# WATER TRANSFER WORKING GROUP PROJECT DESCRIPTION

<table>
<thead>
<tr>
<th>APPLICATION NO./COURT CLAIM NO.</th>
<th>Pending</th>
</tr>
</thead>
<tbody>
<tr>
<td>APPLICANT NAME</td>
<td>Dave Brown/Pro Ag Services, Inc</td>
</tr>
<tr>
<td>CONTACT NAME</td>
<td>Jason Shira, Aspect Consulting</td>
</tr>
<tr>
<td>TELEPHONE NO.</td>
<td>509-895-5470</td>
</tr>
<tr>
<td>EMAIL</td>
<td><a href="mailto:jshira@aspectconsulting.com">jshira@aspectconsulting.com</a></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DATE OF APPLICATION(S)</th>
<th>PRIORITY DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pending</td>
<td>Pending, mitigated by a pre-1905 water right (No. CS4-02136sb9@1(B))</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>WATER SOURCE:</th>
<th>CROP: Berries (e.g. strawberries, blueberries, grapes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groundwater – a well completed in Saddle Mountain Basalt aquifer</td>
<td>ANNUAL QUANTITY: Not to exceed 10 ac-ft/yr (CU)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>INSTANTANEOUS QUANTITY:</th>
<th>54 gpm</th>
</tr>
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</table>

<table>
<thead>
<tr>
<th>PERIOD OF USE:</th>
<th>PLACE OF USE:</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 1 to October 15</td>
<td>NE¼NW¼ of S18, T14N/R19E.W.M.</td>
</tr>
</tbody>
</table>

<table>
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<tr>
<th>PURPOSE OF USE:</th>
<th>Irrigation of 6 acres</th>
</tr>
</thead>
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<table>
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<tr>
<th>IRRIGATION METHOD:</th>
<th>Drip</th>
</tr>
</thead>
</table>

## CONSUMPTIVE USE CALCULATION:

The new water budget water right will authorize Dave Brown/Pro Ag Services to withdraw groundwater not to exceed 10 acre-feet (consumptive use) from a well completed in the Saddle Mountain Basalt aquifer for irrigation water supply.

Mr. Brown runs a business (Pro Ag Services) providing and installing trellises for area farmers. Mr. Brown plans to install a trellis system on 10-foot rows across 6 acres to grow various berries. The berries (e.g. strawberries, blueberries, grapes) will be irrigated with a drip irrigation system.

## NARRATIVE DESCRIPTION OF PROJECT:

Dave Brown/Pro Ag Services has a purchase pending of a senior (pre-1905) water right from Archie and Marie den Hoed (formally Flying M Ranch) that is currently is currently in instream flow and mitigation. The water right will enable Dave Brown/Pro Ag Services to grow various berries north of Selah along Buffalo Road. The project proposes to receive a new mitigated water right using consumptive use mitigation credits from Washington State’s Trust Water Right Program.

## IMPAIRMENT ANALYSIS:
To facilitate the transfer, Aspect completed a site-specific hydrogeologic investigation (available upon request) using a multiple line of evidence approach that used the best available data describing the hydrogeology surrounding the farm’s well. The objective of the investigation was to determine if water is physically available and if the existing point of withdrawal is in hydraulic continuity with the adjacent reach of the Wenas or Yakima River.

Based on review of the available information and understanding of the site-specific hydrogeologic conceptual model presented below, Aspect observed the following:

- The proposed point of withdrawal (well) is completed in the Saddle Mountain Basalt aquifer. The well is located on the south limb of the Umtanum Ridge anticline, which dips approximately 14 degrees toward the south in the project area.

- Water-bearing interval in the well consists of the Selah Interbed sandstone unit. At-time-of-drilling (ATD) water level in 1981 was reported at 90 feet below ground surface (bgs).

- The 100-feet-thick overlying Pomona Member of the Saddle Mountain Basalt Formation behaves as a confining unit and extends beneath Wenas Creek and Yakima River. The vertical separation between the water bearing sandstone and Wenas Creek near the project site is approximately 65 feet.

- The direction of Saddle Mountain aquifer horizontal groundwater flow is down the Wenas Creek valley toward the Yakima River. The piezometric surface is likely higher than the lower 1-mile reach of Wenas Creek valley bottom elevation.

- Stream depletion due to groundwater pumping of the existing well will likely occur along the mainstem of the Yakima River.

The proposed new water right is water budget neutral with respect to Total Water Supply Available (TWSA) in the Yakima River Basin as measured at the Parker gage. Month by month mitigation is offered to account for the project’s water use during the irrigation season.

Wenas Creek and Yakima River are located within 1,100 and 4,100 feet, respectively, of the applicant’s property. The Washington State Department of Fish and Wildlife (WDFW) database (SalmonScape) indicates documentation of Endangered Species Act (ESA)-listed species in both Wenas Creek and Yakima River.

CONCLUSION
Based on review of the site-specific information, Aspect concluded that groundwater in the Saddle Mountain Basalt aquifer is physically available and in hydraulic continuity with the Yakima River.
October 18, 2017

Mr. Trevor Hutton, Section Manager  
Department of Ecology – Water Resources Program  
1250 West Alder Street  
Union Gap, WA 98903-0009  

Re:  Dave Brown Pre-Application Consultation  
Project No. 170473

Dear Mr. Hutton:

Mr. Dave Brown is actively pursuing water rights to acquire for mitigation of a new water budget neutral (WBN) water right to facilitate establishment of a berry farm near Selah. The purpose of this letter is to request technical assistance from the Washington Department of Ecology Water Resources Program (Ecology) to support the acquisition of water rights and issuance of a new WBN water right. We are requesting technical assistance in identifying the suitable geographical area to pursue a water right that will be transferred to the Trust Water Right Program as mitigation for a new WBN water right.

An overview of hydrogeologic setting and description of the project is provided in this letter.

Project Description
Mr. Brown’s project is located north of Selah, WA in Yakima County, NE 1/4, NW 1/4 of Section 18, T14N, R19E, as shown on Figure 1. Mr. Brown plans to plant less than 6 acres of berries, and estimates 10 acre-feet per year of water. Water will be supplied through an existing well (14N/19E-18C01).

Hydrogeologic Framework
Local geologic characteristics are largely the result of regional tectonic processes. Mr. Brown’s project is located east of the Cascade Mountains within the Selah-Wenas Basin, of the Yakima Fold Belt, a sub-province of the Columbia Basin. The Selah-Wenas Basin is bounded to the northeast by the Manastash and Umtanum Anticlines and to the southwest by the Yakima Ridge structure.

Regional bedrock is dominated by the Columbia River Basalt Group (CRBG), a series of stacked basalt flows and sedimentary interbeds that were deposited 17 and 6 million years ago during the Miocene epoch. The CRBG is underlain, intercalated, and overlain by volcanoclastic sedimentary deposit (Ellensburg Formation) derived from ancestral cascade volcanoes. The Ellensburg Formation is overlain by recent alluvium, i.e. Wenas Creek and Yakima River alluvial deposits.
Site Hydrostratigraphic Units
Surficial geology is shown in Figure 2. Geologic unit and structural data from the Washington State Department of Natural Resources, hydrogeology framework from the U.S. Geological Survey, and driller’s well log data from the Ecology on-line water well database (included as Attachment 1) were used to develop the subsurface interpretation. Local data indicate that there are three principal geologic units that underlie Mr. Brown’s project. From younger to older, these are unconsolidated quaternary alluvium, the Ellensburg Formation, and the CRBG. The characteristics and distribution of each unit is described as follows:

Alluvium – Floodplain deposits occupy intermittent and perennial drainage features. The deposits are composed of clay, gravel, boulder sized grains deposited by fluvial processes. The driller’s log for Mr. Brown’s existing well (14N/19E-18C01) describes a 45-foot deposit of boulders, sand, and clay that are underlain by basalt.

Ellensburg Formation - The Ellensburg Formation is largely the result of deposition of volcanoclastic sediment from nearby domal volcanoes. The deposits are composed of intercalated conglomerates, sandstones, and siltstones. These sediments often occur as stratigraphic sequences alternating between laterally extensive depositional sheets of hyperconcentrated flood flow deposits to reworked sediments that are moderately sorted bedded and crossbedded.

The unconsolidated Ellensburg Formation occurs as a thin unit of overburden in the vicinity of Mr. Brown’s project as shown in Figure 3.

Columbia River Basalt Group – The CRBG is the basement unit in the area. The CRBG is defined by the Pomona Member of the Saddle Mountains Basalt Formation; and the Priest Rapids, Roza, and Frenchman Springs Member of the Wanapum Basalt Formation in the Selah-Wenas Basin. These units are composed of multiple basalt flows and an intervening consolidated Ellensburg Formation sedimentary interbed, e.g. Selah Interbed.

The 14N/19E-18C01 driller’s log (Attachment 1) describes the following members in order of depth below ground surface:
- Pomona Member, Saddle Mountains Basalt Formation – soft to hard, brown and grey, 100-feet thick basalt layer
- Selah Interbed – sandstone with gravel and clay

Analysis of driller’s logs, geologic maps, and USGS reports were used to complete the conceptual cross-section presented in Figure 3. The thickness of the Selah Interbed is estimated at 100 to 200-feet thick, and thickens toward the south and east. Underlying the Selah Interbed is the Priest Rapids Member of the Wanapum Basalt Formation.

Geologic Cross-section
The alignment of the geologic cross-section, shown on Figure 2, was chosen to show the relative thickness and position of mappable geologic units in relation to Wenas Creek and Yakima River. Water wells proximal to the cross-section are included. It is important to note the distance the reference wells are to the alignment of the cross-section. The well completions into a respective formation are distorted due to folding of the CRBGs.
The geologic cross-section, shown as Figure 3, indicates the Pomona Member behaves as a confining unit to the water bearing Selah Interbed. The Pomona Member also extends beneath Wenas Creek and Yakima River, separating the water bearing zone of the Selah Interbed from surface water.

**Surface Water/Groundwater Interaction**

Groundwater in the CRBG aquifer system ultimately discharges out of the Selah-Wenas Basin into the Yakima River Valley. The aquifers hosted by the Saddle Mountains Basalt and Wanapum Basalt Formations within the Selah-Wenas Basin likely discharge to the Yakima River near the Selah Gap. The Pomona member is presumed to behave as an effective aquitard based on review of well logs (Attachment 1). As a result, local pumping of groundwater is not expected to have an impact on Wenas Creek. It is expected that vertical hydraulic gradients increasing down-valley within the basalt aquifer are due to the higher elevation recharge zones along Umtanum Ridge. The USGS found that Yakima River reach between RM 123.5 and 116.7 is neutral; whereas, upstream between RM 124.4 and 123.5 a significant gaining reach occurs.

Stream depletion due to withdrawal of water from existing well 14N/19E-18C01 is likely to occur along the mainstem of the Yakima River where the sequence of Yakima Fold Basalt Subgroup comes into contact with alluvial deposits of the Yakima River, RM 124.4 to 123.5 and RM ~117.5.

**New Water Budget Neutral Water Right**

Mr. Brown is seeking to acquire a water right and is actively investigating a number of potential opportunities. Ultimately the acquired water right will be transferred into the Trust Water Program and a WBN water right would authorize new uses at Mr. Brown’s property. Mainstem Yakima River water rights are being targeted as suitable for mitigating impacts due to the lack of local impacts on Wenas Creek.

Mr. Brown’s water supply needs are for irrigation and seasonal in nature. Depending on the purpose and season of the acquired water right, Mr. Brown will evaluate whether use of the Bureau Exchange Contract or other seasonal authorization is necessary.

**Technical Assistance Request**

We are requesting technical assistance in identifying the suitable geographical area to pursue a water right that will be transferred to the Trust Water Right Program as mitigation for a new WBN water right. It is Aspect’s understanding that Mr. Brown may apply for a new WBN water right with priority processing under the Hillis Rule assuming a suitable water right has been acquired to mitigate for the new WBN, and no local impairment will result from issuance of the new WBN water right.
We look forward to meeting with you to discuss this project further.

Sincerely,

Jason M. Shira, LHG

Attachments:
- Figure 1: Vicinity Map
- Figure 2: Surficial Geology
- Figure 3: Cross-Section
- Attachment 1: Well Logs

cc: Dave Brown
FIGURES
Site Location Map
Hydrogeologic Memorandum
Dave Brown Water Rights
Yakima County, Washington
ATTACHMENT 1

Well Logs
WATER WELL REPORT

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

Construction/Decommission (“x” in circle) 346916

PROPOSED USE:  □ Domestic  □ Industrial  □ Municipal
□ DeWater  □ Irrigation  □ Test Well  □ Other

TYPE OF WORK:  □ New well  □ Reconditioned Method:  □ Dog  □ Bored  □ Driven
□ Deepened  □ Cable  □ Rotary  □ Jetted

DIMENSIONS: Diameter of well 6 inches, drilled 240 ft.
Depth of completed well 240 ft.

CONSTRUCTION DETAILS
Casing:  □ Welded  □ Pressed  □ Screw  □ Threaded
Installed:  □ Inside  □ Outside
Perforations:  □ Yes  □ No
Type of perforator used:  □ Skill Saw
SIZE of perfor:  □ No in. in. and no. of perfor. from 240 ft. to 240 ft.

Screens:  □ Yes  □ No  □ K-Pac
Manufacturer’s Name:  H.P.

Gravel/Filter packed:  □ Yes  □ No  □ Size of gravel/sand
Materials 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

PUMP:  Manufacturer’s Name:  H.P.

WATER LEVELS:  Land-surface elevation above mean sea level ft.
Static level:  20 ft. below top of well Date 6-3-09
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
□ Yes  □ No

RECEIVED
JUL 20 2009

Driller  □ Engineer  □ Trainer Name (Print)
Driller/Engineer/Trainer Signature: Gary Enkin
Driller’s License No. 1023

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

(1) OWNER: Name Bill Jones
Address 850 Buffalo Rd, Selah, WA 98942

(2) LOCATION OF WELL: County Yakima
(2a) STREET ADDRESS OF WELL (or nearest address) 850 Buffalo Rd

TAX PARCEL NO. 171412-44006

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

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

(5) DIMENSIONS: Diameter of well 6 inches.
Drilled 275 feet. Depth of completed well 275 ft.

(6) CONSTRUCTION DETAILS:
Casing installed:
X Welded 6 ft. Diam. from 10 ft. to 36 ft.
X Liner installed 4 1/2 in. Diam. from 15 ft. to 275 ft.

Perforations: X Yes  No
Type of perforator used SAW
SIZE of perforations 1/8 in. by 8 in.
30 perforations from 255 ft. to 275 ft.
30 perforations from 195 ft. to 215 ft.

Screens: X Yes  No  K-Pac Location
Manufacturer's Name
Type:  Model No.
Diam. from ft. to ft.

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

Surface seal: X Yes  No  To what depth? 36 ft.
Material used in seal Bentonite
Did any strata contain unusable water? X Yes  No
Type of water? Depth of strata
Method of sealing strata off

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

(8) WATER LEVELS:
Static level 76 ft. below top of well Date 9/3/2014
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?
Yield: 75 gal./min. with 260 ft. drawdown after hrs.
Yield: 60 gal./min. with 200 ft. drawdown after hrs.
Yield: 50 gal./min. with 160 ft. drawdown after hrs.
Recovery date (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
Boiler test gal./min. with ft. drawdown after hrs.
Airstest gal./min. with stem set at ft. for hrs.
Artesian flow g.p.m. Date
Temperature of water Was a chemical analyses made? X 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.

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<tr>
<th>MATERIAL</th>
<th>FROM</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soil &amp; Bolders</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>Clay &amp; Bolders</td>
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<td>9</td>
</tr>
<tr>
<td>Clay</td>
<td>9</td>
<td>15</td>
</tr>
<tr>
<td>Basalt Black Brown</td>
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<td>23</td>
</tr>
<tr>
<td>Basalt Black</td>
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<td>120</td>
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<tr>
<td>Sandstone</td>
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<td>Sandstone &amp; Clay Layers</td>
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<tr>
<td>Shale Clay</td>
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<td>192</td>
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<tr>
<td>Gravel</td>
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<tr>
<td>Sandstone</td>
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<tr>
<td>Shale Clay</td>
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<td>Basalt Black Soft</td>
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<td>261</td>
</tr>
<tr>
<td>Basalt Black Brown</td>
<td>261</td>
<td>275</td>
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WELL CONSTRUCTION CERTIFICATION:
I, the undersigned, do hereby certify that this well meets the standards of the State of Washington for construction and operation.

Type or Print Name TOM MC GUIGUE
License No. 0357
(Registered Driller/Engineer)

Trainee Name
License No.

Drilling Company RICK POULIN WELL DRILLING, INC.
(Signed) 0357
(Registered Driller/Engineer)

Address 1301 LANCASTER RD SELAH, WA 98942

Contractor's Registration No. RICKPWDD2441
Date 9/4/2014 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.
WATER WELL REPORT
STATE OF WASHINGTON
Application No. 5E-181
Permit No.

(1) OWNER: Name Jack Brown
Address Buffalo Rd., North Salish WA.

(2) LOCATION OF WELL: County: Yakima
Section: NE 1/4 NW 1/4 Sec. 18 T14 N. R19 E1 W.M.

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

(4) TYPE OF WORK: Owner’s number of well
Number of wells [ ] Method: Dug [ ] Bored [ ]
Deepened [ ] Cable [ ] Driven [ ]
Reconditioned [ ] Rotary [ ] Jetted [ ]

(5) DIMENSIONS:
Diameter of well: 6 inches
Drilled: 185 ft. Depth of completed well: 185 ft.

(6) CONSTRUCTION DETAILS:
Casing installed: diam. from ft. to ft.
Threaded [ ] Welded [ ]
Diam. from ft. to ft. ft. ft.
Perforations: Yes [ ] No [ ]
Type of perforator used: in. by in.
Size of perforations: from ft. to ft.

Screens: Yes [ ] No [ ]
Manufacturer’s Name:
Type: Diam. from ft. to ft.
Diam. 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: Bent-zite
Diameter of well lowered below static level

(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: Mar 28
Artesian pressure: lbs. per square inch Date:
Artesian water is controlled by: (C.A.D. valve, etc.)

(9) WELL TESTS:
Drawdown is amount water level is lowered below static level
Was a pump test made? Yes [ ] No [ ]

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)

<table>
<thead>
<tr>
<th>Time</th>
<th>Water Level</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
</tr>
</tbody>
</table>

Test: .60 gal./min. with ft. drawdown after hrs.
Artesian flow: g.p.m. Date:
Temperature of water: Was a chemical analysis made? Yes [ ] No [ ]

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
Address: 5503 Abatanum Rd., Yakima, WA. 98903

[Signature] (Well Driller)
License No. 0854 Date: 3/29 /1881

USE ADDITIONAL SHEETS IF NECESSARY

DK 7/31/81

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

### STATE OF WASHINGTON

**OWNER:** Bruce Buchanan  
**Address:** Buchanan Rd Selah

**LOCATION OF WELL:**  
County: Yakima  
NE 1/4 SW 1/4 Sec. 18 T 14 N R 19 WM.

### PROPOSED USE:
- Domestic [ ]  
- Irrigation [ ]  
- Industrial [ ]  
- Municipal [ ]

### TYPE OF WORK:
- Owner's number of well: [ ]
- New well: [ ]
- Method: Dug: [ ]
- Bored: [ ]
- Deepened: [ ]
- Cable: [ ]
- Driven: [ ]
- Reconditioned: [ ]
- Rotary: [x]
- Jetted: [ ]

### DIMENSIONS:
- Diameter of well: 10 inches
- Drilled: 812 feet
- Depth of completed well: 812 ft.

### CONSTRUCTION DETAILS:
- Casing installed: 10
- Diam. from 1 1/2 ft. to 527 ft.
- Welded: [ ]
- Liner installed: [ ]
- Threading: [ ]

- Perforations: [ ] No [x]  
  - Type of perforator used: [ ]
  - Size of perforations: [ ]

- Screens: [ ] No [x]
  - Manufacturer's Name: [ ]
  - Model No.: [ ]
  - Diam.: [ ]
  - Slot size: [ ]

- Gravel packed: [ ] No [x]  
  - Size of gravel: [ ]

- Gravel placed from: [ ]

- Surface seal: [ ] Yes [ ] No [x]
  - To what depth?: 526 ft.
  - Material used in seal: [ ]
  - Did any strata contain unusable water?: [ ] No [x]

### WATER LEVELS:
- Land surface elevation: [ ]
- Above mean sea level: [ ]
- ft. below top of well: [ ]
- Data: [ ]

### ARTESIAN PRESSURE:
- Ibs. per square inch: [ ]
- Data: [ ]

### WELL TESTS:
- Drawdown is amount water level is lowered below static level.
- Was a pump test made?: [ ] Yes [ ] No [x]
- Yield: 750 gal./min. with: [ ] ft. drawn down after: [ ] hrs.

### RECEIVED:
- Date: [ ]

### 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 the best knowledge and belief.

**NAME:** Rick Poulin, Drilling  
**Address:** 2 N 1st St Selah  
**License No.:** 942  
**WELL DRILLER:** (Signed)

**CONTRACTOR'S REGISTRATION No.:** WINDI12401  
**Date:** 8-28-95

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

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**WATER WELL REPORT**

**STATE OF WASHINGTON**

**WATER RIGHT PERMIT NO. 64-30307**

---

**1. OWNER:** V & R Enterprises (Larson)

**2. LOCATION OF WELL:** Yakima

**3. STREET ADDRESS OF WELL:** P.O. Box 68, Selah, WA

**4. PROPOSED USE:**
- Domestic 
- Irrigation 
- Municipal 
- DeWater 
- Test Well 
- Other

**5. DIMENSIONS:**
- Diameter of well: 12" 8" inches
- Drilled depth: 449 feet
- Depth of completed well: 449 feet

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**6. CONSTRUCTION DETAILS:**

<table>
<thead>
<tr>
<th>Casing installed</th>
<th>Diam. ft. from</th>
<th>386 ft.</th>
</tr>
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<tbody>
<tr>
<td>Welded</td>
<td>Diam. ft. from</td>
<td>369 ft.</td>
</tr>
<tr>
<td>Liner installed</td>
<td>Diam. ft. from</td>
<td>449 ft.</td>
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</tbody>
</table>

**7. SCREENS:**
- Yes
- No

**8. WATER LEVELS:**
- Land-surface elevation: 123 ft.
- Artesian pressure: 0.0 to 0.5
- Artesian water is controlled by: Cap. valve, etc.

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**9. WELL TESTS:**
- Drawdown is amount water level is lowered below static level.
- Was a pump test made? Yes
- If yes, by whom?

<table>
<thead>
<tr>
<th>Time</th>
<th>Water Level</th>
<th>Time</th>
<th>Water Level</th>
<th>Time</th>
<th>Water Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air lift</td>
<td>200+ GPM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**10. WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION:**

<table>
<thead>
<tr>
<th>MATERIAL</th>
<th>FROM</th>
<th>TO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top soil brown medium</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Gravel cobbles black/brown med/h</td>
<td>1</td>
<td>37</td>
</tr>
<tr>
<td>Sandstone brown medium</td>
<td>37</td>
<td>78</td>
</tr>
<tr>
<td>Sandstone multi colored med/soft</td>
<td>216</td>
<td>229 water</td>
</tr>
<tr>
<td>Sandstone gray/white medium</td>
<td>256</td>
<td>272</td>
</tr>
<tr>
<td>Sandstone shale blue/green</td>
<td>272</td>
<td>279</td>
</tr>
<tr>
<td>Sandstone shale green/gray med</td>
<td>279</td>
<td>289</td>
</tr>
<tr>
<td>Basalt black gray very hard</td>
<td>311</td>
<td>343</td>
</tr>
<tr>
<td>Sandstone blue clay soft</td>
<td>343</td>
<td>372</td>
</tr>
<tr>
<td>Sandstone blue soft</td>
<td>372</td>
<td>379 water</td>
</tr>
<tr>
<td>Basalt gray very hard</td>
<td>379</td>
<td>444</td>
</tr>
<tr>
<td>Basalt fractured black/gray med</td>
<td>444</td>
<td>449 water</td>
</tr>
</tbody>
</table>

**11. METHOD OF SEALING STRATA OFF:** Cement grout

**12. MATERIAL USED IN SEAL:** Cement

**13. ARTESIAN WATER:**
- Yes
- No

**14. DEPTH OF STRATA:** 386 ft.

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**WELL CONSTRUCTOR CERTIFICATION:**

I, [Name], accept responsibility for the construction of this well.

**NAME:** Ponderosa Drilling & Development, Inc.

**ADDRESS:** E. 6010 Broadway, Spokane, WA 99212

**LICENSE NO.:** 1335

**CONTRACTOR'S (WELL CALLER):**

**REGISTRATION NO.:** PND-ET*248JE

**DATE:** 11/11, 1991

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(USE ADDITIONAL SHEETS IF NECESSARY)
WATER WELL REPORT

STATE OF WASHINGTON

1) OWNER: Name: Les Simonds
   Address: 2111 S. 1st St., Yakima, WA.

2) LOCATION OF WELL:
   County: Yakima
   Parcel #: 191419 11401
   Sec. 19, T. 14 N., R. 19 W.
   Rome Rd., NE

3) PROPOSED USE:
   Abandoned ☐
   New well ☐
   Irrigation ☐
   Water Well ☐
   Other ☐

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

5) DIMENSIONS:
   Diameter of well: 8 inches
   Drilled: 220 feet
   Depth of completed well: 220 ft.

6) CONSTRUCTION DETAILS:
   Casing installed: 8 feet
   Dia. from: 0 to 23 ft.
   Welded: 6" PVC
   Dia. from: 100 to 220 ft.
   Linear installed: Diam.
   Dia. from: 220 to 220 ft.
   Perforations: Yes ☐
   Type of perforator used
   Size of perforations: 1/8 in.
   Depth of strata:
   Perforations from: 170 ft. to 210 ft.
   Perforations from: 210 ft. to 220 ft.
   Perforations from: 220 ft. to 220 ft.
   Screws: Yes ☐
   No ☐
   Manufacturer's Name:
   Type: Model No.:
   Dia. Slot size: ft. to. ft.
   Gravel packed: Yes ☐
   No ☐
   Size of gravel:
   Gravel placed from: ft. to.
   Surface seal: Yes ☐
   No ☐
   To what depth? 23 ft.
   Bentonite & cement
   Material used in seal:
   Did any strata contain usable water? Yes ☐
   No ☐
   Type of water:
   Type of sealing strata:

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

8) WATER LEVELS:
   Land surface elevation:
   Mean sea level: 5'31'90 ft.
   Artesian level:
   Date:
   Artesian water is controlled by
   (Canyon, valley, etc.)

9) WELL TESTS:
   Was a pump test made? Yes ☐
   No ☐
   If yes, by whom? Bach
   Yield:
   gal./min. 
   ft. drawdown after
   hrs.

   Recovery data (time taken as zero when pump turned off) (water level measured from top to water level)
   Time Water Level Time Water Level
   200 GPM @ 220' 50 GPM @140'
   100 GPM @ 160' 30 GPM @120'
   10 GPM @ 80'
   Date of test:
   Boiler test:
   Air test:
   Artesian flow:
   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 formation.
   MATERIAL FROM TO
   Topsoil 0 3
   Slag boulders & gravel 3 8517
   Hard grey basalt 1723 37
   Fractured blak. basalt 37 64
   Med. brown blak. basalt 64 73
   Hard 73 75
   Hard grey basalt 93 93
   Med. grey basalt 93 93
   Hard it. grey basalt 93 104
   Hard dark grey basalt 104 105
   Med. hard lt. grey basalt 105 112
   Broken soft basalt & clay
   like shale 112 116
   Med. brn. basalt 116 122
   Blvd med. soft basalt 122 127
   w/clay 127 135
   Soft brn. sandstone w/blond clay 135 142
   Soft shale w/blond clay 142 159
   Brn. sandstone 159 164
   Grey sandstone 164 169
   Dark brn. sandstone 169 174
   Multi colored sandstone 174 186
   Greenish tan sandstone 186 196
   Multi colored sandstone w/shale 196 212
   Green sandstone 212 216
   Broken blak. basalt & green sandstone 216 218
   Hard it. green sandstone 218 219
   Green claystone 249 829

   Work started: 5/25 19
   Completed: 5/31 90

WELL CONSTRUCTOR CERTIFICATION:
I, the well constructor, hereby certify that I have constructed this well in accordance with all Washington well construction standards 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 Well Drilling Co.

(Signed) Seaborn Bach Co.

Address: 2111 Birchfield Rd. Yakima, WA 98901

WELL DRILLER License No.: 1526

Contractor's Registration No.: 1914137NU Date: 5/31 1990

(USE ADDITIONAL SHEETS IF NECESSARY)