

MEMO

State of Idaho

Department of Water Resources

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Phone: (208) 287-4800 Fax: (208) 287-6700

Date: December 27, 2007

To: Jeff Peppersack

From: Dennis Owsley, Hydrology Section, State Office 

cc: Sean Vincent, Rick Raymondi

Subject: Hydrogeologic Assessment of Transfer No. 5400 for Water Right No. 34-4035C

Introduction

Per your request, this memo summarizes a hydrogeologic assessment of the subject water right transfer. The application is for the transfer of a 1.31 cfs irrigation water right in Administrative Basin #34 (Big Lost Basin).

Water Right No. 34-4035C is a decreed water right authorizing use of ground water for irrigation purposes in Township 7N, Range 24E, Sections 34 and 35, near the Big Lost River, approximately six miles downstream of Mackay Dam. The application proposes to change the location of the point of diversion (POD) and place of use (POU) to a well located in Township 8N, Range 22E, Sections 6 and 7, approximately 10 miles west and upstream of Mackay Reservoir (Figure 1).

The existing POD for this water right lies within the portion of the Big Lost Basin that is within the Eastern Snake Plain Aquifer (ESPA) in model cell SP010108. The proposed location of the transfer moves the POD to a non-modeled tributary aquifer. Impacts of the transfer on ESPA discharges to the Snake River are assumed negligible based on the fact that both locations are within the same tributary basin and the mouth of the basin is approximately 50 miles from the Snake River. In accordance with guidance for application of the ESPA transfer spreadsheet (IDWR, 2007), the hydrogeologic assessment presented herein evaluates local effects using commonly accepted methods because the transfer is: 1) from the ESPA modeled area to a non-modeled tributary aquifer, and 2) the transfer distance is more than two model cells.

The assessment was conducted in four phases:

1. Literature review

2. Development of hydrogeologic conceptual model
 - a. Physiography
 - b. Geologic Framework
 - c. Hydrogeologic Framework
3. Analysis of potential ground water impacts
4. Analysis of potential surface water impacts

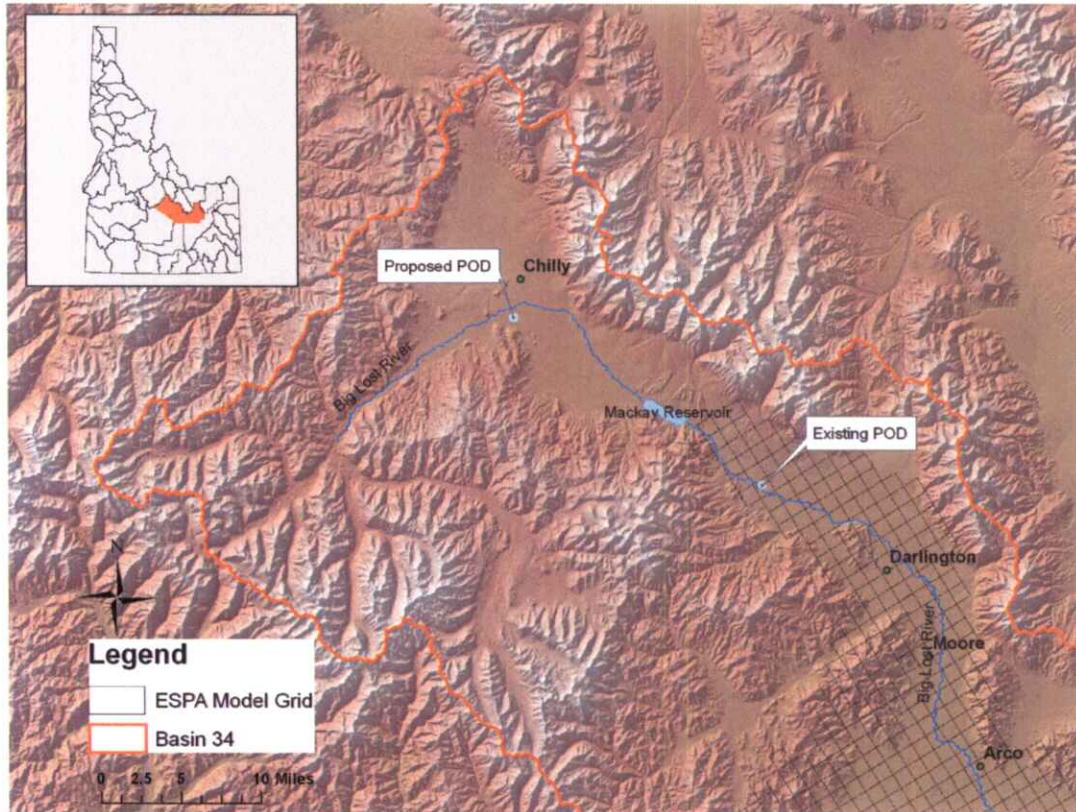


Figure 1. Location of the Big Lost River Basin with the current and proposed POD locations for Water Right No. 34-04035C.

Literature Review

A literature review was conducted that included well driller's reports for wells closest to the proposed POD, related hydrogeologic reports, and geologic maps of the area. Based on the Idaho Department of Water Resources (IDWR) database, it appears that there are over 1,500 wells in the Big Lost Basin. Logs for the 21 closest wells were reviewed to investigate local hydrogeologic conditions (Attachment 1). The locations range from approximately 0.5 to 1.5 miles from the POD. The well depths range from 60 to 190 feet, and the depth of the proposed well (103 feet) is within this range. Two hydrogeologic reports and geologic maps of the Big Lost Basin were reviewed to develop a hydrogeologic conceptual model of the area.

Hydrogeologic Conceptual Model

Physiography

The Big Lost River basin occupies approximately 1,400 square miles in central Idaho. This basin hosts the watershed for the Big Lost River and its tributary streams. Much of the basin is steep mountainous terrain. The basin is bounded on the east and northeast by the Lost River Range, on the northwest by the northeast extension of the Boulder Mountains, on the southwest by the Pioneer Mountains, and on the southeast by the Snake River Plain (Crosthwaite, et al., 1970).

The headwaters of the Big Lost River are approximately 60 miles upstream from the mouth of the basin, where it flows southward onto the Snake River Plain. Mackay Reservoir is located approximately 25 miles downstream from the headwaters and is the only storage reservoir in the basin. A distinctive feature of the Big Lost River basin is the high degree of interaction between surface water and ground water. At low flows, the Big Lost River disappears into the ground at the Chilly Sinks, near the location of the proposed POD. Large quantities of water reappear above Mackay Reservoir, disappear again at Darlington Sinks, reappear near Moore, and finally disappear beneath the Snake River Plain downstream of Arco (Crosthwaite, et al., 1970). Flows in the Big Lost River are controlled by precipitation and runoff, which vary widely from year to year (Figure 2).

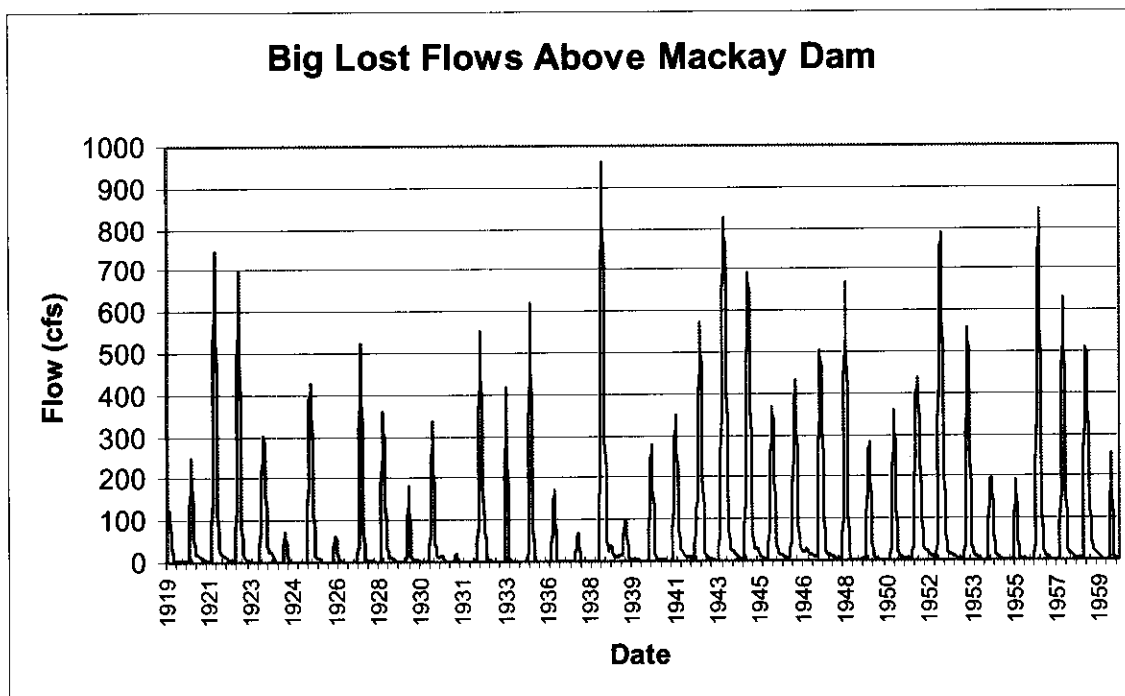


Figure 2. Hydrograph for the USGS gage (Site No. 13123500) on the Big Lost River, located approximately two miles above Mackay Reservoir. (USGS, 2007)

Geologic Framework

A large variety of rock types make up the geologic framework of the basin. The uplands are composed of limestone, dolomite, quartzite, sandstone, shale, and argillite

(Szczepanowski, 1982). These strata are folded, faulted, highly jointed, and have been intruded by granitic rocks (Crosthwaite, et al., 1970). Latite-andesite flows, breccia, and tuffs associated with the Challis Volcanics cover much of the older consolidated sedimentary strata (Crosthwaite, et al., 1970).

Glacial and stream deposits occupy the valleys, and these deposits are present in both consolidated and unconsolidated form. These deposits range in size from clay to large boulders, with variable degrees of sorting. The thickness of these deposits ranges from 2,000-3,000 feet near the proposed POD, to over 5,000 feet near Mackay (Szczepanowski, 1982). Near the mouth of the basin, basalt of the Snake River Group is present (Crosthwaite, et al., 1970).

Hydrogeologic Framework

Alluvium comprises the most important aquifer in the basin. Water recharges this aquifer system through percolation of precipitation and irrigation practices, underflow from adjacent upland aquifer systems, and through losses from the Big Lost River and its tributaries. Ground water discharges from the aquifer as gains to the Big Lost River, underflow to the Snake River Plain near Arco, spring discharges, and through wells.

Ground water occurs primarily under water table conditions throughout most of the basin. However, zones of low permeability materials cause perched and artesian conditions to exist locally. These localized zones have not been well defined in terms of their areal extent. Ground water movement within the basin is to the south, following the flow of the Big Lost River. The gradient of the water table in the basin is variable, created by the variations in the cross-sectional area of the aquifer, aquifer heterogeneity, and changes in the volume of water flowing through the aquifer. Generally, the water table gradient ranges from 10 to 100 feet per mile (Crosthwaite, et al., 1970).

Ground water and surface water interactions are significant throughout the Big Lost Basin. In the vicinity of the proposed POD, the Big Lost River is losing water to the aquifer. This area is known as the Chilly Sinks, where significant portions of the flows of the Big Lost disappear into the ground. The water table in this area is approximately 50 feet below the base of the river channel, so it appears that the aquifer is not in direct hydraulic communication with the river in this portion of the basin.

Analysis of potential ground water impacts

Aquifer Properties

None of the 21 well logs reviewed provide aquifer test data. Therefore, published estimates of aquifer transmissivity, storage coefficients, and aquifer thickness were used in order to analyze impacts to the aquifer from the proposed transfer.

The aquifer transmissivity used in the analysis was 400,000 gallons per day per foot (53,476 ft²/day) based on the analysis of specific capacity data from 20 wells in the basin (Crosthwaite, et al., 1970). The storage coefficient was 0.186. This value is an average for 154 samples of 10 different materials that comprise the aquifer (Crosthwaite, et al., 1970). The aquifer thickness was 110 feet, based on the interpretation of the driller's log

for the deepest well that was reviewed (see log for the Cherian well, attachment 1). This agrees with the estimated saturated thickness of the aquifer presented in Crosthwaite et al. (1970).

Infinite Aquifer Analysis

In accordance with guidance for determining yield for public drinking water supply wells (IDEQ, 2007), a pumping duration of 1 year was used to estimate potential impacts to water levels in nearby wells. A constant pumping rate of 1.31 cfs (the withdrawal rate on Water Right No. 34-04035C) was assumed. Assuming an infinite aquifer, the following drawdown values were predicted for selected alluvial aquifer wells in the vicinity of the proposed pumping well:

Table 1. Predicted drawdown values for selected wells assuming an infinite aquifer.

Well Owner	Water Right Number	Distance from POD (feet) ¹	Drawdown (feet) ²
Plummer	Unknown	1950	0.70
Arnold	Unknown	2040	0.68
Harvey	Unknown	2680	0.59
Link	Unknown	2800	0.58
Huff	Unknown	2820	0.57
Haeg	Unknown	3230	0.53
Simon	Unknown	3240	0.53
Coates	34-10231	4540	0.42
Brown	Unknown	4720	0.41
Cherian	34-2456	4940	0.39
Pritchett	34-269	6455	0.31
Orwig	Unknown	7325	0.27

¹ Approximate distances based on IDWR database locations (see Figure 3)

² Drawdown values estimated using the series approximation of the Theis (1935) solution with all applicable assumptions (Fetter, 1994, pp. 198-200).

The above drawdown estimates are based on the best available estimates for aquifer transmissivity and storage, a pumping time frame of 1 year, and the assumption that the Theis (1935) solution for a confined, infinite aquifer is appropriate for the purpose of estimating drawdown. Deviations from the assumptions affect the validity of the predictions, however.

Not all of the 21 wells reviewed were included in the drawdown analysis. Drawdown values on the more distant wells were on the order of less than 0.25 feet, and were not included in the analysis. Figure 3 is a plan view showing the predicted drawdown distribution after one year of continuous pumping and the locations of the wells selected for the drawdown analysis. Figure 4 presents the same data in graphical format.

As shown on these figures, drawdown decreases with radial distance from the pumping well. The cone of depression is radially symmetric because the aquifer is assumed to be

homogenous, isotropic, and infinite. Ground water impacts due to the proposed transfer are minimal, ranging from 0.70 feet of drawdown for the closest well to the proposed POD (Plummer) to 0.27 feet for the furthest well investigated (Orwig). The Plummer well is approximately 1,950 feet due north and the Orwig well is 7,325 feet east of the proposed POD. Predicted drawdown values in the vicinity of the Big Lost River (approximately 3,200 feet away) are on the order of 0.5 feet.

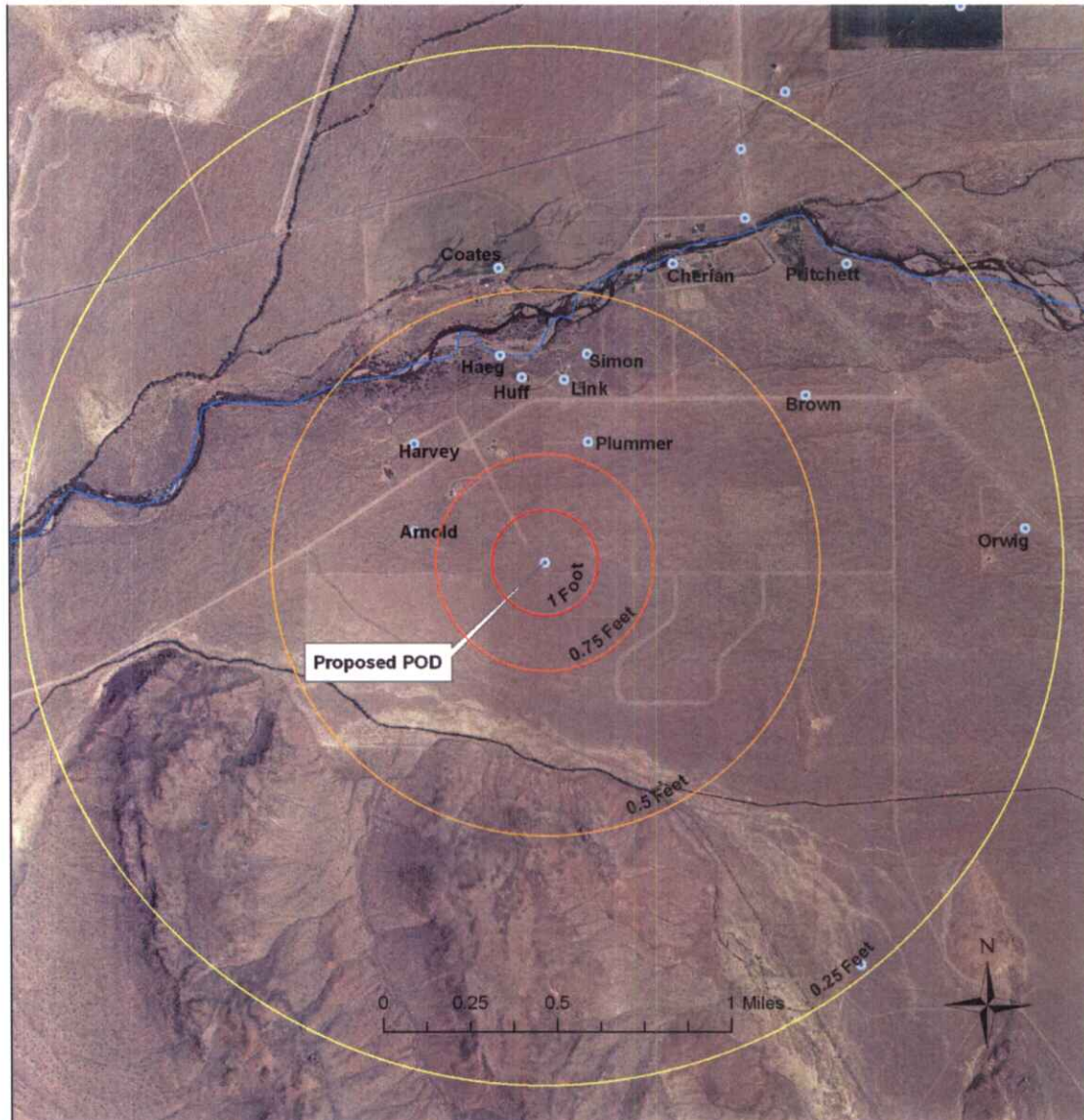


Figure 3. Map showing predicted drawdown after one year of continuous pumping assuming infinite aquifer and an aquifer storage coefficient of 0.186.

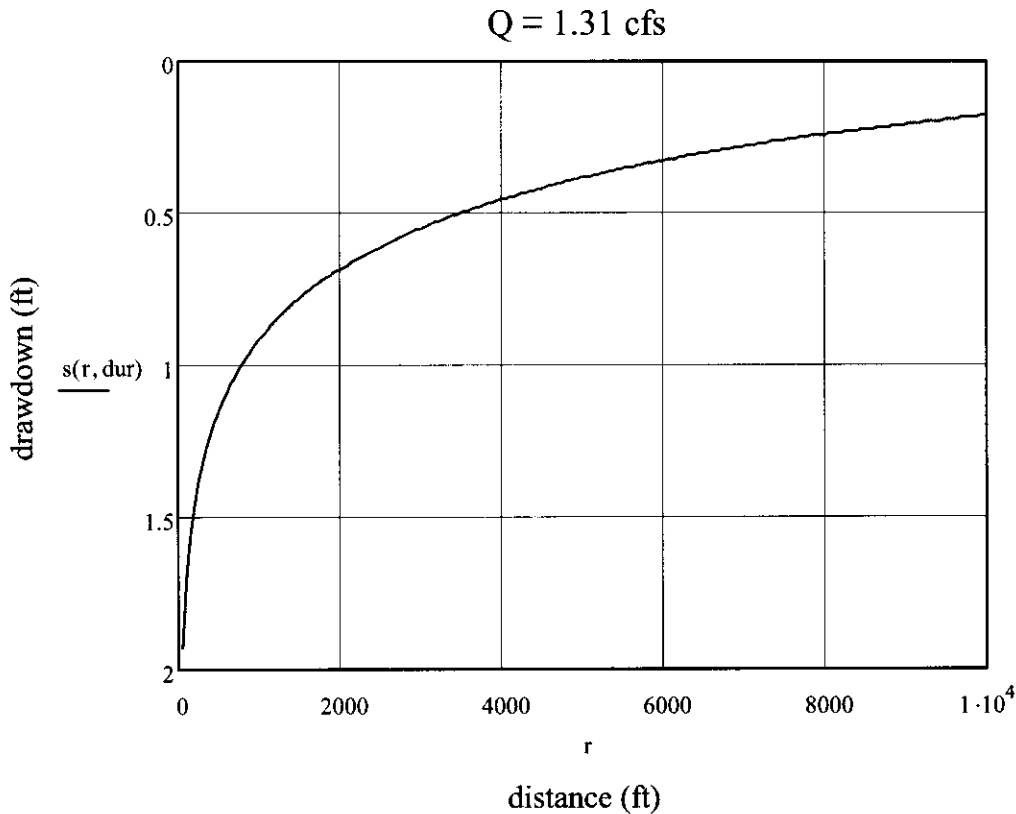


Figure 4. Plot of drawdown versus distance after 1 year of pumping at the proposed application rate.

Finite Aquifer Analysis

As previously described, the well penetrates an aquifer that is not in reality of infinite areal extent. In this case, the Big Lost River, when flowing and where it is in hydraulic communication with the aquifer, likely represents a positive boundary that will provide water to the well and create less drawdown than predicted. Similarly, the bedrock/alluvium contact at the valley margin likely represents a negative boundary that, once encountered by the cone of depression, will cause additional drawdown.

In accordance with theory, the image well used to evaluate the negative southwestern valley-margin boundary was placed on the opposite side of the boundary at a distance equal to the distance from the pumping well to the boundary (Figure 5). The image well had a positive pumping rate equal to the pumping rate of the pumping well. The effect of the eastern valley margin boundary was assumed negligible because it is approximately four miles away from the proposed POD. The distribution of drawdown for the system was estimated by adding up the component drawdown terms (Table 2).

As a conservative approach to investigating ground water impacts, only one image well was used to simulate the impacts of the low permeability uplands (i.e., negative boundary). The Big Lost River could have been included in the analysis as a positive

boundary adding water to the aquifer, but in years of low flow when the river does not continuously flow, this analysis would have underestimated the predicted drawdown values. Therefore, only the negative boundary and a corresponding image well were emplaced for this analysis.

As shown in Figure 5, the nonlinear geometry of the suspected negative aquifer boundary was approximated as a linear feature to facilitate calculation of the theoretical impacts using image well theory (see, for example, Freeze and Cherry, 1979, p. 330). A strict application of image well theory requires that the real well be reflected across the aquifer boundary and the resulting image well also be reflected across the boundary. In practice, however, the negligible effects of distant image wells are often ignored in order to evaluate drawdown affected by multiple boundaries (Freeze and Cherry, 1979). By making this simplifying assumption, the distribution of drawdown resulting from pumping in the bounded aquifer can be estimated by adding the cone of depression associated with the image pumping well to the cone of depression caused by the real pumping well.

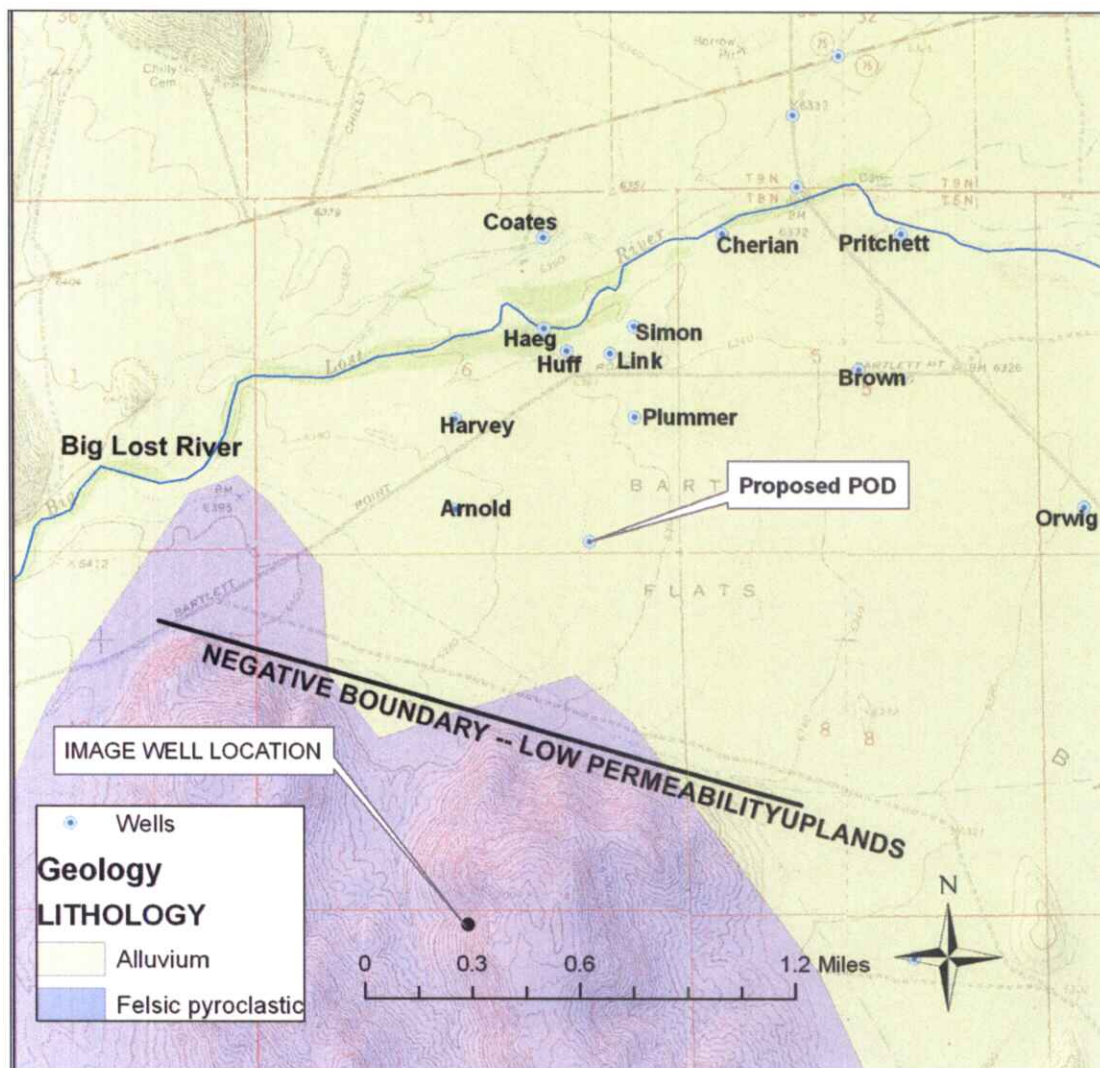


Figure 5. Location of image well for boundary condition analysis.

As shown in Table 2, impacts from the boundary condition are greatest for wells closer to the edge of the valley. Increased drawdown is predicted as compared to the infinite aquifer scenario because rocks in the uplands transmit less water to the well than the alluvium. Inclusion of the negative boundary in the analysis of ground water impacts increased the predicted drawdown values from 37-60%, depending on the well location.

Table 2. Image Well Analysis

Well Owner	Distance to Negative Image Well (feet)	Image Well Drawdown (feet)²	Pumping Well Drawdown (feet)	Total Drawdown (feet)
Plummer	7,770	0.25	0.70	0.95
Arnold	5,990	0.33	0.68	1.01
Harvey	7,310	0.27	0.59	0.86
Link	8,600	0.22	0.58	0.80
Huff	8,465	0.23	0.57	0.80
Haeg	8,845	0.22	0.53	0.75
Simon	9,030	0.21	0.53	0.74
Coates	10,050	0.18	0.42	0.60
Brown	9,890	0.19	0.41	0.60
Cherian	10,750	0.16	0.39	0.55
Pritchett	11,900	0.14	0.31	0.45
Orwig	10,930	0.16	0.27	0.43

Analysis of Impacts to the Big Lost River

As shown in Figure 6, approximately 80 surface water rights exist on the Big Lost River and Parsons Creek between the Chilly Sinks and Mackay Reservoir. The priority date on these surface water rights are senior to the priority date of 08/01/1960 on the water right associated with this transfer.

As described previously, the Big Lost River is in hydraulic communication with the underlying aquifer at many locations within the basin. However, in the vicinity of the proposed POD, ground water levels are significantly below the elevation of the base of the river channel. Therefore, it is assumed that the river is a losing stream in this particular reach and not in direct hydraulic communication with the aquifer. Ground water pumping in this area should therefore not affect the Big Lost River along this reach.

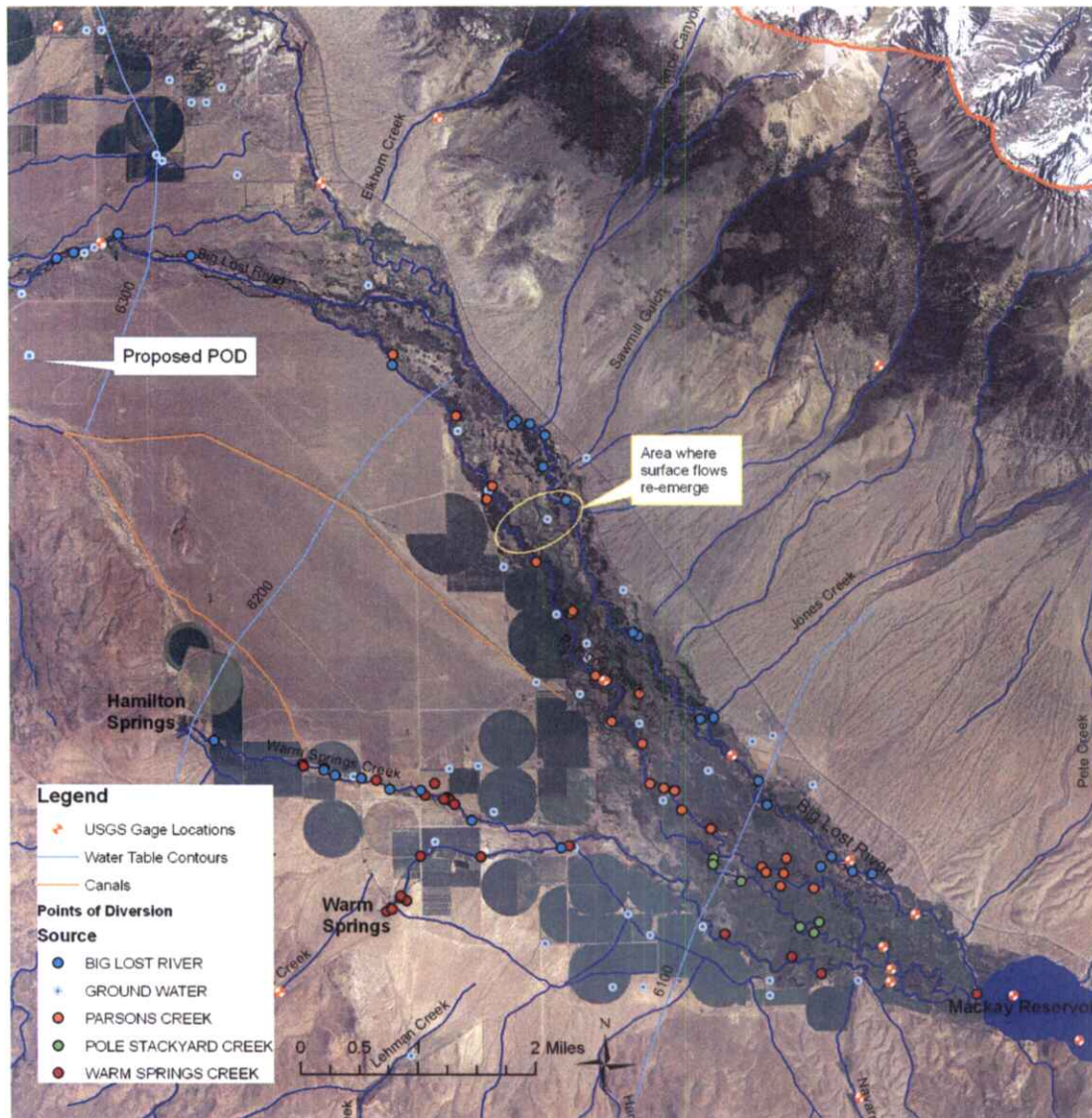


Figure 6. Map of the Big Lost River drainage between the Chilly Sinks and Mackay Reservoir showing surface water features and water table contours.

Although the aquifer in the immediate area of the proposed POD is not in direct hydraulic communication with the river, at some point between the Chilly Sinks and Mackay Reservoir the water table approaches the elevation of the river channel (Figure 7). It is this re-emergence of ground water in the Big Lost River channel that requires potential impacts from this transfer to surface water flows to be investigated.

Stream gage records maintained by the USGS show that the river reach between Chilly Sinks and Mackay Dam has hosted approximately 10 surface water gages, dating back to 1919. However, because the majority of these gages were only operational for one season, generally from April or May through October, the available gage data cannot be used to determine where the flows in the river re-emerge.

Ground water levels were analyzed to determine where the water table intersects the river channel. Static water levels reported on the driller's logs were reviewed and generally agree with the water level contours shown in Figure 6 (Graham and Campbell, 1981).

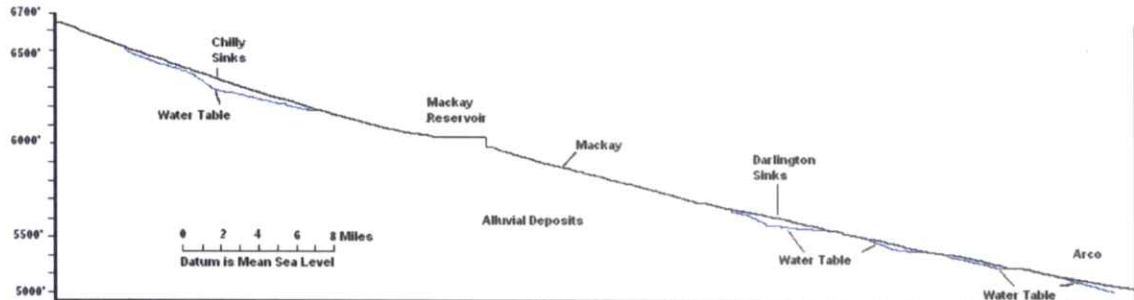


Figure 7. Profile of the Big Lost River with respect to the water table in the alluvial deposits (modified from Crosthwaite et al., 1970).

The location where the water table intersects the river channel varies from season to season. However, after discussions with the Watermaster in Basin 34 (Shaffer, 2007), the approximate location where the river historically re-gains flow has been identified and is shown in Figure 6.

A stream flow depletion analysis was conducted to assess potential impacts to surface water right holders as a result of this transfer. To conduct this analysis, the percentage of water pumped from the well that is withdrawn from the river was estimated using the Glove and Balmer (1951) equation for stream flow depletion.

The equation can be used to estimate the amount of flow drawn from the river at any time after pumping begins. Simplifying assumptions used to develop the equation include: 1) the river flows in a straight course which extends considerable distances both upstream and downstream from the well location; 2) the aquifer and the river are in direct hydraulic connection; 3) the aquifer is isotropic, homogenous, semi-infinite in areal extent; 4) the stream and the pumping well fully penetrate the aquifer; and 5) the pumping rate and aquifer properties do not change over time (Jenkins, 1968).

For this analysis, a seven month pumping period (growing season) was used as the time of pumping. Additional inputs required for the analysis include aquifer properties and distance from the well to the river. A storage coefficient of 0.186 was used in this analysis to simulate an unconfined aquifer in direct hydraulic communication with the river. The distance from the POD to the river was estimated at 25,000 feet, which is the approximate distance from the proposed POD to the point of river re-emergence above Mackay Reservoir. The hydraulic conductivity used in the analysis was 486 feet/day, the same value used in the drawdown analysis presented above. Based on the analysis presented above, approximately 2% of the water pumped from the well will be withdrawn from the river after seven months of continuous pumping.

Conclusions

The transfer application proposes to relocate the POD of Water Right No. 34-4035C from Township 7 North, Range 24 East, Section 34 to Township 8 North, Range 22 East, Section 6. Both locations are within the Big Lost River Basin (Basin 34). The current POD location is within the defined portion of this basin that is incorporated into the model of the Eastern Snake Plain Aquifer. The proposed location lies outside of the ESPA modeled area in a tributary aquifer.

As shown above, impacts related to this transfer to the ground water users near the proposed POD are relatively insignificant. Using image well theory, the maximum predicted drawdown is approximately one foot at a distance of approximately one mile from the proposed POD.

With respect to surface water, the Big Lost River is known to be losing in this portion of the valley and is not in direct hydraulic communication with the underlying aquifer. The transfer will not impact the natural losses experienced by the Big Lost River in the reach nearest the POD. Stream flow depletion calculations suggest that potential impacts to downstream surface water users are relatively small (2% of the pumping rate).

Lastly, impacts to the ESPA will be insignificant in terms of the overall water budget. Tributary underflow to the ESPA from the Big Lost drainage should be relatively unchanged since the consumptive use will likely not be affected by the transfer.

References

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- IDEQ – see Idaho Department of Environmental Quality
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- Shaffer, Bob, 2007. Personal communication. Phone conversation on December 11, 2007.
- Szczepanowski, S.P., 1982. Review of Ground-Water Conditions in the Big Lost River Valley. IDWR Internal Report, 1982.
- Theis, C.V., 1935. *The Relation Between the Lowering of the Piezometric Surface and the Rate and Duration of Discharge of a Well Using Groundwater Storage*, Trans. Amer. Geophysical Union, v. 16, pp. 519-524.

ATTACHMENT 1
WELL DRILLER'S REPORTS

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT 62146

Use Typewriter
or
Ball Point Pen

1. DRILLING PERMIT NO. 34-97-E-0012-000
Other (DWR) No. _____

2. OWNER:
Name DALE J. ARNOLD
Address 742 HUBBARD
City PACIFIC State ID Zip 83201

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

N		Twp. <u>8</u> North ☒ or South ☐	
E		Rge. <u>22</u> East ☐ or West ☐	
W		Sec. <u>6</u> 1/4 <u>SE</u> 1/4 <u>SW</u> 1/4	
S		Gov't Lot _____ County <u>CLATSOP</u>	

Address of Well Site BARTLETT ROAD
City MADEIRA
Lt. 2 Blk. 2 Sub. Name _____

4. PROPOSED USE:
☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other _____

5. TYPE OF WORK
☒ New Well ☐ Modify or Repair ☐ Replacement ☐ Abandonment

6. DRILL METHOD
☐ Mud Rotary ☒ Air Rotary ☐ Cable ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK		AMOUNT		METHOD
Material	From	To	Scale or Pressure	
<u>Neoseal</u>	<u>0</u>	<u>20</u>	<u>250</u>	<u>Over Core</u>

Was drive shoe used? YES ☐ NO ☐
Was drive shoe seal tested? YES ☐ NO ☐ How? _____

8. CASING/LINER:

Depth	From	To	Depth	Material	Casing	Liner	Welded	Threaded
<u>6</u>	<u>10</u>	<u>102</u>	<u>250</u>	<u>Steel</u>	☒	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

☒ Perforations Method Touch
☐ Screens Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
<u>85</u>	<u>100</u>	<u>1/2</u>	<u>18</u>	<u>1/2"</u>	<u>Steel</u>	☒	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

52 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices: top of well cap

11. WELL TESTS:

☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
<u>40</u>	<u>5.0</u>	<u>90</u>	<u>2 HRS.</u>

Water Temp. Cold Bottom hole temp. _____
Water Quality test or comments: Good

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
<u>0</u>	<u>6</u>	<u>Brown Silty Gravel</u>	☒	☐
<u>6</u>	<u>27</u>	<u>SAND & GRAVEL</u>	☒	☐
<u>27</u>	<u>82</u>	<u>Brown Clay Gravel</u>	☒	☐
<u>82</u>	<u>102</u>	<u>SAND & GRAVEL</u>	☒	☐

RECEIVED
OCT 15 1997
Department of Water Resources
Eastern Region

RECEIVED
OCT 30 1997
Department of Water Resources
Eastern Region

Completed Depth 103' (Measurable)
Date: Started July 19-97 Completed July 19-97

13. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name GUTHRIE DRILLING Firm No. 226
Firm Official J. H. HARRIS Date 10-29-97
and
Supervisor or Operator _____ Date _____
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Inspected by _____
Twp _____ Rge _____ Sec _____
_____ 1/4 _____ 1/4 _____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 0024401
 DRILLING PERMIT NO. 779801
 Other IDWR No. _____

2. OWNER:
Name Gilbert D. Brown
Address 2019 TRAIL CR. Circle
City THANKS FALLS State TX Zip 75730

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

N

 W
 S
 Twp. 8 North ☒ or South ☐
 Rge. 22 East ☒ or West ☐
 Sec. 5
 Gov't Lot 4 1/4 1/4 1/4
 County St. Louis 40 acres 40 acres 160 acres
 Lat. : Long:
 Address of Well Site Old Childs Rd
Py River City Adair
 (Site at least name of road + Distance to Road or Landmark)
 Lt. Bk. Sub. Name

4. USE:

4. USE: ☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other _____

5. TYPE OF WORK check all that apply (Replacement etc.)

☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD

☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK		AMOUNT		METHOD
Material	From	To	Sacks or Pounds	
Montearto	0	30	250	over 200

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 103

Was drive shoe seal tested? ☐ Y ☒ N How?

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	41	103	250	Steel	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Perforations Method Torch Cut
Screens Screen Type

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
90	100	1/8"	15	6	Steel	☒	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

10. STATIC WATER LEVEL ON ARTESIAN P.W. _____
 5.2 ft. below ground Artesian pressure _____ lb.

Depth flow encountered _____ ft. Describe access port or control devices: top of well

11. WELL TESTS:

☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Pumping Level	Time
35		100	1 hr

Water Temp. cold Bottom hole temp. _____

Water Quality test or comments: Good

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

[illegible]

Completed Depth 103 (Measurable)

Date: Started 7/1/02 Completed 7/2/02

13. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name Guthrie Printing Firm No. 226

Firm Official J. T. H. [Signature] Date 7-27-02

and
Driller or Operator Boat Collins Date 7-27-02

(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only			
Inspected by			
Twp	Rge	Sec	
1/4	1/4	1/4	
Lat	Long		

1. WELL TAG NO. D 0000851
DRILLING PERMIT NO. 767205
Other IDWR No. _____

2. OWNER:

Name Alex Cherian
Address P.O. Box 720
City Ketchum State Id Zip 83340

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

Twp. <u>8</u>		North ☒ or South ☐	
Rge. <u>22</u>		East ☒ or West ☐	
Sec. <u>5</u>		1/4 NW 1/4 NW 1/4	
Gov't Lot		County	
Lat		Long	

Address of Well Site #4 Big Lost
River Drive City ChillyLI. 4 Bk. — Sub. Name Winter Haven

4. USE:

☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other

5. TYPE OF WORK check all that apply (Replacement etc.)

☒ New Well ☐ Modify ☐ Abandonment ☐ Other

6. DRILL METHOD

☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT		METHOD
Material	From	To	Scale or	Feet	
Bentonite	0	18	785"		Poured

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 150 FL
Was drive shoe seal tested? ☐ Y ☒ N How? _____

8. CASING/LINER:

Diameter	From	To	Specs	Material	Casing	Liner	Welded	Threaded
8"	18"	150	230	Steel	☒	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS None

Perforations _____ Method _____
Screens _____ Screen Type _____

From	To	Std Size	Number	Diameter	Material	Casing	Liner
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

60 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or
control devices: Removable well cap

11. WELL TESTS:

☐ Pump ☐ Bailor ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Pumping Level	Time
20 gpm	N/A	140 FL	2 HRS

Water Temp. Cold Bottom hole temp. ColdWater Quality test or comments: good, cleanDepth first Water Encounter 78 FL

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
12"	0	2	Topsoil, clay, Gravel		X
8"	2	18	Gravel		X
8"	18	140	Gravel		X
	140	160	med Sand, small Gravel		X
			Same fine sand mix		

RECEIVED

DEC 22 2000

Department of Water Resources

RECEIVED

DEC 8 8 2000

Department of Water Resources
Eastern RegionCompleted Depth 150 FL (Measurable)
Date: Started 10-23-00 Completed 11-8-00

13. DRILLER'S CERTIFICATION

I/we certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name JAFCD Firm No. 504Firm Official [Signature] Date 12-4-00

and _____ Date _____

Driller or Operator _____
(Sign once if Firm Official's Operator)

FORWARD WHITE COPY TO WATER RESOURCES

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only			
Inspected by			
Twp	Rge	Sec	
1/4	1/4	1/4	
Lat	Long		

1. WELL TAG NO. D 0021106
DRILLING PERMIT NO. 768887
Other IDWR No. 34-002690/34-024560

2. OWNER:

Name Alex Cherian
Address P.O. Box 720
City Ketchum State ID Zip 83340

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

N		Twp. <u>8</u>		North ☒ or South ☐	
E		Rge. <u>22</u>		East ☒ or West ☐	
S		Sec. <u>5</u>		1/4 NW 1/4 NW 1/4	
W		Gov't Lot		County <u>Custer</u>	
		Lat		Long	
		Address of Well Site <u>#4 Big Lost</u>		City <u>Chilly (Mackay)</u>	

River Dr.
(Date of last name of road - Distance to Road or Landmark)
L. 4 Bk. — Sub. Name Winter Haven

4. USE:

☐ Domestic ☐ Municipal ☐ Monitor ☒ Irrigation
☐ Thermal ☐ Injection ☐ Other

5. TYPE OF WORK check all that apply (Replacement etc.)

☒ New Well ☐ Modify ☐ Abandonment ☐ Other

6. DRILL METHOD

☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other

7. SEALING PROCEDURES

SEAL/FILTER PACK	AMOUNT	METHOD
Material	From To	Seals or Pounds
Bentonite	0 18	800#
		Poured

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 113 FE.Was drive shoe seal tested? ☐ Y ☒ N How?

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
10"	+ 18"	110	280	Steel	☒	☐	☒	☐

Length of Headpipe — Length of Tailpipe 3 FE.9. PERFORATIONS/SCREENS STAINLESS steelPerforations Method WIRE WRAP V SCREEN
Screens x Screen Type JOHNSON

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
110	128	30	304	8"	STAINLESS	☒	☐
			S.S.	TELE	STEEL	☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

55 ft. below ground Artesian pressure — lb.
Depth flow encountered — ft. Describe access port or control devices: WELL CAP

11. WELL TESTS:

☐ Pump ☐ Bailor ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Pumping Level	Time
275 GPM	N/A	90 FT.	3 Hrs

Water Temp. Cold Bottom hole temp. ColdWater Quality test or comments: Good, clean
Depth first Water Encounter 28 FE.

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
14"	0	18	med Grvl, some sand + clay mix		X
10"	18	25	med Grvl, med sand		
	25	40	med to fine sand, med to small Grvl, med to fine sand mx		X
	40	80	med to small Grvl, med to fine sand mx		X
	80	100	med sand, med to Pea Grvl mx		X
	100	125	med to Pea Grvl, med sand		X
	125	128	med to Pea Grvl, fine sand		X

RECEIVED

JUL 2 2001

RECEIVED

JUN 13 2001

Department of Water Resources
Eastern RegionCompleted Depth 128 FE. (Measurable)
Date: Started 5-17-01 Completed 5-25-01

13. DRILLER'S CERTIFICATION

We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name JAFCD Firm No. 504Firm Official James J. Fisherand
Driller or Operator James J. Fisher Date 5-25-01
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

USE ADDITIONAL SHEETS IF NECESSARY - FORWARD THE WHITE COPY TO THE DEPARTMENT

RECEIVED
APR 26 1964

APR 26 1968

Department of Reclamation
the well.

WELL OWNER: 11045 218
Name Byron Costas
Address Chilly Idaho

Owner's Permit No. _____
 NATURE OF WORK (check): Replacement well ☐
 New well ☒ Deepened ☐ Abandoned ☐
 Water is to be used for: Culinary use
 METHOD OF CONSTRUCTION: Rotary ☐ Cable ☒
 Dag ☐ Other ☐

CASING SCHEDULE: Threaded _____ Welded ☒
 6 "Diam. from 0 ft. to 82 ft.
 _____ "Diam. from _____ ft. to _____ ft.
 _____ "Diam. from _____ ft. to _____ ft.
 _____ "Diam. from _____ ft. to _____ ft.
 Thickness of casing: 1/4 Material:
 Steel ☒ concrete ☐ wood ☐ other ☐

(explain)
PERFORATED? Yes ☒ No ☐ Type of
perforator used: *tuck*

Size of perforations: 5/8" by 8"
20 perforations from 60 ft. to 80 ft.
 _____ perforations from _____ ft. to _____ ft.
 _____ perforations from _____ ft. to _____ ft.
 _____ perforations from _____ ft. to _____ ft.

WAS SCREEN INSTALLED? Yes ☐ No ☒

Manufacturer's name _____

Type _____ Model No. _____

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

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

CONSTRUCTION: Well gravel packed? Yes ☐
No. ☒ size of gravel _____ Gravel
placed from _____ ft. to _____ ft. Surface seal
provided? Yes ☐ No ☐ To what depth?
_____ ft. Material used in seal: _____

Did any strata contain unusable water? Yes ☐
No. ☒ Type of water:
Depth of strata _____ ft. Method of sealing
strata off:

Surface casing used? Yes ☐ No ☐
Cemented in place? Yes ☐ No ☐

Locate well in section

LOCATION OF WELL: County Custer
NW 1/4 NE 1/4 Sec. 6 T. 8 N. 8 R. 22 E. 1/4

Size of drilled hole: 6" ^{inches} Total
depth of well: 88' Standing water
level below ground: 55' Temp.
Fahr. _____ Test delivery: 800 gpm
or _____ cfs Pump? ☐ Bail ☒
Size of pump and motor used to make test:

Length of time of test: Hrs. Min.
 Drawdown: ft. Artesian pressure: ft.
 above land surface Give flow cfs
 or gpm. Shutoff pressure:
 Controlled by: Valve Cap Plug ☐
 No control ☐ Does well leak around casing?
 Yes No

DEPTH	MATERIAL	WATER
FROM TO		ES OR NO
FEET FEET		

0	60	gravelly sand - mixed	no
60	88	gravel	yes

Work started: 2-24-68
Work finished: 3-1-68
Well Driller's Statement: This well was drilled under my supervision and this report is true to the best of my knowledge.
Name: Lambert Well Drilling
Address: Madison Idaho
Signed by: Cliff Lambert
License No. 5777 Date: 4-24-68

3161

Use other side for additional remarks

USGS

Form 238-7
11/87
DMD

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT 59787

Office Use Only
Inspected by _____
Twp _____ Rge _____ Sec _____
1/4 _____ 1/4 _____ 1/4 _____
Lat _____ Long _____
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

1. WELL TAG NO. D 0011194
DRILLING PERMIT NO. 3499E-0002-000
Other IDWR No. _____

2. OWNER:
Name JAHAL & MELISSA FOWLER
Address Box 476
City MACRAE State ID Zip 83351

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

Map grid showing location. Twp. 8 North or South ☒ East or West ☒
Rge. 32 Sec. 6 1/4 SE 1/4 NE 1/4
Gov't Lot _____ County BUTTE
Lat _____ Long _____
Address of Well Site BARTLETT
POINT RD. NORTH, CITY MACRAE
Lt. 1 Bk. 7C Sub. Name _____

4. USE:
☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other _____
5. TYPE OF WORK check all that apply (Replacement etc.)
☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____
6. DRILL METHOD
☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK		AMOUNT		METHOD
Material	From To	Backs or Pounds		
Benmore, etc	0 20	250	Over Ben	

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 105
Was drive shoe seal tested? ☐ Y ☐ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	41	105	250	Steel	☒	☐	☒	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS
Perforations Method torch
Screens Screen Type _____

From	To	Shot Size	Number	Diameter	Material	Casing	Liner
90	105	20	21			☒	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
58 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices: TOP OF CASING

11. WELL TESTS:

Yield gal./min.	Drawdown	Pumping Level	Time
40		100	2 hrs

Water Temp. 53 Bottom hole temp. 54
Water Quality test or comments: Clear

12. LITHOLOGIC LOG: (Describe repairs or abandonment) Water

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
0	0	8	SILT & GRAVEL		X
8	61	81	Compact GRAVEL		X
81	105		SAND GRAVEL LARGE		X

RECEIVED
NOV 19 1999
Department of Water Resources

RECEIVED
NOV 15 1999
Department of Water Resources

MICROFILMED

Completed Depth 105 (Measurable)
Date: Started 9-17-99 Completed 9-21-99

13. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name BUTTRIE DRILLING Firm No. 226
Firm Official J. H. Buttrick Date 11-6-99
Driller or Operator _____ Date _____
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Inspected by _____
Twp _____ Rge _____ Sec _____
1/4 _____ 1/4 _____ 1/4 _____
Lat _____ Long _____
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

1. WELL TAG NO. D 0011828
DRILLING PERMIT NO. 763929
Other IDWR No. _____

2. OWNER:
Name THOMAS M. HAEG
Address PO BOX 338
City MACKAY State Id Zip 83213

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

Twsp. 8 North ☒ or South ☐
Rge. 22 East ☐ or West ☐
Sec. 6 1/4 SW 1/4 NE 1/4
Gov't Lot _____ County CLATSOP
Lat: _____ Long: _____
Address of Well Site BARTLETT ROAD
City MACKAY

Li. _____ Blk. _____ Sub. Name _____

4. USE:
☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other _____

5. TYPE OF WORK check all that apply (Replacement etc.)
☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD
☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK	AMOUNT	METHOD
Material	From To	Spools or Pounds
<u>Ben-tonite</u>	<u>0 20</u>	<u>300</u>
		<u>Over Box</u>

Was drive shoe used? ☒ N ☐ Shoe Depth(s) _____
Was drive shoe used tested? ☐ Y ☐ N How? _____

8. CASING/LINER:

Diameter	From	To	Spools	Material	Casing Liner	Welded	Threaded
<u>6</u>	<u>1</u>	<u>103</u>	<u>250</u>	<u>Steel</u>	☒	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Screen Extension Method Torch
Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
<u>84</u>	<u>102</u>	<u>1/2"</u>	<u>24</u>		<u>Steel</u>	☒	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

46 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices: top of casing

11. WELL TESTS:

Yield gal/min.	Drawdown	Pumping Level	Time
<u>60</u>		<u>90</u>	<u>2 hrs</u>

Water Temp. cold Bottom hole temp. _____
Water Quality test or comments: clear

12. LITHOLOGIC LOG: (Describe repairs or abandonment) Water

Bore Dis.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
<u>8</u>	<u>0</u>	<u>2</u>	<u>SILT + GRAVEL</u>		☒
	<u>2</u>	<u>16</u>	<u>SAND + GRAVEL</u>		☒
	<u>16</u>	<u>42</u>	<u>LARGE GRAVEL</u>		☒
	<u>42</u>	<u>103</u>	<u>SAND + GRAVEL</u>		☒

RECEIVED

JUL 10 2000

Department of Water Resources
Eastern Region

Completed Depth 103' (Measurable)
Date: Started 4-11-00 Completed 4-13-00

13. DRILLER'S CERTIFICATION

We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name GUTHER DRILLING Phone No. 226

Firm Official J. E. Gutierrez Date 7-7-00

and
Driller or Operator _____ Date _____
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

#3

WELL LOG AND REPORT TO THE
STATE RECLAMATION ENGINEER OF IDAHO

RECEIVED
FEB 21 1956 084708
Department of Reclamation

Log No. _____
Res. _____, 19____
Well No. _____
Permit No. _____

(DO NOT FILL IN)

17040218
Owner Vic Johnson Address Chilly
Driller Leater Brown Address Leater Brown Lic. No. 121
Location of Well: NW 1/4 NE 1/4 Sec. 4, T. 8 N. R. 22 E. Custer County,
and _____ foot N/S, and _____ foot E/W from _____ Corner of _____ 1/4 _____ 1/4 Sec.
Size of Drilled Hole 6" Total depth of Well 56 1/2'
Give depth of standing water from surface 22' Water Temp. 46° Farenheit
On pumping test delivery was _____ g.p.m. or _____ c.f.s. Drawdown was _____ feet.
Size of pump and motor used to make the test _____
Length of time pumped during check was _____ hr., _____ minutes.
If flowing well, give flow in c.f.s. _____ or g.p.m. _____ and shut in pressure _____
If flowing well, describe control works _____ (TYPE AND SIZE OF VALVE, ETC.)
Water will be used for Stock well Weight of casing per linear foot _____
Thickness of casing 3/8" Casing material P.P. E.G., PIPE, CONCRETE, WOOD.
Diameter, length and location of casing 6" - 54'6"
(CASING 18" IN DIAMETER AND UNDER GIVE INSIDE DIAMETER;
CASING OVER 18" IN DIAMETER GIVE OUTSIDE DIAMETER.)
Number and size of perforations _____ located _____ feet to _____ feet
from surface of ground.
Other perforations _____
Date of commencement of well 1/30/56 Date of completion of well 2-13-56
Type of well rig No. 50 Keystone

CASING RECORD

DIAM. CASING	FROM FEET	TO FEET	LENGTH	"REMARKS" -- SEALS, GROUTING, ETC.
6"	2	56 1/2'	6'48"	

GENERAL INFORMATION—Pumping Test, Quality of Water, Etc.

Drilled in old dug well 16' deep
Owner installed 4 HP Fairbanks-Morse pump
& pumped about 20 hrs. Water raised in
casing 1 foot. Seemed to be plenty of water.

NW NE 1/4 S. 4 T. 8 N. R. 22 E

(3160)

#3

WELL LOG AND REPORT TO THE
STATE RECLAMATION ENGINEER OF IDAHO

RECEIVED
FEB 21 1956 084708
Department of Reclamation

Log No. _____
Res. _____, 19____
Well No. _____
Permit No. _____

(DO NOT FILL IN)

17040218
Owner Vic Johnson Address Chilly
Driller Leslie Brown Address Sanctuary Lic. No. 121
Location of Well: NW 1/4 NE 1/4 Sec. 4, T. 8 N. R. 22 E. Custer County,
and _____ foot N/S, and _____ foot E/W from _____ Corner of _____ 1/4 _____ 1/4 Sec.
Size of Drilled Hole 6" Total depth of Well 56 1/2"
Gve depth of standing water from surface 22' Water Temp. 46° Fahrenheit
On pumping test delivery was _____ g.p.m. or _____ c.f.s. Drawdown was _____ feet.
Size of pump and motor used to make the test _____
Length of time pumped during check was _____ hr., _____ minutes.
If flowing well, give flow in c.f.s. _____ or g.p.m. _____ and shut in pressure _____
If flowing well, describe control works _____ (TYPE AND SIZE OF VALVE, ETC.)
Water will be used for stock well Weight of casing per linear foot _____
Thickness of casing 3/8" Casing material P.P. E.S., PIPE, CONCRETE, WOOD.
Diameter, length and location of casing 6" - 54'6"
(CASING 12" IN DIAMETER AND UNDER GIVE INSIDE DIAMETER;
CASING OVER 12" IN DIAMETER GIVE OUTSIDE DIAMETER.)
Number and size of perforations _____ located _____ feet to _____ feet
from surface of ground.
Other perforations _____
Date of commencement of well 1/30/56 Date of completion of well 2-15-56
Type of well rig No. 50 Keystone

CASING RECORD

DIAM. CASING	FROM FEET	TO FEET	LENGTH	REMARKS -- SEALS, GRROUTING, ETC.
6"	2	56 1/2"	6' 4 1/2"	

GENERAL INFORMATION—Pumping Test, Quality of Water, Etc.

Drilled in old dug well 16' deep.
Owner installed 4 HP Fairbanks-Morse pump
& pumped about 20 hrs. Water raised in
casing 1 foot. Seemed to be plenty of water.

NE NE S. 4 R. 22 E

(3160)

Form 238-7
3/95

IDAHO DEPARTMENT OF WATER RESOURCES

WELL DRILLER'S REPORT 62147

Use Typewriter or Ballpoint Pen

Office Use Only
Inspected by _____
Twp _____ Rge _____ Sec _____
1/4 _____ 1/4 _____ 1/4 _____
Lat: _____ Long: _____
☒ Air ☐ Flowing Artesian

1. DRILLING PERMIT NO. 34-99-E-0019-000
Other IDWR No. _____

2. OWNER:
Name STELLA MARK HAM
Address RD BOX 212
City MAKAY State ID Zip 83257

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

North ☒ or South ☐
Twp. 8 North ☒ or South ☐
Rge. 22 East ☒ or West ☐
Sec. 4 1/4 SE 1/4 SE 1/4
Gov't Lot _____ County CUSTER
Lat: _____ Long: _____
Address of Well Site BARTLETT
ROAD NORTH OF City MAKAY
(Give at least name of road + distance to road or landmark)

Lt. _____ Bk. _____ Sub. Name _____

4. USE:
☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other _____

5. TYPE OF WORK check all that apply (Replacement etc.)
☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD
☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK		AMOUNT		METHOD
Material	From	To	Sacks or Pounds	
<u>Ben-tonite</u>	<u>0</u>	<u>22</u>	<u>250</u>	<u>Over Pack</u>

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 103'

Was drive shoe seal tested? ☒ Y ☐ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
<u>6 1/2</u>	<u>103</u>	<u>250</u>	<u>Steel</u>	<u>10</u>	☒	☐	☒	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

☒ Perforations Method Torch
☐ Screens Screen Type _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
<u>80</u>	<u>100</u>	<u>1/2"</u>	<u>21</u>	<u>Steel</u>	☒	☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

48 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices: TOP OF WELL CAP

11. WELL TESTS:

Yield gal./min.	Drawdown	Pumping Level	Time
<u>40</u>	<u>90</u>		<u>2 HRS</u>

Water Temp. Cold Bottom hole temp. _____
Water Quality test or comments: Clear

Depth first Water Encountered 50

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
	<u>0</u>	<u>4</u>	<u>Open Silty Gravel</u>	☒	☐
	<u>4</u>	<u>21</u>	<u>Light Sand Gravel</u>	☒	☐
	<u>21</u>	<u>36</u>	<u>Sand Gravel</u>	☒	☐
	<u>36</u>	<u>44</u>	<u>Heavy Silty Gravel</u>	☒	☐
	<u>44</u>	<u>103</u>	<u>Sand Gravel</u>	☒	☐

RECEIVED

OCT 30 1997

Department of Water Resources
Eastern Region

RECEIVED

NOV 05 1997

Department of Water Resources

Completed Depth 103' (Measurable)
Date: Started 9-4-97 Completed 9-5-97

13. DRILLER'S CERTIFICATION

We certify that all minimum well construction standards were complied with at the time the rig was removed.

Firm Name GUTHRIE DRILLING Firm No. 226

Firm Official H. T. Guthrie Date 10-29-97

Supervisor or Operator _____ Date _____
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

Form 206-7
1/77

DMD

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only		
Inspected by		
Twp	Rgn	Sec
1/4	1/4	1/4
Lat	Long	

1. WELL TAG NO. D 0921141
DRILLING PERMIT NO. 969621
Other IDWR No. 34

2. OWNER:
Name MARTY GRWIG
Address Box 30
City MARLEY State ID Zip 83422

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

N W E S T	Twp. <u>8</u> Rgn. <u>22</u> Sec. <u>7</u> Gov't Lot <u>C 337</u> Lat: _____ Long: _____	North ☒ or South ☐
		East ☒ or West ☐
		1/4 <u>34</u> 1/4 <u>34</u> 1/4 <u>34</u>
		County <u>CROSFORD</u>
Address of Well Site <u>North of PA. Road</u> City <u>MARLEY</u>		

4. USE:
☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other _____

5. TYPE OF WORK check all that apply (Replacement etc.)
☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD
☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

SEAL/PLUG PACK			AMOUNT		METHOD
Material	From	To	Feet	Feet	
Ben-tonite	0	30	30		over Bore

Was drive shoe used? ☒ Yes ☐ No Shoe Depth: 130
Was drive shoe seal tested? ☐ Yes ☐ No?

CASING/LINER:				Casing		Liner		Welder		Threaded	
Size	From	To	Depth	Feet	Feet	Feet	Feet	Feet	Feet	Feet	Feet
6	1	120	24	6	Steel						

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS
Screens Perforated Method comb
Screen Type _____

From	To	Size	Number	Material	Casing	Liner
102	118	24	6	Steel		

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
91 ft. below ground Artesian pressure _____ ft.
Depth flow encountered _____ ft. Describe access port or control device: top of well

Yd. at base	Drawdown	Pumping Level	Time
30		110	26

Water Temp. Cold Bottom hole temp. _____
Water Quality test or comments: _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Start	End	Remarks: Lithology, Water Quantity & Temperature	Water
0	4	Brown sand & gravel	H
4	8	Gravel & sand	H
8	12	Gravel & sand	H
12	16	Gravel & sand	H
16	20	Gravel & sand	H
20	24	Gravel & sand	H
24	28	Gravel & sand	H
28	32	Gravel & sand	H
32	36	Gravel & sand	H
36	40	Gravel & sand	H
40	44	Gravel & sand	H
44	48	Gravel & sand	H
48	52	Gravel & sand	H
52	56	Gravel & sand	H
56	60	Gravel & sand	H
60	64	Gravel & sand	H
64	68	Gravel & sand	H
68	72	Gravel & sand	H
72	76	Gravel & sand	H
76	80	Gravel & sand	H
80	84	Gravel & sand	H
84	88	Gravel & sand	H
88	92	Gravel & sand	H
92	96	Gravel & sand	H
96	100	Gravel & sand	H

Completed _____ Depth 130 (Maximum)
Date Started 6-22-01 Completed 6-22-01

13. DRILLER'S CERTIFICATION

I/We certify that all minimum well construction standards were complied with at the time the log was removed.

Company Name Gutwirth Drilling No. 226
Firm Official John Gutwirth 11-10-01
and _____
Driller or Operator _____ Date _____
(Sign over Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

Form 38-7
1/93IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only			
Inspected by _____			
Twp _____	Rge _____	Sec _____	
1/4 _____	1/4 _____	1/4 _____	
Lat: _____		Long: _____	
☐ Air		☐ Flowing Artesian	

1. WELL TAG NO. D 2021794
DRILLING PERMIT NO. 771883
Other IDWR No. _____

11. WELL TESTS:

☐ Pump ☐ Bailor

Yield gal/min.	Drawdown	Pumping Level	Time
35	110		2 hrs.

Water Temp. 60.12

Bottom hole temp. _____

Water Quality test or comments: _____

Depth first Water Encounter 85

2. OWNER:

Name JOHN PLUMMER & KATHIE RICH
Address PO BOX 900
City SUN VALLEY State ID Zip 83353

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

N		E	

Twp. 8 North ☒ or South ☐
Rge. 22 East ☒ or West ☐
Sec. 6 1/4 NE 1/4 SE 1/4
Gov't Lot _____ County CUSTER
Lat: _____ Long: _____

Address of Well Site BARTLETT POINTRD N. E. MACKAY City MACKAYLt. _____ Blk. _____ Sub. Name BACAN VIEW
ESTATES

4. USE:

☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other _____5. TYPE OF WORK check all that apply (Replacement etc.)
☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD

☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

7. SEALING PROCEDURES				METHOD
SEAL/FILTER PACK		AMOUNT		
Material	From	To	Seals or Pounds	
Benite, P.	0	20	700	Over Bore

Was drive shoe used? ☒ N ☐ Shoe Depth(s) 120Was drive shoe seal tested? ☐ Y ☐ N How? _____

8. CASING/LINER:

Diameter	From To	Gauge	Material	Casing	Linear	Welded	Threaded
<u>6 x 1</u>	<u>120</u> <u>250</u>	<u>Steel</u>	<u>8</u>	☒	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Perforations _____ Method touch cut
Screens _____ Screen Type _____

From To	Shot Size	Number	Diameter	Material	Casing	Linear
<u>102</u> <u>118</u>	<u>40</u> <u>30</u>	<u>2</u> <u>2</u>	<u>6</u>	<u>Steel</u>	☒	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices: top of well

12. LITHOLOGIC LOG: (Describe repairs or abandonment) Water

Bore Dia.	From To	Remarks: Lithology, Water Quality & Temperature	Y	N
<u>8</u>	<u>0</u> <u>20</u>	<u>Cemented Borehole</u>	☒	☐
<u>6</u>	<u>20</u> <u>100</u>	<u>Reamed Borehole</u>	☒	☐
<u>6</u>	<u>100</u> <u>120</u>	<u>Sand & Gravel</u>	☒	☐

RECEIVED
FEB 08 2002
Department of Water Resources
Eastern Region

Completed Depth 120 (Measurable)
Date: Started 10-31-01 Completed 11-2-01

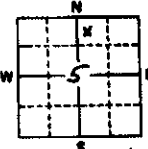
13. DRILLER'S CERTIFICATION

We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name GUTHRIE DRILLING Firm No. 226
Firm Official H. T. Guthrie Date 2-7-02
and _____
Driller or Operator _____ Date _____
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORTUSE TYPEWRITER OR
BALLPOINT PENState law requires that this report be filed with the Director, Department of Water Resources
within 30 days after the completion or abandonment of the well.

1. WELL OWNER Name <u>Steve Pritchett</u> Address <u>Bellevue Idaho</u> Owner's Permit No. <u>34-935-019</u>	7. WATER LEVEL Static water level <u>58'</u> feet below land surface. Flowing? ☐ Yes ☒ No G.P.M. flow _____ Artesian closed-in pressure _____ p.s.i. Controlled by: ☐ Valve ☐ Cap ☐ Plug Temperature _____ OF. Quality <u>Good</u> Describe artesian or temperature zones below _____																																				
2. NATURE OF WORK ☒ New well ☐ Deepened ☐ Replacement ☐ Well diameter increase ☐ Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)	8. WELL TEST DATA ☐ Pump ☐ Bailor ☒ Air ☐ Other _____ <table border="1"><thead><tr><th>Discharge G.P.M.</th><th>Pumping Level</th><th>Hours Pumped</th></tr></thead><tbody><tr><td><u>50</u></td><td><u>75</u></td><td><u>1</u></td></tr></tbody></table>	Discharge G.P.M.	Pumping Level	Hours Pumped	<u>50</u>	<u>75</u>	<u>1</u>																														
Discharge G.P.M.	Pumping Level	Hours Pumped																																			
<u>50</u>	<u>75</u>	<u>1</u>																																			
3. PROPOSED USE ☒ Domestic ☐ Irrigation ☐ Test ☐ Municipal ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection ☐ Other _____ (specify type)	9. LITHOLOGIC LOG <u>090527</u> <table border="1"><thead><tr><th>Bore Diam.</th><th>Depth From To</th><th>Material</th><th>Water Yield No</th></tr></thead><tbody><tr><td><u>8</u></td><td><u>0</u> <u>1</u></td><td><u>TOP SOIL</u></td><td></td></tr><tr><td></td><td><u>1</u> <u>18</u></td><td><u>Dir. & Gravel</u></td><td></td></tr><tr><td></td><td><u>12</u> <u>20</u></td><td><u>Shale - Gravel</u></td><td></td></tr><tr><td></td><td><u>20</u> <u>45</u></td><td><u>Dark Reddish Gravel - Dir.</u></td><td></td></tr><tr><td></td><td><u>45</u> <u>62</u></td><td><u>Gravel - Sand</u></td><td></td></tr><tr><td></td><td><u>62</u> <u>71</u></td><td><u>Clay Lenses - Gravel</u></td><td></td></tr><tr><td></td><td><u>71</u> <u>84</u></td><td><u>Gravel & Sand</u></td><td></td></tr><tr><td></td><td><u>84</u> <u>87</u></td><td><u>Clay - Gravel</u></td><td></td></tr></tbody></table>	Bore Diam.	Depth From To	Material	Water Yield No	<u>8</u>	<u>0</u> <u>1</u>	<u>TOP SOIL</u>			<u>1</u> <u>18</u>	<u>Dir. & Gravel</u>			<u>12</u> <u>20</u>	<u>Shale - Gravel</u>			<u>20</u> <u>45</u>	<u>Dark Reddish Gravel - Dir.</u>			<u>45</u> <u>62</u>	<u>Gravel - Sand</u>			<u>62</u> <u>71</u>	<u>Clay Lenses - Gravel</u>			<u>71</u> <u>84</u>	<u>Gravel & Sand</u>			<u>84</u> <u>87</u>	<u>Clay - Gravel</u>	
Bore Diam.	Depth From To	Material	Water Yield No																																		
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4. METHOD DRILLED ☒ Rotary ☒ Air ☐ Hydraulic ☐ Reverse rotary ☐ Cable ☐ Dug ☐ Other _____																																					
5. WELL CONSTRUCTION Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____ <table border="1"><thead><tr><th>Thickness</th><th>Diameter</th><th>From</th><th>To</th></tr></thead><tbody><tr><td><u>2.50</u> inches</td><td><u>8</u> inches</td><td><u>1</u> foot</td><td><u>20</u> feet</td></tr><tr><td>_____ inches</td><td>_____ inches</td><td>_____ feet</td><td>_____ feet</td></tr><tr><td>_____ inches</td><td>_____ inches</td><td>_____ feet</td><td>_____ feet</td></tr><tr><td>_____ inches</td><td>_____ inches</td><td>_____ feet</td><td>_____ feet</td></tr></tbody></table> Was casing drive shoe used? ☒ Yes ☐ No Was a packer or seal used? ☐ Yes ☒ No Perforated? ☐ Yes ☒ No How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun Size of perforation _____ inches by _____ inches <table border="1"><thead><tr><th>Number</th><th>From</th><th>To</th></tr></thead><tbody><tr><td>_____ perforations</td><td>_____ feet</td><td>_____ feet</td></tr><tr><td>_____ perforations</td><td>_____ feet</td><td>_____ feet</td></tr><tr><td>_____ perforations</td><td>_____ feet</td><td>_____ feet</td></tr></tbody></table> Well screen installed? ☐ Yes ☒ No Manufacturer's name _____ Type _____ Model No. _____ Diameter _____ Slot size _____ Set from _____ feet to _____ feet Diameter _____ Slot size _____ Set from _____ feet to _____ feet Gravel packed? ☐ Yes ☒ No Size of gravel _____ Placed from _____ feet to _____ feet Surface seal depth <u>20</u> Material used in seal: ☐ Cement grout ☒ Bentonite ☐ Puddling clay ☐ Sealing procedure used: ☐ Slurry pit ☒ Temp. surface casing ☒ Overbore to seal depth Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld _____ ☐ Cemented between strata Describe access port <u>Sanitary Well Cap</u>	Thickness	Diameter	From	To	<u>2.50</u> inches	<u>8</u> inches	<u>1</u> foot	<u>20</u> feet	_____ inches	_____ inches	_____ feet	_____ feet	_____ inches	_____ inches	_____ feet	_____ feet	_____ inches	_____ inches	_____ feet	_____ feet	Number	From	To	_____ perforations	_____ feet	_____ feet	_____ perforations	_____ feet	_____ feet	_____ perforations	_____ feet	_____ feet	11. DRILLERS CERTIFICATION I/We certify that all minimum well construction standards were complied with at the time the rig was removed. Firm Name <u>Scott Drilling</u> Firm No. <u>327</u> Address <u>PA 20X 577</u> Date <u>4-26-93</u> Signed by (Firm Official) <u>J. L. L...</u> and (Operator) <u>J. L. L...</u>				
Thickness	Diameter	From	To																																		
<u>2.50</u> inches	<u>8</u> inches	<u>1</u> foot	<u>20</u> feet																																		
_____ inches	_____ inches	_____ feet	_____ feet																																		
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_____ perforations	_____ feet	_____ feet																																			
_____ perforations	_____ feet	_____ feet																																			
_____ perforations	_____ feet	_____ feet																																			
6. LOCATION OF WELL - 101 Buckskin RD MACON ID. Sketch map location must agree with written location.  Subdivision Name <u>East</u> <u>River Acres</u> Lot No. _____ Block No. _____ County <u>Custer</u> NW 1/4 NE 1/4 Sec. <u>5</u> T. <u>8</u> N 21 S R. <u>22</u> W 1/4																																					

USE ADDITIONAL SHEETS IF NECESSARY - FORWARD THE WHITE COPY TO THE DEPARTMENT

Form 238-7
8/02
DMD

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Well ID No. _____
Inspected by _____
Twp 3 Rge NE Sec 1/4
1/4 NE 1/4 NN 1/4
Lat: _____ Long: _____

1. WELL TAG NO. D 00020453

DRILLING PERMIT NO. _____

Water Right or Injection Well No. _____

2. OWNER:

Name Cathy & Laura Surtz
Address 17825 Arvida Dr
City Granada Hills State CA Zip 91344

3. LOCATION OF WELL by legal description:

You must provide address or Lot, Blk, Sub. or Directions to well.

Twp. 8 North ☒ or South ☐
Rge. 22 East ☒ or West ☐
Sec. 5 1/4 SW 1/4 NE 1/4
Gov't Lot _____ County Custer

Long: _____
Address of Well Site 5405 Old Chilly Rd
City Mackay

City _____

Sub. Name _____

4. USE:

☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other _____

5. TYPE OF WORK check all that apply (Replacement etc.)

☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD:

☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
Bentonite	0	18	500#	Poured

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 118 ft

Was drive shoe seal tested? ☐ Y ☒ N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	18	118	20	Steel	☒	☐	☒	☐

Length of Headpipe _____ Length of Tailpipe _____

Packer ☐ Y ☒ N Type _____

9. PERFORATIONS/SCREENS PACKER TYPE

Perforation Method _____

Screen Type _____ Method of Installation _____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						☐	☐

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

78 ft. below ground Artesian pressure _____ lb.

Depth flow encountered _____ ft. Describe access port or control devices: _____

REMOVABLE WELL CAP

12. WELL TESTS:

Yield gal./min.	Drawdown	Pumping Level	Time
15 gpm	N/A	90 ft	2 1/2 hrs

Water Temp. cold Bottom hole temp. cold

Water Quality test or comments: good

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
6"	0	1	Top Soil		X
	1	10	sand, grv/ silty clay mx	X	
	10	18	sand, grv/ mx	X	
	18	20	sand, grv/ mx	X	
	20	30	silty sand + grv/ mx	X	
	30	40	sand, sm. grv/ mx	X	
	40	44	sand, silty clay mx	X	
	44	60	sand, sm. grv/ mx	X	
	60	70	silty sand + grv/ mx	X	
	70	80	grv/ sand mx	X	
	80	90	grv/ sand mx	X	
	90	120	grv/ med to coarse sand sand mx	X	

SCANNED

RECEIVED JUN 26 2003

JUL - 2 2003

DEPARTMENT OF WATER RESOURCES RECEIVED

JUN 20 2003

DEPARTMENT OF WATER RESOURCES
Eastern Region

Completed Depth 120 ft (Measurable)

Date: Started 5-25-03 Completed 5-26-03

14. DRILLER'S CERTIFICATION

(We certify that all minimum well construction standards were complied with at the time the rig was removed.)

Company Name JATCO Firm No. 504

Principal Driller [Signature] Date 6/18/03

Driller or Operator [Signature] Date 6/18/03

Operator [Signature] Date 6/18/03

Principal Driller and Rig Operator Required.
Operator I must have signature of Driller/Operator II.

FORWARD WHITE COPY TO WATER RESOURCES

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only
Inspected by _____
Twp _____ Rge _____ Sec _____
_____ 1/4 _____ 1/4 _____ 1/4
Lat: : : Long: : :

1. WELL TAG NO. D 00 11876
 DRILLING PERMIT NO. 764044
 Other IDWR No. _____

2. OWNER: DAVE SIMON
Name 4110 SE. GUMBERLAND
Address SALT LAKE CITY State UT Zip 84124
City

3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

N
 W E
 Twp. 8
 Rge. 22
 Sec. 6
 Gov't Lot _____
 Lat. _____
 Long. _____
 North ☒ or South ☐
 East ☒ or West ☐
 1/4 SE 1/4 NE 1/4
 County CHRYSLER
 State OK

Address of Well Site 1 MI. WEST
CHILI' BRIDGE TRAIL City NOR MACKAY
(Give at least name of road - Distance to Road or Landmark) 1000 Rd

It. Bk. Sub. Name

4. USE:

☒ Domestic	☐ Municipal	☐ Monitor	☐ Irrigation
☐ Thermal	☐ Injection	☐ Other _____	

5. TYPE OF WORK check all that apply (Replacement etc.)
☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD
☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK		AMOUNT		METHOD
Material	From	To	Books or Pounds	
Bentonite	20	250	over 100	

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 60
Was drive shoe seal tested? ☐ Y ☐ N How? _____

A. CASING/LINER:

A. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	1	40	250	37-6	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS
 Perforations _____ Method torch
 Screens _____ Screen Type _____

From	To	Net Wgt	Number	Diameter	Material	Coating	Linear
48	58	1/2 x 3	15		Steel	☒	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

17 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or
control devices: top of well

11. WELL TESTS:

☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
30		55	2 hrs.

Water Temp. 52.6 Bottom hole temp. _____

Water Quality test or comments: _____

Depth first Water Encounter 1'

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

[illegible]

Completed Depth 60' (Measurable)
Date: Started 4-20-00 Completed 4-22-00

13. DRILLEN'S CERTIFICATION

1/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name Guthrie Driving Firm No. 226
Firm Official J. T. Guthrie 7-5-00
and
Driver or Operator _____ Date _____
(Fill out only if Firm Official is Operator)

FORWARD WHITE COPY TO WATER RESOURCES

Form 238-7
1/8/97IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

94395

Office Use Only		
Inspected by		
Twp	Rge	Sec
1/4	1/4	1/4
Lat	Long	

1. WELL TAG NO. D 0006182
DRILLING PERMIT NO. 3498 E-0026000
Other DWR No. _____2. OWNER:
Name ELAINE SOMERVILLE
Address PO BOX 3835
City KEITHUM State ID Zip 833403. LOCATION OF WELL by legal description:
Sketch map location must agree with written location.

Twp. <u>8</u> North ☒ or South ☐	
Rge. <u>22</u> East ☐ or West ☐	
Sec. <u>5</u> 1/4 NW 1/4 NW 1/4	
Gov't Lot _____ County <u>CLUSTER</u>	
Lat _____ Long _____	
Address of Well Site <u>Old Chili</u>	
City <u>RD. NORTH</u>	

Lt. _____ Bk. _____ Sub. Name _____

4. USE:
☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other _____5. TYPE OF WORK check all that apply (Replacement etc.)
☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____6. DRILL METHOD
☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other _____

7. SEALING PROCEDURES

SEAL/FILTER PACK	AMOUNT	METHOD
Material	From To	Grade or Pressure
<u>Reuben</u>	<u>0</u> <u>20</u>	<u>700</u>
		<u>Over Bore</u>

Was drive shoe used? ☒ N ☐ Shoe Depth(s) _____
Was drive shoe seal tested? ☐ Y ☐ N How? _____

8. CASING/LINER:

Diameter	From	To	Grade	Material	Casing	Liner	Welded	Threaded
<u>6</u>	<u>1</u>	<u>103</u>	<u>210</u>	<u>Steel</u>	☒	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Perforations Method torch
Screens Screen Type _____

From	To	But Size	Number	Diameter	Material	Casing	Liner
<u>14</u>	<u>101</u>		<u>24</u>	<u>1/2</u>	<u>Steel</u>	☒	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

42 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices: Top of Casing

11. WELL TESTS:

☐ Pump	☐ Bailor	☒ Air	☐ Flowing Artesian
Yield gal./min.	Drawdown	Pumping Level	Time
<u>60</u>		<u>90</u>	<u>2 hr</u>

Water Temp. cold Bottom hole temp. cold

Water Quality test or comments: _____

Depth first Water Encounter 44

12. LITHOLOGIC LOG: (Describe repairs or abandonment) Water

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	M
<u>6</u>	<u>0</u>	<u>4</u>	<u>SANDY GRAVEL</u>	☒	☐
	<u>4</u>	<u>36</u>	<u>LARGE GRAVEL BOUNCHUP</u>	☒	☐
	<u>36</u>	<u>54</u>	<u>SANDY LARGE GRAVEL</u>	☒	☐
	<u>54</u>	<u>71</u>	<u>LARGE ROCKS Cemented</u>	☒	☐
	<u>71</u>	<u>74</u>	<u>SANDY GRAVEL</u>	☒	☐
	<u>74</u>	<u>85</u>	<u>Cement/LARGE GRAVEL</u>	☒	☐
	<u>85</u>	<u>103</u>	<u>LARGE ROCKS + SAND</u>	☒	☐

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MICROFILMED JAN 13 1999
MAR 08 1999 Department of Water Resources Eastern Region

Completed _____ Depth 103' (Measurable)
Date Started 9.28.98 Completed 9.29.98

13. DRILLER'S CERTIFICATION

We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name GUTHRIE DRILLING Firm No. 226
Firm Official L. T. H. HARRIS - 12-99
and _____
Driller or Operator _____ Date _____
(Sign over if Firm Official's Operator)

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✓
2005
DND

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

34

Office Use Only
Well ID No. _____
Inspected by _____
Top Hgt. _____
Elev. _____
Long. _____

1. WELL TAG NO. 0 D0032833
OWNER'S PERMIT NO. _____
Water Right or Right of Well No. _____

2. OWNER
Name: PAUL HARVEY
Address: 65 WALDEN AVE.
City: COPATI State: CA 94931

3. LOCATION OF WELL by legal description:
Section: 3 North 4 of 36 South
Range: 22 East 4 of 14 West
County: Colusa
Latitude: _____ Longitude: _____
Address of Well Site: RAILROAD ROAD
City: MACKAY
Sub. Name: BORAH VIEW

4. USE:
☒ Domestic ☐ Industrial ☐ Municipal ☐ Irrigation
☐ Other _____

5. TYPE OF WORK (check all that apply) (Check one if it is)
☒ New Well ☐ Modify ☐ Abandonment ☐ Other _____

6. DRILL METHOD:
☒ Air-Force ☐ Core ☐ Mud Rotary ☐ Other _____

7. SPALING PROCEDURES
Sp. Record: _____
Date: 6/10/04 Time: 12:00 Location: Copati
Was it done before? ☒ Yes ☐ No
Was it done after? ☐ Yes ☒ No

8. CASING/LINER:
Length of casing: _____ Depth of casing: _____
Material: Steel Size: 4" x 120 Weight: 250 Thickness: 1/2"

9. PERFORATIONS/SCREENS BACK BIT TIME
Perforator Method: torch cut
Screen Type: 105 Size: 1/2" Length: 21 Weight: 6 Thickness: 5/16"

10. FILTER PACK
Material: _____ Depth: _____

11. STATIC WATER LEVEL OR ARTERIAL PRESSURE:
Gauge: 6.2 Pressure: _____
Date: 6/10/04 Location: TOP OF WELL

12. WELL TESTS:
Pump: _____ Motor: _____
Flow rate: _____ Pressure: _____
Water Quality: Cold Borehole Temp: _____

13. LITHOLOG LOG: (Describe depths or abandonment)
Depth from surface: _____
2. 0-2' top soil
3. 2-14' SAND & GRAVEL
4. 14-19' CEMENT GRAVEL
5. 19-20' SAND & GRAVEL

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Eastern Region

14. DRILLER'S CERTIFICATION
Driller's Name: 120 Date: 6/10/04
Signature: 6/10/04

15. DRILLER'S SIGNATURE
Signature: HHH Date: 6/10/04
Printed Name: HHH Title: Driller

2007 255
 802
 (Am)

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

34

Other Use Only

Well ID No. _____
 Inspected by _____
 Two _____ Figs _____ Sec _____
 _____ 1/4 _____ 1/4 _____ 1/4

1. WELL TAG NO. D0035796
 JOE TOWN - 4-MILE NO
 Water Right or Impoundment No. _____

2. OWNER:
 Name ASCO Haul HUFF
 Address 5940 2nd St. N. P.O. Box 8322
 City MACRAY State ID Zip 83222

3. LOCATION OF WELL by legal description:
 You must give the corner of the Sec. or the corners to the well
 At 8N 22E 6 SE 1/4 SW 1/4 NE 1/4
 Section 6 SE 1/4 SW 1/4 NE 1/4
 Township 22N Range 6E
 Date _____ Conty CUSTER
 Address of Well Site 5940 2nd St. N. P.O. Box 8322
 City MACRAY State ID Zip 83222

4. USE:
 Domestic ☒ Irrigation ☐ Industrial ☐ Power ☐ Other ☐

5. TYPE OF WORK: (check all that apply) (check placement site)
 New Well ☒ Modify ☐ Rehabilitation ☐ Other ☐

6. DRILL METHOD:
 Air Rotary ☒ Core ☐ Mud Rotary ☐ Other ☐

7. SEALING PROCEDURES:
 Seal Material Grout 200 lbs 200 lbs 200 lbs
 Seal Type Grout 200 lbs 200 lbs 200 lbs
 Seal Depth 185'
 Seal Material Grout 200 lbs 200 lbs 200 lbs

8. CASING/LINER:
 Material Steel 18" x 20" 18" x 20" 18" x 20"
 Length of casing 185' 185' 185' 185'
 Casing Type Steel 18" x 20" 18" x 20" 18" x 20"

9. PERFORATIONS/SCREENS/PACKER TYPES:
 Perforation Type Screen 18" x 20" 18" x 20" 18" x 20"
 Screen Type Screen 18" x 20" 18" x 20" 18" x 20"
 Packer Type Screen 18" x 20" 18" x 20" 18" x 20"

10. FILTER PACK:
 Filter Pack Material Grout 18" x 20" 18" x 20" 18" x 20"
 Filter Pack Type Grout 18" x 20" 18" x 20" 18" x 20"

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
 Static Water Level 185' 185' 185' 185'
 Artesian Pressure 185' 185' 185' 185'
 Well ID No. D0035796

12. WELL TESTS:
 Flow Rate 100 100 100 100
 Duration 100 100 100 100
 Pumping Unit 100 100 100 100
 Test Date 100 100 100 100

13. LITHOLOGIC LOG: (Describe in detail the formations encountered)
 Formation Grout 18" x 20" 18" x 20" 18" x 20"
 Lithology Grout 18" x 20" 18" x 20" 18" x 20"
 Depth 185' 185' 185' 185'

Depth	Formation	Lithology	Remarks
0 - 10'	Grout	Grout	Grout
10 - 20'	Grout	Grout	Grout
20 - 30'	Grout	Grout	Grout
30 - 40'	Grout	Grout	Grout
40 - 50'	Grout	Grout	Grout
50 - 60'	Grout	Grout	Grout
60 - 70'	Grout	Grout	Grout
70 - 80'	Grout	Grout	Grout
80 - 90'	Grout	Grout	Grout
90 - 100'	Grout	Grout	Grout
100 - 110'	Grout	Grout	Grout
110 - 120'	Grout	Grout	Grout
120 - 130'	Grout	Grout	Grout
130 - 140'	Grout	Grout	Grout
140 - 150'	Grout	Grout	Grout
150 - 160'	Grout	Grout	Grout
160 - 170'	Grout	Grout	Grout
170 - 180'	Grout	Grout	Grout
180 - 190'	Grout	Grout	Grout
190 - 200'	Grout	Grout	Grout

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 JUL 13 2005
 Department of Water Resources
 Eastern Region

14. DRILLER'S CERTIFICATION:
 I certify that the well was drilled and tested in accordance with the rules and regulations of the Department of Water Resources.
 Date 3-11-05

15. SIGNATURES:
 Driller 185' 185' 185' 185'
 Date 3-11-05 3-11-05 3-11-05 3-11-05
 Signature 185' 185' 185' 185'
 Date 3-11-05 3-11-05 3-11-05 3-11-05

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24

00047032

Google Digitized by Google

Name Galen Jeff
Address 1265 Spring Rd. D.R.
City San Jose Grade 4th

100 mg/kg, 500 mg/kg and 1,000 mg/kg of body weight.

Typ: 8 Unit: 2 Sec: 1
 Fpd: 225 Date: 4 Wk: 7
 Ann: 6 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
 Gnd: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31
 Lst: 1 Lst: 1
 Address: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

1. 9 Feb 2 1944 City MARAY
Bohah Creek Acres

✓ Doc ref:	✓ Title:	✓ Memo	✓ Index ref:
✓ Date:	✓ Page:	✓ Cont	

1. State _____ 2. County _____ 3. City _____ 4. Zip _____

Mr. J. M. Peters, U. S. Marshal

Dr. Wilson, Jr.	20	3rd	Oct 20 1892
-----------------	----	-----	-------------

Was John born in 1847? ☒ F. B. C. or Don't know 1842-9
Was John ever in the military? ☒ F. B. How? _____

Case No.	Page	Date	Time	By	Initials	Signature	Remarks
6	1	123	130	3	2	2	

Source: 1940 Census

11-121-0576

[illegible]

62 - Interview (max) Arizona (yes) 1.
 Depth into interview _____ months newspaper or other source
 Top of wall (S.M.) _____

100	115	260
-----	-----	-----

Date Rec'd 12/1/73 Date Paid 12/1/73
 Date Due 12/1/73 Date Paid 12/1/73

Time	Description	Value	Unit
0 15	Large Rock & Soil		
15 34	Large Sand & Gravel		
6 34 59	2 1/2 hours Large Rock & Soil		
59 123	Large Gravel & Sand		

2504 VCL

10/1/77

Requiem: Mass: First "Agnus Dei"

10-10-68 - 10-10-68

Log Number 9/1/04 Date 9/2/04

1) The study has a 1-year horizon and cannot capture changes over a longer period (2010-2011) which are not covered.

Company Name H.H. in Box 5-41
 Please Print: Shudlick Date 9/28/06
 and Donner Date 11-6-06
 Order to Customer: _____

Printed Name: _____
 Country: _____

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