CLAY & BROKEN Rock	20	67
SAND & GRAVEL	67	75

Work started , 19 Completed , 19

WELL DRILLER'S STATEMENT:

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

NAME HORTON DRILLING CO
(Person, firm, or corporation) (Type or print)

Address PO BOX 1145 BLING WASH

[Signed] O. R. Horton
(Well Driller)

License No. 0206 Date 9-14, 1978

(USE ADDITIONAL SHEETS IF NECESSARY) OK since 10-78

ECY 050-1-20

114999

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

WATER WELL REPORT
STATE OF WASHINGTON

Application No. .....
Permit No. .....

(1) OWNER: Name Glen Cooke Address R45 Box 705 Ellensburg WA 98926

(2) LOCATION OF WELL: County Kittitas — NE ¼ SE ¼ Sec. 6 T. 18 N., R. 19 W.M.

Bearing and distance from section or subdivision corner

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

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

(5) DIMENSIONS: Diameter of well 6 inches. Drilled ..... ft. Depth of completed well 160 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6 " Diam. from 0 ft. to 120 ft.
Threaded ☐ ..... " Diam. from ..... ft. to ..... ft.
Welded ☐ ..... " Diam. from ..... ft. to ..... ft.

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

Screens: Yes ☐ No ☒
Manufacturer's Name .....
Type ..... Model No. .....
Diam. ..... Slot size ..... from ..... ft. to ..... ft.
Diam. ..... Slot size ..... from ..... ft. to ..... ft.

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

Surface seal: Yes ☑ No ☐ To what depth? ..... ft.
Material used in seal Bentonite
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? ..... Depth of strata .....
Method of sealing strata off .....

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

(8) WATER LEVELS: Land-surface elevation above mean sea level .... ft.
Static level 95 ft. below top of well Date .....
Artesian pressure ..... lbs. per square inch Date .....
Artesian water is controlled by ..... (Cap, valve, etc.)

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

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

Time	Water Level	Time	Water Level	Time	Water Level

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

(10) WELL LOG:

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

MATERIAL	FROM	TO
Soil & Boulders	0'	4'
Hard Cemented Gravel	4'	65'
Soft Cemented Gravel	65'	73'
Hard Cemented Gravel	73'	105'
Soft Cemented Gravel	105'	116'
Hard Cemented Gravel	116'	130'
Soft Cemented Gravel	130'	145'
Little water		
Hard Cemented Gravel	145'	160'

JUN – 4 1981

Work started MAY 4, 19 81 Completed MAY 5, 19 81

WELL DRILLER'S STATEMENT:

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

NAME Bach Drilling Co. (Person, firm, or corporation) (Type or print)

Address Box 1010, Rt. 5

[Signed] Mike Bach (Well Driller)

License No. 92 Date May 6, 19 81

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20

114999

Grantor hereby irrevocably grants, bargains, sells and conveys to Trustee in trust, with power of sale, the following described property in Kittitas County Washington:

That portion of the Northeast 1/4 of the Southeast 1/4 of Section 6, Township 18 North, Range 19 East, W.M., in the County of Kittitas, State of Washington, described as follows: Beginning at the Northeast corner of said subdivision; thence South 0°00' West along the East line of said subdivision 584.5 feet to the thrue point of beginning thence South 89°23' West 300.0 feet; thence South 10°20' West 43.0 feet; thence South 88°38' East 25.0 feet; thence South 6°25' West 196.7 feet; thence North 81°40' West 81.0 feet; thence South 17°26' West 60.0 feet; thence South 68°05' West 205.0 feet; thence South 15 55' West 439.0 feet to a point on the South line of said subdivision situate South 89°12' West 713.4 feet from the Southeast corner thereof; thence North 89°12' East 713.4 feet to said Southeast corner; thence North 0°00' West along the East line of said subdivision 775.55 feet to the true point of beginning.

EPT Road right of way along the East boundary.

115767

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

WATER WELL REPORT
STATE OF WASHINGTON

Application No. .....
Permit No. .....

(1) OWNER: Name Jim Jenkins Address .....

(2) LOCATION OF WELL: County Kittitas — SE ¼ SW ¼ Sec 5 T. 18 N., R. 19 W.M.
[redacted] and distance from section or subdivision corner

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

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

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 95 ft. Depth of completed well 95 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 6 " Diam. from +2 ft. to 30 ft.
Threaded ☐ ..... " Diam. from ..... ft. to ..... ft.
Welded ☒ ..... " Diam. from ..... ft. to ..... ft.

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

Screens: Yes ☐ No ☒
Manufacturer's Name .....
Type ..... Model No .....
Diam. ..... Slot size ..... from ..... ft. to ..... ft.
Diam. ..... Slot size ..... from ..... ft. to ..... ft.

[redacted] **Gravel packed:** Yes ☐ No ☒ Size of gravel: .....
Gravel placed from ..... ft. to ..... ft.

Surface seal: Yes ☒ No ☐ To what depth? 20 ft.
Material used in seal Bentonite
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? ..... Depth of strata .....
Method of sealing strata off .....

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

(8) WATER LEVELS: Land-surface elevation above mean sea level .... ft.
Static level 9 ft. below top of well Date 8/24/81
Artesian pressure ..... lbs. per square inch Date .....
Artesian water is controlled by ..... (Cap, valve, etc.)

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

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

Time	Water Level	Time	Water Level	Time	Water Level

[redacted]te of test .....
Bailer test 12 gal./min. with ..... ft. drawdown after ..... hrs.
Artesian flow ..... g.p.m. Date .....
Temperature of water ..... Was a chemical analysis made? Yes ☐ No ☒

(10) WELL LOG: P

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

MATERIAL	FROM	TO
Topsoil	0	3
Silt & boulders	3	30
Soft basalt	30	50
Basalt & brown clay & Water	50	95

RECEIVED
JAN 26 1982
DEPARTMENT OF ECOLOGY

Work started 8/22, 19 81 Completed 8/24, 19 81

WELL DRILLER'S STATEMENT:

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

NAME Vernon L. Rank
(Person, firm, or corporation) (Type or print)
Address 5503 Ahtanum Rd., Yakima, Wa. 98903
[Signed] Vernon L. Rank (Well Driller)
License No. 0854 Date 9/25, 1981

(USE ADDITIONAL SHEETS IF NECESSARY)

RJF 1/27/82

ECY 050-1-20

116590

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

WATER WELL REPORT

STATE OF WASHINGTON

Application No. .....

Permit No. .....

(1) **OWNER:** Name Lyndell G. Hobbs Address Route 3, Box 1060, Ellensburg WA 98926

(2) **LOCATION OF WELL:** County KITTITAS NE ¼ SE ¼ Sec. 10 T. 18 N., R. 19E W.M.

Bearing and distance from section or subdivision corner

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

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

(5) **DIMENSIONS:** Diameter of well 6 inches.
Drilled 100 ft. Depth of completed well 90 ft.

(6) **CONSTRUCTION DETAILS:**
Casing installed: 6 " Diam. from +1 ft. to 57 ft.
Threaded ☐ " Diam. from ft. to ft.
Welded ☒ " Diam. from ft. to ft.

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

Screens: Yes ☐ No ☒
Manufacturer's Name
Type Model No
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

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

Surface seal: Yes ☒ No ☐ To what depth? 30 ft.
Material used in seal bentonite
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of strata
Method of sealing strata off

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

(8) **WATER LEVELS:** Land-surface elevation above mean sea level ft.
Static level 2 ft. below top of well Date 5/03/87
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) **WELL TESTS:** Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☒ If yes, by whom?
Yield: 90+ gal./min. with ft. drawdown after hrs.
" ESTIMATED AIRLIFT " "
" " " "

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

Time	Water Level	Time	Water Level	Time	Water Level

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

(10) **WELL LOG:**

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

MATERIAL	FROM	TO
Top soil	0	5
Clay, tan & river rock	5	28
Basalt, broken & tan clay	28	59
Basalt gravel w/water	59	100
NO PVC Liner Installed		
6" Drive shoe utilized		
Note: Recommend setting pump between 65 and 75 feet		

RECEIVED
MAY 15 1987
DEPARTMENT OF ECOLOGY
CENTRAL REGION OFFICE

Work started 5/02 19 87 Completed 5/02 19 87

WELL DRILLER'S STATEMENT:

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

NAME PONDEROSA DRILLING & DEVELOPMENT INC.
(Person, firm, or corporation) (Type or print)

Address E. 6010 Broadway, Spokane, WA 99212

[Signed] Douglas E. Lane (Well Driller)
Douglas E. Lane

License No. 1030 Date 5/02 19 87

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20

120293

W= 05813

Start Card No. 05813

UNIQUE WELL I.D. # AAZ512

28276

WATER WELL REPORT

STATE OF WASHINGTON

Water Right Permit No. _____

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

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

OWNER: Name Frank Beard Address 7490 Naneum Rd, Ellensburg

(2) LOCATION OF WELL: County Kittitas SW 1/4 NE 1/4 Sec 9 T. 18 N. R 19E W.M.

(2a) STREET ADDRESS OF WELL (or nearest address) Naneum Rd. Ellensburg

(3) PROPOSED USE: [X] Domestic [ ] Industrial [ ] Municipal [ ] Irrigation [ ] Test Well [ ] Other [ ] DeWater

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

Abandoned [ ] New well [X] Method: Dug [ ] Bored [ ] Deepened [ ] Cable [ ] Driven [ ] Reconditioned [ ] Rotary [X] Jetted [ ]

(5) DIMENSIONS: Diameter of well 6" inches. Drilled 200 feet. Depth of completed well 165 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6" Diam. from +2 ft. to 140 ft.
Welded [X] Liner installed [X] Threaded [ ] " Diam. from -4 ft. to 130 ft.
" Diam. from _____ ft. to _____ ft.

Perforations: Yes [ ] No [X]
Type of perforator used _____
SIZE of perforations _____ in. by _____ in.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.

Screens: Yes [ ] No [X]
Manufacturer's Name _____
Type _____ Model No. _____
Diam. ____ Slot size _____ from _____ ft. to _____ ft.
Diam. ____ Slot size _____ from _____ ft. to _____ ft.

Gravel packed: Yes [ ] No [X] Size of gravel _____
Gravel placed from _____ ft. to _____ ft.

Surface seal: Yes [X] No [ ] To what depth? 18 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 above mean sea level _____ ft.
Static level -2 ft. below top of well Date 8-23
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (Cap, valve, etc.)

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

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____
Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Airtest 10 gal./min. with stem set at 195 ft. for 1 hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water _____ Was a chemical analysis made? Yes [ ] No [X]

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
Top Soil	0	4
Brown Clay & gravel	4	81
Brown Clay & Boulders	81	127
Blue Clay & Boulders	127	154
Brown Clay & gravel	154	191
Cemented Gravel & Water	191	200

OCT – 4 1994

Work Started 8-19 19. Completed 8-23 1994

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Mathews Drilling (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address 9455 Stonecrest Rd Mab.

(Signed) Mitch Mathews (WELL DRILLER) License No. 1267

Contractor's Registration No. MATHEDW11BC Date 8-23 1994

(USE ADDITIONAL SHEETS IF NECESSARY)

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

349-620

WATER WELL REPORT

160573

CURRENT Notice of Intent No W108937

ECOLOGY Original & 1st copy Ecology 2nd copy owner 3rd copy driller

Unique Ecology Well ID Tag No AGL526

Water Right Permit No

Property Owner Name Russ Annett J

Well Street Address

City Ellensburg County Kittitas

Location NE 1/4 1/4 SE 1/4 Sec 13 Twn 18 R 19 EWM or WWM (circle one)

Lat/Long (s,t,r still REQUIRED) Lat Deg Lat Min/Sec Long Deg Long Min/Sec

Tax Parcel No

DEPT OF ECOLOGY Received MAY 13 2002 CENTRAL REGION FILE

Construction/Decommission (x in circle)

- ○ Construction 125177
- ○ Decommission ORIGINAL CONSTRUCTION Notice of Intent Number

PROPOSED USE ☑ Domestic ☐ Industrial ☐ Municipal ☐ DeWater ☐ Irrigation ☐ Test Well ☐ Other

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

☑ New Well ☐ Reconditioned Method ☐ Dug ☐ Bored ☐ Driven ☐ Deepened ☐ Cable ☑ Rotary ☐ Jetted

DIMENSIONS Diameter of well 6 inches drilled 140 ft. Depth of completed well 140 ft.

CONSTRUCTION DETAILS

Casing Installed: ☑ Welded 6 Diam from +4 ft to 105 ft

☐ Liner installed Diam from ft to ft

☐ Threaded Diam from ft to ft

Perforations ☐ Yes ☑ No

Type of perforator used

SIZE of perfs in by in and no of perfs from ft to ft

Screens ☐ Yes ☑ No ☐ K Pac Location

Manufacturer's Name

Type Model No

Diam Slot Size from ft to ft

Diam Slot Size from ft to ft

Gravel/Filter packed ☐ Yes ☑ No ☐ Size of gravel/sand

Materials placed from ft to ft

Surface Seal ☑ Yes ☐ No To what depth? 20 ft

Materials used in seal Bentonite

Did any strata contain unusable water? ☐ Yes ☐ No

Type of water? Depth of strata 25

Method of sealing strata off

PUMP Manufacturer's Name

Type H P

WATER LEVELS Land surface elevation above mean sea level ft

Static level 25 ft below top of well Date

Artesian pressure lbs per square inch Date

Artesian water is controlled by (cap valve etc)

WELL TESTS Drawdown is amount water level is lowered below static level

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

Yield gal./min with ft drawdown after hrs

Yield gal./min with ft drawdown after hrs

Yield gal./min with ft drawdown after hrs

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test

Bailer test gal /min with ft drawdown after hrs

Airtest 20 gal /min with stem set at ft for hrs

Artesian flow g p m Date

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

CONSTRUCTION OR DECOMMISSION PROCEDURE

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 one entry for each change of information Indicate all water encountered (USE ADDITIONAL SHEETS IF NECESSARY)

MATERIAL	FROM	TO
D.F	0	5
cemt Gravl	5	40
Basa Rock	40	45
med Rock Bass	45	100
cemt Gravl	100	115
Broken Rock	115	140

RECEIVED

MAY 09 2002

DEPARTMENT OF ECOLOGY WELL DRILLING UNIT

DEPT OF ECOLOGY FISCAL BUDGET

02 MAY -9 PM 2:31

Start Date 3-16-02 Completed Date 3-15-02

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

☐ Driller ☑ Engineer ☐ Trainee Name (Print) Mike Morefield

Driller/Engineer/Trainee Signature Mike Morefield

Driller or Trainee License No 2361 2536

If trainee, licensed driller s Signature and License no Jeremy Bach 2536

Drilling Company Bach Drilling Co

Address 3340 W. Ilson Creek Rd

City State Zip Ellensburg Wa 98926

Contractor s Registration No Mike BDC.133N4 Date 3-15-02

Ecology is an Equal Opportunity Employer ECY 050 1 20 (Rev 4/01)

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

410758

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

51547

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. WD87577
UNIQUE WELL I.D. # ACL345
Water Right Permit No. 9926

(1) OWNER: Name Brent Minor Address 88 Radar Rd, Ellensburg Wa

(2) LOCATION OF WELL: County Kittitas NE 1/4 NW 1/4 Sec 9 T. 18 N., R. 19 E W.M.

(2a) STREET ADDRESS OF WELL (or nearest address) Naneum Rd

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

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

(5) DIMENSIONS: Diameter of well 6 inches. Drilled 200 feet. Depth of completed well 196 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 6" Diam. from +2 ft. to 118 ft.
Welded ☒
Liner installed ☒ 4" Diam. from -14 ft. to 196 ft.
Threaded ☐ ____" Diam. from ____ ft. to ____ ft.

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

Screens: Yes ☐ No ☒
Manufacturer's Name ____
Type ____ Model No. ____
Diam. ____ Slot size ____ from ____ ft. to ____ ft.
Diam. ____ Slot size ____ from ____ ft. to ____ ft.

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

Surface seal: Yes ☒ No ☐ To what depth? 18 ft.
Material used in seal Bentonite 22-30
Did any strata contain unusable water? Yes ☒ No ☐
Type of water? Surface Depth of strata 8 ft
Method of sealing strata off ____

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

(8) WATER LEVELS: Land-surface elevation above mean sea level ____ ft.
Static level 69 ft. below top of well Date ____
Artesian pressure ____ lbs. per square inch Date ____
Artesian water is controlled by ____ (Cap, valve, etc.)

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

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test ____
Bailer test ____ gal./min. with ____ ft. drawdown after ____ hrs.
Airtest 10 gal./min. with stem set at 195 ft. for 1 hrs.
Artesian flow ____ g.p.m. Date ____
Temperature of water ____ Was a chemical analysis made? Yes ☐ No ☒

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
Top Soil	0	4
Brown Clay & gravel	4	22
gravel & Surface water	22	30
Brown Clay & gravel	30	114
gravel & water	114	126
Yellow Clay	126	134
Cemented gravel	134	172
Black Basalt	172	192
Broken Red Basalt & water	192	200

NOV 27 1996

Work Started 11-13 19. Completed 11-14 19 96

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Mathews Drilling & Const (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)
Address 9455 Stonecrest Rd Mt.
(Signed) Mick Mathews (WELL DRILLER) License No. 1269
Contractor's Registration No. MathedC117BC Date 11-14 19 96

(USE ADDITIONAL SHEETS IF NECESSARY)

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

ECY 050-1-20 (9/93)

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

548778

WATER WELL REPORT

Original & 1st copy – Ecology, 2nd copy – owner, 3rd copy – driller

Construction/Decommission ("x" in circle)
○ Construction 312796
○ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

CURRENT
Notice of Intent No. W-256327
Unique Ecology Well ID Tag No. APG-949
Water Right Permit No. _____
Property Owner Name LES MILLER
Well Street Address LEWIS LN
City E-BURG County KITTITAS
Location SE 1/4-1/4 SE 1/4 Sec 05 Twn 18 R 19 (WWM or SWM) circle one
Lat/Long (s, t, r Still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec R
Tax Parcel No. 18-19-05000-0015

PROPOSED USE: ☒ Domestic ☐ Industrial ☐ Municipal ☐ DeWater ☐ Irrigation ☐ Test Well ☐ Other _____

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

DIMENSIONS: Diameter of well 6 inches, drilled 113 ft.
Depth of completed well 90 ft.

CONSTRUCTION DETAILS
Casing Installed: ☒ Welded 6" Diam. from +2 ft. to 30 ft.
☒ Liner installed 4-1/2" Diam. from -3 ft. to 90 ft.
☐ Threaded _____" Diam. from _____ ft. to _____ ft.

Perforations: ☒ Yes ☐ No
Type of perforator used SKELSAW
SIZE of perfs 6 in. by 1/4 in. and no. of perfs 60 from -3 ft. to 90 ft.

Screens: ☐ Yes ☒ No ☐ K-Pac Location _____
Manufacturer's Name _____
Type _____ Model No. _____
Diam. _____ Slot size _____ from _____ ft. to _____ ft.
Diam _____ Slot size _____ from _____ ft. to _____ ft.

Gravel/Filter packed: ☐ Yes ☒ No ☐ Size of gravel/sand _____
Materials placed from _____ ft. to _____ ft.

Surface Seal: ☒ Yes ☐ No To what depth? 18 ft.
Material used in seal BENTONITE HOLE PLUG
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

PUMP: Manufacturer's Name _____
Type: _____ H.P. _____

WATER LEVELS: Land-surface elevation above mean sea level _____ ft.
Static level 5 ft. below top of well Date 8/10/07
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☒ No If yes, by whom? _____
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____
Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Airtest 30+ gal./min. with stem set at 80 ft. for 2 hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water. _____ Was a chemical analysis made? ☐ Yes ☒ No

CONSTRUCTION OR DECOMMISSION PROCEDURE
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 one entry for each change of information. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
LARGE COBBLES + GRAVEL	0	13
BROKEN BROWN BASALT	13	25
BROKEN BLACK BASALT	25	32
BROKEN BROWN BASALT CLAY LAYERS	32	81
BROKEN BLACK BASALT WATER	81	113

RECEIVED
SEP 11 2008
DEPARTMENT OF ECOLOGY - CENTRAL REGIONAL OFFICE

Start Date 8/8/07 Completed Date 8/10/07

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) JUSTIN WIMMER
Driller/Engineer/Trainee Signature _____
Driller or trainee License No. T-2900

Drilling Company HIDDEN RIVERS DRILLING INC
Address P.O. BOX 993
City, State, Zip SELAH, WA 98942
Contractor's Registration No HIDDERI 959DR Date 8/10/07

If TRAINEE,
Driller's Licensed No. 2781
Driller's Signature _____

Ecology is an Equal Opportunity Employer.

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

642954

WATER WELL REPORT

DEPARTMENT OF ECOLOGY State of Washington

Original & 1st copy - Ecology, 2nd copy - owner, 3rd copy - driller

Construction/Decommission ("x" in circle) 310728

[X] Construction

[ ] Decommission *ORIGINAL INSTALLATION*

Notice of Intent Number _____

PROPOSED USE: [X] Domestic [ ] Industrial [ ] Municipal [ ] DeWater [ ] Irrigation [ ] Test Well [ ] Other _____

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

[X] New well [ ] Reconditioned *Method:* [ ] Dug [ ] Bored [ ] Driven [ ] Deepened [ ] Cable [X] Rotary [ ] Jetted

DIMENSIONS: Diameter of well 6 inches, drilled 78 ft. Depth of completed well 66 ft.

CONSTRUCTION DETAILS

Casing **Installed:** [X] Welded 6 " Diam. from +2 ft. to 55 ft.

[X] Liner installed 4 1/2 " Diam. from -48 ft. to 66 ft.

[ ] Threaded _____ " Diam. From _____ ft. to _____ ft.

Perforations: [X] Yes [ ] No

Type of perforator used Skill saw

SIZE of perfs 1/8 in. by 10 in. and no. of perfs 21 from 48 ft. to 66 ft.

Screens: [ ] Yes [X] No [ ] K-Pac Location _____

Manufacturer's Name _____

Type _____ Model No. _____

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel/Filter packed: [ ] Yes [X] No Size of gravel/sand _____

Materials placed from _____ ft. to _____ ft.

Surface Seal: [X] Yes [ ] No To what depth? 18 ft.

Material used in seal Bentonite

Did any strata contain unusable water? [ ] Yes [X] No

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

PUMP: Manufacturer's Name _____

Type: _____ H.P. _____

WATER LEVELS: Land-surface elevation above mean sea level 2117 ft.

Static level 20 ft. below top of well Date 02-18-10

Artesian pressure _____ lbs. per square inch Date _____

Artesian water is controlled by _____ (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? [ ] Yes [X] No If yes, by whom? _____

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____

Bailer Test _____ gal./min. with _____ ft. drawdown after _____ hrs.

Airtest 30 gal./min. with stem set at 54 ft. for 2 hrs.

Artesian flow _____ g.p.m. Date 02-18-10

Temperature of water _____ Was a chemical analysis made? [ ] Yes [X] No

CURRENT

Notice of Intent No. W 272743

Unique Ecology Well ID Tag No. BBJ 403

Water Right Permit No. _____

Property Owner Name Grab, Frank & Diane

Well Street Address Schnebly Rd.

City Ellensburg County Kittitas

Location NE 1/4-1/4 NW 1/4 Sec 13 Twn 18 R 19 EWM [X] Check Or WWM [ ] One

(s, t, r Still REQUIRED)

Lat/Long Lat Deg N 47 Lat Min/Sec 03.556

Long Deg W 120 Long Min/Sec 24.229

Tax Parcel No. (Required) 13494 18141300000021

CONSTRUCTION OR DECOMMISSION PROCEDURE

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 one entry for each change of information. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
Brown clay, loose basalt gravel, rocks	0	12
Brown cemented clay, basalt gravel, rocks	12	29
Brown clay, gravel WB	29	36
Brown cemented clay, gravel	36	54
Gravel WB	54	56
Brown cemented clay, gravel	56	67
Loose basalt gravel WB	67	72
Brown cemented clay, gravel	72	78

RECEIVED

APR 07 2010

DEPARTMENT OF ECOLOGY - CENTRAL REGIONAL OFFICE

Start Date 02-18-10 Completed Date 02-18-10

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.

[X] Driller [ ] Engineer [ ] Trainee Name (Print) Brett Phythian

Driller/Engineer/Trainee Signature _____

Driller or trainee License No. 1249

IF TRAINEE: Driller's License No: _____

Driller's Signature: _____

Drilling Company Tumwater Drilling & Pump Inc.

Address 9292 Hwy 2 / P. O. Box 777

City, State, Zip Leavenworth , WA , 98826

Contractor's Registration No. TUMWADP 011 LZ Date 02-19-2010

ECY 050-1-20 (Rev 06/08) If you need this document in an alternate format, please call the Water Resources Program at 360-407-6600. Persons with hearing loss can call 711 for Washington Relay Service.. Persons with a speech disability can call 877-833-6341.

Fox Rd. 113785 484

WATER WELL REPORT

STATE OF WASHINGTON

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

Start Card No. 010455

Water Right Permit No. C

(1) OWNER: Name Darrell Swafield Address Fox Rd.

(2) LOCATION OF WELL: County _____ NE ¼ NW ¼ Sec 33 T. 18 N., R 20 W.M.

(2a) STREET ADDDRESS OF WELL (or nearest address) _____

(3) PROPOSED USE: [X] Domestic [ ] Industrial [ ] Municipal [ ] Irrigation [ ] Test Well [ ] Other [ ] DeWater

(4) TYPE OF WORK: Owner's number of well (if more than one) _____
Abandoned [ ] New well [X] Method: Dug [ ] Bored [ ] Deepened [ ] Cable [ ] Driven [ ] Reconditioned [ ] Rotary [ ] Jetted [ ]

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled _____ feet. Depth of completed well _____ ft.

(6) CONSTRUCTION DETAILS:
Casing Installed: 6 " Diam. from _____ ft. to _____ ft.
Welded [X] Liner installed [ ] Threaded [ ] _____ " Diam. from _____ ft. to _____ ft.

Perforations: Yes [ ] No [X]
Type of perforator used _____
SIZE of perforations _____ in. by _____ in.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.

Screens: Yes [ ] No [X]
Manufacturer's Name _____
Type _____ Model No. _____
Diam. _____ Slot size _____ from _____ ft. to _____ ft.
Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel packed: Yes [ ] No [ ] Size of gravel _____
Gravel placed from _____ ft. to _____ ft.

Surface seal: Yes [X] No [ ] To what depth? 20 ft.
Material used in seal #8 Bentonite
Did any strata contain unusable water? Yes [ ] No [ ]
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

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

(8) WATER LEVELS: Land-surface elevation above mean sea level _____ ft.
Static level 40 ft. below top of well Date 4-8-91
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (Cap, valve, etc.)

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

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____
Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Airtest 25 gal./min. with stem set at _____ ft. for 2 hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water _____ Was a chemical analysis made? Yes [ ] No [ ]

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
DIRT	0	3
HARD PAN	3	5
Cemented Gravel	5	20
Cemented Gravel with LAYERS OF BASALT	20	60
Cemented Gravel	60	75
SOFT BROWN BASALT	75	140

RECEIVED MAY - 6 1991 DEPARTMENT OF ECOLOGY CENTRAL REGION OFFICE

Work started 4-8 19 91 completed 4-8 19 91

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Bach Drilling Co. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address Rt 5 Box 1010 E-Burg

(Signed) _____ License No. 0836
(WELL DRILLER)

Contractor's Registration No. BDC133N4 Date 4-8 19 91

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20 (10/87) -1329- 3

115501

8736

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

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. 086885

UNIQUE WELL I.D. #

Water Right Permit No.

(1) OWNER: Name Jack Loftis Address Rt. 3 Box 585, Ellensburg, WA 98926

(2) LOCATION OF WELL: County Kittitas W½ ¼ SW ¼ Sec. 34 T. 18 N., R. 20 W.M.

(2a) STREET ADDDRESS OF WELL (or nearest address)

(3) PROPOSED USE: [X] Domestic [ ] Industrial [ ] Municipal [ ] Irrigation [ ] Test Well [ ] Other [ ] DeWater

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

Abandoned [ ] New well [X] Method: Dug [ ] Bored [ ] Deepened [ ] Cable [ ] Driven [ ] Reconditioned [ ] Rotary [X] Jetted [ ]

(5) DIMENSIONS: Diameter of well 6 inches. Drilled 160 feet. Depth of completed well 160 ft.

(6) CONSTRUCTION DETAILS:

Casing Installed: 6 " Diam. from +2 ft. to 126 ft.
Welded [X] PVC 4 " Diam. from 20 ft. to 160 ft.
Liner installed [X]
Threaded [ ] " Diam. from ft. to ft.

Perforations: Yes [X] No [ ] PVC Liner
Type of perforator used Skill Saw
SIZE of perforations 6 in. by 1/8 in.
102 perforations from 140 ft. to 160 ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes [ ] No [X]
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes [ ] No [X] Size of gravel
Gravel placed from ft. to ft.

Surface seal: Yes [X] No [ ] To what depth? 20 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 above mean sea level ft.
Static level ft. below top of well Date
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes [ ] No [X] If yes, by whom?
Yield: 40 gal./min. with ft. drawdown after hrs.
" ESTIMATED AIRLIFT " "
" " " "

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test gal./min. with ft. drawdown after hrs.
Airtest gal./min. with stem set at ft. for hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes [ ] No [ ]

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
Loam, Dark Brown, Soft	0	3
Cobbles, Boulders, Hard	3	7
Gravel, Boulders, Hard	7	18
Cemented Gravels, Brown, Hard	18	36
Sandstone, Brown, Medium Soft	36	48
Cemented Gravels, Brown, Hard	48	52
Sandstone, Tan, Medium	52	56
Gravels/Sand, Tan/Black, Med. Hard	56	125
Porous Basalt, Black/Red, Hard	125	160

MAY 14 1993

6" Drive Shoe Utilized

Work started 4-28-93 19. Completed 4-29-93 19

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Ponderosa Drilling & Development, Inc.
(PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address E. 6010 Broadway, Spokane, WA 99212

(Signed) (WELL DRILLER) License No. 2060

Contractor's Registration No. PO-ND-EI*248JE (Dave Ricard) Date April 30 19 93

(USE ADDITIONAL SHEETS IF NECESSARY)

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

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

116132

4/86

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

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. 28749

Water Right Permit No. M

(1) OWNER: Name KEN McKENZIE Address Park Creek Rd.

(2) LOCATION OF WELL: County Kittitas NW ¼ SW ¼ Sec 34 T 18 N., R 20 W.M.

(2a) STREET ADDDRESS OF WELL (or nearest address)

(3) PROPOSED USE: [X] Domestic [ ] Industrial [ ] Municipal [ ] Irrigation [ ] Test Well [ ] Other [ ] DeWater

(4) TYPE OF WORK: Owner's number of well (if more than one)
Abandoned [ ] New well [X] Method: Dug [ ] Bored [ ] Deepened [ ] Cable [ ] Driven [ ] Reconditioned [ ] Rotary [X] Jetted [ ]

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled feet. Depth of completed well ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 6 " Diam. from +4 ft. to 120 ft.
Welded [X] Liner installed [ ] Threaded [ ] " Diam. from ft. to ft.
" Diam. from ft. to ft.

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

Screens: Yes [ ] No [ ]
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes [ ] No [ ] Size of gravel
Gravel placed from ft. to ft.

Surface seal: Yes [X] No [ ] To what depth? 20 ft.
Material used in seal Bentonite
Did any strata contain unusable water? Yes [ ] No [ ]
Type of water? Depth of strata
Method of sealing strata off

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

(8) WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level +2 ft. below top of well Date 11-7-90
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

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

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test

Bailer test gal./min. with ft. drawdown after hrs.
Airtest 40 gal./min. with stem set at 155 ft. for 2 hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes [ ] No [ ]

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
DIRT + COBBLES	0	4
HARD PAN + COBBLES	4	12
SANDSTONE + GRAVEL	12	20
CEMENTED GRAVEL	20	80
CEMENTED GRAVEL WITH LAYERS OF BASALT	80	115
MED. BROWN + BLACK BASALT	115	160

RECEIVED
DEC 6 1990
DEPARTMENT OF ECOLOGY
CENTRAL REGION OFFICE

ENTERED
IN COMPUTER

Work started 11-6 19 90 Completed 11-7 19 90

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Bach Drilling (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address RT 5 Box 1010 Ellensburg, WA.

(Signed) Mike Bach (WELL DRILLER) License No. 22

Contractor's Registration No. MIKE BOC 133N4 Date 11-12 19 90

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20 (10/87) -1329- 3

116404

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

WATER WELL REPORT
STATE OF WASHINGTON

Application No. NP
Permit No.

(1) OWNER: Name Lee Orcutt Address

(2) LOCATION OF WELL: County — S ¼ SW ¼ Sec 28 T. 18 N., R 20 W.M.
Bearing and distance from section or subdivision corner

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

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

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 145 ft. Depth of completed well 145 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 6 " Diam. from 0 ft. to 60 ft.
Threaded ☐ " Diam. from ft. to ft.
Welded ☑ " Diam. from ft. to ft.

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

Screens: Yes ☐ No ☑
Manufacturer's Name
Type Model No
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

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

Surface seal: Yes ☑ No ☐ To what depth? 25 ft.
Material used in seal Bentonite
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of strata
Method of sealing strata off

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

(8) WATER LEVELS: Land-surface elevation above mean sea level.... ft.
Static level 30 ft. below top of well Date
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

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

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Baller test 20 gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes ☐ No ☐

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

MATERIAL	FROM	TO
Gravel	0	15
Clay	15	45
Soft Basalt	45	60
Med. Basalt	60	130
Soft Basalt with water	130	145

RECEIVED
DEPARTMENT OF ECOLOGY
CENTRAL REGION OFF...

Work started 4-4 19 87 Completed 4-5 19 87

WELL DRILLER'S STATEMENT:

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

NAME Bach Drilling Co.
(Person, firm, or corporation) (Type or print)

Address Rt. 5, Box 1010, Ellensburg

[Signed] Mike Bach
(Well Driller)

License No. 22 Date 4, 19

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY-050-1-20

255454

WATER WELL REPORT

ECOLOGY Original & 1st copy Ecology 2nd copy owner 3rd copy driller

Construction/Decommission (x in circle) 129289

○ Construction

○ Decommission *ORIGINAL CONSTRUCTION Notice of Intent Number* W 161056

CURRENT Notice of Intent No W 161059

Unique Ecology Well ID Tag No ~~W 161659~~

Water Right Permit No AHK 663

Property Owner Name Tim Bergevin

Well Street Address Clockum Rd

City Ellensburg County Kittitas

Location NE 1/4 1/4 SE 1/4 Sec 18 Twn 18 R 20 (EWM) circle one or WWM

Lat/Long (s t r still REQUIRED) Lat Deg _____ Lat Min/Sec _____

Long Deg _____ Long Min/Sec _____

Tax Parcel No 18-20-18000-0005

PROPOSED USE ☒ Domestic ☐ Industrial ☐ Municipal ☐ DeWater ☐ Irrigation ☐ Test Well ☐ Other _____

TYPE OF WORK Owner s number of well (if more than one) _____

☒ New Well ☐ Reconditioned *Method* ☐ Dug ☐ Bored ☐ Driven ☐ Deepened ☐ Cable ☐ Rotary ☐ Jetted

DIMENSIONS Diameter of well 6 inches drilled 180 ft

Depth of completed well 140 ft

CONSTRUCTION DETAILS

Casing Installed ☒ Welded 6 Diam from +2 ft to 36 ft

☐ Liner installed _____ Diam from _____ ft to _____ ft

☐ Threaded _____ Diam from _____ ft to _____ ft

Perforations ☐ Yes ☒ No

Type of perforator used _____

SIZE of perfs ____ in by ____ in and no of perfs ____ from ____ ft to ____ ft

Screens ☐ Yes ☒ No ☐ K Pac Location _____

Manufacturer s Name _____

Type _____ Model No _____

Diam _____ Slot Size _____ from _____ ft to _____ ft

Diam _____ Slot Size _____ from _____ ft to _____ ft

Gravel/Filter packed ☐ Yes ☐ No ☐ Size of gravel/sand _____

Materials placed from _____ ft to _____ ft

Surface Seal ☒ Yes ☐ No To what depth? 22 ft

Materials used in seal Bentonite

Did any strata contain unusable water? ☐ Yes ☒ No

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

PUMP Manufacturer s Name _____

Type _____ H P _____

WATER LEVELS Land surface elevation above mean sea level _____ ft

Static level 56 ft below top of well Date 3/5/03

Artesian pressure _____ lbs per square inch Date _____

Artesian water is controlled by _____ (cap valve etc)

WELL TESTS Drawdown is amount water level is lowered below static level

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

Yield ____ gal /min with ____ ft drawdown after ____ hrs

Yield ____ gal /min with ____ ft drawdown after ____ hrs

Yield ____ gal /min with ____ ft drawdown after ____ hrs

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____

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

Airtest 12 gal /min with stem set at 140 ft for 4 hrs

Artesian flow _____ g p m Date _____

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

CONSTRUCTION OR DECOMMISSION PROCEDURE

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 one entry for each change of information Indicate all water encountered (USE ADDITIONAL SHEETS IF NECESSARY)

MATERIAL	FROM	TO
Top Soil	0	2
Cemented gravel	2	12
Brown Clay & gravel	12	36
gray Basalt	36	118
Fractured gray Basalt & water	118	124
gray Basalt	124	148
Fractured Basalt & Water	148	165
gray Basalt	165	180

DEPT OF ECOLOGY Received MAR 24 2003 CENTRAL REGION OFFICE

Start Date 3/4/03 Completed Date 3/5/03

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) Mitch Mathews

Driller/Engineer/Trainee Signature Mitch Mathews

Driller or Trainee License No _____

Drilling Company Mathews Drilling

Address 2317 Rd 10.2 NE

City State Zip Moses Lake Wa. 98837

Contractor s Registration No Mathedc117B Date 3/5/03

If trainee, licensed driller s Signature and License no _____

Ecology is an Equal Opportunity Employer ECY 050 1 20 (Rev 4/01)

302310

File Original with Department of Ecology
Second Copy - Owner's Copy
Third Copy - Driller's Copy 101614

WATER WELL REPORT
STATE OF WASHINGTON

Notice of Intent Wo73703
UNIQUE WELL I D # AAC360
Water Right Permit No

(1) OWNER Name GERRY & Katy BRUMMER Address 572-NAVEUM Rd. ELLENSBURG

(2) LOCATION OF WELL County KITTITAS SW 1/4 NE 1/4 Sec 24 T 18 N R 20 E WM

(2a) STREET ADDRESS OF WELL (or nearest address) 100 80 - Lyon Rd. ELLENSBURG, WASH. 98926

TAX PARCEL NO

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

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

(5) DIMENSIONS Diameter of well 6 inches
Drilled 125 feet Depth of completed well 125 ft

(6) CONSTRUCTION DETAILS
Casing Installed
☒ Welded 6 " Diam from -1 ft to 116 ft
☐ Liner installed " Diam from ft to ft
☐ Threaded " Diam from ft to ft

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

Screens ☐ Yes ☐ No ☒ K-Pac Location
Manufacturer's Name
Type Model No
Diam Slot Size from ft to ft
Diam Slot Size from ft to ft

Gravel/Filter packed ☐ Yes ☒ No ☐ Size of gravel/sand
Material placed from ft to ft

Surface seal ☒ Yes ☐ No To what depth? 20 ft
Material used in seal Bentonite
Did any strata contain unusable water? ☐ Yes ☐ No
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP Manufacturer's Name
Type H P

(8) WATER LEVELS Land surface elevation above mean sea level ft
Static level 6 ft below top of well Date 4/30/2001
Artesian pressure lbs per square inch Date
Artesian water is controlled by
(Cap, valve, etc)

(9) WELL TESTS Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☒ No If yes, by whom?
Yield gal /min with ft drawdown after hrs
Yield gal /min with ft drawdown after hrs
Yield gal /min with ft drawdown after hrs
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test 20 gal./min with 13 ft drawdown after 1 hrs
Airtest gal /min with ft drawdown after hrs
Artesian flow g p m Date
Temperature of water Was a chemical analysis made? ☐ Yes ☒ No

(10) WELL LOG 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 one entry for each change of information Indicate all water encountered

MATERIAL	FROM	TO
Top Soil	0	2'
Caliche	2'	11'
Caliche & Rock	11'	23'
Rock	23'	28'
Caliche & Rock	28'	110'
Rock & Caliche	110	125'

DEPT OF ECOLOGY Received AUG 31 2001 CENTRAL REGION OFFICE

Work Started 4/16/2001 Completed 4/29/2001

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 Terry Close License No 701
(Licensed Driller/Engineer)

Trainee Name License No
Drilling Company Close Drilling
(Signed) License No 701
(Licensed Driller/Engineer)
Address PO Box 177 Quincy Wa 98848
Contractor's Registration No CLOSEW*110*JJ Date 4/30/2001
91-13826

(USE ADDITIONAL SHEETS IF NECESSARY)

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

ECY 050-1-20 (11/98)

339772

WATER WELL REPORT

ECOLOGY Original & 1st copy Ecology 2nd copy owner 3rd copy driller

Construction/Decommission (x in circle) 118952
☒ Construction
○ Decommission *ORIGINAL CONSTRUCTION Notice of Intent Number* _____

RECEIVED JUL 05 2002

CURRENT
Notice of Intent No W108671
Unique Ecology Well ID Tag No AFE 106
Water Right Permit No _____
Property Owner Name Larry Dean ABGH
Well Street Address _____
City _____ **County** Kittitas
Location ___1/4 1/4 NE 1/4 Sec 3 Twn 17 R 20 EWM or WWM *circle one*
Lat/Long (s,t r still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____
Tax Parcel No _____

PROPOSED USE ☒ Domestic ☐ Industrial ☐ Municipal ☐ DeWater ☐ Irrigation ☐ Test Well ☐ Other _____

TYPE OF WORK Owner's number of well (if more than one) _____
☒ New Well ☐ Reconditioned *Method* ☐ Dug ☐ Bored ☐ Driven ☐ Deepened ☐ Cable ☒ Rotary ☐ Jetted

DIMENSIONS Diameter of well 6 inches drilled 175 ft
Depth of completed well 175 ft

CONSTRUCTION DETAILS
Casing Installed ☒ Welded 6 Diam from +2 ft to 53 ft
☒ Liner installed 4PVC Diam from 6 ft to 175 ft
☐ Threaded _____ Diam from _____ ft to _____ ft

Perforations ☒ Yes ☐ No
Type of perforator used Skill Saw
SIZE of perfs 1/4 in by 7 in and no of perfs 48 from 155 ft to 175 ft

Screens ☐ Yes ☒ No ☐ K Pac Location _____
Manufacturer's Name _____
Type _____ Model No _____
Diam _____ Slot Size _____ from _____ ft to _____ ft
Diam _____ Slot Size _____ from _____ ft to _____ ft

Gravel/Filter packed ☐ Yes ☒ No ☐ Size of gravel/sand _____
Materials placed from _____ ft to _____ ft

Surface Seal ☒ Yes ☐ No To what depth? 18 ft
Materials used in seal Bentonite
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

PUMP Manufacturer's Name _____
Type _____ H P _____

WATER LEVELS Land surface elevation above mean sea level _____ ft
Static level 85 ft below top of well Date 6/18/02
Artesian pressure _____ lbs per square inch Date _____
Artesian water is controlled by _____ (cap valve etc)

WELL TESTS Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☐ No If yes by whom? _____
Yield _____ gal/min with _____ ft drawdown after _____ hrs
Yield _____ gal/min with _____ ft drawdown after _____ hrs
Yield _____ gal/min with _____ ft drawdown after _____ hrs
Recovery data (time taken as zero when pump turned off)(water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____
Bailer test _____ gal/min with _____ ft drawdown after _____ hrs
Airtest 30 gal/min with stem set at 173 ft for 1 hrs
Artesian flow _____ g p m Date _____
Temperature of water _____ Was a chemical analysis made? ☐ Yes ☒ No

CONSTRUCTION OR DECOMMISSION PROCEDURE
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 one entry for each change of information Indicate all water encountered (USE ADDITIONAL SHEETS IF NECESSARY)

MATERIAL	FROM	TO
Silt & Gravel	0	1
Clay w/gravel	1	5
Cemented Gravel	5	51
Basalt(black) Broken	51	53
Basalt(brown) Visecular	53	95
Basalt(black) Fractured	95	153
Basalt(brown) Fractured W B	153	160
Basalt(black & brown) W B	160	175
6" Drive shoe utilized		

DEPT OF ECOLOGY Received JUL 10 2002 CENTRAL REGION OFFICE

Start Date 6/14/02 Completed Date 6/18/02

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

☒ Driller ☐ Engineer ☐ Trainee Name (Print) Michael Robinson
Driller/Engineer/Trainee Signature Michael Robinson
Driller or Trainee License No 1544

Drilling Company Pratt Bros Well&Pump
Address 2309 S 3rd Ave
City State Zip Yakima, WA 98903
Contractor's Registration No PRATBI033US Date 06/28/02

If trainee, licensed driller's Signature and License no _____

Ecology is an Equal Opportunity Employer ECY 050 1 20 (Rev 4/01)

Jerry 349606

File Original with Department of Ecology
Second Copy Owner's Copy
Third Copy Driller's Copy 125152

WATER WELL REPORT
STATE OF WASHINGTON

Notice of Intent W108970
UNIQUE WELL I D # AFH 899
Water Right Permit No

(1) **OWNER** Name JERRY ALPHIN Address

(2) **LOCATION OF WELL** County KIT SE 1/4 NE 1/4 Sec 3 T 17 N R 20 WM

(2a) **STREET ADDRESS OF WELL** (or nearest address) 01 JAN -8 P1:20

TAX PARCEL NO H

(3) **PROPOSED USE** ☒ Domestic ☐ Industrial ☐ Municipal ☐ Irrigation ☐ Test Well ☐ Other DEPT O ECOLOGY ☐ DeWater FISCAL BUDGET

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

(5) **DIMENSIONS** Diameter of well 6 inches
Drilled 160 feet Depth of completed well 160 ft

(6) **CONSTRUCTION DETAILS**
Casing Installed
☒ Welded 6 Diam from 0 ft to 35 ft
☐ Liner installed Diam from ft to ft
☐ Threaded Diam from ft to ft

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

Screens ☐ Yes ☒ No ☐ K Pac Location
Manufacturer's Name
Type Model No
Diam Slot Size from ft to ft
Diam Slot Size from ft to ft

Gravel/Filter packed ☐ Yes ☒ No ☐ Size of gravel/sand
Material placed from ft to ft

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

(7) **PUMP** Manufacturer's Name
Type H P

(8) **WATER LEVELS** Land surface elevation above mean sea level ft
Static level 90 ft below top of well Date 10-20-2000
Artesian pressure lbs per square inch Date
Artesian water is controlled by
(Cap valve etc)

(9) **WELL TESTS** Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☐ No If yes by whom?
Yield gal /min with ft drawdown after hrs
Yield gal /min with ft drawdown after hrs
Yield gal /min with ft drawdown after hrs
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test gal /min with ft drawdown after hrs
Airtest 6-7 gal /min with ft drawdown after hrs
Artesian flow g p m Date
Temperature of water Was a chemical analysis made? ☐ Yes ☐ No

(10) **WELL LOG 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 one entry for each change of information Indicate all water encountered

MATERIAL	FROM	TO
SOIL & Cemented Gravel	0	15
Soft Brown Basalt	15	35
Med Black Basalt	35	120
Brown Basalt	120	140
Brown Basalt With water	140	160

RECEIVED
JAN 11 2001
DEPARTMENT OF ECOLOGY
WELL DRILLING UNIT

DEPT OF ECOLOGY Received DEC 13 2000 CENTRAL REGION OFFICE

DEPT OF ECOLOGY Received JAN 16 2001 CENTRAL REGION OFFICE

Work Started 10-19-2000 Completed 10-20-2000

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 Bill Bolyard License No 0997
(Licensed Driller/Engineer)

Trainee Name License No
Drilling Company Bach Drilling Co
(Signed) Mike Bach License No 22
(Licensed Driller/Engineer)
Address 3340 Wilson Creek Rd, Ellensburg
Contractors Registration No MIKEBDC133NA Date 10-20-2000

(USE ADDITIONAL SHEETS IF NECESSARY)

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

ECY 050 1 20 (11/98)

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

375922

File Original and First Copy with Department of Ecology
Second Copy — Owner s Copy
Third Copy — Driller s Copy 42995

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No WO58320
UNIQUE WELL I D # ABL 772
Water Right Permit No

OWNER Name Robert Weber Address 3546 Dub-Mar Rd. Loomis Calif. 95650

(2) LOCATION OF WELL County Kittitas SW 1/4 NW 1/4 Sec 28 T 18 N R 20 E WM E

(2a) STREET ADDRESS OF WELL (or nearest address) Corner of Fox and Lyon's Rd Ellensburg

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

(4) TYPE OF WORK Owner s number of well (If more than one)
Abandoned ☐ New well ☒ Deepened ☐ Reconditioned ☐ Method Dug ☐ Cable ☐ Rotary ☒ Bored ☐ Driven ☐ Jetted ☐

(5) DIMENSIONS Diameter of well 6 inches
Drilled 160 feet Depth of completed well 160 ft

(6) CONSTRUCTION DETAILS
Casing installed 6" Diam from +2 ft to 115 ft
Welded ☒ Liner installed ☒ 4 1/2 Diam from -10 ft to 160 ft
Threaded ☐ Diam from ft to ft

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

Screens Yes ☐ No ☒
Manufacturer s Name
Type Model No
Diam Slot size from ft to ft
Diam Slot size from ft to ft

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

Surface seal Yes ☒ No ☐ To what depth? 18 ft
Material used in seal Bentonite
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP Manufacturer s Name
Type HP

(8) WATER LEVELS Land surface elevation above mean sea level ft
Static level 37 ft below top of well Date 3-27-95
Artesian pressure lbs per square inch Date
Artesian water is controlled by (Cap valve etc)

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

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test gal /min with ft drawdown after hrs
Airtest 16 gal /min with stem set at 155 ft for 1 hrs
Artesian flow g p m Date
Temperature of water Was a chemical analysis made? Yes ☐ No ☒

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
Top Soil	0	3
Clay & gravel	3	36
Sandy Clay	36	53
gravel & Clay	53	67
Sandy Clay	67	81
Tightly Cemented gravel	81	94
gravel & Clay	94	114
Basalt	114	138
Fractured Basalt & Water	138	160

RECEIVED
MAY 31 1995
DEPARTMENT OF ECOLOGY
CENTRAL REGION OFFICE

Work Started 3-25 19 Completed 3-27 19 95

WELL CONSTRUCTOR CERTIFICATION

I constructed and/or accept responsibility for construction of this well and its compliance with all Washington well construction standards Materials used and the information reported above are true to my best knowledge and belief

NAME MATHEWS Drilling (PERSON FIRM OR CORPORATION) (TYPE OR PRINT)
Address 9455 Stone Crest Rd. ML.
(Signed) Mathews (WELL DRILLER) License No 1267
Contractor s Registration No MATHEDC117BC Date 19 95

(USE ADDITIONAL SHEETS IF NECESSARY)

ECL 050 1 20 (2/93) 1

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

377332

WATER WELL REPORT

ECOLOGY Original & 1st copy Ecology 2nd copy owner 3rd copy driller

Construction/Decommission (x in circle)
- (X) Construction
- ( ) Decommission *ORIGINAL CONSTRUCTION Notice of Intent Number* 14730

CURRENT
Notice of Intent No W 171224
Unique Ecology Well ID Tag No AKL 606
Water Right Permit No B
Property Owner Name Tom McCosh
Well Street Address Park Creek Rd
City Kittitas County Kittitas
Location NW 1/4 1/4 NE 1/4 Sec 03 Twn 17 R 20 EWM or WWM (circle one)
Lat/Long (s,t r still REQUIRED) Lat Deg ____ Lat Min/Sec ____ Long Deg ____ Long Min/Sec ____
Tax Parcel No 17-20-0351-0004

PROPOSED USE (X) Domestic ( ) Industrial ( ) Municipal ( ) DeWater ( ) Irrigation ( ) Test Well ( ) Other

TYPE OF WORK Owner's number of well (if more than one) ____
(X) New Well ( ) Reconditioned *Method* ( ) Dug ( ) Bored ( ) Driven ( ) Deepened ( ) Cable (X) Rotary ( ) Jetted

DIMENSIONS Diameter of well 10 inches drilled 85 ft
Depth of completed well 85 ft

CONSTRUCTION DETAILS
Casing Installed (X) Welded 6 Diam from +2 ft to 64 ft
( ) Liner installed ____ Diam from ____ ft to ____ ft
( ) Threaded ____ Diam from ____ ft to ____ ft

Perforations ( ) Yes (X) No
Type of perforator used ____
SIZE of perfs ____ in by ____ in and no of perfs ____ from ____ ft to ____ ft

Screens ( ) Yes (X) No ( ) K Pac Location ____
Manufacturer's Name ____
Type ____ Model No ____
Diam ____ Slot Size ____ from ____ ft to ____ ft
Diam ____ Slot Size ____ from ____ ft to ____ ft

Gravel/Filter packed ( ) Yes (X) No ( ) Size of gravel/sand ____
Materials placed from ____ ft to ____ ft

Surface Seal (X) Yes ( ) No To what depth? 18 ft
Materials used in seal Bentonite
Did any strata contain unusable water? ( ) Yes ( ) No
Type of water? ____ Depth of strata ____
Method of sealing strata off ____

PUMP Manufacturer's Name ____
Type ____ H P ____

WATER LEVELS Land surface elevation above mean sea level ____ ft
Static level 15 ft below top of well Date 2-18-04
Artesian pressure ____ lbs per square inch Date ____
Artesian water is controlled by ____ (cap valve etc)

WELL TESTS Drawdown is amount water level is lowered below static level
Was a pump test made? ( ) Yes ( ) No If yes by whom? ____
Yield ____ gal/min with ____ ft drawdown after ____ hrs
Yield ____ gal/min with ____ ft drawdown after ____ hrs
Yield ____ gal/min with ____ ft drawdown after ____ hrs
Recovery data (time taken as zero when pump turned off)(water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test ____
Bailer test ____ gal/min with ____ ft drawdown after ____ hrs
Airtest 60 gal/min with stem set at 80 ft for 1 hrs
Artesian flow ____ g p m Date ____
Temperature of water ____ Was a chemical analysis made? ( ) Yes ( ) No

CONSTRUCTION OR DECOMMISSION PROCEDURE
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 one entry for each change of information Indicate all water encountered (USE ADDITIONAL SHEETS IF NECESSARY)

MATERIAL	FROM	TO
Top Soil	0	2
Cemented Gravel	2	34
Basalt Black + Brown	34	52
Broken Pouris, + Clay		
Basalt - Brown Broken	52	60
Basalt Black Broken	60	66
Basalt Black + Brown Pouris	66	80
Basalt Black Pouris	80	85

DEPT OF ECOLOGY Received APR 0 6 2004 CENTRAL REGIONAL OFFICE

Start Date 2-18-04 Completed Date 2-18-04

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

(X) Driller ( ) Engineer ( ) Trainee Name (Print) Gary Lydin
Driller/Engineer/Trainee Signature Gary Lydin
Driller or Trainee License No 1023

Drilling Company Apple Valley Well Drilling
Address PO Box 55
City State Zip Selah Wa
Contractor's Registration No Applevawdrl Date 2-24-04

If trainee, licensed driller's Signature and License no ____

Ecology is an Equal Opportunity Employer ECY 050 1 20 (Rev 4/01)

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

436890

WATER WELL REPORT

ECOLOGY Original & 1st copy - Ecology, 2nd copy - owner, 3rd copy - driller

Construction/Decommission *("x" in circle)*

(x) Construction

( ) Decommission *ORIGINAL CONSTRUCTION Notice of Intent Number* 193100

CURRENT Notice of Intent No. W208268

Unique Ecology Well ID Tag No. ALE 956

Water Right Permit No. _____

Property Owner Name James Kelly J

Well Street Address 9741 Parke Creek Road

City Ellensburg County: Kittitas

Location NE 1/4 - 1/4 SE 1/4 Sec 33 Twn 16N R 20 (EWM) or WWM *circle one*

Lat/Long: (s,t,r still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

Tax Parcel No. 16-20-33040-0028

PROPOSED USE: (x) Domestic ( ) Industrial ( ) Municipal ( ) DeWater ( ) Irrigation ( ) Test Well ( ) Other _____

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

(x) New Well ( ) Reconditioned *Method:* ( ) Dug ( ) Bored ( ) Driven ( ) Deepened ( ) Cable (x) Rotary ( ) Jetted

DIMENSIONS: Diameter of well 6 inches, drilled 160 ft. Depth of completed well 160 ft.

CONSTRUCTION DETAILS

Casing (x) Welded 6" Diam. from +3 ft. to 65 ft.

Installed: (x) Liner installed 4" Diam. from -5 ft. to 160 ft.

( ) Threaded _____" Diam. from _____ ft. to _____ ft.

Perforations: (x) Yes ( ) No

Type of perforator used Skilsaw

SIZE of perfs 12 in. by 1/4 in. and no. of perfs 360 from 60 ft. to 160 ft.

Screens: ( ) Yes (x) No ( ) K-Pac Location _____

Manufacturer's Name _____

Type _____ Model No. _____

Diam. _____ Slot Size _____ from _____ ft. to _____ ft.

Diam. _____ Slot Size _____ from _____ ft. to _____ ft.

Gravel/Filter packed: ( ) Yes (x) No ( ) Size of gravel/sand _____

Materials placed from _____ ft. to _____ ft.

Surface Seal: (x) Yes ( ) No To what depth? 20 ft

Materials used in seal Bentonite

Did any strata contain unusable water? ( ) Yes (x) No

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

PUMP: Manufacturer's Name _____

Type: _____ H.P. _____

WATER LEVELS: Land-surface elevation above mean sea level _____ ft.

Static level 73 ft. below top of well Date 4/4/06

Artesian pressure _____ lbs. per square inch Date _____

Artesian water is controlled by _____ (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level.

Was a pump test made? ( ) Yes (x) No If yes, by whom? _____

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____

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

Airtest 15-18 gal./min. with stem set at 140 ft. for 2½ hrs.

Artesian flow _____ g.p.m. Date _____

Temperature of water _____ Was a chemical analysis made? ( ) Yes (x) No

CONSTRUCTION OR DECOMMISSION PROCEDURE

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 one entry for each change of information. Indicate all water encountered. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
top soil	0	5
gravel	5	50
Clay	50	55
gravel	55	60
Rock	60	100
gravel	100	115
rock	115	145
broken rock	145	160

DEPT. OF ECOLOGY Received APR 14 2006 CENTRAL REGION OFFICE

Start Date 4/3/06 Completed Date 4/4/06

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.

(x) Driller ( ) Engineer ( ) Trainee Name (Print) Jeremy Bach

Drilling Company Bach Drilling

Driller/Engineer/Trainee Signature _____

Address 3340 Wilson Creek

Driller or Trainee License No. # 2536

City, State, Zip Ellensburg WA 98926

Contractor's Registration No. BACHDB*133KZ Date 4/4/06

If trainee, licensed driller's Signature and License no. _____

Ecology is an Equal Opportunity Employer. ECY 050-1-20 (Rev 4/01)

638140

368409

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. W089878
Unique Well I.D. # ACP594
Water Right Permit No.

(1) OWNER: Name **BOWERS, RON** Address **205 SOUTH SAMPSON ELLENSBURG, WA 98926-**

(2) LOCATION OF WELL: County **KITTITAS** - 1/4 **SW** 1/4 Sec **34** T **18** N., R **20E** WM
(2a) STREET ADDRESS OF WELL (or nearest address) ,

(3) PROPOSED USE: **DOMESTIC**

(4) TYPE OF WORK: Owner's Number of well (If more than one)
NEW WELL Method: **ROTARY**

(5) DIMENSIONS: Diameter of well **6** inches
Drilled **140** ft. Depth of completed well **140** ft.

(6) CONSTRUCTION DETAILS:
Casing installed: **6** " Dia. from **+2** ft. to **80** ft.
LINER **4** " Dia. from **-10** ft. to **140** ft.
" Dia. from ft. to ft.

Perforations: **YES**
Type of perforator used **SKILL SAW**
SIZE of perforations **1/8** in. by **6** in.
40 perforations from **120** ft. to **140** ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: **NO**
Manufacturer's Name
Type Model No.
Diam. slot size from ft. to ft.
Diam. slot size from ft. to ft.

Gravel packed: **NO** Size of 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

(7) PUMP: Manufacturer's Name
Type **NONE** H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level ... ft.
Static level **70** ft. below top of well Date **04/14/98**
Artesian Pressure lbs. per square inch Date
Artesian water controlled by

(9) WELL TESTS: Drawdown is amount water level is lowered below static level.
Was a pump test made? **NO** If yes, by whom?
Yield: gal./min with ft. drawdown after hrs.

Recovery data
Time Water Level Time Water Level Time Water Level

Date of test / /
Bailer test gal/min. ft. drawdown after hrs.
Air test **20+** gal/min. w/ stem set at **140** ft. for **1** hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? **NO**

(10) WELL LOG C,D,E,F

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.

MATERIAL	FROM	TO
CLAY BROWN	**0**	**1**
CEMENTED GRAVEL COBBLES	**1**	
------- BROWN CLAY	**1**	**27**
CEMENTED GRAVEL BASALT	**27**	
------- W/LENSES	**27**	**82**
BASALT FRACTURED W/WATER	**82**	**140**

RECEIVED
APR 29 1998

Work started **04/14/98** Completed **04/15/98**

WELL CONSTRUCTOR CERTIFICATION:
I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME **FOGLE PUMP & SUPPLY, INC.**
(Person, firm, or corporation) (Type or print)

ADDRESS **POB 1450, AIRWAY HTS. WA.**

[SIGNED] Todd Lively/me License No. **2321**

Contractor's Registration No. **FOGLEPS095L4** Date **04/21/98**

638142

368411

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. W089871
Unique Well I.D. # ACP575
Water Right Permit No.

(1) OWNER: Name **MARCHEL, CHRIS** Address **9120 PARK CREEK ROAD ELLENSBURG, WA 98926-**

(2) LOCATION OF WELL: County **KITTITAS** - W 1/2 SW 1/4 Sec **34** T **18** N., R **20** WM
(2a) STREET ADDRESS OF WELL (or nearest address) ,

(3) PROPOSED USE: **DOMESTIC**

(4) TYPE OF WORK: Owner's Number of well (If more than one)
NEW WELL Method: **ROTARY**

(5) DIMENSIONS: Diameter of well **6** inches
Drilled **160** ft. Depth of completed well **160** ft.

(6) CONSTRUCTION DETAILS:
Casing installed: **6** " Dia. from **+2** ft. to **113** ft.
WELDED " Dia. from ft. to ft.
" Dia. from ft. to ft.

Perforations: **NO**
Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: **NO**
Manufacturer's Name
Type Model No.
Diam. slot size from ft. to ft.
Diam. slot size from ft. to ft.

Gravel packed: **NO** Size of 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

(7) PUMP: Manufacturer's Name
Type **NONE** H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level ... ft.
Static level **70** ft. below top of well Date **04/14/98**
Artesian Pressure lbs. per square inch Date
Artesian water controlled by

(9) WELL TESTS: Drawdown is amount water level is lowered below static level.
Was a pump test made? **NO** If yes, by whom?
Yield: gal./min with ft. drawdown after hrs.

Recovery data
Time Water Level Time Water Level Time Water Level

Date of test / /
Bailer test gal/min. ft. drawdown after hrs.
Air test **30** gal/min. w/ stem set at **160** ft. for **1** hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? **NO**

(10) WELL LOG M, N

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.

MATERIAL	FROM	TO
CLAY BROWN	0	2
GRAVEL CEMENTED	2	58
BASALT BROKEN MEDIUM	58	64
CEMENTED GRAVEL BASALT	64	
------- W/WATER	64	91
BASALT FRACTURED MEDIUM	91	
------- W/WATER	91	127
BASALT BLACK MEDIUM	127	152
BASALT FRACTURED BROWN	152	
------- BLACK W/WATER	152	160

RECEIVED
APR 29 1998

Work started **04/13/98** Completed **04/14/98**

WELL CONSTRUCTOR CERTIFICATION:
I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME **FOGLE PUMP & SUPPLY, INC.**
(Person, firm, or corporation) (Type or print)

ADDRESS **POB 1450, AIRWAY HTS. WA.**

[SIGNED] Todd Lively/mo License No. **2321**

Contractor's
Registration No. **FOGLEPSO95L4** Date **04/21/98**

113629

3254

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

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. 36742

Water Right Permit No. _____

(1) OWNER: Name CAROLYN LOUISE Address STEVENS Rd, E of KITTITAS Wn.

(2) LOCATION OF WELL: County KITTITAS NW ¼ ¼ Sec. 10 T. 17 N., R. 20 W.M.

(2a) STREET ADDDRESS OF WELL (or nearest address) _____

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

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

(5) DIMENSIONS: Diameter of well 6 inches. Drilled 144 feet. Depth of completed well 144 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 6 " Diam. from +2 ft. to 103 ft.
Welded ☒ Liner installed ☐ Threaded ☐ " Diam. from _____ ft. to _____ ft.
" Diam. from _____ ft. to _____ ft.

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

Screens: Yes ☐ No ☒
Manufacturer's Name _____
Type _____ Model No. _____
Diam. _____ Slot size _____ from _____ ft. to _____ ft.
Diam. _____ Slot size _____ from _____ ft. to _____ ft.

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

Surface seal: Yes ☒ No ☐ To what depth? 18± ft.
Material used in seal _____
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

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

(8) WATER LEVELS: Land-surface elevation above mean sea level _____ ft.
Static level 47 ft. below top of well Date 9-14-90
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (Cap, valve, etc.))

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

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

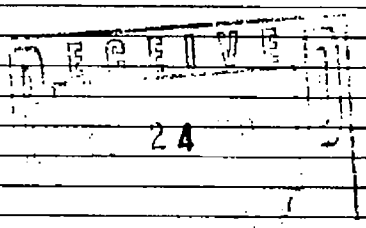
Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____
Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Airtest 15-100 gal./min. with stem set at _____ ft. for _____ hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water _____ Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL		FROM	TO
TOP SOIL	S	0	1
SAND CLAY & SHALE	m	1	15
CLAY GRAVEL	m	15	20
SANDSTONE & CLAY	m	20	35
SANDSTONE & CLAY SHALE	H	35	81
GREEN & YELLOW SANDSTONE	H	81	97
FINE SAND	S	97	105
POROUS FRACTURED BASALT	VH	105	133
BLACK BASALT	VH	133	136
FRACTURED BASALT	VH	136	144



Work started 9-11-90, 19. Completed 9-14-90, 19

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME RIEBE WELL DRILLING (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address PO BOX 10866 YAK WA.

(Signed) J Riebe (WELL DRILLER) License No. 0422

Contractor's Registration No. 132K1 Date 9-18-90 19

(USE ADDITIONAL SHEETS IF NECESSARY)

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

255418

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

WATER WELL REPORT

STATE OF WASHINGTON

Notice of Intent W114643
UNIQUE WELL I.D. # AEQ 840
Water Right Permit No. _____

(1) **OWNER:** Name Denney Grenihger Address 3100 Boylston Rd Ellensburg W.

(2) **LOCATION OF WELL:** County Kittitas NW 1/4 NW 1/4 Sec 22 T 17 N.R. 20E WM

(2a) **STREET ADDRESS OF WELL:** (or nearest address) Boylston RD

TAX PARCEL NO.: _____ D

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

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

(5) **DIMENSIONS:** Diameter of well 6 inches
Drilled 200 feet. Depth of completed well 200 ft.

(6) **CONSTRUCTION DETAILS**
Casing Installed:
☒ Welded 6 " Diam. from +2 ft. to 22 ft.
☒ Liner installed 5 " Diam. from +3 ft. to 177 ft.
☐ Threaded _____ " Diam. from _____ ft. to _____ ft.

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

Screens: ☐ Yes ☒ No ☐ K-Pac Location _____
Manufacturer's Name _____
Type _____ Model No. _____
Diam. _____ Slot Size _____ from _____ ft. to _____ ft.
Diam. _____ Slot Size _____ from _____ ft. to _____ ft.

Gravel/Filter packed: ☐ Yes ☒ No ☐ Size of gravel/sand _____
Material placed from _____ ft. to _____ ft.

Surface seal: ☒ Yes ☐ No To what depth? 20 ft.
Material used in seal Bentonite
Did any strata contain unusable water? ☐ Yes ☐ No
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

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

(8) **WATER LEVELS:** Land-surface elevation above mean sea level _____ ft.
Static level 158 ft. below top of well Date 10/18
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (Cap, valve, etc.)

(9) **WELL TESTS:** Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☐ No If yes, by whom? _____
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____
Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Airtest 12 gal./min. with 0 ft. drawdown after 2 hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water _____ Was a chemical analysis made? ☐ Yes ☒ No

(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 one entry for each change of information. Indicate all water encountered.

MATERIAL	FROM	TO
Top Soil	0	1
Pourous Brown Basalt	1	175
Fractured Brown Basalt Water	175	200

RECEIVED NOV 2 1999 DEPT OF ECOLOGY CENTRAL REGIONAL OFFICE

Work Started 10/14 99 Completed 10/18 99

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 Mitch Mathews License No. 1267
(Licensed Driller/Engineer)

Trainee Name _____ License No. _____
Drilling Company Mathews Drilling
(Signed) _____ License No. _____
(Licensed Driller/Engineer)
Address 2317 RD 10.2 NE Moses Lake
Contractor's Registration No. MATHEDC117BC Date 10/21 99

(USE ADDITIONAL SHEETS IF NECESSARY)

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.

ECY 050-1-20 (11/98)

383744

WATER WELL REPORT

ECOLOGY Original & 1st copy - Ecology, 2nd copy - owner, 3rd copy - driller

Construction/Decommission *("x" in circle)* 152768
- ○ Construction
- ○ Decommission *ORIGINAL CONSTRUCTION Notice of Intent Number*_____

CURRENT Notice of Intent No. W149032

Unique Ecology Well ID Tag No. AKL 742

Water Right Permit No. _____

Property Owner Name James Murphy

Well Street Address 1704 Bouston Rd

City ell County: Kittitas

Location SE 1/4- 1/4 SE 1/4 Sec 16 Twn 17 R 20 E WWM *circle one* or WWM

Lat/Long: (s,t,r still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec R

Tax Parcel No. 17201604000009

PROPOSED USE: ☑ Domestic ☐ Industrial ☐ Municipal ☐ DeWater ☐ Irrigation ☐ Test Well ☐ Other_____

TYPE OF WORK: Owner's number of well (if more than one)_____
☑ New Well ☐ Reconditioned *Method:* ☐ Dug ☐ Bored ☐ Driven ☐ Deepened ☐ Cable ☑ Rotary ☐ Jetted

DIMENSIONS: Diameter of well 6 inches, drilled 164 ft. Depth of completed well 164 ft.

CONSTRUCTION DETAILS
Casing Installed: ☑ Welded 6" Diam. from +2 ft. to 90 ft.
☑ Liner installed 4" Diam. from -20 ft. to 164 ft.
☐ Threaded _____" Diam. from _____ ft. to _____ ft.

Perforations: ☑ Yes ☐ No
Type of perforator used Skil saw
SIZE of perfs 8 in. by 4 in. and no. of perfs 250 from 100 ft. to 164 ft.

Screens: ☐ Yes ☑ No ☐ K-Pac Location_____
Manufacturer's Name_____
Type_____ Model No._____
Diam._____ Slot Size_____ from_____ ft. to_____ ft.
Diam._____ Slot Size_____ from_____ ft. to_____ ft.

Gravel/Filter packed: ☐ Yes ☑ No ☐ Size of gravel/sand_____
Materials placed from_____ ft. to_____ ft.

Surface Seal: ☑ Yes ☐ No To what depth? 25 ft
Materials used in seal Bentonite
Did any strata contain unusable water? ☐ Yes ☐ No
Type of water?_____ Depth of strata_____
Method of sealing strata off_____

PUMP: Manufacturer's Name_____
Type:_____ H.P._____

WATER LEVELS: Land-surface elevation above mean sea level_____ ft.
Static level 60 ft. below top of well Date 7-16-04
Artesian pressure_____ lbs. per square inch Date_____
Artesian water is controlled by_____ (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level.
Was a pump test made? ☐ Yes ☐ No If yes, by whom?_____
Yield:_____ gal./min. with_____ ft. drawdown after_____ hrs.
Yield:_____ gal./min. with_____ ft. drawdown after_____ hrs.
Yield:_____ gal./min. with_____ ft. drawdown after_____ hrs.
Recovery data (time taken as zero when pump turned off)(water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test_____
Bailer test_____ gal./min. with _____ ft. drawdown after_____ hrs.
Airtest 30 gal./min. with stem set at 160 ft. for 2 hrs.
Artesian flow_____ g.p.m. Date_____
Temperature of water_____ Was a chemical analysis made? ☐ Yes ☐ No

CONSTRUCTION OR DECOMMISSION PROCEDURE
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 one entry for each change of information. Indicate all water encountered. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
top soil	0	1
sandstone + Clay	1	67
Brown Black Basalt	67	90
Hard Black Basalt	90	115
med Black Basalt	115	155
Brown Black + Basalt	155	164
water		

DEPT. OF ECOLOGY Received AUG 0 3 2004 CENTRAL REGION OFFICE

Start Date 7-14-04 Completed Date 7-16-04

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) Mike Morefield

Driller/Engineer/Trainee Signature Mike Morefield

Driller or Trainee License No. 2361

Drilling Company Water Man Well Drill Inc

Address P.O. Box 246

City, State, Zip Selah Wa 98942

Contractor's Registration No. WATERWD022DB Date 7/28/04

If trainee, licensed driller's Signature and License no. _____

Ecology is an Equal Opportunity Employer. ECY 050-1-20 (Rev 4/01)

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

386590

WATER WELL REPORT

ECOLOGY Original & 1st copy Ecology 2nd copy owner 3rd copy driller

Construction/Decommission (x in circle)
- ○ Construction
- ○ Decommission *ORIGINAL CONSTRUCTION Notice of Intent Number* 155136

CURRENT
Notice of Intent No W-177168
Unique Ecology Well ID Tag No AKO-140
Water Right Permit No D
Property Owner Name ERIC ANDERSON
Well Street Address 440 LARSEN RD
City ~~Sumner~~ Buckley County KITTITAS
Location NW 1/4 1/4 NW 1/4 Sec 33 Twn 17 R 20 (EWM) or WWM (circle one)
Lat/Long (s t,r still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____
Tax Parcel No 172033020000 7

PROPOSED USE ☒ Domestic ☐ Industrial ☐ Municipal ☐ DeWater ☐ Irrigation ☐ Test Well ☐ Other

TYPE OF WORK Owner s number of well (if more than one)
☒ New Well ☐ Reconditioned *Method* ☐ Dug ☐ Bored ☐ Driven ☐ Deepened ☐ Cable ☒ Rotary ☐ Jetted

DIMENSIONS Diameter of well 6 inches drilled 193 ft
Depth of completed well 193 ft

CONSTRUCTION DETAILS
Casing Installed ☒ Welded 6 Diam from +2 ft to 45 ft
☐ Liner installed _____ Diam from _____ ft to _____ ft
☐ Threaded _____ Diam from _____ ft to _____ ft

Perforations ☒ Yes ☐ No
Type of perforator used SKANSAW
SIZE of perfs 1/4 in by 6 in and no of perfs 80 from 33 ft to ~~193~~ ft

Screens ☐ Yes ☐ No ☐ K Pac Location
Manufacturer s Name
Type Model No
Diam Slot Size from ft to ft
Diam Slot Size from ft to ft

Gravel/Filter packed ☐ Yes ☒ No ☐ Size of gravel/sand
Materials placed from ft to ft

Surface Seal ☒ Yes ☐ No To what depth? 20 ft
Materials used in seal BENTONITE
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? Depth of strata
Method of sealing strata off

PUMP Manufacturer s Name
Type H P

WATER LEVELS Land surface elevation above mean sea level ft
Static level 82 ft below top of well Date 7/20/04
Artesian pressure lbs per square inch Date
Artesian water is controlled by (cap valve etc)

WELL TESTS Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☐ No If yes by whom?
Yield gal /min with ft drawdown after hrs
Yield gal /min with ft drawdown after hrs
Yield gal /min with ft drawdown after hrs
Recovery data (time taken as zero when pump turned off)(water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test gal /min with ft drawdown after hrs
Airtest 60 gal /min with stem set at 190 ft for 2 hrs
Artesian flow g p m Date
Temperature of water Was a chemical analysis made? ☐ Yes ☒ No

CONSTRUCTION OR DECOMMISSION PROCEDURE
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 one entry for each change of information Indicate all water encountered (USE ADDITIONAL SHEETS IF NECESSARY)

MATERIAL	FROM	TO
DIRT	0	2
GRAVEL	2	3
CEMENTED GRAVEL	3	15
BROKEN BASALT-CLAY	15	45
BASALT ROCK+CLAY	45	90
BLACK BASALT	90	150
BROWN BASALT	150	170
BROWN BASALT BLACK BASALT	170	193
WATER	~~193~~	

RECEIVED SEP - 8 2004 DEPARTMENT OF ECOLOGY WELL TAG UNIT

DEPT OF ECOLOGY Received SEP 22 2004 CENTRAL REGION OFFICE

Start Date 7/18/04 Completed Date 7/20/04

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) Orange Williams
Driller/Engineer/Trainee Signature
Driller or Trainee License No 2928

Drilling Company Hoddel Bros
Address P.O. BOX 993
City State Zip SUMNER WA 98352
Contractor s Registration No HODDEBB003 Date 7/20/04

If trainee, licensed driller s Signature and License no

Ecology is an Equal Opportunity Employer ECY 050 1 20 (Rev 4/01)

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

404273

Please print, sign and return to the Department of Ecology

Water Well Report

Original – Ecology, 1st copy – owner, 2nd copy – driller

Construction/Decommission

☐ Construction

☐ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* 168926

Current Notice of Intent No. W170982

Unique Ecology Well ID Tag No. AKL 787 N

Water Right Permit No. _____

Property Owner Name Randy Fisher / Gay Brennan

Well Street Address 430 Barr rd.

City Ell County Kittitas

Location SW 1/4-1/4 SW 1/4 Sec 28 Twn 17 R 20 EWM ☐ or WWM ☐ circle one

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

Tax Parcel No. 17 20 28 000 0004

PROPOSED USE: ☑ Domestic ☐ Industrial ☐ Municipal ☐ DeWater ☐ Irrigation ☐ Test Well ☐ Other _____

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

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

DIMENSIONS: Diameter of well 6 inches, drilled 185 ft. Depth of completed well 185 ft.

CONSTRUCTION DETAILS

Casing Installed: ☑ Welded 6 " Diam. from +2 ft. to 145 ft. ☐ Liner installed _____ " Diam. from _____ ft. to _____ ft. ☐ Threaded _____ " Diam. from _____ ft. to _____ ft.

Perforations: ☐ Yes ☑ No

Type of perforator used _____

SIZE of perfs _____ in. by ____ in. and no. of perfs ____ from ____ ft. to ____ ft.

Screens: ☐ Yes ☑ No ☐ K-Pac Location _____

Manufacturer's Name _____

Type _____ Model No. _____

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel/Filter packed: ☐ Yes ☐ No ☐ Size of gravel/sand _____

Materials placed from _____ ft. to _____ ft.

Surface Seal: ☑ Yes ☐ No To what depth? 23 ft.

Material used in seal Bentonite

Did any strata contain unusable water? ☐ Yes ☐ No

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

PUMP: Manufacturer's Name _____

Type: _____ H.P. _____

WATER LEVELS: Land-surface elevation above mean sea level _____ ft.

Static level 90 ft. below top of well Date 3-14-05

Artesian pressure _____ lbs. per square inch Date _____

Artesian water is controlled by _____ (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level

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

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____

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

Airtest 45 gal./min with stem set at 180 ft. for 2½ hrs.

Artesian flow _____ g.p.m. Date _____

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

CONSTRUCTION OR DECOMMISSION PROCEDURE

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 one entry for each change of information indicate all water encountered. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
Top Soil	0	5
Brown cobles m	5	14
Tan & Brown sandstone & clay	14	65
Brown Broken Rock	65	105
Black Brown Broken Rock	105	145
Tan Shall & sandstone	145	160
Tan gray sandstone water	160	185

DEPT. OF ECOLOGY Received MAR 23 2005 CENTRAL REGION OFFICE

Start Date 3-10-05 Completed Date 3-14-05

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) Mike Morefield

Driller/Engineer/Trainee Signature Mike Morefield

Driller or trainee License No. 2361

If TRAINEE.

Driller's Licensed No. _____

Driller's Signature _____

Drilling Company Water Man Well Drilling Inc

Address P.O. Box 246

City, State, Zip Selah Wa 98942

Contractor's Registration No. WATERWD022DB Date 3/15/05

Ecology is an Equal Opportunity Employer. ECY 050-1-20 (Rev 2/03)

413014

WATER WELL REPORT

ECOLOGY Original & 1st copy - Ecology, 2nd copy - owner, 3rd copy - driller

Construction/Decommission *("x" in circle)*

○ Construction 176389

○ Decommission *ORIGINAL CONSTRUCTION Notice of Intent Number*

CURRENT Notice of Intent No. W 170994

Unique Ecology Well ID Tag No. ALF358

Water Right Permit No.

Property Owner Name Charlie Lunn

Well Street Address 1362 Sunset rd

City ell. County: Kittitas

Location SW 1/4- 1/4 SW 1/4 Sec 02 Twn 17 R 20 EWM or WWM *circle one*

Lat/Long: (s,t,r still REQUIRED) Lat Deg ____ Lat Min/Sec ____ Long Deg ____ Long Min/Sec ____

Tax Parcel No. 17 20 02 000 0014

PROPOSED USE: ☑ Domestic ☐ Industrial ☐ Municipal ☐ DeWater ☐ Irrigation ☐ Test Well ☐ Other

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

☑ New Well ☐ Reconditioned *Method:* ☐ Dug ☐ Bored ☐ Driven ☐ Deepened ☐ Cable ☑ Rotary ☐ Jetted

DIMENSIONS: Diameter of well 6 inches, drilled 140 ft. Depth of completed well 140 ft.

CONSTRUCTION DETAILS

Casing Installed: ☑ Welded 6" Diam. from +2 ft. to 27 ft.

☑ Liner installed 4" Diam. from -8 ft. to 140 ft.

☐ Threaded ____" Diam. from ____ ft. to ____ ft.

Perforations: ☑ Yes ☐ No

Type of perforator used Sk. 1 saw

SIZE of perfs 7 in. by 1/4 in. and no. of perfs 300 from 100 ft. to 140 ft.

Screens: ☐ Yes ☑ No ☐ K-Pac Location

Manufacturer's Name

Type Model No.

Diam. Slot Size from ft. to ft.

Diam. Slot Size from ft. to ft.

Gravel/Filter packed: ☐ Yes ☑ No ☐ Size of gravel/sand

Materials placed from ft. to ft.

Surface Seal: ☑ Yes ☐ No To what depth? 27 ft

Materials used in seal Bentonite

Did any strata contain unusable water? ☐ Yes ☐ No

Type of water? Depth of strata

Method of sealing strata off

PUMP: Manufacturer's Name

Type: H.P.

WATER LEVELS: Land-surface elevation above mean sea level ft.

Static level 40 ft. below top of well Date 6-28-05

Artesian pressure lbs. per square inch Date

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

WELL TESTS: Drawdown is amount water level is lowered below static level.

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

Yield: gal./min. with ft. drawdown after hrs.

Yield: gal./min. with ft. drawdown after hrs.

Yield: gal./min. with ft. drawdown after hrs.

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test

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

Airtest 50 gal./min. with stem set at 139 ft. for 2-5 hrs.

Artesian flow g.p.m. Date

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

CONSTRUCTION OR DECOMMISSION PROCEDURE

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 one entry for each change of information. Indicate all water encountered. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
top Soil	0	3
Brown Rock Hard	3	15
Brown Black Basalt Hard	15	65
Black Basalt Hard	65	125
Brown Brouke Basalt water	125	140

DEPT OF ECOLOGY Received JUL 08 2005 CENTRAL REGION OFFICE

Start Date 6-27-05 Completed Date 6-28-05

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) Mike Morefield

Driller/Engineer/Trainee Signature Mike Morefield

Driller or Trainee License No. 2361

Drilling Company Waterman well Drilling Inc

Address P.O. Box 296

City, State, Zip Selah Wa 98942

Contractor's Registration No. WATERWD022DB Date 6/30/05

If trainee, licensed driller's Signature and License no.

Ecology is an Equal Opportunity Employer. ECY 050-1-20 (Rev 4/01).

450562

Please print, sign and return to the Department of Ecology

Water Well Report

Original – Ecology, 1st copy – owner, 2nd copy – driller

Construction/Decommission 203243

☐ Construction

☐ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

Current Notice of Intent No. W241927

Unique Ecology Well ID Tag No. AKH 973

Water Right Permit No. _____

Property Owner Name Gary Randleman

Well Street Address Bowston Rd

City Ell. County Kittitas

Location NE 1/4-1/4 NE 1/4 Sec 21 Twn 17 R 20 EWM or WWM ☐ circle one

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

Tax Parcel No. 17202101000006 A

PROPOSED USE: ☑ Domestic ☐ Industrial ☐ Municipal ☐ DeWater ☐ Irrigation ☐ Test Well ☐ Other _____

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

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

DIMENSIONS: Diameter of well 6 inches, drilled 185 ft. Depth of completed well 185 ft.

CONSTRUCTION DETAILS

Casing Installed: ☑ Welded 6" Diam. from +2 ft. to 43 ft.; ☐ Liner installed _____" Diam. from _____ ft. to _____ ft.; ☐ Threaded _____" Diam. from _____ ft. to _____ ft.

Perforations: ☐ Yes ☑ No

Type of perforator used _____

SIZE of perfs _____ in. by ____ in. and no. of perfs _____ from _____ ft. to _____ ft.

Screens: ☐ Yes ☑ No ☐ K-Pac Location _____

Manufacturer's Name _____

Type _____ Model No. _____

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel/Filter packed: ☐ Yes ☑ No ☐ Size of gravel/sand _____

Materials placed from _____ ft. to _____ ft.

Surface Seal: ☑ Yes ☐ No To what depth? 38 ft.

Material used in seal Bentonite

Did any strata contain unusable water? ☐ Yes ☑ No

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

PUMP: Manufacturer's Name _____

Type: _____ H.P. _____

WATER LEVELS: Land-surface elevation above mean sea level _____ ft.

Static level 105 ft. below top of well Date 5-19-06

Artesian pressure _____ lbs. per square inch Date _____

Artesian water is controlled by _____ (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level

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

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____

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

Airtest 20 gal./min. with stem set at 180 ft. for 2 hrs.

Artesian flow _____ g.p.m. Date _____

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

CONSTRUCTION OR DECOMMISSION PROCEDURE

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 one entry for each change of information indicate all water encountered. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
Top Soil	0	2
Sandstone & Clay	2	15
Browken Black Rock	15	19
gray Clay	19	38
Black Basalt Hard	38	65
Black Basalt Mx	65	125
Black Basalt Hard	125	165
Brecoken Black Basalt water	165	170
Hard Black Basalt	170	185
pump 15. gal		
clint sadd No PVC		

DEPT OF ECOLOGY Received JUN 08 2006 CENTRAL REGION OFFICE

Start Date 5-18-06 Completed Date 5-19-06

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) Mike Morefield

Driller/Engineer/Trainee Signature Mike Morefield

Driller or trainee License No. 2361

Drilling Company Water Man Well Drilling

Address P.O. Box 244

City, State, Zip Selah WA 98942

Contractor's Registration No. WATERW002218B Date 5/23/06

If TRAINEE,

Driller's Licensed No. _____

Driller's Signature _____

Ecology is an Equal Opportunity Employer. ECY 050-1-20 (Rev 2/03)

525 858

WATER WELL REPORT

Original & 1st copy – Ecology, 2nd copy – owner, 3rd copy – driller

Construction/Decommission *("x" in circle)*

○ Construction

● Decommission *ORIGINAL INSTALLATION Notice of Intent Number* W254755

A = 296299
W = 296300

CURRENT Notice of Intent No. A 087251 W254755

Unique Ecology Well ID Tag No. _____

Water Right Permit No. _____

Property Owner Name Chris Beeman

Well Street Address 172 Beaverpond

City Ellensburg County Kittitas

Location NE 1/4-1/4 SW 1/4 Sec 28 Twn 17 R 20 (EWM or WWM) circle one

Lat/Long (s, t, r Still **REQUIRED**) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

Tax Parcel No. 17-20-28-051-00202

PROPOSED USE: ■ Domestic ☐ Industrial ☐ Municipal ☐ DeWater ☐ Irrigation ☐ Test Well ☐ Other _____

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

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

DIMENSIONS: Diameter of well 6 inches, drilled 80 ft. Depth of completed well 80 ft.

CONSTRUCTION DETAILS

Casing Installed: ■ Welded 6 " Diam. from +2 ft. to 80 ft. ☐ Liner installed _____ " Diam. from _____ ft. to _____ ft. ☐ Threaded _____ " Diam. from _____ ft. to _____ ft.

Perforations: ☐ Yes ■ No

Type of perforator used _____

SIZE of perfs _____ in. by _____ in. and no. of perfs _____ from _____ ft. to _____ ft.

Screens: ☐ Yes ■ No ☐ K-Pac Location _____

Manufacturer's Name _____

Type _____ Model No. _____

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel/Filter packed: ☐ Yes ■ No ☐ Size of gravel/sand _____

Materials placed from _____ ft. to _____ ft.

Surface Seal: ■ Yes ☐ No To what depth? 20 ft.

Material used in seal Cement / Bentonite

Did any strata contain unusable water? ☐ Yes ■ No

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

PUMP: Manufacturer's Name _____

Type: _____ H.P. _____

WATER LEVELS: Land-surface elevation above mean sea level _____ ft.

Static level _____ ft. below top of well Date _____

Artesian pressure _____ lbs. per square inch Date _____

Artesian water is controlled by _____ (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level

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

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____

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

Airtest _____ gal./min. with stem set at _____ ft. for _____ hrs.

Artesian flow _____ g.p.m. Date _____

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

CONSTRUCTION OR DECOMMISSION PROCEDURE

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 one entry for each change of information. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
WAC 173-160-381		
casing was pulled out	80 ft	
filled with slurry		
topsoil	0	2
sandstone/clay	2	35
gravel	35	80

Received DEPT OF ECOLOGY APR 09 2008 CENTRAL REGION OFFICE

Start Date 3/17/08 Completed Date 3/19/08

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) Jeremy Beach

Driller/Engineer/Trainee Signature _____

Driller or trainee License No. 2536

Drilling Company Beach Well Drilling

Address 3340 Wilson Creek

City, State, Zip Ellensburg WA 98926

Contractor's Registration No. BEACHWD945DG 3/19/08

If TRAINEE, Driller's Licensed No. _____

Driller's Signature _____

Ecology is an Equal Opportunity Employer.

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

536768

WATER WELL REPORT

STATE OF WASHINGTON

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

Start Card No. W089688
UNIQUE WELL I.D. # ACL 918
Water Right Permit No.

OWNER: Name Dorothy Spratlen Address 300 Barnard Ell. Wa 98926

(2) LOCATION OF WELL: County Kittitas S1/2 1/4 SW 1/4 Sec 28 T. 17 N., R. 20 W.M.

(2a) STREET ADDRESS OF WELL (or nearest address) N.P

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

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

(5) DIMENSIONS: Diameter of well 10 X 6 inches. Drilled 184 feet. Depth of completed well 184 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 6" Diam. from +2 ft. to 161 ft.
Welded ☐ Liner installed ☐ Threaded ☐ ____" Diam. from ____ ft. to ____ ft.
____" Diam. from ____ ft. to ____ ft.

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

Screens: Yes ☐ No ☒
Manufacturer's Name
Type ____ Model No.
Diam. ____ Slot size ____ from ____ ft. to ____ ft.
Diam. ____ Slot size ____ from ____ ft. to ____ ft.

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

Surface seal: Yes ☒ No ☐ To what depth? 20 ft.
Material used in seal Bentanite
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? ____ Depth of strata
Method of sealing strata off

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

(8) WATER LEVELS: Land-surface elevation above mean sea level ____ ft.
Static level 73 ft. below top of well Date 5-28-98
Artesian pressure ____ lbs. per square inch Date
Artesian water is controlled by ____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☐ If yes, by whom?
Yield: 20 gal./min. with ____ ft. drawdown after ____ hrs.
" AirLift " "
" " " "

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test ____ gal./min. with ____ ft. drawdown after ____ hrs.
Airtest ____ gal./min. with stem set at ____ ft. for ____ hrs.
Artesian flow ____ g.p.m. Date
Temperature of water ____ Was a chemical analysis made? Yes ☐ No ☒

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL			FROM	TO
Clay	Brown	m	0	4
Sandstone	Brown	m	4	28
cemented gravel	Brown	m	28	51
sandy clay	Brown	m	51	78
cemented gravel with sandstone	Brown	m	78	109
Sandstone	Brown	m	109	116
sandstone	white Brown	m	116	127
clay gravel	Brown	m	127	151
cemented gravel with sandstone	Brown	m	151	184

RECEIVED
MAY 22 1998
DEPARTMENT OF ECOLOGY
CENTRAL REGION OFFICE

Work Started 5-14-98 19. Completed 5-18-98 19

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Waterman Well Drilling Inc (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)
Address 1016 Berriman ln Selah Wa 98942
(Signed) Chris Hamm (WELL DRILLER) License No. 1908
CHRIS HAMM
Contractor's Registration No WATERWD022DB Date 5/20/98

(USE ADDITIONAL SHEETS IF NECESSARY)

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

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

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

APPENDIX B
WIP AREA WELL LOGS

30?

115774

CARD # 016734

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

WATER WELL REPORT
STATE OF WASHINGTON

Application No.
Permit No. J

(1) **OWNER:** Name JIM Mc MINNIHEE Address RT 1 OUT LOOK

(2) **LOCATION OF WELL:** County YAKIMA NE ¼ SE ¼ Sec. 22 T. 10 N., R. 18 W.M.

Bearing and distance from section or subdivision corner PARCEL # 41401

(3) **PROPOSED USE:** Domestic [X] Industrial [ ] Municipal [ ]
Irrigation [ ] Test Well [ ] Other [ ]

(4) **TYPE OF WORK:** Owner's number of well (if more than one)
New well [X] Method: Dug [ ] Bored [ ]
Deepened [ ] Cable [X] Driven [ ]
Reconditioned [ ] Rotary [ ] Jetted [ ]

(5) **DIMENSIONS:** Diameter of well 6 inches.
Drilled 205 ft. Depth of completed well 202 ft.

(6) **CONSTRUCTION DETAILS:**
Casing installed: 6 " Diam. from +1 ft. to 202 ft.
Threaded [ ] " Diam. from ft. to ft.
Welded [X] " Diam. from ft. to ft.

Perforations: Yes [ ] No [X]
Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes [ ] No [X]
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes [ ] No [X] Size of gravel:
Gravel placed from ft. to ft.

Surface seal: Yes [X] No [ ] To what depth? 20 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 above mean sea level ft.
Static level 22 ft. below top of well Date 12-4
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

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

RECEIVED
DEC 12 1988

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test 12-3-87
Bailer test 24 gal./min. with 40 ft. drawdown after 4 hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes [ ] No [ ]

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

MATERIAL	FROM	TO
sandy soil no water	0	20
sandy soil water	20	25
light Brown sandy clay no water	25	75
conglomerate no water	75	82
light Brown sandy clay water	82	110
light Brown clay no water	110	120
bold colored sand water	120	180
light Brown sand few pieces of small gravel water	180	197
multi colored gravel small amount fine sand water	197	205

Work started 11-16 19 87 Completed 12-4 19 87

WELL DRILLER'S STATEMENT:

ENTERED

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

NAME GENE THOMAS WELL DRILLING
(Person, firm, or corporation) (Type or print)

Address RT 1 Box 1269 GRANGER

[Signed] R. Gene Thomas
(Well Driller)

License No. 0867 Date 12-5 19 87

(USE ADDITIONAL SHEETS IF NECESSARY)

399712

Please print, sign and return to the Department of Ecology

Water Well Report

Original – Ecology, 1st copy – owner, 2nd copy – driller

Construction/Decommission 165681

☒ Construction

☐ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

Current Notice of Intent No. W 164200

Unique Ecology Well ID Tag No. AKJ-544

Water Right Permit No. _____

Property Owner Name John & Judy Hunter

Well Street Address 5241 Lateral B

City Wapato County Yakima

Location NW 1/4-1/4 NW 1/4 Sec 30 Twn 10 R 19 EWM ☒ or WWM ☐ circle one

Lat/Long (s, t, r still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

Tax Parcel No. _____ D

PROPOSED USE: ☐ DeWater ☒ Domestic ☐ Irrigation ☐ Industrial ☐ Test Well ☐ Municipal ☐ Other

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

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

DIMENSIONS: Diameter of well 6 inches, drilled 85 ft. Depth of completed well 85 ft.

CONSTRUCTION DETAILS

Casing Installed: ☒ Welded 6 " Diam. from +1 ft. to 83 ft.

☐ Liner installed _____ " Diam. from _____ ft. to _____ ft.

☐ Threaded _____ " Diam. from _____ ft. to _____ ft.

Perforations: ☐ Yes ☒ No

Type of perforator used _____

SIZE of perfs _____ in. by ____ in. and no. of perfs ____ from ____ ft. to ____ ft.

Screens: ☐ Yes ☒ No ☐ K-Pac Location _____

Manufacturer's Name _____

Type _____ Model No. _____

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel/Filter packed: ☐ Yes ☒ No ☐ Size of gravel/sand _____

Materials placed from _____ ft. to _____ ft.

Surface Seal: ☒ Yes ☐ No To what depth? 20 ft.

Material used in seal Bentonite

Did any strata contain unusable water? ☐ Yes ☒ No

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

PUMP: Manufacturer's Name _____

Type: _____ H.P. _____

WATER LEVELS: Land-surface elevation above mean sea level _____ ft.

Static level 14 ft. below top of well Date 12/10/04

Artesian pressure _____ lbs. per square inch Date _____

Artesian water is controlled by _____ (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level

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

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____

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

Airtest 100 gal./min. with stem set at 84 ft. for 1 hrs.

Artesian flow _____ g.p.m. Date _____

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

CONSTRUCTION OR DECOMMISSION PROCEDURE

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 one entry for each change of information indicate all water encountered. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
Soil	0	8
Sand & gravel	8	15
Sand, grvl & trace h2o	15	35
Clay, sand gravel	35	37
Sand, gravel & h2o	37	45
Clay, sand & gravel	45	47
Sand, gravel & h2o	47	65
Sand, clay, grvl & h2o	65	70
Sand, gravel & h20	70	79
Sand, gravel & clay	79	81
Sand, gravel & H2O	81	85

DEPT. OF ECOLOGY Received JAN 06 2005 CENTRAL REGION OFFICE

DEPT OF ECOLOGY Received FEB 07 2005 CENTRAL REGION OFFICE

Start Date 12/8/04 Completed Date 12/10/04

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) Vernon L Rank

Driller/Engineer/Trainee Signature 854 Vernon L. Rank

Driller or trainee License No. 854

If TRAINEE,

Driller's Licensed No. _____

Driller's Signature _____

Drilling Company Water Wells Drilling

Address 5503 Ahtanum Rd

City, State, Zip Yakima, Wa. 98903

Contractor's Registration No. WaterWD112QB Date 12/10/04

Ecology is an Equal Opportunity Employer. ECY 050-1-20 (Rev 2/03)

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

541751

WATER WELL REPORT

Original & 1st copy – Ecology, 2nd copy – owner, 3rd copy – driller

Construction/Decommission *("x" in circle)*

- [x] Construction 306553
- [ ] Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

PROPOSED USE: [x] Domestic [ ] Industrial [ ] Municipal [ ] DeWater [ ] Irrigation [ ] Test Well [ ] Other _____

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

[x] New well [ ] Reconditioned *Method:* [ ] Dug [ ] Bored [ ] Driven [ ] Deepened [ ] Cable [x] Rotary [ ] Jetted

DIMENSIONS: Diameter of well 6 inches, drilled 91 ft.
Depth of completed well 91 ft.

CONSTRUCTION DETAILS

Casing Installed: [x] Welded 6 " Diam. from +1'6" ft. to 91 ft.
[ ] Liner installed _____ " Diam. from _____ ft. to _____ ft.
[ ] Threaded _____ " Diam. from _____ ft. to _____ ft.

Perforations: [ ] Yes [x] No
Type of perforator used _____
SIZE of perfs _____ in. by _____ in. and no. of perfs _____ from _____ ft. to _____ ft.

Screens: [ ] Yes [x] No [ ] K-Pac Location _____
Manufacturer's Name _____
Type _____ Model No. _____
Diam. _____ Slot size _____ from _____ ft. to _____ ft.
Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel/Filter packed: [ ] Yes [x] No [ ] Size of gravel/sand _____
Materials placed from _____ ft. to _____ ft.

Surface Seal: [x] Yes [ ] No To what depth? 20 ft.
Material used in seal Bentonite Grout
Did any strata contain unusable water? [ ] Yes [x] No
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

PUMP: Manufacturer's Name _____
Type: _____ H.P. _____

WATER LEVELS: Land-surface elevation above mean sea level 795. ft.
Static level 8'6" ft. below top of well Date 7/21/08
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? [ ] Yes [x] No If yes, by whom? _____
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____
Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Airtest 50 gal./min. with stem set at 80 ft. for 2 hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water _____ Was a chemical analysis made? [ ] Yes [x] No

CURRENT
Notice of Intent No. W231265
Unique Ecology Well ID Tag No. BAR 748
Water Right Permit No. _____
Property Owner Name Shane Olney
Well Street Address 9190 Marion Drain Rd
City Toppenish County Yakima
Location SE 1/4-1/4 SE 1/4 Sec 23 Twn 10 R 18 EWM or WWM [x] check one
(Lat/Long (s, t, r Still **REQUIRED**) Lat Deg 46 Lat Min/Sec 20.738
Long Deg -120 Long Min/Sec 31.680
Tax Parcel No. Tribal Allot 519

CONSTRUCTION OR DECOMMISSION PROCEDURE

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 one entry for each change of information. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
Top soil	0	5
Sand & gravel	5	12
Sand	12	16
Gravel & sand	16	20
Gravel, sand, little clay mixed	20	45
Cemented gravel & sand/ loose layers	45	60
Silty clay, little gravel	60	65
Gravel, sand & clay	65	70
Semi cemented sand & gravel	70	81
Sand	81	86
Sand & gravel WB	86	91

RECEIVED JUL 29 2008 DEPARTMENT OF ECOLOGY WELL DRILLING UNIT

RECEIVED AUG 04 2008 DEPARTMENT OF ECOLOGY - CENTRAL REGIONAL OFFICE

Start Date 7/21/08 Completed Date 7/21/08

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.

[x] Driller [ ] Engineer [ ] Trainee Name (Print) Jim Hansen
Driller/Engineer/Trainee Signature Jim Hansen
Driller or trainee License No. 0171

Drilling Company Person Pump & Well Drilling
Address 166 Rimrock Road
City, State, Zip Goldendale, WA 98620

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

Contractor's Registration No. PERSOPW940PQ Date 7/22/08

ECY 050-1-20 (Rev 3/05)

Ecology is an Equal Opportunity Employer.

123069

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

DEPT. OF ECOLOGY Received FEB 2 1999 CENTRAL REGION OFFICE

WATER WELL REPORT
STATE OF WASHINGTON

Start Card No. W105339
UNIQUE WELL I.D. # AEG-096
Water Right Permit No. _____

(1) OWNER: Name Richard Earls Address 2260 Yost Rd., Toppenish

(2) LOCATION OF WELL: County Yakima SW 1/4 SW 1/4 Sec 21 T 10 N.R 19 WM

(2a) STREET ADDRESS OF WELL: (or nearest address) 10821 Ashue Rd. N

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

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

(5) DIMENSIONS: Diameter of well 6 inches
Drilled 80 feet. Depth of completed well 80 ft.

(6) CONSTRUCTION DETAILS
Casing installed:
☒ Welded 6 " Diam. from +1 ft. to 80 ft.
☐ Liner installed _____ " Diam. from _____ ft. to _____ ft.
☐ Threaded _____ " Diam. from _____ ft. to _____ ft.

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

Screens: ☐ Yes ☒ No
Manufacturer's Name _____
Type _____ Model No. _____
Diam. _____ Slot size _____ from _____ ft. to _____ ft.
Diam. _____ Slot size _____ from _____ ft. to _____ ft.

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

Surface seal: ☒ Yes ☐ No To what depth? 20
Material used in seal Bentonite
Did any strata contain unusuable water? ☐ Yes ☒ No
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

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

(8) WATER LEVELS: Land-surface elevation above mean sea level 720 ft.
Static level 7 ft. below top of well Date 11-27-98
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☒ No If yes, by whom? _____
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____
Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Airtest 100 gal./min. with stem set at 80 ft. for 1 hrs.
Artesian flow _____ g.p.m. Date 11-27-98
Temperature of water 57 Was a chemical analysis made? ☐ Yes ☒ No

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION
Formation: Describe by color, character, size of material and structure, and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

MATERIAL	FROM	TO
Topsoil	0	3
Small Gravel & Br.	3	10
Clay & Br. Sand		
Small Gravel & Br.	10	80
Clay & Br. Sand & Water		
(Yakima Nation Permit# 1998-036)		

Work Started 11-27 19 98 Completed 11-27 19 98

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.

NAME OASIS DRILLING (Person, Firm, or Corporation) (Type or Print)
Address 2017 S. 65th Ave Union Gap, WA 98903
(Signed) Jerry L. Rook License No. 1435
Contractor's Registration No. OASISD*072J9 Date 11-30-98

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20 (7/97)

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.

192039

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

WATER WELL REPORT

STATE OF WASHINGTON

Notice of Intent W109377
UNIQUE WELL I.D. # AEG491
Water Right Permit No. Y.I.N. # 1999-050

(1) OWNER: Name John Hale Address 12450 Lat. A Toppenish, Wa. m

(2) LOCATION OF WELL: County Yakima NE 1/4 SE 1/4 Sec 19 T 10 N.R. 19 WM
(2a) STREET ADDRESS OF WELL: (or nearest address) _____
TAX PARCEL NO.: _____

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

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

(5) DIMENSIONS: Diameter of well 6 inches
Drilled 80 feet. Depth of completed well 80 ft.

(6) CONSTRUCTION DETAILS
Casing Installed:
☒ Welded 6" Diam. from +2 ft. to 75 ft.
☐ Liner installed _____" Diam. from _____ ft. to _____ ft.
☐ Threaded _____" Diam. from _____ ft. to _____ ft.

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

Screens: ☐ Yes ☒ No ☐ K-Pac Location _____
Manufacturer's Name _____
Type _____ Model No. _____
Diam. _____ Slot Size _____ from _____ ft. to _____ ft.
Diam. _____ Slot Size _____ from _____ ft. to _____ ft.

Gravel/Filter packed: ☐ Yes ☒ No ☐ Size of gravel/sand _____
Material placed from _____ ft. to _____ ft.

Surface seal: ☒ Yes ☐ No To what depth? 18 ft.
Material used in seal Bentonite Chips
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

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

(8) WATER LEVELS: Land-surface elevation above mean sea level _____ ft.
Static level 9 ft. below top of well Date 6/30/99
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☒ No If yes, by whom? _____
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____
Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Airtest 60 gal./min. with 60 ft. drawdown after 1 hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water _____ Was a chemical analysis made? ☐ Yes ☒ No

(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 one entry for each change of information. Indicate all water encountered.

MATERIAL	FROM	TO
SANDY SOIL & GRVL	0	14
GRVL & SAND BRN	14	44
BRN SAND	44	48
GRVL & SAND	48	51
RED SAND SILT & GRVL WB	51	57
BRN GRVL & SAND WB	57	80

CENTRAL REGION OFFICE DEPT. OF ECOLOGY Received JUL 6 1999

Work Started 6/17/99 Completed 6/30/99

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 Bill Heintz License No. 1825
(Licensed Driller/Engineer)

Trainee Name _____ License No. _____
Drilling Company SIEBE WELL DRILLING
(Signed) _____ License No. 0422
(Licensed Driller/Engineer)
Address P.O. BOX 10806 YAKIMA 98909
Contractor's Registration No. SIEBEW 132KI Date 7/3/99

(USE ADDITIONAL SHEETS IF NECESSARY)

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.

ECY 050-1-20 (11/98)

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

255004

WATER WELL REPORT

STATE OF WASHINGTON

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

Notice of Intent WI13375
UNIQUE WELL I.D. AET 798
Water Right Permit No.

(1) OWNER: Name Camella Vijarro Address Old Goldendale Rd, Toppenish

(2) LOCATION OF WELL: County Yakima SW 1/4 NW 1/4 Sec 30 T 10 N.R. 20 WM

(2a) STREET ADDRESS OF WELL: (or nearest address) Old Goldendale Rd, Toppenish

TAX PARCEL NO.:

(3) PROPOSED USE: [X] Domestic [ ] Industrial [ ] Municipal [ ] Irrigation [ ] Test Well [ ] Other [ ] DeWater

(4) TYPE OF WORK: Owner's number of well (if more than one)
[X] New Well Method: [ ] Deepened [ ] Dug [ ] Bored [ ] Reconditioned [ ] Cable [ ] Driven [ ] Decommission [X] Rotary [ ] Jetted

(5) DIMENSIONS: Diameter of well 6 inches
Drilled 85 feet. Depth of completed well 85 ft.

(6) CONSTRUCTION DETAILS
Casing installed:
[X] Welded 6 " Diam. from +2 ft. to 80 ft.
[ ] Liner installed " Diam. from ft. to ft.
[ ] Threaded " Diam. from ft. to ft.

Perforations: [ ] Yes [X] No
Type of perforator used
SIZE of perforations in. by in.
perforations from ft. to ft.

Screens: [X] Yes [ ] No [X] K-Pac Location 75 ft
Manufacturer's Name stainless steel
Type Model No.
Diam. 5 Slot Size .020 from 80 ft. to 85 ft.
Diam. Slot Size from ft. to ft.

Gravel/Filter packed: [ ] Yes [X] No Size of gravel/sand
Material placed from ft. to ft.

Surface seal: [X] Yes [ ] No To what depth? 20 ft.
Material used in seal Bentonite
Did any strata contain unusable water? [ ] Yes [ ] No
Type of water? Depth of strata
Method of sealing strata off

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

(8) WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level 8 ft. below top of well Date 11-10-99
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? [X] Yes [ ] No If yes, by whom? Vernon Rank
Yield: 22 gal./min. with 2 ft. drawdown after 2 hrs.
Yield: gal./min. with ft. drawdown after hrs.
Yield: gal./min. with ft. drawdown after hrs.
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level
1:45	8	2:15	10		
2:00	10				

Date of test 11-10-99
Bailer test gal./min. with ft. drawdown after hrs.
Airtest 100+ gal./min. with ft. drawdown after hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? [ ] Yes [X] No

(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 one entry for each change of information. Indicate all water encountered.

MATERIAL	FROM	TO
Soil	0	5
sand,sm gravel,silt,		
clay	5	15
sand,silt,gravel,&		
little water	15	25
sand, clay & gravel	25	33
sand,gravel,clay&water	33	48
cemented gravel & water	48	65
clay & water	65	75
gravel & water	75	85

RECEIVED
NOV 29 1999
DEPARTMENT OF ECOLOGY
REGIONAL OFFICE

Work Started 11-08-99 Completed 11-10-99

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 Vernon Rank License No. 0854
(Licensed Driller/Engineer)

Trainee Name License No.
Drilling Company Water Wells Drilling Inc
(Signed) Vernon L. Rank License No. 0854
(Licensed Driller/Engineer)
Address 5503 Ahtanum Rd, Yakima 98903
Contractor's Registration No. WATERWD112QB Date 11-17-99

(USE ADDITIONAL SHEETS IF NECESSARY)

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.

ECY 050-1-20 (11/98)

303143

File Original with Department of Ecology 89385
Second Copy - Owner's Copy
Third Copy - Driller's Copy

WATER WELL REPORT
STATE OF WASHINGTON

Notice of Intent YIN Reservation
UNIQUE WELL I D # AFE 351
~~Water Right Permit No~~ W136353

(1) **OWNER** Name Josiah HALE Address 12100 LATA

(2) **LOCATION OF WELL** County Yakima NE 1/4 SW 1/4 Sec 19 T 10 N R 19 WM

(2a) **STREET ADDRESS OF WELL** (or nearest address) _____

TAX PARCEL NO _____

(3) **PROPOSED USE** ☑ Domestic ☐ Industrial ☐ Municipal ☐ Irrigation ☐ Test Well ☐ Other ☐ DeWater

(4) **TYPE OF WORK** Owner's number of well (if more than one) _____
☑ New Well Method
☐ Deepened ☐ Dug ☐ Bored
☐ Reconditioned ☐ Cable ☐ Driven
☐ Decommission ☑ Rotary ☐ Jetted

(5) **DIMENSIONS** Diameter of well 6 inches
Drilled _____ feet Depth of completed well _____ ft

(6) **CONSTRUCTION DETAILS**
Casing Installed
☑ Welded 6" Diam from +3 ft to 77 ft
☐ Liner installed _____" Diam from _____ ft to _____ ft
☐ Threaded _____" Diam from _____ ft to _____ ft

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

Screens ☐ Yes ☒ No ☐ K-Pac Location _____
Manufacturer's Name _____
Type _____ Model No _____
Diam _____ Slot Size _____ from _____ ft to _____ ft
Diam _____ Slot Size _____ from _____ ft to _____ ft

Gravel/Filter packed ☐ Yes ☐ No ☒ Size of gravel/sand _____
Material placed from _____ ft to _____ ft

Surface seal ☑ Yes ☐ No To what depth? 20 ft
Material used in seal Bentonite
Did any strata contain unusable water? ☐ Yes ☑ No
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

(7) **PUMP** Manufacturer's Name _____
Type _____ H P _____

(8) **WATER LEVELS** Land-surface elevation above mean sea level _____ ft
Static level 8 ft below top of well Date 11/16/0
Artesian pressure _____ lbs per square inch Date _____
Artesian water is controlled by _____ (Cap, valve etc)

(9) **WELL TESTS** Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☐ No If yes, by whom? _____
Yield _____ gal /min with _____ ft drawdown after _____ hrs
Yield _____ gal /min with _____ ft drawdown after _____ hrs
Yield _____ gal /min with _____ ft drawdown after _____ hrs
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____
Bailer test _____ gal /min with _____ ft drawdown after _____ hrs
Airtest 80 gal /min with 50 ft drawdown after 1 hrs
Artesian flow _____ g p m Date _____
Temperature of water _____ Was a chemical analysis made? ☐ Yes ☐ No

ECY 050-1-20 (11/98)

(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 one entry for each change of information Indicate all water encountered

MATERIAL		FROM	TO
TOP SOIL	S	0	6
SAND & GRAVEL	H	6	18
CLAY LENSE	M	18	20
COBBLES W/SAND LENS		20	80

DEPT OF ECOLOGY Received NOV 21 2000 CENTRAL REGIONAL OFFICE

Work Started 11/14/0 Completed 11/17/0

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 Driller Trainee License No 1828
(Licensed Driller/Engineer)

Trainee Name _____ License No _____
Drilling Company Rinker Well Drilling Inc
(Signed) John Rinker License No 0422
(Licensed Driller/Engineer)
Address P.O. BOX 10566 YAKIMA WA. 98909
Contractor's Registration No RWD132KI Date 11/17/0

(USE ADDITIONAL SHEETS IF NECESSARY)

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

5351180

WATER WELL REPORT

ECOLOGY Original & 1st copy - Ecology, 2nd copy - owner, 3rd copy - driller

Construction/Decommission *("x" in circle)* 111917

(X) Construction

( ) Decommission *ORIGINAL CONSTRUCTION Notice of Intent Number*_____

CURRENT Notice of Intent No. W149388

Unique Ecology Well ID Tag No. AGL-746

Water Right Permit No. _____

Property Owner Name Mario Felan M

Well Street Address 10549 Ashue Rd.

City Toppenish County: Yakima

Location NW 1/4- 1/4 SW 1/4 Sec 21 Twn 10 R 19 EWM or WWM *circle one*

Lat/Long: (s,t,r still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

Tax Parcel No. 191021-32403

PROPOSED USE: [X] Domestic [ ] Industrial [ ] Municipal [ ] DeWater [ ] Irrigation [ ] Test Well [ ] Other_____

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

[X] New Well [ ] Reconditioned *Method* [ ] Dug [ ] Bored [ ] Driven [ ] Deepened [ ] Cable [ ] Rotary [ ] Jetted

DIMENSIONS: Diameter of well 6 inches, drilled 80 ft. Depth of completed well 80 ft

CONSTRUCTION DETAILS

Casing Installed: [X] Welded 6" Diam from +1 ft to 80 ft

[ ] Liner installed _____" Diam from _____ ft to _____ ft

[ ] Threaded _____" Diam from _____ ft to _____ ft

Perforations: [ ] Yes [X] No

Type of perforator used_____

SIZE of perfs_____ in by_____ in and no of perfs_____ from _____ ft to _____ ft

Screens: [ ] Yes [ ] No [ ] K-Pac Location_____

Manufacturer's Name_____

Type_____ Model No _____

Diam _____ Slot Size_____ from_____ ft to_____ ft

Diam _____ Slot Size_____ from_____ ft to_____ ft

Gravel/Filter packed: [ ] Yes [X] No [ ] Size of gravel/sand_____

Materials placed from_____ ft to_____ ft

Surface Seal: [X] Yes [ ] No To what depth? 18 ft

Materials used in seal Bentonite

Did any strata contain unusable water? [ ] Yes [X] No

Type of water?_____ Depth of strata_____

Method of sealing strata off_____

PUMP: Manufacturer's Name_____

Type_____ H P _____

WATER LEVELS: Land-surface elevation above mean sea level _____ ft

Static level 8 ft below top of well Date 1-4-02

Artesian pressure_____ lbs per square inch Date_____

Artesian water is controlled by_____ (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? [ ] Yes [X] No If yes, by whom?_____

Yield _____ gal./min with_____ ft drawdown after_____ hrs

Yield _____ gal./min with_____ ft drawdown after_____ hrs

Yield _____ gal./min with_____ ft drawdown after_____ hrs

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test_____

Bailer test_____ gal./min with _____ ft drawdown after_____ hrs

Airtest 50 gal./min with stem set at 80 ft. for 1 hrs

Artesian flow_____ g p m Date 1-4-02

Temperature of water 58 Was a chemical analysis made? [ ] Yes [X] No

CONSTRUCTION OR DECOMMISSION PROCEDURE

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 one entry for each change of information. Indicate all water encountered (USE ADDITIONAL SHEETS IF NECESSARY)

MATERIAL	FROM	TO
Topsoil	0	4
Large & Small Gravel & Br. Clay & Br. Sand	4	15
Large & Small Gravel & Br. Clay & Br.Sand & Water	15	80
(Yakima Nation Permit # 2001-075)		

DEPT OF ECOLOGY Received APR 10 2002 CENTRAL REGION OFFICE

Start Date 1-3-02 Completed Date 1-4-02

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.

[X] Driller [ ] Engineer [ ] Trainee Name (Print) Jerry Rank

Driller/Engineer/Trainee Signature Jerry L. Rank

Driller or Trainee License No. 1435

Drilling Company Oasis Drilling

Address 2017 S. 16th. Ave.

City, State, Zip Union Gap, Wash. 98903

Contractor's Registration No OASISD*07219 Date 1-4-02

If trainee, licensed driller's Signature and License no. _____

Ecology is an Equal Opportunity Employer ECY 050-1-20 (Rev 4/01)

352483

WATER WELL REPORT

ECOLOGY Original & 1st copy Ecology 2nd copy owner 3rd copy driller

Construction/Decommission (x in circle)
(X) Construction 127260
( ) Decommission *ORIGINAL CONSTRUCTION Notice of Intent Number*

CURRENT
Notice of Intent No W149515

Unique Ecology Well ID Tag No AHK-182

Water Right Permit No

Property Owner Name David Bell

Well Street Address 9000 Campbell Rd

City Wapato County Yakima

Location SW 1/4 1/4 SE 1/4 Sec 21 Twn 10 R 19 EWM or WWM *circle one*

Lat/Long (s t r still REQUIRED) Lat Deg Lat Min/Sec Long Deg Long Min/Sec

Tax Parcel No 19102143401

PROPOSED USE [X] Domestic [ ] Industrial [ ] Municipal [ ] DeWater [ ] Irrigation [ ] Test Well [ ] Other

TYPE OF WORK Owner's number of well (if more than one)
[X] New Well [ ] Reconditioned *Method* [ ] Dug [ ] Bored [ ] Driven [ ] Deepened [ ] Cable [X] Rotary [ ] Jetted

DIMENSIONS Diameter of well 6 inches drilled 87 ft
Depth of completed well 87 ft

CONSTRUCTION DETAILS
Casing Installed [X] Welded 6 Diam from +1 ft to 87 ft
[ ] Liner installed Diam from ft to ft
[ ] Threaded Diam from ft to ft

Perforations [ ] Yes [X] No
Type of perforator used
SIZE of perfs in by in and no of perfs from ft to ft

Screens [ ] Yes [X] No [ ] K Pac Location
Manufacturer s Name
Type Model No
Diam Slot Size from ft to ft
Diam Slot Size from ft to ft

Gravel/Filter packed [ ] Yes [X] No [ ] Size of gravel/sand
Materials placed from ft to ft

Surface Seal [X] Yes [ ] No To what depth? 18 ft
Materials used in seal Bentonite
Did any strata contain unusable water? [ ] Yes [X] No
Type of water? Depth of strata
Method of sealing strata off

PUMP Manufacturer s Name
Type HP

WATER LEVELS Land surface elevation above mean sea level ft
Static level 7 ft below top of well Date 10-18-02
Artesian pressure lbs per square inch Date
Artesian water is controlled by
(cap valve etc)

WELL TESTS Drawdown is amount water level is lowered below static level
Was a pump test made? [ ] Yes [X] No If yes by whom?
Yield gal /min with ft drawdown after hrs
Yield gal /min with ft drawdown after hrs
Yield gal /min with ft drawdown after hrs
Recovery data (time taken as zero when pump turned off)(water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test gal /min with ft drawdown after hrs
Airtest 75 gal./min with stem set at 87 ft for 1 hrs
Artesian flow g p m Date 10-17-02
Temperature of water 59 Was a chemical analysis made? [ ] Yes [X] No

CONSTRUCTION OR DECOMMISSION PROCEDURE
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 one entry for each change of information Indicate all water encountered (USE ADDITIONAL SHEETS IF NECESSARY)

MATERIAL	FROM	TO
Topsoil	0	4
Large & Small Gravel & Br Clay & Br Sand	4	11
Large & Small Gravel & Br Clay & Br Sand & Water	11	87
(Yakima Nation Permit # 2002-092)		

DEPT OF ECOLOGY Received DEC 17 2002 CENTRAL REGION OFFICE

Start Date 10-17-02 Completed Date 10-17-02

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

[X] Driller [ ] Engineer [ ] Trainee Name (Print) Jerry Rank
Driller/Engineer/Trainee Signature
Driller or Trainee License No 1435

Drilling Company Oasis Drilling
Address 2017 S 16th Ave
City State Zip Union Gap, Wash 98903
Contractor s Registration No OASISD 072J9 Date 10-17-02

If trainee, licensed driller s Signature and License no

Ecology is an Equal Opportunity Employer ECY 050 1 20 (Rev 4/01)

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

593200

WATER WELL REPORT

Original & 1st copy – Ecology, 2nd copy – owner, 3rd copy – driller

Construction/Decommission ("x" in circle) 344970

☒ Construction

○ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

CURRENT

Notice of Intent No. WE09741

Unique Ecology Well ID Tag No. BAA-304

Water Right Permit No. _____

Property Owner Name Yakama Nation Fisheries

Well Street Address 12421 Lateral A Rd.

City Toppenish County Yakima

Location SE 1/4-1/4 SW 1/4 Sec 20 Twn 10N R 19E (EWM or WWM) circle one

Lat/Long (s, t, r Still REQUIRED) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

Tax Parcel No. 191020-33001 / 34C / Marion Drain Hatchery

PROPOSED USE: ☐ Domestic ☐ Industrial ☐ Municipal ☐ DeWater ☐ Irrigation ☐ Test Well ☒ Other Fish Hatchery

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

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

DIMENSIONS: Diameter of well 10 inches, drilled 320 ft.

Depth of completed well 320 ft.

CONSTRUCTION DETAILS

Casing Installed: ☒ Welded 10" Diam. from +2 ft. to 285 ft.

☐ Liner installed 6" riser Diam. from 275 ft. to 280 ft.

☐ Threaded 6" tail Diam. from 305 ft. to 320 ft.

Perforations: ☐ Yes ☒ No

Type of perforator used _____

SIZE of perfs _____ in by _____ in. and no. of perfs _____ from _____ ft. to _____ ft.

Screens: ☒ Yes ☐ No ☐ K-Pac Location _____

Manufacturer's Name Alloy

Type Stainless Steel Model No. _____

Diam. 6" Slot size 50 from 280 ft. to 305 ft.

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel/Filter packed: ☒ Yes ☐ No Size of gravel/sand 6 x 9 sand

Materials placed from 275 ft. to 320 ft.

Surface Seal: ☒ Yes ☐ No To what depth? 240 ft.

Material used in seal 3/4" Bentonite

Did any strata contain unusable water? ☐ Yes ☒ No

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

PUMP: Manufacturer's Name _____

Type: _____ H.P. _____

WATER LEVELS: Land-surface elevation above mean sea level _____ ft.

Static level _____ ft. below top of well Date _____

Artesian pressure 5 lbs. per square inch Date 4-24-09

Artesian water is controlled by well seal with valve (cap, valve, etc.)

Flowing 60 GPM

WELL TESTS: Drawdown is amount water level is lowered below static level

Was a pump test made? ☒ Yes ☐ No If yes, by whom? H.D.C.

Yield: 510 gal./min. with 118 ft. drawdown after 3 hrs.

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test 5-13-09

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

Airtest _____ gal./min. with stem set at _____ ft. for _____ hrs.

Artesian flow 60 g.p.m. Date 5-14-09

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

CONSTRUCTION OR DECOMMISSION PROCEDURE

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 one entry for each change of information. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
Top soil	0	1
Sticky brown clay	1	4
Loose gravel, cobbles	4	16
Cemented sand & gravel	16	52
Loose sand & gravel	52	77
Cemented gravel, loose layers	77	95
Cemented gravel	95	133
Loose cobbles, gravel	133	136
Hard cemented gravel	136	150
Loose sand & gravel	150	154
Cemented gravel	154	193
Sand & clay	193	195
Cemented gravel	195	199
Multi-colored clay, sand	199	207
Brown clay	207	230
Gray clay	230	239
Blue-green shaley clay	239	256
Gray sand, shale, gravel & water	256	281
Gray sand, slightly cemented gravel & water	281	305
Gray shale	305	310
Gray shale & clay	310	320
Shoe cut off at 30.7'6" below ground level		

RECEIVED
JUN 12 2009
DEPARTMENT OF ECOLOGY - CENTRAL REGIONAL OFFICE

Start Date 4-8-09 Completed Date 5-14-09

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) Timothy D. Jones

Driller/Engineer/Trainee Signature Timothy D. Jones

Driller or trainee License No. 1342

Drilling Company Hansen Drilling Co., Inc.

Address 6711 NE. 58th Ave.

City, State, Zip Vancouver, WA 98661

Contractor's Registration No. HANSEDC947RJ Date 5-18-09

RECEIVED
JUN 08 2009
Washington State Department of Ecology

If TRAINEE, Driller's Licensed No. _____

Driller's Signature _____

Ecology is an Equal Opportunity Employer.

ECY 050-1-20 (Rev 3/05)

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

601156

WATER WELL REPORT

Original & 1st copy – Ecology, 2nd copy – owner, 3rd copy – driller

Construction/Decommission ("x" in circle) 349475

☒ Construction

○ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

CURRENT

Notice of Intent No. W-256260

Unique Ecology Well ID Tag No. APG-218

Water Right Permit No. _____

Property Owner Name EVERETT ABERCROMBIE

Well Street Address 2920 S. OLDEN WAY

City TOPPENISH County YAKIMA

Location NW 1/4-1/4 NW 1/4 Sec 25 Twn 10 R 19 (EWM or WWM) circle one

Lat/Long (s, t, r Still **REQUIRED**) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

Tax Parcel No. 191025-11402

PROPOSED USE: ☒ Domestic ☐ Industrial ☐ Municipal ☐ DeWater ☐ Irrigation ☐ Test Well ☐ Other _____

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

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

DIMENSIONS: Diameter of well 6 inches, drilled 90 ft. Depth of completed well 90 ft.

CONSTRUCTION DETAILS

Casing Installed: ☒ Welded 6 " Diam. from +2 ft. to 88 ft.

☐ Liner installed _____ " Diam. from _____ ft. to _____ ft.

☐ Threaded _____ " Diam. from _____ ft. to _____ ft.

Perforations: ☐ Yes ☒ No

Type of perforator used _____

SIZE of perfs _____ in. by _____ in. and no. of perfs ____ from ____ ft. to ____ ft.

Screens: ☐ Yes ☒ No ☐ K-Pac Location _____

Manufacturer's Name _____

Type _____ Model No. _____

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel/Filter packed: ☐ Yes ☒ No ☐ Size of gravel/sand _____

Materials placed from _____ ft. to _____ ft.

Surface Seal: ☒ Yes ☐ No To what depth? 20 ft.

Material used in seal BENTONITE

Did any strata contain unusable water? ☐ Yes ☒ No

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

PUMP: Manufacturer's Name _____

Type: _____ H.P. _____

WATER LEVELS: Land-surface elevation above mean sea level _____ ft.

Static level 10 ft. below top of well Date 11/27/06

Artesian pressure _____ lbs. per square inch Date _____

Artesian water is controlled by _____ (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level

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

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Yield: _____ gal./min with _____ ft. drawdown after _____ hrs.

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____

Bailer test 35 gal./min. with – ft. drawdown after _____ hrs.

Airtest 60 gal./min. with stem set at 80 ft. for 1 hrs.

Artesian flow _____ g.p.m. Date _____

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

CONSTRUCTION OR DECOMMISSION PROCEDURE

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 one entry for each change of information. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
DIRT	0	8
GRAVEL	8	16
BROWN CLAY + GRAVEL	16	24
SAND + GRAVEL	24	28
BROWN CLAY + GRAVEL	28	42
GRAVEL	42	63
BROWN CLAY + GRAVEL	63	68
LARGE GRAVEL	68	78
BROWN CLAY + GRAVEL	78	90
WATER		

RECEIVED

SEP 02 2009

DEPARTMENT OF ECOLOGY - CENTRAL REGIONAL OFFICE

Start Date 11/27/06 Completed Date 11/27/06

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) Gregory Cromley

Driller/Engineer/Trainee Signature _____

Driller or trainee License No. 2428

Drilling Company HIDDEN RIVERS DRILLING INC

Address P.O. BOX 881

City, State, Zip SELAH, WA 98942

Contractor's Registration No. HIDDERC859DY Date 11/27/06

If TRAINEE,

Driller's Licensed No. _____

Driller's Signature _____

Ecology is an Equal Opportunity Employer.

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

113764

8302

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

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. 211442

UNIQUE WELL I.D. #

Water Right Permit No. D

(1) OWNER: Name Daniel Brownlee Address 6161 Lateral B Road, Wapato, WA 98951

(2) LOCATION OF WELL: County Yakima NW ¼ NW ¼ Sec 29 T 10 N., R 20 W.M.

(2a) STREET ADDDRESS OF WELL (or nearest address)

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

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

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

(5) DIMENSIONS: Diameter of well 6 inches. Drilled 60 feet. Depth of completed well 60 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6 " Diam. from +2 ft. to 58 ft.

Welded ☒ Liner installed ☐ Threaded ☐ " Diam. from ft. to ft.

" Diam. from ft. to ft.

Perforations: Yes ☐ No ☒

Type of perforator used

SIZE of perforations in. by in.

perforations from ft. to ft.

perforations from ft. to ft.

perforations from ft. to ft.

Screens: Yes ☐ No ☒

Manufacturer's Name

Type Model No.

Diam. Slot size from ft. to ft.

Diam. Slot size from ft. to ft.

Gravel packed: Yes ☐ No ☒ Size of gravel

Gravel placed from ft. to ft.

Surface seal: Yes ☒ No ☐ To what depth? 18 ft.

Material used in seal Bentonite

Did any strata contain unusable water? Yes ☐ No ☒

Type of water? Depth of strata

Method of sealing strata off

(7) PUMP: Manufacturer's Name

Type: H.P.

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

Static level ft. below top of well Date

Artesian pressure lbs. per square inch Date

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

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

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

Yield: 300 gal./min. with ft. drawdown after hrs.

" ESTIMATED AIRLIFT " "

" " " "

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test

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

Airtest gal./min. with stem set at ft. for hrs.

Artesian flow g.p.m. Date

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

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
Top Soil, Brown, Medium	0	6
Sand gravel cobbles hard	6	22
Silty sand gravel cobbles hard	22	44
Sand brown medium	44	48
Sand gravel cobbles	48	60water

RECEIVED MAR – 5 1993 DEPARTMENT OF ECOLOGY WELL REPORTS

6" Drive shoe utilized

Work started 2-18-93 19. Completed 2-18 19 93

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Ponderosa Drilling & Development, Inc. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address E. 6010 Broadway Spokane, WA 99212

(Signed) Steve Mills (WELL DRILLER) License No. 1335

Contractor's Registration No. PO-ND-EI*248JE Date 2-23 19 93

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-20 (10-87) -1329

121464

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

WATER WELL REPORT

STATE OF WASHINGTON WELL #1

Start Card No. W048057
UNIQUE WELL I.D. # ACE 318
Water Right Permit No.

(1) OWNER: GREG WALLACE Address 450 CHAMBERS

(2) LOCATION OF WELL: County YAKIMA SE 1/4 NE 1/4 Sec. 25 T. 10 N, R. 20 W.M.

(2a) STREET ADDRESS OF WELL (or nearest address) 450 CHAMBERS

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

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

(5) DIMENSIONS: Diameter of well 6 inches. Drilled 85 feet. Depth of completed well 85 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 6 " Diam. from +1 ft. to 85 ft.
Welded ☒
Liner installed ☐ " Diam. from ft. to ft.
Threaded ☐ " Diam. from ft. to ft.

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

Screens: Yes ☐ No ☒
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

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

Surface seal: Yes ☒ No ☐ To what depth? 20 ft.
Material used in seal BENTONITE
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of strata
Method of sealing strata off

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

(8) WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level 10 ft. below top of well Date 12/5/95
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

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

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test 100 gal./min. with ft. drawdown after hrs.
Airtest gal./min. with stem set at 85 ft. for 1 hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes ☐ No ☒

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
SOIL	0	10
SOIL & GRAVEL	10	15
COARSE GRAVEL, SAND & WATER	15	75
COARSE GRAVEL & WATER	75	85

RECEIVED
JAN 24 1996

Work Started 12/4/95 19. Completed 12/5/95 19

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME WATER WELLS DRILLING, INC. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)
Address 5503 AHTANUM RD, YAKIMA
(Signed) Vernon L. Rank (WELL DRILLER) License No. 0854
Contractor's Registration No. WATERWD 112QB Date 6 Nov 19 95

(USE ADDITIONAL SHEETS IF NECESSARY)

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

ECY 050-1-20 (9/93)

122 107

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

WATER WELL REPORT
STATE OF WASHINGTON

Start Card No. W090212
UNIQUE WELL I.D. # ACL-850
Water Right Permit No.

(1) OWNER: Name Harvey Snyder Address 58781 Hwy. 97, Toppenish

(2) LOCATION OF WELL: County Yakima - NE 1/4 NE 1/4 Sec 28 T. 10 N., R 20 W.M.

(2a) STREET ADDRESS OF WELL (or nearest address) 58781 Hwy. 97, Toppenish A

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

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

(5) DIMENSIONS: Diameter of well 6 inches. Drilled 90 feet. Depth of completed well 90 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 6 " Diam. from +1 ft. to 90 ft.
Welded ☒
Liner installed ☐ " Diam. from ft. to ft.
Threaded ☐ " Diam. from ft. to ft.

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

Screens: Yes ☐ No ☒
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

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

Surface seal: Yes ☒ No ☐ To what depth? 18 ft.
Material used in seal Bentonite
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? Depth of strata
Method of sealing strata off

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

(8) WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level 5 ft. below top of well Date 9-15-97
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

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

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test gal./min. with ft. drawdown after hrs.
Airtest 100 gal./min. with stem set at 90 ft. for 1 hrs.
Artesian flow g.p.m. Date 9-15-97
Temperature of water 59 Was a chemical analysis made? Yes ☐ No ☒

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
Topsoil	0	10
Large & Small Gravel & Silt & Sand & Water	10	19
Br. Clay & Large & Small Gravel & Sand & Water	19	90
(Yakima Nation Permit # 1997-435)		

RECEIVED
OCT 16 1997
DEPARTMENT OF ECOLOGY
CENTRAL REGIONAL OFFICE

Work Started 9-15-97 19. Completed 9-15-97 19

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME OASIS DRILLING (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)
Address 2017 S. 16th Ave. Union Gap, WA 98903
(Signed) (WELL DRILLER) License No. 1435
Contractor's Registration No. OASISD*072J9 Date 9-15-97 19

(USE ADDITIONAL SHEETS IF NECESSARY)

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ECY 050-1-20 (REV) * * *

115091

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

WATER WELL REPORT
STATE OF WASHINGTON

Application No. /
Permit No /

(1) **OWNER:** Name Greg Rasmussen Address Route 2 Box 8 Granger, WA 98932

(2) **LOCATION OF WELL:** County YAKIMA NE¼SE ¼ SW ¼ Sec. 28 T. 10 N., R. 21 W.M.

...ing and distance from section or subdivision corner

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

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

(5) **DIMENSIONS:** Diameter of well 6 inches.
Drilled 41 ft. Depth of completed well 39 ft.

(6) **CONSTRUCTION DETAILS:**
Casing installed: 6 " Diam. from +1 ft. to 39 ft.
Threaded ☐ " Diam. from ft. to ft.
Welded ☒ " Diam. from ft. to ft.

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

Screens: Yes ☐ No ☒
Manufacturer's Name
Type Model No
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

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

Surface seal: Yes ☒ No ☐ To what depth? 18 ft.
Material used in seal Bentonite
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? Depth of strata
Method of sealing strata off

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

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

(9) **WELL TESTS:** Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☒ If yes, by whom?
Yield: 30 gal./min. with ft. drawdown after hrs.
" ESTIMATED AIRLIFT " "
" " " "

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

Time	Water Level	Time	Water Level	Time	Water Level

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

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

MATERIAL	FROM	TO
Sand & Gravel	0	41
NO PVC LINER INSTALLED		
6" DRIVE SHOE INSTALLED		

RECEIVED AUG 5 1985 DEPARTMENT OF ECOLOGY CENTRAL REGION

Work started 7/10, 19 85 Completed 7/10, 19 85

WELL DRILLER'S STATEMENT:

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

NAME PONDEROSA DRILLING & DEVELOPMENT INC. (Person, firm, or corporation) (Type or print)
Address E. 6010 Broadway Spokane, WA 99212

[Signed] James M. Doyle (Well Driller)

License No. 1287 Date 7/10, 1985

(USE ADDITIONAL SHEETS IF NECESSARY)

116679

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

WATER WELL REPORT
STATE OF WASHINGTON

Application No. G1-
Permit No. 48948

(1) OWNER: Name Martin Childers Address RT 2 Box 2258 Toppenish, Wa

LOCATION OF WELL: County Yakima SW ¼ NE ¼ Sec 30 T 10 N., R 21 W.M.

Bearing and distance from section or subdivision corner 800' E of NW Corner & 75's of Subdivision Corner

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

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

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 60 ft. Depth of completed well 60 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: ..." Diam. from ... ft. to ... ft.
Threaded ☐ ..." Diam. from ... ft. to ... ft.
Welded ☑ 6" Diam. from 0 ft. to 60 ft.

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

Screens: Yes ☐ No ☑
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

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

Surface seal: Yes ☑ No ☐ To what depth? 18 ft.
Material used in seal Bentonite
Did any strata contain unusable water? Yes ☐ No ☑
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP: Manufacturer's Name Berk
Type: Sub H.P. 3/4

(8) WATER LEVELS: Land-surface elevation above mean sea level ... ft.
Static level 15 ft. below top of well Date 12/15/86
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

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

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test 45 gal./min. with 15 ft. drawdown after 2 hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes ☐ No ☑

(10) WELL LOG:

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

MATERIAL	FROM	TO
T.O.P. Soil	0	8
Gravel	8	32
Black Sand & Gravel	32	50
Tan Gravel & Sand	50	60

RECEIVED
JAN - 9 1987
WATER RESOURCES
CENTRAL REG.

Work started 12/8/ 19 86 Completed 12/12/ 19 86

WELL DRILLER'S STATEMENT:

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

NAME Watkins Well Drilling
(Person, firm, or corporation) (Type or print)

Address Rt. 2 Box 245-A Toppenish

[Signed] Lewis T. Watkins
(Well Driller)

License No. 0516 Date 12/13/ 19 86

(USE ADDITIONAL SHEETS IF NECESSARY)

116960

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

WATER WELL REPORT
STATE OF WASHINGTON

Application No
Permit No.

(1) **OWNER:** Name Mosdick Jr. Address Yakima Indian Agency, Toppenish

(2) **LOCATION OF WELL:** County Yakima — ¼ ¼ Sec 30 T. 10 N., R. 21 W.M.

...ing and distance from section or subdivision corner

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

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

(5) **DIMENSIONS:** Diameter of well 6 inches.
Drilled 58 ft. Depth of completed well 58 ft.

(6) **CONSTRUCTION DETAILS:**

Casing installed: 6 " Diam. from 0 ft. to 53 ft.
Threaded ☐ " Diam. from ft. to ft.
Welded ☒ " Diam. from ft. to ft.

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

Screens: Yes ☒ No ☐
Manufacturer's Name Smith
Type Stainless steel Model No.
Diam. 5 Slot size 30 from 53 ft. to 58 ft.
Diam. Slot size from ft. to ft.

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

Surface seal: Yes ☒ No ☐ To what depth? 21 ft.
Material used in seal Cement grout
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? Depth of strata
Method of sealing strata off

(7) **PUMP:** Manufacturer's Name Sta-Rite
Type: submersible H.P. 1/3

(8) **WATER LEVELS:** Land-surface elevation above mean sea level ft.
Static level 9 ft. below top of well Date 4-30-74
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) **WELL TESTS:** Drawdown is amount water level is lowered below static level AAA PUmp
Was a pump test made? Yes ☒ No ☐ If yes, by whom?
Yield: 10 gal./min. with 4 inches drawdown after 1 hrs.
" " " "
" " " "

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

Time	Water Level	Time	Water Level	Time	Water Level
3:05	9ft4in				
3:06	9ft				

Date of test 5-1-74
...ler test 10 gal./min. with 1 ft. drawdown after 2 hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes ☐ No ☒

(10) **WELL LOG:**

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

MATERIAL	FROM	TO
Soil, Brown	0	1
Sand, Gravel, WB	1	58

RECEIVED
NOV 12 1974
DEPARTMENT OF ECOLOGY
CENTRAL REGIONAL OFFICE

Work started 4/30/74 Completed 4/30/74, 19

WELL DRILLER'S STATEMENT:

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

NAME B & B Well Drilling
(Person, firm, or corporation) (Type or print)
Address Rt 7 BOx 600-A, Yakima, Wa. 9890

[Signed] Harvey Blackman (Well Driller)

License No. 0037 Date 6/17/74, 19

(USE ADDITIONAL SHEETS IF NECESSARY)

S. F. No. 7356—OS—(Rev. 4-71).

192 262

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

WATER WELL REPORT

STATE OF WASHINGTON

Notice of Intent W108841

UNIQUE WELL I.D. # AET-947

Water Right Permit No.

(1) OWNER: Name Craig Oswalt Address 340 SR 223, Toppenish

(2) LOCATION OF WELL: County Yakima NW 1/4 SE 1/4 Sec 29 T 10 N.R. 21 WM

(2a) STREET ADDRESS OF WELL: (or nearest address) Chausee Rd.

TAX PARCEL NO.: 211029-42001

K

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

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

(5) DIMENSIONS: Diameter of well 6 inches
Drilled 50 feet. Depth of completed well 50 ft.

(6) CONSTRUCTION DETAILS
Casing Installed:
☒ Welded 6 " Diam. from +1 ft. to 50 ft.
☐ Liner installed " Diam. from ft. to ft.
☐ Threaded " Diam. from ft. to ft.

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

Screens: ☐ Yes ☒ No ☐ K-Pac Location
Manufacturer's Name
Type Model No.
Diam. Slot Size from ft. to ft.
Diam. Slot Size from ft. to ft.

Gravel/Filter packed: ☐ Yes ☒ No ☐ Size of gravel/sand
Material placed from ft. to ft.

Surface seal: ☒ Yes ☐ No To what depth? 18 ft.
Material used in seal Bentonite
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? Depth of strata
Method of sealing strata off

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

(8) WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level 7 ft. below top of well Date 6-30-99
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☒ No If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
Yield: gal./min. with ft. drawdown after hrs.
Yield: gal./min. with ft. drawdown after hrs.
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test gal./min. with ft. drawdown after hrs.
Airtest 75 gal./min. with ft. drawdown after 1 hrs.
Artesian flow g.p.m. Date 6-30-99
Temperature of water 61 Was a chemical analysis made? ☐ Yes ☒ No

(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 one entry for each change of information. Indicate all water encountered.

MATERIAL	FROM	TO
Topsoil	0	12
Br. Clay & Br. Sand & Small Gravel & Water	12	44
Blue Clay & Gray Sand & Small Gravel & Sulfer & Water	44	50
(Yakima Nation Permit # 1999-057)		

STATE OF WASHINGTON DEPT. OF ECOLOGY Received JUL 15 1999 REGIONAL OFFICE

Work Started 6-29-, 99 Completed 6-30-, 99

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 Jerry Rank License No. 1435
(Licensed Driller/Engineer)

Trainee Name License No.

Drilling Company Oasis Drilling

(Signed) Jerry L. Rank License No. 1435
(Licensed Driller/Engineer)

Address 2017 S. 16th Ave., Union Gap

Contractor's Registration No. OASISD*07199 Date 6-30-, 99

(USE ADDITIONAL SHEETS IF NECESSARY)

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.

ECY 050-1-20 (11/98)

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

699574

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

WATER WELL REPORT

Original & 1st copy – Ecology, 2nd copy – owner, 3rd copy – driller

DEPARTMENT OF ECOLOGY State of Washington

Construction/Decommission *("x" in circle)*

☒ Construction

☐ Decommission *ORIGINAL INSTALLATION* 378544

Notice of Intent Number _____

PROPOSED USE: ☐ Domestic ☐ Industrial ☐ Municipal ☐ DeWater ☒ Irrigation ☐ Test Well ☐ Other _____

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

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

DIMENSIONS: Diameter of well 12 inches, drilled 60 ft. Depth of completed well 59 ft.

CONSTRUCTION DETAILS

Casing Installed: ☒ Welded 12 " Diam. from +2 ft. to 46 ft

☐ Liner installed _____ " Diam. from _____ ft. to _____ ft.

☐ Threaded _____ " Diam. From _____ ft. to _____ ft.

Perforations: ☐ Yes ☒ No

Type of perforator used _____

SIZE of perfs _____ in. by _____ in. and no. of perfs _____ from _____ ft. to _____ ft.

Screens: ☒ Yes ☐ No ☒ K-Pac Location 43

Manufacturer's Name Alloy Machine works

Type Stainless Steel Model No 347408

Diam. 10" Slot size .070 from 44 ft. to 59 ft.

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel/Filter packed: ☐ Yes ☒ No Size of gravel/sand _____

Materials placed from _____ ft. to _____ ft

Surface Seal: ☒ Yes ☐ No To what depth? 18 ft.

Material used in seal Bentonite

Did any strata contain unusable water? ☐ Yes ☒ No

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

PUMP: Manufacturer's Name _____

Type: _____ H.P _____

WATER LEVELS: Land-surface elevation above mean sea level _____ ft.

Static level 10 ft. below top of well Date 06/12/2010

Artesian pressure _____ lbs. per square inch Date _____

Artesian water is controlled by _____ (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level

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

Yield. _____ gal./min. with _____ ft. drawdown after _____ hrs.

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs

Yield. _____ gal /min. with _____ ft. drawdown after _____ hrs.

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____

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

Airtest 500 gal./min. with stem set at 44-59 ft. for 6 1/2 hrs.

Artesian flow _____ g.p.m Date _____

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

CURRENT

Notice of Intent No. WE11502

Unique Ecology Well ID Tag No. BAE928

Water Right Permit No. 2010-16

Property Owner Name Oswalt Farms

Well Street Address 541 Chausee Road

City Grainger County Yakima

Location NE1/4-1/4 SE1/4 Sec 29 Twn 10 R 21 EWM ☒ Or WWM ☐

(s, t, r Still REQUIRED)

Lat/Long Lat Deg _____ Lat Min/Sec _____

Long Deg _____ Long Min/Sec _____

Tax Parcel No. (Required) 21102941007

CONSTRUCTION OR DECOMMISSION PROCEDURE

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 one entry for each change of information. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
Silt with Gravel	0	6
Sand & Gravel	6	14
Sand (Black)	14	19
Silty Sand & Gravel		
W.B.	19	25
Sand & Gravel (coarse)		
W.B.	25	35
Sand & Gravel 2" minus		
W.B.	35	50
Sand (fine) & Gravel		
W.B.	50	60

RECEIVED

JUN 07 2010

DEPARTMENT OF ECOLOGY - CENTRAL REGIONAL OFFICE

Start Date 05/21/2010 Completed Date 06/12/2010

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) Michael Robinson	Drilling Company Robinson Drilling & Development, Inc.
Driller/Engineer/Trainee Signature Michael Robinson	Address 4902 Viewland Drive
Driller or trainee License No. 1544	City, State, Zip Yakima , WA, 98908
IF TRAINEE: Driller's License No:	Contractor's Registration No. ROBINDD938QE Date 06/14/2010
Driller's Signature:	

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.*

112944

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

WATER WELL REPORT
STATE OF WASHINGTON

Application No C
Permit No

(1) **OWNER:** Name Brad M. Morford Address Route 1, Box 182, White Swan, WA 98952

(2) **LOCATION OF WELL:** County YAKIMA E½ NE ¼ NW ¼ Sec. 17 T. 10 N., R 18E W.M.

Bearing and distance from section or subdivision corner

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

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

(5) **DIMENSIONS:** Diameter of well 6 inches.
Drilled 72 ft. Depth of completed well 67 ft.

(6) **CONSTRUCTION DETAILS:**
Casing installed: 6 " Diam. from +1 ft. to 66 ft.
Threaded ☐ " Diam. from ft. to ft.
Welded ☐ " Diam. from ft. to ft.

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

Screens: Yes ☐ No XX
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

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

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

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

(8) **WATER LEVELS:** Land-surface elevation above mean sea level ft.
Static level 21 ft. below top of well Date 10/14/86
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) **WELL TESTS:** Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No XX If yes, by whom?
Yield: 40+ gal./min. with ft. drawdown after hrs.
" ESTIMATED AIRLIFT " "
" " " "

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

Time	Water Level	Time	Water Level	Time	Water Level

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

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

MATERIAL	FROM	TO
Clay, brown, sandy	0	35
Clay, tan	35	61
Gray sand & gravel w/water	61	72
NO PVC Liner Installed		
6" Drive shoe utilized		
NOTE: Set pump at 60'		

RECEIVED
OCT 21 1986
DEPARTMENT OF ECOLOGY
CENTRAL REGION OFFICE

Work started 10/13 19 86 Completed 10/14 19 86

WELL DRILLER'S STATEMENT:

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

NAME PONDEROSA DRILLING & DEVELOPMENT INC.
(Person, firm, or corporation) (Type or print)

Address E. 6010 Broadway, Spokane, WA 99212

[Signed] Dennis J. Huhn (Well Driller)

License No. 1428 Date 10/14/ 19 86

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY-050-1-20

11317 8

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

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. 031536

Water Right Permit No. A

(1) OWNER: Name Carlson Orchards Address

(2) LOCATION OF WELL: County Yakima NE ¼ NE ¼ Sec. 11 T. 11 N., R. 18 W.M.

(2a) STREET ADDDRESS OF WELL (or nearest address)

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

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

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

(5) DIMENSIONS: Diameter of well 8 inches. Drilled 121 feet. Depth of completed well 121 ft.

(6) CONSTRUCTION DETAILS:

Casing Installed: 8 " Diam. from +1 ft. to 117 ft.
Welded ☒
Liner installed ☐
Threaded ☐
" Diam. from ft. to ft.
" Diam. from ft. to ft.

Perforations: Yes ☐ No ☒
Type of perforator used Mills
SIZE of perforations ¼ in. by 2 3/4 in.
perforations from ft. to ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes ☐ No ☒
Manufacturer's Name
Type Model No
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

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

Surface seal: Yes ☒ No ☐ To what depth? 25+ ft.
Material used in seal Bentonite
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of strata
Method of sealing strata off

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

(8) WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level 25 ft. below top of well Date 2/8/91
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☐ If yes, by whom?
Yield: gal./min. with ft. drawdown after hrs.
" " " "
" " " "
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

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

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
Gravel, cobbles, sand	0	19
Gravel, cobbles, sand, silt	19	32
Gravel, cobbles, sand, silt, some water	32	56
Conglomerate, brown	56	60
Gravel, sand, water, good	60	72
Gravel, sand, silt, s?water	72	85
Gravel, water, good aquafer	85	101
Gravel, silt, conglomerate, some water	101	121

MAR 25 1991
DEPARTMENT OF ECOLOGY
CENTRAL REGION OFFICE

Work started 2/6/91 19. Completed 2/8/91 19

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Cassel Drilling and Pump (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address 1308 Voelker, Yakima, Wa.

(Signed) (WELL DRILLER) License No. 73

Contractor's Registration No. Cassewd317cp Date 2/9/91 19

(USE ADDITIONAL SHEETS IF NECESSARY)

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

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

173290

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

WATER WELL REPORT

STATE OF WASHINGTON

Application No. .....
Permit No. N

(1) OWNER: Name Chester E. Rockwell Address Route 1, Box 26, Harrah, WA 98933

(2) LOCATION OF WELL: County YAKIMA — SW ¼ SW ¼ Sec. 27 T. 11 N., R. 18E W.M.

Bearing and distance from section or subdivision corner

(3) PROPOSED USE: Domestic [X] Industrial [ ] Municipal [ ]
Irrigation [ ] Test Well [ ] Other [ ]

(4) TYPE OF WORK: Owner's number of well (if more than one) .....
New well [X] Method: Dug [ ] Bored [ ]
Deepened [ ] Cable [ ] Driven [ ]
Reconditioned [ ] Rotary [X] Jetted [ ]

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 64 ft. Depth of completed well 60 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6 " Diam. from +1 ft. to 60 ft.
Threaded [ ] ..... " Diam. from ..... ft. to ..... ft.
Welded [X] ..... " Diam. from ..... ft. to ..... ft.

Perforations: Yes [ ] No [X]
Type of perforator used .....
SIZE of perforations ..... in. by ..... in.
..... perforations from ..... ft. to ..... ft.
..... perforations from ..... ft. to ..... ft.
..... perforations from ..... ft. to ..... ft.

Screens: Yes [ ] No [X]
Manufacturer's Name .....
Type ..... Model No .....
Diam. ..... Slot size ..... from ..... ft. to ..... ft.
Diam. ..... Slot size ..... from ..... ft. to ..... ft.

Gravel packed: Yes [ ] No [X] Size of gravel: .....
Gravel placed from ..... ft. to ..... ft.

Surface seal: Yes [X] No [ ] To what depth? 20 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 above mean sea level ..... ft.
Static level 35 ft. below top of well Date 7/23/87
Artesian pressure ..... lbs. per square inch Date .....
Artesian water is controlled by ..... (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes [ ] No [X] If yes, by whom? .....
Yield: 30 gal./min. with ..... ft. drawdown after ..... hrs.
" ESTIMATED AIRLIFT " "
" " " "

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

Time	Water Level	Time	Water Level	Time	Water Level

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

(10) WELL LOG:

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

MATERIAL	FROM	TO
Clay, sandy, brown	0	47
Cemented gravel	47	50
Sand, gravel, river rock w/water	50	64
NO PVC Liner Installed		
6" Drive shoe utilized		

RECEIVED
AUG 10 1987
DEPARTMENT OF ECOLOGY
CENTRAL REGIONAL OFFICE

Work started 7/23 19 87 Completed 7/23 19 87

WELL DRILLER'S STATEMENT:

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

NAME PONDEROSA DRILLING & DEVELOPMENT INC.
(Person, firm, or corporation) (Type or print)
Address 704 River Road, Yakima, WA 98902
6010 E. Broadway, Spokane, WA 99212

[Signed] Dennis J. Huhn (Well Driller)
License No. 1428 Date 7/23 19 87

(USE ADDITIONAL SHEETS IF NECESSARY)

1625 14456

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

WATER WELL REPORT

STATE OF WASHINGTON

D

Start Card No. 010247

Water Right Permit No. _____

(1) OWNER: Name Double R Hop Ranch Address Rt 1 Box 24, Harrah, Wa.

LOCATION OF WELL: County Yakima NW ¼ NW ¼ Sec 34 T. 11 N., R 18 W.M.

(2a) STREET ADDDRESS OF WELL (or nearest address) Branch & Canal Rd., Harrah, Wa.

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

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

(5) DIMENSIONS: Diameter of well 16 inches.
Drilled 167 feet. Depth of completed well 167 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 16 ☒ Threaded ☐ " Diam. from +1 ft. to 135 ft.
Welded ☒ Liner installed ☐ Threaded ☐ " Diam. from _____ ft. to _____ ft.
" Diam. from _____ ft. to _____ ft.

Perforations: Yes ☒ No ☐
Type of perforator used Mills knife
SIZE of perforations 3/8 x 3 in. by _____ in.
40 perforations from 30 ft. to 40 ft.
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.

Screens: Yes ☐ No ☒
Manufacturer's Name _____
Type _____ Model No. _____
Diam. _____ Slot size _____ from _____ ft. to _____ ft.
Diam. _____ Slot size _____ from _____ ft. to _____ ft.

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

Surface seal: Yes ☒ No ☐ To what depth? 20 ft.
Material used in seal Bentonite
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? _____ Depth of strata _____
Method of sealing strata off _____

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

(8) WATER LEVELS: Land-surface elevation above mean sea level _____ ft.
Static level 9 ft. below top of well Date 3/3/89
Artesian pressure _____ lbs. per square inch Date _____
Artesian water is controlled by _____ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☐ No ☒ If yes, by whom? _____
Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.
" " " "
" " " "
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____
Bailer test _____ gal./min. with _____ ft. drawdown after _____ hrs.
Airtest 800 gal./min. with stem set at 100 ft. for 4 hrs.
Artesian flow _____ g.p.m. Date _____
Temperature of water _____ Was a chemical analysis made? Yes ☐ No ☒

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
Soil	0	6
Sand gravel & rock	6	30
Small gravel And water	30	33
Br clay, gravel & rock	33	85
Br. sand & water	85	125
BR. sandstone, sand, clay, & water	125	133
Hd. br clay, sandstone & water	133	167

MAY 12 1989

Work started 1/15/89, 19. Completed 3/3/89, 19

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Water Wells Drilling (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address 5503 Ahtanum Rd. Yakima, Wa.

(Signed) Vernon L. Rook (WELL DRILLER) License No. 0854

Contractor's Registration No. WATERW*131N8 Date 3/15/89, 19

(USE ADDITIONAL SHEETS IF NECESSARY)

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

114157

WATER WELL REPORT

STATE OF WASHINGTON

Application No

Permit No

(1) OWNER: Name Double "R" Hop Ranch Address Harrah

(LOCATION OF WELL: County Yakima SE ¼ SW ¼ Sec. 27 T. 11 N., R. 18 W.M.

Bearing and distance from section or subdivision corner

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

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

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

(5) DIMENSIONS: Diameter of well 18 inches.
Drilled 140 ft. Depth of completed well 140 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 18" Diam. from 0 ft. to 100 ft.
Threaded ☐ " Diam. from ft. to ft.
Welded ☒ " Diam. from ft. to ft.

Perforations: Yes ☒ No ☐
Type of perforator used Mill knife
SIZE of perforations ¼ in. by 3 in.
400 perforations from 38 ft. to 90 ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes ☐ No ☒
Manufacturer's Name
Type Model No
Diam. Slot size from ft. to ft.
Diam Slot size from ft. to ft.

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

Surface seal: Yes ☒ No ☐ To what depth? 20 ft.
Material used in seal Bentenite
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? Depth of strata
Method of sealing strata off

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

(8) WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level 10½ ft. below top of well Date 7-15-87
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom? Bach
Yield: 3,000 gal./min. with 40 ft. drawdown after 4 hrs.
" " " "
" " " "

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

Time	Water Level	Time	Water Level	Time	Water Level

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

(10) WELL LOG:

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

MATERIAL	FROM	TO
Topsoil	0	3
Sandy loam w/gravel	3	11
Coarse gravel	11	85
Sandstone	85	140

RECEIVED
AUG 19 19[illegible]
DEPARTMENT OF ECOLOGY
CENTRAL REGION OFFICE

Work started 6/11 19 87 Completed 7/15 19 87

WELL DRILLER'S STATEMENT:

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

NAME Bach Well Drilling Co.
(Person, firm, or corporation) (Type or print)

Address 211 Birchfield Rd. Yakima, Wa. 989C

[Signed] (Well Driller)

License No. 1541 Date 7/15 19 87

(USE ADDITIONAL SHEETS IF NECESSARY)

115055

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

WATER WELL REPORT
STATE OF WASHINGTON

Application No. .....
Permit No. .....

(1) OWNER: Name Grant Van Cleave Address RT 4 Box 417 Buckeye, Wa 98951

(2) LOCATION OF WELL: County Yakima — NW ¼ SW ¼ Sec. 1 T. 11 N., R. 18 W.M.
Bearing and distance from section or subdivision corner

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

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

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 55 ft. Depth of completed well 55 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 6 " Diam. from 0 ft. to 35 ft.
Threaded ☐ " Diam. from ft. to ft.
Welded ☒ " Diam. from ft. to ft.

Perforations: Yes ☒ No ☐
Type of perforator used Mills
SIZE of perforations 1 in. by 1 in.
60 perforations from 15 ft. to 30 ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes ☐ No ☒
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

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

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

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

(8) WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level 12 ft. below top of well Date 5-3-83
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

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

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test 30 gal./min. with 3 ft. drawdown after 1 hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes ☐ No ☒

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

MATERIAL	FROM	TO
Brown Dirt	0'	6'
Gravel & Gray Sand	6'	31'
Tan Clay	31'	36'
Soft Gravel & Sand	36'	37'
Tan Clay	37'	55'

Work started 4-29 — 19 83 Completed 5-3 — 19 83

WELL DRILLER'S STATEMENT:

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

NAME King Well Drilling
(Person, firm, or corporation) (Type or print)

Address Rt 2 Box 2375-C, Wapato, Wa 98951

[Signed] Robert D Barnes
(Well Driller)

License No. 0026 Date 5-3- 19 83

SR 2-16-84

(USE ADDITIONAL SHEETS IF NECESSARY)

1502 N5071

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

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. 007325

Water Right Permit No. _____

(1) OWNER: Name Green Acre Farms Inc. Address RT 1 Box 1770 Toppenish

(2) LOCATION OF WELL: County Yakima NE¼ NE¼ Sec. 8 T. 10 N.R. 18 W.M.

(2a) STREET ADDDRESS OF WELL (or nearest address) Corner Island Rd + Fort Rd. A

(3) PROPOSED USE: [X] Domestic [ ] Industrial [ ] Municipal [ ] Irrigation [ ] Test Well [ ] Other [ ] DeWater

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

Abandoned [ ] New well [X] Method: Dug [ ] Bored [ ] Deepened [ ] Cable [ ] Driven [ ] Reconditioned [ ] Rotary [X] Jetted [ ]

(5) DIMENSIONS: Diameter of well _____ inches.

Drilled 50 feet. Depth of completed well 50 ft.

(6) CONSTRUCTION DETAILS:

Casing Installed: 6" Diam. from 0 ft. to 40 ft.

Welded [X] Liner installed [ ] Threaded [ ] _____" Diam. from _____ ft. to _____ ft.

_____" Diam. from _____ ft. to _____ ft.

Perforations: Yes [ ] No [ ]

Type of perforator used _____

SIZE of perforations _____ in. by _____ in.

_____ perforations from _____ ft. to _____ ft.

_____ perforations from _____ ft. to _____ ft.

_____ perforations from _____ ft. to _____ ft.

Screens: Yes [ ] No [ ]

Manufacturer's Name _____

Type _____ Model No. _____

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel packed: Yes [ ] No [ ] Size of gravel _____

Gravel placed from _____ ft. to _____ ft.

Surface seal: Yes [X] No [ ] To what depth? 20 ft.

Material used in seal Bentonite

Did any strata contain unusable water? Yes [ ] No [ ]

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

(7) PUMP: Manufacturer's Name _____

Type: _____ H.P. _____

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

Static level 11 ft. below top of well Date 4-6-89

Artesian pressure _____ lbs. per square inch Date _____

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

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

Was a pump test made? Yes [ ] No [ ] If yes, by whom? _____

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

" " " "

" " " "

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____

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

Airtest 50 gal./min. with stem set at 50 ft. for 2 hrs.

Artesian flow _____ g.p.m. Date _____

Temperature of water _____ Was a chemical analysis made? Yes [ ] No [ ]

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
Silt	0	6
Gravel + Sand	6	25
Large Gravel Cemented	25	35
Loose Gravel	35	40
Sand Gravel Water	40	50

RECEIVED
APR 7 1989

Work started 4-5 1989 Completed 4-6 1989

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Bach Drilling Co. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address RT 5 Box 1010 E-Burg

(Signed) _____ (WELL DRILLER) License No. 0836

Contractor's Registration No. Mike BDC133NH Date 4-6 1989

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20 (10-87) -1329- 3

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

115557

WATER WELL REPORT

STATE OF WASHINGTON

Application No. .....
Permit No. .....

(1) OWNER: Name James Canapoo Address Yakima Indian Reservation

(2) LOCATION OF WELL: County Yakima — SW ¼ SW ¼ Sec. 1 T. 11 N., R. 18 W.M.

Bearing and distance from section or subdivision corner

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

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

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 99 ft. Depth of completed well 99 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6 " Diam. from 0 ft. to 93 ft.
Threaded ☐ ..... " Diam. from ..... ft. to ..... ft.
Welded ☒ ..... " Diam. from ..... ft. to ..... ft.

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

Screens: Yes ☒ No ☐
Manufacturer's Name Johnson
Type SS Model No. .....
Diam. 6 Slot size .006 from 93 ft. to 98 ft.
Diam. ..... Slot size ..... from ..... ft. to ..... ft.

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

Surface seal: Yes ☒ No ☐ To what depth? 21 ft.
Material used in seal cement
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? ..... Depth of strata .....
Method of sealing strata off .....

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

(8) WATER LEVELS: Land-surface elevation above mean sea level .... ft.
Static level 17'6" ft. below top of well Date .....
Artesian pressure ..... lbs. per square inch Date .....
Artesian water is controlled by ..... (Cap, valve, etc.)

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

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test .....
Bailer test 15 gal./min. with ..... ft. drawdown after 1½ hrs.
Artesian flow ..... g.p.m. Date .....
Temperature of water ..... Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG:

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

MATERIAL	FROM	TO
top soil	0	2
soft clay	2	24
broken basalt	24	37
hard clay and sand	37	92
fine sand, clay and cemented sand	92	99

RECEIVED
DEPT. OF ECOLOGY

Work started 2/10/75, 19 Completed 5/1/75, 19

WELL DRILLER'S STATEMENT:

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

NAME Bartholomew Drilling
(Person, firm, or corporation) (Type or print)

Address Nine Mile Falls, Wa. 99026

[Signed] D E Bartholomew
(Well Driller)

License No. 0027 Date 5/26/75, 19

(USE ADDITIONAL SHEETS IF NECESSARY)

S. F. No. 7356—OS—(Rev. 4-71)
ECY-070-28

B50

116449

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

WATER WELL REPORT

STATE OF WASHINGTON

Application No.

Permit No. ....

(1) OWNER: Name Leonard ~~XXXX~~ Riel Address Harrah Rd. Harrah Wa

(2) LOCATION OF WELL: County Yakima NW ¼ SW ¼ Sec 14 T. 11 N., R. 18 W.M.

Bearing and distance from section or subdivision corner

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

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

(5) DIMENSIONS: Diameter of well 12 inches.
Drilled 82 ft. Depth of completed well 82 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: +12 " Diam. from +1 ft. to 80 ft.
Threaded ☐ " Diam. from ft. to ft.
Welded ☒ " Diam. from ft. to ft.

Perforations: Yes ☒ No ☐
Type of perforator used Air Operated
SIZE of perforations 1/4 in. by 1 in.
480 perforations from 30 ft. to 38 ft.
1920 perforations from 48 ft. to 80 ft.
perforations from ft. to ft.

Screens: Yes ☐ No ☒
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

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

Surface seal: Yes ☒ No ☐ To what depth? 20 ft.
Material used in seal Bentonite
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? Depth of strata
Method of sealing strata off

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

(8) WATER LEVELS: Land-surface elevation above mean sea level .... ft.
Static level 14 ft. below top of well Date 1/27/88
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

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

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

Time	Water Level	Time	Water Level	Time	Water Level

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

(10) WELL LOG:

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

MATERIAL	FROM	TO
Topsoi	0	3
Gravel & sand	3	10
Lg gravel & sand (rocks)	10	30
Lg gravel & sand, Water	30	38
Lg gravel & sand	38	48
Lg gravel, sand & water	48	52
Pea gravel, sand & water	52	70
Gray sandstone water	70	76
Sand water	7	82

AUG - 3 1988

Work started 1/15/88 19 Completed 1/27/88 19

WELL DRILLER'S STATEMENT:

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

NAME Water Wells Drilling
(Person, firm, or corporation) (Type or print)
Address 5503 Ahtanum Rd. Yakima, Wa. 98903

[Signed] (Well Driller)
1435 2/16/88
License No. Date 19

(USE ADDITIONAL SHEETS IF NECESSARY)

ECY 050-1-20

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

116547

WATER WELL REPORT

STATE OF WASHINGTON

Application No. .....

Permit No. .....

(1) OWNER: Name Lorraine Afterbuffalo Address Yakima Indian Reservation

(2) LOCATION OF WELL: County Yakima — NW ¼ SW ¼ Sec 9 T 10 N., R 18 W.M.

Bearing and distance from section or subdivision corner

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

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

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 82 ft. Depth of completed well 82 ft.

(6) CONSTRUCTION DETAILS:

Casing installed: 6 " Diam. from 0 ft. to 76 ft.
Threaded ☐ ..... " Diam. from ..... ft. to ..... ft.
Welded ☒ ..... " Diam. from ..... ft. to ..... ft.

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

Screens: Yes ☒ No ☐
Manufacturer's Name Johnson
Type SS Model No. .....
Diam. 6 Slot size .025 from 76 ft. to 81 ft.
Diam. ..... Slot size ..... from ..... ft. to ..... ft.

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

Surface seal: Yes ☒ No ☐ To what depth? 24 ft.
Material used in seal Cement
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? ..... Depth of strata .....
Method of sealing strata off .....

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

(8) WATER LEVELS: Land-surface elevation above mean sea level .... ft.
Static level 36 ft. below top of well Date .....
Artesian pressure ..... lbs. per square inch Date .....
Artesian water is controlled by ..... (Cap, valve, etc.)

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

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test .....
Bailer test 35 gal./min. with ..... ft. drawdown after 1½ hrs.
Artesian flow ..... g.p.m. Date .....
Temperature of water ..... Was a chemical analysis made? Yes ☐ No ☐

(10) WELL LOG:

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

MATERIAL	FROM	TO
top soil	0	2
brown clay	2	10
clay, sand and some gravel	10	28
brown clay with abrasive	28	49
gray clay and broken basalt	49	74
brokwn basalt and sand	74	82

Work started 2/10/75, 19.... Completed 5/1/75, 19....

WELL DRILLER'S STATEMENT:

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

NAME Bartholomew Drilling
(Person, firm, or corporation) (Type or print)

Address Nine Mile Falls, Wa. 99026

[Signed] D E Bartholomew
(Well Driller)

License No. 0027 Date 5/26/75, 19....

(USE ADDITIONAL SHEETS IF NECESSARY)

S. F. No. 7356—OS—(Rev. 4-71)
ECY-070-28

118618

40%

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

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. 055565

Water Right Permit No. R

(1) OWNER: Name Sil 567 Jim Harvey Address 10310 McDonald Rd Brownstown WA

(2) LOCATION OF WELL: County Yakima SE ¼ SE ¼ Sec 33 T. 1E N., R. 11 W.M.

(2a) STREET ADDDRESS OF WELL (or nearest address) Same

11/48

(3) PROPOSED USE: [x] Domestic [ ] Irrigation [ ] DeWater Industrial [ ] Test Well [ ] Municipal [ ] Other [ ]

(4) TYPE OF WORK: Owner's number of well (if more than one) ______
Abandoned [ ] New well [x] Deepened [ ] Reconditioned [ ] Method: Dug [ ] Cable [ ] Rotary [x] Bored [ ] Driven [ ] Jetted [ ]

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 61 feet. Depth of completed well 61 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 6" Diam. from +1 ft. to 53 ft.
Welded [x] ___" Diam. from ___ ft. to ___ ft.
Liner installed [ ]
Threaded [ ] ___" Diam. from ___ ft. to ___ ft.

Perforations: Yes [ ] No [x]
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 [x] No [ ]
Manufacturer's Name Houston
Type Stainless Steel Model No. ___
Diam. 5 Slot size 20 from 54 ft. to 59 ft.
Diam. ___ Slot size ___ from ___ ft. to ___ ft.

Gravel packed: Yes [ ] No [x] Size of gravel ___
Gravel placed from ___ ft. to ___ ft.

Surface seal: Yes [x] No [ ] To what depth? 20 ft.
Material used in seal Wyo-Ben High Yield Gel
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 above mean sea level ___ ft.
Static level 7 ft. below top of well Date 11/7/90
Artesian pressure ___ lbs. per square inch Date ___
Artesian water is controlled by ___ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes [ ] No [x] If yes, by whom? ___
Yield: 25 gal./min. with ___ ft. drawdown after ___ hrs.
" " " "
Air Test " " "
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test ___
Bailer test ___ gal./min. with ___ ft. drawdown after ___ hrs.
Airtest ___ gal./min. with stem set at ___ ft. for ___ hrs.
Artesian flow ___ g.p.m. Date ___
Temperature of water ___ Was a chemical analysis made? Yes [ ] No [ ]

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
Clay Brown	0	3
Sand Gravel Large Cobble	3	39
Sand & Gravel	39	61

20

Work started 11/6, 1990 Completed 11/7, 1990

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME J&J Drilling, Inc. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)
Address 5613 S Link Rd Brownstown WA
(Signed) [signature] (WELL DRILLER) License No. 1447
Contractor's Registration No. VJJDOIE177KK Date 11/13, 1990

(USE ADDITIONAL SHEETS IF NECESSARY)

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

122567

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

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. [illegible]
UNIQUE WELL I.D. # [illegible]
Water Right Permit No. [illegible]

(1) OWNER: Name CAROLINE CHARLES Address SUMAC RD

(2) LOCATION OF WELL: County YAKIMA NE 1/4 NW 1/4 Sec 11 T. 11 N, R. 18 W.M.

(2a) STREET ADDRESS OF WELL (or nearest address) SUMAC RD

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

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

(5) DIMENSIONS: Diameter of well 6 inches. Drilled 105 feet. Depth of completed well 105 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 6 " Diam. from -1 ft. to 92 ft.
Welded ☒ Liner installed ☐ Threaded ☐ " Diam. from ft. to ft.
" Diam. from ft. to ft.

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

Screens: Yes ☒ No ☐
Manufacturer's Name HOUSTON
Type STAINLESS STEEL Model No.
Diam. 6 Slot size 020 from 100 ft. to 105 ft.
Diam. Slot size from ft. to ft.

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

Surface seal: Yes ☒ No ☐ To what depth? 18 ft.
Material used in seal BENTONITE
Did any strata contain unusable water? Yes ☐ No ☒
Type of water? Depth of strata
Method of sealing strata off

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

(8) WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level 14 ft. below top of well Date 1/9/98
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? Yes ☒ No ☐ If yes, by whom? VERNON RANK
Yield: 22 gal./min. with ft. drawdown after 2 hrs.
" " " "
" " " "

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test gal./min. with ft. drawdown after hrs.
Airtest 40 gal./min. with stem set at 105 ft. for 2 hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes ☐ No ☒

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
SOIL	0	8
BR CLAY, SOIL	8	16
SANDSTONE, CLAY, WATER	16	38
SAND CLAY, WATER	38	48
SANDSTONE, CLAY	48	55
SAND, GRAVEL, WATER	55	70
SANDSTONE, CLAY, WATER	70	105

RECEIVED
JAN 28 1998
DEPARTMENT OF ECOLOGY
CENTRAL REGION OFFICE

Work Started 12/29/97 19. Completed 1/9/98 19

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME WATER WELLS DRILLING, INC. (Person, firm or corporation) (Type or print)
Address 5503 ALTAANUM RD, YAKIMA
(Signed) Vernon L. Rank (WELL DRILLER) License No. 0854

Contractor's Registration No. WATERWD 112QB Date 23 Jan 1998

(USE ADDITIONAL SHEETS IF NECESSARY)

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

ECY 050-1-20 (6/93) * * 1

122642

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

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No. W105012
UNIQUE WELL I.D. # ACX 887
Water Right Permit No.

(1) OWNER: Name L. KEN ANDERSON Address 541 SUN RAY RD

(2) LOCATION OF WELL: County YAKIMA SE 1/4 SW 1/4 Sec 8 T. 10 N. R. 18 W.M.

(2a) STREET ADDRESS OF WELL (or nearest address) 541 SUN RAY RD

(3) PROPOSED USE: [X] Domestic [ ] Irrigation [ ] DeWater [ ] Industrial [ ] Test Well [ ] Municipal [ ] Other

(4) TYPE OF WORK: Owner's number of well (if more than one)
Abandoned [ ] New well [X] Deepened [ ] Reconditioned [ ] Method: Dug [ ] Cable [ ] Rotary [X] Bored [ ] Driven [ ] Jetted [ ]

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 320 feet. Depth of completed well 320 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: 6 " Diam. from +1 ft. to 245 ft.
Welded [X] Liner installed [ ] Threaded [ ] " Diam. from ft. to ft.
" Diam. from ft. to ft.

Perforations: Yes [ ] No [X]
Type of perforator used
SIZE of perforations in. by 0 in.
perforations from 0 ft. to 0 ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: Yes [X] No [ ]
Manufacturer's Name ARDVARK
Type PLASTIC Model No.
Diam. 6 Slot size 0.02 from 245 ft. to 265 ft.
Diam. Slot size from ft. to ft.

Gravel packed: Yes [ ] No [X] Size of gravel
Gravel placed from ft. to ft.

Surface seal: Yes [X] No [ ] To what depth? 18 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 above mean sea level ft.
Static level 30 ft. below top of well Date 11/24/98
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc.)

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

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test gal./min. with ft. drawdown after hrs.
Airtest 30 gal./min. with stem set at 230 ft. for 1 hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analysis made? Yes [ ] No [X]

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION

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

MATERIAL	FROM	TO
SOIL	0	22
SOIL, BR CLAY, SAND	22	28
SAND, BRN CLAY WATER	28	32
BR CLAY, SAND	32	51
GRN CLAY, GRAVEL	51	60
GRN CLAY, GRAVEL, WATER	60	85
GRN CLAY, SAND, GRAVEL, WATER	85	128
GRN CLAY, SAND, GRAVEL	128	148
GRN CLAY, SAND	148	158
LT BL CLAY	158	191
GRN CLAY, SAND, WATER	191	240
BL CLAY, BL SANDSTONE, WATER	240	320

Received DEPT. OF ECOLOGY JAN 13 1999 CENTRAL REGION OFFICE

Work Started 11/19/98 19. Completed 11/24/98

WELL CONSTRUCTOR CERTIFICATION:

I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME WATER WELLS DRILLING, INC. (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)

Address 5503 AHTANUM RD

(Signed) Vernon L. Rank (WELL DRILLER) License No. 0854

Contractor's Registration No. WATERWD112QB Date 12/2/98

(USE ADDITIONAL SHEETS IF NECESSARY)

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

ECY 050-1-20 (6/93)

338236

WATER WELL REPORT

ECOLOGY Original & 1st copy Ecology 2nd copy owner 3rd copy driller

Construction/Decommission (x in circle) 117647
- ⊗ Construction
- ○ Decommission *ORIGINAL CONSTRUCTION Notice of Intent Number*_____

CURRENT
Notice of Intent No W160018
Unique Ecology Well ID Tag No AHK 366
Water Right Permit No _____
Property Owner Name Todd Spencer G
Well Street Address 10360 McDonald Rd
City Harrah County Yakima
Location SW 1/4 1/4 NE 1/4 Sec 04 Twn 10 R 18 EWM or WWM *circle one*
Lat/Long (s t r still REQUIRED) Lat Deg _____ Lat Min/Sec _____
Long Deg _____ Long Min/Sec _____
Tax Parcel No 181004-13405

PROPOSED USE ☒ Domestic ☐ Industrial ☐ Municipal ☐ DeWater ☐ Irrigation ☐ Test Well ☐ Other_____

TYPE OF WORK Owner's number of well (if more than one)_____
☒ New Well ☐ Reconditioned *Method* ☐ Dug ☐ Bored ☐ Driven ☐ Deepened ☐ Cable ☒ Rotary ☐ Jetted

DIMENSIONS Diameter of well 6 inches drilled 85 ft
Depth of completed well 85 ft

CONSTRUCTION DETAILS
Casing Installed ☒ Welded 6 Diam from +2 ft to 82 ft
☐ Liner installed _____ Diam from _____ ft to _____ ft
☐ Threaded _____ Diam from _____ ft to _____ ft

Perforations ☐ Yes ☒ No
Type of perforator used_____
SIZE of perfs____in by____in and no of perfs_____ from _____ft to _____ft

Screens ☐ Yes ☒ No ☐ K Pac Location_____
Manufacturer's Name_____
Type_____ Model No _____
Diam _____ Slot Size_____ from_____ft to_____ft
Diam _____ Slot Size_____ from_____ft to_____ft

Gravel/Filter packed ☐ Yes ☒ No ☐ Size of gravel/sand_____
Materials placed from_____ft to_____ft

Surface Seal ☒ Yes ☐ No To what depth? 18 ft
Materials used in seal Bentonite
Did any strata contain unusable water? ☐ Yes ☐ No
Type of water?_____ Depth of strata_____
Method of sealing strata off_____

PUMP Manufacturer's Name_____
Type _____ H P _____

WATER LEVELS Land surface elevation above mean sea level_____ft
Static level 6 ft below top of well Date 7-23-02
Artesian pressure_____lbs per square inch Date_____
Artesian water is controlled by_____ (cap valve etc)

WELL TESTS Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☐ No If yes by whom?_____
Yield _____gal./min with_____ft drawdown after_____hrs
Yield _____gal./min with_____ft drawdown after_____hrs
Yield _____gal./min with_____ft drawdown after_____hrs
Recovery data (time taken as zero when pump turned off)(water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test_____
Bailer test_____gal./min with _____ft drawdown after_____hrs
Airtest 80 gal./min with stem set at 70 ft for 1 hrs
Artesian flow_____g p m Date_____
Temperature of water_____ Was a chemical analysis made? ☐ Yes ☐ No

CONSTRUCTION OR DECOMMISSION PROCEDURE
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 one entry for each change of information Indicate all water encountered (USE ADDITIONAL SHEETS IF NECESSARY)

MATERIAL	FROM	TO
Top Soil	0	6
Sand + Gravel	6	18
Gravel	18	39
Clay	39	54
Gravel	54	65
Sandstone	65	85

DEPT. OF ECOLOGY Received JUL 30 2002 CENTRAL REGION OFFICE

Start Date 7-23-02 Completed Date 7-23-02

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

☒ Driller ☐ Engineer ☐ Trainee Name (Print) Gary Lydish
Driller/Engineer/Trainee Signature Gary Lydish
Driller or Trainee License No 1023

Drilling Company Apple Valley Well Drilling
Address PO Box 55
City State Zip Selah Wa
Contractor's Registration No Applevawo*KL Date 7-23-02

If trainee, licensed driller's Signature and License no _____

Ecology is an Equal Opportunity Employer ECY 050 1 20 (Rev 4/01)

355298

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

WATER WELL REPORT

STATE OF WASHINGTON

Start Card No W48012

UNIQUE WELL I D # ABL597

Water Right Permit No

(1) **OWNER** Name Jess Hamilton Address 2212 So. 4th Avenue Yakima, WA

(2) **LOCATION OF WELL** County Yakima SE 1/4 SW 1/4 Sec 36 T 12 N R 18 WM

(2a) **STREET ADDRESS OF WELL** (or nearest address) 2212 So 4th Avenue Yakima, WA 98903

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

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

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

(5) **DIMENSIONS** Diameter of well 6 inches
Drilled 90 feet Depth of completed well 90 ft

(6) **CONSTRUCTION DETAILS**

Casing installed 6 Diam from +1 ft to 90 ft
Welded ☐ Liner installed ☐ Threaded ☐ Diam from ft to ft

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

Screens Yes ☐ No ☒
Manufacturer s Name
Type Model No
Diam Slot size from ft to ft
Diam Slot size from ft to ft

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

Surface seal Yes ☒ No ☐ To what depth? ~~20~~ 40 ft
Material used in seal Bentonite Clay
Did any strata contain unusable water? Yes ☐ No ☐
Type of water? Depth of strata
Method of sealing strata off

(7) **PUMP** Manufacturer s Name
Type HP

(8) **WATER LEVELS** Land surface elevation above mean sea level ft
Static level 12 ft below top of well Date 4-13-95
Artesian pressure lbs per square inch Date
Artesian water is controlled by (Cap valve etc)

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

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test gal /min with ft drawdown after hrs
Artest 50 gal /min with stem set at 90 ft for 1 hrs
Artesian flow g p m Date
Temperature of water Was a chemical analysis made? Yes ☐ No ☒

(10) **WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION**

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

MATERIAL	FROM	TO
~~Soil~~	0	~~14~~
~~Gravel, Soil and Sand~~	~~14~~	~~27~~
~~Gravel, Sand & Water~~	~~27~~	~~32~~
~~Cemented Gravel~~	~~32~~	~~45~~
Sand, Gravel and Clay	45	88
Gravel and WAter	88	90

RECEIVED
MAY 2 1995
DEPARTMENT OF ECOLOGY
CENTRAL REGION OFFICE

Work Started 4-13-95 19 Completed 4-14-95 19

WELL CONSTRUCTOR CERTIFICATION

I constructed and/or accept responsibility for construction of this well and its compliance with all Washington well construction standards Materials used and the information reported above are true to my best knowledge and belief

NAME Water Wells Drilling, Inc (PERSON, FIRM OR CORPORATION) (TYPE OR PRINT)
Address 5503 Antanum Yakima, WA 98903
(Signed) Vernon L. Rank (WELL DRILLER) License No 0854

Contractor s Registration No Date 19

(USE ADDITIONAL SHEETS IF NECESSARY)

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

ECY 050 1 20 (9/93)

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

369199

WATER WELL REPORT

ECOLOGY Original & 1st copy Ecology 2nd copy owner 3rd copy driller

Construction/Decommission (x in circle)
- (X) Construction 138814
- ( ) Decommission *ORIGINAL CONSTRUCTION Notice of Intent Number*

CURRENT
Notice of Intent No W163370
Unique Ecology Well ID Tag No AKH-633
Water Right Permit No
Property Owner Name Steve Riel D
Well Street Address 7950 Progressive Rd
City Wapato County Yakima
Location NW 1/4 1/4 NW 1/4 Sec 27 Twn 11 R 18 EWM or WWM *circle one*
Lat/Long (s t r still REQUIRED) Lat Deg Lat Min/Sec Long Deg Long Min/Sec
Tax Parcel No 181127-22402

PROPOSED USE (X) Domestic ( ) Industrial ( ) Municipal ( ) DeWater ( ) Irrigation ( ) Test Well ( ) Other

TYPE OF WORK Owner s number of well (if more than one)
(X) New Well ( ) Reconditioned *Method* ( ) Dug ( ) Bored ( ) Driven ( ) Deepened ( ) Cable (X) Rotary ( ) Jetted

DIMENSIONS Diameter of well 6 inches drilled 110 ft
Depth of completed well 110 ft

CONSTRUCTION DETAILS
Casing Installed (X) Welded 6 Diam from +1 ft to 80 ft
(X) Liner installed 5 Diam from 68 ft to 110 ft
( ) Threaded Diam from ft to ft

Perforations (X) Yes ( ) No
Type of perforator used Torch
SIZE of perfs 1/4 in by 5 in and no of perfs 40 from 90 ft to 110 ft

Screens ( ) Yes (X) No ( ) K Pac Location
Manufacturer s Name
Type Model No
Diam Slot Size from ft to ft
Diam Slot Size from ft to ft

Gravel/Filter packed ( ) Yes (X) No ( ) Size of gravel/sand
Materials placed from ft to ft

Surface Seal (X) Yes ( ) No To what depth? 18 ft
Materials used in seal Bentonite
Did any strata contain unusable water? ( ) Yes (X) No
Type of water? Depth of strata
Method of sealing strata off

PUMP Manufacturer s Name
Type H P

WATER LEVELS Land surface elevation above mean sea level ft
Static level 7 ft below top of well Date 6-24-03
Artesian pressure lbs per square inch Date
Artesian water is controlled by (cap valve etc)

WELL TESTS Drawdown is amount water level is lowered below static level
Was a pump test made? ( ) Yes (X) No If yes by whom?
Yield gal /min with ft drawdown after hrs
Yield gal /min with ft drawdown after hrs
Yield gal /min with ft drawdown after hrs
Recovery data (time taken as zero when pump turned off)(water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test gal /min with ft drawdown after hrs
Airtest 60 gal /min with stem set at 110 ft for 1 hrs
Artesian flow g p m Date 6-24-03
Temperature of water 60 Was a chemical analysis made? ( ) Yes (X) No

CONSTRUCTION OR DECOMMISSION PROCEDURE
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 one entry for each change of information Indicate all water encountered (USE ADDITIONAL SHEETS IF NECESSARY)

MATERIAL	FROM	TO
Topsoil	0	1
Large & Small Gravel & Br Clay & Br Sand	1	12
Large & Small Gravel & Br Clay & Br Sand & Water	12	58
Br. Clay & Br. Sand	58	67
Br Sandstone & Gravel	67	85
Gray Clay & Gray Sand	85	92
Br Sandstone & Water	92	110
(Yakima Nation Permit # 2003-035)		

DEPT OF ECOLOGY Received SEP 12 2003 CENTRAL REGION OFFICE

Start Date 6-20-03 Completed Date 6-24-03

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

(X) Driller ( ) Engineer ( ) Trainee Name (Print) Jerry Rank
Driller/Engineer/Trainee Signature Jerry L Rank
Driller or Trainee License No 1435

Drilling Company Oasis Drilling
Address 2017 S 16th Ave
City State Zip Union Gap, Wash 98903
Contractor s Registration No OASISD*072J9 Date 6-24-03

If trainee, licensed driller's Signature and License no

Ecology is an Equal Opportunity Employer ECY 050 1 20 (Rev 4/01)

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

477863

WATER WELL REPORT

Original & 1st copy – Ecology, 2nd copy – owner, 3rd copy – driller

Construction/Decommission *("x" in circle)*

☒ Construction 259744

○ Decommission *ORIGINAL INSTALLATION Notice of Intent Number* _____

CURRENT

Notice of Intent No. W 255581

Unique Ecology Well ID Tag No. APG 375

Water Right Permit No. _____

Property Owner Name Federico Palomera

Well Street Address Sunray Rd

City Wapito County Yakima

Location NE 1/4-1/4 NW /4 Sec 17 Twn 10 R 18 EWM or WWM (circle one)

Lat/Long (s, t, r Still **REQUIRED**) Lat Deg _____ Lat Min/Sec _____ Long Deg _____ Long Min/Sec _____

Tax Parcel No. 181017-~~21001~~ 21401

PROPOSED USE: ☒ Domestic ☐ Industrial ☐ Municipal ☐ DeWater ☐ Irrigation ☐ Test Well ☐ Other _____

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

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

DIMENSIONS: Diameter of well 6 inches, drilled 85 ft. Depth of completed well 85 ft.

CONSTRUCTION DETAILS

Casing Installed: ☒ Welded 6 " Diam. from +2 ft. to 78 ft. ☐ Liner installed _____ " Diam. from _____ ft. to _____ ft. ☐ Threaded _____ " Diam. from _____ ft. to _____ ft.

Perforations: ☐ Yes ☒ No

Type of perforator used _____

SIZE of perfs _____ in. by _____ in. and no. of perfs _____ from _____ ft. to _____ ft.

Screens: ☐ Yes ☒ No ☐ K-Pac Location _____

Manufacturer's Name _____

Type _____ Model No. _____

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Diam. _____ Slot size _____ from _____ ft. to _____ ft.

Gravel/Filter packed: ☐ Yes ☒ No ☐ Size of gravel/sand _____ Materials placed from _____ ft. to _____ ft.

Surface Seal: ☒ Yes ☐ No To what depth? 18 ft.

Material used in seal Bentonite

Did any strata contain unusable water? ☐ Yes ☐ No

Type of water? _____ Depth of strata _____

Method of sealing strata off _____

PUMP: Manufacturer's Name _____

Type: _____ H.P. _____

WATER LEVELS: Land-surface elevation above mean sea level _____ ft.

Static level 27 ft. below top of well Date 11-29-06

Artesian pressure _____ lbs. per square inch Date _____

Artesian water is controlled by _____ (cap, valve, etc.)

WELL TESTS: Drawdown is amount water level is lowered below static level

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

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

Yield: _____ gal./min. with _____ ft. drawdown after _____ hrs.

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test _____

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

Airtest 20 gal./min. with stem set at 80 ft. for 1 hrs.

Artesian flow _____ g.p.m. Date _____

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

CONSTRUCTION OR DECOMMISSION PROCEDURE

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 one entry for each change of information. (USE ADDITIONAL SHEETS IF NECESSARY.)

MATERIAL	FROM	TO
Clay + Silt Brown	0	48
Clay + Silt Green	48	65
Gravel - Grem - Water	65	85

DEPT OF ECOLOGY Received MAY 02 2007 CENTRAL REGION OFFICE

Start Date 11-29-06 Completed Date 11-29-06

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) Gary Lydin

Driller/Engineer/Trainee Signature Gary Lydin

Driller or trainee License No. 1023

Drilling Company Apple Valley Well Drilling

Address PO Box 53

City, State, Zip Selah Wa

Contractor's Registration No. Applevawe*** Date 12-5-06

If TRAINEE,

Driller's Licensed No. _____

Driller's Signature _____

Ecology is an Equal Opportunity Employer.

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

485778

File Original and First Copy with Department of Ecology
Second Copy - Owner's Copy
Third Copy - Driller's copy a65664

WATER WELL REPORT

STATE OF WASHINGTON

Notice of Intent WE06802
UNIQUE WELL I.D. # APT371
Water Right Permit No.

(1) OWNER: Name GREEN ACRE FARMS Address 451 N FORT RD, WHITE SWAN, WA 98952

(2) LOCATION OF WELL: County YAKIMA - NE 1/4 NE 1/4 Sec 08 T. 10 N.,R 18 W.M.

(2a) STREET ADDRESS OF WELL (or nearest address) [illegible] FORT RD TOPPENISH WA 98948

TAX PARCEL NO. 181008-11006 A

(3) PROPOSED USE: [X] Domestic [ ] Industrial [ ] Municipal [ ] Irrigation [ ] Test Well [ ] Other [ ] DeWater

(4) TYPE OF WORK: Owner's number of well (if more than one)
[X] New Well Method: [ ] Deepened [ ] Dug [ ] Bored [ ] Reconditioned [ ] Cable [ ] Driven [ ] Decommission [X] Rotary [ ] Jetted

(5) DIMENSIONS: Diameter of well 8 inches. Drilled 189 feet. Depth of completed well 189 ft.

(6) CONSTRUCTION DETAILS:
Casing Installed:
[X] Welded 8 " Diam. from +1 ft. to 187 ft.
[ ] Liner Installed " Diam. from ft. to ft.
[ ] Threaded " Diam. from ft. to ft.

Perforations: [ ] Yes [X] 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 [X] No [ ] K-Pac Location
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

Gravel/Filter packed: [ ] Yes [X] No [ ] Size of gravel/sand
Material placed from ft. to ft.

Surface seal: [X] Yes [ ] No To what depth? 50 ft.
Material used in seal BENTONITE
Did any strata contain unusable water? [ ] Yes [X] No
Type of water? Depth of strata
Method of sealing strata off

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

(8) WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level 39 ft. below top of well Date 7/14/2007
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc)

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

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test gal./min. with ft. drawdown after hrs.
Airtest 150 gal./min. with stem set at 180 ft. for 1 hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analyses made? [ ] Yes [X] No

(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 one entry for each change of information. Indicate all water encountered.

MATERIAL	FROM	TO
SOIL	0	18
CLAY	18	50
CLAY & GRAVEL	50	68
SAND & GRAVEL	68	81
CLAY	81	92
GRAVEL & SAND	92	103
CLAY GREEN	103	114
CLAY & GRAVEL	114	122
SANDSTONE GREEN	122	134
SAND	134	146
BASALT BROKEN	146	173
BASALT & SHALE CLAY GREEN	173	186
GRAVEL & SAND	186	189
150 GPM @ 180		
80 GPM @ 140		
40 GPM @ 100		

DEPT OF ECOLOGY Received JUL 02 2007 CENTRAL REGION OFFICE

Work Started 6/13/2007 , 19. Completed 6/14/2007 , 19

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 TOM MCGUIRE (Licensed Driller/Engineer) License No. 0357
Trainee Name License No.
Drilling Company RICK POULIN WELL DRILLING INC.
(Signed) Tom McGuire (Licensed Driller/Engineer) License No. 0357
Address 1301 LANCASTER RD SELAH, WA 98942
Contractor's Registration No. RICKPWD944PW Date 6/15/2007 , 19

(USE ADDITIONAL SHEETS IF NECESSARY)

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

485809

File Original with Department of Ecology 89379
Second Copy - Owner's Copy
Third Copy - Driller's Copy

WATER WELL REPORT
STATE OF WASHINGTON

Notice of Intent W-113685
UNIQUE WELL I D # ACX-942
Water Right Permit No

(1) OWNER Name LON INABA Address 8351 McDONALD RD

(2) LOCATION OF WELL County YAKIMA NW 1/4 SE 1/4 Sec 02 T 10 N R 18 WM

(2a) STREET ADDRESS OF WELL (or nearest address)

TAX PARCEL NO

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

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

(5) DIMENSIONS Diameter of well 6 inches
Drilled 100 feet Depth of completed well 100 ft

(6) CONSTRUCTION DETAILS
Casing Installed
☒ Welded 6 " Diam from 42 ft to 100 ft
☐ Liner installed " Diam from ft to ft
☐ Threaded " Diam from ft to ft

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

Screens ☐ Yes ☒ No ☐ K-Pac Location
Manufacturer's Name
Type Model No
Diam Slot Size from ft to ft
Diam Slot Size from ft to ft

Gravel/Filter packed ☐ Yes ☒ No ☐ Size of gravel/sand
Material placed from ft to ft

Surface seal ☒ Yes ☐ No To what depth? 30 ft
Material used in seal BENTONITE
Did any strata contain unusable water? ☐ Yes ☒ No
Type of water? Depth of strata
Method of sealing strata off

(7) PUMP Manufacturer's Name
Type H P

(8) WATER LEVELS Land-surface elevation above mean sea level ft
Static level 9 ft below top of well Date 7/31/00
Artesian pressure lbs per square inch Date
Artesian water is controlled by
(Cap valve etc)

(9) WELL TESTS Drawdown is amount water level is lowered below static level
Was a pump test made? ☐ Yes ☐ No If yes by whom?
Yield gal/min with ft drawdown after hrs
Yield gal/min with ft drawdown after hrs
Yield gal/min with ft drawdown after hrs
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test gal/min with ft drawdown after hrs
Airtest 30 gal/min with ft drawdown after 2 hrs
Artesian flow g p m Date
Temperature of water Was a chemical analysis made? ☐ Yes ☒ No

ECY 050-1-20 (11/98)

(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 one entry for each change of information Indicate all water encountered

MATERIAL	FROM	TO
DIRT-ROCKS	0	3
GRAVEL	3	17
SAND-GRAVEL-WATER	17	63
CLAY-GRAVEL	63	67
GRAVEL-WATER	67	100

RECEIVED
AUG 17 2000
DEPARTMENT OF ECOLOGY
WELL DRILLING UNIT

AUG 24 2000

Work Started 7/27/00 Completed 7/28/00

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 CRAIG WAMSLEY License No 2428
(Licensed Driller/Engineer)

Trainee Name License No
Drilling Company HIDDEN RIVERS DRILLING
Signed (Licensed Driller/Engineer) License No 2428
Address 757 COMBE EAGLE RD SELAH WA
Contractors Registration No HIDDERD*061DS Date 8/1/00

(USE ADDITIONAL SHEETS IF NECESSARY)

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

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

520867

File Original and First Copy with Department of Ecology
Second Copy - Owner's Copy
Third Copy - Driller's copy 298976

WATER WELL REPORT

STATE OF WASHINGTON

Notice of Intent W254625
UNIQUE WELL I.D. # APT878
Water Right Permit No.

(1) OWNER: Name DALE EARLY Address 1169 N 1000 W, CLINTON, UT 84015

(2) LOCATION OF WELL: County YAKIMA - NW 1/4 NE 1/4 Sec 04 T. 10 N.,R 18 W.M.

(2a) STREET ADDRESS OF WELL (or nearest address) MCDONALD RD

TAX PARCEL NO. 181004-12403 B

(3) PROPOSED USE: [X] Domestic [ ] Industrial [ ] Municipal [ ] Irrigation [ ] Test Well [ ] Other [ ] DeWater

(4) TYPE OF WORK: Owner's number of well (If more than one) ____
[X] New Well Method: [ ] Deepened [ ] Dug [ ] Bored [ ] Reconditioned [ ] Cable [ ] Driven [ ] Decommission [X] Rotary [ ] Jetted

(5) DIMENSIONS: Diameter of well 6 inches. Drilled 213 feet. Depth of completed well 213 ft.

(6) CONSTRUCTION DETAILS:
Casing Installed:
[X] Welded 6 " Diam. from +2 1/2 ft. to 198 ft.
[X] Liner installed 4 1/2 " Diam. from 188 ft. to 213 ft.
[ ] Threaded ____ " Diam. from ____ ft. to ____ ft.

Perforations: [X] Yes [ ] No
Type of perforator used SKILLSAW
SIZE of perforations 1/8 in. by 6 in.
25 perforations from 198 ft. to 213 ft.
____ perforations from ____ ft. to ____ ft.
____ perforations from ____ ft. to ____ ft.

Screens: [ ] Yes [X] No [ ] K-Pac Location ____
Manufacturer's Name ____
Type ____ Model No. ____
Diam. ____ Slot size ____ from ____ ft. to ____ ft.
Diam. ____ Slot size ____ from ____ ft. to ____ ft.

Gravel/Filter packed: [ ] Yes [X] No [ ] Size of gravel/sand ____
Material placed from ____ ft. to ____ ft.

Surface seal: [X] Yes [ ] No To what depth? 25 ft.
Material used in seal BENTONITE
Did any strata contain unusable water? [ ] Yes [X] No
Type of water? ____ Depth of strata ____
Method of sealing strata off ____

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

(8) WATER LEVELS: Land-surface elevation above mean sea level ____ ft.
Static level 55 ft. below top of well Date 2/18/2008
Artesian pressure ____ lbs. per square inch Date ____
Artesian water is controlled by ____ (Cap, valve, etc)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level
Was a pump test made? [ ] Yes [X] No If yes, by whom? ____
Yield: ____ gal./min. with ____ ft. drawdown after ____ hrs.
Yield: ____ gal./min. with ____ ft. drawdown after ____ hrs.
Yield: ____ gal./min. with ____ ft. drawdown after ____ hrs.

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test ____
Bailer test ____ gal./min. with ____ ft. drawdown after ____ hrs.
Airtest 60 gal./min. with stem set at 200 ft. for 1 hrs.
Artesian flow ____ g.p.m. Date ____
Temperature of water ____ Was a chemical analyses made? [ ] Yes [X] No

(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 one entry for each change of information. Indicate all water encountered.

MATERIAL	FROM	TO
SOIL	0	3
CLAY	3	6
SANDSTONE & CLAY	6	62
CLAY & GRAVEL	62	87
CLAY	87	95
GRAVEL & SAND	95	102
CLAY & GRAVEL	102	111
SANDSTONE & CLAY	111	118
SANDSTONE, CLAY & SANDSTONE & SAND	118	
LAYERS		128
SAND	128	133
SAND & GRAVEL	133	137
SAND	137	162
SAND GREEN	162	173
BASALT BROKEN & GREEN SHALE CLAY &	173	
SAND		182
CLAY	182	209
SHALE CLAY	209	213
60 GPM @ 200		
50 GPM @ 140		
20 GPM @ 80		

DEPT OF ECOLOGY Received MAR 10 2008 CENTRAL REGION OFFICE

Work Started 2/18/2008, 19. Completed 2/18/2008, 19

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 TOM MCGUIRE License No. 0357
(Licensed Driller/Engineer)
Trainee Name ____ License No. ____
Drilling Company RICK POULIN WELL DRILLING INC.
(Signed) Tom McGuire License No. 0357
(Licensed Driller/Engineer)
Address 1301 LANCASTER RD SELAH, WA 98942
Contractor's Registration No. RICKPWD944PW Date 2/19/2008, 19

(USE ADDITIONAL SHEETS IF NECESSARY)

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

570638

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 298423

WATER WELL REPORT

STATE OF WASHINGTON

Notice of Intent W254634
UNIQUE WELL I.D. # APT902
Water Right Permit No.

(1) OWNER: Name ADAM LESLIE Address 283 LATERAL C, WAPATO, WA 98951

(2) LOCATION OF WELL: County YAKIMA - SW 1/4 NW 1/4 Sec 01 T. 11 N., R. 18 W.M.

(2a) STREET ADDRESS OF WELL (or nearest address) LATERAL C WAPATO WAPATO WA 98951

TAX PARCEL NO. 181101-23405

E

(3) PROPOSED USE: [X] Domestic [ ] Industrial [ ] Municipal [ ] Irrigation [ ] Test Well [ ] Other [ ] DeWater

(4) TYPE OF WORK: Owner's number of well (If more than one)
[X] New Well. Method: [ ] Dug [ ] Bored [ ] Deepened [ ] Cable [ ] Driven [ ] Reconditioned [ ] Rotary [ ] Jetted [ ] Decommission

(5) DIMENSIONS: Diameter of well 6 inches. Drilled 129 feet. Depth of completed well 129 ft.

(6) CONSTRUCTION DETAILS:
Casing Installed:
[X] Welded 6 " Diam. from +2 ft. to 99 ft.
[X] Liner installed 4 1/2 " Diam. from 89 ft. to 129 ft.
[ ] Threaded " Diam. from ft. to ft.

Perforations: [X] Yes [ ] No
Type of perforator used SKILLSAW
SIZE of perforations 1/8 in. by 6 in.
30 perforations from 109 ft. to 129 ft.
perforations from ft. to ft.
perforations from ft. to ft.

Screens: [ ] Yes [X] No [ ] K-Pac Location
Manufacturer's Name
Type Model No.
Diam. Slot size from ft. to ft.
Diam. Slot size from ft. to ft.

Gravel/Filter packed: [ ] Yes [X] No [ ] Size of gravel/sand
Material placed from ft. to ft.

Surface seal: [X] Yes [ ] No To what depth? 25 ft.
Material used in seal BENTONITE
Did any strata contain unusable water? [ ] Yes [X] No
Type of water? Depth of strata
Method of sealing strata off

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

(8) WATER LEVELS: Land-surface elevation above mean sea level ft.
Static level 16.6 ft. below top of well Date 4/17/2008
Artesian pressure lbs. per square inch Date
Artesian water is controlled by (Cap, valve, etc)

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

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

Time	Water Level	Time	Water Level	Time	Water Level

Date of test
Bailer test gal./min. with ft. drawdown after hrs.
Airtest 30 gal./min. with stem set at 125 ft. for 1 hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analyses made? [ ] Yes [X] No

(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 one entry for each change of information. Indicate all water encountered.

MATERIAL	FROM	TO
SOIL & SMALL BOLDERS	0	2
SOIL	2	4
GRAVEL & CLAY	4	12
CLAY	12	17
GRAVEL & SAND	17	28
SANDSTONE & CLAY	28	42
SANDSTONE & CLAY LAYERS	42	81
SANDSTONE	81	129
30 GPM @ 125		
30 GPM @ 100		
20 GPM @ 60		

DEPT OF ECOLOGY Received MAY 07 2008 CENTRAL REGIONAL OFFICE

Work Started 4/17/2008 , 19 Completed 4/17/2008 , 19

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 TOM MCGUIRE License No. 0357
(Licensed Driller/Engineer)
Trainee Name License No.
Drilling Company RICK POULIN WELL DRILLING INC.
(Signed) Tom McGuire License No. 0357
(Licensed Driller/Engineer)
Address 1301 LANCASTER RD SELAH, WA 98942
Contractor's Registration No. RICKPWD944PW Date 4/21/2008 , 19

(USE ADDITIONAL SHEETS IF NECESSARY)

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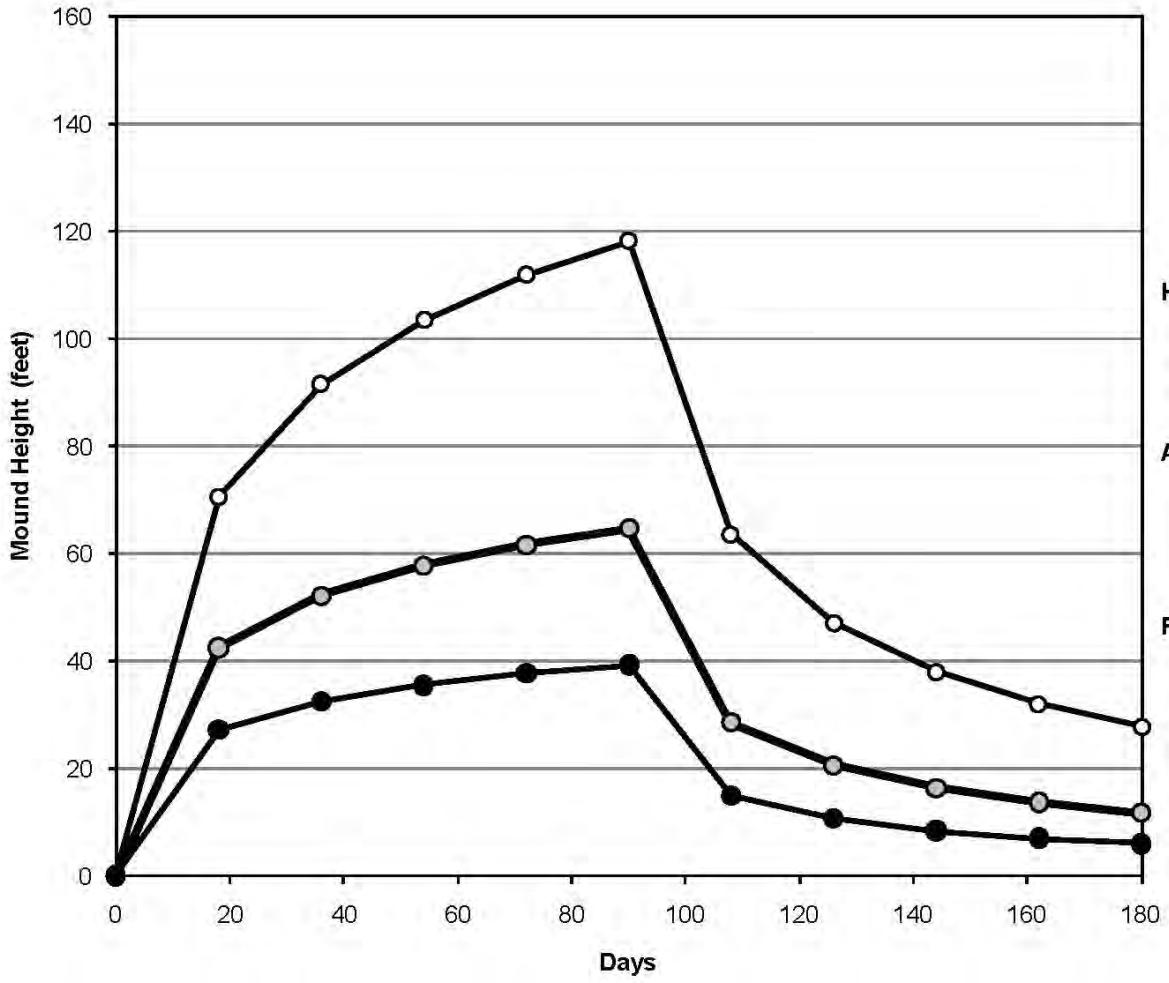
APPENDIX C

MOUNDING CALCULATIONS



Legend

- LOW
- MODERATE
- HIGH

Hydraulic Conductivities:

LOW = 20 ft/d
MODERATE = 50 ft/d
HIGH = 100 ft/d

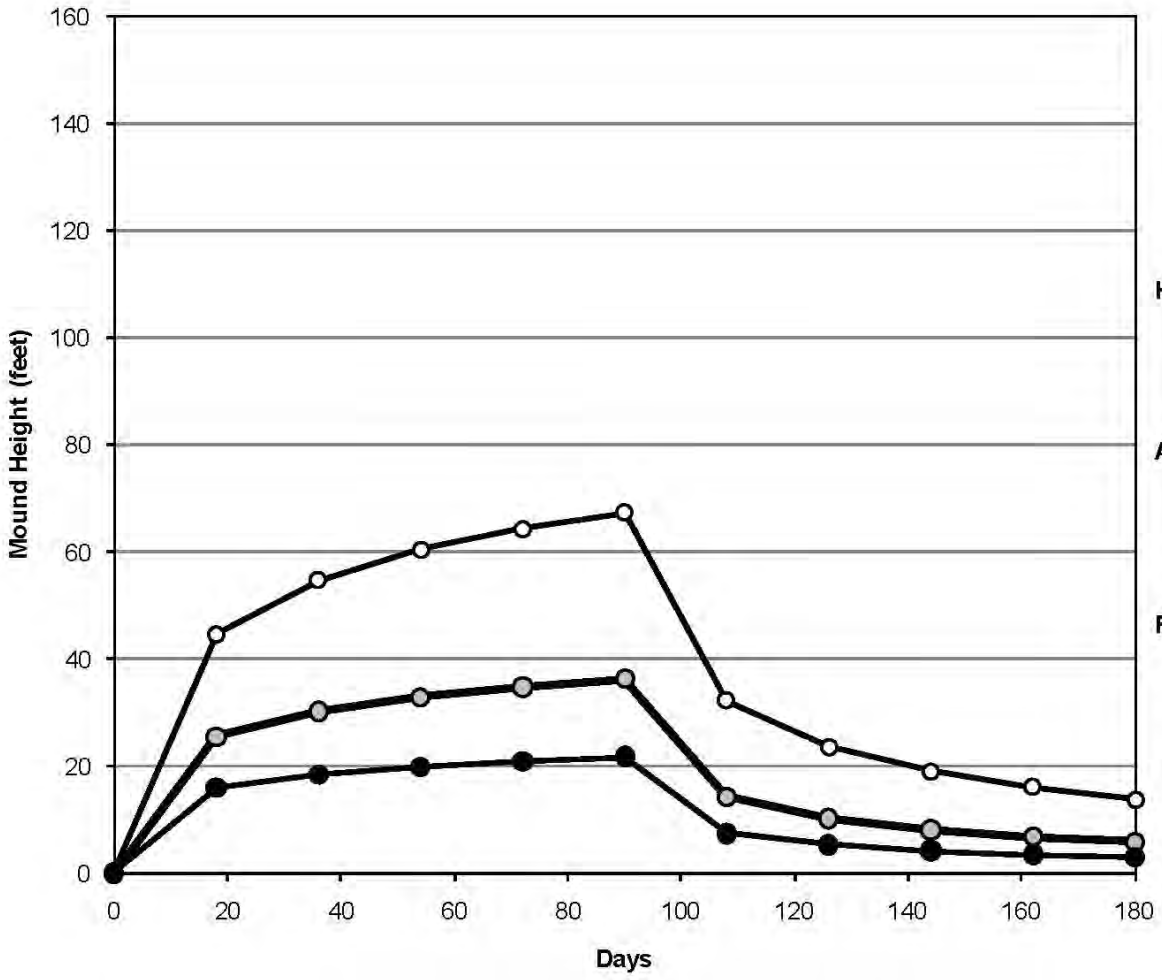
Aquifer Properties:

Hydraulic Conductivity, K (see above)
Specific Yield, $S_y = 0.30$
Depth to Water = 80 feet
Initial Saturated Thickness, $h_{(0)} = 200$ ft

Recharge Area Properties:

Infiltration Rate = 2.5 ft/d
Simulation Time, t = 180 days
Recharge Duration, $t_{(0)} = 90$ days
Length in x direction: 1100 ft
Length in y direction: 800 ft
Total area: 20 ACRES

FIGURE **C-1**
EXAMPLE MOUNDING RESULTS FOR A 20-ACRE POND WITH 200 FEET SATURATED THICKNESS
YAKIMA BASIN GROUNDWATER STORAGE/WA



Legend

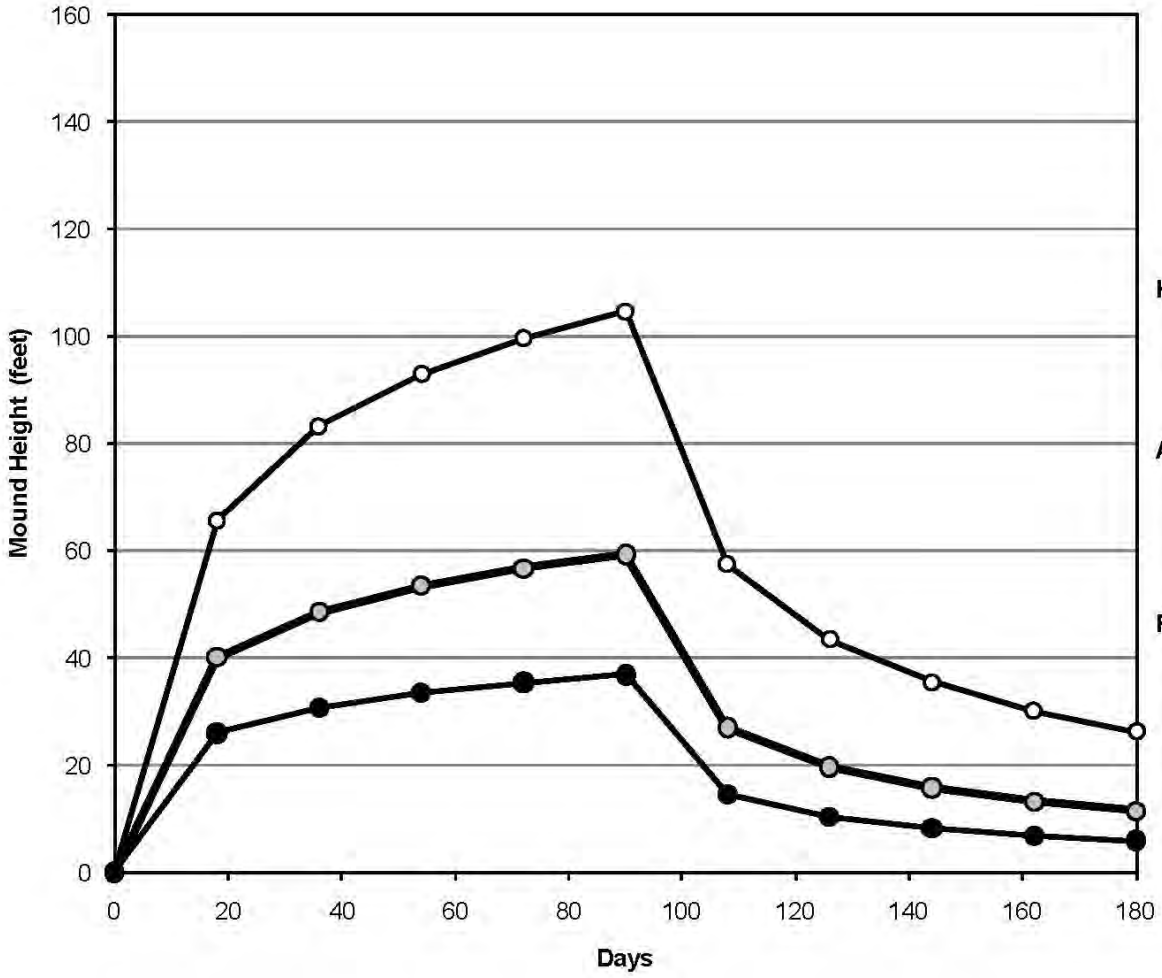
- LOW
- MODERATE
- HIGH

Hydraulic Conductivities:
LOW = 20 ft/d
MODERATE = 50 ft/d
HIGH = 100 ft/d

Aquifer Properties:
Hydraulic Conductivity, K (see above)
Specific Yield, $S_y = 0.30$
Depth to Water = 80 feet
Initial Saturated Thickness, $h_{(0)} = 100$ ft

Recharge Area Properties:
Infiltration Rate = 2.5 ft/d
Simulation Time, t = 180 days
Recharge Duration, $t_{(0)} = 90$ days
Length in x direction: 600 ft
Length in y direction: 360 ft
Total area: 5 ACRES

FIGURE **C-2**
EXAMPLE MOUNDING RESULTS FOR A 5-ACRE POND WITH 100 FEET SATURATED THICKNESS
YAKIMA BASIN GROUNDWATER STORAGE/WA



Legend

LOW

MODERATE

HIGH

Hydraulic Conductivities:

LOW = 20 ft/d
MODERATE = 50 ft/d
HIGH = 100 ft/d

Aquifer Properties:

Hydraulic Conductivity, K (see above)
Specific Yield, $S_y = 0.30$
Depth to Water = 80 feet
Initial Saturated Thickness, $h_{(0)} = 100$ ft

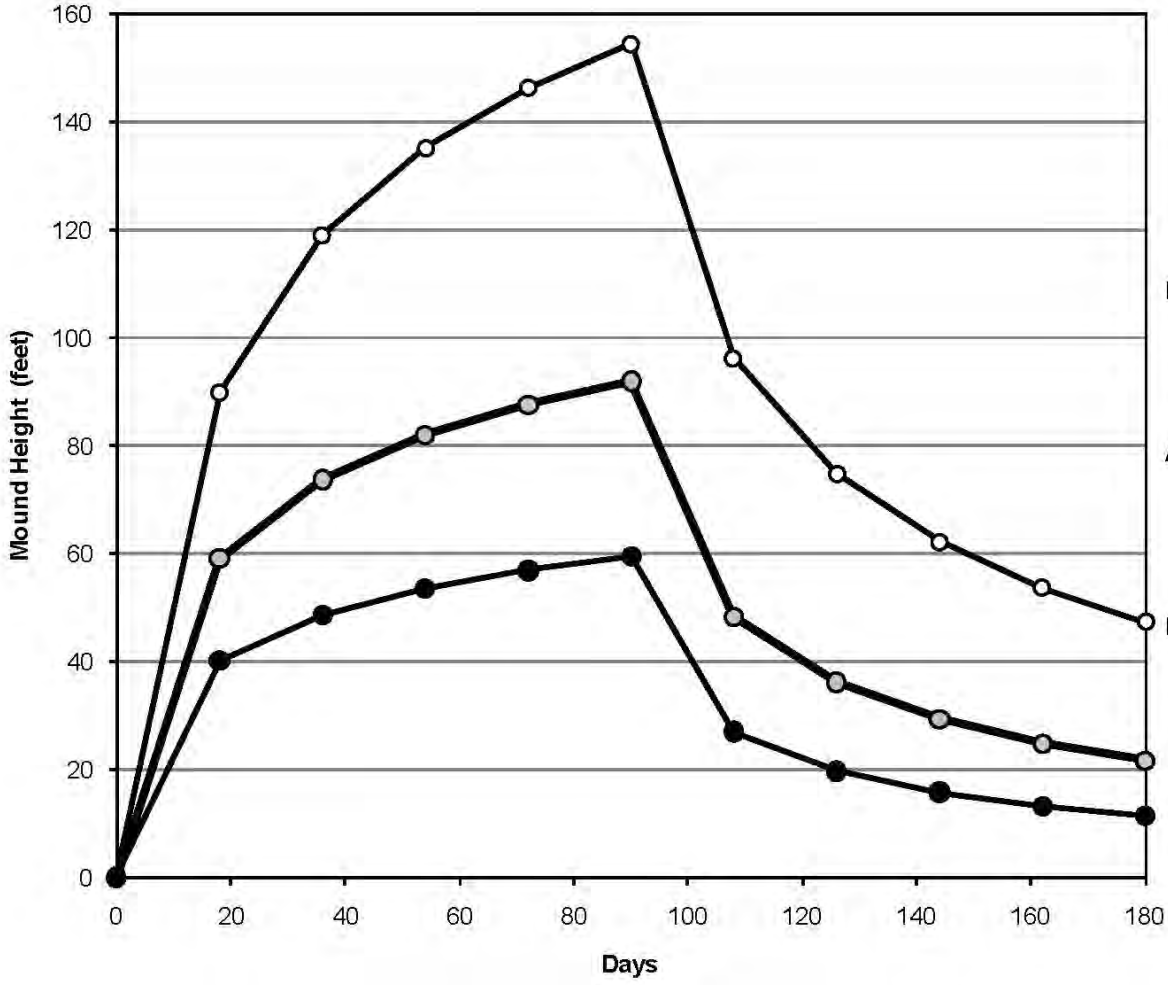
Recharge Area Properties:

Infiltration Rate = 2.5 ft/d
Simulation Time, t = 180 days
Recharge Duration, $t_{(0)} = 90$ days
Length in x direction: 800 ft
Length in y direction: 550 ft
Total area: 10 ACRES

FIGURE **C-3**

EXAMPLE MOUNDING RESULTS FOR A 10-ACRE POND WITH 100 FEET SATURATED THICKNESS

YAKIMA BASIN GROUNDWATER STORAGE/WA



Legend

- LOW
- MODERATE
- HIGH

Hydraulic Conductivities:
LOW = 20 ft/d
MODERATE = 50 ft/d
HIGH = 100 ft/d

Aquifer Properties:
Hydraulic Conductivity, K (see above)
Specific Yield, S_y = 0.30
Depth to Water = 80 feet
Initial Saturated Thickness, $h_{(0)}$ = 100 ft

Recharge Area Properties:
Infiltration Rate = 2.5 ft/d
Simulation Time, t = 180 days
Recharge Duration, $t_{(0)}$ = 90 days
Length in x direction: 1100 ft
Length in y direction: 800 ft
Total area: 20 ACRES

FIGURE **C-4**
EXAMPLE MOUNDING RESULTS FOR A 20-ACRE POND WITH 100 FEET SATURATED THICKNESS
YAKIMA BASIN GROUNDWATER STORAGE/WA

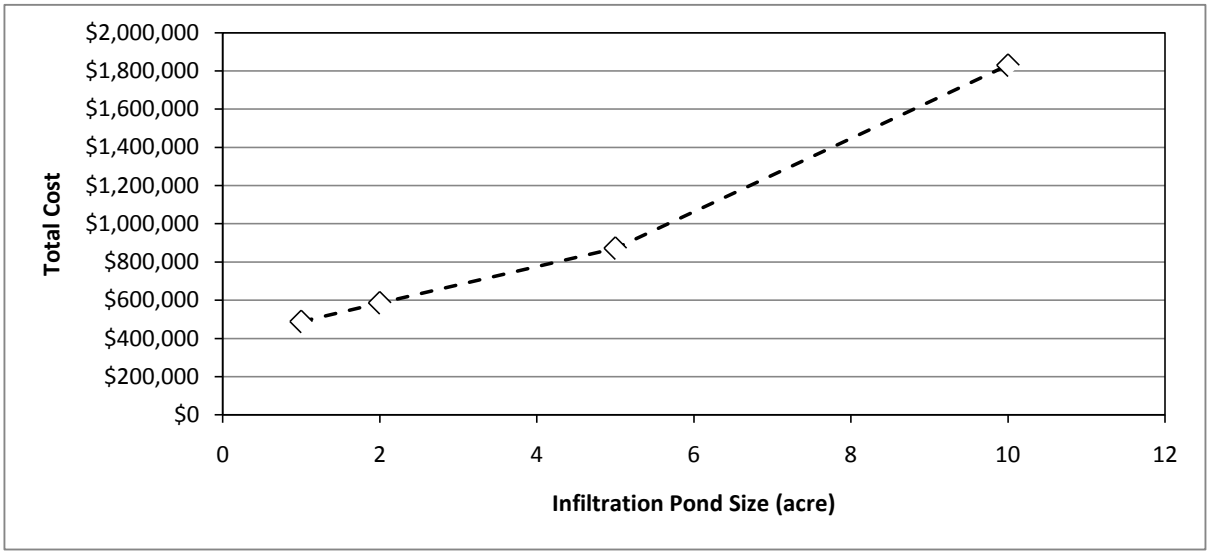
Golder Associates

APPENDIX D

PLANNING LEVEL POND CONSTRUCTION ESTIMATE

TABLE 1
Summary

Option	Construction Cost	Net Present O&M	Total
1 Acre Pond	$428,000	$59,900	$488,000
2 Acre Pond	$489,000	$97,000	$586,000
5 Acre Pond	$666,000	$206,200	$872,200
10 Acre Pond	$1,449,000	$380,900	$1,830,000



Assumptions used in cost development:

This estimate is a planning level estimate only. Detailed design was not completed to assist in the development of the cc
Costs were developed based on *RS Means Heavy Construction Cost Data, 2007* , judgement, and Golder experience.
Land acquisition rate assumed. Area of land acquisition assumed 10% beyond area of clearing.
Cost for permitting assumed based on similar projects. Permitting costs assumed to be the same for all ponds.
Cost per acre for clearing site assumed based on range in values in RS Means. Existing site condition unknown.
10 mile round trip haul distance for borrow material (trench backfill) and disposal of excess material.
Rectangular pond with length equal to 3 times the pond width. Ponds assumed to be 4-ft deep total (inc. freeboard).
Pond berms assumed to be 10 feet wide at the crest with 3H:1V side slopes.
Limited the total pond storage above the original ground surface to a maximum of 10 acre feet.
For 1, 2, and 5 acre ponds, balanced total cut and fill volumes.
For 10 acre pond, berm height above original ground limited by storage requirements.
Soil stripped can be re-used for berm construction.
1000 lf of PVC pipe for water conveyance, assumed pipe backfill hauled in from off-site.
Trench for water pipe is 4 feet wide, 5 feet deep.
Pipe bedding material in lower 1 ft of trench assumed to be select structural fill.

TABLE 2
Cost Breakdown - 1 acre infiltration pond

Item	Quantity	Units	Unit Rate	Cost	Total
1 Acre Pond Construction					
Brush Clearing	2.0	acre	$500	$1,000	
Stripping of Soil (assume 6" over entire footprint)	1,400	cy	$2	$2,800	
Excavation	2,000	cy	$7	$13,000	
Excavation Haul and Disposal	0	cy	$10	$0	
Embankment Fill	2,000	cy	$3	$6,000	
Embankment Fill Compaction	2,000	cy	$1	$2,000	
Chain Link Fence	1,100	lf	$10	$11,000	
Monitoring Well Installation	1	ls	$15,000	$15,000	
SUBTOTAL					$50,800
1 Acre Pond Permits and Land Acquisition					
Land Acquisition	2.2	acre	$12,000	$26,400	
Permitting	1	ls	$15,000	$15,000	
SUBTOTAL					$41,400
Pipe and Components					
24" PVC Pipe	1,000	lf	$100	$100,000	
Valves and Appurtenances	1	ls	$10,000	$10,000	
Trench Excavation (assume 5 ft deep, 4 ft wide trench)	740	cy	$6	$4,440	
Trench Backfill	430	cy	$11	$4,730	
Trench Backfill Compaction	430	cy	$1	$430	
Pipe Bedding Material (assume 1 ft deep, 5 ft wide)	190	cy	$20	$3,800	
Pipe Bedding Material Compaction	190	cy	$4	$760	
Energy dissipation structure	1	ls	$10,000	$10,000	
SUBTOTAL					$134,160
Subtotal Construction Cost:					**$226,360**
Mobilization at	10%			$22,600	
Subtotal				$248,960	
CQA	15%			$37,300	
Subtotal				$286,260	
Final Design Engineering	15%			$42,900	
Subtotal				$329,160	
Contingency at	30%			$98,700	
TOTAL CONSTRUCTION COST:					**$428,000**
O&M Costs					
1 Acre Pond Annual O&M					
Pond Scraping (6" excavation, haul, dispose annually)	800	cy	$21	$16,800	
Pest Management	1	ls	$5,000	$5,000	
Water Quality Monitoring	1	ls	$7,000	$7,000	
Present Value of O&M	1.81	PV Factor			$52,128
Contingency (15% applied to total O&M cost)	15%	percent			$7,800
O&M Total Cost					**$59,900**
TOTAL NET PRESENT COST					**$488,000**

Notes and Assumptions:

1. Present Value of O&M: I=7%, n=2 years - PV Factor =1.81

Golder Associates

TABLE 3
Cost Breakdown - 2 acre infiltration pond

Item	Quantity	Units	Unit Rate	Cost	Total
2 Acre Pond Construction					
Brush Clearing	3.0	acre	$500	$1,500	
Stripping of Soil (assume 6" over entire footprint)	2,400	cy	$2	$4,800	
Excavation	3,200	cy	$7	$20,800	
Excavation Haul and Disposal	0	cy	$10	$0	
Embankment Fill	3,200	cy	$3	$9,600	
Embankment Fill Compaction	3,200	cy	$1	$3,200	
Chain Link Fence	1,500	lf	$10	$15,000	
Monitoring Well Installation	1	ls	$15,000	$15,000	
SUBTOTAL					$69,900
2 Acre Pond Permits and Land Acquisition					
Land Acquisition	3.3	acre	$12,000	$39,600	
Permitting	1	ls	$15,000	$15,000	
SUBTOTAL					$54,600
Pipe and Components					
24" PVC Pipe	1,000	lf	$100	$100,000	
Valves and Appurtenances	1	ls	$10,000	$10,000	
Trench Excavation (assume 5 ft deep, 4 ft wide trench)	740	cy	$6	$4,440	
Trench Backfill	430	cy	$11	$4,730	
Trench Backfill Compaction	430	cy	$1	$430	
Pipe Bedding Material (assume 1 ft deep, 5 ft wide)	190	cy	$20	$3,800	
Pipe Bedding Material Compaction	190	cy	$4	$760	
Energy dissipation structure	1	ls	$10,000	$10,000	
SUBTOTAL					$134,160
Subtotal Construction Cost:					**$258,660**
Mobilization at	10%			$25,900	
Subtotal				$284,560	
CQA	15%			$42,700	
Subtotal				$327,260	
Final Design Engineering	15%			$49,100	
Subtotal				$376,360	
Contingency at	30%			$112,900	
TOTAL CONSTRUCTION COST:					**$489,000**
O&M Costs					
2 Acre Pond Annual O&M					
Pond Scraping (6" excavation, haul, dispose annually)	1,600	cy	$21	$33,600	
Pest Management	1	ls	$6,000	$6,000	
Water Quality Monitoring	1	ls	$7,000	$7,000	
Present Value of O&M	1.81	PV Factor			$84,346
Contingency (15% applied to total O&M cost)	15%	percent			$12,700
O&M Total Cost					**$97,000**
TOTAL NET PRESENT COST					**$586,000**

Notes and Assumptions:

1. Present Value of O&M: I=7%, n=2 years - PV Factor =1.81

Golder Associates

TABLE 4
Cost Breakdown - 5 acre infiltration pond

Item	Quantity	Units	Unit Rate	Cost	Total
5 Acre Pond Construction					
Brush Clearing	7.0	acre	$500	$3,500	
Stripping of Soil (assume 6" over entire footprint)	5,300	cy	$2	$10,600	
Excavation	5,600	cy	$7	$36,400	
Excavation Haul and Disposal	0	cy	$10	$0	
Embankment Fill	5,500	cy	$3	$16,500	
Embankment Fill Compaction	5,500	cy	$1	$5,500	
Chain Link Fence	2,300	lf	$10	$23,000	
Monitoring Well Installation	1	ls	$15,000	$15,000	
SUBTOTAL					$110,500
5 Acre Pond Permits and Land Acquisition					
Land Acquisition	7.7	acre	$12,000	$92,400	
Permitting	1	ls	$15,000	$15,000	
SUBTOTAL					$107,400
Pipe and Components					
24" PVC Pipe	1,000	lf	$100	$100,000	
Valves and Appurtenances	1	ls	$10,000	$10,000	
Trench Excavation (assume 5 ft deep, 4 ft wide trench)	740	cy	$6	$4,440	
Trench Backfill	430	cy	$11	$4,730	
Trench Backfill Compaction	430	cy	$1	$430	
Pipe Bedding Material (assume 1 ft deep, 5 ft wide)	190	cy	$20	$3,800	
Pipe Bedding Material Compaction	190	cy	$4	$760	
Energy dissipation structure	1	ls	$10,000	$10,000	
SUBTOTAL					$134,160
Subtotal Construction Cost:					**$352,060**
Mobilization at	10%			$35,200	
Subtotal				$387,260	
CQA	15%			$58,100	
Subtotal				$445,360	
Final Design Engineering	15%			$66,800	
Subtotal				$512,160	
Contingency at	30%			$153,600	
TOTAL CONSTRUCTION COST:					**$666,000**
O&M Costs					
5 Acre Pond Annual O&M					
Pond Scraping (6" excavation, haul, dispose annually)	4,050	cy	$21	$85,050	
Pest Management	1	ls	$7,000	$7,000	
Water Quality Monitoring	1	ls	$7,000	$7,000	
Present Value of O&M	1.81	PV Factor			$179,281
Contingency (15% applied to total O&M cost)	15%	percent			$26,900
O&M Total Cost					**$206,200**
TOTAL NET PRESENT COST					**$872,200**

Notes and Assumptions:

1. Present Value of O&M: I=7%, n=2 years - PV Factor =1.81

Golder Associates

TABLE 5
Cost Breakdown - 10 acre infiltration pond

Item	Quantity	Units	Unit Rate	Cost	Total
10 Acre Pond Construction					
Brush Clearing	12.0	acre	$500	$6,000	
Stripping of Soil (assume 6" over entire footprint)	9,700	cy	$2	$19,400	
Excavation	25,200	cy	$7	$163,800	
Excavation Haul and Disposal	20,300	cy	$10	$203,000	
Embankment Fill	4,900	cy	$3	$14,700	
Embankment Fill Compaction	4,900	cy	$1	$4,900	
Chain Link Fence	3,200	lf	$10	$32,000	
Monitoring Well Installation	1	ls	$15,000	$15,000	
SUBTOTAL					$458,800
10 Acre Pond Permits and Land Acquisition					
Land Acquisition	13.2	acre	$12,000	$158,400	
Permitting	1	ls	$15,000	$15,000	
SUBTOTAL					$173,400
Pipe and Components					
24" PVC Pipe	1,000	lf	$100	$100,000	
Valves and Appurtenances	1	ls	$10,000	$10,000	
Trench Excavation (assume 5 ft deep, 4 ft wide trench)	740	cy	$6	$4,440	
Trench Backfill	430	cy	$11	$4,730	
Trench Backfill Compaction	430	cy	$1	$430	
Pipe Bedding Material (assume 1 ft deep, 5 ft wide)	190	cy	$20	$3,800	
Pipe Bedding Material Compaction	190	cy	$4	$760	
Energy dissipation structure	1	ls	$10,000	$10,000	
SUBTOTAL					$134,160
Subtotal Construction Cost:					**$766,360**
Mobilization at	10%			$76,600	
Subtotal				$842,960	
CQA	15%			$126,400	
Subtotal				$969,360	
Final Design Engineering	15%			$145,400	
Subtotal				$1,114,760	
Contingency at	30%			$334,400	
TOTAL CONSTRUCTION COST:					**$1,449,000**
O&M Costs					
10 Acre Pond Annual O&M					
Pond Scraping (6" excavation, haul, dispose annually)	8,000	cy	$21	$168,000	
Pest Management	1	ls	$8,000	$8,000	
Water Quality Monitoring	1	ls	$7,000	$7,000	
Present Value of O&M	1.81	PV Factor			$331,230
Contingency (15% applied to total O&M cost)	15%	percent			$49,700
O&M Total Cost					**$380,900**
TOTAL NET PRESENT COST					**$1,830,000**

Notes and Assumptions:

1. Present Value of O&M: I=7%, n=2 years - PV Factor =1.81

Golder Associates