GROUNDWATER SUPPLY EVALUATION FOR ELK CREEK VILLAGE, APPLICATION FOR PERMIT NO. 61-12090

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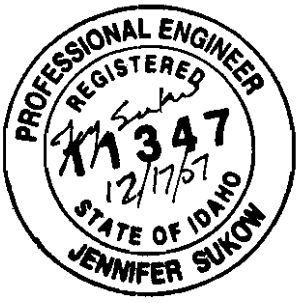

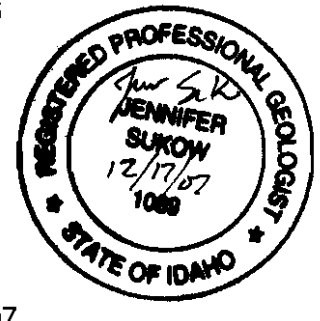

December 17, 2007

SPF Water Engineering, LLC
water resource consultants

Executive Summary

Elk Creek Canyon, LLC is proposing to develop a planned community about 25 miles southeast of Boise in western Elmore County. Elk Creek Village is the first phase of this project. A portion of the Elk Creek Village property and water right permit application 61-12090 were acquired from Boise Highland Development Company. Application 61-12090 will provide a portion of the water needed for the proposed Elk Creek Village development. The purpose of this water supply assessment is to provide additional information in support of application 61-12090, as requested by the Idaho Department of Water Resources (IDWR) on May 17, 2007. The assessment evaluates potential water availability in aquifers underlying the project site.

Elk Creek Canyon, LLC is proposing to supply domestic and irrigation water to the Elk Creek Village development via a new public water system supplied by groundwater. The proposed Elk Creek Village development includes approximately 1,200 equivalent domestic units (EDUs). Application 61-12090 requests appropriation of 5.0 cfs for municipal uses, including domestic and commercial use for 178 EDUs, 138 acres of irrigation, and fire flow. Two or more wells would be constructed within the Elk Creek Village property to divert water. Elk Creek Canyon, LLC applied for additional appropriation of groundwater under applications 61-12095 and 61-12096 (submitted April 3, 2007) for the remainder of Elk Creek Village and the Elk Creek Canyon planned community. This assessment is limited to water use under application 61-12090.

The anticipated average annual groundwater diversion associated with permit application 61-12090 was estimated to be approximately 577 AF. The anticipated average annual consumptive use was estimated to be approximately 419 AF. Additional groundwater appears to be available for appropriation in the Elk Creek Village area, as evidenced by stable or rising water level hydrographs from areas wells. The amount of water available for appropriation in this area is estimated to be between 1,200 and 12,100 AF per year.

Significant impacts on existing water rights are not anticipated as a result of proposed new diversions for the project. The estimated water budget suggests there is an adequate water supply for existing water rights and permits, and the new uses proposed under water right application 61-12090. Based on IDWR's groundwater level change map and groundwater elevation contours, the Elk Creek Village site is not up-gradient of areas with declining water levels in the Cinder Cone Butte CGWA or Mountain Home GWMA. Diversions in the Elk Creek Village area are not expected to have significant impacts on water levels in the Cinder Cone Butte CGWA.

Because the ultimate capacity of aquifers in this area is uncertain, groundwater level monitoring should be conducted in the area prior to and following construction of new public water system wells. Monitoring should occur on a periodic basis (i.e. quarterly or semi-annually) for an extended period of time during and following development of municipal uses.

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1. INTRODUCTION

1.1. Project Location

Elk Creek Canyon, LLC is proposing to develop a planned community about 25 miles southeast of Boise in western Elmore County. Elk Creek Village is the first phase of this project. A portion of the Elk Creek Village property and water right permit application 61-12090 were acquired from Boise Highland Development Company. Application 61-12090 will provide a portion of the water needed for the proposed Elk Creek Village development. The location of Elk Creek Village is shown in Figure 1. The project site is approximately 703 acres and lies in a high desert environment at an elevation of approximately 3,400 feet.

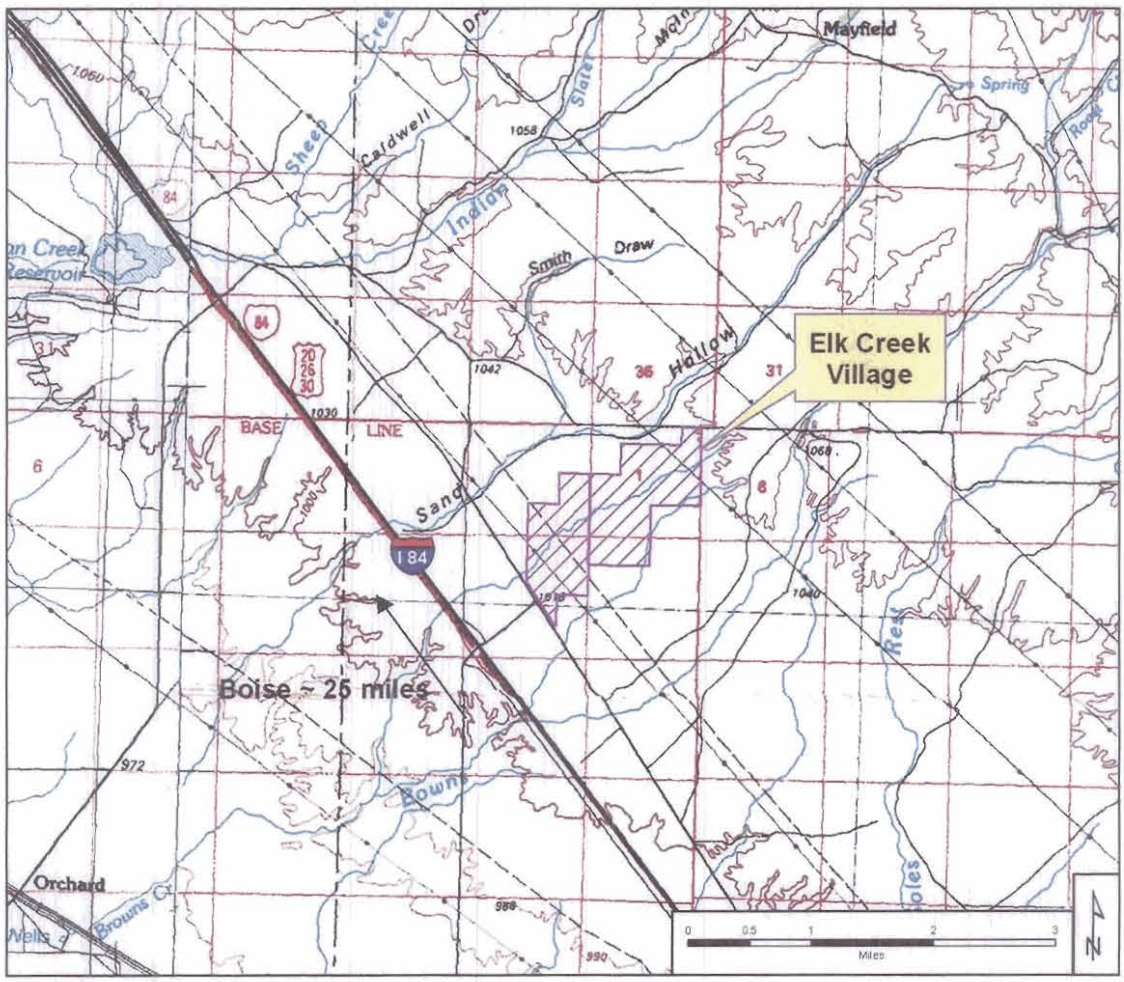

Figure 1. Elk Creek Village location map.

1.2. Purpose and Objectives

The purpose of this water supply assessment is to provide additional information in support of application 61-12090, as requested by the Idaho Department of Water Resources (IDWR) on May 17, 2007. The assessment evaluates potential water availability in aquifers underlying the project site. Specific objectives of the assessment included the following:

1. Assess water availability based on general aquifer characteristics and estimated aquifer recharge and discharge.
2. Evaluate potential impacts on existing water rights
3. Evaluate potential impacts to water levels in the Mountain Home Ground Water Management Area (GWMA) and Cinder Cone Butte Critical Ground Water Area (CGWA).

1.3. Proposed Water Supply

Elk Creek Canyon, LLC is proposing to supply domestic and irrigation water to the Elk Creek Village development via a new public water system supplied by groundwater. The proposed Elk Creek Village development includes approximately 1,200 equivalent domestic units (EDUs). Application 61-12090 (submitted September 28, 2006) requests appropriation of 5.0 cfs for municipal uses, including domestic and commercial use for 178 EDUs, 138 acres of irrigation, and fire flow. Two or more wells would be constructed within the Elk Creek Village property to divert water. Elk Creek Canyon, LLC applied for additional appropriation of groundwater under applications 61-12095 and 61-12096 (submitted April 3, 2007) for the remainder of Elk Creek Village and the Elk Creek Canyon planned community. This assessment is limited to water use under application 61-12090.

2. WATER DEMAND

This section provides peak hour, maximum day and average annual water demand for the portion of the project to be supplied under water right application 61-12090. Water demands are based on the following assumptions.

1. Proposed municipal water uses include domestic use for 178 EDUs (176 homes and two commercial EDUs are described in application 61-12090), irrigation of 138 acres, and fire flow.

2. Annual domestic use averages 250 gallons per day (gpd) per EDU. For comparison, average annual domestic use in the Boise area ranges from about 175 to 225 gpd per unit.

3. Peak hour and maximum day demands for domestic use were estimated using Idaho Department of Environmental Quality (DEQ) guidelines (Marchus, 2006).

4. Municipal wastewater will be treated and re-used for irrigation. Approximately 50 percent of the water diverted for domestic use is assumed to be available for re-use. Approximately 40 percent of the water diverted for domestic use is assumed to return to the subsurface via infiltration. The remaining 10 percent of the domestic use is assumed to be consumptive use.

5. The annual diversion rate for irrigation is 4.0 acre-feet (AF) of water per irrigated acre. The annual consumptive use rate for irrigation is 3.0 AF per acre.

6. The peak hour irrigation rate is approximately 15 gallons per minute per acre (gpm/ac). The maximum day irrigation rate is approximately 9 gpm/ac.

7. The groundwater diversion rate will be equal to or greater than the maximum day demand. Storage reservoir(s) (water tanks) may be used to provide a portion of the peak hour and/or fire flows.

Anticipated water demands are shown in Table 1. Annual use estimates are shown in Table 2. The anticipated average annual groundwater diversion associated with permit application 61-12090 was estimated to be approximately 577 AF (Table 2). This estimate includes average annual demands of approximately 50 AF for residential and commercial domestic use and 552 AF for irrigation use. Approximately 25 AF of the irrigation demand will be met with reclaimed wastewater. The anticipated average annual consumptive use was estimated to be approximately 419 AF.

Residential & commercial domestic use (178 EDUs)	210	0.5	100	0.2
Irrigation (138 acres)	2,070	4.6	1,240	2.8
Total domestic and irrigation demand	2,280	5.1	1,340	3.0
Fire flow	1,000	2.2	--	--

Table 1. Estimated peak hour and maximum day water demands for Elk Creek Village water right permit application 61-12090.

Residential & commercial domestic (178 EDUs)	50	5
Irrigation (138 acres)	552	414
Wastewater reuse	-25	--
Fire protection	<1	<1
Total	**577**	**419**

Table 2. Estimated average annual water use for Elk Creek Village water right permit application 61-12090.

3. GROUNDWATER RESOURCE EVALUATION

3.1. Geologic and Hydrogeolgic Setting

The Elk Creek Village site is located in an area of unconsolidated alluvial sediments mapped as Pleistocene waterlaid detritus by Bond and Wood (1978) and as cobbly to pebbly fan gravel of the Bruneau Formation by Rember and Bennett (1979). These sediments are likely underlain by basalt flow deposits and/or Tertiary-age sediments.

The base of the Danskin Mountain front, located approximately 4 miles northeast of the project site, is a faulted contact between granitic rocks of the Idaho batholith and the younger sediments and basalt flows. Productive aquifers may be present in the sediments if sufficient thickness of permeable sediments exist below the water table. Moderately productive aquifers may be present in the basalt if hydraulically connected fractures are present below the water table. Additional northwest-trending faults are likely present between I-84 and the mountain front.

3.2. Review of Nearby Well Data

Well driller's logs available from the Idaho Department of Water Resources were reviewed for wells located within approximately three miles of the Elk Creek Village site. IDWR records include 28 well driller's logs with locations in this area. A map showing approximate locations of the wells, a summary table, and copies of selected well logs are included in Attachment A. Well locations are based on the well driller's reports and have not been field-verified.

The wells located within three miles of the proposed well sites include 24 domestic wells, 2 commercial wells, and 2 wells drilled to provide cathodic protection. The wells range in depth from 75 to 665 feet and had static water levels ranging from 15 to 528 feet below ground level when drilled. Production rates reported on the drillers' logs ranged from 5 to 70 gallons per minute (gpm). These production rates are typically based on short-term tests conducted by air-lifting. The production rate in some of the deeper wells may have been limited by the pumping method.

Well logs for wells located within approximately 1 mile of the project site reported static water levels ranging 300 to 440 feet. Well depths ranged from 390 to 633 feet and yields ranged from 10 to 70 gpm.

Driller's logs from nearby wells suggest that wells drilled at the proposed locations are likely to encounter unconsolidated sediments (including clay, silt, sand and gravel) interbedded with varying thicknesses of volcanic deposits (basalt and other volcanic rocks). Cemented or consolidated sedimentary units may also be encountered. New wells drilled to serve Elk Creek Village would likely be between 400 and 800 feet deep.

3.3. Regional Groundwater Levels

The project site is located within the Mountain Home Groundwater Management Area (GWMA), but is outside of the Cinder Cone Butte Critical Groundwater Area (CGWA). The Cinder Cone Butte CGA was established by IDWR in 1981 because of observed water level declines. The Mountain Home GMA was established in 1982, because of concerns about regional water levels and groundwater recharge. New groundwater appropriations are not allowed within the Cinder Cone Butte CGWA. The order designating the Mountain Home GWMA stated that the area is approaching critical conditions, "although there appear to be subareas where new appropriations could be authorized without injuring existing water rights" (Harrington and Bendixsen, 1999). An except from an IDWR open-file report that describes these areas is provided in Appendix B. This report noted that water levels in some parts of the CGWA and GWMA had water level declines of 50 to 60 feet between the 1960s and 1998. However, the north and northwest parts of the area, where the Elk Creek Village site is located, were observed to have water levels that were apparently stable and had increases of as much as 3 to 4 feet between the 1960s and 1998 (Harrington and Bendixsen, 1999).

Appendix C shows groundwater hydrographs from wells in the IDWR water level monitoring program, which show data collected through 2005. Hydrographs from wells located near the project site suggest that water levels in wells within approximately six miles of the project site are stable or increasing slightly. A copy of the *Final Report and Recommendations* of the Expanded Natural Resources Interim Committee Mountain Home Working Group (2004) is included in Appendix D. The Working Group acknowledges that "there are areas of the Mountain Home Basin where underlying groundwater levels in the regional aquifer have not declined significantly," and that "the areas of groundwater decline are sufficiently separated by horizontal distance and the parallel direction of groundwater flow that withdrawals of

groundwater from one area do not significantly impact water levels in the other area." The Working Group recommended that "the Idaho Department of Water Resources reconsider the boundaries of the Mountain Home Ground Water Management Area and the Cinder Cone Butte Critical Ground Water Area, and redefine the boundaries of areas for ground water management to match physical evidence of declining ground water levels and areas of water supply."

An evaluation of regional groundwater levels by Lindholm, et al. (1988) suggests that the static water level beneath the project site in the spring of 1980 ranged from approximately 3,000 to 3,100 feet above mean sea level, with the regional hydraulic gradient sloping toward the southwest. Water level elevations measured by IDWR in 2005 (Appendix C) are generally consistent with the groundwater contour map and suggest that the groundwater elevation beneath the project site is likely to be between 2,950 and 3,100 feet.

3.4. Water Quality Data

Groundwater quality data were available from the Idaho Statewide Ground Water Quality Monitoring Program for eleven wells located within 6 miles of the Elk Creek Village site. The data were collected during various years between 1991 and 2004. Available data suggest that groundwater quality is generally good in this area. Water temperature and arsenic concentration appear to increase with depth, approaching 80°F and 8 µg/L, respectively, in a 960-foot deep well located approximately 5 miles southwest of the project site. The arsenic concentration is this well is still below the primary drinking water standard of 10 µg/L. Groundwater with a temperature exceeding 85°F (and less than 212°F) is classified by the state of Idaho as a low temperature geothermal resource. Water temperatures exceeding 80°F are also less desirable for a public water supply well. Additional regulations and bonding requirements apply to the development of wells in a low temperature geothermal aquifer.

4. WATER SUPPLY ASSESSMENT

4.1. Water Budget

A general water budget was prepared to estimate recharge rates to aquifers underlying the property area. Water budget components included precipitation, seepage of areal infiltration into the subsurface, surface water runoff, evapotranspiration, and seepage from surface channels. Aquifer recharge components included areal infiltration and seepage from surface channels. Aquifer discharge in this area includes limited well withdrawals; most groundwater leaves aquifers in this area as underflow. These water budget components are described in the following sections and summarized in Section 3.1.7.

4.1.1. Contributing Basins

Four watershed areas define surface water flow in and upgradient of the property, shown in Figure 2. However, these surface water drainages do not necessarily define subsurface flow divides. Aquifers in the area extend beyond, and can be influenced by, recharge and discharge from areas beyond these watershed areas. For this analysis it was assumed that the capture area for aquifers in the project area and the area of well withdrawals near the Elk Creek Village property, is the area within approximately 2 miles of the Elk Creek Village property but limited by contacts with granitic rocks (Figure 2). The assumed capture area for areal infiltration is approximately 21,400 acres.

Precipitation in granitic areas in the upper Sand Hollow Creek and Bowns Creek watersheds is expected to contribute to aquifer recharge in the project area via seepage from surface channels into underlying sediments. These upper watershed areas include approximately 5,400 additional acres (Figure 2).

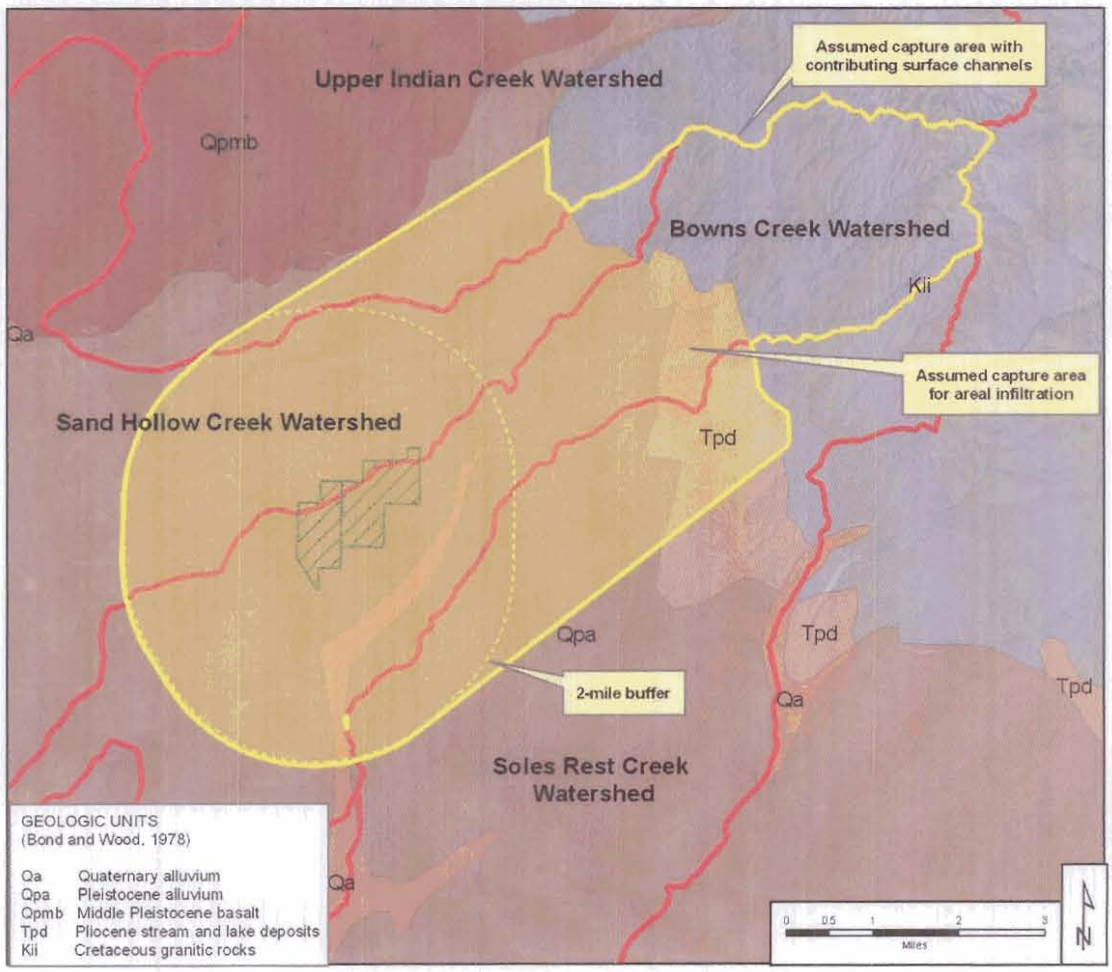

Figure 2. Assumed capture area for areal infiltration and contributing watershed areas for surface channel seepage. Surficial geology from Bond and Wood, 1978.

4.1.2. Precipitation

Average annual precipitation estimates, based on data obtained from the IDWR, range from approximately 12 to 14 inches per year in lower elevations of the water budget area to 24 to 28 inches of precipitation in highest elevations (Figure 3). The average precipitation volume over the entire water budget area is approximately 35,500 acre feet. This estimate is based on an average of 13 inches per year over 8,895 acres, 15 inches per year over 8,585 acres, 17 inches per year over 3,963 acres, 19 inches per year over 1,671 acres, 21 inches per year over 1,767 acres, 23 inches per year over 1,740 acres, and 25 inches per year over 199 acres.

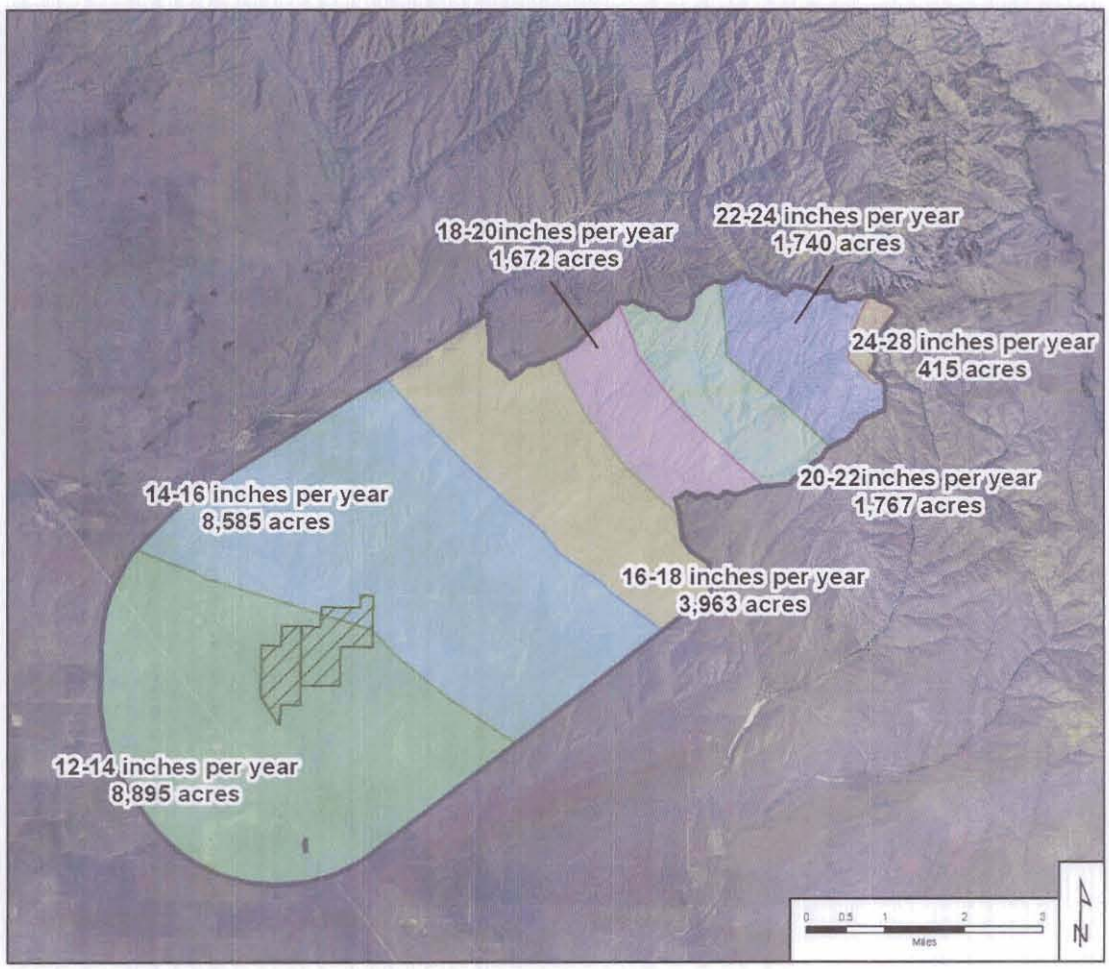

Figure 3. Annual precipitation rates in the project area.

4.1.3. Evapotranspiration

A preliminary 2002 SEBAL[1] estimate for seasonal rangeland evapotranspiration in the lower Boise River basin was 9.5 inches (Morse et al., 2003). Assuming that this rough approximation applies to the capture area shown in Figure 3, the annual volume of evapotranspiration would be approximately 21,200 acre feet.

4.1.4. Aquifer Inflows

4.1.4.1. Areal Infiltration

Only a small portion of precipitation infiltrates through the soil; the remainder is lost to evaporation, transpiration by plants, or drains as surface runoff. Estimates of areal infiltration rates might range from about 2 to 8 percent. An average infiltration rate of 5 percent of precipitation was assumed for this analysis. Factors supporting this assumption include (1) abundant sandy areas and/or fractured basalt in low-lying areas, (2) the presence of decomposed granitic soils, granitic fractures, and alluvial sediments in upland areas, and (3) higher rates of precipitation during months of lowest evapotranspiration (i.e. winter). However, infiltration of water into the plutonic rocks in the northeastern highlands of the water budget area is likely negligible, and assumed to be zero. The estimated average areal infiltration, based on the assumption that 5 percent of precipitation that falls on non-plutonic rock and soil becomes deep infiltration, is about 1,300 acre feet (Figure 4).

4.1.4.2. Stream Seepage

Water that does not infiltrate or is not lost to evapotranspiration becomes surface runoff. Basin evapotranspiration (approximately 21,200 AF) and areal infiltration (approximately 1,300 AF) are substantially less than the estimated average basin precipitation (35,500 AF). Much of the difference (13,000 AF) becomes surface runoff. A substantial portion of this water may seep into the subsurface from the Sand Hollow Creek and Bowns Creek channels.

Channel seepage in the adjacent Indian Creek basin was described in a *Ground-Water Supply Evaluation for the Mayfield Townsite Property* (SPF, 2007). A range of average annual channel seepage from Indian Creek and it tributaries was estimated from limited streamflow observations and annual precipitation, infiltration, and evapotranspiration estimates. The low estimate of channel seepage was approximately 14% of the difference between the precipitation and infiltration/evapotranspiration for the Mayfield Townsite study area. Because streamflow data are not available for Sand Hollow Creek and Bowns Creek, this ratio was used to estimate the low range of recharge from channel seepage for this

[1] "Surface Energy Balance Algorithm for Land"

study area. The low estimate of recharge from channel seepage is approximately 1,800 AF (14% of 13,000 AF).

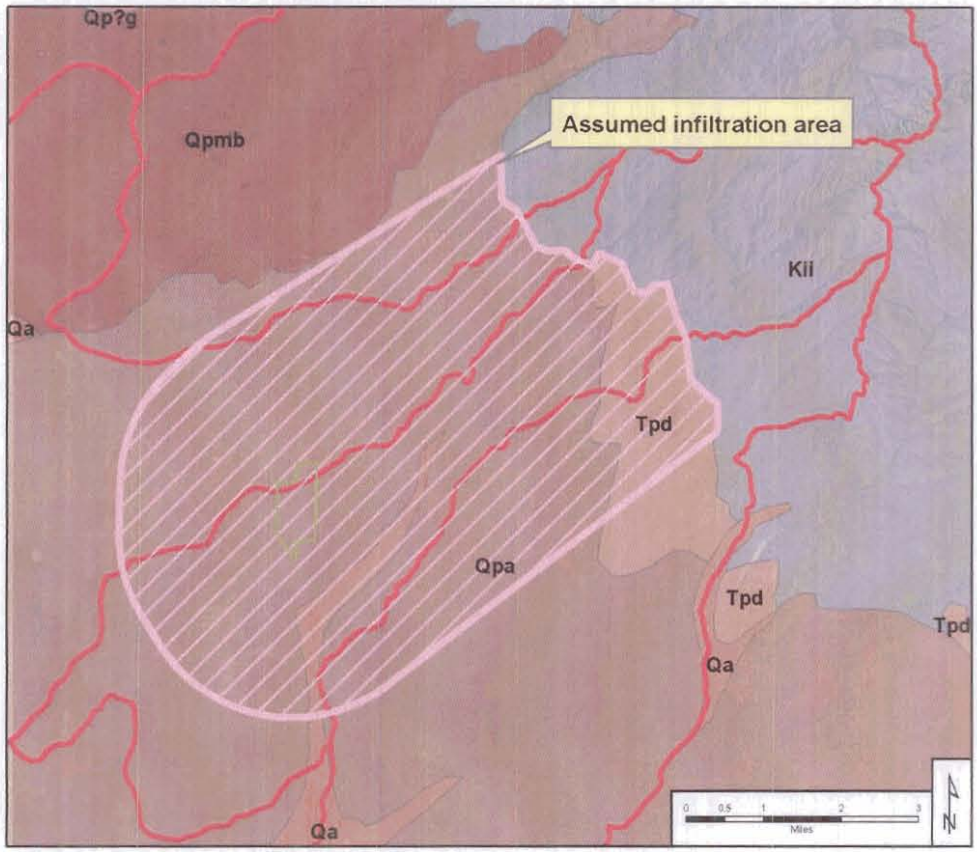

Figure 4. Precipitation infiltration area in the vicinity of the property.

A text-based search of the IDWR water rights database for water rights in Twp. 1N and 1S, Rge. 4E and 5E revealed two surface-water irrigation rights diverted from Sand Hollow Creek or Bowns Creek basins. Water right 61-2002 authorizes diversions of 0.5 cfs from Roost Creek for the irrigation of 25 acres, and water right 61-2051 authorizes diversions of 1 cfs from Bowns Creek for the irrigation of 50 acres. Diversions under these surface water rights, assuming an annual diversion volume of 4.0 AF/ac, are estimated to be approximately 300 acre feet. This diversion volume reduces the surface runoff potentially available for channel seepage to approximately 12,700 AF.

The range of estimated recharge from channel seepage is substantial (1,800 to 12,700 AF). Uncertainties in estimates of precipitation, evapotranspiration, areal infiltration rates, stream seepage rates, and/or surface irrigation contribute to the uncertainty in this component of the water budget. Recharge from channel seepage is likely greater than 1,800 AF, but less than 12,700 AF.

4.1.5. Overlap with Water Supply Evaluation for Mayfield Townsite and Mayfield Springs properties

Estimating groundwater available for appropriation in the vicinity of the Elk Creek Village site is complicated by a partial overlap between the Elk Creek Village assumed capture area, the Mayfield Townsite assumed capture area (SPF, 2007a), and the Mayfield Springs assumed capture area (SPF, 2007b). The assumed capture area for Elk Creek Village overlaps with approximately 8,700 acres (26%) of the Mayfield Springs water budget area and approximately 11,300 acres (18%) of the Mayfield Townsite capture area.

4.1.6. Aquifer Outflows

Most of the subsurface flow from aquifers in this area is (1) withdrawals by wells and (2) underflow toward the Snake River. There are 35 wells listed in the IDWR well construction database with locations in the assumed capture boundary. Of these 35 wells, 28 are for domestic uses, two are for cathodic protection, four are for commercial purposes, and one is for stockwater. Based on water rights listed in the IDWR database, the amount of land irrigated by groundwater in this area appears to be small, likely less than 130 acres. Assuming 130 acres of irrigation (at an average diversion volume of 4.0 acre feet per year), domestic use for 28 homes (at 0.3 acre feet per year per household), commercial use from four wells (at 1.0 acre feet per year per well), and stockwater use for 100 cattle (1.4 acre feet per year), the annual average withdrawal of groundwater is estimated to be approximately 530 acre feet per year. Inclusion of the annual withdrawal rate in the water budget is conservative, because non-consumptive components of these withdrawals would result in returns (recharge) to the shallow subsurface.

In addition, the developer of the nearby Mayfield Townsite property plans to divert approximately 3,950 AF per year under water right permit 63-12447 and application 63-32499, which are senior to application 61-12090. Because of the partial overlap between the Mayfield Townsite and Elk Creek Canyon capture areas, a portion of water use for the Mayfield Townsite property is considered in the Elk Creek Village water budget. The Elk Creek Village assumed capture area overlaps with approximately 26% of the Mayfield Townsite water budget area. The water use applicable to the Elk Creek Village water budget is estimated to be approximately 1,040 AF (26% of 3,950 AF).

Similarly, the developer of the nearby Mayfield Springs property plans to divert approximately 1,815 AF per year under existing water rights and permits. The Elk Creek Village assumed capture area overlaps with approximately 18% of the Mayfield Springs water budget area. The water use applicable to the Elk Creek Village water budget is estimated to be approximately 320 AF (18% of 1,815 AF). Therefore, total discharge to existing and proposed wells within the Elk Creek Village water budget area is estimated to be approximately 1,890 AF.

4.1.7. Water Budget Summary

A summary of estimated basin and aquifer inflows and outflows is provided in Table 3. Average annual recharge to aquifers in the vicinity of the Elk Creek Canyon site is estimated

to be between 3,100 and 14,000 AF. Existing and permitted groundwater withdrawals in the study area are estimated to be approximately 2,150 AF per year. The amount of water available for appropriation is estimated to be between 1,200 and 12,100 AF per year. Average annual groundwater withdrawal under permit application 61-12090 is estimated to be approximately 580 AF, with an estimated average annual consumptive use of approximately 420 AF.

Component	Estimated Average Annual Volume (AF)
Precipitation in assumed capture area and upper Sand Hollow and Bowns Creek basins	35,500
Precipitation in assumed capture area	26,000
Estimated infiltration (5% of precipitation in assumed capture area)	1,300
Evapotranspiration in assumed capture area and upper Sand Hollow and Bowns Creek basins	21,200
Evapotranspiration in assumed capture area	17,000
Estimated surface water diversions from Sand Hollow and Bowns Creek	300
High estimate of surface channel seepage into shallow aquifers[1]	12,700
Low estimate of surface channel seepage into shallow aquifers[2]	1,800
Estimated aquifer recharge (high estimate)[3]	14,000
Estimated aquifer recharge (low estimate)[4]	3,100
Estimated discharge to wells[5]	1,900
Available for appropriation (high estimate)	12,100
Available for appropriation (low estimate)	1,200

[1] Precipitation less areal infiltration, evapotranspiration, and surface water diversions
[2] See Section 3.1.4.2
[3] Areal infiltration plus high infiltration estimate
[4] Areal infiltration plus low infiltration estimate
[5] See Section 3.1.6
[6] High recharge estimate less estimated discharge to wells
[7] Low recharge estimate less estimated discharge to wells

Table 3. Water budget summary

4.2. Groundwater Availability for Appropriation

Additional groundwater appears to be available for appropriation in the Elk Creek Canyon area. This opinion is based on estimated recharge in excess of current uses (Table 3) and on steady (or slightly rising) water levels in the area (Figure 5). Stable water levels suggest that water is available for appropriation. The amount of water available for appropriation is estimated to be between 1,200 and 12,100 AF per year. The average annual groundwater withdrawals for uses proposed under application 61-12090 is approximately 580 AF, with an estimated annual consumptive use of 420 AF. The average annual use anticipated under application 61-12090 is less than the low estimate of groundwater available for appropriation.

4.3. Potential Impact on Existing Water Rights

Significant impacts on existing water rights are not anticipated as a result of proposed new diversions for the project. The estimated water budget suggests there is an adequate water supply for existing water rights and permits, and the new uses proposed under water right application 61-12090.

Because of uncertainties inherent to estimating a water budget, groundwater level monitoring prior to and during development of additional water right permits in this area is recommended. The ultimate groundwater supply in this general area is limited. Use of water-efficient fixtures and appliances, drougt-tolerant landscaping, and other water conservation measures are strongly encouraged to maximize water resources in this area.

4.4. Potential Impact on Mountain Home GWMA

Elk Creek Village is located within the Mountain Home Ground Water Management Area (GWMA). The property is located near the northwestern boundary of the GWMA and is located approximately 3 miles northwest of the Cone Butte Critical Ground Water Area (CGWA). Figure 5 shows groundwater elevation contours developed for the Mountain Home Ground Water Management Area (GWMA) by IDWR and hydrographs of groundwater level monitoring wells in the vicinity of the Elk Creek Village site. Figure 6 (Harrington, 2004) shows groundwater level changes measured by IDWR in the Mountain Home GWMA between 1976 and 2002.

As shown in Figure 5, hydrographs in the vicinity of the Elk Creek Village site indicate that groundwater levels are stable or rising slightly in this area. Figure 6 (Harrington, 2004) indicates that three areas of significant groundwater level declines are located in the southwestern portion of the Cinder Cone Butte CGWA and the southern portion of the Mountain Home GWMA. Therefore, use of groundwater in the project area is not expected to reduce recharge entering the Cinder Cone Butte CGWA. Groundwater level contours shown in Figure 5 (Harrington, 2004) indicate that groundwater flow is to the southwest in the vicinity of the Elk Creek Village site. These figures indicate that Elk Creek Village and tributary basin areas considered in this water budget are not up-gradient of the Cinder Cone

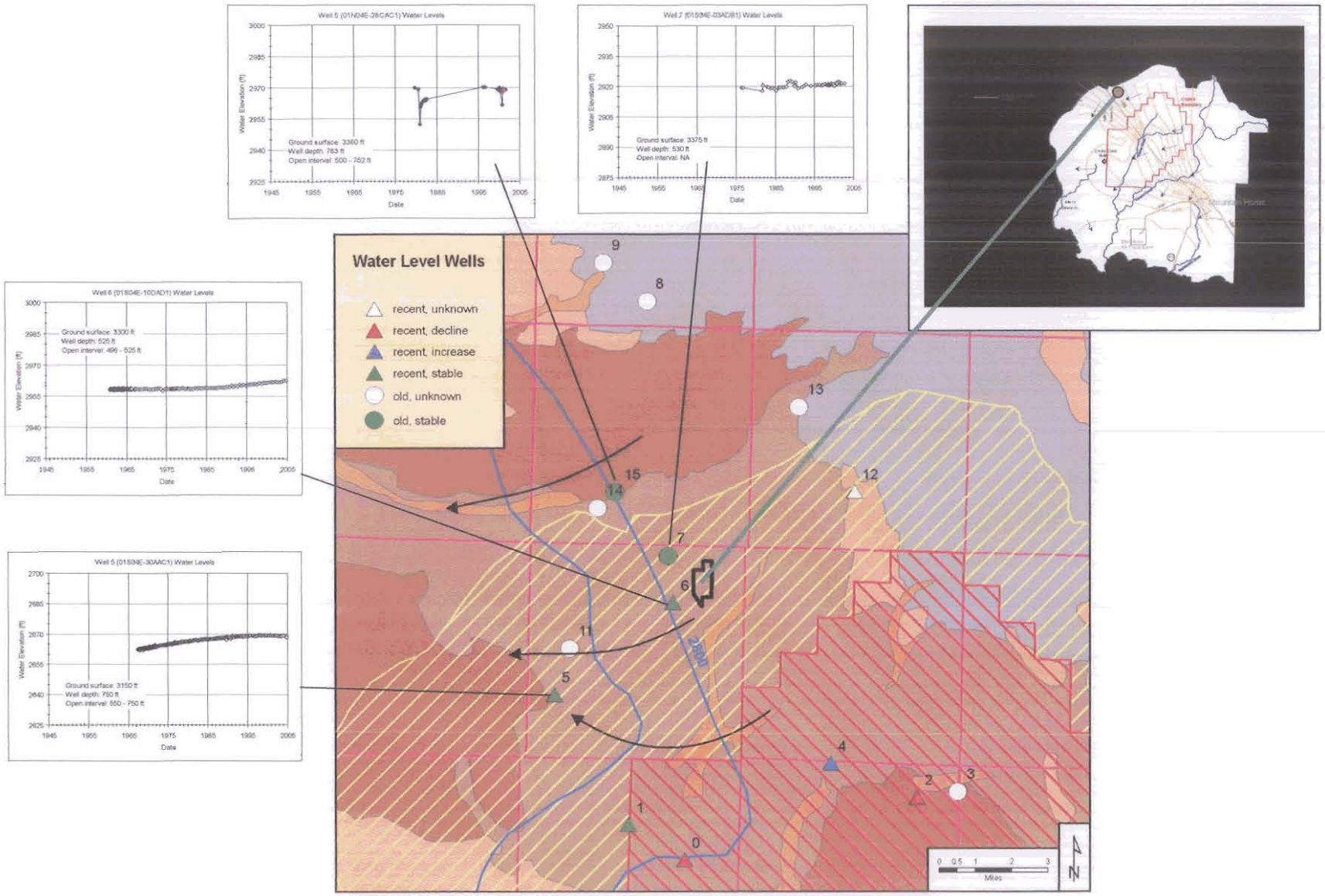

Figure 5. Mountain Home GWMA and Cinder Cone Butte CGWA boundaries with IDWR water level monitoring sites and hydrographs (Bendixsen, 1994). Arrows show general groundwater flow directions. Groundwater elevation contours in inset from Harrington, 2004.

Butte CGWA or areas of decline in the southern Mountain Home GWMA. Therefore, water use at the Elk Creek Village site is not expected to reduce underflow into areas of declining water levels.

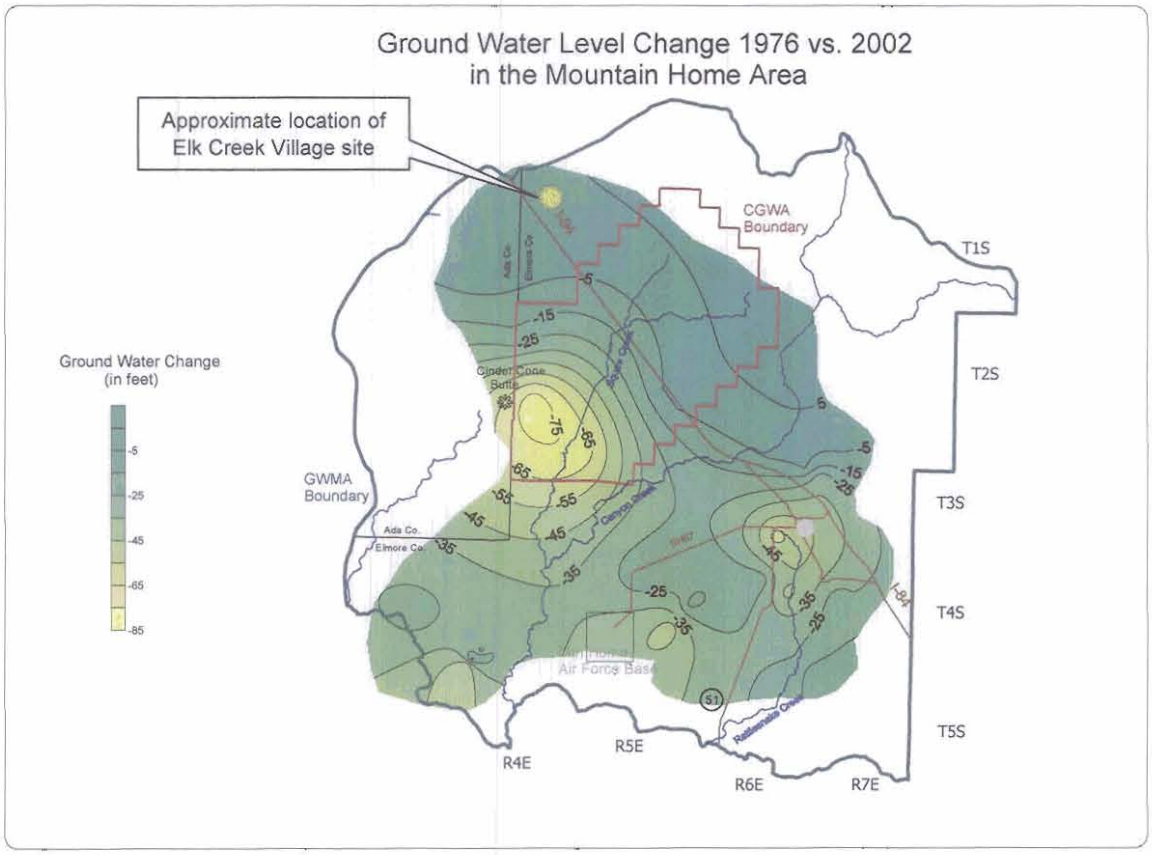

Figure 6. Water level changes measured by IDWR, 1976 to 2002 (from Harrington, 2004).

5. CONCLUSIONS

1. The amount of water available for appropriation is estimated to be between 1,200 and 12,100 AF per year.

2. The average annual groundwater withdrawals for uses proposed under application 61-12090 is approximately 580 AF, with an estimated annual consumptive use of 420 AF.

3. Additional groundwater appears to be available for appropriation in the Elk Creek Canyon area, as evidenced by stable or rising hydrographs.

4. Significant impacts on existing water rights are not anticipated as a result of proposed new diversions for the project. The estimated water budget suggests there is an adequate water supply for existing water rights and permits, and the new uses proposed under water right application 61-12090.

5. Hydrographs in the vicinity of the Elk Creek Village site indicate that groundwater levels are stable or rising slightly in this area.

6. Based on IDWR's groundwater level change map and groundwater elevation contours, the Elk Creek Village site is not up-gradient of areas with declining water levels. Therefore, diversions under application 61-12090 are unlikely to significantly impact areas of decline within the Cinder Cone Butte CGWA or Mountain Home GWMA.

7. Because the ultimate capacity of aquifers in this area is uncertain, groundwater level monitoring should be conducted in the area prior to and following construction of new public water system wells. Monitoring should occur on a periodic basis (i.e. quarterly or semi-annually) for an extended period of time during and following development of municipal uses.

6. REFERENCES

Bond, J.G. and Wood, C.H., 1978, *Geologic Map of Idaho*. Idaho Department of Lands, Bureau of Mines and Geology, 1:500,000 scale.

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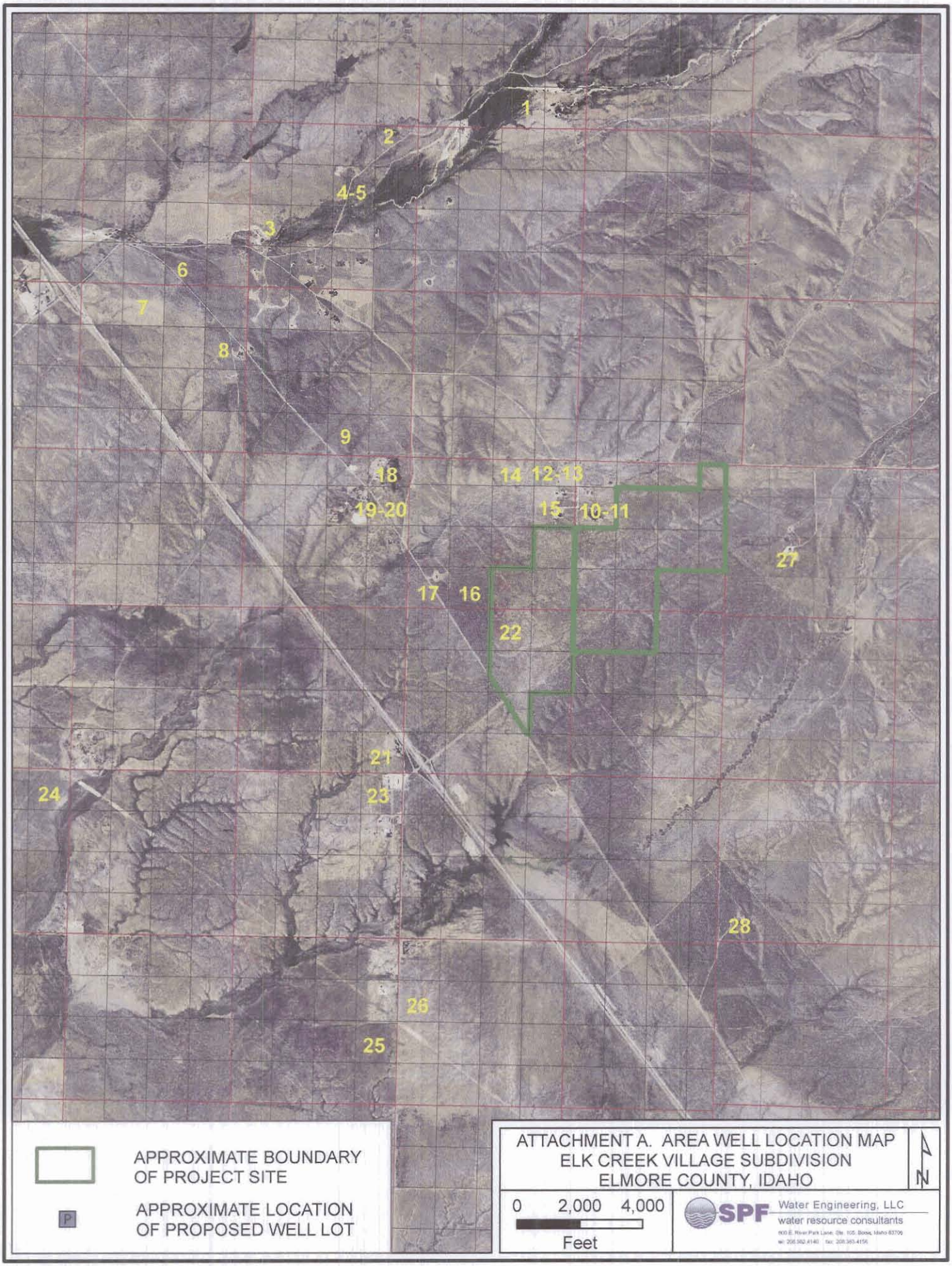
SPF Water Engineering, 2007b. *Ground-Water Supply Evaluation for the Mayfield Springs Planned Community*, August 22, 2007.

Appendix A

Area Well Logs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APPROXIMATE BOUNDARY OF PROJECT SITE
P
APPROXIMATE LOCATION OF PROPOSED WELL LOT
ATTACHMENT A. AREA WELL LOCATION MAP
ELK CREEK VILLAGE SUBDIVISION
ELMORE COUNTY, IDAHO
N
0 2,000 4,000
Feet
SPF Water Engineering, LLC
water resource consultants

STERLING SAGE SUBDIVSION
WELL LOGS AVAILABLE FOR WELL LOCATED WITHIN APPROXIMATELY 3 MILES OF PROJECT SITE
Records compiled from IDWR database on January 10, 2007. Locations are based on driller's reports and have not been field-verified.

WELL NO	OWNER	COUNTYNAME	TOWNSHIP	RANGE	SEC	QQQ	QQ	Q	WELL ADDRESS	WELLUSE	PRODUCTION (GPM)	STATIC WATER LEVEL (FT)	CASING DIA. (IN)	SCREEN DIA. (IN)	CASING DEPTH (FT)	TOTAL DEPTH (FT)	CONSTRUCTION DATE
1	RONALD D AMBROSE	ELMORE	01N	04E	23		SW	SE		Domestic-Single Residence	40	205	8		255		Mar 13 1992
2	DARLA UNDERWOOD	ELMORE	01N	04E	27	NW	NE	NE	HC 34 MAYFIELD STAGE	Domestic-Single Residence	9	343	5		515		May 7 1991
2	JAMES UNDERWOOD	ELMORE	01N	04E	27	NW	NE	NE	HC 34 MAYFIELD STAGE	Domestic-Single Residence	9	343	5		515		May 7 1991
3	NEIL HELMICK	ELMORE	01N	04E	27		NW	SW	INDIAN CREEK OR MAYFIELD ROAD	Domestic-Single Residence	20	340	6		404		Aug 7 1992
4	DANSKIN PROPERTIES LTD	ELMORE	01N	04E	27		SW	NE	INDIAN CK RD HC34 MAYFIELD STA	Domestic-Single Residence			12		480		Oct 20 1993
5	JAMES UNDERWOOD	ELMORE	01N	04E	27		SW	NE	INDIAN CREEK RD, HC 34, MAYFIELD STAGE STOP	Domestic-Single Residence	55	15	8		68	75	Oct 13 1993
6	GUY VAN BEEK	ADA	01N	04E	28		SW	SE		Domestic?		160				375	May 17 1978
7	JIM PHAGAN	ADA	01N	04E	33		NE	NW	NORTH OF 23735 DESERT WIND	Domestic-Single Residence	17	481	6	6	560	572	Nov 17 2001
8	TIM ANDERSON	ADA	01N	04E	33		SE	NE	24601 S OLD HWY 30	Domestic-Single Residence	20	528	6	5	660	665	Nov 9 2000
8	TIM ANDERSON	ADA	01N	04E	33		SE	NE	24601 S OLD HWY 30	Domestic-Single Residence	20	528	6	6	660	665	Nov 9 2000
9	RONALD L MILLER	ELMORE	01N	04E	34		SW	SE	MAYFIELD RD	Domestic-Single Residence		450	5		596		Sep 23 1999
9	PAMELA K MILLER	ELMORE	01N	04E	34		SW	SE	MAYFIELD RD	Domestic-Single Residence		450	5		596		Sep 23 1999
10	BOB WICKHAM	ADA	01S	04E	1		SW	NW	730 S PRAIRIE GRASS DRIVE	Domestic-Single Residence	20	337	6	6	444	460	Jan 11 2002
11	CHRIS RENINGER	ELMORE	01S	04E	1		SW	NW	Baseline Rd jsut past old Hwy 30 cutoff	Domestic-Single Residence	70	342	6	6	502	516	Apr 10 2001
12	MARY BOTTS	ELMORE	01S	04E	2		NE	NE	5625 BASELINE RD	Domestic-Single Residence	20	310	8		537		Jun 2 1999
13	DALE MEEKS	ELMORE	01S	04E	2		NE	NE	PRAIRIE GRASS OFF BESELINE PRAD 3 MILES PAST STAGE STOP	Domestic-Single Residence	30	331	6	6	428	435	Nov 1 2002
14	RICH CORNELL	ELMORE	01S	04E	2		NW	NE	1/2 MILE OFF BASELINE ROAD	Domestic	20	300	6	6	383	390	Nov 28 2002
15	JACK BUCHANAN	ADA	01S	04E	2		SE	NE	731 S PRAIRIE GROSS RD (MAYFIELD)	Domestic-Single Residence	50	331	6	7	469	476	May 5 2003
16	BIG VIEW BUILDERS	ELMORE	01S	04E	2		SE	SW	1020 DESERT WIND RD	Domestic-Single Residence	15	365	6	5	491	504	Feb 15 2004
16	BIG VIEW BUILDERS	ELMORE	01S	04E	2		SE	SW	1020 DESERT WIND RD	Domestic-Single Residence	15	365	6	6	278	504	Feb 15 2004
17	GLEN JORGENSEN	ELMORE	01S	04E	2		SW	SW	Baseline Rd.	Domestic-Single Residence	20	388	6	6	608	633	Nov 17 2000
17	JANET JORGENSEN	ELMORE	01S	04E	2		SW	SW	Baseline Rd.	Domestic-Single Residence	20	388	6	6	608	633	Nov 17 2000
17	JANET JORGENSEN	ELMORE	01S	04E	2		SW	SW	Baseline Rd.	Domestic-Single Residence	20	388	6	5	633	633	Nov 17 2000
17	GLEN JORGENSEN	ELMORE	01S	04E	2		SW	SW	Baseline Rd.	Domestic-Single Residence	20	388	6	5	608	633	Nov 17 2000
17	JANET JORGENSEN	ELMORE	01S	04E	2		SW	SW	Baseline Rd.	Domestic-Single Residence	20	388	6	5	608	633	Nov 17 2000
17	GLEN JORGENSEN	ELMORE	01S	04E	2		SW	SW	Baseline Rd.	Domestic-Single Residence	20	388	6	5	633	633	Nov 17 2000
18	JERRY MORTON	ELMORE	01S	04E	3		NE	NE		Domestic-Single Residence	25	460	6		584		Nov 11 1989
19	RONALD B CASTLE	ELMORE	01S	04E	3		SE	NE	HC 34 MAYFIELD STAGE BOX 100	Commercial	30	338	8		490		Jul 28 1993
19	ROSANNA K CASTLE	ELMORE	01S	04E	3		SE	NE	HC 34 MAYFIELD STAGE BOX 100	Commercial	30	338	8		490		Jul 28 1993
20	RONALD B CASTLE	ELMORE	01S	04E	3		SE	NE	HC 34, MAYFIELD STAGE, BOX 100	Commercial	40	435	6		550		Apr 25 1996
20	ROSANNA K CASTLE	ELMORE	01S	04E	3		SE	NE	HC 34, MAYFIELD STAGE, BOX 100	Commercial	40	435	6		550		Apr 25 1996
21	JIM HISEL	ADA	01S	04E	10		SE	SE	MAYFIELD STAGE HC -34	Domestic-Single Residence	10	350	6		541		Sep 23 1998
22	ED DIENES	ELMORE	01S	04E	11		NW	NE		Domestic	27	440					Jun 27 1979
23	LEONARD EISEMAN	ELMORE	01S	04E	15		NE	NE	SIMCO RD/I-84	Domestic-Single Residence	35	335	8		448		Jun 26 1994
24	EL PASO NATURAL GAS CO	ADA	01S	04E	17		NE	NE		Other-Cathodic Protection		450				571	Apr 30 1973
25	MIKE EISMAN	ADA	01S	04E	22		NE	SE	1639 S SIMCO ROAD	Domestic-Single Residence	40	464	6	8	175	640	Jun 20 2002
25	MIKE EISMAN	ADA	01S	04E	22		NE	SE	1639 S SIMCO ROAD	Domestic-Single Residence	40	464	6	6	625	640	Jun 20 2002
26	WILLIAM PIPELINE WEST	ELMORE	01S	04E	23		SW	NW	3 MILES SOUTH ON SIMCO ROAD	Cathodic Protection			10	8	55	500	Oct 30 2001
26	WILLIAM PIPELINE WEST	ELMORE	01S	04E	23		SW	NW	3 MILES SOUTH ON SIMCO ROAD	Cathodic Protection			10	8	500	500	Oct 30 2001
27	RICK MILLINGTON	ELMORE	01S	05E	6		NE	SW	BASELINE RD	Domestic-Single Residence	30	387	6		575		Jul 18 1997
28	FRED T SMITH	ELMORE	01S	05E	18		SW	SW		Domestic-Single Residence	5	334	6		431		Mar 26 1990
28	FRANCES E SMITH	ELMORE	01S	05E	18		SW	SW		Domestic-Single Residence	5	334	6		431		Mar 26 1990
										Max	70	528	12	8	660	665	
										Min	5	15	5	5	55	75	

Form 238-7
8/90

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

WELL DRILLER'S REPORT

State 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.

R-2

1. WELL OWNER

Name Ron Ambrose

Address 2295 E. 3100 South, Wendell, ID 83355

Drilling Permit No. 63-92-W-119

Water Right Permit No. _____

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement
☐ Well diameter increase
☐ Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Test ☐ Municipal
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

4. METHOD DRILLED

☒ Rotary ☒ Air ☐ Hydraulic ☐ Reverse rotary
☐ Cable ☐ Dug ☐ Other _____

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	8 5/8 inches	+ 2 feet	255 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

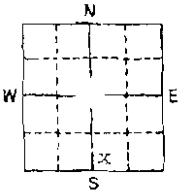
Was casing drive shoe used? ☒ Yes ☐ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation _____ inches by _____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

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 98 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 _____

6. LOCATION OF WELL

Sketch map location must agree with written location



Subdivision Name _____

Lot No. _____ Block No. _____

County Elmore

SW ¼ SE ¼ Sec. 23, T. 1 ☐ S ☒ N, R. 4 ☐ W ☒ E

7. WATER LEVEL

Static water level 205 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature ____ °F. Quality _____
Describe artesian or temperature zones below.

8. WELL TEST DATA

☐ Pump ☐ Bailer ☒ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
40		3

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
10	0	20	Decomposed granite		
"	20	24	Decomp granite and red clay		
"	24	60	Tan clay and sand		
10	60	98	Gravel and sand		
8	98	110	Tan clay		
"	110	160	Tan clay sand		
"	160	180	Sand and ¼ gravel		
"	180	225	Sand		
"	225	250	Tan clay and sand		
"	250	253	Sand	X	
8	253	256	Sand and gravel		

RECEIVED
MAR 31 1992
Department of Water Resources

RECEIVED
MAR 24 1992
Department of Water Resources
Southern Regional Office

10.

Work started 3/10/92 finished 3/13/92

11. DRILLERS CERTIFICATION

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

Firm Name Hiddleston & Son, Inc Firm No. 35
Address Rt. 3, Box 610-D Mtn Home, ID 83647 Date 3/16/92

Signed by (Firm Official) Mark Hiddleston

and

(Operator) John V Smith

RECEIVED
APR 09 1992

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

Form 238-7
6/89

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

WELL DRILLER'S REPORT

State 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.

☆ 2

1. WELL OWNER

Name James & Darla Underwood
RC31, Mayfield Stage
Address Boise, ID 83705
Drilling Permit No. 63-919-127-100
Owner's Permit No. _____

2. NATURE OF WORK

☐ New well ☑ Deepened ☐ Replacement
☐ Well diameter increase
☐ Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)

3. PROPOSED USE

☑ Domestic ☐ Irrigation ☐ Test ☐ Municipal
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

4. METHOD DRILLED

☐ Rotary ☐ Air ☐ Hydraulic ☐ Reverse rotary
☑ Cable ☐ Dug ☐ Other _____

5. WELL CONSTRUCTION

* = Depth Referenced to Top of 6 Inch Casing.

Casing schedule: ☑ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
_____ inches	_____ inches	+ 3 feet	359 feet
(See original well log) inches			feet
0.259 inches	5 9/16 inches	443.4* feet	515.3 feet
0.237 inches	4 1/2 inches	475.3* feet	515.3 feet

Was casing drive shoe used? ☐ Yes ☑ No-liners belled,
Was a packer or seal used? ☐ Yes ☑ No top & bottom
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation _____ inches by _____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

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 _____ Material used in seal: ☐ Cement grout ☐ Bentonite ☐ Puddling clay ☐ _____
Sealing procedure used: ☐ Slurry pit ☐ Temp. surface casing liners ☐ Overbore to seal depth
Method of joining casing: ☐ Threaded ☒ Welded ☐ Solvent Weld ☐ Cemented between strata
Describe access port Remove pitless cap for 5"diam access.

6. LOCATION OF WELL

Sketch map location must agree with written location.

N / W / E / S

Subdivision Name _____
Lot No. _____ Block No. _____
County Elmore NW¼NE¼NE¼ S27 T1N R4E
NW¼ NE¼ NE¼ Sec. 27, T. 1N, N ☒ S ☐, R. 4E, E ☒ W ☐

AUG 28 1991

7. WATER LEVEL

* Depth Reference @ top of casing.
Static water level 443.4* feet below ~~land surface~~
Flowing? ☐ Yes ☑ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature 71 °F. Quality Excellent
Describe artesian or temperature zones below.

8. WELL TEST DATA

☒ Pump ☐ Bailer ☐ Air ☐ Other _____
Caution, keep sounding device out of well w/pump installed.

Discharge G.P.M.	Pumping Level	Hours Pumped
6.7	less than 272 ft.	65

9. LITHOLOGIC LOG

* = Depth referenced to top of 6 inch casing.

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
		475'	See original log by Bill Doty Drlg		
5"	475	506*	Dusty, poorly sorted fine sand	x	
			fines on down to silt size.		
	506	507	Streak of Clay Brown to grey		x
	507	513	Sand, Fine, Poorly Sorted,		
			lighter colored, w/ Grey cast.	x	
	513	529	Sand & Gravel, Bank Run, Tight	x	
	529	530	Silty Sand	x	
	530	545	Tight Sand & Gravel	x	
	545	549	Rock, Basalt?Sandstone? Cemented		
			Gravel? Boulder?	?	
	549	555	Silt-Clay, Light Grey		x
[redacted]	555	561	Sand	x	
	561	565	Sandstone, Clay binder		x
	565	568*	Sand	x	
			Bridged hard at 561'*,		
			Jetted back to 520'* and		
			eventually on back to [redacted]		
			Liner at 516'.		

RECEIVED
MAY 8 1991
Department of Water Resources
Western Southern Region

10.

Work started March 25, 1991 Finished May 7, 1991

11. DRILLERS CERTIFICATION

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

Firm Name Artesian Co. Firm No. 318
7325 W. 36th S.
Address Mountain Home, ID Date May 7, 1991
83647-9613
Signed by (Firm Official) Hugh Harden
and Hugh Harden
(Operator) Hugh Harden

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

Form 238-7
6/98

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Use Typewriter or Ball Point Pen

1 OF 3 RECEIVED
NOV 01 1993
Department of Water Resources

1. DRILLING PERMIT NO. 63 93 C - 869 -0
Other IDWR No. 63-11382

2. OWNER:
Name DANSKIN PROPERTIES LTD
Address INDIAN CR. RD. HC 34 MAYFIELD STAGE
City BOISE State ID Zip 83706

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

N / W / E / S

T. 01 N North ☐ or South ☐
R. 04 E East ☐ or West ☐
Sec. 27 ___ 1/4 SW 1/4 NE 1/4
Gov't Lot ___ County ELMORE

Address of Well Site INDIAN CK RD HC34 MAYFIELD STAGE
(Give at least Direction + Distance to Road or Landmark)

Lot No. 19 Block No. 1 Subdivision DANSKIN PROPERTIES

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

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

6. DRILL METHOD REVERSE CIRCULATION
☐ Mud Rotary ☐ Air Rotary ☐ Cable ☐ Other

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
BENTONITE	0	126	22,500#	POURED
BENTONITE	360	380	2500#	POURED

Was drive shoe seal tested? YES NO How?

8. CASING/LINER:

Diameter	From	To	Guage	Casting	Liner	Steel	Plastic	Welded	Threaded
12"	+3	420	.250			☒	☐	☒	☐
10"	460	480	.250			☒	☐	☒	☐
						☐	☐	☐	☐
						☐	☐	☐	☐

Final location of shoes
Top Packer or Headpipe Bottom Tailpipe

9. PERFORATIONS/SCREENS
☐ Perforations Methoc
☒ Screens Typa HOUSTON Material STAINLESS STEEL

From	To	Slot Size	Number	Diameter	Tele/Pipe Size	Casting	Liner
420	460	.20		10"		☐	☐
						☐	☐
						☐	☐
						☐	☐

10. WELL TESTS: N/A
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min.	Drawdown	Pumping Depth	Time
NA	NA	NA	NA

Temperature of water 65 Was a water analysis done? Yes ☐ No ☒
By whom?
Water Quality (odor, etc) GOOD
Bottom Hole Temperature 65

11. STATIC WATER LEVEL:
N/A ft. below surface Depth artesian flow found
Artesian pressure lb. Describe access port WELL CAP
Describe Controlling Devices:

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	GPM	SWL
26"	0	10	TOPSOIL		N
	10	35	COURSE SAND		Y
	35	55	CLAY & CRSE SAND MIX		Y
	55	65	CRS & FINE SAND SOME CLAY MIX		Y
	65	75	CRS SAND W/BRN CLAY MIX		N
	75	105	CRS SAND W/BRN CLAY & GRAVEL MIX		Y
	105	115	BRN CLAY W/CRS SAND&SMALL ROCK MIX		N
	115	120	BRN CLAY		N
	120	125	FINE TO COURSE SAND, WITH CLAY AND SMALL GRAVEL & LARGE ROCKS MIXED		N
	125	140	CRS SAND, CLAY, SMALL & LARGE GRAVEL MIXED		N
	140	160	FINE TO CRS SAND		N
	160	165	BROWN CLAY		N
	165	195	FINE TO CRS SAND W/CLAY & GRAVEL MIX		N
	195	210	FINE TO CRS SAND & GRAVEL		N
	210	223	FINE TO CRS SAND & CLAY MIX		N
	223	235	FINE TO CRS SAND & GRAVEL		N
	235	245	FINE TO CRS SAND & SMALL GRAVEL		N
	245	255	FINE TO CRS SAND W/ CLAY MIX		N
	255	260	FINE TO CRS SAND		N
	260	265	FINE SAND & CLAY MIX		N
	265	271	FINE TO CRS SAND W/CLAY&GRAVEL MIX		N
	271	275	FINE SAND		Y
	275	285	FINE SAND WITH CLAY MIX		N
	285	295	FINE TO CRS SAND		N
	295	305	CLAY & FINE SAND MIX		N

FEB 28 1994

Date: Started 10-15-93 Completed 10-20-93

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 PETE COPE DRILLING Firm No. 213
Firm Official [signature] Date 10/29/93
and
Supervisor or Operator Date 10/29/93
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

Form 238-7
6/93

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Use Typewriter or Ball Point Pen

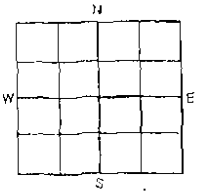
2 OF 3

108846

1. DRILLING PERMIT NO. 63 93 C 869 0
Other IDWR No.

2. OWNER:
Name DANSKIN PROPERTIES LTD
Address
City State Zip

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



T. 1 North ☒ or South ☐
R. 4 East ☒ or West ☐
Sec. 27 1/4 (10 acres) SW 1/4 (40 acres) NE 1/4 (160 acres)
Gov't Lot County Elmore

Address of Well Site INDIAN CREEK RD
(Give at least Direction & Distance to Road or Landmark)
Lot No. Block No. Subd. 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	Sacks or Pounds	

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

8. CASING/LINER:

Diameter	From	To	Guage	Casing	Liner	Steel	Plastic	Welded	Threaded
						☐	☐	☐	☐
						☐	☐	☐	☐
						☐	☐	☐	☐
						☐	☐	☐	☐

Final location of shoes
Top Packer or Headpipe Bottom Tailpipe

9. PERFORATIONS/SCREENS
☐ Perforations Method
☐ Screens Type Material

From	To	Slot Size	Number	Diameter	Tele/Pipe Size	Casing	Liner
						☐	☐
						☐	☐
						☐	☐
						☐	☐

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FEB 28 1994

10. WELL TESTS:
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min.	Drawdown	Pumping Depth	Time

Temperature of water Was a water analysis done? Yes ☐ No ☐
By whom?
Water Quality (odor, etc.)
Bottom Hole Temperature

11. STATIC WATER LEVEL:
ft. below surface Depth artesian flow found
Artesian pressure lb. Describe access port
Describe Controlling Devices:

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	GPM	SWL
	305	315	FINE SAND AND CLAY MIX		N
	315	325	CLAY & FINE SAND MIX		N
	325	335	LIGHT BRN CLAY		N
	335	339	LIGHT BRN CLAY		N
	339	341	FINE TO CRS SAND		N
	341	351	SANDY LIGHT BRN CLAY		N
	351	355	FINE TO CRS SAND & GRAVEL		N
	355	365	FINE SAND W/SMALL AMOUNT CLAY MIX		N
	365	370	FINE SAND		N
	370	372	FINE TO CRS SAND & BOULDERS		N
	372	374	FINE TO CRS SAND W/BOULDERS & BROKEN ROCK		N
	374	376	SAND & CLAY MIXED		N
	376	382	SANDY CLAY LIGHT BROWN COLOR		N
	382	387	SANDY CLAY & SHALE MIXED		N
	387	400	CRS SAND & CLAY MIXED		N
	400	407	FINE TO MED SAND		N
	407	413	SAND & CLAY MIXED		Y
	413	423	FINE TO MED SAND & CLAY MIXED		Y
			SOME PEA GRAVEL MIXED		Y
	423	429	FINE TO MED SAND & PEA GRAVEL		Y
	429	433	FINE SAND, & SMALL AMOUNT CLAY MIXED		Y
	433	440	FINE MED SAND		Y
	440	443	FINE TO CRS SAND W/GRAVEL&CLAY MIXED		Y
	443	449	FINE TO COURSE SAND		Y
	449	450	BRN CLAY		N
	450	453	SAND, GRAVEL & CLAY MIXED		Y

Date: Started Completed

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 Firm No.
Firm Official Date
and
Supervisor or Operator Date
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

4

Form 238
6/93

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Use Typewriter or Ball Point Pen

3 of 3

108847

1. DRILLING PERMIT NO. 63 93 C . 869 . 0
Other IDWR No.

2. OWNER:
Name DANSKIN PROPERTIES LTD
Address
City State Zip

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

N / W / E / S

T. 1 North ☒ or South ☐
R. 4 East ☒ or West ☐
Sec. 27 1/4 SW 1/4 NE 1/4
(10 acres / 40 acres / 160 acres)
Gov't Lot SE County Elmore

Address of Well Site
(Give at least Direction + Distance to Road or Landmark)
Lot No. Block No. Subd. 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	Sacks or Pounds	

Was drive shoe seal tested? YES NO How?

8. CASING/LINER:

Diameter	From	To	Guage	Casing	Liner	Steel	Plastic	Welded	Threaded
						☐	☐	☐	☐
						☐	☐	☐	☐
						☐	☐	☐	☐
						☐	☐	☐	☐

Final location of shoes
Top Packer or Headpipe Bottom Tailpipe

9. PERFORATIONS/SCREENS
☐ Perforations Method
☐ Screens Type Material

From	To	Slot Size	Number	Diameter	Tele/Pipe Size	Casing	Liner
						☐	☐
						☐	☐
						☐	☐
						☐	☐

FEB 28 1994

10. WELL TESTS:
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Depth	Time

Temperature of water Was a water analysis done? Yes ☐ No ☐
By whom?
Water Quality (odor, etc.)
Bottom Hole Temperature

11. STATIC WATER LEVEL:
ft. below surface Depth artesian flow found
Artesian pressure lb. Describe access port
Describe Controlling Devices:

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	GPM	SWL
	453	456	CLAY, SAND, SOME GRAVEL		Y
	456	460	FINE TO COURSE SAND (GREEN COLOR)		Y
	460	463	FINE SAND & BLUISH-GREEN CLAY MIXED		Y
	463	473	LIGHT BLUE CLAY		N
	173	480	VERY FINE BLUE SAND & LIGHT BLUE CLAY		N

Date: Started Completed

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 Firm No.
Firm Official Date
and
Supervisor or Operator Date
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

5

38-7

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Use Typewriter or Ball Point Pen

108814

1. DRILLING PERMIT NO. 93 93 W 1045 .000
Other IDWR No.

2. OWNER:
Name JIM UNDERWOOD
Address HC 34 MAYFIELD STAGE
City BOISE State ID Zip 83706

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

N / W / E / S

T. 1N North ☐ or South ☐ 15 L.F. ft. below surface Depth artesian flow found
R. 4E East ☐ or West ☐ Artesian pressure lb. Describe access port WELL CAP
Sec 27 SW 10 acres 1/4 NE 40 acres 1/4 1/4 160 acres
Gov't Lot County ELMORE
Describe Controlling Devices:

Address of Well Site HC 34 INDIAN CREEK RD HC 34 Mayfield Stage Stop
(Give at least Direction + Distance to Road or Landmark)

Lot No. Block No. Subd. Name

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

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

6. DRILL METHOD AIR ROTARY
☐ Mud Rotary ☐ Air Rotary ☐ Cable ☐ Other

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
BENTONITE	0	20	750#	POURED

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

8. CASING/LINER:

Diameter	From	To	Gauge	Casting	Liner	Steel	Plastic	Welded	Threaded
8"	+1	68	.250			☒	☐	☒	☐
						☐	☐	☐	☐
						☐	☐	☐	☐
						☐	☐	☐	☐

Final location of shoes 63
Top Packer or Headpipe Bottom Tailpipe

9. PERFORATIONS/SCREENS
☒ Perforations Method FACTORY
☐ Screens Type Material

From	To	Slot Size	Number	Diameter	Tele/Pipe Size	Casting	Liner
28	68	1/8"		8"	PIPE	☒	☐
						☐	☐
						☐	☐
						☐	☐

10. WELL TESTS: PUMP
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Depth	Time
55	48	63	80

Temperature of water 65 Was a water analysis done? Yes ☐ No ☒
By whom?
Water Quality (odor, etc.) GOOD
Bottom Hole Temperature 65

11. STATIC WATER LEVEL:

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	GPM	SWI
	0	9	TOPSOIL		N
10	9	20	SAND		Y
8	20	23	GRAVEL		Y
	23	27	SAND		Y
	27	29	CLAY		N
	29	48	SAND		Y
	48	49	BROWN CLAY		N
	49	58	SAND		Y
	58	75	BROWN CLAY		N
	75		SAND		Y

RECEIVED
OCT 20 1993
WATER RESOURCES
WESTERN REGION

APPROVED
FEB 28 1994

Date: Started 10/12/93 Completed 10/13/93

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 PETE COPE DRILLING Firm No. 213
Firm Official Date 10/19/93
and
Supervisor or Operator Date 10/19/93
(Sign both if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

USE TYPEWRITER OR BALL POINT PEN

State of Idaho
Department of Water Resources

WELL DRILLER'S REPORT

State 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.

X3 6

1. WELL OWNER

Name [illegible]

Address Middleton

Owner's Permit No. 63-8720

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

3. PROPOSED USE

☐ Domestic ☐ Irrigation ☐ Test ☐ Other (specify type)

☐ Municipal ☐ Industrial ☐ Stock ☐ Waste Disposal or Injection

4. METHOD DRILLED

☒ Cable ☐ Rotary ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 8 inches Total depth 375 feet

Casing schedule: ☐ Steel ☐ Concrete

Thickness	Diameter	From	To
.250 inches	8 inches	+ 1 feet	375 feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet

Was casing drive shoe used? ☒ Yes ☐ No

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☒ Yes ☐ No

How perforated? ☐ Factory ☒ Knife ☐ Torch

Size of perforation ¼ inches by 2 inches

Number		From	To
200	perforations	103 feet	200 feet
80	perforations	228 feet	250 feet
	perforations	feet	feet

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

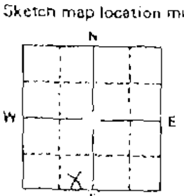
Surface seal depth 20' Material used in seal ☐ Cement grout ☒ Puddling clay ☐ Well cuttings

Sealing procedure used ☐ Slurry pit ☐ Temporary surface casing ☐ Overbore to seal depth

6. LOCATION OF WELL

63

Sketch map location must agree with written location.



Subdivision Name

Lot No. Block No.

County [illegible] Ada

SW ¼ SE ¼ Sec. 28, T. 1 N, R. 4 E

7. WATER LEVEL

Static water level 160 feet below land surface

Flowing? ☐ Yes ☐ No G.P.M. flow

Temperature °F. Quality

Artesian closed-in pressure p.s.i.

Controlled by ☐ Valve ☒ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☒ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped

106023

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
8"	0	3	Top soil		
	3	56	Sand + Clay		
	56	69	Coarse Sand		
	69	103	Lava		
	103	200	Coarse Sand	✓	
	200	228	Sand + Clay Seams		
	228	245	Coarse Sand	✓	
	245	265	Fine Sand		
	265	305	Sand + Clay		
	305	340	Coarse Sand	✓	
	340	375	Coarse Sand + Clay		

[illegible] 1978
Department of Water Resources
Western Regional Office

10. Work started 2/14/78 finished 5/17/78

11. DRILLERS CERTIFICATION

Firm Name Middleton [illegible] Firm No. 26

Address Middleton, Ida. Date 12/1/78

Signed by (Firm Official) Daniel Wheyer

and

(Operator) Daniel Wheyer

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

869364 72053

Form 238-7
3/95-C96

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: ' "

7

1. DRILLING PERMIT NO. _____
Other IDWR No. D0019379

2. OWNER:
Name JIM PHAGAN
Address 4200 PASADENA DR. #30
City BOISE State ID Zip 83705

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

N
W E
S

Twp. 1 North ☒ or South ☐
Rge. 4 East ☒ or West ☐
Sec. 33 1/4 (10 acres) NE 1/4 (40 acres) NW 1/4 (160 acres)

Gov't lot ____ County ADA
Lat: ____ ' ____ " Long: ____ ' ____ "
Address of Well Site 23735 DESERT WIND
City BOISE
(Give at least name of road + Distance to Road or Landmark)
Lt. ____ Blk. ____ Sub. Name REGINA HEIGHTS

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	
BENTONITE	0	18	9 SACKS	OVERBORE

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6	+2	560	250	ST	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe 10'8" Length of Tailpipe ____

9. PERFORATIONS/SCREENS
☐ Perforations Method ____
☒ Screens Screen Type telescoping

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
559	569	20		5"	ST ST	☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
481 ft. below ground Artesian Pressure ____ lb
Depth flow encountered ____ ft. Describe access port or control devices: ____

11. WELL TESTS:
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Pumping Level	Time
17		560	2 HRS

Water Temp. ____ Bottom hole temp. ____
Water Quality test or comments: ____
Depth first Water Encountered 487

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia	From	To	Remarks:Lithology, Water Quality & Temp.	Water Y	Water N
10	0	3	BROWN TOPSOIL		☒
10	3	14	BROWN SANDY CLAY		☒
10	14	18	TAN SANDY CLAY		☒
8	18	29	TAN SANDY CLAY		☒
8	29	57	BROWN CLAY, SAND & SMALL		
			GRAVEL		☒
8	57	81	BLACK LAVA		☒
8	81	212	TAN CLAY W/SAND		☒
8	212	244	STICKY TAN CLAY		☒
8	244	309	STICKY TAN CLAY W/STRIPS BROWN		
			SAND		☒
8	309	376	BROWN SAND W/SMALL STRIPS		
			TAN CLAY		☒
8	376	421	CEMENTED BROWN SAND		☒
8	421	480	STRIPS BROWN SAND & TAN CLAY		☒
6	480	487	STRIPS BROWN SAND & TAN CLAY		☒
6	487	511	FINE BROWN & CLEAR QUARTZ SAND	☒	
6	511	539	STICKY TAN CLAY		☒
6	539	541	VERY FINE BROWN & MICA SAND	☒	
6	541	545	DIRTY BROWN SAND & SOFT TAN		
			CLAY		☒
6	545	562	MEDIUM STICKY TAN CLAY		☒
6	562	572	COARSE CLEAR QUARTZ SAND &		
			PEA GRAVEL	☒	

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JAN 03 2002
WATER RESOURCES
WESTERN REGION

Completed Depth: 569 (Measurable)
Date: Started 11/12/01 Completed 11/17/01

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 SOS Welldrilling & Pump Co Firm No. 212
Firm Official Frank Skinner Date 12-5-01
Supervisor or Operator Dick Date 12-28-01
(Sign once if Firm Official & Operator)

Date: 12/5/01 Time:12:12 PM

Form 238-7
3/95-C96

767235

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

3N
8

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. DRILLING PERMIT NO. __ - __ - __ - ____ - ____
Other IDWR No. D0015796

2. OWNER:
Name Tim Anderson
Address 4450 S. Timridge Way
City Boise State ID Zip 83716

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

N
W [X] E
S

Twp. 1 North X or South ☐
Rge. 4 East X or West ☐
Sec. 33 1/4 (10 acres) SE 1/4 (40 acres) NE 1/4 (160 acres)
Gov't lot _____ County Ada
Lat. ___ ___ ___ Long: ___ ___ ___
Address of Well Site 24601 S. Old Hwy 30
City Boise
(Give at least name of road + Distance to Road or Landmark)
Lt. _____ Blk. _____ Sub. Name _____

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

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

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

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
Bentonite	0	18	800lbs	Overbore

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6.625	+2	660	250	Steel	X	☐	X	☐
5.563	654	650	188	Steel	☐	X	X	☐
					☐	☐	☐	☐

Length of Headpipe 6' Length of Tailpipe N/A

9. PERFORATIONS/SCREENS
☐ Perforations Method _____
X Screens Screen Type Johnson

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
660	665	020		5.563	SS	☐	X
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
528ft. below ground Artesian Pressure ____ lb
Depth flow encountered ____ Describe access port or control devices: _____

11. WELL TESTS:
☐ Pump ☐ Bailer X Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Pumping Level	Time
20		-650	1hr

Water Temp. _____ Bottom hole temp. _____
Water Quality test or comments: _____
Depth first Water Encountered 583'

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temp.	Water Y	Water N
10	0	2	Top soil		X
10	2	10	Tan sand		X
10-6	10	120	Sand & Clay seam		X
6	120	260	Sand & small gravels		X
6	260	583	Cemented sand & gravel		X
6	583	620	Fine sand	X	
6	620	630	Tan clay		X
6	630	665	Med. Sand	X	

RECEIVED
DEC 27 2000
Department of Water Res...

RECEIVED
DEC 12 2000
WATER RESOURCES
WESTERN REGION

Completed Depth: 665' (Measurable)
Date Started 10/27/00 Completed 11/09/00

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 Hiddleston & Son, Inc. Firm No. 35
Firm Official _____ Date 12-7-00
Supervisor or Operator _____ Date 12-7-00
(Sign once if Firm Official & Operator)

195-C96

Inspected by _____
Twp ____ Rge ____ Sec ____
____ 1/4 ____ 1/4 ____ 1/4
Lat: ' " Long: ' "

34 9

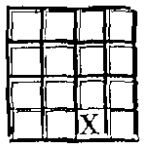
IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. DRILLING PERMIT NO. 61-99-W-0059-000
Other IDWR No. D0012097

2. OWNER:
Name Ronald & Pamela Miller
Address HC 34 Mayfield Stage
City Boise State ID Zip 83716

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

N



E

S

orm 238V7

Twp. 1 North X or South ☐
Rge. 4 East X or West ☐
Sec. 34 1/4 (10 acres) SW 1/4 (40 acres) SE 1/4 (160 acres)
Gov't lot _____ County Elmore
Lat: ' " Long: ' "
Address of Well Site Mayfield Road
City Mayfield
(Give at least name of road + Distance to Road or Landmark)
Lt. _____ Blk. _____ Sub. Name _____

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

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

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

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	
Bentonite	0	18	900 lbs	Overbore

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

8. CASING/LINER:

Diameter	From	To	Gauge	Materia	Casing	Liner	Welded	Threaded
5.438	+2	596	288	Steel	X	☐	X	☐
5.563	606	616	288	Steel	X	☐	X	☐
					☐	☐	☐	☐

Length of Headpipe _____ Length of Tailpipe _____

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

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
596	606	020		5.563	SS	X	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
450 ft. below ground Artesian Pressure _____ lb
Depth flow encountered _____ Describe access port or control devices: _____

11. WELL TESTS: 59137
☐ Pump ☐ Bailer X Air ☐ Flowing Artesian

Yield gal/min.	Drawdown	Pumping Level	Time

Water Temp. _____ Bottom hole temp. _____
Water Quality test or comments. _____
Depth first Water Encountered _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temp.	Water Y	Water N
12	0	3	Top Soil		X
12	3	15	Hard Pan		X
12	15	18	Sand & Clay Seams		X
8	18	22	Tan Clay		X
8	22	257	Tan Sand & Clay Seams		X
8	257	260	Tan Clay		X
8	260	320	Brown Silt & Sand		X
8	320	400	Tan Clay & Some Sand		X
8	457	469	White Clay & Large Stone		X
8	469	471	Sand – 015		X
8	471	500	Tan Clay & Some Sand		X
8	500	520	White Clay & Some Sand		X
8	520	594	Tan Clay & Some Sand		X
8	594	610	White Clay & Some Sand		X
8	610	615	Medium Sand & White Clay		X
8	615	620	White Clay & Some Stone		X

MICROFILMED NOV 3 1 1999

RECEIVED OCT 13 1999 WATER RESOURCES WESTERN REGION

Completed Depth: 615 (Measurable)
Date Started 9-18-99 Completed 9-23-99

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 Hiddleston & Son, Inc. Firm No. 35
Firm Official _____ Date 10/11/99
Supervisor or Operator _____ Date _____
(Sign once if Firm Official & Operator)

870655-775948

Form 238-7
3/95-C96

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. DRILLING PERMIT NO. - - - - -
Other IDWR No. D0019537

2. OWNER:
Name Bob Wickham
Address 730 S. Prairie Grass Dr.
City Boise State ID Zip 83716

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

N
W X E
S

Twp. 1 North ☐ or South X
Rge. 4 East X or West ☐
Sec. 1 1/4 SW 1/4 NW 1/4
10 acres 40 acres 160 acres

Gov't lot County Elmore

Lat: : : Long: : :

Address of Well Site 730 S. Prairie Dr.
City Mtn Home
(Give at least name of road + Distance to Road or Land mark)

Lt. ____ Blk. ____ Sub. Name ____

4. USE:
X Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other ____

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

6. DRILL METHOD
X Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other ____

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
Bentonie	0	20	700 lbs.	Overbore

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6.625	+1	444	.250	Steel	X	☐	X	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe 6' Length of Tailpipe 3'

9. PERFORATIONS/SCREENS
☐ Perforations Method ____
X Screens Screen Type Johnson

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
445	450	.030		5"	SS	☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
337 ft. below ground Artesian Pressure ____ lb
Depth flow encountered ____ ft. Describe access port or control devices: ____

11. WELL TESTS:
☐ Pump ☐ Bailer X Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Pumping Level	Time
20			1 hr

Water Temp. 68 Bottom hole temp. ____
Water Quality test or comments: ____
Depth first Water Encountered 415'

12. LITHOLOGIC LOG: (Describe repair or abandonment)

Bore Dia.	From	To	Remarks:Lithology, Water Quality & Temp.	Water Y	Water N
10"	0	2	Top Soil		X
10"	2	7	Cleache		X
10"	7	18	Sand & Gravel		X
6"	18	30	Sand & Gravel		X
6"	30	34	Brown Clay		X
6"	34	225	Sand & Gravel w/ Clay Seams		X
6"	225	236	Brown Clay		X
6"	236	250	Tan Sand Stone		X
6"	260	415	Sand & Gravel w/ Clay Seams		X
6"	415	428	Coarse Sand	X	
6"	428	441	Brown Clay		X
6"	441	455	Coarse Sand	X	
6"	455	460	Brown Clay		X

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APR 26 2002
WATER RESOURCES
WESTERN REGION

Completed Depth: 455' (Measurable)
Date: Started 1-04-02 Completed 1-11-02

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 Hiddleston & Son, Inc. Firm No. 35
Firm Official [signature] Date 04-22-02
Supervisor or Operator Matt Hiddleston Date 4-17-02
(Sign once if Firm Official & Operator)

768411

Form 238-7
3/95-0796

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. DRILLING PERMIT NO. _____
Other IDWR No. D0018029

2. OWNER:
Name Chris Reninger
Address P.O. Box 190782
City Boise State ID Zip 83719

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

N
W E
S

Twp. 1 North ☐ or South ☒
Rge. 4 East ☒ or West ☐
Sec. 1 1/4 (10 acres) SW 1/4 (40 acres) NW 1/4 (160 acres)
Gov't lot _____ County Elmore
Lat: : : Long: : :
Address of Well Site Baseline Rd just past
Old Hwy. 30 cut-off City Boise
(Give at least name of road + Distance to Road or Landmark)
Lt. _____ 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 Material	From	To	AMOUNT Sacks or Pounds	METHOD
bentonite	0'	18+'	25 sacks	overbore

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2'	502'	250	steel	☒	☐	☒	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe 12' Length of Tailpipe _____

9. PERFORATIONS/SCREENS
☐ Perforations Method pull back
☒ Screens Screen Type telescoping

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
504'	514'	.020		5.5"	StSt	☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
342 ft. below ground Artesian Pressure _____ lb
Depth flow encountered _____ ft. Describe access port or control devices: _____

11. WELL TESTS:
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min.	Drawdown	Pumping Level	Time
10 GPM		500'	2 hrs.

Water Temp. _____ Bottom hole temp. _____
Water Quality test or comments: _____
Depth first Water Encountered 355'

12. LITHOLOGIC LOG: (Describe repair or abandonment)

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temp.	Water Y	Water N
10"	0'	2'	brown top soil		☒
10"	2'	4'	brown hard pan		☒
10"	4'	6'	*hard brown clay*		☒
10"	6'	8'	coarse brown sand		☒
10"	8'	18'	brown clay		☒
8"	18'	21'	brown clay		☒
8"	21'	65'	brown clay & coarse sand strips		☒
8"	65'	72'	brown & white decomposed granite		☒
8"	72'	85'	bron clay		☒
8"	85'	150'	*soft brown & white granite*		☒
8"	150'	166'	soft white granite		☒
8"	166'	203'	black & brown granite		☒
8"	203'	240'	soft white granite		☒
8"	240'	290'	brown clay & coarse sand strips		☒
8"	290'	305'	white & brown granite		☒
8"	305'	312'	hard brown clay		☒
8"	312'	355'	brown clay & coarse white sand strip		☒
8"	355'	358'	white & brown sand	☒	
8"	358'	361'	brown clay		☒
6"	361'	381'	brown clay		☒
6"	381'	384'	brown sand	☒	
6"	384'	397'	brown clay		☒
6"	397'	415'	coarse brown sand w/sandy clay strip	☒	
6"	415'	448'	coarse white & brown sand	☒	
6"	448'	457'	brown clay		☒
6"	457'	461'	crse/fine brn & wht sand w/gravel	☒	
6"	461'	470'	sandy clay & sm sand & gravel strips		☒
6"	470'	502'	coarse/fine brown sand packed		☒
6"	502'	504'	brown clay		☒
6"	504'	515'	white sand & small gravel	☒	

Completed Depth: 516 (Measurable)
Date: Started 4-3-01 Completed 4-10-01

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 _____ Firm No. _____
Firm Official Tony Hackett Date 5-17-00
Supervisor or Operator Tony Hackett Date 5-17-0
(Sign once if Firm Official & Operator)

RECEIVED
Date: 5/16/01 Time: 9:18 AM
JUN - 4 2001
Department of Water Resources

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Form 238-7
3/95-C96

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT 053590

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

1. DRILLING PERMIT NO. 61-99-W-0025-000
Other IDWR No. D0009421
2. OWNER:
Name Mary Botts
Address 5625 Baseline Rd.
City Boise State ID Zip 83617
3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location

N
W [X] E
S

Twp. 1 North ☐ or South X
Rge. 4 East X or West ☐
Sec. 2 1/4 (10 acres) NE 1/4 (40 acres) NE 1/4 (160 acres)
Gov't lot _____ County Elmore
Lat: : : Long: : :
Address of Well Site 5625 Baseline Rd. - Tippanuk
City Boise
(Give at least name of road + Distance to Road or Landmark)
Lt. _____ Blk. _____ Sub. Name _____

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

SEAL/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	
Bentonite	0	158	4000 lbs	Overbore

Was drive shoe used? ☐ Y X N Shoe Depth(s) _____
Was drive shoe seal tested? ☐ Y X N How? _____
8. CASING/LINER:

Diameter	From	To	Gauge	Materia	Casing	Liner	Welded	Threaded
8.625	+6"	158'	.250	STEEL	X	☐	X	☐
8.625	+2	523	.250	SS	X	☐	X	☐
8.625	523	537	.250	STEEL	☒	☐	☒	☐

Length of Headpipe 523' Length of Tailpipe 3'
9. PERFORATIONS/SCREENS
☐ Perforations Method _____
☐ Screens Screen Type _____

From	To	Slot Size	Number	Diameter	Materia	Casing	Liner
523	533	.020		5.563	SS	X	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
310 ft below ground Artesian Pressure _____ lb
Depth flow encountered Describe access port or control devices: _____

11. WELL TESTS:
☐ Pump ☐ Bailer X Air ☐ Flowing Artesian

Yield gal/min.	Drawdown	Pumping Level	Time
20+			

Water Temp. _____ Bottom hole temp. _____
Water Quality test or comments: _____
Depth first Water Encountered _____

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temp.	Water Y	Water N
12"	0	2	Top Soil	☐	X
12"	2	10	Sandy Clay	☐	X
12"	10	138	Tan Sand & Clay Seam	☐	X
12-8	138	175	Brown Sand & Clay Seam	☐	X
8"	175	195	Sand Stone	☐	X
8"	195	210	Brown Clay	☐	X
8"	210	215	Sand & Clay Seam	☐	X
8"	215	290	Tan Clay & Sand Seam	☐	X
8"	290	312	Sand-10/20	☐	X
8"	312	330	Sand & Clay Seam	☐	X
8"	330	350	Coarse Sand	☐	X
8"	350	367	Clay & Sand Seam	☐	X
8"	367	400	Brown Clay & Sand Seam	☐	X
8"	400	462	Tan Clay & Sand Seam	☐	X
8"	462	465	Tan Clay & Some Pea Gravel	☐	X
8"	465	514	Light Tan Clay & Some Stone	☐	X
8"	514	522	Sand Stone	☐	X
8"	522	534	Coarse Sand	X	
8"	534	540	Ash Color	☐	X
				☐	☐
				☐	☐
				☐	☐
				☐	☐
				☐	☐
				☐	☐
				☐	☐
				☐	☐
				☐	☐
				☐	☐

MICROFILMED
OCT 19 1999
RECEIVED
JUL - 1 1999
RECEIVED
JUN 22 1999
Department of Water Resources
WATER RESOURCES
WESTERN REGION

Completed Depth: 537' (Measurable)
Date: Started 5-13-99 Completed 6-2-99

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 Hiddleston & Son, Inc. Firm No. 35
Firm Official _____ Date 6/17/99
Supervisor or Operator _____ Date 6/17/99

788349 50

13

Form 238-7
3/95-C96

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. DRILLING PERMIT NO. - - - -
Other IDWR No. B0025803
2. OWNER:
Name Dale Meeks
Address 977 N. Ethridge Pl
City Boise State ID Zip 83704
3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location

N
W [X] E
S

Twp. 1 North ☐ or South X
Rge. 4 East X or West ☐
Sec. 2 1/4 (10 acres) NE 1/4 (40 acres) NE 1/4 (160 acres)
Gov't lot ____ County Elmore
Lat: : : Long: : :
Address of Well Site Prairie Grass Rd. off baseline rd.
City Mtn Home
(Give at least name of road + Distance to Road or Landmark)
Lt. ____ Blk. ____ Sub. Name ____

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

SEAL/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	
Bentonite	0	19	500 lbs	Overbore

Was drive shoe used? X Y ☐ N Shoe Depth(s) ____
Was drive shoe seal tested? ☐ Y X N How? ____
8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6.625	+2	428	.250	Steel	X	☐	X	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe N/A Length of Tailpipe ____
9. PERFORATIONS/SCREENS
☐ Perforations Method ____
X Screens Screen Type Johnson

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
429	434	.025		5"	SS	☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
331 ft below ground Artesian Pressure ____ lb
Depth flow encountered ____ ft. Describe access port or control devices: ____

11. WELL TESTS:
☐ Pump ☐ Bailer X Air ☐ Flowing Artesian

Yield gal/min.	Drawdown	Pumping Level	Time
30			1

Water Temp. 60 Bottom hole temp. ____
Water Quality test or comments: ____
Depth first Water Encountered 409'
12. LITHOLOGIC LOG: (Describe repair or abandonment)

Bore Dia.	From	To	Remarks:Lithology, Water Quality & Temp.	Water Y	Water N
10	0	2	Top Soil		X
10	2	5	Cleache		X
10	5	15	Sand & Gravel		X
10	15	18	Tan Clay		X
6	18	22	Tan Clay		X
6	22	78	Tan Coarse Sand		X
6	78	83	Tan Clay		X
6	83	213	Coarse Sand		X
6	213	225	Brown Sandstone		X
6	225	290	Coarse Sand		X
6	290	409	Tan Sandy Clay		X
6	409	414	Coarse Sand	X	
6	414	421	Tan Sand w/ Clay Seams		X
6	421	434	Tan Sand	X	
6	434	435	Tan Clay		X

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NOV 13 2002
WATER RESOURCES
WESTERN REGION

Completed Depth: 434' (Measurable)
Date: Started 10-28-02 Completed 11-01-02

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 Hiddleston & Son, Inc. Firm No. 35
Firm Official [signature] Date 11-11-02
Supervisor or Operator Matt Hiddleston Date 11-11-02
(Sign once if Firm Official & Operator)

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JAN 0 2 2003

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Form 238-7
3795-C96

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. DRILLING PERMIT NO. - - - -
Other IDWR No. D0025928
2. OWNER:
Name Rich Cornell
Address HC 87 Box 700
City Mtn Home State ID Zip 83647
3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location

N
W [X] E
S

Twp. 1 North ☐ or South X
Rge. 4 East X or West ☐
Sec. 2 1/4 (10 acres) NW 1/4 (40 acres) NE 1/4 (80 acres)
Gov't lot County Elmore
Lat: Long:
Address of Well Site ½ mile off baseline rd.
City Mtn Home
(Give at least name of road + Distance to Road or Landmark)
Lt. Blk. Sub. Name

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

SEAL/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	
Bentonite	0	19	600 lbs	Overbore

Was drive shoe used? X Y ☐ N Shoe Depth(s)
Was drive shoe seal tested? ☐ Y X N How?
8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6.625	+2	383	.250	Steel	X	☐	X	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe 5' Length of Tailpipe N/A
9. PERFORATIONS/SCREENS
☐ Perforations Method
X Screens Screen Type Johnson

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
385	390	.030		5"	SS	☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
300 ft. below ground Artesian Pressure lb
Depth flow encountered ft. Describe access port or control devices:

11. WELL TESTS:
☐ Pump ☐ Bailer X Air ☐ Flowing Artesian

Yield gal/min.	Drawdown	Pumping Level	Time
20			

Water Temp. 62 Bottom hole temp.
Water Quality test or comments:
Depth first Water Encountered 185
12. LITHOLOGIC LOG: (Describe repair or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temp.	Y	N
10	0	2	Top Soil		X
10	2	10	Silty Sand		X
10	10	12	Big Sand & Gravel		X
10	12	19	Coarse Sand & Gravel		X
6	19	21	Tan Clay		X
6	21	88	Coarse Sand & Gravel		X
6	88	92	Brown Clay		X
6	92	165	Sand		X
6	165	185	Sandstone		X
6	185	250	Sand	X	
6	250	255	Tan Clay		X
6	255	380	Sand		X
6	380	382	Tan Clay		X
6	382	390	Coarse Sand	X	

Completed Depth: 390' (Measurable)
Date: Started 11-22-02 Completed 11-28-02

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 Hiddleston & Son, Inc. Firm No. 35
Firm Official [signature] Date 12-20-02
Supervisor or Operator Matt Hiddleston Date
(Sign once if Firm Official & Operator)

799883

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

Form 238-7
3/95-C96

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. DRILLING PERMIT NO. _ _ _ _ _ _ _ _
Other IDWR No. D0029374

2. OWNER:
Name Jack Buchanan
Address 731 S. Prairie Grass Rd.
City Boise State ID Zip 83716

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

N
W [X] E
S

Twp. 15 North ☐ or South X
Rge. 4 East X or West ☐
Sec. 2 1/4 (10 acres) SE 1/4 (40 acres) NE 1/4 (160 acres)
Gov't lot _____ County Ada

Lat: : : Long: : :
Address of Well Site 731 S. Prairie Grass Rd.
City Boise
(Give at least name of road + Distance to Road or Landmark)

Lt. _____ Blk. _____ Sub. Name _____

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

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

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

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	
Bentonite	0	18	700 lbs	Overbore

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6.625	+2	469	.250	Steel	X	☐	X	☐
					☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe 20' Length of Tailpipe N/A

9. PERFORATIONS/SCREENS
☐ Perforations Method _____
X Screens Screen Type Johnson

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
471	476	.020		5"	SS	☐	☐
451	471	N/A		5"	Steel		X
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
331 ft. below ground Artesian Pressure ___ lb
Depth flow encountered ___ ft. Describe access port or control devices: _____

11. WELL TESTS:
☐ Pump ☐ Bailer X Air ☐ Flowing Artesian

Yield gal/min.	Drawdown	Pumping Level	Time
50			1 hr

Water Temp. _____ Bottom hole temp. _____
Water Quality test or comments: _____
Depth first Water Encountered _____

12. LITHOLOGIC LOG: (Describe repair or abandonment)

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temp.	Water Y	Water N
10"	0	2	Top Soil		X
10"	2	7	Cleache		X
10"	7	16	Tan Sand W/ Gravel		X
10"	16	18	Tan Clay		X
6"	18	22	Tan Clay		X
6"	22	80	Tan Coarse Sand		X
6"	80	83	Tan Clay		X
6"	83	217	Coarse Sand		X
6"	217	227	Brown SandStone		X
6"	227	460	Tan Sand w/ Clay Seams		X
6"	460	476	Coarse Tan Sand & Gravel	X	

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JUN 0 2 2003
WATER RESOURCES
WESTERN REGION

Completed Depth: 476' (Measurable)
Date: Started 4-28-03 Completed 5-5-03

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 Hiddleston & Son, Inc. Firm No. 35
Firm Official _____ Date 5-27-03
Supervisor or Operator Matt Hiddleston Date _____
(Sign once if Firm Official & Operator)

810178 54 16

Form 238-7
3/95-C96

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. DRILLING PERMIT NO. ___ - ___ - ___ - ___
Other IDWR No. D0030779

2. OWNER:
Name Big View Builders
Address 5006 Man O War
City Nampa State ID Zip 83686

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

N
W E
S

Twp. 1 North ☐ or South ☒
Rge. 4 East ☒ or West ☐
Sec. ___ 1/4 (10 acres) SE 1/4 (40 acres) SW 1/4 (160 acres)
Gov't lot ____ County Elmore
Lat: : : Long: : :
Address of Well Site 1020 Desert Wind Rd
City Mountain Home,
(Give at least name of road + Distance to Road or Landmark)
Lt. ____ 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 Material	From	To	AMOUNT Sacks or Pounds	METHOD
Bentonite	0	20	12	overbore

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s) 278
Was drive shoe seal tested? ☐ Y ☒ N How? ____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	-2	278	250	steel	☒	☐	☒	☐
5"	6	491	188	steel	☐	☒	☒	☐
					☐	☐	☐	☐

Length of Headpipe ____ Length of Tailpipe ____

9. PERFORATIONS/SCREENS
☐ Perforations Method ____
☒ Screens Screen Type sand blocker

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
492	504	n/a	n/a	4"	stst	☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
365 ft. below ground Artesian Pressure ____ lb
Depth flow encountered 485 ft. Describe access port or control devices: ____

11. WELL TESTS:
☒ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min.	Drawdown	Pumping Level	Time
15	50	415	3 hrs

Water Temp. ____ Bottom hole temp. ____
Water Quality test or comments: ____
Depth first Water Encountered 408

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temp.	Y	N
10"	0	18	Sandy brown clay		☒
8	18	36	Sandy brown clay		☒
8	36	42	Cemented gravel		☒
8	42	185	Brown clay		☒
8	185	243	Brown clay w/ sand strips		☒
8	243	278	Black cinders		☒
8	278	408	Black lava		☒
8	408	485	Brown clay w/ sand strips	☒	
8	485	504	Coarse white sand & some gravel	☒	

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MAR 08 2004
WATER RESOURCES
WESTERN REGION

Completed Depth: 504 (Measurable)
Date: Started 01/12/04 Completed 02/15/04

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 Skinner & Son Well Drilling Firm No. 635
Firm Official ____ Date 3-2-04
Supervisor or Operator ____ Date 3-2-04
(Sign once if Firm Official & Operator)

Date: 3/2/04 Time: 3:50 PM

167572 58 17

Form 238-7
3/95-C96

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. DRILLING PERMIT NO. _____
Other IDWR No. D0015631

2. OWNER:
Name Glen & Janet Jorgensen
Address 1386 N. Little Creek
City Meridian State ID Zip 83642

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

N
W E
X
S

Twp. 1 North ☐ or South X
Rge. 4 East X or West ☐
Sec. 2 1/4 (10 acres) SW 1/4 (40 acres) SW 1/4 (160 acres)
Gov't lot ____ County Elmore
Lat: : : Long: : :
Address of Well Site Base Line Rd.
City Mtn Home
(Give at least name of road + Distance to Road or Landmark)
Lt. ____ Blk. ____ Sub. Name ____

4. USE:
X Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other ____

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

6. DRILL METHOD
X Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other ____

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
Bentonite	0	18	800 lbs	Overbore

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6.625	+2	608	250	Steel	X	☐	X	☐
5.563	602	608	.188	Steel	☐	X	X	☐
5.563	618	633	188	Steel	☐	X	X	☐

Length of Headpipe 6' Length of Tailpipe 15'

9. PERFORATIONS/SCREENS
☐ Perforations Method ____
X Screens Screen Type Johnson

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
608	618	.010		5.563	SS	☐	X
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
388 ft. below ground Artesian Pressure ____ lb
Depth flow encountered ft. Describe access port or control

11. WELL TESTS:
☐ Pump ☐ Bailer X Air ☐ Flowing Artesian

Yield gal/min.	Drawdown	Pumping Level	Time
20			

Water Temp. ____ Bottom hole temp. ____
Water Quality test or comments: ____
Depth first Water Encountered 500

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temp.	Water Y	Water N
10	0	2	Top Soil		X
10	2	18	Sandy Clay		X
6	18	120	Tan Sand & Clay Seams		X
6	120	175	Brown Sand & Clay		X
6	175	200	Sand Stone		X
6	200	290	Tan Clay & Sand Seam		X
6	290	400	Tan Sand & Clay Seams		X
6	400	465	Tan Clay & Sand Seams		X
6	465	500	Tan Sand & Clay Seam		X
6	500	510	Coarse Sand – Rusty	X	
6	510	540	Tan Clay & Sand Seam		X
6	540	551	Brown Clay		X
6	551	620	Gray Sand	X	
6	620	633	Gray Sand & Hard Clay Seam		X

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DEC 27 2000
Department of Water Resources

RECEIVED
DEC 12 2000
WATER RESOURCES
WESTERN REGION

Completed Depth: 633 (Measurable)
Date: Started 11-09-00 Completed 11-17-00

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 Hiddleston & Son, Inc. Firm No. 35
Firm Official _____ Date 12/6/00
Supervisor or Operator _____ Date 12-7-00
(Sign once if Firm Official & Operator)

Form 238-7
6/89

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

WELL DRILLER'S REPORT

State 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.

58
18

1. WELL OWNER

Name Jerry Morton

Address Box 48 Mayfield Stage Boise

Owner's Permit No. 61-89-7-026 83707

2. NATURE OF WORK

☑ New well ☐ Deepened ☐ Replacement
☐ Well diameter increase
☐ Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)

3. PROPOSED USE

☑ Domestic ☐ Irrigation ☐ Test ☐ Municipal
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

4. METHOD DRILLED

☑ Rotary ☑ Air ☐ Hydraulic ☐ Reverse rotary
☐ Cable ☐ Dug ☐ Other _____

5. WELL CONSTRUCTION

Casing schedule: ☑ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	6 5/8 inches	+ 2 feet	584 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

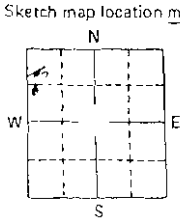
Was casing drive shoe used? ☑ Yes ☐ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation _____ inches by _____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

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 50 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 _____

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name _____
Lot No. ___ Block No. ___
County Elmore
SW ¼ NW ¼ Sec. 34, T. 1 N ☒ S ☐ R. 4 E ☐ W ☐

7. WATER LEVEL

Static water level 460 feet below land surface.
Flowing? ☐ Yes ☑ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature ___ °F Quality _____
Describe artesian or temperature zones below.

8. WELL TEST DATA

☐ Pump ☐ Bailer ☑ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
25		2

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
8"	0	10	Sand		✓
8"	10	28	clay w/some sand		✓
8"-6"	28	260	clay w/ sand		✓
6"	260	510	cemented sand & gravel w/clay		✓
6"	510	583	fine sand (gray) w/very little gravel	X	
6"	583	586	sand & gravel	X	

RECEIVED
NOV 15 1989
Department of Water Resources

RECEIVED
DEC 13 1989
Department of Water Resources
Western Regional Office

RECEIVED
JUN 05 1990

10. Work started 10-24-89 finished 11-11-89

11. DRILLERS CERTIFICATION OL

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

Firm Name Middleton & Son, Inc Firm No. 35
Address Mt. Home, Id Date 11-12-89
Signed by (Firm Official) Mark S Middleton
and
(Operator) Mark S Middleton

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

Form 238-7
4/92

POOR QUALITY

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

RECEIVED
AUG 0 3 1993
Department of Water Resources

USE TYPEWRITER OR BALLPOINT PEN

WELL DRILLER'S REPORT

State 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 RONALD & ROSEANNA CASTLE

Address HC 85, BX 237 GRANDVIEW, ID 83624

Drilling Permit No. 61-93-C-0031-000

Water Right Permit No. 61-07683 (upon approval)

2. NATURE OF WORK NEW WELL

☐ New well ☐ Deepened ☐ Replacement
☐ Well diameter increase ☐ Modification
☐ Abandoned (describe abandonment or modification procedures such as liners, screen, materials, plug depths, etc. in lithologic log, section 9.)

3. PROPOSED USE NON-DOMESTIC

☐ Domestic ☐ Irrigation ☐ Monitor
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other ______ (specify type)

4. METHOD DRILLED AIR&MUD ROTARY

☐ Rotary ☐ Air ☐ Auger ☐ Reverse rotary
☐ Cable ☐ Mud ☐ Other ______ (backhoe, hydraulic, etc.)

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other ______

Thickness	Diameter	From	To
.25 inches	8 inches	+ 1 feet	490 feet
inches	inches	feet	feet
inches	inches	feet	feet

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

Number	From	To
perforations	feet	feet
perforations	feet	feet
perforations	feet	feet

Well screen installed? ☐ Yes ☒ No
Manufacturer ______ Type ______
Top Packer or Headpipe ______
Bottom of Tailpipe ______

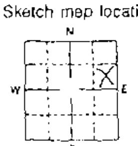
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Diameter ____ Slot size ____ Set from ____ feet to ____ feet
Gravel packed? ☐ Yes ☒ No ☐ Size of gravel ______
Placed from ______ feet to ______ feet

Surface seal depth 270 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 WELL CAP

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name ______

Lot No. ______ Block No. ______

County ELMORE

Address of Well Site HC 33 BAYFIELD STAGE BOX 100
(give at least name of road)

T. 4S N ☐ or S ☐

SE ¼ NE ¼ Sec. 3, R. 4E E ☐ or W ☐

7. WATER LEVEL

Static water level 338 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow ______
Artesian closed-in pressure ______ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature 65 °F. Quality Good
Describe artesian or temperature zones below.

8. WELL TEST DATA AIR

☐ Pump ☐ Bailer ☐ Air ☐ Other ______

Discharge G.P.M.	Pumping Level	Hours Pumped
30	505	1

081538

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
10"	0	5	CLEACHEY		X
	5	50	CLAY & DECOMPOSED GRANIT AND SAND mix		X
	50	65	SAND		X
	65	90	CLAY AND SAND MIXED		X
	90	170	BOULDERS & SAND		X
	170	223	CLAY, & SAND MIXED		X
	223	240	HARD GRANIT		X
	240	270	DECOMPOSED GRANIT		X
	270	275	BROWN CLAY		X
	275	330	DECOMPOSED GRANIT		X
	330	483	SAND		X
	483	497	CLAY		X
	497	518	LAVA ROCK	X	
			SWITCHED TO AIR ROTARY		
8"	518	505	BROCKEN LAVA ROCK, & SOME ROUND LAVA	X	

RECEIVED
AUG 0 2 1993
Department of Water Resources
Western Regional Office

FEB 09 1994

10. Work started 7/8/93 finished 7/28/93

11. DRILLER'S CERTIFICATION

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

Firm Name ELITE CORE DRILL Firm No. 311

Address 6025 W. CHINDEN Date 7/29/93

Signed by Drilling Supervisor [signature]

and

(Operator) ______
(If different than the Drilling Supervisor)

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

Form 238-7
3/95

C

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT 033341

Use Typewriter or Ballpoint Pen

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

54
20

1. DRILLING PERMIT NO. 61 - 96 - W - 10 - 100
Other IDWR No. 61-07683 Previous permit 61-93-C-0031-000

2. OWNER:
Name RONALD B & ROSANNA K CASTLE
Address HC 34 BOX 34-106
City BOISE State ID Zip 83706

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

N / W / E / S

Twp 1 S North ☐ or South ☐
Rge 4 E East ☐ or West ☐
Sec 3 10 acres SE 1/4 40 acres NE 1/4 160 acres 1/4
Gov't Lot ____ County ELMORE
Lat: : : Long: : :
Address of Well Site HC 34 MAYFIELD STAGE
BOX 100 City MAYFIELD
(Give at least name of road + Distance to Road or Landmark)

Lt ____ Blk. ____ Sub. Name ____

4. USE: NON-DOMESTIC MULTIPLY HOME DOMESTIC
☒ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation
☐ Thermal ☐ Injection ☐ Other ____

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

6. DRILL METHOD AIR ROTARY
☒ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other ____

7. SEALING PROCEDURES

SEAL/FILTER PACK			AMOUNT	METHOD
Material	From	To	Sacks or Pounds	
REFER TO FIRST WELL LOG				

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
REFER TO FIRST WELL LOG				0 TO 535	☐	☐	☐	☐
6"	+2	550	.250	STEEL	☒	☐	☒	☐
4.5"	498	678	40	PVC	☐	☒	☐	☒

Length of Headpipe ____ Length of Tailpipe ____

9. PERFORATIONS/SCREENS
☒ Perforations Method SKIL SAW
☐ Screens Screen Type ____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
378	678	1/8"	3 per ft	4.5"	PVC	☐	☒
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
433 ft. below ground Artesian pressure ____ lb.
Depth flow encountered ____ ft. Describe access port or control devices: WELL CAP

11. WELL TESTS:
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
40 GPM	N/A	616 FT	2 HRS

Water Temp. COLD Bottom hole temp. COLD
Water Quality test or comments: GOOD, CLEAR, NO SMELL
Depth first Water Encountered 629

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
		0	TO 535 REFER TO FIRST WELL LOG		X
6"	535	550	CAVING LAVA ROCK		X
	550	565	LAVA & GRANITE		X
	565	570	BROWN CINDERS		X
	570	584	LAVA		X
	584	588	BROWN CINDERS		X
	588	597	LAVA ROCK		X
	597	609	GREEN GRANITE		X
	609	618	WHITE & GREEN GRANITE W/ LAVA		X
	618	619	GRAY GRANITE		X
	619	629	WHITE GRANITE W/ LAVA	X	
	629	638	BROWN CINDERS	X	
	638	670	BRN CINDERS FINE & CRS SND	X	
	670	678	LAVA ROCK & SAND		

RECEIVED
MAY 30 1996
Department of Water Resources

RECEIVED
MAY 22 1996
WATER RESOURCES
WESTERN REGION

AUG 21 1996

Completed Depth 678 FEET (Measurable)
Date Started [redacted] 4/10/96 Completed [redacted] 4-25-96

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 PETE COPE DRILLING CO., INC. Firm No. 213
Firm Official [signature] Date 5/16/96
and
Supervisor or Operator ____ Date ____
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

CORRECTED 94796

Form 238-7
3/95-C96

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. DRILLING PERMIT NO. 61-98-W-0059-000
Other IDWR No. D0007514

2. OWNER:
Name Jim Hisel
Address Mayfield Stage, HC-34
City Boise State ID Zip 83706

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

N / W / E / S

Twp. 1 North ☐ or South ☒
Rge. 4 East ☒ or West ☐
Sec. 10 1/4 (10 acres) SE 1/4 (40 acres) SE 1/4 (160 acres)
Gov't lot ____ County Elmore
Lat: : - Long: :
Address of Well Site Mayfield Stage, HC-34
City Boise
(Give at least name of road + Distance to Road or Landmark)
Lt. ____ 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 Material	From	To	AMOUNT Sacks or Pounds	METHOD
Bentonite	2'	40+'	16	Overbore

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+1'	541	250	Steel	☒	☐	☒	☐
4.5"	532'	542'	Sc40	PVC	☐	☐	☐	☐
					☐	☐	☐	☐

Length of Headpipe ____ Length of Tailpipe ____

9. PERFORATIONS/SCREENS
☒ Perforations Method saw
☐ Screens Screen Type ____

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
539'	542'		80	4.5"	PVC	☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
350ft. below ground Artesian Pressure ____ lb
Depth flow encountered ____ ft. Describe access port or control devices: ____

11. WELL TESTS:
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min	Drawdown	Pumping Level	Time
10		400'	1hr
40		520'	1hr
50		540'	1hr

Water Temp. ____ Bottom hole temp. ____
Water Quality test or comments: ____
Depth first Water Encountered 358'

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temp.	Water Y	Water N
10"	0'	1'	brown top soil		☒
10"	1'	2'	lt brown hardpan		☒
10"	2'	8'	coarse brown sand		☒
10"	8'	18'	brown sandy clay		☒
10"	18'	20'	coarse brown sand		☒
8"	20'	205'	brown clay/coarse sand strips		☒
8"	205'	225'	browen brown & black granite		☒
8"	225'	307'	brown & white granite		☒
8"	307'	328'	cemented quartz sand		☒
8"	328'	358'	white & clear granite		☒
8"	358'	396'	brown clay w/sand strips	☒	
6"	396'	410'	coarse white & brown sand		☒
6"	410'	422'	brown clay		☒
6"	422'	432'	coarse white sand	☒	
6"	432'	453'	lt brown clay w/small cracks		☒
6"	453'	464'	hard brown clay		☒
6"	464'	467'	coarse brown sand	☒	
6"	467'	484'	lt brown sand w/sm. cracks		☒
6"	484'	501'	dirty brown sand w/clay strips		☒
6"	501'	532'	brown clay w/small cracks		☒
6"	532'	538'	grey clay w/grey sand		☒
6"	538'	542'	grey clay		☒
6"	542'	545'	blue/grey & white sand	☒	

RECEIVED
MAR 26 1999
WATER RESOURCES
WESTERN REGION

RECEIVED
MAR 30 1999
Department of Water Resources

Completed Depth: 542 (Measurable)
Date: Started 09-16-98 Completed 09-23-98

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 SOS Welldrilling & Pump Co Firm No. 212
Firm Official ____ Date 3-24-99
Supervisor or Operator ____ Date 3/24/99
(Sign once if Firm Official & Operator)

Date: 03/24/99 Time: 12:30 PM

MICROFILMED
JUN 08 1999

Form 238-7
1/78

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

WELL DRILLER'S REPORT

State 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.

58
22

1. WELL OWNER

Name ED DIENES

Address MT. HOME

Owner's Permit No. –

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement
☐ Abandoned (describe method of abandoning) _____

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Test ☐ Municipal
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

4. METHOD DRILLED

☒ Rotary ☒ Air ☐ Hydraulic ☐ Reverse rotary
☐ Cable ☐ Dug ☐ Other _____

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.250 inches	8" inches	+ 1 feet	340 feet
.250 inches	6" inches	1 feet	360 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

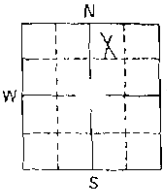
Was casing drive shoe used? ☒ Yes ☐ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch
Size of perforation _____ inches by _____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

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 40 Material used in seal: ☐ Cement grout ☒ Puddling clay ☒ Well cuttings
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 _____

6. LOCATION OF WELL 61

Sketch map location must agree with written location.



Subdivision Name –
Lot No. – Block No. –
County ELMORE
NW ¼ NE ¼ Sec. 11 T 1 N R. 4 E W.

7. WATER LEVEL

Static water level 440 feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow _____
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☒ Cap ☐ Plug
Temperature ___ °F. Quality _____

8. WELL TEST DATA

☐ Pump ☐ Bailer ☒ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped
27	–	3

9. LITHOLOGIC LOG

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
8	0	340	SAND & CLAY		✓
6	340	362	SAND & CLAY		✓
	362	543	LAVA	✓	

JAN 3 1980
Department of Water Resources
Western Regional Office

10. Work started 6-6-79 finished 6-27-79

11. DRILLERS CERTIFICATION

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

Firm Name H2O Well Drilling Firm No. 303
Address 1917 HIGHLANDER Date 9-1-79
Signed by (Firm Official) Bruce Y Connolly
and
(Operator) Bruce Y Connolly

MICROFILMED

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

Form 238-7
1/94

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Use Typewriter or Ball Point Pen

56757

1. DRILLING PERMIT NO. 61-94-W-0027-000
Other IDWR No.

2. OWNER:
Name LEONARD EISEMAN
Address 802 East Pennsylvania Ave.
City Boise State ID Zip 83706

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

N / W / E / S

Twp. 1 North ☐ or South ☒
Rge. 4 East ☒ or West ☐
Sec. 15, 10 acres 1/4 NE 40 acres 1/4 NE 160 acres 1/4
Gov't Lot ____ County Elmore

Address of Well Site Sinco Rd.
City Mountain Home
(Give at least name of road + Distance to Road or Landmark)

Lt. ____ Blk. ____ 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 Material	From	To	AMOUNT (Sacks or Pounds)	METHOD
Bentonite	0	250'	20	overrbore

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6.625	0	250'	.250	steel	☒	☐	☐	☐
6.625	2'	425'	.250	steel	☒	☐	☐	☐
5.57	436'	448'	.188	steel	☐	☒	☐	☐

Length of Headpipe 7' Length of Tailpipe 5'

9. PERFORATIONS/SCREENS
☐ Perforations Method
☒ Screens Screen Type V-wire

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
453'	448'	.040		5.57	S.S.	☐	☒
436'	431'	.030		5.57	S.S.	☐	☒
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
335 ft. below ground Artesian pressure ____ lb.
Depth flow encountered ____ ft. Describe access port or control devices:

11. WELL TESTS:
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
35			5hr.

Water Temp. ____ Bottom hole temp. ____
Water Quality test or comments:

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water Y	Water N
8"	0	2'	Topsoil		
"	2'	11'	Brown Clay		
"	11'	18'	Sand & Gravel		
"	18'	21'	Brown Clay		
"	21'	43'	Sand & Gravel		
"	43'	65'	Clay w/Sand		
"	65'	80'	Coarse Sand		
"	80'	84'	Sandy clay		
"	84'	108'	Sand w/gravel		
"	108'	140'	Sandy clay		
"	140'	150'	Coarse sand		
"	150'	155'	Sand w/gravel		
"	155'	161'	Sandy clay		
"	161'	190'	Coarse sand w/clay		
"	190'	203'	Cemented sand & gravel		
"	203'	228'	Clay w/sand & gravel		
"	228'	240'	Coarse Sand		
"	240'	330'	Sandstone		
"	330'	340'	Coarse sand		
"	340'	356'	Brown clay		
"	356'	365'	Coarse sand		
"	365'	375'	Brown clay		
"	375'	386'	Coarse sand		
"	386'	409'	Clay w/sand seams		
"	409'	415'	Brown clay		
"	415'	428'	Coarse sand	X	
"	428'	430'	Brown clay		
6"	430'	439'	Coarse sand	X	
"	439'	441'	Brown clay		
"	441'	458'	Sand & Gravel	X	
"	458'	467'	Brown clay		

RECEIVED JUN 20 1994 WATER RESOURCES WESTERN REGION
RECEIVED OCT 17 1994 Department of Water Resources
MAY 08 1995

Completed Depth 458' (Measurable)
Date: Started June 11, 1994 Completed June 26, '94

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 Hiddleston & Son, Inc. Firm No. 35
Firm Official Mark Hiddleston Date 7/19/94
and
Supervisor or Operator ____ Date ____
(Sign once if Firm Official & Operator)

FORWARD WHITE COPY TO WATER RESOURCES

USE TYPEWRITER OR BALL POINT PEN

Department of Water Administration

WELL DRILLER'S REPORT 1150

State law requires that this report be filed with the State Reclamation Engineer within 30 days after completion or abandonment of the well.

24

1. WELL OWNER

Name El Paso Natural Gas

Address

Owner's Permit No.

2. NATURE OF WORK Anode Bed

☒ New well ☐ Deepened ☐ Replacement

☐ Abandoned (describe method of abandoning)

Not a Water Well

3. PROPOSED USE

☐ Domestic ☐ Irrigation ☐ Test Not a Water Well

☐ Municipal ☐ Industrial ☐ Stock

4. METHOD DRILLED

☒ Cable ☐ Rotary ☐ Dug ☐ Other

5. WELL CONSTRUCTION

Diameter of hole 12 inches Total depth 576 feet

Casing schedule: ☒ Steel ☐ Concrete

Thickness	Diameter	From	To
1/4 inches	10 3/4 inches	+1 feet	508 feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet
inches	inches	feet	feet

Was a packer or seal used? ☐ Yes ☒ No

Perforated? ☐ Yes ☒ No

How perforated? ☐ Factory ☐ Knife ☐ Torch

Size of perforation inches by inches

Number	From	To
perforations	feet	feet
perforations	feet	feet
perforations	feet	feet

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

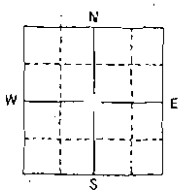
Placed from feet to feet

Surface seal? ☒ Yes ☐ No To what depth 18 feet

Material used in seal ☐ Cement grout ☒ Puddling clay

6. LOCATION OF WELL

Sketch map location must agree with written location.



County Ada

NE ¼ NE ¼ Sec. 17 T. 1 ☐S R. 4 ☒E

7. WATER LEVEL

Static water level 450 feet below land surface

Flowing? ☐ Yes ☐ No G.P.M. flow

Temperature ° F. Quality

Artesian closed-in pressure p.s.i.

Controlled by ☐ Valve ☐ Cap ☐ Plug

8. WELL TEST DATA

☐ Pump ☐ Bailer ☐ Other

Discharge G.P.M.	Draw Down	Hours Pumped
None		
Was Not Tested		

9. LITHOLOGIC LOG 028863

Hole Diam.	Depth From	Depth To	Material	Water Yes	Water No
12	0	8	Surface		
12	8	114	Clay Fine gravel bed		✓
12	114	118	Gravel		✓
12	118	177	Black Basalt		✓
12	177	187	Red Basalt		✓
12	187		Caving		✓
12	187	197	Red Basalt		✓
12	197	223	Black Basalt		✓
12	223	237	Red BASALT		✓
12	237	277	Fine gravel Sand		✓
			Clay Lenses & Drill		✓
12	277	284	Gravel & Sand		✓
			Caving		✓
			Run Casing		✓
10	284	288	gravel & Sand		✓
10	288	360	Lower Clay & White Sand		✓
	360	450	Sand & Clay		✓
		450	Water Flowing	✓	
	450	550	Clay with Layers		
			Sand Could Be		
			Water at 550 ?		
			Caving 550-578		
	550	578	Clay		
			Clay Was Sticky		
			Sand White Grain		
			Glen Ewing Formation		
			Water		
			Not a		
			Well		
			Could Not drive Pipe further		

10. Work started 14 Feb 73 finished 30 April 1973

11. DRILLER'S CERTIFICATION

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

USGS

Eugene W Walker

Driller's or Firm's Name — Number

624 Locust Twin Falls

Address

Eugene W Walker 14 June 1973

Signed By — Date

USE ADDITIONAL SHEETS IF NECESSARY FORWARD THE WHITE, BLUE, AND PINK COPIES TO THE DEPARTMENT

778010

Form 238-7
3/95-C96

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. DRILLING PERMIT NO. - - - -
Other IDWR No. D0025092

2. OWNER:
Name Mike Eisman
Address 2988 S. Owyhee
City Boise State ID Zip 83705

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

N
W E
S

Twp. 1 North ☐ or South X
Rge. 4 East X or West ☐
Sec. 22 1/4 (10 acres) NE 1/4 (40 acres) SE 1/4 (160 acres)
Gov't lot County Elmore
Lat: Long:
Address of Well Site 1639 S. Simco Rd.
City Boise
(Give at least name of road + Distance to Road or Landmark)
Lt. Blk. Sub. Name

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

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

6. DRILL METHOD
X Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other

7. SEALING PROCEDURES

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
Bentonite	0	18	500 lbs	Overbore

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

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6.625	+1	625	.250	Steel	X	☐	X	
8"	+1	175	.322	Steel	X	☐	X	☐
					☐	☐	☐	☐

Length of Headpipe Length of Tailpipe

9. PERFORATIONS/SCREENS
☐ Perforations Method
X Screens Screen Type Johnson

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
625	635	.025		5"	SS	☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
464 ft. below ground Artesian Pressure lb
Depth flow encountered ft. Describe access port or control devices:

11. WELL TESTS:
☐ Pump ☐ Bailer X Air ☐ Flowing Artesian

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

Water Temp. 63 degrees Bottom hole temp.
Water Quality test or comments:
Depth first Water Encountered

12. LITHOLOGIC LOG: (Describe repair or abandonment)

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temp.	Y	N
12"	0	2	Top Soil		X
12"	2'	7'	Cleache		X
12"	7'	18'	Sand & Brown Clay		X
8"	18'	70'	Tan Sand		X
8"	70'	80'	Brown Clay		X
8"	80'	130'	Coarse Sand		X
8"	130'	134'	Brown Clay		X
8"	134'	150'	Gray Lava		X
8"	150'	155'	Brown Coarse Sand		X
8"	155'	174'	Brown Clay		X
8"	174'	230'	Gray Lava		X
6"	230'	240'	Redish Brown Cinders		X
6"	240'	350'	Coarse Tan Sand		X
6"	350	351	Tan Clay		X
6"	351	396	Decomposed Granite		X
6"	396	760	Brown Sandstone		X
6"	460'	570'	Brown Clay		X
6"	570'	600'	Brown Clay w/ Sand Seams	X	
6"	600'	640'	Coarse Tan Sand	X	

RECEIVED
JUL 24 2002
WATER RESOURCES
WESTERN REGION

Completed Depth: 640' (Measurable)
Date: Started 6-19-02 Completed 6-20-02

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 Hiddleston & Son, Inc. Firm No. 35
Firm Official Date 7-16-02
Supervisor or Operator Matt Hiddleston Date 7/16/02
(Sign once if Firm Official & Operator)

8L1262 - 771970

Inspect.
Twp ____ Rge ____ Sec ____
¼ ¼ ¼
Lat: Long:

Form 238-7
3/95-C96

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. DRILLING PERMIT NO.
Other IDWR No. D0019345 CPS#1655
2. OWNER:
Name Williams Pipeline West
Address 5821 Industrial Way
City American Falls State ID Zip 83202
3. LOCATION OF WELL by legal description:
Sketch map location *must* agree with written location

N
W X E
S

Twp. 1 North or South X
Rge. 4 East X or West
Sec. 23 1/4 SW/4 NW 1/4
(10 acres) (40 acres) (160 acres)

Gov't lot County Elmore
Lat: Long:
Address of Well Site 3 miles South on Simco Rd.
City Mtn Home
(Give at least name of road + Distance to Road or Landmark)
Lt. Blk. Sub. Name

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

SEAL/FILTER PACK Material	From	To	AMOUNT Sacks or Pounds	METHOD
Bentonite	0	18	1200 lbs	Overbore

Was drive shoe used? X Y ☐ N Shoe Depth(s)
Was drive shoe seal tested? ☐ Y X N How?
8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
8.625	+2	55	250	PVC	X	☐	X	☐
8.625	-50	500	362	Steel	X	☐	X	☐
					☐	☐	☐	☐

Length of Headpipe Length of Tailpipe
9. PERFORATIONS/SCREENS
☐ Perforations Method
☐ Screens Screen Type

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

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
Dry ft. below ground Artesian Pressure lb
Depth flow encountered ft. Describe access port or control

11. WELL TESTS:
☐ Pump ☐ Bailer ☐ Air ☐ Flowing Artesian

Yield gal/min.	Drawdown	Pumping Level	Time
N/A			

Water Temp. Bottom hole temp
Water Quality test or comments:
Depth first Water Encountered
12. LITHOLOGIC LOG: (Describe repair or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temp.	Y	N
12	0	2	Top Soil		X
12-10	2	152	Sand & Gravel		X
10	152	175	Gray Lava		X
10	175	195	Sand & Red Cinder		X
10	195	228	Gray Lava		X
10	228	300	Tan Sand		X
10	300	321	Tan Clay		X
10	321	340	Tan Sand		X
10	340	345	Tan Clay		X
10	345	400	Tan Sand & Gravel		X
10	400	422	Tan Clay		X
10	422	492	Tan Sand		X
10	492	506	Tan Sand		X

RECEIVED
NOV 26 2001
WATER RESOURCES
WESTERN REGION

Completed Depth: 500' (Measurable)
Date: Started 10-26-01 Completed 10-30-01

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 Hiddlesten & Son, Inc. Firm No. 35
Firm Official Date 11-19-01
Supervisor or Operator Date 11/8/01
(Sign once if Firm Official & Operator)

63
26

Form 238-7
3-95-C96

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT 65952

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

1. DRILLING PERMIT NO. 61-97-W-0033-000
Other IDWR No.
2. OWNER:
Name Rick Millington
Address 8011 Ustick Rd.
City Boise State ID Zip 83704
3. LOCATION OF WELL by legal description:
Sketch map location must agree with written location

N / W / E / S

Twp. 1 North ☐ or South ☒
Rge. 5 East ☒ or West ☐
Sec. 6 1/4 (10 acres) NE 1/4 (40 acres) SW 1/4 (160 acres)
Gov't lot ____ County Elmore
Lat: : : Long: : :
Address of Well Site Baseline Rd
City Mayfield
(Give at least name of road + Distance to Road or Landmark)
Lt. ____ 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	Sacks or Pounds	
bentonite	2	18	6	overbore

Was drive shoe used? ☒ Y ☐ N Shoe Depth(s)
Was drive shoe seal tested? ☐ Y ☒ N How?
8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+1	575	.250	steel	☒	☐	☒	☐
8"	0	80	.250	steel	☒	☐	☒	☐
					☐	☐	☐	☐

Leagth of Headpipe ____ Length of Tailpipe ____
9. PERFORATIONS/SCREENS
☐ Perforations Method
☐ Screens Screen Type

From	To	Slot Size	Number	Dimmeter	Material	Casing	Liner
						☐	☐
						☐	☐
						☐	☐

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
387 ft below ground Artesian Pressure ____ lb
Depth flow encountered ____ ft. Describe access port or control devices:

11. WELL TESTS:
☐ Pump ☐ Bailer ☒ Air ☐ Flowing Artesian

Yield gal/min.	Drawdown	Pumping Level	Time
30		560	2 hrs.

Water Temp. ____ Bottom hole temp. ____
Water Quality test or comments:
Depth first Water Encountered 455
12. LITHOLOGIC LOG: (Describe repair or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temp.	Water Y	Water N
10"	0	1	brown top soil		☒
10"	1	3	brown clay		☒
10"	3	5	brown hardpan clay		☒
10"	5	20	brown sand		☒
8"	20	24	brown clay		☒
8"	24	60	brown clay & strips brown sand		☒
8"	60	114	white & brown soft granite		☒
8"	114	117	black granite		☒
8"	117	160	white & brown granite		☒
8"	160	175	brown granite chips		☒
8"	175	225	white & brown granite		☒
8"	225	338	brown clay		☒
8"	338	365	clear & white gmt. w/strps brn clay		☒
8"	365	402	brown fine sand		☒
8"	402	440	brn snad w/strips of clay		☒
6"	440	455	brown sandy clay		☒
6"	455	473	brown sand w/small gravel	☒	
6"	473	495	brown clay		☒
6"	495	528	brown sand & small gravel	☒	
6"	528	533	brown sandy clay		☒
6"	533	561	brown & white sand		☒
6"	561	566	light brown clay		☒
6"	566		gray sand	☒	

RECEIVED
SEP 11 1997
Department of Water Resources

RECEIVED
SEP - 4 1997
WATER RESOURCES
WESTERN REGION

Completed Depth: 387 (Measurable)
Date: Started 07-11-97 Completed 07-18-97

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 SOS Welldrilling & Pump Co Firm No. 212
Firm Official [signature] Date 9-2-97
Supervisor or Operator [signature] Date 9-2-97
(Sign once if Firm Official & Operator)

Date: 08/22/97 Time: 4:11 PM

MICROFILMED
JAN 2 9 1998

Form 238-7
6/89

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES

USE TYPEWRITER OR BALLPOINT PEN

WELL DRILLER'S REPORT

State 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.

28

1. WELL OWNER

Name FRED T. & FRANCES E. SMITH
Address HC. 34 SIMCO RD BOISE, ID 83706
Owner's Permit No. 61-90-W-002

2. NATURE OF WORK

☒ New well ☐ Deepened ☐ Replacement
☐ Well diameter increase
☐ Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)

3. PROPOSED USE

☒ Domestic ☐ Irrigation ☐ Test ☐ Municipal
☐ Industrial ☐ Stock ☐ Waste Disposal or Injection
☐ Other _____ (specify type)

4. METHOD DRILLED

☐ Rotary ☐ Air ☐ Hydraulic ☐ Reverse rotary
☒ Cable ☐ Dug ☐ Other _____

5. WELL CONSTRUCTION

Casing schedule: ☒ Steel ☐ Concrete ☐ Other _____

Thickness	Diameter	From	To
.125 inches	6 inches	+ 2 feet	431 feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet
_____ inches	_____ inches	_____ feet	_____ feet

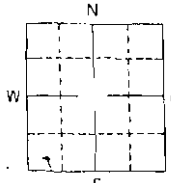
Was casing drive shoe used? ☒ Yes ☐ No
Was a packer or seal used? ☐ Yes ☒ No
Perforated? ☐ Yes ☒ No
How perforated? ☐ Factory ☐ Knife ☐ Torch ☐ Gun
Size of perforation _____ inches by _____ inches

Number	From	To
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet
_____ perforations	_____ feet	_____ feet

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 10' 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 _____

6. LOCATION OF WELL

Sketch map location must agree with written location.



Subdivision Name _____
Lot No. _____ Block No. _____
County Elmore
SW ¼ SW ¼ Sec. 18 T. 1 ☐ N ☒ S R. 5 ☐ W

MICROFILMED MAY 05 1992

7. WATER LEVEL

Static water level 334' feet below land surface.
Flowing? ☐ Yes ☒ No G.P.M. flow 5
Artesian closed-in pressure _____ p.s.i.
Controlled by: ☐ Valve ☐ Cap ☐ Plug
Temperature 58 °F. Quality GOOD
Describe artesian or temperature zones below

8. WELL TEST DATA

☐ Pump ☒ Bailer ☐ Air ☐ Other _____

Discharge G.P.M.	Pumping Level	Hours Pumped

9. LITHOLOGIC LOG

Bore Diam.	Depth From	Depth To	Material	Water Yes	Water No
	0	2	SURFACE SOIL		
	2	8	DECOMPOSED GRANITE		
	8	190	D.G. / CLAY		
	190	193	BOULDER SAND STONE		
	193	300	D. G. / clay		
	300	307	D. G.		
	307	334	D. G. / CLAY		
	334	340	SAND / W WATER	✓	
	340	376	SAND / clay		
	376	380	SAND	✓	
	380	396	SAND / clay		
	398	400	SAND / WATER	✓	
	400	427	SAND / clay		
	427	431	SAND / WATER	✓	
	396	398	CLAY		

RECEIVED APR 25 1990 Department of Water Resources
RECEIVED APR 19 1990 Department of Water Resources
RECEIVED APR 23 1990 Department of Water Resources Western Regional Office

10.

Work started 6 FEB 90 finished 26 MAR 90

11. DRILLERS CERTIFICATION

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

Firm Name G.G. Gurley Well Drilling Firm No. 476
Address 12410 AIR BASE RD MTN HOME, ID Date 19 APR 90
Signed by (Firm Official) George A. Gurley
and
(Operator) _____

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

Appendix B

Excerpt from Harrington and Bendixsen (1999)

OPEN-FILE REPORT

GROUND WATER MANAGEMENT AREAS IN IDAHO:
OVERVIEW AS OF 1998

By
Helen Harrington
Shane Bendixsen

Idaho Department of Water Resources
Boise, Idaho

December 1999

INTRODUCTION

Introduction

The purpose of this report is to provide a summary of the current areas designated as Ground Water Management Areas (GWMA) and Critical Ground Water Management areas (CGWA). At present, there are 17 areas: eight CGWA and nine GWMA (Table 1 and Figure 2). This report is intended to provide a compilation of the current status of administrative actions and ground water level trends. Additionally, each section summarizes the general hydrogeology, current ground water level monitoring frequency, and a list of the primary reports and documents related to the area whether or not they are cited in the text.

This report is the first phase of a project to review, update and analyze data and develop recommendations for administration options for each management area. As you will note in the summaries, each area has unique characteristics, history, and impacts. Because of this uniqueness, data collection and management of each area must consider the localized aspects and develop individualized plans tailored to address the problems and issues of the area. These summaries will provide a foundation from which to build these plans.

The next phase will evaluate the technical aspects and activities within each area to determine the needs for additional data and follow up with updating or acquiring data. Water rights, land use changes, and other impacts will be analyzed. Water budgets and conceptual models will be developed for the most critical areas. The final phase of the project will develop recommendations for administrative and technical actions to alleviate ground water declines.

Statutory Authority

The authority for designating areas for regulating ground water withdrawals from aquifers subject to insufficient supplies was first granted in 1953 through amendments to Idaho's Ground Water Act. However, it was not until 1962 that the first CGWAs were designated in the Oakley Fan area. Amendments to the Act in 1982 granted authority for designating ground water management areas. The Grandview-Bruneau area, designated in 1982, was the first GWMA.

The Director of Idaho Department of Water Resources (IDWR) is granted the authority to designate "critical ground water areas" and "ground water management areas" under Idaho Code Title 42, Chapter 233a and 233b, respectively. These sections codify the definitions and bases for designating these special management areas.

A CGMA is all or part of a ground water basin that does not have sufficient ground water to provide a reasonably safe supply for irrigation or other uses at the current or projected rates of withdrawal. The Director of IDWR can deny an application for a proposed use if the point of diversion lies within the designated area and may require water users to report diversions or other information.

A GWMA is all or part of a ground water basin that may be approaching the conditions of a CGMA. Applications for new water appropriations may be approved only after it is

determined that sufficient supply is available and other prior water rights will not be injured. The director may require reporting of water use by water users within the area.

The Order designating the Southeast Boise GWMA in 1994 was the first time an advisory committee was required as a part of the initial formation of a GWMA. Since that time, orders requiring the formation of advisory committees have been issued subsequent to the initial formation of the management areas. These committees are to assist in the management of ground water resources through development of management plans, establishing processes for dispute resolution and acting as a forum for discussion and communication.

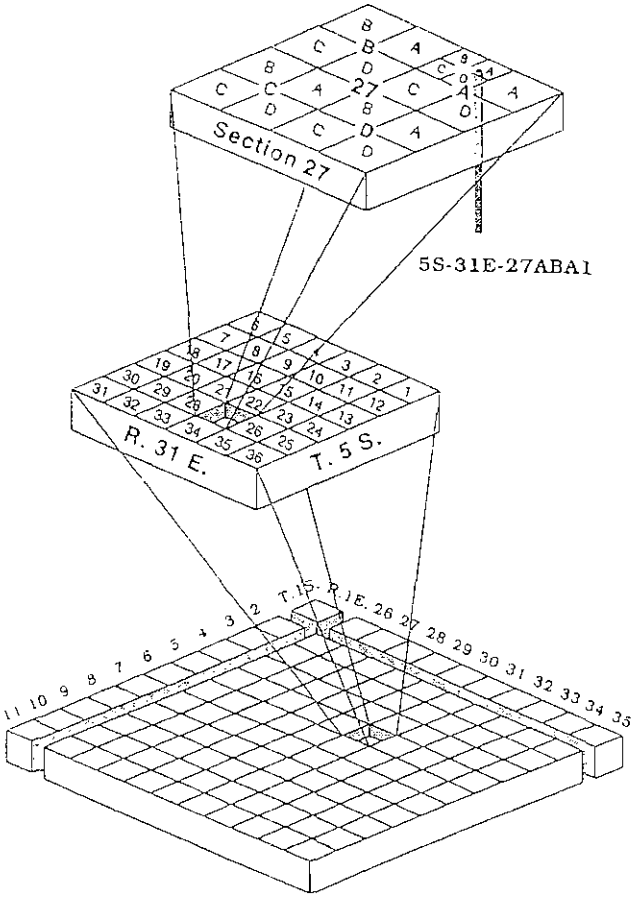
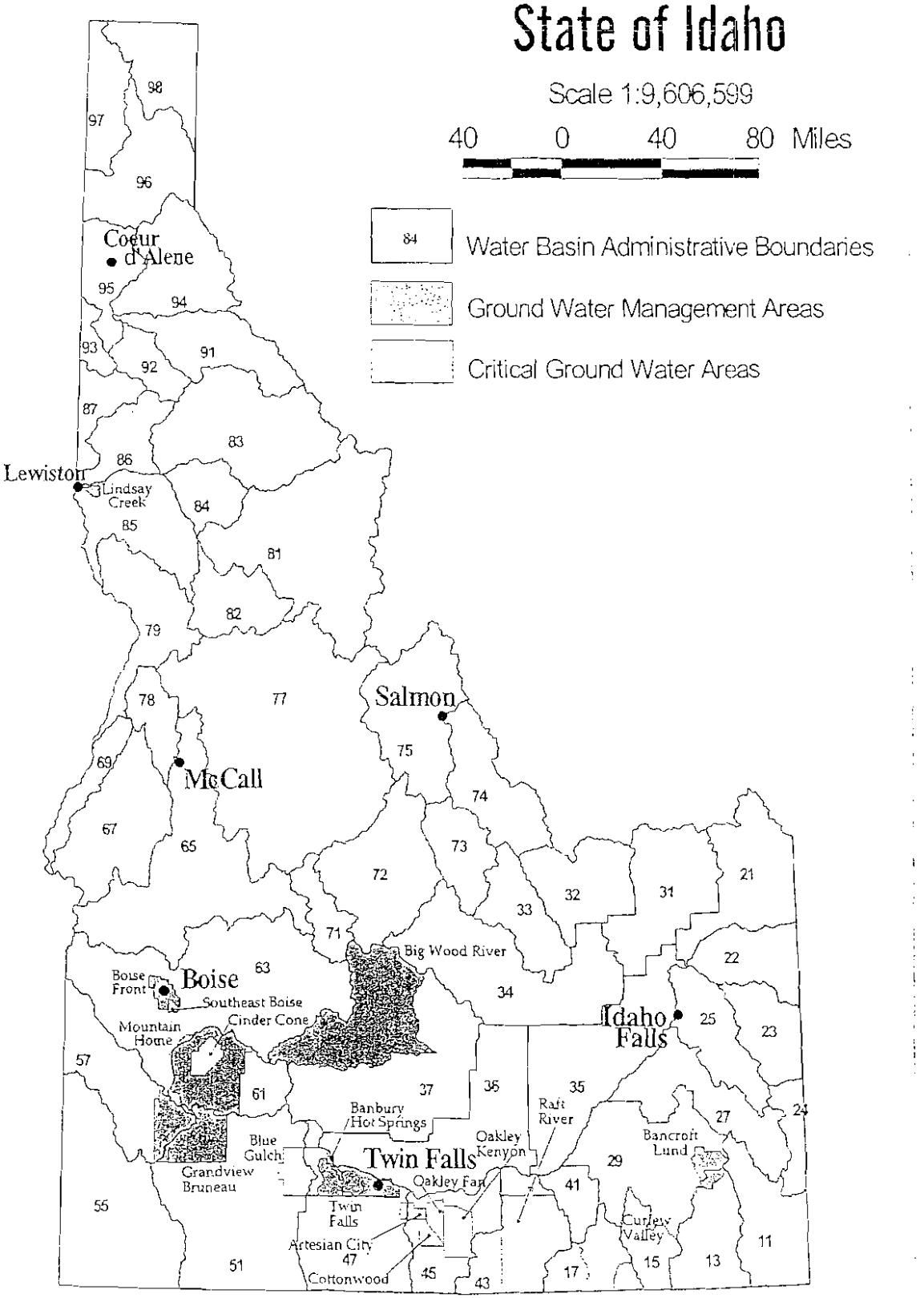


Figure 1: Well Numbering System

IDWR uses this well numbering system to indicate the location of wells within the Public Land Survey, as shown in the example above. The first two segments designate the township and range, the third section indicates the section. Quarter sections are designated by letters A,B,C, and D in counterclockwise order from the northeast quarter. Forty-acre and 10-acre tracts within each quarter section are lettered in the same manner. Well 5S-31E-27ABA1, for example, is in the NE1/4NW1/4NE1/4, section 27, Township 5 South, Range 31 East.

Management Area	Date Designated
CRITICAL GROUND WATER AREAS (CGWA)	
Blue Gulch	12/9/1970
Cinder Cone Butte	5/7/1981
Curlew Valley	3/15/1976
Oakley Fan	
Artesian City	1/16/1962
Cottonwood	1/16/1962
Oakley-Kenyon	1/16/1962
West Oakley Fan	1/19/1982
Raft River	7/23/1963
GROUND WATER MANAGEMENT AREAS (GWMA)	
Banbury Hot Springs	4/12/1983
Bancroft Lund	10/21/1991
Big Wood River	6/28/1991
Boise Front	6/15/1987
Grandview-Bruneau	10/29/1982
Lindsay Creek	3/5/1992
Mountain Home	11/9/1982
Southeast Boise	10/14/1994
Twin Falls	7/24/1987

Table 1: List of Critical and Ground Water Management Areas



stategwm.apr - SBT - 10/99

Figure 2

Mountain Home Ground Water Management Area and Cinder Cone Butte Critical Ground Water Area

Overview of Current Management Status

The Cinder Cone Butte area, located in Elmore County, was declared a CGWA on May 7, 1981 (Figure 20). Following the declaration, a study was conducted to evaluate the entire Mountain Home area. As a result of that study by Norton and others (1982), the Mountain Home GWMA, which surrounds the Cinder Cone Butte area, was designated on November 9, 1982. The Mountain Home GWMA is located in Elmore and western Ada counties. The areas were designated due to declining ground water levels.

New ground water appropriations are not allowed in the Cinder Cone Butte CGWA. The order declaring the Mountain Home area a GWMA states that the area is approaching critical, "although there appear to be subareas where new appropriations could be authorized without injuring existing water rights."

A management policy was not included in the designation of either area. On June 6, 1996, the Director issued an order establishing an advisory committee. The Committee has the following objectives:

a. Collect and review data;
b. Mediate water related issues involving water users;
c. Develop draft ground water management plan;
d. Develop and propose implementation of a ground water recharge program;
e. Serve as a forum for communication of water related issues.

The composition of the Committee is specified in the order. The Committee does not have any formal enforcement authority.

Hydrogeology

The Mountain Home area contains a regional aquifer system that flows west-southwest. Depth to water in the regional system is usually in excess of 300 feet. Two perched aquifer systems are found in the area: one system in the area in and around the City of Mountain Home, and another system northwest of Mountain Home in Township 2 South, Range 5 East (Young, 1977). Water in the perched areas range from a few feet to several hundred. Ground water flow direction is south to southwest.

Major geologic units in the area are, from youngest to oldest: 1) alluvium and terrace gravels; 2) Snake River Group; 3) Idaho Group; 4) Idavada Volcanics, and 5) Idaho Batholith. The regional aquifer is found primarily in the Bruneau Formation, a unit in the Idaho Group that consists of fluvial-lake deposits, layers of ash, and basaltic lava flows (Ralston and Chapman, 1968). Two northwest trending faults pass through the northeast part of the area (Bond, 1978). The perched aquifers occur primarily in the alluvium and terraces.

Recharge to the perched system in the Mountain Home area is from Rattlesnake and Canyon creeks, local irrigation, and leakage from Mountain Home Reservoir. Recharge to the perched system northwest of Mountain Home is from percolation from intermittent streams. Recharge to the regional system occurs mainly from downward flow from the perched system, precipitation from the uplands and underflow from the north. It has been suggested that the regional system is quite old based on isotope composition (Young, 1977).

Current Conditions

Ground water levels in the regional system in the southern and eastern portions of the area near the Mountain Home Air Force Base show declines of more than 50 feet since 1968 (Figures 21 and 22). Steep declines occurred during the late 1960s and early1970s. Water levels appeared to stabilize in several wells during the mid 1970s and early 1980s. However, declines began again in the mid to late 1980s and have continued to present. In the northcentral part of the Cinder Cone Butte CGWA, water levels have declined as much as 50 feet since 1976. In the north and northwest parts of the area, ground water levels appear to be stable and have increased by as much as 3 to 4 feet since 1966.

The perched system in and surrounding Mountain Home fluctuates in response to seasonal and climatic cycles. Fluctuations can be as much as 50 feet. Overall water levels appear to be relatively stable based on data collected since 1975.

The IDWR monitors 15 wells on a monthly basis. Prior to June 1998, these wells were monitored on a semi-annual basis. USGS monitors 9 wells, two semi-annually and seven bi-monthly. In November 1997, IDWR contracted for seven additional wells to be monitored on a monthly basis by a private consultant.

REFERENCES

Bendixsen, Shane, 1994, Summary of Hydrologic Conditions in the Mountain Home and Cinder Cone Butte Areas, IDWR Open File Report, 30 pages.

Castelin, Paul M., 1988, Review of Factors Affecting Ground-Water Levels in the Mountain Home Plateau Area Elmore and Ada Counties, Idaho, IDWR Open File Report, 5 pages.

Norton, Marc A., Ondrechen, William and Baggs, James L., 1982, Groundwater Water Investigation of the Mountain Home Plateau, Idaho, IDWR Open File Report, 62 pages.

Ralston, Dale R., and Chapman, Sherl L., 1968, Ground-Water Resource of the Mountain Home Area, Elmore County, Idaho, IDWR Water Information Bulletin No. 4, 63 pages.

Ralston, Dale R., and Chapman, Sherl L.,1970, Ground-Water Resource of Southern Ada and Western Elmore Counties, Idaho, IDWR Water Information Bulletin No. 15, 52 pages.

Young, H. W., 1977, Reconnaissance of Ground-Water Resources in the Mountain Home Plateau Area, Southwest Idaho, USGS Water-Resources Investigations 77-108, 40 pages.

Mountain Home

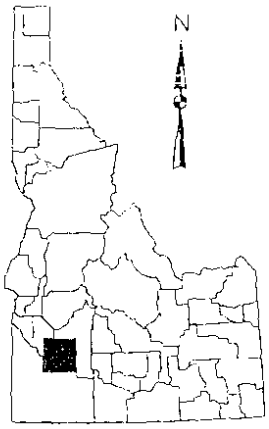
Ground Water Management Area

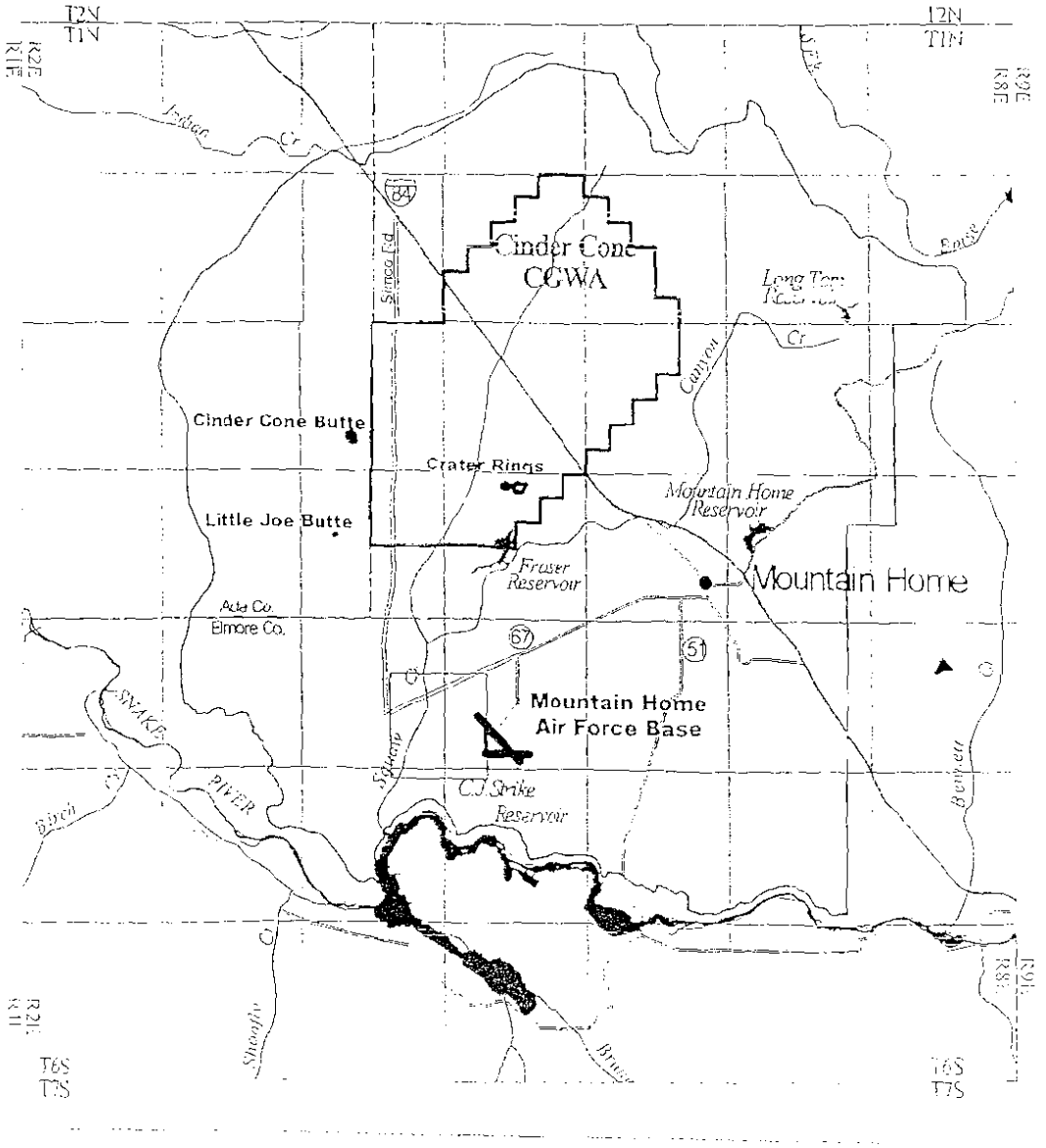
and Cinder Cone Butte

Critical Ground Water Area

Scale 1:493,190

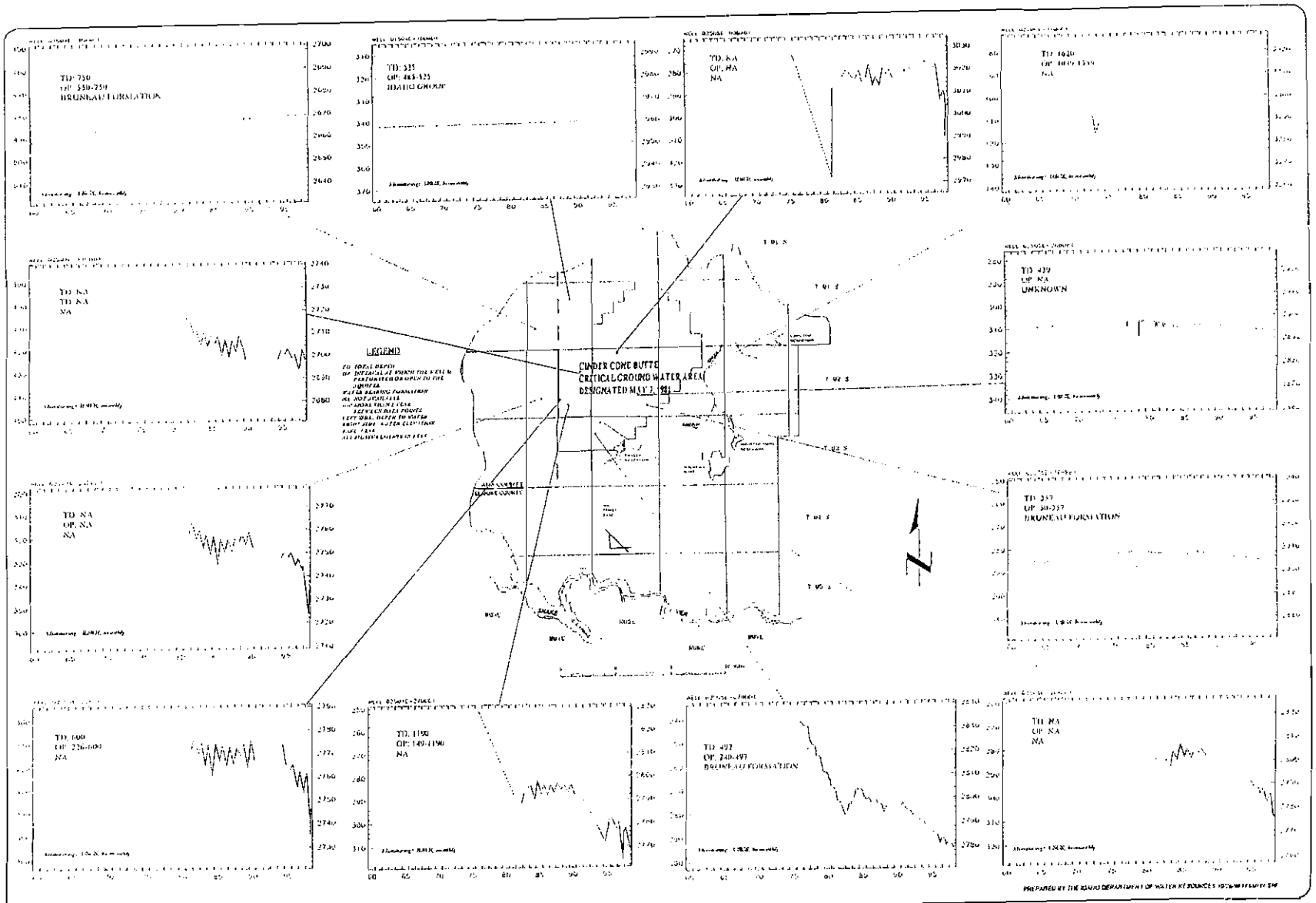
4 0 4 Miles





Mountainhm.apr - SST: 1/3/9

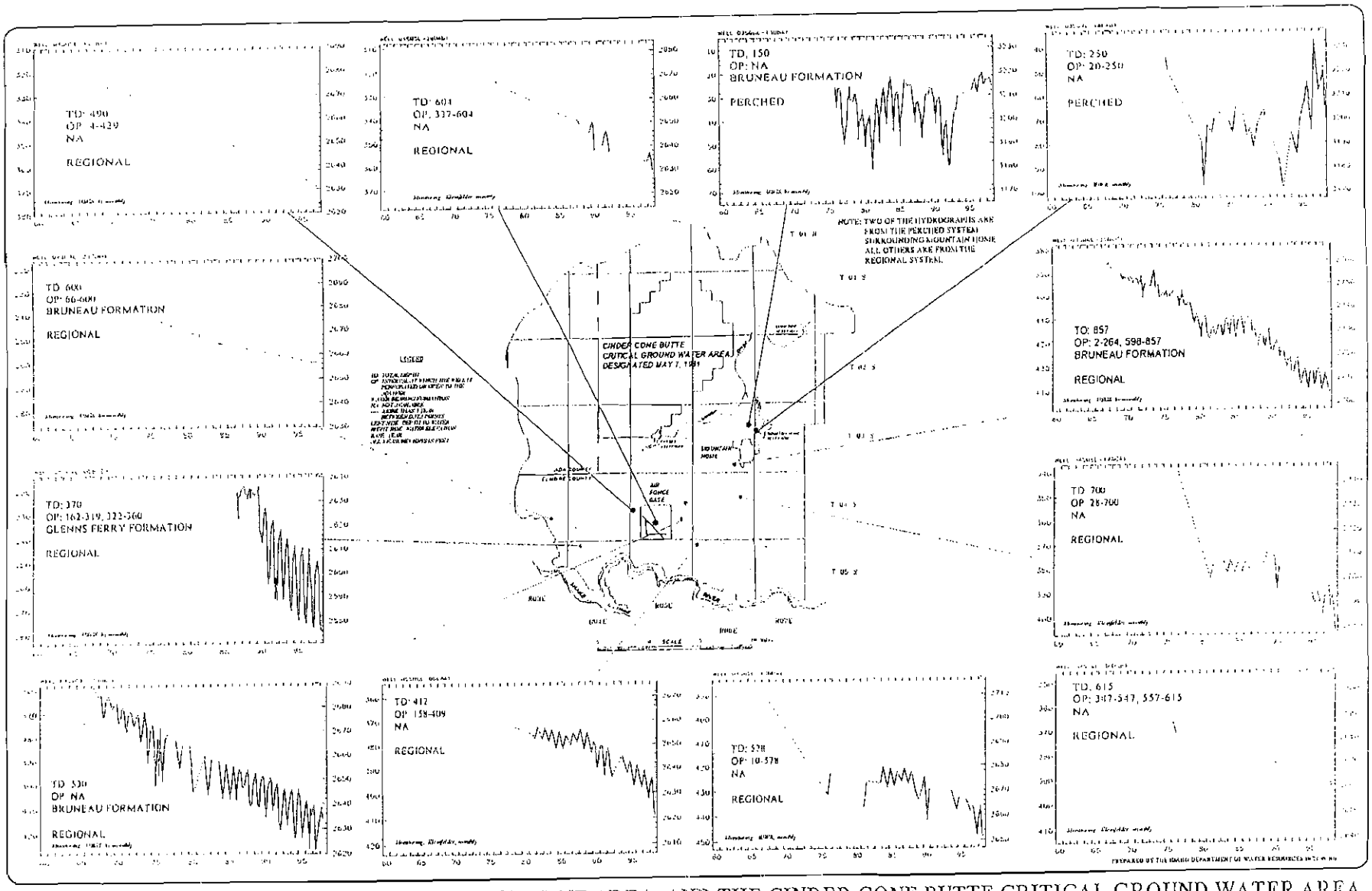
Figure 20



MOUNTAIN HOME GROUND WATER MANAGEMENT AREA AND THE CINDER CONE BUTTE CRITICAL GROUND WATER AREA

Ground Water Hydrographs - North Area

FIGURE 21



MOUNTAIN HOME GROUND WATER MANAGEMENT AREA AND THE CINDER CONE BUTTE CRITICAL GROUND WATER AREA

Ground Water Hydrographs - South Area

FIGURE 22

Appendix C

Well hydrographs

EXPLANATION

IDWR Monitoring Wells

Elk Creek Village

Mountain Home Ground Water Management Area

Cinder Cone Butte Critical Ground Water Area

01N04E-28CAC1

01S04E-03ADB1

01S04E-10DAD1

01S04E-30AAC1

01S05E-35BDB1

02S05E-03BAB1

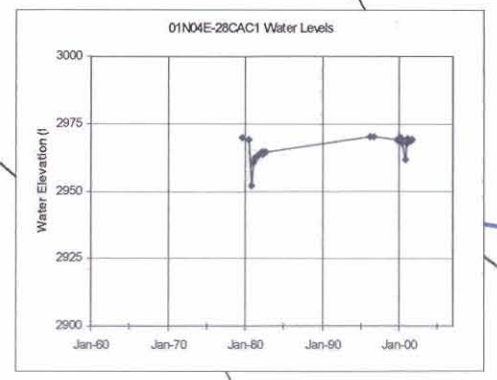
02S04E-09DDD2

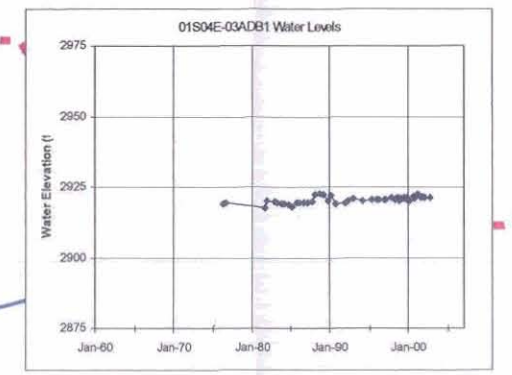
02S04E-14CDD1

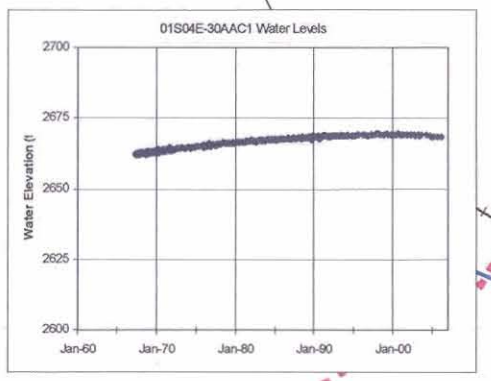
02S04E-20DDD1

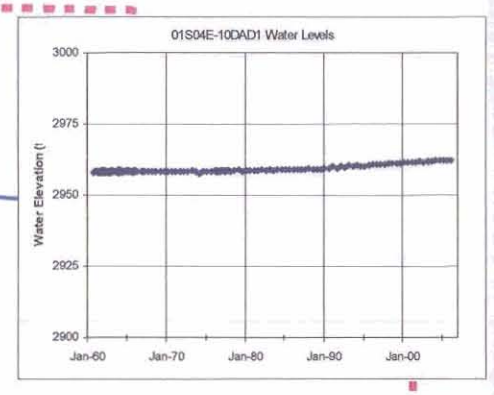
02S04E-24DBB1

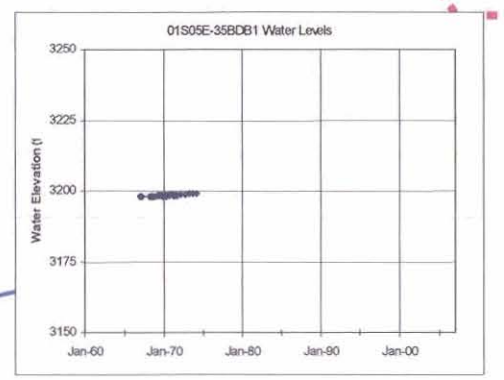
02S04E-27DDD1

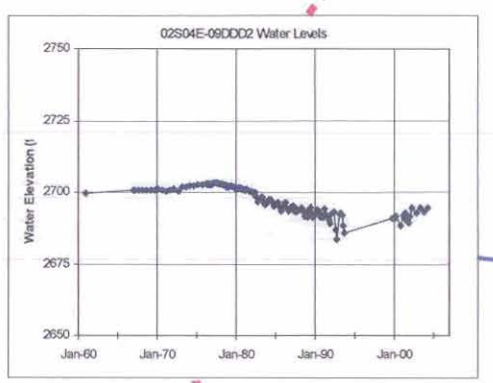


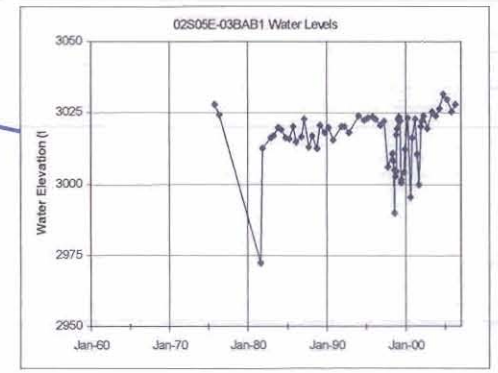


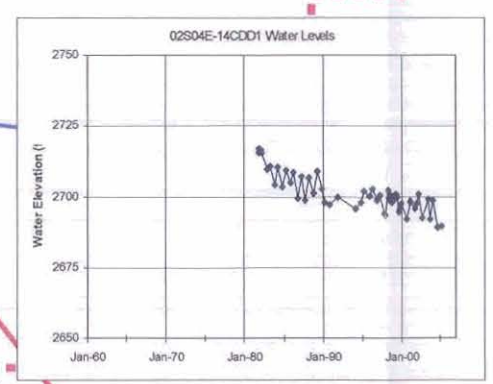


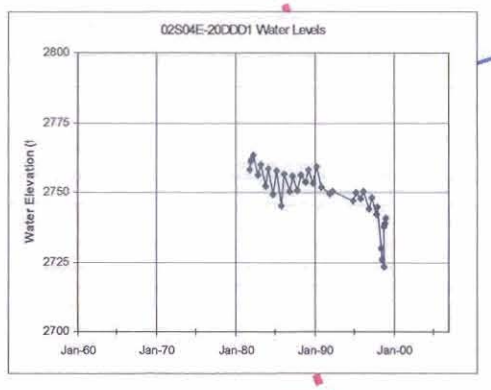


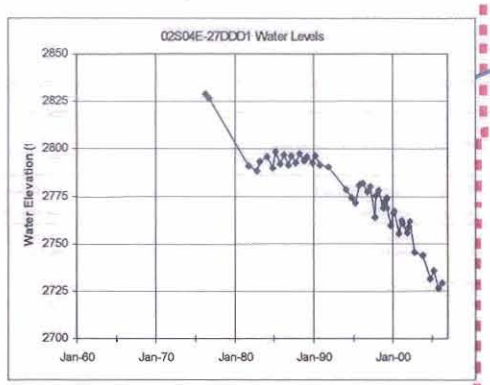


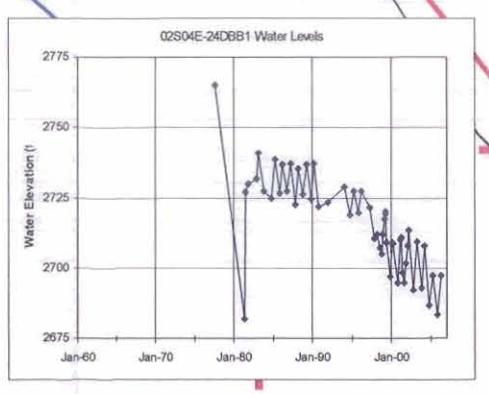












Mountain Home Ground Water Management Area

ATTACHMENT C. IDWR WATER LEVEL MONITORING WELL HYDROGRAPHS

N

0 1 2

Miles

SPF Water Engineering, LLC

water resource consultants

609 E. River Park Lane, Ste. 105, Boise, Idaho 83706

tel: 208.383.4140 fax: 208.383.4156

Appendix D

Final Report and Recommendations of Mountain Home Working Group

Expanded Natural Resources Interim Committee
Mountain Home Working Group

Final Report and Recommendations
Adopted December 6, 2004

INTRODUCTION

The Mountain Home Working Group has met on a regular basis since April to hear local concerns, discuss ground water conditions, and analyze strategies to address the issues and concerns specific to the Mountain Home area. After conducting the meetings, the Mountain Home Working Group Finds and Recommends as follows:

FINDINGS

1. The Mountain Home ground water budget is not in balance. Annual withdrawals of ground water are exceeding the average annual rate of natural recharge to the groundwater. IDWR studies show an annual deficit of approximately 30,000 acre-feet per year.

2. The regional aquifer is generally described as east of Indian Creek, west of Bennett Creek. The north boundary is below the foothills and the southern boundary is the rim of the Snake River Canyon. Two areas of significant ground water level declines can be geographically defined.

a. Ground water levels in the regional aquifer have declined as much as 70 feet during the last 35 years in an area roughly encompassing the City of Mountain Home, the Mountain Home Air Force Base, and surrounding agricultural lands.

b. Ground water levels in the regional aquifer have declined as much as 70 feet during the last 35 years in an area approximately 15 miles northwest of the City of Mountain Home, near Cinder Cone Butte.

c. There are areas of the Mountain Home Basin where underlying ground water levels in the regional aquifer have not declined significantly.

3. The areas of ground water decline are sufficiently separated by horizontal distance and the parallel direction of ground water flow that withdrawals of ground water from one area do not significantly impact water levels in the other area.

4. Opportunities for recharge or water savings in the Mountain Home Basin are limited.

a. All surface water in the basin is fully appropriated except for occasional short duration flood water flowing in some of the low elevation, south-facing streams. The volume of water that could be recharged to the regional aquifer by these occasional

flood flows is insignificant when compared to the deficient volume of water in the water budget.

b. Water for recharge or conversion of lands from irrigation with ground water to surface water could be delivered from the South Fork of the Boise River and its tributaries, Bennett Creek, or the Snake River. Very little unappropriated water remains in these streams, however, and any water delivered to the Mountain Home Plateau from these sources for recharge would probably have to be obtained by the acquisition of existing water rights.

c. Some surface water delivery losses could be saved through conservation efforts.

5. **Irrigation** (agricultural/domestic use) is responsible for an estimated 95% of ground water pumping. The number of acres irrigated on the Mountain Home Plateau must be reduced to balance the water budget.

6. Some proposed water uses are presently given preference over other proposed water uses. For instance, the Department of Water Resources will not approve new ground water right permits for irrigation but will approve new water rights for domestic or municipal users. Those seeking to use water for domestic use as defined by Idaho Code § 42-111 may obtain a drilling permit and may appropriate ground water by beneficially using the water without express approval by the Idaho Department of Water Resources.

ISSUES

The working group is particularly concerned about **economic impacts** of balancing the water budget. The working group expects growth in the Mountain Home area, and all recommendations must attempt to minimize negative impacts to the local economy.

Mountain Home Air Force Base contributes significantly to the area economy. With the U.S. Department of Defense in the process of restructuring and closing military bases around the country, it is essential to demonstrate sufficient water availability to satisfy the base's water needs.

Agriculture also contributes significantly to the economy and is a large component of the local tax base. Forced curtailment could impact an estimated 15,000 acres or one-half of the ground water irrigated acres. Drought, declining aquifer levels and rising electrical costs of high lift pumping may mean irrigators can no longer afford to pump. Agricultural users of ground water may be the first user group that cannot afford the cost of pumping water from deeper, declining water levels. Some of these ground water irrigators hold water rights bearing early priority dates. The **prior appropriation doctrine** cannot be compromised or weakened in any way. Water rights should not be made valueless by allowing water level declines to lower below reasonable economic pumping levels.

Holders of water rights for all uses of water must be subject to limitations on further water appropriation and must all participate in and reductions in use, curtailments, or mitigation to prevent such curtailment under the doctrine of prior appropriation.

The following options were discussed during working group meetings:

Agricultural set-aside programs (CREP, EQIP)
Local water projects
Low impact landscaping (and demonstration project)
Bennett Creek water importation
Storage increases in Little Camas and Long Tom Reservoirs
Determine and decrease reach losses in ditches and canals
Increase tunnel capacity
Seal or line canals

RECOMMENDATIONS

These recommendations are formulated from presentations and discussions.

1. Mountain Home Ground Water Advisory Committee. The committee has been meeting for over eight years and a recommended management plan has not been completed. The Working Group recommends that the committee complete and submit to IDWR a recommended management plan within 180 days starting January 1, 2005. The Working group has reviewed an existing draft plan prepared by the committee in 1998, and recommends the committee pursue revision and completion of this plan that is consistent with the following recommendations.

2. The Working Group recommends a net reduction of approximately 30,900 acre-feet per year in ground water withdrawals from the regional aquifer system to balance the water budget. Reductions in ground water withdrawal must be sufficient to arrest, or at least significantly slow the declines in water levels in the regional aquifer

3. The Working Group recommends that the Idaho Department of Water Resources reconsider the boundaries of the Mountain Home Ground Water Management Area and the Cinder Cone Butte Critical Ground Water Area, and redefine the boundaries of a areas for ground water management to match physical evidence of declining ground water levels and areas of water supply.

4. The Working Group recommends legislation that would authorize the creation of an umbrella aquifer management authority with broad authority for inclusion of ground water users, for implementing actions to address water shortages, and for equitably assessing all water users to finance the actions.

5. The Working Group recommends the legislature analyze the existing definition of domestic use in Idaho Code § 42-111 and the associated exclusion from the requirement

to apply for a water right contained in Idaho Code § 42-227 to determine need for revision.

6. The Working Group recommends the Director of the Idaho Department of Water Resources form a water district that includes the ground water rights in the Mountain Home area. While regulation should not be immediately contemplated by the creation, ground water users must measure and report their diversions of water to insure adherence to limitation of the water rights.

7. The Working Group recommends establishment of a Conservation Reserve Enhanced Program (CREP) for the state of Idaho. Some lands irrigated with ground water could be taken out of production through CREP, reducing the financial loss of nonagricultural production.

8. The Working Group recommends adoption of water conservation measures by local governments, including incentives for low water use landscaping.

9. The Working Group recommends the county and city evaluate the benefits of revisions to land use codes. Land use codes may be used to ensure water rights are transferred when lands are annexed. Revisions to land use codes could also restrict development of large lot acreage that may ultimately be irrigated illegally with ground water.

10. The Working Group recommends a one-time budget request in the amount of $100,000 to IDWR for installation of dedicated monitoring wells. Dedicated monitoring wells provide valuable and accurate data for evaluating the aquifer conditions and changes. Current monitoring network depends on existing wells that were drilled for various uses. Dedicated monitoring wells at key locations would add important data to the network. To obtain such wells, they would need to be installed at selected locations. Estimated cost for installing monitoring wells is $25-30 per foot; estimated cost for pressure transducer monitoring equipment is $1500. Estimated cost for a 600-foot monitoring well, with monitoring equipment would be $15,000-18,000. It is recommended that 5 wells be installed, with a total estimated cost of $75,000-$90,000.

11. The Working Group evaluated several projects during the course of meeting. A description and evaluation of these projects is attached at Appendix I. The Working Group recommends the following projects:

a. Conservation Reserve Enhancement Program (CREP)
b. Little Camas Canal PAM Study

Additional details about the projects, cost estimates, and cost comparisons can be found in Appendix I.