

Cotner Rezone/Preliminary Plat Hawk's View Estates Subdivision

I am opposed to this rezone and the corresponding Preliminary Plan, Irrigation, and Drainage Plan.

I have read the 2020 and 2030 (Draft) Comprehensive Plan. If I am reading the 2030 Draft Plan correctly (see attached), properties North of Purple Sage are NOT in the area of impact and are still designated as Agriculture. I am assuming the 2030 version is a more forward-thinking vision of the area.

We live on land currently being used as Agriculture land. A density of two plus acre lots is not compatible with that zoning and the surrounding properties. If, as the applicant states, that the proposed lot size is consistent with existing development, then why would a rezone be necessary? Land that is situated miles from any services is not the appropriate place to developing land of this concentration.

I am becoming increasingly concerned that the only determinant to developing Agriculture land is going through the process that has been established and not if it is beneficial to the existing neighborhood. Why is the applicant referencing a proposed 90-acre development as evidence (exhibit 3) that his development is compatible with surrounding properties?

Benefit and enhancement to the neighborhood? Our expectation to living in this area is not to have such a concentrated housing development. We can move to town for that experience.

Another concern are the individual wells drilled for each these lots. I am especially concerned of what the impact of that will be on the existing, surrounding landowners' wells, yet I see nowhere in the application process that any review of this type is required. What recourse would be we have in a situation where our well is negatively impacted?

If part of the intent of the development is to provide a country experience, I would have the expectation of walking paths and/or green space to be included in the development. It has been our observation, that residents seek that experience by walking along the evermore busy county roads and irrigation ditchbank roads, illegally, to enjoy their time in the country.

I also have concerns about increased traffic, elimination of cover for wildlife in the affected fields, and security concerns with an increased population, but in the goal to be concise, I will only mention those.

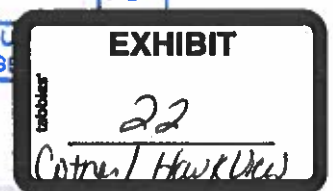
Honestly, looking at a map overall, approval of this Rezone, will only encourage more development in this area. Shouldn't the existing properties in the Impact zone be used for that purpose?

It seems ironic that everyone moves out to the country to enjoy the open space, but soon after multiple rezones and development, the open space they sought, becomes developments, like the one they are living in or moved away from.

I hope these comments are thoughtfully considered.

Sincerely,

Cecile McMonigle



CANYON COUNTY COMPREHENSIVE PLAN 2030 PROPOSED FUTURE LAND USE MAP



PAYETTE COUNTY

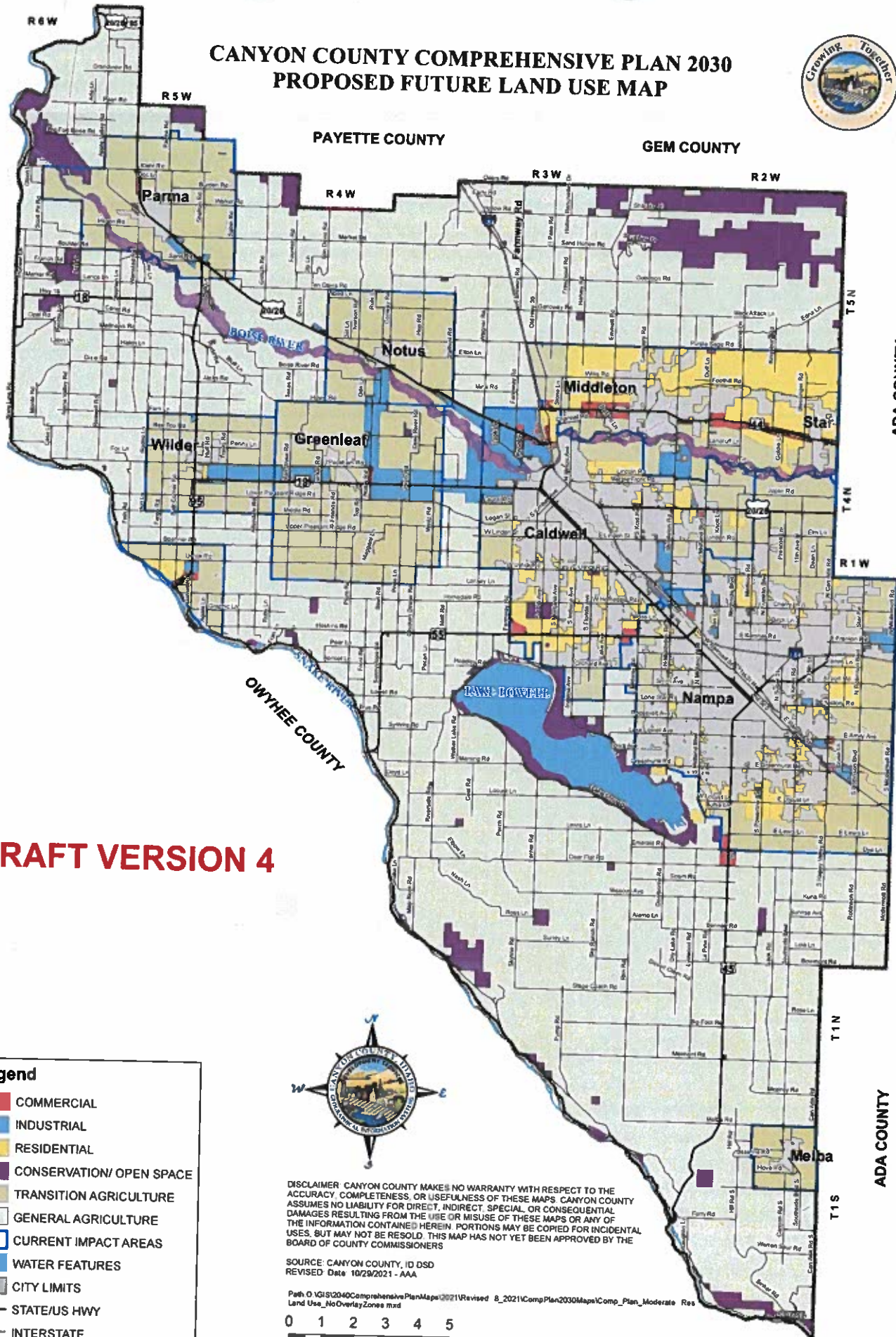
GEM COUNTY

MALHEUR COUNTY, OREGON

ADA COUNTY

OWYHEE COUNTY

DRAFT VERSION 4



Legend

- COMMERCIAL
- INDUSTRIAL
- RESIDENTIAL
- CONSERVATION/ OPEN SPACE
- TRANSITION AGRICULTURE
- GENERAL AGRICULTURE
- CURRENT IMPACT AREAS
- WATER FEATURES
- CITY LIMITS
- STATE/US HWY
- INTERSTATE



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SOURCE: CANYON COUNTY, ID DSD
REVISED: Date 10/29/2021 - AAA

Path: O:\GIS\2040ComprehensivePlan\Map\2021\Revised_8_2021\CompPlan2030\Map\Comp_Plan_Moderate Res Land Use_NoOverlayZones.mxd



ADA COUNTY



September 28, 2021

Lone Star Land, LLC
Developer/Applicant
PO BOX 785
Meridian, Idaho 83680

RE: Hawk View Estates Subdivision, Level 1 Nutrient Pathogen (NP) Study Approval

Dear Mr. Cotner:

Southwest District Health (SWDH) and the Idaho Department of Environmental Quality (DEQ) received your revised Level 1 Nutrient-Pathogen study for review on September 21, 2021 for the proposed Hawk View Estates Subdivision, located north of Purple Sage Road, and east of Lansing Lane, Canyon County, Idaho in NW $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 27, Township 5N, Range 2W, Boise Meridian. The NP study was prepared by Applied Intellect, LLC, for John Cotner of Meridian, Idaho.

The Property is reported to be an approximate 26.85-acre area of land. The proposed development includes twelve (12) residential lots, with a lot size ranging from approximately 2.0 to 2.15 acres. Individual wastewater disposal systems and individual water wells for single family residences are planned.

Based on the data presented in the NP Study, Hawk View Estates Subdivision will likely not significantly impact ground water quality downgradient of the proposed subdivision. The NP Study is approved, and the following conditions apply:

- DEQ's review of the MB Spreadsheets indicate all lots will need extended treatment systems to reduce nitrate concentrations in wastewater to 16 mg/L or less.
- Maximum house size permitted is a four (4) bedroom house (300 gallons per day). 300 gallons per day is the value used in the NP study as the amount of effluent discharged from each individual subsurface disposal system.
- If lots are added the study must be resubmitted and/or amended before additional lots are approved.
- Secondary dwellings are not approved for this proposed subdivision, without resubmitting and/or amending the NP study to include additional dwellings. Approval of secondary dwellings is based on the resubmittal/amended NP study findings.

Based upon the review and results provided by DEQ, Hawk View Estates Subdivision can now move forward with the next stage in the process by meeting the requirements of SWHD's Subdivision Engineering Report (SER). The SER and subsurface sewage disposal design must incorporate the

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EXHIBIT

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findings of the Nutrient-Pathogen study. For lot design care should be taken to locate septic systems so potential impacts to downgradient wells are minimized.

If you have questions, please contact Stephen Fitzner at 208.455.5382, or via e-mail: stephen.fitzner@phd3.idaho.gov.

Sincerely,

 Digitally signed by
Stephen Fitzner
Date: 2021.09.28 07:40:11
-06'00'

Stephen Fitzner, REHS/RS
Land Development Senior

c Paul Hunter, P.G. Applied Intellect, LLC
Lance Warnick, P.E. Aspen Engineers
File copy



Level One Nutrient Pathogen Study

Proposed Hawk View Estates Development
25292 Lansing
Middleton, Idaho

April 21, 2021

Prepared for:
Mr. John Cotner
Cotner Building
P.O. Box 785
Meridian, ID 83680

Prepared by:
Applied Intellect, LLC
1670 E Monterey Dr
Boise, ID 83706



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1.0 INTRODUCTION

Applied Intellect, LLC (AI) was contracted by Mr. John Cotner of Cotner Building, Meridian, Idaho to conduct a Level One Nutrient Pathogen (N-P) Study for a proposed residential subdivision located at 25292 Lansing Lane in Middleton, Idaho. The purpose of this study is to assess soil and groundwater conditions in the vicinity of the property and evaluate nitrate loading to the aquifer associated with subsurface wastewater discharge. This assessment, described in the following report, considers soil classification, area hydrogeology, area water supply wells, available groundwater quality data, and nutrient predictive modeling results. This analysis follows guidance documents established by the Southwest District Health Department (SWDHD) and Idaho Department of Environmental Quality (IDEQ) for Nutrient Pathogen Studies (IDEQ, 2002).

2.0 SITE INFORMATION

This section summarizes available information on the proposed residential subdivision, site specific soil conditions, local and regional hydrogeology, area water supply wells, readily available existing water quality data, and nitrate predictive modeling results.

2.1 Site Location and Description

The proposed development is a 12-lot residential subdivision located on an approximately 26.85-acre parcel in Canyon County, Idaho (Figure 1). The development is more specifically located in the Northwest $\frac{1}{4}$ of the Southwest $\frac{1}{4}$ of Section 27, Township 5 North, Range 2 West. Individual lot sizes range from approximately 2.0 to 2.15 acres (Figure 2). One of the residential parcels is currently occupied by an existing residence. The other eleven will serve as sites for new residences. Each individual lot will be serviced by an on-site septic tank/drainfield system and potable water will be provided by individual drinking water wells. Wastewater flow is expected to be 300 gallons per day (gpd) for each lot, which is based on a four-bedroom home.

The water supply well for the existing residence was sampled on January 15, 2021 and tested for Nitrate and Nitrite. Results indicated nitrate at 2.1 milligrams per liter (mg/L) and nitrate less than the laboratory detection limit of 0.01 mg/L.

The site is in a mixed agricultural/residential area with Oaklee Estates Subdivision and Willow Creek Ranch Estates #3, similar residential developments, located to the west across Lansing Lane. The C-Line Canal East is located north of the site; there are also several unnamed irrigation canals and ditches within the area. The Willow Creek Pump Lateral is located approximately $\frac{3}{4}$ -mile south of the site. The Boise River is located approximately 3.5 miles to the south-southwest. The land use classification for this property is rural residential, per Canyon County Planning and Zoning.



2.2 Soil Classification

All soil types for the site are classified in the USDA Soil Conservation Service Soil Survey of Canyon County as Elijah silt loams. Sixty four percent of the site is classified as Elijah-Chilcott silt loam either at 0 to 1 percent slopes (EsA) or 1 to 3 percent slopes (EsB). The remainder of the site is classified as Elijah-Vickory silt loams either at 3 to 7 percent slopes (EvC) or 7 to 12 percent slopes (EvD). The Elijah soil type is described as well drained with a depth to water table of greater than 80-inches. The hydraulic capacity of the most limiting layer to transmit water is very low to moderately low.

Although no soil test pits were excavated at the site, according to the soil survey the predominant soil profile (for Elijah-Chilcott silt loam, EsB) typically consists of silt loam from ground surface to approximately 22 inches below ground surface (bgs). A zone of cemented material may be present from approximately 22 to 40 inches bgs. Sand to very gravelly sand is typically present from 40 to at least 65 inches bgs. A custom soil survey report by the United States Department of Agriculture Natural Resources Conservation Service (NRCS) showing soil locations and soil descriptions is presented in Appendix 1.

2.3 Hydrogeology

The site is located in the northwestern portion of the Western Snake River Plain physiographic province. Figure 3 presents a geologic map of the region. The Western Snake River Plain is a northwest-trending structural basin bounded by high angle faults of Miocene and younger age. The basin separates the mountains of the Idaho batholith on the northeast and the Owyhee Range on the southwest. Fine to coarse sedimentary deposits interbedded with basalt, andesitic flows and ash deposits associated with regional volcanic activity fill the basin to depths exceeding 4,000 feet (Othberg and Stanford, 1992).

The site is more specifically located within the fourth terrace above the modern Boise River Valley and east of the confluence with the Snake River. The valley's landforms consist of medium to coarse-grained arkosic sand, sandstone and claystone, including interbeds of gravel, locally cemented and sandy siltstone. Structures vary from large foreset beds of sand to thin-bedded claystone. Undifferentiated units reflect a variety of sand, and mudstone of stream and lake depositional environments. Boise River gravels also interfinger with alluvial fan sand and gravel of Willow Creek (Othberg and Stanford, 1992; Malde and Powers, 1962).

The area identified as "Gravel of Deer Flat Terrace" by Othberg and Stanford is located south of the proposed development and extends south to Lake Lowell. The surface of this terrace may have been offset by several northwest trending faults. Deposits include sandy pebble gravel grading at depth to coarse pebbly sand.

Two aquifers are known to exist in the area. Throughout much of the valley, an unconfined water table aquifer is found within the shallow alluvium, normally at a depth of less than 50 feet bgs. Recharge to the shallow aquifer is dominated by applied irrigation water and canal



seepage. Groundwater flow direction and elevation in the shallow aquifer fluctuate due to seasonal influences from irrigation canals; however, groundwater generally migrates toward the southwest, towards the Boise River. The valley's principal water supply is contained at a depth of approximately 300 to 500 ft bgs, within the Upper Idaho Group (Squires et al, 1992).

Review of area well driller reports maintained by the Idaho Department of Water Resources (IDWR) indicate the upper 80 to 100 feet of the subsurface consists of unconsolidated and interbedded clay, silt, sand and gravel. A single well located at the site indicates a depth to groundwater of 87 feet bgs. Groundwater elevations are expected to be variable under the site due to irrigation and seepage losses from nearby agricultural canals.

The aquifer properties beneath the site were estimated based on a review of existing information and professional judgment. Several previous NP studies have been completed in the area. The nearby Lansing Meadows Subdivision performed slug test studies indicating hydraulic conductivity of 120 to 198 feet per day (Terracon, 2001). The Oaklee Estates Subdivision, located at the northwest corner of Purple Sage Road and Grayhawk Drive in Middleton, identified a hydraulic conductivity of 73 feet per day. Due to proximity, this value was selected for use in the current study.

The hydraulic gradient and flow direction were also estimated based on water level contour maps generated by IDWR and values used in other nearby studies approved by IDEQ. The hydraulic gradient was calculated at 0.005 ft/ft with a flow direction towards the southwest (approximately 220 degrees). Regional groundwater potentiometric contours from IDWR are presented in Appendix 3.

2.4 Area Well Survey

A survey of records maintained by the IDWR was conducted of wells located within close proximity of the site. The survey consisted of reviewing records maintained by IDWR within a 1/2-mile radius of the site. Water supply wells in this area were completed at depths from 163 to 351 feet bgs. Copies of well logs with a well location map are presented in Appendix 2.

2.5 Groundwater Quality Data

Groundwater quality data for wells in the vicinity of the site was obtained from the IDEQ (<https://mapcase.deq.idaho.gov/gwq/>). Wells within approximately ½ mile of the site were reviewed. Results for six wells including the water supply well for the existing residence are presented in Table 1. Of the six wells, the on-site well and the two shallowest off-site wells were selected as most representative of shallow groundwater conditions. The on-site well was sampled on January 15, 2021. Laboratory analysis indicated a nitrate concentration of 2.1 mg/L; nitrite was below the laboratory detection limit of 0.01 mg/L. The two selected off-site wells were reported with nitrate concentrations of 11.6 and 2.239 mg/L. The higher report was based on sampling performed during 1997, nearly 25 years ago, and may not be as representative of current conditions as other results included in Table 1. The average of these three nitrate



concentrations (2.1, 11.6 and 2.239 mg/L) was selected as representative of background concentrations. This value is 5.3 mg/L. The well locations are shown on Figure 4. It should be noted that the site is located on the boundary of the Purple Sage Nitrate Priority Area.

Table 1. Groundwater Quality Data

Well ID	Sample Date (Most Recent)	Depth of Well (ft bgs)	Nitrate Concentration (mg/L)
2202401	7/7/2008	277	1.5
2205201	7/7/2008	270	1.1
262	9/16/1997	50	11.6
434343116344701	7/10/2008	136	2.239
658	10/17/2007	216	1.2
On-Site Well	1/15/2021	188	2.1

2.6 Nutrient Mass Balance Evaluation

The Idaho DEQ Mass Balance Spreadsheet was used to evaluate the potential impact that wastewater discharge from the proposed residential homes will have on groundwater quality. This analysis evaluated both the impact the entire development would have on groundwater quality and the impact for each lot (conservatively estimated by evaluating the smallest lot). The existing residence, which will be located on a 2.03 acre lot, was also specifically evaluated. Dimensions of these specific parcels are shown in Figure 5 and included in Table 2.

Primary input values used in the spreadsheet model were discussed in previous sections and are summarized in Table 2. Due to the density of the proposed subdivision, advanced package wastewater treatment systems will be used on all new lots to reduce nitrate levels in wastewater to 16 mg/L or less prior to discharge. The wastewater system for the existing residence will not be altered and will be assumed to discharge wastewater with a nitrate concentration of 45 mg/L.

Table 2. Mass Balance Spreadsheet Input Values

Parameter	Value Used in Mass-Balance Spreadsheet
Hydraulic Conductivity (ft/day)	73
Hydraulic Gradient (ft/ft)	0.005
Mixing Zone Thickness (ft)	15
Aquifer Width Perpendicular to Flow (Development in ft)	1361
Aquifer Width Perpendicular to Flow (Smallest lot in ft)	366
Aquifer Width Perpendicular to Flow (Existing residence lot in ft)	465
Parcel Area (Development in acres)	26.85
Parcel Area (Smallest lot in acres)	2.0
Natural Recharge Rate (inches/yr)	0.5
Upgradient Groundwater Concentration (mg/L)	6.9



Parameter	Value Used in Mass-Balance Spreadsheet
Septic Tank Effluent Concentration (mg/L)	16 for new residences 45 for existing residence

For the analysis of the entire proposed development, the overall effluent nitrate concentration was calculated based on one existing residence plus 11 new residences using advanced wastewater treatment systems:

$$\text{Septic Tank Effluent Concentration (mg/L)} = (45 \text{ mg/L})/12 + (11 \cdot 16 \text{ mg/L})/12$$

$$\text{Septic Tank Effluent Concentration (mg/L)} = 18.4 \text{ mg/L}$$

Output from the Mass Balance Spreadsheets are presented in Appendix 4. Three scenarios were modeled: the entire development, the smallest lot, and the existing residence. Each of these analyses indicated the proposed development will not cause groundwater nitrate concentrations to increase by more than 1 mg/L at the down-gradient boundary of the development or at the downgradient boundary of each individual lot. Nitrate levels in groundwater will also be well below the drinking water maximum contaminant level (MCL) of 10 mg/L.

3.0 CONCLUSIONS

The primary conclusions based on the Nutrient Pathogen study are as follows:

- The site is located in an agricultural area in Canyon County, Idaho. The closest surface water that has the potential for groundwater discharge is the Boise River, located approximately 3.5 miles south of the property. Due to the distance from the development it will not be impacted by the project;
- Extended Treatment Package Systems capable of achieving a nitrate concentration of 16 mg/L will be utilized to treat wastewater on all proposed new lots;
- Soils are classified in the Canyon County Soil Survey as Elijah silt loams and appear suitable for standard drainfield systems; and
- Based on the results of nitrate mass balance modeling, the proposed development meets NP study requirements. Nitrate levels in the shallow alluvial aquifer will be sufficiently dispersed and will not increase more than 1.0 mg/L above background levels at the down-gradient compliance points (*i.e.*, southwestern development or individual lot boundaries). In addition, levels will be below the nitrate MCL of 10 mg/L.

4.0 RECOMMENDATIONS

On the basis of this N-P Study, AI recommends the following actions:



- All drainfield designs should follow health district and IDEQ guidelines and setback requirements; and
- Advanced treatment systems should be used on all new lots to reduce nitrate concentrations in the effluent to 16 mg/L.

Prepared By:

Paul Hunter, P.G.
Senior Hydrogeologist

Reviewed By:

Christopher Lammer, P.E.
Senior Engineer



5.0 REFERENCES

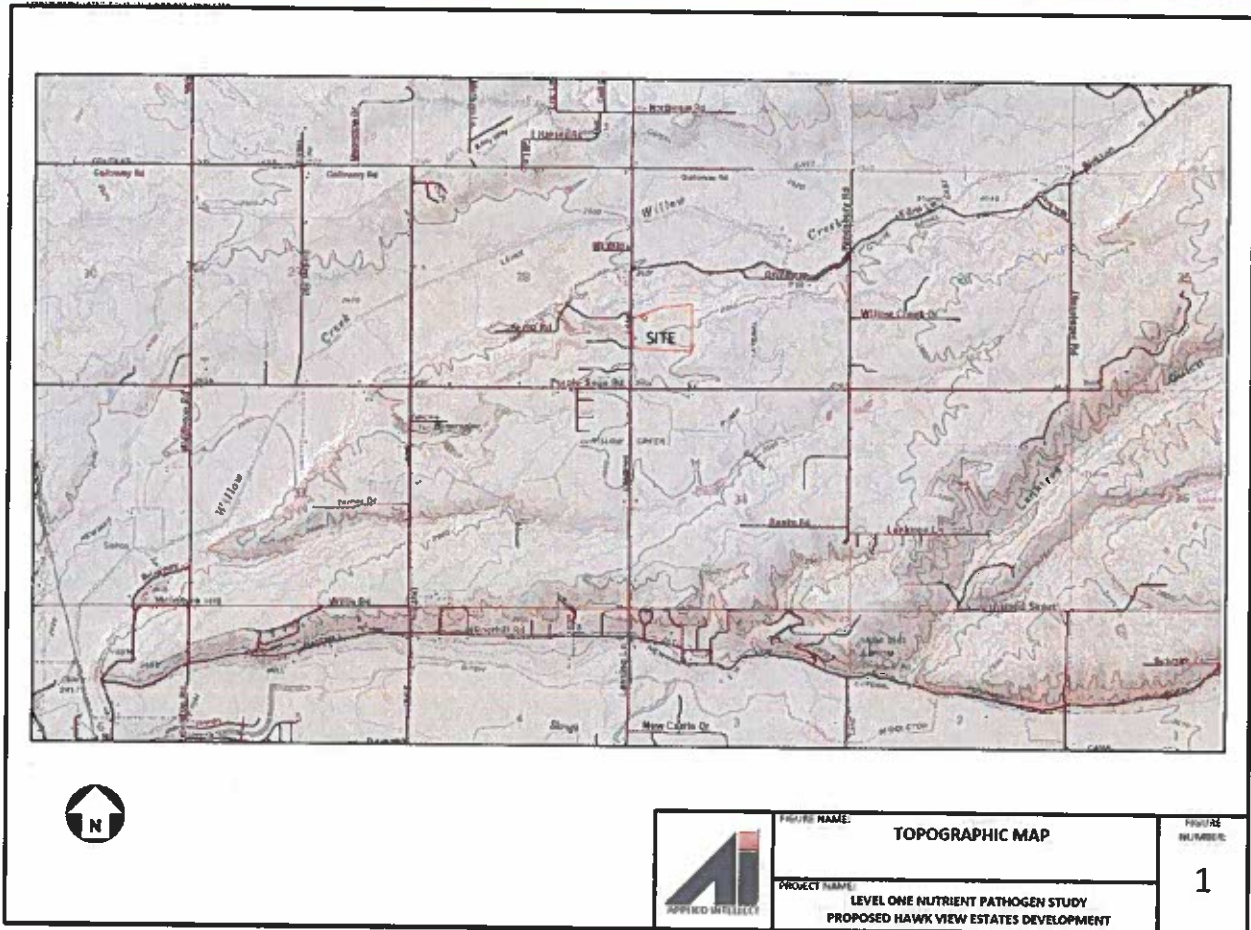
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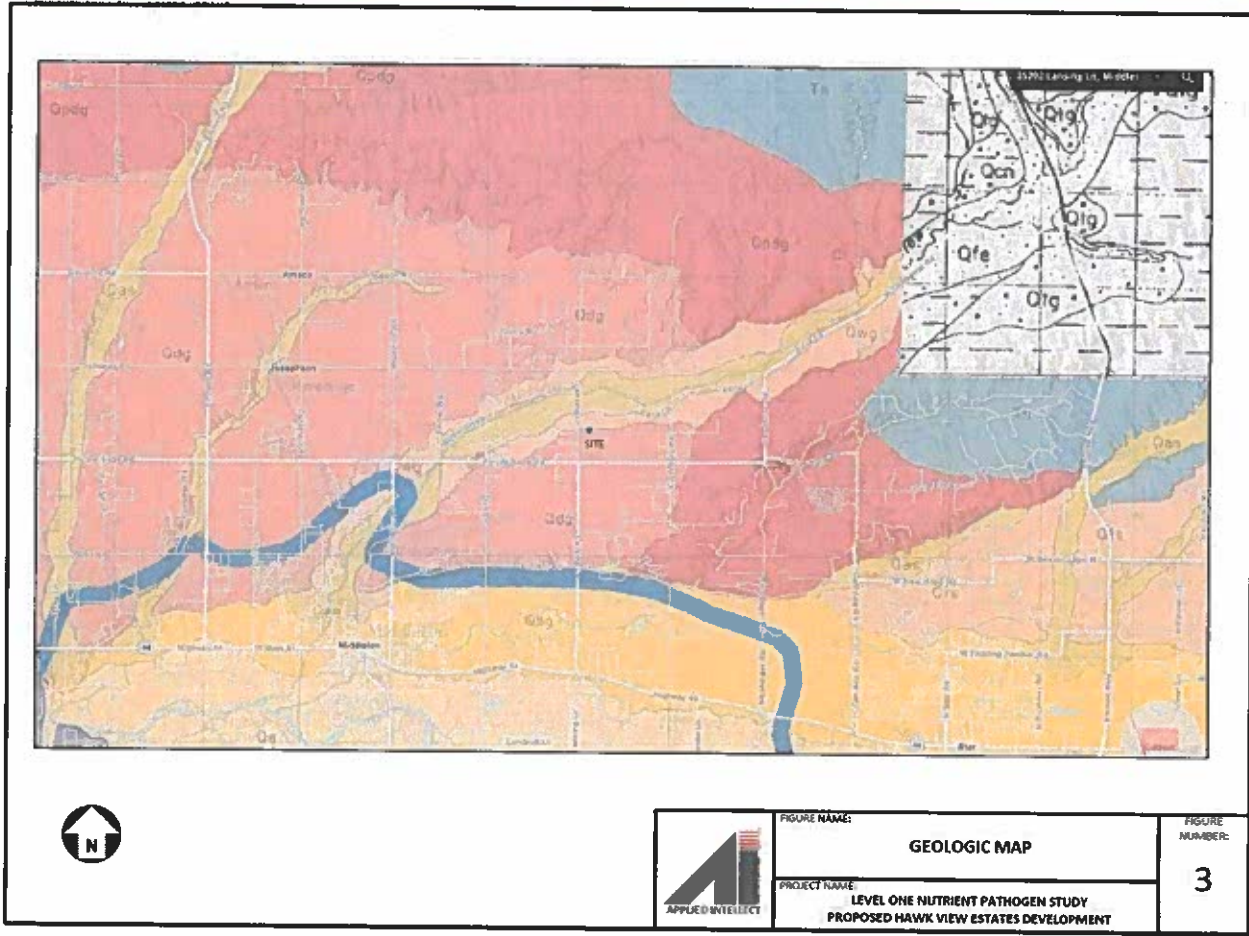
USGS/AASG National Geologic Map Database
https://ngmdb.usgs.gov/ngmdb/ngmdb_home.html

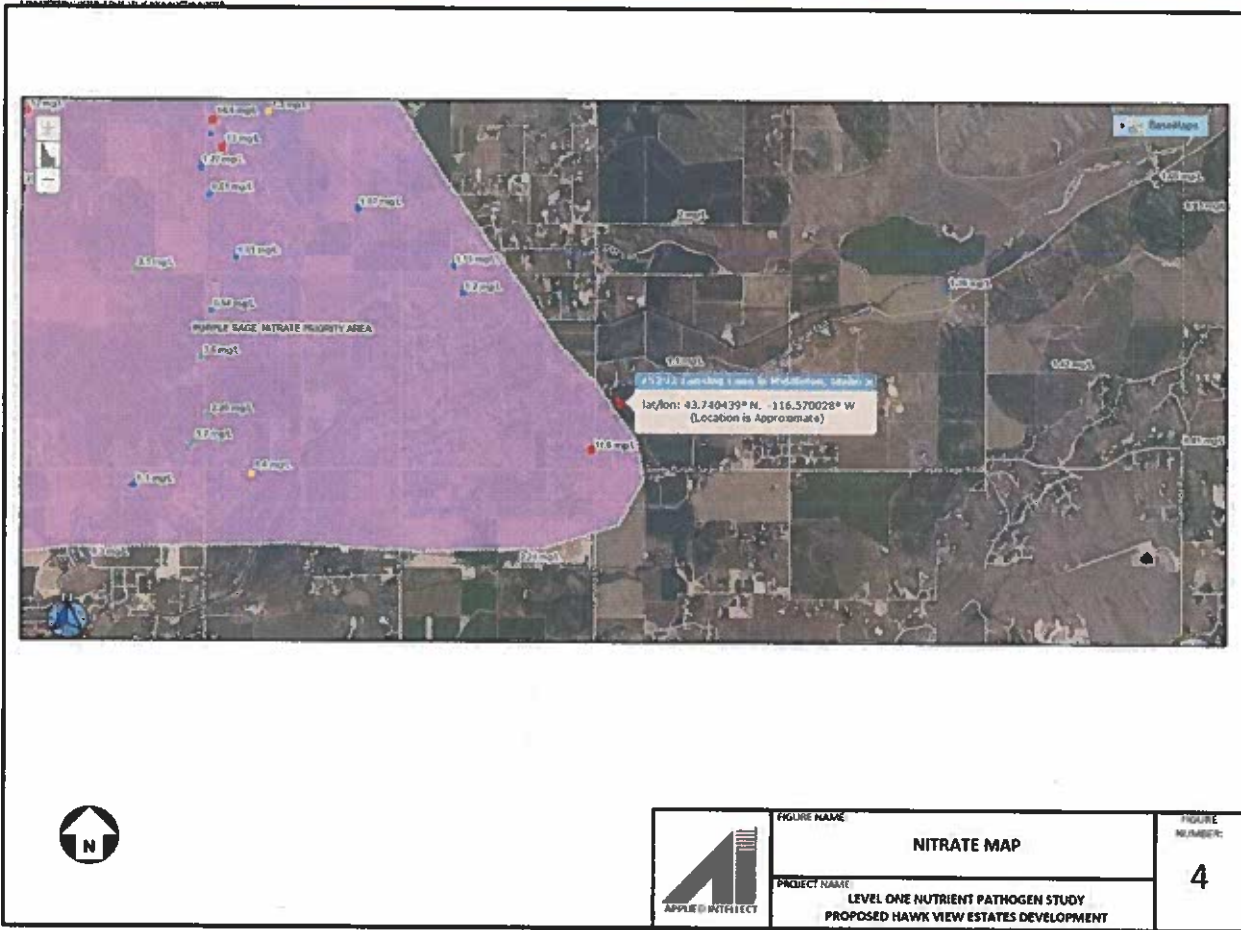



FIGURES

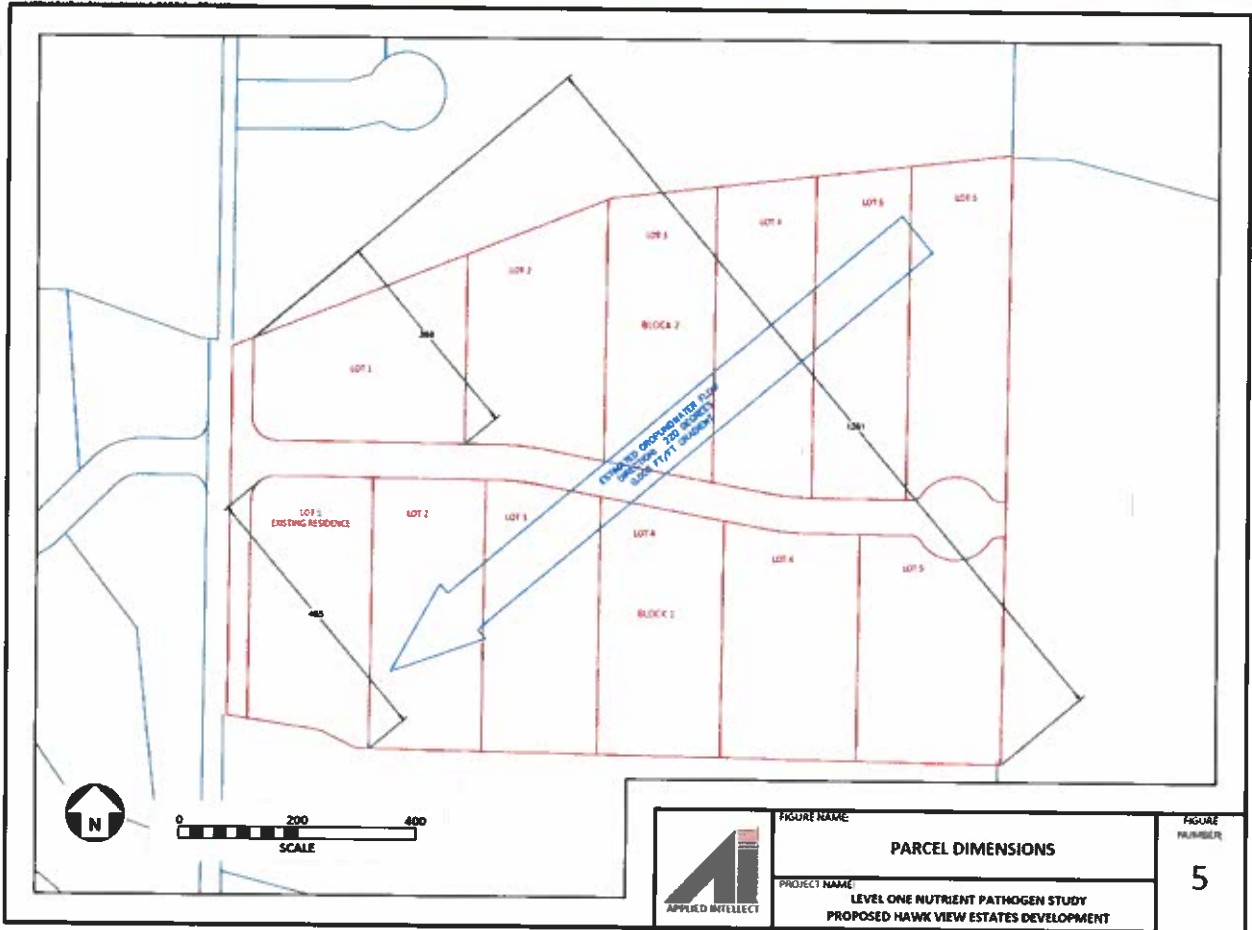


	PROJECT NAME: TOPOGRAPHIC MAP	FIGURE NUMBER: 1
	PROJECT NAME: LEVEL ONE NUTRIENT PATHOGEN STUDY PROPOSED HAWK VIEW ESTATES DEVELOPMENT	





 APPLIED INTELLIGENCE	FIGURE NAME	NITRATE MAP	FIGURE NUMBER
	PROJECT NAME	LEVEL ONE NUTRIENT PATHOGEN STUDY PROPOSED HAWK VIEW ESTATES DEVELOPMENT	





APPENDIX 1

Soil Survey



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for Canyon Area, Idaho



April 8, 2021

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

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scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

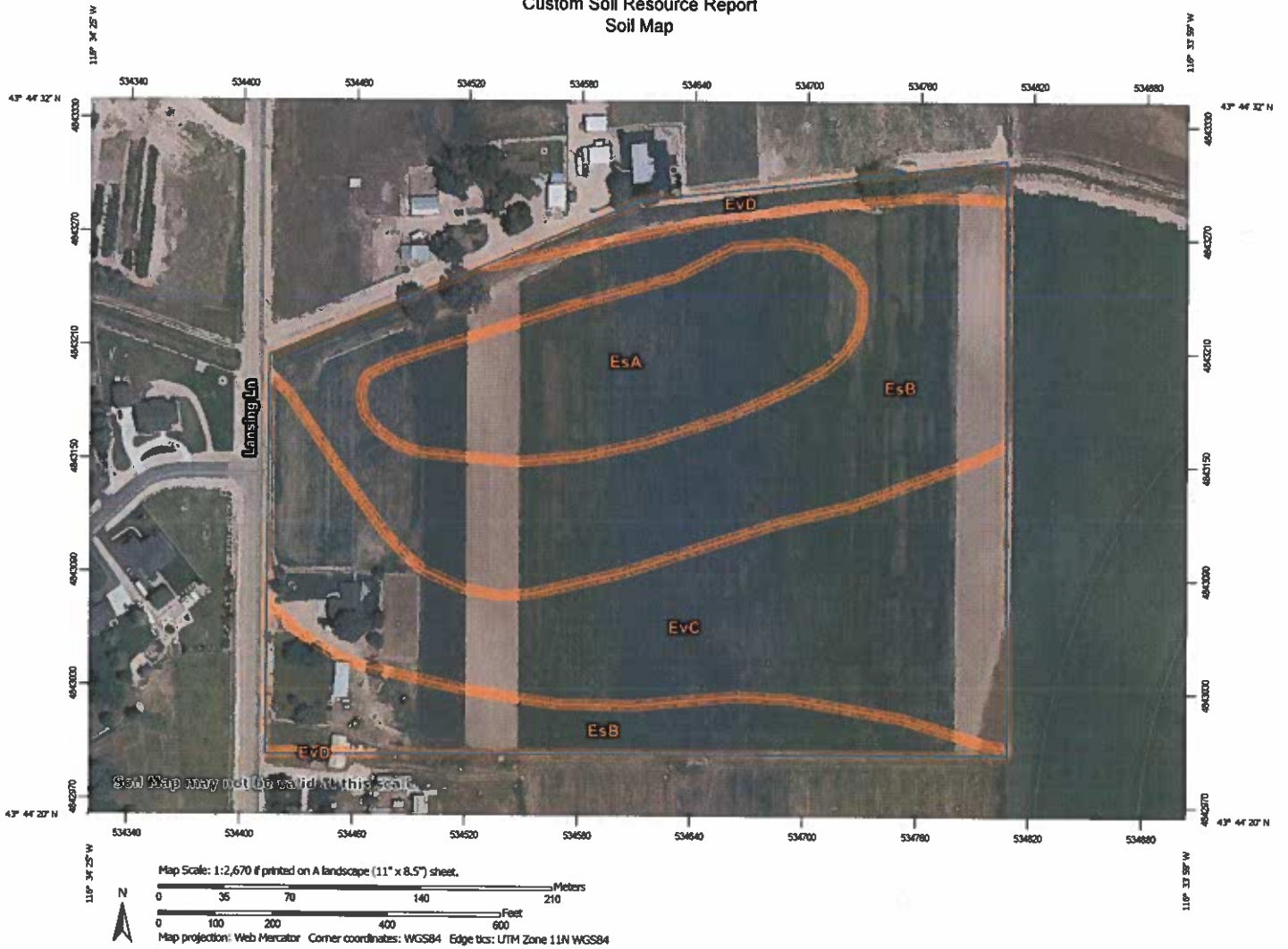
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identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map





































The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

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Soil Map



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MAP LEGEND

 Area of Interest (AOI)	 Spoil Area
Soils	 Stony Spot
 Soil Map Unit Polygons	 Very Stony Spot
 Soil Map Unit Lines	 Wet Spot
 Soil Map Unit Points	 Other
Special Point Features	 Special Line Features
 Blowout	Water Features
 Borrow Pit	 Streams and Canals
 Clay Spot	Transportation
 Closed Depression	 Rails
 Gravel Pit	 Interstate Highways
 Gravelly Spot	 US Routes
 Landfill	 Major Roads
 Lava Flow	 Local Roads
 Marsh or swamp	Background
 Mine or Quarry	 Aerial Photography
 Miscellaneous Water	
 Perennial Water	
 Rock Outcrop	
 Saline Spot	
 Sandy Spot	
 Severely Eroded Spot	
 Sinkhole	
 Slide or Slip	
 Sodic Spot	

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Canyon Area, Idaho
 Survey Area Data: Version 17, Jun 3, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 10, 2020—Jun 26, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
EsA	Elijah-Chilcott silt loams, 0 to 1 percent slopes	4.6	17.0%
EsB	Elijah-Chilcott silt loams, 1 to 3 percent slopes	12.7	47.0%
EvC	Elijah-Vickery silt loams, 3 to 7 percent slopes	8.8	32.6%
EvD	Elijah-Vickery silt loams, 7 to 12 percent slopes	0.9	3.4%
Totals for Area of Interest		27.1	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

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The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Canyon Area, Idaho

EsA—Elijah-Chilcott silt loams, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2q0t
Elevation: 2,300 to 5,300 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 54 degrees F
Frost-free period: 90 to 170 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Elijah and similar soils: 55 percent
Chilcott and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Elijah

Setting

Landform: Terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Lacustrine deposits and/or loess and/or alluvium

Typical profile

Ap - 0 to 9 inches: silt loam
Bt - 9 to 19 inches: silty clay loam
Bk - 19 to 22 inches: silt loam
Bkqm - 22 to 40 inches: cemented material
C - 40 to 65 inches: very gravelly sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: 20 to 40 inches to duripan
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water capacity: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 6c
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Chilcott

Setting

Landform: Terraces
Down-slope shape: Linear

Custom Soil Resource Report

Across-slope shape: Linear

Parent material: Volcanic ash and/or mixed alluvium and/or loess

Typical profile

A - 0 to 10 inches: silt loam

Bt - 10 to 26 inches: silty clay

Bk - 26 to 31 inches: loam

Bkqm - 31 to 46 inches: cemented material

2C - 46 to 60 inches: very gravelly sand

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: 3 to 19 inches to abrupt textural change; 20 to 40 inches to duripan

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water capacity: Very low (about 2.0 inches)

Interpretive groups

Land capability classification (irrigated): 3s

Land capability classification (nonirrigated): 6c

Hydrologic Soil Group: D

Ecological site: R011XY001ID - LOAMY 8-12 - Provisional

Hydric soil rating: No

EsB—Elijah-Chilcott silt loams, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2q0v

Elevation: 2,300 to 5,300 feet

Mean annual precipitation: 8 to 12 inches

Mean annual air temperature: 45 to 54 degrees F

Frost-free period: 90 to 170 days

Farmland classification: Prime farmland if irrigated

Map Unit Composition

Elijah and similar soils: 55 percent

Chilcott and similar soils: 25 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Elijah

Setting

Landform: Terraces

Down-slope shape: Linear

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Across-slope shape: Linear

Parent material: Lacustrine deposits and/or loess and/or alluvium

Typical profile

Ap - 0 to 9 inches: silt loam

Bt - 9 to 19 inches: silty clay loam

Bk - 19 to 22 inches: silt loam

Bkqm - 22 to 40 inches: cemented material

C - 40 to 65 inches: very gravelly sand

Properties and qualities

Slope: 1 to 3 percent

Depth to restrictive feature: 20 to 40 inches to duripan

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water capacity: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): 3e

Land capability classification (nonirrigated): 6c

Hydrologic Soil Group: C

Hydric soil rating: No

Description of Chilcott

Setting

Landform: Terraces

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Volcanic ash and/or mixed alluvium and/or loess

Typical profile

A - 0 to 10 inches: silt loam

Bt - 10 to 26 inches: silty clay

Bk - 26 to 31 inches: loam

Bkqm - 31 to 46 inches: cemented material

2C - 46 to 60 inches: very gravelly sand

Properties and qualities

Slope: 1 to 3 percent

Depth to restrictive feature: 3 to 19 inches to abrupt textural change; 20 to 40 inches to duripan

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water capacity: Very low (about 2.0 inches)

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Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 6c
Hydrologic Soil Group: D
Ecological site: R011XY001ID - LOAMY 8-12 - Provisional
Hydric soil rating: No

EvC—Elijah-Vickery silt loams, 3 to 7 percent slopes

Map Unit Setting

National map unit symbol: 2q0w
Elevation: 2,000 to 5,200 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 54 degrees F
Frost-free period: 100 to 160 days
Farmland classification: Farmland of statewide importance, if irrigated

Map Unit Composition

Elijah and similar soils: 60 percent
Vickery and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Elijah

Setting

Landform: Terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Lacustrine deposits and/or loess and/or alluvium

Typical profile

Ap - 0 to 9 inches: silt loam
Bt - 9 to 19 inches: silty clay loam
Bk - 19 to 22 inches: silt loam
Bkqm - 22 to 40 inches: cemented material
C - 40 to 65 inches: very gravelly sand

Properties and qualities

Slope: 3 to 7 percent
Depth to restrictive feature: 20 to 40 inches to duripan
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water capacity: Low (about 4.4 inches)

Custom Soil Resource Report

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6c
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Vickery

Setting

Landform: Terraces
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loess and/or volcanic ash and/or alluvium derived from igneous rock

Typical profile

A - 0 to 4 inches: silt loam
Bw - 4 to 17 inches: silt loam
Bk - 17 to 34 inches: loam
Bkqm - 34 to 47 inches: cemented material
2C - 47 to 60 inches: coarse sand

Properties and qualities

Slope: 3 to 7 percent
Depth to restrictive feature: 20 to 40 inches to duripan
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water capacity: Moderate (about 6.1 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 6c
Hydrologic Soil Group: C
Hydric soil rating: No

EvD—Elijah-Vickery silt loams, 7 to 12 percent slopes

Map Unit Setting

National map unit symbol: 2q0x
Elevation: 2,000 to 5,200 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 45 to 54 degrees F
Frost-free period: 100 to 160 days
Farmland classification: Not prime farmland

Custom Soil Resource Report

Map Unit Composition

Elijah and similar soils: 65 percent

Vickery and similar soils: 30 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Elijah

Setting

Landform: Terraces

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Lacustrine deposits and/or loess and/or alluvium

Typical profile

Ap - 0 to 9 inches: silt loam

Bt - 9 to 19 inches: silty clay loam

Bk - 19 to 22 inches: silt loam

Bkqm - 22 to 40 inches: cemented material

C - 40 to 65 inches: very gravelly sand

Properties and qualities

Slope: 7 to 12 percent

Depth to restrictive feature: 20 to 40 inches to duripan

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water capacity: Low (about 4.4 inches)

Interpretive groups

Land capability classification (irrigated): 6e

Land capability classification (nonirrigated): 6c

Hydrologic Soil Group: C

Hydric soil rating: No

Description of Vickery

Setting

Landform: Terraces

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Loess and/or volcanic ash and/or alluvium derived from igneous rock

Typical profile

A - 0 to 4 inches: silt loam

Bw - 4 to 17 inches: silt loam

Bk - 17 to 34 inches: loam

Bkqm - 34 to 47 inches: cemented material

2C - 47 to 60 inches: coarse sand

Properties and qualities

Slope: 7 to 12 percent

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Depth to restrictive feature: 20 to 40 inches to duripan

Drainage class: Well drained

Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 15 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water capacity: Moderate (about 6.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6c

Hydrologic Soil Group: C

Hydric soil rating: No

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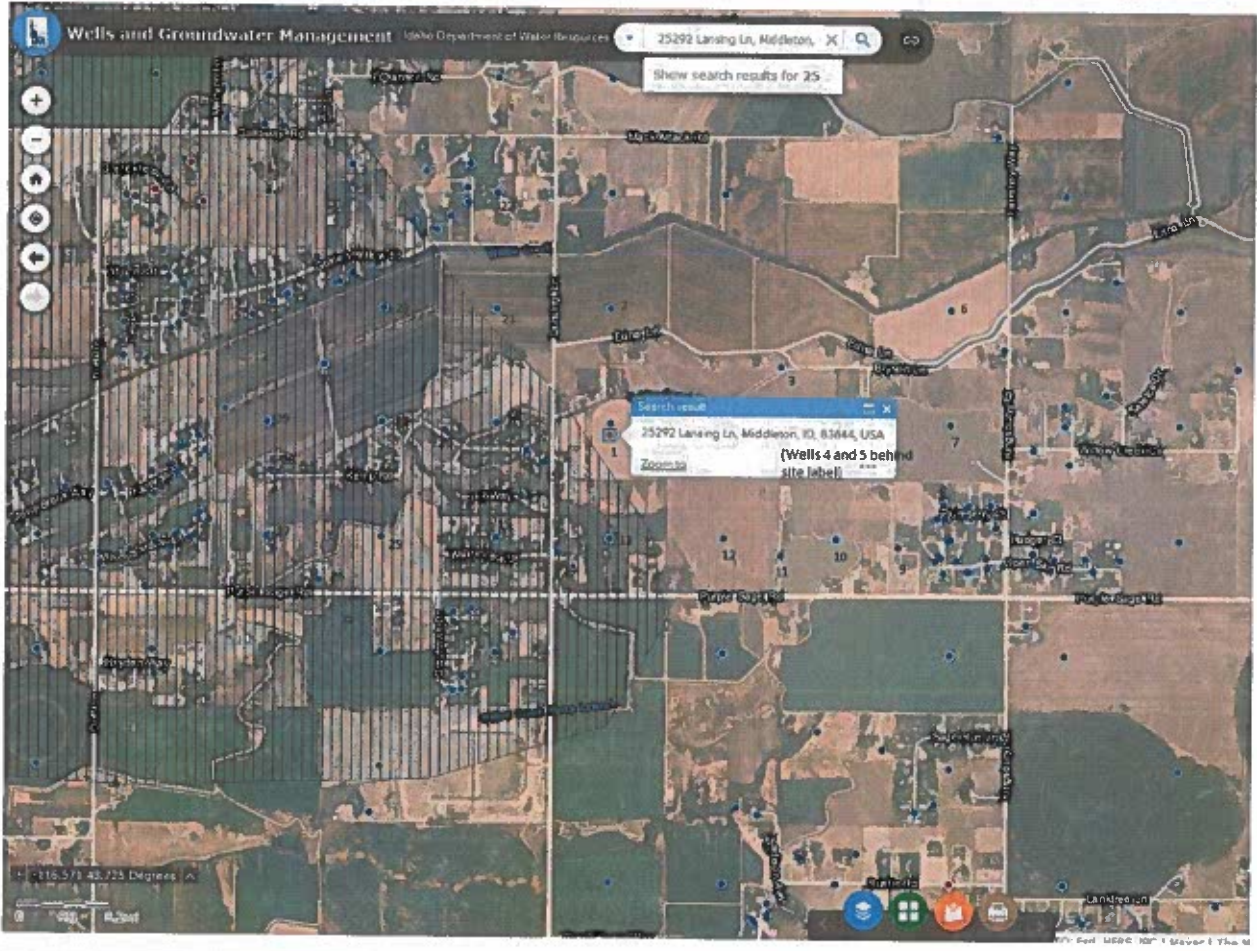
APPENDIX 2

IDWR Well Logs



Well drilling records maintained by the Idaho Department of Water Resources (IDWR) were accessed at <https://idwr.idaho.gov/> and reviewed for wells in the site vicinity. Thirty wells were identified within an approximately 0.5-mile search radius. These wells are shown in the following figure with arbitrary identification numbers added for this report. Summary data regarding selected wells is listed in the following tables. Copies of well drilling records for these wells follow the tables. Note that well locations on the IDWR web site (and the following image) may vary significantly from actual well locations.

Hawk View Estates
Level One Nutrient Pathogen Study
April 21, 2021





Summary of Area Water Supply Wells

Section 27

Well No.	Owner	Depth (ft)	Static Water Level (ft, bgs)	Township/ Range/ Section	Use
1 (Subject Property)	TIM MEAGER	188	87	05N, 02W, 27	Domestic
2	GARY STEINBACK	197	90	05N, 02W, 27	Domestic
3	RICH BECHTOLD	270	150	05N, 02W, 27	Domestic
4	DON BRYSON	340	140	05N, 02W, 27	Domestic
5	RALPH KRAWL	240	90	05N, 02W, 27	Domestic
6	STUBBELFIELD	179	116	05N, 02W, 27	Domestic
7	HAROLD CROWNOVER	247	146	05N, 02W, 27	Domestic
8	TRADITION CUSTOM HOMES	333	168	05N, 02W, 27	Domestic
9	ALFONSO ORTIZ	351	162	05N, 02W, 27	Domestic
10	RICH BECHTOLD	290	160	05N, 02W, 27	Domestic
11	ALAN THRELFALL	218	133	05N, 02W, 27	Domestic
12	RANDY ROVETTO MOBILE HOME LOCATORS	211	118	05N, 02W, 27	Domestic
13	MARK VANBLAIRCOM	228	106	05N, 02W, 27	Domestic
14	AMERICHoice CUSTOM HOMES	282	127	05N, 02W, 27	Domestic



Summary of Area Water Supply Wells

Section 28

Well No.	Owner	Depth (ft)	Static Water Level (ft, bgs)	Township/ Range/ Section	Use
15	KARA CHRISTIAN	217	117	05N, 02W, 28	Domestic
16	JUSTIN & AUBREY WALKER	228	107	05N, 02W, 28	Domestic
17	BRANDON WALKER WALKER BUILDING	214	103	05N, 02W, 28	Domestic
18	PRINDLE & PRINDLE INC	225	75	05N, 02W, 28	Domestic
19	SUNRISE FINE HOMES	214	93	05N, 02W, 28	Domestic
20	DEON ECHOLS	193	77	05N, 02W, 28	Domestic
21	STEVE ALTERS ALTERS BROTHERS CONSTRUCTION	192	60	05N, 02W, 28	Domestic
22	MARY LOU DAVIS	220	123	05N, 02W, 28	Domestic
23	LEGACY HOMES	165	45	05N, 02W, 28	Domestic
24	TYSON YOUNGBERG	237	117	05N, 02W, 28	Domestic
25	HEPPEN HOMES	175	57	05N, 02W, 28	-
26	KARIA STOCKDALE	163	-	05N, 02W, 28	-
27	STEVE CORDELL	327	92	05N, 02W, 28	Domestic
28	RICHARD HORN	196	66	05N, 02W, 28	Domestic
29	RANDY FOUT	189	57	05N, 02W, 28	Domestic
30	TRADITION CUSTOM HOMES	190	46	05N, 02W, 28	Domestic



IDWR Well Logs

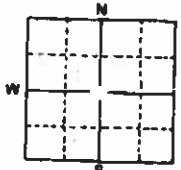
Section 27

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.

<p>1. WELL OWNER Name: <u>Ken Bechtold</u> Address: <u>939-8112</u> <u>888 1123</u> <u>40306</u> <u>#3 Purple Sage Rd</u></p>	<p>7. WATER LEVEL Static water level <u>110</u> feet below land surface Flowing? <input type="checkbox"/> Yes <input type="checkbox"/> No G.P.M. flow _____ Temperature _____ ° F. Quality _____ Artesian closed-in pressure _____ p.s.i. Controlled by <input type="checkbox"/> Valve <input type="checkbox"/> Cap <input type="checkbox"/> Plug</p>																																								
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USE ADDITIONAL SHEETS IF NECESSARY

FORWARD THE WHITE COPY TO THE DEPARTMENT

USE TYPEWRITER OR BALLPOINT 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.

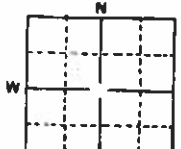
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USE TYPEWRITER OR BALL POINT PEN

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.

<p>1. WELL OWNER</p> <p>Name: <u>Robert Dickson</u></p> <p>Address: <u>313-9847</u></p> <p>Owner's Permit No. <u>Sample Says 4 F F...</u></p>	<p>7. WATER LEVEL</p> <p>Static water level <u>150</u> feet ^{Depth} below land surface</p> <p>Flowing? <input type="checkbox"/> Yes <input type="checkbox"/> No G.P. <u>Multi</u></p> <p>Temperature <u> </u> ° F. Quality <u> </u></p> <p>Artesian closed-in pressure <u> </u> p.s.i.</p> <p>Controlled by <input type="checkbox"/> Valve <input type="checkbox"/> Cap <input type="checkbox"/> Plug</p>																																															
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<p>5. WELL CONSTRUCTION</p> <p>Diameter of hole <u>6</u> inches Total depth <u>235</u> feet</p> <p>Casing schedule: <input checked="" type="checkbox"/> Steel <input type="checkbox"/> Concrete</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>Thickness</th> <th>Diameter</th> <th>From</th> <th>To</th> </tr> </thead> <tbody> <tr> <td><u>1.250</u> inches</td> <td><u>6</u> inches</td> <td><u>1</u> feet</td> <td><u>224</u> feet</td> </tr> <tr> <td> inches</td> <td> inches</td> <td> feet</td> <td> feet</td> </tr> <tr> <td> inches</td> <td> inches</td> <td> feet</td> <td> feet</td> </tr> <tr> <td> inches</td> <td> inches</td> <td> feet</td> <td> feet</td> </tr> </tbody> </table> <p>Was casing drive shoe used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Was a packer or seal used? <input type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Perforated? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>How perforated? <input type="checkbox"/> Factory <input checked="" type="checkbox"/> Knife <input type="checkbox"/> Torch</p> <p>Size of perforation <u> </u> inches by <u> </u> inches</p> <p>Number <u> </u> From <u> </u> To <u> </u></p> <p> perforations <u> </u> feet <u> </u> feet</p> <p> perforations <u> </u> feet <u> </u> feet</p> <p> perforations <u> </u> feet <u> </u> feet</p> <p>Well screen installed? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No</p> <p>Manufacturer's name <u>Johanna</u></p> <p>Type <u>10 1/2 1020</u> Model No. <u>SS</u></p> <p>Diameter <u> </u> Slot size <u> </u> Set from <u> </u> feet to <u> </u> feet</p> <p>Diameter <u> </u> Slot size <u> </u> Set from <u> </u> feet to <u> </u> feet</p> <p>Gravel packed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Size of gravel <u> </u></p> <p>Placed from <u> </u> feet to <u> </u> feet</p> <p>Surface seal depth <u>18</u> Material used in seal <input type="checkbox"/> Cement grout</p> <p><input checked="" type="checkbox"/> Pudding clay <input type="checkbox"/> Well cuttings</p> <p>Sealing procedure used <input checked="" type="checkbox"/> Sherry pit <input type="checkbox"/> Temporary surface casing</p> <p><input type="checkbox"/> Overbore to seal depth</p>	Thickness	Diameter	From	To	<u>1.250</u> inches	<u>6</u> inches	<u>1</u> feet	<u>224</u> feet	inches	inches	feet	feet	inches	inches	feet	feet	inches	inches	feet	feet	<p>11. DRILLER'S CERTIFICATION</p> <p>Firm Name <u> </u> Firm No. <u> </u></p> <p>Address <u> </u> Date <u> </u></p> <p>Signed by (Firm Official) <u> </u></p> <p>and <u> </u> (Deputy)</p>																											
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<p>6. LOCATION OF WELL</p> <p>Sketch map location must agree with written location. <u>67</u></p>  <p>Subdivision Name <u> </u></p> <p>Lot No. <u> </u> Block No. <u> </u></p> <p>County <u> </u></p> <p><u>SW 1/4 SE 1/4 Sec. 27 T. 5 N. R. 2 W.</u></p>	<p>SEP 8 1978</p> <p>Department of Water Resources Western Regional Office</p>																																															

USE ADDITIONAL SHEETS IF NECESSARY

FORWARD THE WHITE COPY TO THE DEPARTMENT

RECEIVED

DEC 16 1968

REPORT OF WELL DRILLER
State of Idaho

Department of Reclamation

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

WELL OWNER:
Name Alan Threlfall
Address Rt #1
Caldwell, Idaho

Owner's Permit No. _____
NATURE OF WORK (check): Replacement well
New well Deepened Abandoned

Water is to be used for: Domestic

METHOD OF CONSTRUCTION: Rotary Cable
Dug Other _____

(explain)
CASING SCHEDULE: Threaded _____ Welded
6 "Diam. from +15" ft. to -213 ft.
"Diam. from _____ ft. to _____ ft.
"Diam. from _____ ft. to _____ ft.
"Diam. from _____ ft. to _____ ft.
Thickness of casing: _____ Material: _____

Steel concrete wood other

(explain)
PERFORATED? Yes No Type of perforator used: _____

Size of perforations: _____ " by _____ "
perforations from _____ ft. to _____ ft.
perforations from _____ ft. to _____ ft.
perforations from _____ ft. to _____ ft.
perforations from _____ ft. to _____ ft.

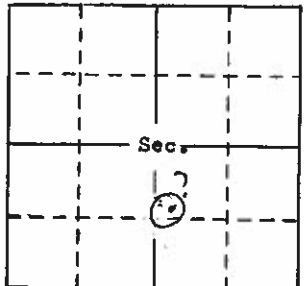
WAS SCREEN INSTALLED? Yes No
Manufacturer's name _____
Type _____ Model No. _____
Diam. _____ Slot size _____ Set from _____ ft. to _____ ft.
Diam. _____ Slot size _____ Set from _____ ft. to _____ ft.

CONSTRUCTION: Well gravel packed? Yes
No size of gravel _____ Gravel placed from _____ ft. to _____ ft. Surface seal provided? Yes No To what depth? 10 ft. Material used in seal: Puddling and Benflinite.

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

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

Locate well in section



LOCATION OF WELL: County Canyon
No. X SW X Sec. 27 T. 5 N X R. 2 E (W)

Size of drilled hole: 6" Total depth of well: 218' Standing water level below ground: 133' Temp. Fahr. aft. 42° Test delivery: 75 gpm or _____ cfs Pump? Bail
Size of pump and motor used to make test: 7 1/2 HP Rapidatan
Length of time of test: 23 Hrs. _____ Min.
Drawdown: 15 ft. Artesian pressure: ft. above land surface _____ Give flow _____ cfs or _____ gpm. Shutoff pressure: _____
Controlled by: Valve Cap Plug
No control Does well leak around casing? Yes No

DEPTH MATERIAL 32019 WATER FROM TO YES OR NO

DEPTH	MATERIAL	WATER	YES OR NO
0	11	Silt Soil	No
11	14	Coarse sand	No
14	60	Silt & Sand	No
60	119	Coarse Sand & Gravel	No
119	150	Coarse gravel & Balders	No
150	159	L. Brown Clay	No
159	163	L. Brown Sand fine	Yes
163	178	L. Brown Clay	No
178	192	L. Brown Sand Fine	Yes
192	208	L. Brown Clay	No
208	210	L. Brown Sand Fine	Yes
210	218	L. Brown Clay	No
218	?	Coarse White Sand	Yes

Work started: 8 Nov. 1968
Work finished: 16 Nov. 1968
Well Driller's Statement: This well was drilled under my supervision and this report is true to the best of my knowledge.
Name: Jim Baker C.F. Baker & Sons
Address: 1215 Savannah, Caldwell, Idaho
Signed by: Jim Baker
License No. 9 Date: 6 Dec. 1968

Use other side for additional remarks

63

USGS

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

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

1. WELL TAG NO. D 0029197
DRILLING PERMIT NO. _____
Water Right or Injection Well No. _____

2. OWNER: Randy Payette
Name Randy Payette
Address 76 Maple Home Coasters 5600E Clarksburg
City Caldwell State Id Zip 83607

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 5 North or South
Rge. 2 East or West
Sec. 27 SE 1/4 SW 1/4 NE 1/4 NW 1/4
Gov't Lot _____
County Canyon
Lat: : : Long: : :
Address of Well Site 8771 Purple Sage
City Middleton

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

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

6. DRILL METHOD:
 Air Rotary Cable Mud Rotary Other _____

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
Bentonite	0	20	700#	overbore

Was drive shoe used? Y N Shoe Depth(s) 211'
Was drive shoe seal tested? Y N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2	217	250	Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe 10' Length of Tailpipe none
Packer Y N Type K-Packer

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method _____
Screen Type & Method of Installation Johnson - wash down

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
213	218	.035		5"	SS	<input type="checkbox"/>	<input type="checkbox"/>

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
118 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices: well cap

12. WELL TESTS:
 Pump Bailor Air Flowing Artesian

Yield gal./m.n.	Drawdown	Pumping Level	Time
80+			1 hour

Water Temp. 55° Bottom hole temp. _____
Water Quality test or comments: Iron, 5 or less PH 7.5
Grains 8 Depth first Water Encounter 167'

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

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
10"	0	3	top soil		
10"	3	20	clay & sand		
10"	20	24	gravel & clay		
10"	24	91	clay		
10"	91	122	gravel		
10"	122	167	clay & fine sand		
10"	167	181	sand		X
10"	181	190	clay		
10"	190	192	sand		X
10"	192	194	clay		
10"	194	210	sand		X
10"	210	211	clay		
10"	211	218	sand		X

RECEIVED
APR 03 2003
WATER RESOURCES
WESTERN REGION

Completed Depth 218' (Measurable)
Date: Started 3-26-03 Completed 3-27-03

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

Company Name ABC Well Drilling Firm No. 621
Principal Driller Andy Payne Date 3-31-03
and Driller or Operator II Andy PAYNE Date 3-31-03
Operator I _____ Date _____

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

RECEIVED
APR 30 1990

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

USE TYPEWRITER OR
BALLPOINT PEN

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.

<p>1. WELL OWNERS Name <u>Harold Crowder</u> Address <u>25317 Kingsbury Road Middleton</u> Owner's Permit No. <u>63-90-W-089</u></p>	<p>7. WATER LEVEL Static water level <u>146</u> feet below land surface. Flowing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No G.P.M. flow _____ Artesian closed-in pressure _____ p.s.i. Controlled by: <input type="checkbox"/> Valve <input type="checkbox"/> Cap <input type="checkbox"/> Plug Temperature _____ OF. Quality _____ <i>Describe artesian or temperature zones below.</i></p>																																																																																																																																																																																																																						
<p>2. NATURE OF WORK <input checked="" type="checkbox"/> New well <input type="checkbox"/> Deepened <input type="checkbox"/> Replacement <input type="checkbox"/> Well diameter increase <input type="checkbox"/> Abandoned (describe abandonment procedures such as materials, plug depths, etc. in lithologic log)</p>	<p>8. WELL TEST DATA <input type="checkbox"/> Pump <input type="checkbox"/> Bailor <input checked="" type="checkbox"/> Air <input type="checkbox"/> Other _____</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Discharge G.P.M.</th> <th>Pumping Level</th> <th>Hours Pumped</th> </tr> <tr> <td><u>30 GPM</u></td> <td><u>-</u></td> <td><u>1 Hour</u></td> </tr> </table>	Discharge G.P.M.	Pumping Level	Hours Pumped	<u>30 GPM</u>	<u>-</u>	<u>1 Hour</u>																																																																																																																																																																																																																
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<p>6. LOCATION OF WELL Sketch map location must agree with written location. N W <u>27</u> E S County <u>Canyon</u> NE 1/4 SE 1/4 Sec. <u>27</u>, T. <u>5</u> S. R. <u>2</u> W. <u>2</u></p>	<p>11. DRILLERS CERTIFICATION I/We certify that all minimum well construction standards were complied with at the time the rig was removed. Firm Name <u>Adamsen Pump Drill</u> Firm No. <u>457</u> Address <u>Nampa</u> Date <u>4-22-90</u> Signed by (Firm Official) <u>Steve Adamsen</u> and (Operator) <u>Dave Adamsen</u></p>																																																																																																																																																																																																																						

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

811384

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

1. DRILLING PERMIT NO. 0-0-3-0903 -

Other IDWR No. _____

2. OWNER:

Name Mark VanBlaircom

Address 25114 Lansing Ln

City Middleton State ID _____ Zip 83644

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location

N

W		E	Twp. <u>5</u> North <input checked="" type="checkbox"/> or South <input type="checkbox"/>
			Rge. <u>2</u> East <input type="checkbox"/> or West <input checked="" type="checkbox"/>
			Sec. <u>27</u> 1/4 SW 1/4 SW 1/4
			Gov't lot _____ County <u>Canyon</u>

Lat: _____ Long: _____

Address of Well Site 25114 Lansing Ln

City Middleton

(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	0	20	550Lbs	Dry Pour

Was drive shoe used? Y N Shoe Depth(s) 227ft

Was drive shoe seal tested? Y N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2	227	.250	Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5"	223	228	.188	Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe 5ft Length of Tailpipe _____

9. PERFORATIONS/SCREENS

Perforations Method _____

Screens Screen Type johnson

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
228	233	.018	---	5"	SS	<input type="checkbox"/>	<input checked="" type="checkbox"/>
						<input type="checkbox"/>	<input type="checkbox"/>

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

106ft. 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
75GPM	---	230ft	2hours

Water Temp. 58Deg Bottom hole temp. _____

Water Quality test or comments: _____

Depth first Water Encountered 106ft

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Water				Y	N
Bore Dia	From	To	Remarks: Lithology, Water Quality & Temp.		
10"	0	2	Top Soil		
"	2	14	Sandy Clay		
"	14	20	Sand and Gravel		
6"	20	68	Sand and Gravel		
"	68	74	Tan Clay		
"	74	86	Sand and Gravel		
"	86	95	Tan Clay		
"	95	130	Gravel and Sand		
"	130	137	Sand Clay		
"	137	145	Sand		
"	145	160	Sandy Clay		
"	160	174	Fine Sand		
"	174	186	Tan Clay		
"	186	190	Sand		
"	190	196	Tan Clay		
"	196	200	Sand		
"	200	214	Sandy Clay		
"	214	216	Sand		
"	216	227	Tan Clay		
"	227	233	Sand		

RECEIVED

MAR 11 2004

WATER RESOURCES WESTERN REGION

Completed Depth: 233 (Measurable)

Date: Started 3-5-04 Completed 3-8-04

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 Coonse Well Drilling Firm No. 409

Firm Official [Signature] Date 3-8-04

Supervisor or Operator [Signature] Date 3-8-04

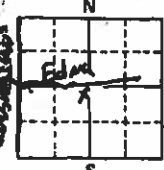
(Sign once if Firm Official & Operator)

Date: 3/9/2004 Time: 8:57:15 AM

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.

90

<p>1. WELL OWNER</p> <p>Name <u>Don Bryson</u></p> <p>Address _____</p> <p>Owner's Permit No. _____</p>	<p>7. WATER LEVEL</p> <p>Static water level <u>140</u> feet below land surface.</p> <p>Flowing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No G.P.M. flow _____</p> <p>Artesian closed-in pressure _____ p.s.i.</p> <p>Controlled by: <input type="checkbox"/> Valve <input type="checkbox"/> Cap <input type="checkbox"/> Plug</p> <p>Temperature _____ °F. Quality _____</p>																																																																
<p>2. NATURE OF WORK</p> <p><input checked="" type="checkbox"/> New well <input type="checkbox"/> Deepened <input type="checkbox"/> Replacement</p> <p><input type="checkbox"/> Abandoned (describe method of abandoning) _____</p>	<p>8. WELL TEST DATA</p> <p><input type="checkbox"/> Pump <input type="checkbox"/> Bailor <input checked="" type="checkbox"/> Air <input type="checkbox"/> Other _____</p> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th>Discharge G.P.M.</th> <th>Pumping Level</th> <th>Hours Pumped</th> </tr> <tr> <td><u>80 GPM</u></td> <td></td> <td><u>2 HR</u></td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	Discharge G.P.M.	Pumping Level	Hours Pumped	<u>80 GPM</u>		<u>2 HR</u>																																																										
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<p>3. PROPOSED USE</p> <p><input checked="" type="checkbox"/> Domestic <input type="checkbox"/> Irrigation <input type="checkbox"/> Test <input type="checkbox"/> Municipal</p> <p><input type="checkbox"/> Industrial <input type="checkbox"/> Stock <input type="checkbox"/> Waste Disposal or Injection</p> <p><input type="checkbox"/> Other _____ (specify type)</p>	<p>9. LITHOLOGIC LOG 080976</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Hole Diam.</th> <th colspan="2">Depth</th> <th rowspan="2">Material</th> <th colspan="2">Water</th> </tr> <tr> <th>From</th> <th>To</th> <th>Yes</th> <th>No</th> </tr> </thead> <tbody> <tr> <td>8</td> <td>0</td> <td>2</td> <td>Top Soil</td> <td></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td></td> <td>2</td> <td>100</td> <td>Sand</td> <td></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td></td> <td>100</td> <td>106</td> <td>Sand & clay</td> <td></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td></td> <td>146</td> <td>316</td> <td>Sand & clay</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td></td> <td>316</td> <td>318</td> <td>Sand</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td></td> <td>318</td> <td>325</td> <td>Sand clay</td> <td></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td></td> <td>325</td> <td>328</td> <td>Coarse sand</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td></td> <td>328</td> <td>338</td> <td>orange white sand</td> <td><input checked="" type="checkbox"/></td> <td><input checked="" type="checkbox"/></td> </tr> <tr> <td></td> <td>338</td> <td>340</td> <td>clay</td> <td></td> <td><input checked="" type="checkbox"/></td> </tr> </tbody> </table>	Hole Diam.	Depth		Material	Water		From	To	Yes	No	8	0	2	Top Soil		<input checked="" type="checkbox"/>		2	100	Sand		<input checked="" type="checkbox"/>		100	106	Sand & clay		<input checked="" type="checkbox"/>		146	316	Sand & clay	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		316	318	Sand	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		318	325	Sand clay		<input checked="" type="checkbox"/>		325	328	Coarse sand	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		328	338	orange white sand	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		338	340	clay		<input checked="" type="checkbox"/>
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<p>LOCATION OF WELL</p> <p>Sketch map location must agree with written location.</p>  <p>Subdivision Name _____</p> <p>Lot No. _____ Block No. _____</p> <p>County <u>CANYON</u> <u>24</u></p> <p><u>NE 1/4 SW 1/4</u> Sec. <u>27</u>, T. <u>5</u> N. R. <u>24N.</u></p>	<p>RECEIVED</p> <p>JUL 15 1981</p> <p>MAR 2 1982</p> <p>Department of Water Resources Western Regional Office</p> <p style="text-align: right;">dl cl</p>																																																																

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

603

1. WELL TAG NO. D 0063932

Drilling Permit No. 91513-863437

Water right or injection well # _____

2. OWNER: Tradition Custom Homes

Name _____

Address 8454 Brookhaven Pl.

City Middleton State Id. Zip 83644

3. WELL LOCATION:

Twp. 5 North or South Rge. 3 East or West

Sec. 27 1/4 SE 1/4 SE 1/4

Gov't Lot _____ County Canyon

Lat. 43 ° 44.309 (Deg. and Decimal minutes)

Long. 116 ° 33.333 (Deg. and Decimal minutes)

Address of Well Site 8158 Plumberry Ct.

City Middleton

(Give at least name of road + distance to road or landmark)

Lot. 6 Blk. 1 Sub. Name Kingslawy Meadows

4. USE:

Domestic Municipal Monitor Irrigation Thermal Injection
 Other _____

5. TYPE OF WORK:

New well Replacement well Modify existing well
 Abandonment Other _____

6. DRILL METHOD:

Air Rotary Mud Rotary Cable Other _____

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method/procedure
<u>38 Best</u>	<u>0</u>	<u>35</u>	<u>22 bags</u>	<u>Dry Pour</u>

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Liner	Threaded	Welded
<u>6</u>	<u>42</u>	<u>333</u>	<u>250</u>	<u>Steel</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Was drive shoe used? Y N Shoe Depth(s) 333'

9. PERFORATIONS/SCREENS:

Perforations Y N Method _____

Manufactured screen Y N Type Johnson

Method of installation Wash DN. Valve

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
<u>334</u>	<u>344</u>	<u>20</u>	<u>6"</u>	<u>Tele</u>	<u>S.S.</u>	

Length of Headpipe 5' Length of Tailpipe Ø

Packer Y N Type 3-Rib

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method

11. FLOWING ARTESIAN:

Flowing Artesian? Y N Artesian Pressure (PSIG) _____

Describe control device _____

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) 210 Static water level (ft) 168'

Water temp. (°F) _____ Bottom hole temp. (°F) _____

Describe access port Sani Seal Well Cap

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)
<u>325</u>	<u>100</u>	<u>1 hr.</u>
<u>260</u>	<u>80</u>	<u>.5 hr.</u>

Test method:

Pump Bailer Air Flowing artesian

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
<u>10</u>	<u>0</u>	<u>5</u>	<u>Top Soil</u>		<input checked="" type="checkbox"/>
	<u>5</u>	<u>7</u>	<u>Clay</u>		<input checked="" type="checkbox"/>
	<u>7</u>	<u>11</u>	<u>Hrd Pan</u>		<input checked="" type="checkbox"/>
	<u>11</u>	<u>34</u>	<u>Clay & large Sand</u>		<input checked="" type="checkbox"/>
<u>6</u>	<u>34</u>	<u>47</u>	<u>Broken Clay & Sand</u>		<input checked="" type="checkbox"/>
	<u>47</u>	<u>68</u>	<u>Large Sand</u>		<input checked="" type="checkbox"/>
	<u>68</u>	<u>103</u>	<u>Fractured Clay & Sand</u>		<input checked="" type="checkbox"/>
	<u>103</u>	<u>105</u>	<u>Brn Clay</u>		<input checked="" type="checkbox"/>
	<u>105</u>	<u>143</u>	<u>Large Gravel</u>		<input checked="" type="checkbox"/>
	<u>143</u>	<u>151</u>	<u>Soft Brn Clay</u>		<input checked="" type="checkbox"/>
	<u>151</u>	<u>174</u>	<u>Sandy clay</u>		<input checked="" type="checkbox"/>
	<u>174</u>	<u>177</u>	<u>Hrd Brn Clay</u>		<input checked="" type="checkbox"/>
	<u>177</u>	<u>193</u>	<u>Sandy Clay</u>		<input checked="" type="checkbox"/>
	<u>193</u>	<u>197</u>	<u>Fine red colored Sand</u>		<input checked="" type="checkbox"/>
	<u>197</u>	<u>207</u>	<u>Large Sand</u>		<input checked="" type="checkbox"/>
	<u>207</u>	<u>217</u>	<u>Fractured Clay & Sand</u>		<input checked="" type="checkbox"/>
	<u>217</u>	<u>224</u>	<u>Sandy clay</u>		<input checked="" type="checkbox"/>
	<u>224</u>	<u>237</u>	<u>Fractured Clay & large Sand</u>		<input checked="" type="checkbox"/>
	<u>237</u>	<u>242</u>	<u>Brn Clay</u>		<input checked="" type="checkbox"/>
	<u>242</u>	<u>261</u>	<u>Sandy Clay</u>		<input checked="" type="checkbox"/>
	<u>261</u>	<u>264</u>	<u>Brn Clay</u>		<input checked="" type="checkbox"/>
	<u>264</u>	<u>281</u>	<u>Sandy clay</u>		<input checked="" type="checkbox"/>
	<u>281</u>	<u>298</u>	<u>Fractured clay & large Sand</u>		<input checked="" type="checkbox"/>
	<u>298</u>	<u>301</u>	<u>Brn Clay</u>		<input checked="" type="checkbox"/>
	<u>301</u>	<u>330</u>	<u>Sandy Clay (Silty)</u>		<input checked="" type="checkbox"/>
	<u>330</u>	<u>333</u>	<u>Brn Clay</u>		<input checked="" type="checkbox"/>
	<u>333</u>	<u>344</u>	<u>med (white) Sand</u>		<input checked="" type="checkbox"/>

Completed Depth (Measurable): 344'

Date Started: 7-24-12 Date Completed: 7-24-12

14. DRILLER'S CERTIFICATION:

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

Company Name Precision Well Drilling Co. No. 522

*Principal Driller Jeff Newman Date 8-17-12

*Driller _____ Date _____

*Operator II _____ Date _____

Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required

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SEP 07 2012

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IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

1. WELL TAG NO. D 0070266

Drilling Permit No. 970649-876706

Water right or injection well # _____

2. OWNER: Alfonso Ortiz

Name _____

Address 2929 N. Boulder Creek Ave.

City Meridian State ID. Zip 83646

3. WELL LOCATION:

Twp. 5 North or South Rge. 2 East or West

Sec. 27 SE 1/4 SE 1/4 1/4

Gov'l Lot _____ County Paragon

Lat. 43 ° 44:226 (Deg. and Decimal minutes)

Long. 116 ° 33:452 (Deg. and Decimal minutes)

Address of Well Site No Address

City Middleton

Lot _____ Blk. _____ Sub. Name 10 Acres

4. USE:

Domestic Municipal Monitor Irrigation Thermal Injection
 Other _____

5. TYPE OF WORK:

New well Replacement well Modify existing well
 Abandonment Other _____

6. DRILL METHOD:

Air Rotary Mud Rotary Cable Other _____

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method/procedure
78 best	0	44	24 bags	Dry Pour

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing Liner	Threaded	Welded
6	42	343	250	Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Was drive shoe used? Y N Shoe Depth(s) 343'-2"

9. PERFORATIONS/SCREENS:

Perforations Y N Method _____

Manufactured screen Y N Type Johnson

Method of installation Wash DN. Valve

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
346	351	1/4"	6"	Tele	S.S.	

Length of Headpipe 6'-6 1/2" Length of Tailpipe 0

Packer Y N Type 3-Rib

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method

11. FLOWING ARTESIAN:

Flowing Artesian? Y N Artesian Pressure (PSIG) _____

Describe control device _____

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) 310 Static water level (ft) 162

Water temp. (°F) 57 Bottom hole temp. (°F) _____

Describe access port Same Seal well cap

Well test:	Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	Test method:			
				Pump	Boiler	Air	Flowing artesian
	<u>390</u>	<u>100</u>	<u>7 hrs.</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
10	0	4	Top Soil		-
	4	7	Clay		-
	7	9	Clay & Hrd pan		-
	9	23	Clay & Sand		-
6	23	57	Brn Clay		-
	57	73	Clay & large Sand		-
	73	96	large Sand		-
	96	112	Brn Clay		-
	112	118	Clay & large Sand		-
	118	124	Clay mixed w/ gravel		-
	124	144	gravel		-
	144	153	Hrd Brn Clay		-
	153	157	Sandy clay		-
	157	161	Hrd Brn Clay		-
	161	196	Hrd cemented Sand		-
	196	217	Sandy clay		-
	217	226	Hrd Brn Clay		-
	226	232	Hrd Gray clay		-
	232	245	Hrd Brn clay		-
	245	251	Sandy clay		-
	251	256	large Sand		-
	256	284	Sandy clay		-
	284	291	Brn Clay		-
	291	304	Sandy clay		-
	304	309	Brn Clay		-
	309	314	Sandy clay (Fractured)		-
	314	317	Brn Clay		-
	317	332	Sandy clay		-
	332	340	Fine silty Sand		-
	340	344	Brn Clay		-
	344	351	Fine Sand		-

Completed Depth (Measurable): 351 ft.

Date Started: 9/16/15 Date Completed: 10/11/15

14. DRILLER'S CERTIFICATION:

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

Company Name Precision Well Drilling Co. No. 522

*Principal Driller John Van Arman Date 10/13/15

*Driller _____ Date _____

*Operator II _____ Date _____

Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required.

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OCT 07 2015

WATER RESOURCES
WESTERN REGION

63

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

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WATER RESOURCES
WESTERN REGION

1. WELL TAG NO. D 0082446

Drilling Permit No. 889221

Water right or injection well # _____

2. OWNER: Americhoice

Name _____

Address PO Box 482

City Star State Id. Zip 83669

3. WELL LOCATION:

Twp. 5 North or South Rge. 2 East or West

Sec. 27 1/4 SW 1/4 SW 1/4

Gov't Lot _____ County Canyon

Lat. 43 ° 44.214 (Deg. and Decimal minutes)

Long. 116 ° 34.344 (Deg. and Decimal minutes)

Address of Well Site 25088 Lancing Lane

City Middleton

Lot _____ Blk. _____ Sub. Name _____

4. USE:

Domestic Municipal Monitor Irrigation Thermal Injection
 Other _____

5. TYPE OF WORK:

New well Replacement well Modify existing well
 Abandonment Other _____

6. DRILL METHOD:

Air Rotary Mud Rotary Cable Other _____

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method/procedure
Bent 3/4 Chip	0	40	1550 Lbs	Pour

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing Liner			
					Threaded	Welded		
6	+2	258	.250	Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Was drive shoe used? Y N Shoe Depth(s) 258'

9. PERFORATIONS/SCREENS:

Perforations Y N Method _____

Manufactured screen Y N Type Johnson Stainless

Method of installation Washdown

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
272	282	.016		5"	Stainless	

Length of Headpipe 21'8" Length of Tailpipe 8"

Packer Y N Type K-Packer

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method
N/A				

11. FLOWING ARTESIAN:

Flowing Artesian? Y N Artesian Pressure (PSIG) _____

Describe control device _____

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) 132 Static water level (ft) 127

Water temp. (°F) Cold Bottom hole temp. (°F) _____

Describe access port _____

Well test:			Test method:			
Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	Pump	Bellar	Air	Flowing artesian
280	35	180	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
12	0	22	Brown Clay		X
10	22	28	Coarse dry sand		X
10	28	40	Sandy brown clay		X
6	40	96	Sandy brown clay		X
6	96	124	Dry Sand & Gravel		X
6	124	132	Brown Clay		X
6	132	134	Fine Sand	X	
6	134	180	Sandy brown clay		X
6	180	222	Cemented Sand		X
6	222	248	Fine Brown Sand	X	
6	248	271	Clay with sand streaks	X	
6	271	282	Medium Brown Sand	X	
6	282	283	Brown Clay		X

Completed Depth (Measurable): 282'

Date Started: 3/30/2019 Date Completed: 4/3/2019

14. DRILLER'S CERTIFICATION:

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

Company Name McLeran Well Drilling, LLC Co. No. 641

*Principal Driller [Signature] Date 4/18/2019

*Driller [Signature] Date 4/18/2019

*Operator I _____ Date _____

Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required.



IDWR Well Logs

Section 28

603

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

83/211

Office Use Only		
Well ID No.	401808	
Inspected by		
Twp	Rge	Sec
1/4	1/4	1/4
Lat:	:	Long:
:	:	:

1. WELL TAG NO. D 0038861
 DRILLING PERMIT NO. _____
 Water Right or Injection Well No. _____

12. WELL TESTS:

Pump Bailor Air Flowing Artesian

Yield gal/min.	Drawdown	Pumping Level	Time
30			1/2 hr.

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments: _____

Depth first Water Encounter _____

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
10"	0	2	TOP SOIL		X
	2	18	SANDY BRN. CLAY		X
6"	18	30	SANDY BRN. CLAY		X
	30	42	SAND w/ GRAVEL		X
	42	71	SANDY CLAY w/ SAND		X
	71	95	GRAVEL		X
	95	116	SANDY CLAY		X
	116	120	FINE SAND	X	
	120	195	CLAY w/ SAND STRKS.	X	
	195	198	COARSE SAND	X	
	198	212	SANDY CLAY w/ SAND	X	
	212	214	CLAY		X
	214	224	COARSE SAND	X	
	224	225	BRN. CLAY		X

2. OWNER:
 Name PRINDLE : PRINDLE INC.
 Address 445 CLEAR CREEK DR
 City MERIDIAN State ID. Zip 83642

3. LOCATION OF WELL by legal description:
 You must provide address or Lot, Blk, Sub. or Directions to well.
 Twp. S North or South
 Rge. 2 East or West
 Sec. 28 NE 1/4 SE 1/4
 Gov't Lot _____
 County CANYON 160 acres
 Lat: : : Long: : :
 Address of Well Site 9299 KEMP RD.
 City MIDDLETON
 Lt. 16 Blk. 2 Sub. Name WILLOW CRK. SUB.

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

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

6. DRILL METHOD:
 Air Rotary Cable Mud Rotary Other _____

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
BENTONITE	0	18	500 lbs.	10" OVERLAP

Was drive shoe used? Y N Shoe Depth(s) 213'
 Was drive shoe seal tested? Y N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2	213	.250	STEEL	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5"	209	214	.258	STEEL	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5"	224	225	.258	STEEL	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe 5.0 Length of Tailpipe 1.0
 Packer Y N Type RUBBER K-PACKER

9. PERFORATIONS/SCREENS PACKER TYPE

Perforation Method _____
 Screen Type & Method of Installation TOTANSON / WASHDOWN

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
214	224	.016	304	5"	S.S.	<input type="checkbox"/>	<input checked="" type="checkbox"/>

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method
N/A				

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
75 ft. below ground Artesian pressure _____ lb.
 Depth flow encountered _____ ft. Describe access port or control devices: _____

14. DRILLER'S CERTIFICATION

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

Company Name DENNIS PAPP'S WELL DRILLING INC. Firm No. 332
 Principal Driller Mark Papp Date 3/21/05
 and _____
 Driller or Operator II _____ Date _____
 Operator I Matt McVey Date 3/21/05
 Principal Driller and Rig Operator Required.
 Operator I must have signature of Driller/Operator II.

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 MAR 31 2005

WATER RESOURCES
 WESTERN REGION

Completed Depth 225' (Measurable)
 Date: Started 3/16/05 Completed 3/18/05

63

Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

845468

Office Use Only

Well ID No. _____

Inspected by _____

Twp _____ Rge _____ Sec _____

1/4 1/4 1/4

Lat: : : Long: : :

1. WELL TAG NO. D D0047904

DRILLING PERMIT NO. _____

Water Right or Injection Well No. _____

2. OWNER:

Name LEGACY HOMES

Address 1780 N.J WATERBROOK WAY

City STAR State ID Zip 83669

3. LOCATION OF WELL by legal description:

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

Twp 5 North or South

Rge 2 East or West

Sec 28 SW 1/4 NE 1/4 1/4

Gov't Lot _____ County CANYON 160 acres

Lat: : : Long: : :

Address of Well Site 9612 Golden Willow St City Middleton

(Give at least name of road + Distance to Road or Landmark)

Lt. 28 Blk. 1 Sub. Name Willow View Sub.

4. USE:

Domestic Municipal Monitor Irrigation

Thermal Injection Other _____

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

New Well Modify Abandonment Other _____

6. DRILL METHOD:

Air Rotary Cable Mud Rotary Other _____

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
Bentonite	0	18	500lbs	10" overbore

Was drive shoe used? Y N Shoe Depth(s) 148

Was drive shoe seal tested? Y N How? DRY HOLE

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	52	148	29	Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3"	175	150	188	Steel	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	255				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe 5' Length of Tailpipe 0

Packer Y N Type K Packer

9. PERFORATIONS/SCREENS PACKER TYPE

Perforation Method FACTORY

Screen Type & Method of Installation Stainless Steel

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
150	160	20#		5"	Stainless Steel	<input type="checkbox"/>	<input checked="" type="checkbox"/>

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

45 ft. below ground Artesian pressure _____ lb.

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

12. WELL TESTS:

Pump Bailor Air Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
70			15 HRS.

Water Temp. _____ Bottom hole temp. _____

Water Quality test or comments: _____

Depth first Water Encounter 93'

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

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
10"	0	4	TOP SOIL		
10"	4	18	CLAY & SAND MIXED		
6"	18	25	CLAY & SAND MIXED		
6"	25	48	CLAY		
6"	48	75	GRAVEL		
6"	75	93	CLAY		
6"	93	97	SAND		<input checked="" type="checkbox"/>
6"	97	115	CLAY		
6"	115	130	SAND		<input checked="" type="checkbox"/>
6"	130	135	CLAY		
6"	135	165	SAND		<input checked="" type="checkbox"/>

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APR 18 2007

WATER RESOURCES
WESTERN REGION

Completed Depth 165 (Measurable)

Date: Started 03/01/07 Completed 3-10-07

14. DRILLER'S CERTIFICATION

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

Company Name KNIE PUMP & DRILLING Firm No. 417

Principal Driller Mike Knie Date 4-1-07

and Driller or Operator II _____ Date _____

Operator I _____ Date _____

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

603
Form 238-7
6/02

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

845865

Office Use Only
Well ID No. 415938
Inspected by _____
Twp _____ Rge _____ Sec _____
1/4 _____ 1/4 _____ 1/4 _____
Lat: _____ Long: _____

1. WELL TAG NO. D 0047918
DRILLING PERMIT NO. _____
Water Right or Injection Well No. _____

2. OWNER:
Name MARY LOU DAVIS
Address 25860 WEEPING WILLOW ST
City MIDDLETON State ID Zip 83644

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 5 North or South
Rge. 2 East or West
Sec. 28 1/4 NE 1/4 NE 1/4
Gov't Lot _____ County _____
Lat: _____ Long: _____
Address of Well Site 25860 WEEPING WILLOW ST
City MIDDLETON
(Give at least name of road - Distance to Road or Landmark)
Lt. 10 Blk. 1 Sub. Name WILLOW VIEW SUB

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

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

6. DRILL METHOD:
 Air Rotary Cable Mud Rotary Other _____

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
<u>BENTONITE</u>	<u>0</u>	<u>18</u>	<u>950</u>	<u>DRY POUR</u>

Was drive shoe used? Y N Shoe Depth(s) 218
Was drive shoe seal tested? Y N How? AIR

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
<u>6</u>	<u>+2</u>	<u>218</u>	<u>.250</u>	<u>STEEL</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<u>5</u>	<u>210</u>	<u>220</u>	<u>.250</u>	<u>STEEL</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe _____ Length of Tailpipe _____
Packer Y N Type K-PACKER

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method _____
Screen Type & Method of Installation JOHNSON WIRE WRAP

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
<u>220</u>	<u>225</u>	<u>.020</u>		<u>5</u>	<u>S.S.</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
123 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices:
SANITARY WELL CAP

12. WELL TESTS:

Yield gal./min	Drawdown	Pumping Level	Time
<u>35 gpm</u>			<u>1 hr</u>

Water Temp. 60° Bottom hole temp. _____
Water Quality test or comments: _____

13. LITHOLOGIC LOG: (Describe repairs or abandonment) _____
Depth first Water Encounter _____

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water	Y	N
<u>12</u>	<u>0</u>	<u>18</u>	<u>FINE BROWN SAND</u>			
<u>6</u>	<u>18</u>	<u>22</u>	<u>FINE BROWN SAND</u>			
	<u>22</u>	<u>25</u>	<u>GRAVEL</u>			
	<u>25</u>	<u>50</u>	<u>FINE BR SAND</u>			
	<u>50</u>	<u>59</u>	<u>BR. CLAY w/ SAND</u>			
	<u>59</u>	<u>98</u>	<u>GRAVEL</u>			
	<u>98</u>	<u>110</u>	<u>BR SAND</u>			
	<u>110</u>	<u>118</u>	<u>BR CLAY</u>			
	<u>118</u>	<u>126</u>	<u>BR SAND</u>			
	<u>126</u>	<u>135</u>	<u>BR CLAY</u>			
	<u>135</u>	<u>151</u>	<u>COARSE BR SAND</u>			
	<u>151</u>	<u>157</u>	<u>BR CLAY</u>			
	<u>157</u>	<u>172</u>	<u>FINE-COARSE SAND</u>			
	<u>172</u>	<u>175</u>	<u>BR CLAY</u>			
	<u>175</u>	<u>212</u>	<u>WHITE + BR SAND</u>			
	<u>212</u>	<u>220</u>	<u>BR CLAY</u>			
	<u>220</u>	<u>225</u>	<u>COARSE WHITE SAND</u>			

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MAY 24 2007

WATER RESOURCES
WESTERN REGION

Completed Depth 225' (Measurable)
Date Started 5-1-07 Completed 5-4-07

14. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.
Company Name RIVERSIDE INC Firm No. 333
Principal Driller _____ Date 5/14/07
and _____
Driller or Operator II _____ Date 5/21/07
Operator II _____ Date 5/22/07
Principal Driller and Rig Operator Required.
Operator must have signature of Driller/Operator II.

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

844806

Office Use Only
Well ID No. 414963
Inspected by _____
Twp _____ Rge _____ Sec _____
1/4 1/4 1/4
Lat: _____ Long: _____

1. WELL TAG NO. D 0047518
DRILLING PERMIT NO. _____
Water Right or Injection Well No. _____

2. OWNER:
Name Steve Alters
Address 1217 W Hitchcock St.
City Meridian State Id. Zip 83642

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well.
Twp. 5 North or South
Rge. 2 East or West
Sec. 28 NE 1/4 NE 1/4 1/4
Gov't Lot _____ County Carson 1/4
Lat: _____ Long: _____
Address of Well Site 25902 Weeping Willow St.
City Middleton
(Give at least name of road - Distance to Road or Landmark)
Lt. 9 Blk. 1 Sub. Name Willowwood Sub.

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

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

6. DRILL METHOD:
 Air Rotary Cable Mud Rotary Other _____

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
Bentonite	0	18'	10	dry pour

Was drive shoe used? Y N Shoe Depth(s) 186'
Was drive shoe seal tested? Y N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	2'	192'	20	stainless	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe 5' Length of Tailpipe 0
Packer Y N Type K-pak

9. PERFORATIONS/SCREENS PACKER TYPE
Perforation Method _____
Screen Type & Method of Installation Stainless steel

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
182'	192'	20		5"	stainless	<input checked="" type="checkbox"/>	<input type="checkbox"/>

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method
none				

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
60 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices: well cap

12. WELL TESTS:
 Pump Bailor Air Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
40			1/2 hr

Water Temp. 55° Bottom hole temp _____
Water Quality test or comments: good

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

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
10"	0	10'	Top soil		
10"	10'	18'	Sand + gravel mix		
6"	18'	60	Sand + clay mix		
6"	60	100	Cemented gravel		
6"	100	101	Brown clay		
6"	101	165	Sand		
6"	165	175	Brown clay		
6"	175	192	Sand		

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JAN 09 2007
WATER RESOURCES
WESTERN REGION

Completed Depth 192' (Measurable)
Date: Started 11-13-06 Completed 12-8-06

14. DRILLER'S CERTIFICATION
I/We certify that all minimum well construction standards were complied with at the time the rig was removed.
Company Name Clearwater Drilling Inc Firm No. 382
Principal Driller Brad Carson Date 1/1/07
and Driller or Operator II _____ Date _____
Operator I _____ Date _____
Principal Driller and Rig Operator Required.
Operator I must have signature of Driller/Operator II.

63

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

851562

1. WELL TAG NO. D 0052912

Drilling Permit No. _____
Water right or injection well # _____

2. OWNER:

Name Tradition Custom Homes
Address 8454 Brookhaven Pl
City Middleton State Id. Zip 83644

3. WELL LOCATION:

Twp. 5 North or South Rce. 2 East or West
Sec. 28 1/4 SE 1/4 NW 1/4

Gov't Lot _____ County Canyon
Lat. _____ (Deg. and Decimal minutes)
Long _____ (Deg. and Decimal minutes)
Address of Well Site 9708 Golden Willow St.
City Middleton

(Give at least name of road + Distance to Road or Landmark)
Lot. 26 Blk. 1 Sub. Name Willow View #2

4. USE:

Domestic Municipal Monitor Irrigation Thermal Injection
 Other _____

5. TYPE OF WORK:

New well Replacement well Modify existing well
 Abandonment Other _____

6. DRILL METHOD:

Air Rotary Mud Rotary Cable Other _____

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft')	Placement method/procedure
<u>hole plug</u>	<u>0</u>	<u>19</u>	<u>500</u>	<u>10" overbore</u>
<u>Beet</u>				

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Liner	Threaded	Welded
<u>6</u>	<u>185</u>	<u>250</u>	<u>250</u>	<u>Steel</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Was drive shoe used? Y N Shoe Depth(s) 185ft.

9. PERFORATIONS/SCREENS:

Perforations Y N Method _____
Manufactured screen Y N Type Johnson
Method of installation Wash Dr. Valve

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
<u>185</u>	<u>190</u>	<u>25</u>	<u>6"</u>	<u>7/16</u>	<u>S.S.</u>	

Length of Headpipe 5' Length of Tailpipe Ø
Packer Y N Type 3-Rib

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft')	Placement method

11. FLOWING ARTESIAN:

Flowing Artesian? Y N Artesian Pressure (PSIG) _____
Describe control device Sani Seal Well Cap

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) 71' Static water level (ft) 46'
Water temp. (°F) _____ Bottom hole temp. (°F) _____
Describe access port Sani Seal Well Cap

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)
	<u>150</u>	<u>1hr.</u>

Test method:

Pump Bailer Air Flowing artesian

Water quality test or comments: NO Small good clear color

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
<u>10</u>	<u>0</u>	<u>4</u>	<u>Top Soil</u>		<input checked="" type="checkbox"/>
<u>1</u>	<u>4</u>	<u>9</u>	<u>Sand & clay</u>		<input checked="" type="checkbox"/>
<u>1</u>	<u>9</u>	<u>17</u>	<u>Hard pan</u>		<input checked="" type="checkbox"/>
<u>10-6</u>	<u>17</u>	<u>48</u>	<u>Sand & clay</u>		<input checked="" type="checkbox"/>
	<u>48</u>	<u>83</u>	<u>Sand & gravel</u>	<input checked="" type="checkbox"/>	
	<u>83</u>	<u>87</u>	<u>Hard Brn clay</u>		<input checked="" type="checkbox"/>
	<u>87</u>	<u>92</u>	<u>Dark Brn Sand & Clay</u>	<input checked="" type="checkbox"/>	
	<u>92</u>	<u>95</u>	<u>Brn clay</u>		<input checked="" type="checkbox"/>
	<u>95</u>	<u>105</u>	<u>Dark Brn Sand</u>	<input checked="" type="checkbox"/>	
	<u>105</u>	<u>116</u>	<u>Brn clay</u>		<input checked="" type="checkbox"/>
	<u>116</u>	<u>130</u>	<u>Sandy clay</u>	<input checked="" type="checkbox"/>	
	<u>130</u>	<u>134</u>	<u>Brn clay</u>		<input checked="" type="checkbox"/>
	<u>134</u>	<u>156</u>	<u>Fractured Sand & clay</u>	<input checked="" type="checkbox"/>	
	<u>156</u>	<u>159</u>	<u>Hard Brn clay</u>		<input checked="" type="checkbox"/>
	<u>159</u>	<u>173</u>	<u>Sandy clay</u>	<input checked="" type="checkbox"/>	
	<u>173</u>	<u>185</u>	<u>Brn clay</u>		<input checked="" type="checkbox"/>
	<u>185</u>	<u>190</u>	<u>med/hazy white sand</u>	<input checked="" type="checkbox"/>	

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AUG 04 2008

WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable): 190ft
Date Started: 5/23/08 Date Completed: 5/23/08

14. DRILLER'S CERTIFICATION:

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

Company Name Precision Well Drilling No. 522
*Principal Driller Jeff Dawson Date 6/13/08
*Driller _____ Date _____
*Operator II _____ Date _____
Operator I _____ Date _____

*Signature of Principal Driller and rig operator are required.

63

838703

Form 238-7
11/97 JGE

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

Office Use Only

Inspected by _____

Twp _____ Rge _____ Sec _____

1/4 1/4 1/4

Lat _____ Long _____

1. WELL TAG NO. D 0042304

DRILLING PERMIT NO. _____

Other IDWR No. _____

2. OWNER:

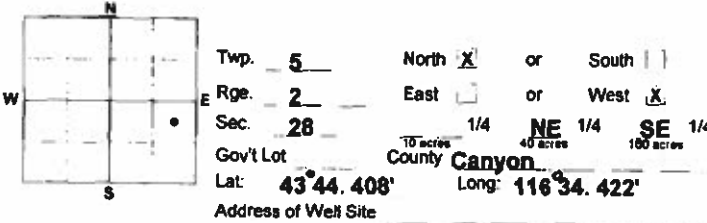
Name Justin & Aubrey Walker

Address 21570 Lansing Lane

City Middleton State ID Zip 83644

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.



(Give at least name of road + Distance to Road or Landmark)

Lt. 11 Blk. 2 Sub. Name Willow Creek Ranch City Middleton

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' 13 Sacks	Overbore

Was drive shoe used? Y N Shoe Depth(s) 218'

Was drive shoe seal tested? Y N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2'	218'	.250	Steel	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	

Length of Headpipe 5' Length of Tailpipe 0

9. PERFORATIONS/SCREENS:

Perforations Screens Method _____ Screen Type Johnson

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
218'	228'	.020		5"	SS		<input checked="" type="checkbox"/>

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

107 ft. below ground Artesian pressure _____ lb.
Depth flow encountered 221 ft. Describe access port or control devices: Cap

11. WELL TESTS:

Pump Bailer Air Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
<u>65</u>	<u>220'</u>	<u>220'</u>	<u>2 Hrs.</u>

Water Temp. 66 Bottom hole temp. 66

Water Quality test or comments: _____

Depth first Water Encounter 162'

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Water
10"	0	2'	Top Soil	
10"	2'	4'	Cliche	
10"	4'	18'	Cemented Sand & Gravel	
6"	18'	24'	Cemented Sand & Gravel	
6"	24'	32'	Sticky Tan Clay	
6"	32'	48'	Med. Brown Sand & Pea Gravel	
6"	48'	63'	Sand & Gravel	
6"	63'	94'	Sticky Brown Clay	
6"	94'	121'	Gravel	
6"	121'	161'	Sticky Tan Clay	
6"	161'	178'	Fine Brown Sand	X
6"	178'	201'	Fine Brown Sand	X
6"	201'	212'	Medium Brown Sand	X
6"	212'	221'	Sticky Tan Clay	
6"	221'	223'	Large Coarse Sand	X
6"	223'	227'	Medium Coarse Sand	X
6"	227'	228'	Sticky Tan Clay	

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MAR 20 2006

WATER RESOURCES
WESTERN REGION

Completed Depth 228 (Measurable)
Date: Started 3/7/2006 Completed 3/13/2006

13. DRILLER'S CERTIFICATION:

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

Company Name Treasure Valley Drilling Firm No. 560

Firm Official _____ Date 3/14/2006

and _____
Driller or Operator _____ Date 3/14/2006

(Sign once if Firm Official & Operator)

63

863083

Form 238-7
6/07

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

1. WELL TAG NO. D 0060357

Drilling Permit No. 914449-863083
Water right or injection well # _____

2. OWNER

Name Richard L. Horn
Address 9600 Kemp Road
City Middletown State ID Zip 83644

3. WELL LOCATION:

Twp. 5 North or South Rge. 2 East or West
Sec. 28 1/4 NE 1/4 SW 1/4
10 acres 40 acres 160 acres

Gov't Lot _____ County Canyon
Lat. 43° 44.364 (Deg. and Decimal minutes)
Long. 116° 35.102 (Deg. and Decimal minutes)
Address of Well Site same

City _____
Lot 2 Blk. 1 Sub. Name Willow Creek Ests. #2

4. USE:

Domestic Municipal Monitor Irrigation Thermal Injection
 Other

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

New Well Replacement well Modify existing well
 Abandonment Other

6. DRILL METHOD:

Air Rotary Mud Rotary Cable Other

7. SEALING PROCEDURES

Seal material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method/procedure
bentonite	0'	46'	2,150 lbs.	pour
chips				

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Liner	Threaded	Welded
6"	+2'	184'	.250	steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5"	174'	196'		scm assem.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Was drive shoe used? Y N Shoe Depth(s) 184'

9. PERFORATIONS/SCREENS:

Perforations Y N Method _____
Manufactured screen Y N Type telescoping
Method of installation wash in

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
186'	196'	.010	10'	5"	St. St.	.250

Length of Headpipe 12' Length of Tailpipe N/A

Packer Y N Type K - Type

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method

11. FLOWING ARTESIAN:

Flowing Artesian? Y N Artesian Pressure (PSIG) _____
Describe control device _____

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) 10' Static water level (ft) 66'
Water temp. (°F) _____ Bottom hole temp. (°F) _____
Describe access port _____

Well test:	Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	Test method:			
				Pump	Bailer	Air	Flowing artesian
	114'	100+		<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	34'	50					

Water Quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
10"	0'	1'	top soil		X
10"	1'	5'	tan clay		X
10"	5'	10'	sand & gravel	X	
10"	10'	27'	gravel & sand		X
10"	27'	48'	clays & sand		X
6"	48'	65'	solid sticky clay		X
6"	65'	91'	gravel & sand	X	
6"	91'	111'	solid tan clay		X
6"	111'	118'	fine sand & clay	X	
6"	118'	124'	fine sand	X	
6"	124'	134'	tan sandy clay		X
6"	134'	139'	sand, fine	X	
6"	139'	161'	tan clay		X
6"	161'	167'	fine sand	X	
6"	167'	173'	tan clay		X
6"	173'	178'	strips sand & clay	X	
6"	178'	182'	tan clay		X
6"	182'	184'	fine sand	X	
6"	184'	185'	clay		X
6"	185'	196'	sand	X	

Per Lynn / Downright: Bentonite Type 15 Chips (MP) 4-2

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APR 10 2012

WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable) 198
Date: Started 3-28-12 Completed 4-3-12

14. DRILLER'S CERTIFICATION

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

Company Name Down Right Drilling & Pump, Inc. Co. No. 637

*Principal Driller [Signature] Date 4-6-12

*Driller [Signature] Date 4-6-12

*Operator II [Signature] Date 4-9-12

Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required.

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

804035

1. WELL TAG NO. D 0063885

Drilling Permit No. 915414-804035
Water right or injection well # _____

2. OWNER

Name Kara Christan
Address 6980 N.Meridian RD
City Eagle State ID Zip 83616

3. WELL LOCATION:

Twp. 5 North or South Rge. 2 East or West
Sec. 28 1/4 NE 1/4 SE 1/4
Gov't Lot _____ County CANYON

Lat. 43° 44.384 (Deg. and Decimal minutes)
Long. 116° 34.382 (Deg. and Decimal minutes)
Address of Well Site 9029 Tamp RD - Kemp Rd.
City Middleton

Willow Creek Ranch
Lot 10 Blk. 2 Sub. Name Estate

4. USE:

Domestic Municipal Monitor Irrigation Thermal Injection
 Other

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

New Well Replacement well Modify existing well
 Abandonment Other

6. DRILL METHOD:

Air Rotary Mud Rotary Cable Other

7. SEALING PROCEDURES

Seal material	From (ft)	To (ft)	Quantity (lbs or ft³)	Placement method/procedure
3/4 bentonite	0	40	1450 lbs	pour

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Liner	Threaded	Welded
6	2	208	.250	steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	200	212	.250	steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Was drive shoe used? Y N Shoe Depth(s) 208

9. PERFORATIONS/SCREENS:

Perforations Y N Method _____
Manufactured screen Y N Type johnson
Method of installation wash in

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
212	217	.14	5ft	5	ss	.250

Length of Headpipe 11 ft Length of Tailpipe _____
Packer Y N Type 3 wing

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft³)	Placement method

11. FLOWING ARTESIAN:

Flowing Artesian? Y N Artesian Pressure (PSIG) _____
Describe control device _____

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) 129 Static water level (ft) 117
Water temp. (°F) 56 Bottom hole temp. (°F) _____

Describe access port cap

Well test:

Test method:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	Pump	Bailer	Air	Flowing artesian
83	50	1/2hr	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Water Quality test or comments:

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
10	0	3	top soil		X
10	3	4	hard pan		X
10	4	40	sandy clay		X
6	40	93	brown sandy clay		X
6	93	115	gravel		X
6	115	125	brown sandy clay		X
6	125	132	brown sand	X	
6	132	136	brown clay		X
6	136	147	brown sand	X	
6	147	152	brown clay		X
6	152	157	brown sand	X	
6	157	161	brown clay		X
6	161	170	brown sand	X	
6	170	173	brown clay		X
6	173	175	brown sand	X	
6	175	196	brown sand w/clay stips	X	
6	196	201	brown clay		X
6	201	205	fine sand	X	
6	205	210	brown clay		X
6	210	217	brown sand	X	

RECEIVED

AUG 24 2012

WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable) 117

Date: Started 8-1-12 Completed 8-3-12

14. DRILLER'S CERTIFICATION

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

Company Name waterpro Well Drilling Co. No. 626

*Principal Driller Monte Post Date 8-6-12

*Driller _____ Date _____

*Operator II _____ Date _____

Operator I _____ Date _____

*Signature of Principal Driller and rig operator are required.

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

1. WELL TAG NO. D 0070321
 Drilling Permit No. 971117 - 877174
 Water right or injection well # _____

2. OWNER: Dean Echols
 Name _____
 Address P.O. Box 462
 City Star State Id. Zip 83669

3. WELL LOCATION:
 Twp. 5 North or South Rge. 2 East or West
 Sec. 28 1/4 NW 1/4 SE

Gov'l Lot _____ County Canyon
 Lat. 43 ° 44:44 (Deg. and Decimal minutes)
 Long. 116 ° 34:64 (Deg. and Decimal minutes)
 Address of Well Site 9222 Kemp Rd.
 City Middleton

Lot. 5 Blk. 4 Sub. Name Willow Creek Ranch #3
 4. USE:
 Domestic Municipal Monitor Irrigation Thermal Injection
 Other _____

5. TYPE OF WORK:
 New well Replacement well Modify existing well
 Abandonment Other _____

6. DRILL METHOD:
 Air Rotary Mud Rotary Cable Other _____

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft')	Placement method/procedure
<u>3/8 Best</u>	<u>0</u>	<u>44</u>	<u>54 bags</u>	<u>Dry Pour</u>

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Liner	Threaded	Welded
<u>6</u>	<u>42</u>	<u>187</u>	<u>250</u>	<u>Steel</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Was drive shoe used? Y N Shoe Depth(s) 187'

9. PERFORATIONS/SCREENS:
 Perforations Y N Method _____
 Manufactured screen Y N Type Johnson
 Method of Installation Wash DN Valve

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
<u>188</u>	<u>193</u>	<u>12</u>	<u>6"</u>	<u>1/2</u>	<u>S.S.</u>	

Length of Headpipe 6'-4" Length of Tailpipe 0
 Packer Y N Type 3-Rib

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft')	Placement method

11. FLOWING ARTESIAN:
 Flowing Artesian? Y N Artesian Pressure (PSIG) _____
 Describe control device _____

12. STATIC WATER LEVEL and WELL TESTS:
 Depth first water encountered (ft) 105 Static water level (ft) 77
 Water temp. (°F) 58 Bottom hole temp. (°F) _____
 Describe access port Swi Seal Well Cap

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	Pump	Ballor	Air	Flowing artesian
<u>180</u>	<u>70</u>	<u>3 hrs.</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<u>120</u>	<u>65</u>	<u>1 hr.</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
11	0	6	TOP Soil		-
	6	8	Hrd pan		-
	8	26	Sand & Brn Clay		-
	26	42	GRAVEL mixed w/ clay		-
6	45	59	GRAVEL		-
	59	68	Brn Clay		-
	68	96	GRAVEL		-
	96	102	Sticky Brn Clay		-
	102	111	Fractured clay & coarse sand		-
	111	116	Brn Clay		-
	116	135	Sandy Clay		-
	135	137	Brn Clay		-
	137	143	White Brn Sand	-	
	143	156	Brn Clay		-
	156	176	Fine Brn Sand	-	
	176	180	Brn Clay		-
	180	181	Fine Sand	-	
	181	187	Brn Clay		-
	187	193	Real Fine white Sand	-	

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NOV 25 2015

WATER RESOURCE
WESTERN REGION

Completed Depth (Measurable): 193ft.
 Date Started: 10/28/15 Date Completed: 11/4/15

14. DRILLER'S CERTIFICATION:
 I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name Precision Drilling No. 522
 *Principal Driller Jef. Phanson Date 11/15/15
 *Driller Bill Ransom Date 11/15/15
 *Operator II _____ Date _____
 Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required.

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: _____
 Air Flowing Artesian

1. WELL TAG NO. D 0009559
DRILLING PERMIT NO. 63-99-W-0377-000
Other IDWR No. _____

95141

11. WELL TESTS:

Pump Bailor

Yield gal/min	Drawdown	Pumping Level	Time
160		170	2 hrs

2. OWNER:
Name Randy Fout
Address 743 W. Blue Downs
City Meridian State Id Zip 83642

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

N					
W		X		E	
S					

Twp. 5 North or South
Rge. 3 East or West
Sec. 28 NE 1/4 SW 1/4
Gov't Lot _____ County Canyon
Lat: _____ Long: _____
Address of Well Site Kemp St
City Middleton

Li 3 Blk. Sub. Name Willow Creek Ranch Estates #2

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	
Western Best	0	18	350	10' over bore

Was drive shoe used? Y N Shoe Depth(s) 189'-9"

Was drive shoe seal tested? Y N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6 1/2	1899	250		Steel	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe 5 Length of Tailpipe 0

9. PERFORATIONS/SCREENS

Perforations Method Wash DN Valve
Screens Screen Type Johnson

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
190	195	16	6	7/8"	SS	<input type="checkbox"/>	<input type="checkbox"/>

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

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

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
	0	4	Top Soil		X
	4	7	Hard Pan		X
	7	21	Sand & clay some gravel		X
	21	29	Brn clay		X
	29	57	Sandy clay		X
	57	80	Large gravel		X
	80	84	Brn clay		X
	84	91	Sandy clay		X
	91	112	Brn clay		X
	112	115	Sandy clay		X
	115	132	Sandy clay (Fractured)	X	
	132	134	Brn clay		X
	134	165	Sandy clay (Fractured)	X	
	165	171	Brn clay		X
	171	174	Sandy clay		X
	174	187	Sandy clay (Red Sand)	X	
	187	189	Brn clay		X
	189	195	med sand		X

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JUN 01 1999
MICROFILMED
AUG 25 1999
WATER RESOURCES
WESTERN REGION

Completed Depth 195' (Measurable)
Date: Started 5-24-99 Completed 5-27-99

13. DRILLER'S CERTIFICATION

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

Company Name Precision Well Pump Firm No. 522

Firm Official J.P. Raven Date 5-28-99

and Driller or Operator _____ Date _____

(Sign once if Firm Official & Operator)

749537

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: _____		_____
<input type="checkbox"/> Air	<input type="checkbox"/> Flowing Artesian		

1. WELL TAG NO. D 0018676
 DRILLING PERMIT NO. _____
 Other IDWR No. _____

2. OWNER:
 Name Steve Cordell
 Address 9684 Purple Sage Rd
 City Middleton State Id Zip 83644

11. WELL TESTS:
 Pump Bailor Air

Yield gal./min	Drawdown	Pumping Level	Time
250		320	2 hrs

Water Temp. _____ Bottom hole temp. _____
 Water Quality test or comments: good clear color
No Red Iron Depth first Water Encounter 82

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.

N					
W	E	S			
X					

Twp. 5 North or South
 Rge. 2 East or West
 Sec. 28 SE 1/4 SW 1/4
 Gov't Lot _____ County Canyon 10 acres 40 acres 160 acres
 Lat: _____ Long: _____
 Address of Well Site 9684 Purple Sage Rd City Middleton

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

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
10	0	4	Top Soil		X
10	4	13	Brn Clay		X
10	13	16	Clay with Sand & gravel		X
10	16	24	Brn Clay		X
6	24	48	Sandy Clay		X
6	48	82	Hrd Brn Clay		X
8	82	113	Sand & gravel	X	
11	113	121	Hrd Brn Clay		X
12	121	142	Sandy Clay		X
14	142	149	Hrd Brn Clay		X
14	149	156	Sandy Clay		X
15	156	161	Hrd Brn Clay		X
16	161	169	Sandy Clay		X
16	169	171	Brn Clay		X
17	171	176	Sandy Clay (Fractured)	X	
17	176	191	Brn Clay		X
19	191	215	Sandy Clay (Fractured)	X	
21	215	231	Hrd Brn Clay		X
22	231	237	Fine Sand (Hty)	X	
23	237	244	Brn Clay		X
24	244	273	Sandy Clay		X
27	273	276	Hrd Brn Clay		X
27	276	282	med Sand (Red in color)	X	
28	282	309	Hrd Brn Clay		X
30	309	321	med Sand	X	
32	321	327	Sandy Clay		X

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 NOV 08 2001 OCT 15 2001
 WATER RESOURCES WESTERN REGION
 WATER RESOURCES WESTERN REGION

Completed _____ Depth 327 (Measurable)
 Date: Started 6-18-01 Completed 6-21-01

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

Company Name Precision Well Pump Firm No. 522
 Firm Official Jeff Lawson Date 6-29-01
 and _____
 Driller or Operator _____ Date _____
 (Sign once if Firm Official & Operator)

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	Cacks or Pounds		
<u>Western Best</u>	<u>0</u> <u>19</u>	<u>7</u>	<u>10" over bore Pipe</u>	

Was drive shoe used? N Shoe Depth(s) 309'
 Was drive shoe seal tested? N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
<u>6</u>	<u>12</u>	<u>309</u>	<u>250</u>	<u>Steel</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe 5' Length of Tailpipe 7'-0"

9. PERFORATIONS/SCREENS

Perforations Method Set Drill back pipe
 Screens Screen Type Johanson

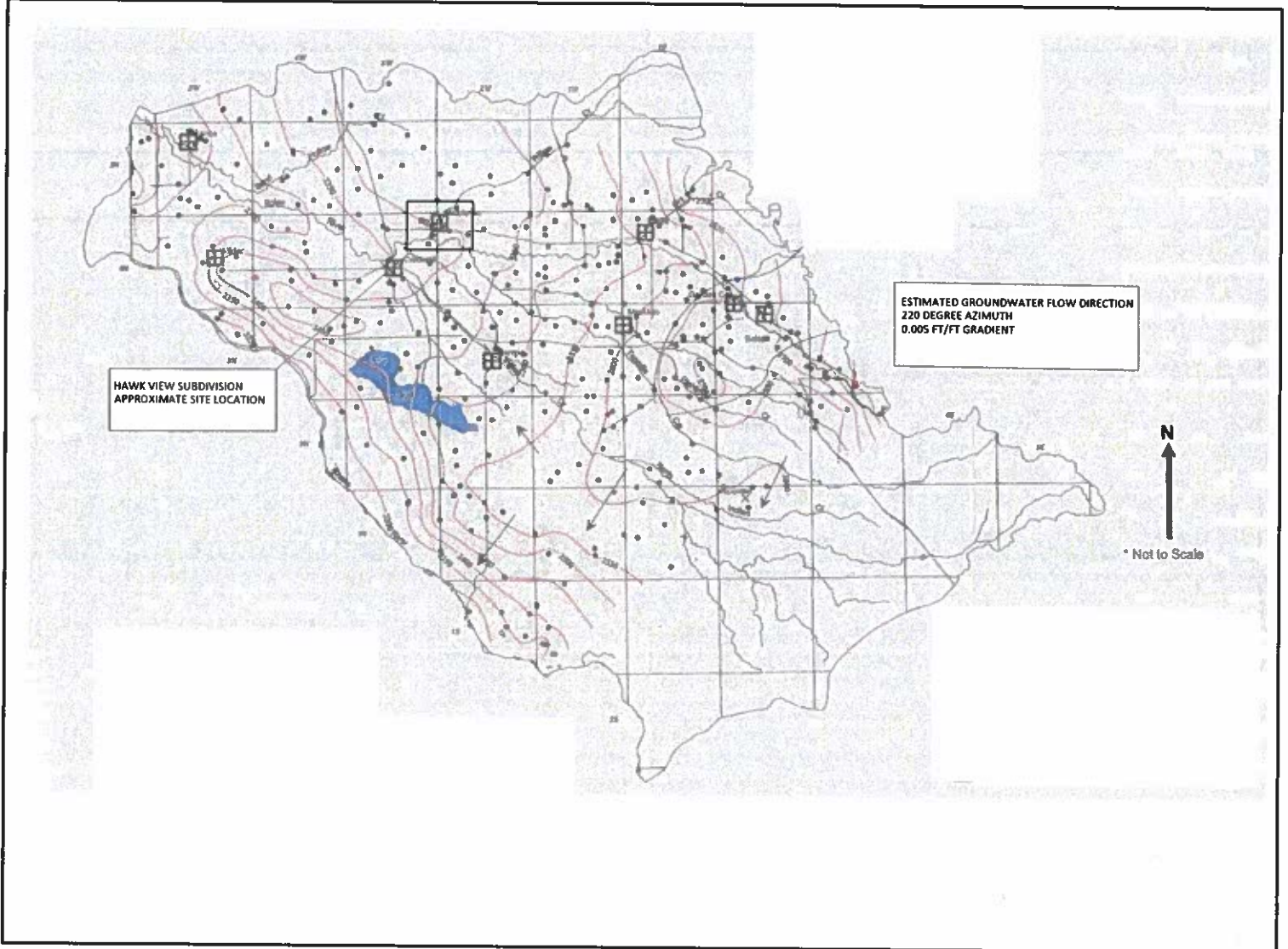
From	To	Slot Size	Number	Diameter	Material	Casing	Liner
<u>310</u>	<u>320</u>	<u>20</u>	<u>6"</u>	<u>Tele</u>	<u>SS</u>	<input type="checkbox"/>	<input type="checkbox"/>

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
72 ft below ground Artesian pressure _____ lb.
 Depth first encountered _____ ft. Describe access port or control devices: Sand Seal well cap



APPENDIX 3

Groundwater Contour Map (IDWR 1998 Data)





APPENDIX 4

IDEQ Mass Balance Spreadsheet

IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADS V. 1.3 5/2/2002

This spreadsheet is based on the mass balance approach documented in: 1985.Bauman, B.J. and W.M. Schaefer. Estimating Ground-Water Quality Impacts From Proceedings of 5th Northwest On-Site Wastewater Treatment Shortcourse, September 10-11, 1985. University of Washington, Seattle, WA. Pages 23-41. See

INPUT				OUTPUT			
Water Budget				Yearly Water Budget			
Hydraulic Conductivity (ft/day)	73.000	Site-specific		Ground Water	6.80E+04	88.8	
Hydraulic Gradient	0.005	Site-specific		Effluent	7.37E+03	9.6	
Mixing Zone Thickness (ft)	15	15	Default	Recharge	1.24E+03	1.6	
Aquifer Width Perpendicular to Flow (ft)	1200	Site-specific		Total Water Volume	7.68E+04		
Parcel Area (acres)	26.85	Site-specific					
Percent of Parcel That Is Impervious (Percent)	10	Site-specific		Point of Compliance Nitrate Concentration Goal	7.9		
Current/Acceptable Number of Homes in Parcel	17.8	Site-specific		Avg. Downgradient Nitrate Concentration in GW	7.9		
Septic Tank Effluent (gallons/d/home)	300	300	Default	Current/Acceptable Lot Size (Acres)	1.5		
Natural Recharge rate (inches/yr)	0.5	Site-specific					
Nitrogen Budget (all concentrations represent nitrate nitrogen)				Yearly Nitrogen Budget			
Upgradient Ground Water Concentration (mg/l)	6.9	Site-specific			Mass (mg)	% of Total	
Septic Tank Effluent Concentration (mg/l)	18.4	45.0	Provide Justification	Background GW Nitrate Mass	4.69E+08	77.5	
Denitrification Rate (decimal fraction)	0	0	Default	Septic Tank Effluent Nitrate Mass	1.36E+08	22.4	
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default	Recharge Nitrate Mass	3.73E+05	0.1	
				Total Nitrate Mass	6.05E+08		

Instructions for Use

Input parameter values appropriate to conditions at the site under consideration are entered in the blue shaded cells on the INPUT side of the spreadsheet. These input values form the basis for calculating yearly water and nitrogen budgets. Default values for selected parameters are provided, as described in the accompanying N-P guidance. Selecting values other than these defaults will require providing adequate justification. Sources of water and nitrogen include ground water inflow from upgradient, natural recharge on pervious portions of the site, and from septic tank effluent. The total yearly nitrogen mass input is then divided by the total yearly volume of water available to recharge groundwater to arrive at the Point of Compliance Nitrate Concentration Goal. The number of homes in the parcel is then adjusted to meet the specified goal. This calculation can be redone iteratively along with changing other site input values.

Aquifer Width Perpendicular to Flow: For land development projects not completely oriented perpendicular to ground water flow, the site specific aquifer width value is determined using the average property width that is perpendicular to flow.

Soil Type	Hydraulic Conductivity (K) for Unconsolidated Sediments (feet/day)	Natural Recharge Rate (NRR) (inches/yr) = (TAP) ² * 0.0046
Silt and sandy silt	0.003 to 0.3	TAP is input in inches/yr.
Silty sands and fine sands	0.03 to 3	
Well-sorted sands and glacial outwash	3 to 300	
Well-sorted gravel	30 to 3000	
Typical Range of Hydraulic Gradient		0.0001 to 0.1

SITE INFORMATION	
Hawk View Estates NP Study - Development	Site Name
4/10/2021	Parcel Identification Date
Chris Lammer	Prepared By
Disclaimer: Considerable care was exercised in developing this software. However, the Idaho Department of Environmental Quality makes no warranty regarding its accuracy and shall not be held liable for any damages resulting from its use.	



IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADS V. 1.3 5/2/2002

This spreadsheet is based on the mass balance approach documented in: 1985, Bauman, B.J. and W.M. Schaefer. Estimating Ground-Water Quality Impacts From Proceedings of 5th Northwest On-Site Wastewater Treatment Shortcourse, September 10-11, 1985. University of Washington, Seattle, WA. Pages 23-41. See

INPUT				OUTPUT			
Water Budget				Yearly Water Budget			
Hydraulic Conductivity (ft/day)	73.000	Site-specific		Ground Water	1.73E+04	88.2	
Hydraulic Gradient	0.005	Site-specific		Effluent	2.22E+03	11.3	
Mixing Zone Thickness (ft)	15	15	Default	Recharge	9.39E+01	0.5	
Aquifer Width Perpendicular to Flow (ft)	305	Site-specific		Total Water Volume	1.96E+04		
Parcel Area (acres)	2.03	Site-specific		Point of Compliance Nitrate Concentration Goal	7.9		
Percent of Parcel That Is Impervious (Percent)	10	Site-specific		Avg. Downgradient Nitrate Concentration in GW	7.9		
Current/Acceptable Number of Homes in Parcel	5.4	Site-specific		Current/Acceptable Lot Size (Acres)	0.4		
Septic Tank Effluent (gallons/d/home)	300	300	Default				
Natural Recharge rate (inches/yr)	0.5	Site-specific					
Nitrogen Budget (all concentrations represent nitrate nitrogen)				Yearly Nitrogen Budget			
Upgradient Ground Water Concentration (mg/l)	6.9	Site-specific		Background GW Nitrate Mass	1.19E+08	77.0	
Septic Tank Effluent Concentration (mg/l)	16.0	45.0	Provide Justification	Septic Tank Effluent Nitrate Mass	3.55E+07	23.0	
Denitrification Rate (decimal fraction)	0	0	Default	Recharge Nitrate Mass	2.82E+04	0.0	
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default	Total Nitrate Mass	1.55E+08		

Instructions for Use


Input parameter values appropriate to conditions at the site under consideration are entered in the blue shaded cells on the INPUT side of the spreadsheet. These input values form the basis for calculating yearly water and nitrogen budgets. Default values for selected parameters are provided, as described in the accompanying N-P guidance. Selecting values other than these defaults will require providing adequate justification. Sources of water and nitrogen include ground water inflow from upgradient, natural recharge on pervious portions of the site, and from septic tank effluent. The total yearly nitrogen mass input is then divided by the total yearly volume of water available to recharge groundwater to arrive at the Point of Compliance Nitrate Concentration Goal. The number of homes in the parcel is then adjusted to meet the specified goal. This calculation can be redone iteratively along with changing other site input values.

All values are input into the blue shaded cells. The totals and percent of total for various components of the water and nitrogen budgets are calculated and shown on the OUTPUT side of the spreadsheet. The Avg. Downgradient Nitrate Concentration in GW is also calculated. The Density button allows the calculation of both the Acceptable Number of Homes in the Parcel (shown in the INPUT area) as well as the acceptable lot size. Clicking the Density button opens an input box that allows the input of the Point of Compliance Nitrate Concentration Goal. The number of homes in the parcel is then adjusted to meet the specified goal. This calculation can be redone iteratively along with changing other site input values.

Aquifer Width Perpendicular to Flow: For land development projects not completely oriented perpendicular to ground water flow, the site specific aquifer width value is determined using the average property width that is perpendicular to flow.

Ranges of Hydraulic Conductivity (K) for Unconsolidated Sediments (feet/day)	Natural Recharge Rate (NRR) can be estimated from total annual precipitation (TAP) using the equation: $NRR \text{ (inches/yr)} = (TAP)^2 \cdot 0.0046$ TAP is input in inches/yr.
Silt and sandy silt	0.003 to 0.3
Silty sands and fine sands	0.03 to 3
Well-sorted sands and glacial outwash	3 to 300
Well-sorted gravel	30 to 3000
Typical Range of Hydraulic Gradient	0.0001 to 0.1

SITE INFORMATION	
Hawk View Estates NP Study - Smallest Lot	Site Name
Minimum Lot Size	Parcel Identification
4/10/2021	Date
Chris Lammer	Prepared By
Disclaimer: Considerable care was exercised in developing this software. However, the Idaho Department of Environmental Quality makes no warranty regarding its accuracy and shall not be held liable for any damages resulting from its use.	



IDEQ LEVEL 1 NUTRIENT-PATHOGEN EVALUATION NITROGEN MASS-BALANCE SPREADS V. 1.3 5/2/2002
 This spreadsheet is based on the mass balance approach documented in: 1985, Bauman, B.J. and W.M. Schaefer. Estimating Ground-Water Quality Impacts From Proceedings of 5th Northwest On-Site Wastewater Treatment Shortcourse, September 10-11, 1985. University of Washington, Seattle, WA. Pages 23-41. See

INPUT				OUTPUT		
Water Budget				Yearly Water Budget		
Hydraulic Conductivity (ft/day)	73.000	Site-specific		Ground Water	2.30E+04	96.9
Hydraulic Gradient	0.005	Site-specific		Effluent	6.40E+02	2.7
Mixing Zone Thickness (ft)	15	15	Default	Recharge	9.39E+01	0.4
Aquifer Width Perpendicular to Flow (ft)	407	Site-specific		Total Water Volume	2.38E+04	
Parcel Area (acres)	2.03	Site-specific				
Percent of Parcel That Is Impervious (Percent)	10	Site-specific		Point of Compliance Nitrate Concentration Goal	7.9	
Current/Acceptable Number of Homes in Parcel	1.5	Site-specific		Avg. Downgradient Nitrate Concentration in Groundwater	7.9	
Septic Tank Effluent (gallons/d/home)	300	300	Default	Current/Acceptable Lot Size (Acres)	1.3	
Natural Recharge rate (inches/yr)	0.5	Site-specific				
Nitrogen Budget (all concentrations represent nitrate nitrogen)				Yearly Nitrogen Budget		
Upgradient Ground Water Concentration (mg/l)	6.9	Site-specific			Mass (mg)	% of Total
Septic Tank Effluent Concentration (mg/l)	45.0	45.0	Default	Background GW Nitrate Mass	1.59E+08	84.6
Denitrification Rate (decimal fraction)	0	0	Default	Septic Tank Effluent Nitrate Mass	2.88E+07	15.3
Nitrate in Natural Recharge (mg/l)	0.3	0.3	Default	Recharge Nitrate Mass	2.82E+04	0.0
				Total Nitrate Mass	1.88E+08	

Instructions for Use

Input parameter values appropriate to conditions at the site under consideration are entered in the blue shaded cells on the INPUT side of the spreadsheet. These input values form the basis for calculating yearly water and nitrogen budgets. Default values for selected parameters are provided, as described in the accompanying N-P guidance. Selecting values other than these defaults will require providing adequate justification. Sources of water and nitrogen include ground water inflow from upgradient, natural recharge on pervious portions of the site, and from septic tank effluent. The total yearly nitrogen mass input is then divided by the total yearly volume of water available to recharge groundwater to arrive at the concentration goal.


As values are input into the blue shaded cells the totals and percent of total for various components of the water and nitrogen budgets are calculated and shown on the OUTPUT side of the spreadsheet. The Avg. Downgradient Nitrate Concentration in GW is also calculated. The Density button allows the calculation of both the Acceptable Number of Homes in the Parcel (shown in the INPUT area) as well as the acceptable lot size. Clicking the Density button opens an input box that allows the input of the Point of Compliance Nitrate Concentration Goal. The number of homes in the parcel is then adjusted to meet the specified goal. This calculation can be redone iteratively along with changing other site input values.

Aquifer Width Perpendicular to Flow: For land development projects not completely oriented perpendicular to ground water flow, the site specific aquifer width value is determined using the average property width that is perpendicular to flow.

Soil Type	Hydraulic Conductivity (K) for Unconsolidated Sediments (feet/day)
Silt and sandy silt	0.003 to 0.3
Silty sands and fine sands	0.03 to 3
Well-sorted sands and glacial outwash	3 to 300
Well-sorted gravel	30 to 3000
Typical Range of Hydraulic Gradient	0.0001 to 0.1

Natural Recharge Rate (NRR) can be estimated from total annual precipitation (TAP) using the equation: $NRR \text{ (inches/yr)} = (TAP)^2 \cdot 0.0046$. TAP is input in inches/yr.

SITE INFORMATION	
Hawk View Estates NP Study	Site Name
Existing Residence	Parcel Identification
4/10/2021	Date
Chris Lammer	Prepared By
Disclaimer: Considerable care was exercised in developing this software. However, the Idaho Department of Environmental Quality makes no warranty regarding its accuracy and shall not be held liable for any damages resulting from its use.	



Sierra Vista Properties, Inc.

PO Box 30
Ola, Idaho 83657

November 17, 2021

Canyon County Development Services

Attn: Jennifer Almeida

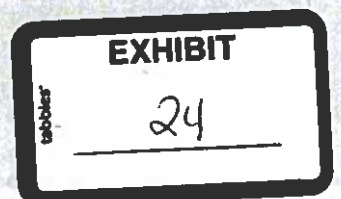
I own the 90.34 acres adjacent to the east of the property owned by John Cotner and his proposed development. This area of Middleton is transitioning to rural acreage home sites. These existing rural residential uses have compatibly with the agricultural operations on my property. John's proposal for high quality homes on acreage lots fits with the character of the area and is much preferred over higher city residential densities. His proposal will not negatively impact the agricultural use of my property or the surrounding area and it will conform with my proposed development for my 90 acres. I am supportive of this new development.

Sincerely,



Mark Andelin,

President, Sierra Vista Properties, Inc.





MEMORANDUM

DATE: November 16, 2021
TO: John Cotner
FROM: Andrew Francis, P.G.
Jason Thompson, P.E.
RE: Hawk View Subdivision Groundwater Study

Andrew Francis
Digitally signed by Andrew Francis
Date: 2021.11.16 16:05:19 -07'00'

Summary

- 1. The Hawk View Subdivision will be irrigated with surface water. Domestic water supply will be from 11 domestic wells.
- 2. Pumping 11 wells for domestic use will induce less than 0.1 foot of drawdown within 100 feet from the center of the Subdivision after one year of continuous pumping.
- 3. The addition of 11 domestic wells to this area will not injure nearby well owners or have a negative impact on local groundwater resources in the area.

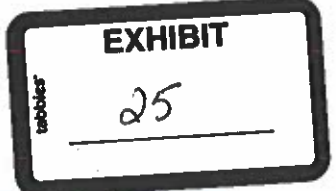
Introduction

The Hawk View Subdivision (Subdivision) consisting of 12 individual 2-acre lots has been proposed in Canyon County. The Subdivision is located northeast of Middleton in the NWSW quarter-quarter of Section 27, Township 5 North, Range 2 West, and has a total area of 26.5 acres.

The property is currently utilized for irrigated agricultural purposes with one existing residence on the property with a domestic well. The Subdivision will consist of 11 more lots with new individual wells and septic systems. The individual lots and common areas of the Subdivision will be irrigated from the available surface water supplies. Water for indoor domestic purposes at each of the individual residences will be provided by individual domestic wells.

The purpose of this memorandum is to estimate the impact on local groundwater conditions due to new well pumping for indoor domestic use at the Subdivision and to make recommendations for the construction of 11 new domestic wells.

To characterize hydrogeologic conditions, driller's reports for wells near the Subdivision were downloaded from the Idaho Department of Water Resources (IDWR) database to determine lithology and existing well capacities. IDWR groundwater-level monitoring data



were reviewed to determine regional trends in groundwater levels. The following is an outline of items covered in this document:

1. Driller's Reports
 - a. Well Construction
 - b. Lithology and Aquifer Conditions
 - c. Water Levels
 - d. Aquifer Hydraulic Parameters
2. Hydrographs
 - a. Regional Trends
3. Drawdown Analysis
4. Recommendations for Well Construction
5. Conclusions

1. Driller's Reports

Representative well driller's reports (i.e., well logs) for wells within approximately one-half mile of the proposed Subdivision were obtained from IDWR's well log database for review. Twelve (12) well logs were used to determine geologic conditions near the Subdivision and to identify the construction of wells most likely to be impacted by potential drawdown. All of these wells were constructed for domestic water supply. Well locations are presented in Figure 1 with important construction information in Table 1. The well labels in Figure 1 correspond to log numbers in Table 1.

Two (2) well logs (13&14) were reviewed for pumping test information (Figure 2). Wells 13 and 14 are within 500 feet and 2.75 miles of the Subdivision, respectively. This information was used to determine of range of aquifer transmissivity based on pumping test results. Well 13 was constructed for irrigation and well 14 was constructed for municipal. Larger irrigation and municipal wells are best utilized for aquifer transmissivity estimates because they are constructed in a manner that allows characterization of a thicker aquifer interval. In addition, irrigation wells typically have more reliable test pumping information than domestic wells as more information is needed to design pumps for wells with higher production rates. Construction and pumping test information presented in Table 2.

All well logs reviewed are included in Appendix A.

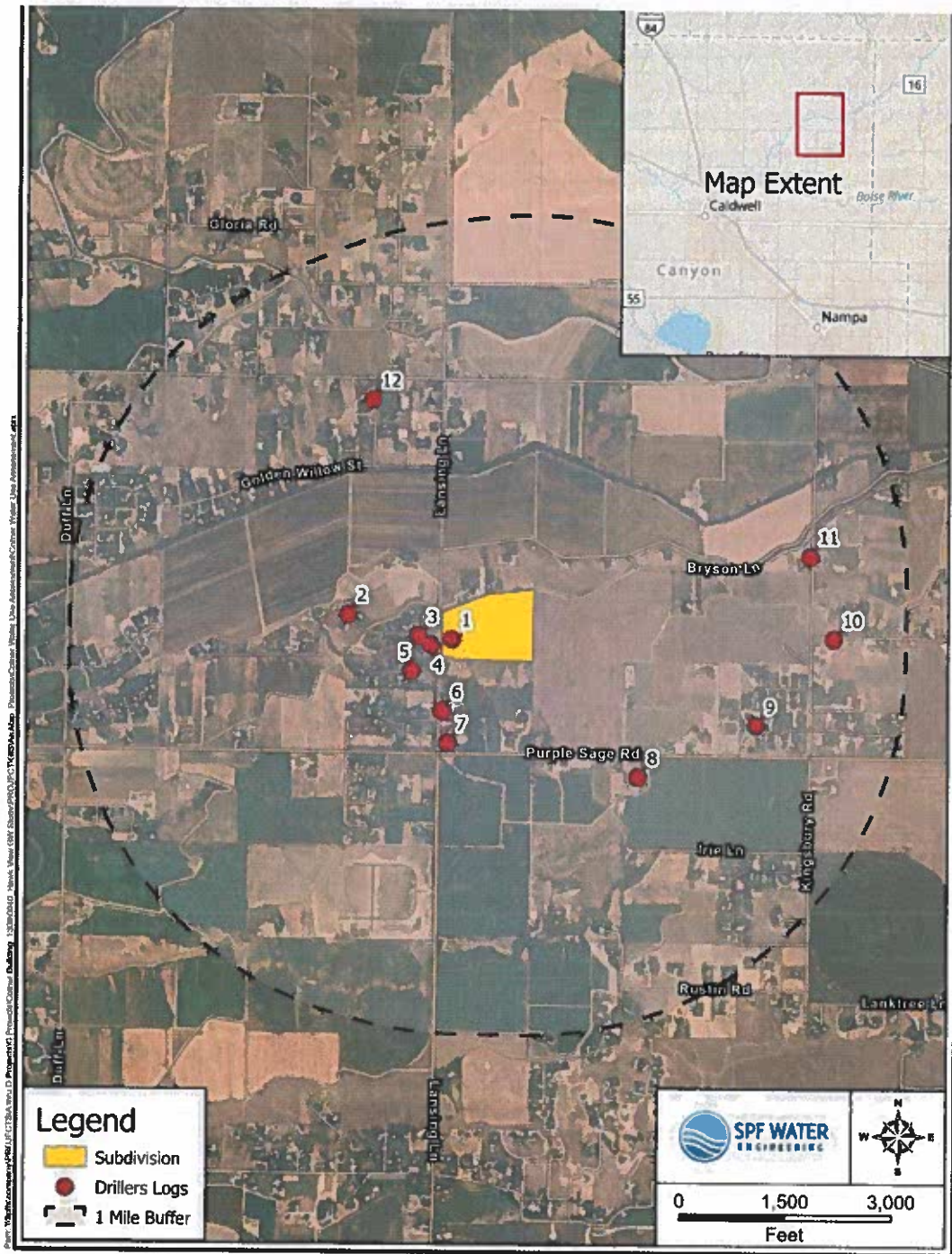


Figure 1. Driller's Logs within 1 mile of the proposed Subdivision.

Table 1. Well Construction

Well ID	Total Depth (feet)	Screen Interval (feet bgs)	Screen Length (feet)	Screen Slot Size (Inch)	Water Bearing Material	Year of Construction	Static Water Level (feet)	First encountered Water (feet)	Well Type
1	230	No Screen - Casing to 218	12 foot unscreened zone	No Screen	Fine coarse white sand	1992	73	No Data	Domestic
2	193	188-193	5	0.012	Very fine white sand	2015	77	77	Domestic
3	228	218-228	10	0.02	Large/Medium coarse sand	2006	107	162	Domestic
4	227	212-217	5	0.014	brown sand	2012	117	129	Domestic
5	219	214-219	5	0.018	sand	2007	103	103	Domestic
6	282	272-282	10	0.016	Medium brown sand	2019	127	132	Domestic
7	235	No Screen - Casing to 234	1 foot unscreened zone	No Screen	Water	1994	120	100	Domestic
8	210	No Screen - Casing to 198	12 foot unscreened zone	No Screen	Sand	1997	110	110	Domestic
9	343	338-343	5	0.015	Fine/med white sand	2016	169	284	Domestic
10	282	277-282	5	0.015	Sand	2014	160	190	Domestic
11	303	298-303	5	0.02	Medium white sand	2017	138	115	Domestic
12	189	179-189	10	0.02	Medium coarse sand	2007	68	68	Domestic

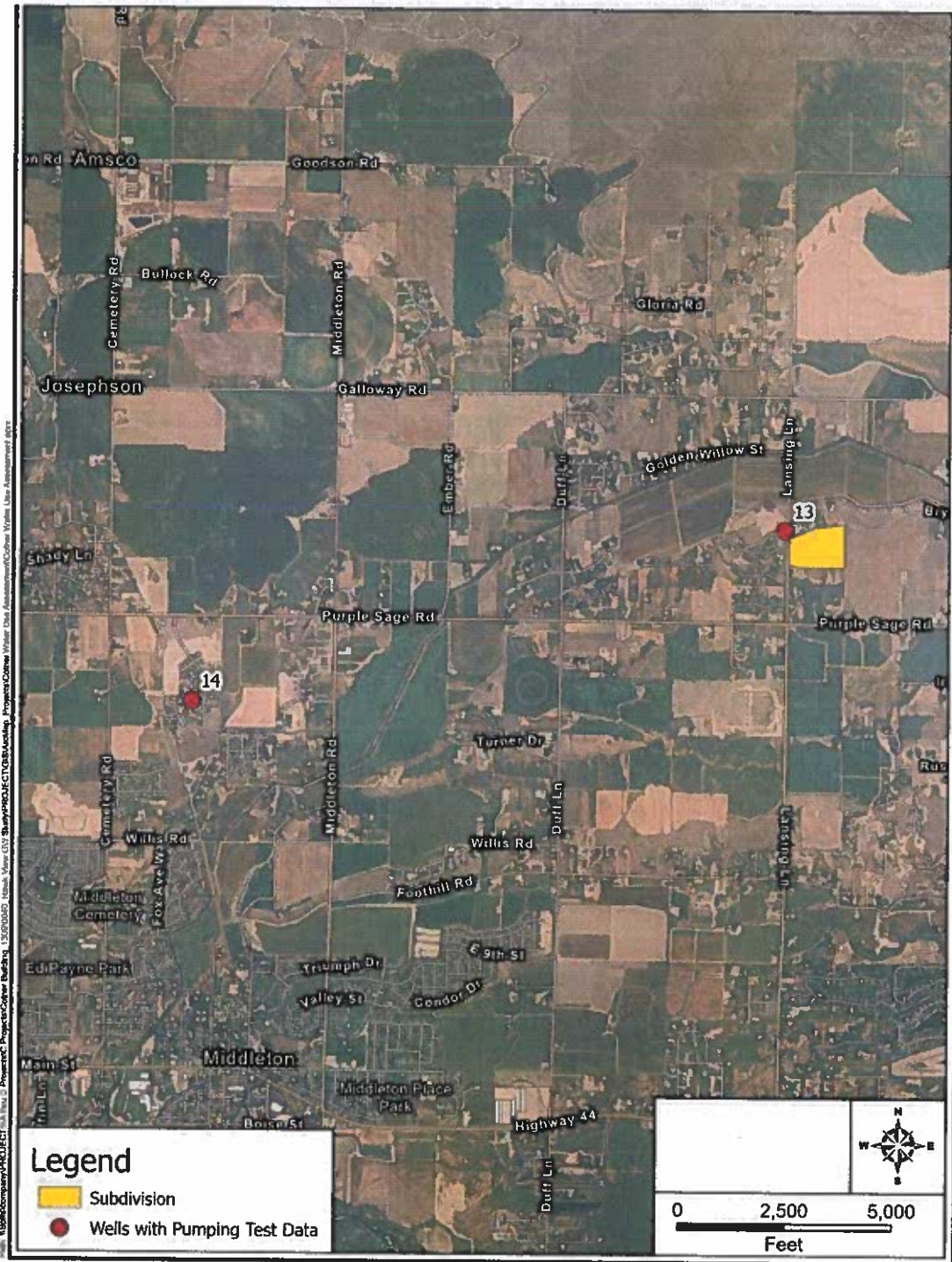


Figure 2. Wells with testing data.

Table 2. Well Testing

Log ID	Yield (gpm)	Static (feet)	Drawdown (feet)	Specific Capacity (gpm/ft)	Transmissivity (gpd/foot)	Screen Interval	Screen Length (feet)	K (gpd/foot ²)
13	500	117	46	11	22000	303-363	60	370
14	2,600	52	100	26	52000	298-338; 418-428; 446-456	50	1000

a. Well Construction

A majority of the domestic wells within a mile of the Subdivision are constructed with 6-inch steel casing and 5-inch diameter stainless steel screens. The total depths for the 12 domestic wells ranges between 189 and 343 feet below ground surface (bgs) with screen intervals between 5 and 10 feet in length. Well depth is generally associated with surface elevation. Wells at higher elevation are generally drilled to a deeper depth. Ground surface elevation is higher to the southeast of the subdivision with lower elevation to the northeast. Well 9 drilled to a total depth 343 feet is located at the highest elevation while well 12 was drilled to a total depth of 189 feet and is located at the lowest elevation. There is a minimal amount of relief near the Subdivision so all 11 new wells will likely consist of similar construction and total depths.

b. Lithology and Aquifer Conditions

The lithologic logs from the driller's reports indicate the subsurface near the Subdivision is primarily alternating layers of sand and clay with some gravel. The water producing zones are primarily sand layers.

Regional geologic mapping shows the surrounding area consists entirely of sands and gravels (Othberg and Stanford 1992, Idaho Geologic Survey Map Series GM-18). The northern portion of the Subdivision is within the *Gravels of Whitney Terrace (Qwg)* and a majority of the Subdivision to the south is within *Gravels of the Deer Flat Terrace (Qdg)*. The Qwg is a quaternary deposit described as sandy pebbles and cobble gravels and ranges in thickness from 16-80 feet. The Qdg is described as a sandy pebble gravel grading at depth to a coarse pebbly sand and approximately 30 feet thick. A geologic map is presented in Figure 3 with the map legend provided in Figure 3a.

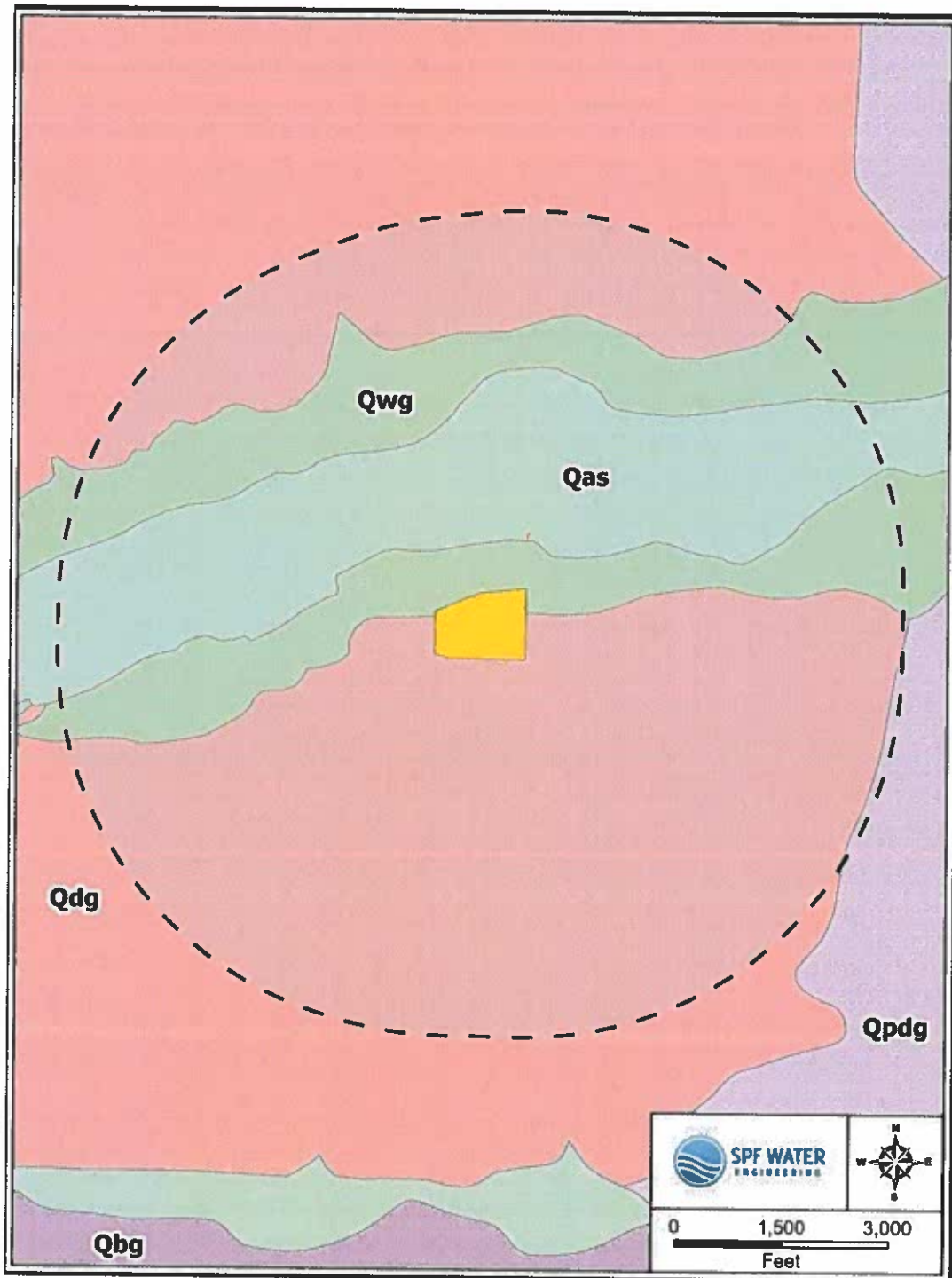


Figure 3. Geologic Map

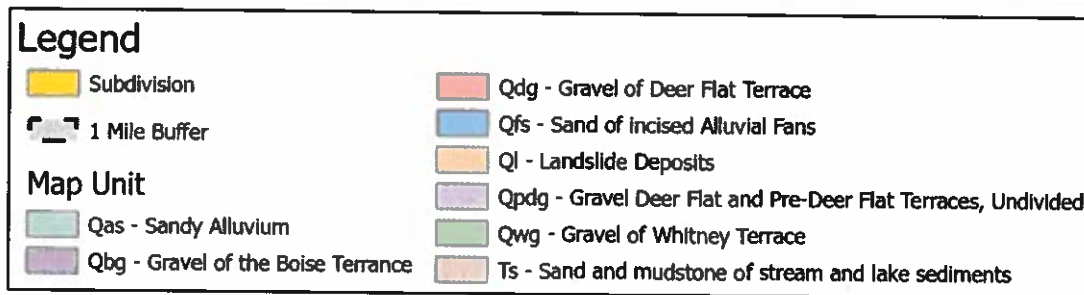


Figure 3a. Geologic Map Legend

c. Water Levels

Static depth to water (DTW) listed on well driller's logs within one mile of the Subdivision were between 68 and 169 feet bgs. All wells have reported static water levels that are typically greater than 100 feet higher than the screened interval, meaning there is plenty of available drawdown for groundwater pumping.

The water-bearing zones tapped by local wells in this area are generally considered "confined" or "semi-confined" because static water levels in completed wells rise to higher elevations than first encountered water and above the tops of the water-bearing zones (Table 1). Water-bearing zones near the water table are "semi-confined" because pumping impacts can eventually propagate upward to the water table drawing water levels below the top of the aquifer.

Groundwater flow direction in the local area is westerly, based on regional groundwater contour maps presented for spring 1996, fall 1996, spring 1998, fall 1998, spring 2000, fall 2000, and fall 2001 in Appendix E of Characterization of Ground Water Flow in the Lower Boise River Basin (Petrich and Urban, 2004, IWRR-2004-01).

d. Aquifer Hydraulic Parameters

Hydraulic parameters of water-bearing zones can be estimated based on the character of the aquifer materials and from well pumping tests. The hydraulic parameter estimates can be utilized to predict water level drawdowns from well pumping.

Hydraulic conductivity (K) is a measurement of how easily water is able to move the materials in the subsurface. This can be quantified as the amount of water that flows through a one square foot area over the course of one day giving units of gallons/day/foot². Typical K values for sands and gravels can range between 100 and 10,000 gallons/day/foot² (Freeze and Cherry, 1979). To measure how water flows through an entire aquifer (or portion of an aquifer), the K value is multiplied by the aquifer thickness which results in the Transmissivity (T) with units of gallons/day/foot (gpd/ft). A saturated thickness of 50 feet was used based on the description of water bearing units and lengths of the screen intervals in the irrigation and municipal well driller's logs. Using

the range of potential K for sands and gravels, and an assumed saturated thickness of 50 feet, estimated T values would range between 5,000 and 500,000 gpd/ft.

Table 2 includes the results from well tests reported on the driller's logs. The yield in gallons per minute (gpm) and drawdown in feet from the static water level were used to calculate the specific capacity which indicates the amount of water produced per foot of drawdown (i.e., specific capacity in gpm/ft). The results from the municipal and irrigation wells are included with values between 11 and 26 gpm/ft. Well testing results from the domestic wells were not used to calculate specific capacity values and aquifer parameters as most were tested by air-lifting which typically underestimate actual well capacities. The shorter screen interval is also less likely to be reflective of the larger aquifer. All of the domestic wells are screened in discrete sand lenses that are connected to the larger aquifer system consisting of multiple sand lenses. The larger municipal and irrigation wells are screened over multiple sand lenses, so testing results are considered more representative of overall aquifer parameters. For confined aquifers, specific capacity multiplied by 2000 provides an empirical estimate of transmissivity (T) in gpd/ft.

A nearby irrigation well (13) less than 500 feet from Subdivision was constructed in 2021 for the Willow Creek Nursery and was test pumped at a rate of 500 gpm with a drawdown of 46 feet. This results in a specific capacity of approximately 11 gpm/ft and an estimated T of 22,000 gpd/ft. The well is constructed with a 60-foot screen interval within materials described as coarse sand and sand. This section also consisted of two thick clay layers no more than 2 feet in thickness. The resulting K based on a T of 22,000 gpd/foot and an aquifer thickness of 60 feet based on the screen interval would be 370 gpd/foot². This is within the range of typical K values for sands and gravels.

A second well-constructed for the City of Middleton for municipal use (14), located a couple miles southwest of the Subdivision, was constructed in 2006 and test pumped at 2,600 gpm with a drawdown of 100 feet. The resulting specific capacity was 26 gpm/ft and T is estimated at about 52,000 gpd/ft. These T values are within the range estimated based on aquifer materials. The well is constructed with three screen intervals with a total length of 50 feet. The resulting K value would be 1000 gpd/foot² based on a T of 52,000 gpd/ft and an aquifer thickness of 50 feet.

A pumping test at the existing domestic well (Well 1 on Figure 1) was conducted on November 11 to help establish aquifer conditions and evaluate local well yield. According to the well log, the well is cased to 218 feet with a total depth of 230 feet. Water is produced from a 12-foot unscreened section of sandstone. A 1-hour test was conducted with an approximate pumping rate of 15 gpm. Static water level was 106.3 feet below measuring point (bmp). The pumping water level after 1 hour of pumping was 109.4 feet bmp resulting in a drawdown of 3.1 feet. This resulted in a specific capacity of 4.8 gpm/foot. Using the same empirical method to estimate T as was used for the larger irrigation and municipal wells, results in a value of 9,700 gpm/foot. Based on a production zone of 12 feet, this would result in a K of 800 gpd/foot². Assuming a 60-foot production zone, the same length of screen as the nearby irrigation well 14, A K of 800 gpd/foot² and

an aquifer thickness of 50 feet would result in a T of 40,000 gpd/foot, consistent with the results of the other pumping test data.

Storativity (S) values were estimated based on the specific storage values for sands and an aquifer thickness of 50 feet for T determination (Batu, 1998). Potential S values could range between 0.02 and 0.00075. A typical S for confined/semi-confined aquifers in the Treasure Valley is approximately 0.005.

2. Hydrographs

Hydrographs from IDWR-monitored wells were reviewed to understand regional groundwater level trends. Locations for IDWR hydrographs are presented in Figure 4. The most recent water levels at each of the well locations are labeled. These wells are all within five miles from the Subdivision.

a. Regional Trends

The individual hydrographs are presented in Figure 5. In the most recent water level measurements, elevations are between 2405 and 2450 feet msl, consistent with the reported water levels in the driller's log near the Subdivision. Water levels have been generally stable going back to 1969. Well **05N 02W 29BBC2** located approximately 2 miles northwest of the subdivision experienced a slight decline starting in 1996 but has stabilized over the past 10 years. Well **04N 20W 08ADD1** located 3 miles to the southwest has shown approximately 2 feet of decline since 1969. Seasonal highs and lows associated with irrigation pumping vary by as much as 25 feet on an annual basis. Two wells with short-term records (**05N 01W 19CBD2** and **05N 02W 25BAA1**) are located 2 to 3 miles the northeast of the subdivision. Both wells show significant fluctuations, but the data are not consistent enough to establish long-term trends.

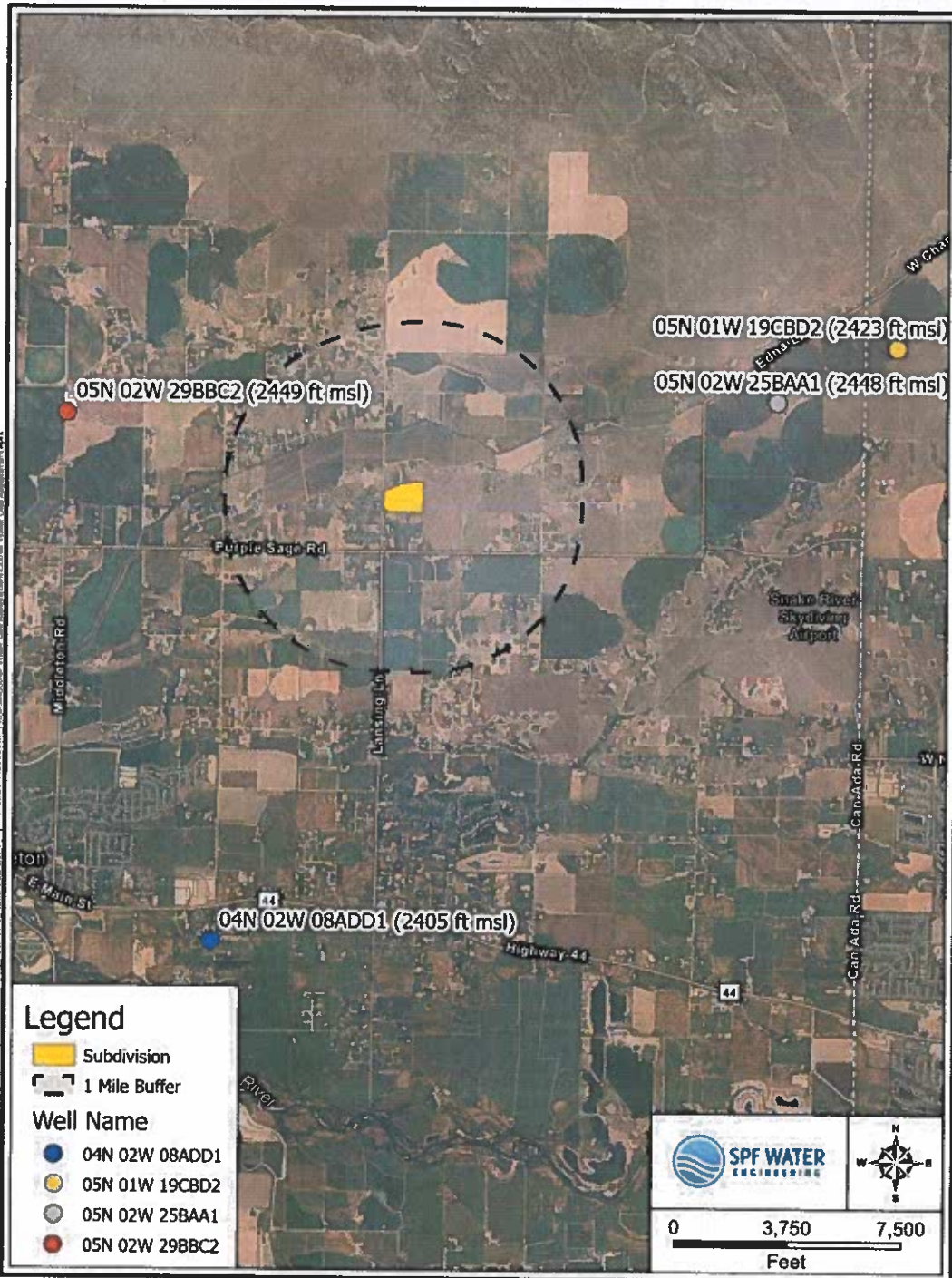


Figure 4. Hydrograph Locations

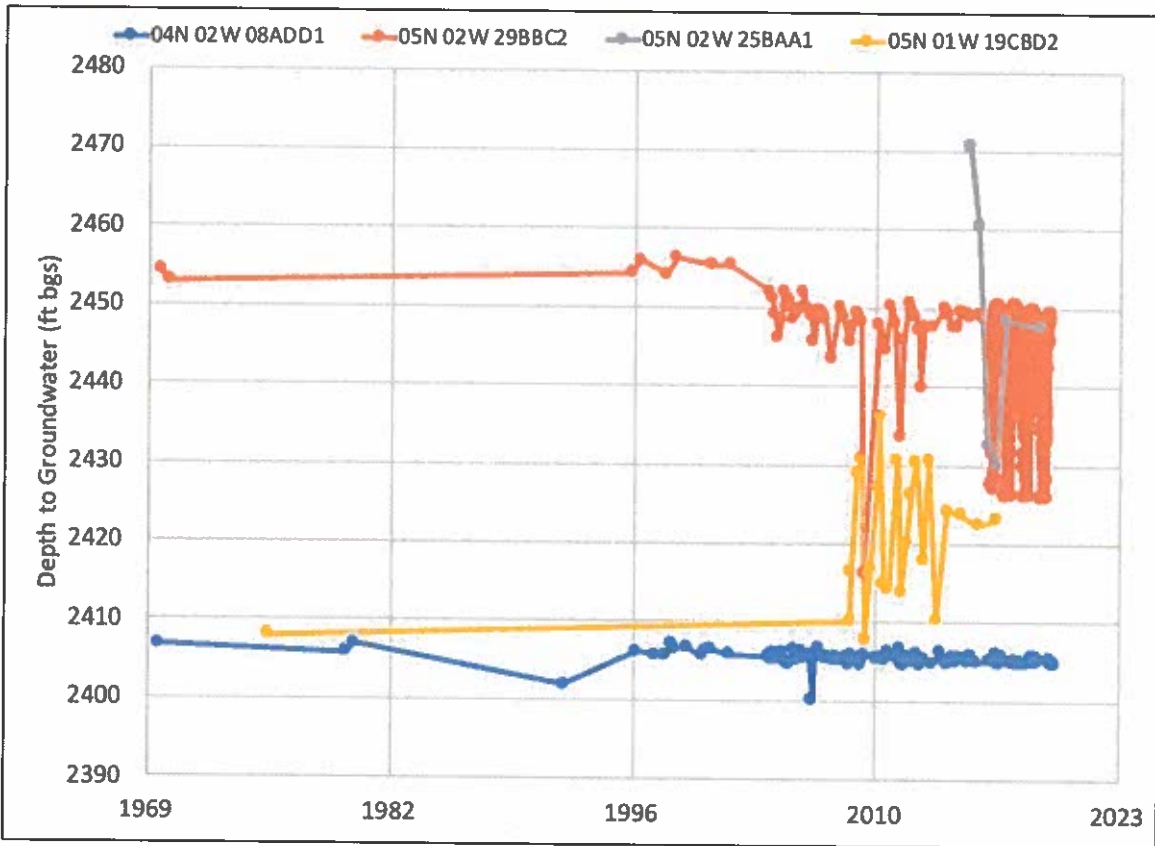


Figure 5. Hydrographs

3. Drawdown Analysis

The predicted drawdown due to the addition of 11 domestic wells was determined by assuming a daily average use of 300 gallons per day (gpd) per household. This results in an average year-round, 24-hour per day, demand of 3,300 gpd or 2 gpm for the entire Subdivision.

To determine the impact of additional groundwater pumping associated with indoor domestic use, a drawdown analysis was performed using the Theis method. The Theis non-equilibrium well equation is a common approach for determining drawdown from pumping wells in confined aquifers. Drawdown can be calculated for any distance from a pumping well and for any duration of pumping. The Theis equation has a number of assumptions (i.e., no recharge, horizontal flow, infinite aquifer lateral extent, fully penetrating wells, and homogenous hydraulic conductivity) which are never fully satisfied in nature, but are adequately approximated in most conditions to allow reliable estimates of well interference impacts.

The analysis utilized the estimated aquifer transmissivity values determined from the results of well tests and the aquifer materials described in the driller's logs. The water producing zones are comprised of sand interbedded with clay layers. Based on these materials and well test results, it was determined that transmissivity values could range between 22,000 and 52,000 gpd/ft.

The results for the low transmissivity (22,000 gpd/ft) value analysis are presented in Figure 6; the high transmissivity (52,000 gpd/ft) value analysis is presented in Figure 7. These figures represent drawdown with increasing distance from the hypothetical well over different time periods. Drawdown was determined at distances between 100 feet to 1 mile at time intervals of 1, 7, 30, 180, and 365 days. Figure 6 shows that with an assumed transmissivity value of 22,000 gpd/ft (low estimate), the drawdown after 365 days of continuous pumping at 2 gpm was 0.1 feet at a radius of 100 feet and 0.03 feet at a radius of 1 mile. Under the high transmissivity value (52,000 gpd/ft) conditions, the estimated drawdown at 100 feet and 1 mile were 0.05 feet and 0.02 feet, respectively.

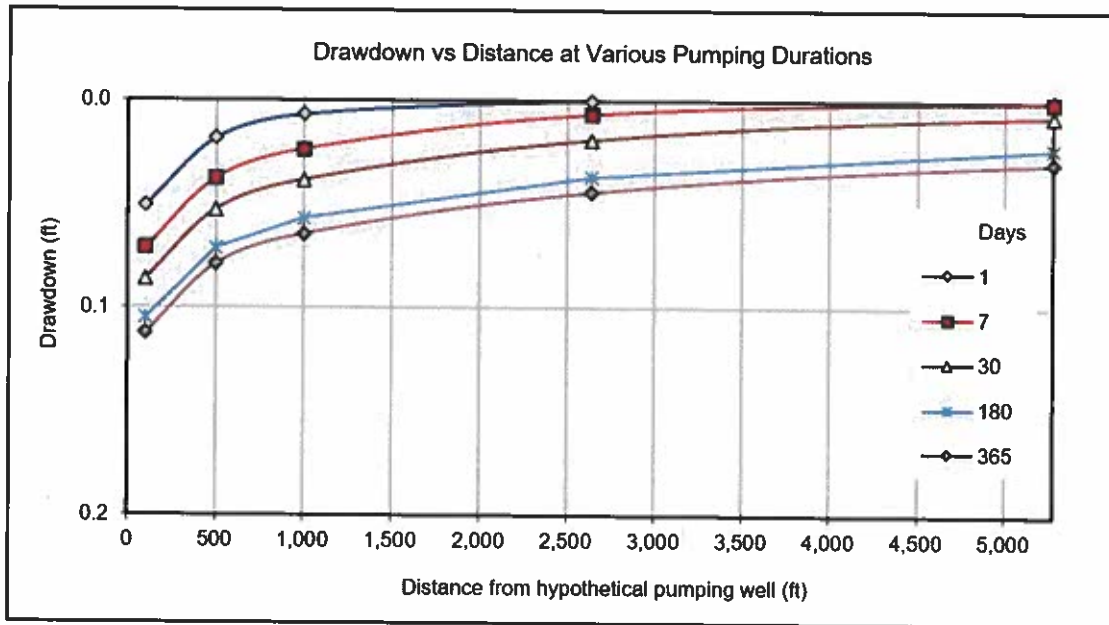


Figure 6. Low Transmissivity Drawdown Analysis.

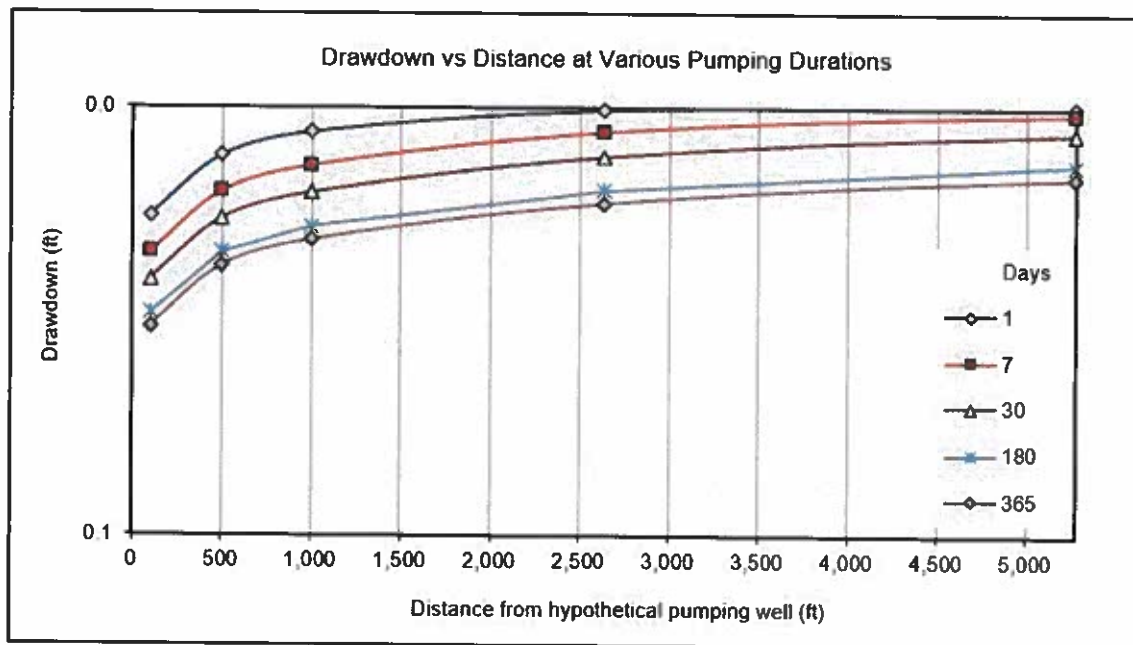


Figure 7. High Transmissivity Drawdown Analysis.

4. Recommendation for Well Construction

The recommendation for well construction is based on the well logs within one mile of the Subdivision. Anticipated static water levels will range from approximately 68 and 169 feet with depth to water levels increasing to the southeast where wells are at higher surface elevations. The following construction is anticipated for the 11 new domestic wells:

- 6-inch steel casing
- 10-foot stainless steel screen (5-inch diameter) at depths between 200 and 300 feet.
- Sand filter pack installed around the screen with annular well seal to surface.
- 4-inch diameter pumps set at approximately 150 to 200 feet.

5. Conclusions

The drawdown analysis suggests that the addition of 11 new domestic wells will have almost no impact on current groundwater levels near the Subdivision. The analysis indicated that the potential drawdown to existing wells in the area would be less than 0.1 feet within 100 feet of the Subdivision and less than 0.03 feet at one mile from the subdivision. Most of the nearby wells are screened more than 100 feet below the reported static water level suggesting there is more than enough drawdown available to support the slight increase in groundwater pumping level. IDWR monitored wells indicate that water levels in the area have been generally stable going back to 1969.

The analysis did not consider the impacts of recharge due to irrigation or recharge from septic systems. Each of these will lessen the already minimal impacts to existing groundwater conditions.

Wells constructed with properly sized well screens are less likely to produce sand and are less likely to lose productivity due to plugging of screens and perforations. Many (perhaps most) well failures are not caused by water-level declines in an aquifer, but rather because of either excessive sand production or loss of productivity caused by plugging of well screens or perforations, or by collapse of open boreholes. In other words, wells generally do not "go dry". Instead, they more often fail due to loss of productivity resulting in excessive drawdown. Properly constructed wells, of adequate depth and using appropriate well screens, are much more resistant to failure.

It is recommended that well owners document static water levels and their well's specific capacity over time. This information can be used to determine if declining well productivity is a result of issues with the well and pump or declining water levels.

References

Batu, V., 1998. Aquifer Hydraulics: A Comprehensive Guide to Hydrogeologic Data Analysis, John Wiley & Sons, New York, 727p.

Freeze, R.A., and Cherry, J.A., 1979, Groundwater: Englewood Cliffs, NJ, Prentice-Hall

Othberg, K.L., and Stanford, L.R., 1992 Geologic Map of the Boise Valley and Adjoining Area, Western Snake River Plain, Idaho. Geologic Maps (GM): GM-18. Idaho Geological Survey.

Petrich, C.R., and Urban, S.M., 2004, Characterization of Ground Water Flow in the Lower Boise River Basin. Idaho Department of Water Resources

Appendix A

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

1. WELL TAG NO. D 0070321
 Drilling Permit No. 971117 - 877174
 Water right or injection well # _____

2. OWNER: Dean Echols
 Name _____
 Address P.O. Box 462
 City Star State Id. Zip 83669

3. WELL LOCATION:
 Twp. 5 North or South Rge. 2 East or West
 Sec. 28 1/4 NW 1/4 SE

Gov't Lot _____ County Canyon
 Lat. 43 ° 44:44 (Deg. and Decimal minutes)
 Long 116 ° 34:64 (Deg. and Decimal minutes)
 Address of Well Site 9222 Kemp Rd.
 City Middleton

Lot 5 Blk. 7 Sub. Name Willow Creek Ranch #3

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

5. TYPE OF WORK:
 New well Replacement well Modify existing well
 Abandonment Other _____

6. DRILL METHOD:
 Air Rotary Mud Rotary Cable Other _____

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method/procedure
<u>3/8 Best</u>	<u>0</u>	<u>44</u>	<u>54 bags</u>	<u>Dry Pour</u>

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing Liner	Threaded	Welded
<u>6</u>	<u>42</u>	<u>187</u>	<u>250</u>	<u>Steel</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Was drive shoe used? Y N Shoe Depth(s) 187'

9. PERFORATIONS/SCREENS:
 Perforations Y N Method _____
 Manufactured screen Y N Type Johnson
 Method of Installation Wash DN- Valve

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
<u>188</u>	<u>193</u>	<u>12</u>	<u>6"</u>	<u>Tele</u>	<u>S.S.</u>	

Length of Headpipe 6'-4" Length of Tailpipe 0
 Packer Y N Type 3-Rib

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method

11. FLOWING ARTESIAN:
 Flowing Artesian? Y N Artesian Pressure (PSIG) _____
 Describe control device _____

12. STATIC WATER LEVEL and WELL TESTS:
 Depth first water encountered (ft) 105 Static water level (ft) 77
 Water temp. (°F) 58 Bottom hole temp. (°F) _____
 Describe access port Sani-Seal Well Cap

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	Pump	Bailer	Air	Flowing artesian
<u>180</u>	<u>70</u>	<u>2 hrs.</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<u>120</u>	<u>65</u>	<u>1 hr.</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
	<u>0</u>	<u>6</u>	<u>TOP Soil</u>		
	<u>6</u>	<u>8</u>	<u>Hrd pan</u>		
	<u>8</u>	<u>26</u>	<u>Sand & Brn clay</u>		
	<u>26</u>	<u>45</u>	<u>GRAVEL mixed w/ clay</u>		
<u>6</u>	<u>45</u>	<u>59</u>	<u>GRAVEL</u>		
	<u>59</u>	<u>68</u>	<u>Brn clay</u>		
	<u>68</u>	<u>96</u>	<u>GRAVEL</u>		
	<u>96</u>	<u>102</u>	<u>Sticky Brn clay</u>		
	<u>102</u>	<u>111</u>	<u>Fractured clay & coarse sand</u>		
	<u>111</u>	<u>116</u>	<u>Brn clay</u>		
	<u>116</u>	<u>135</u>	<u>Sandy clay</u>		
	<u>135</u>	<u>137</u>	<u>Brn clay</u>		
	<u>137</u>	<u>143</u>	<u>White & Brn Sand</u>		
	<u>143</u>	<u>156</u>	<u>Brn clay</u>		
	<u>156</u>	<u>176</u>	<u>Fine Brn Sand</u>		
	<u>176</u>	<u>180</u>	<u>Brn Clay</u>		
	<u>180</u>	<u>181</u>	<u>Fine Sand</u>		
	<u>181</u>	<u>187</u>	<u>Brn Clay</u>		
	<u>187</u>	<u>193</u>	<u>Real Fine White Sand</u>		

RECEIVED

NOV 25 2015

WATER RESOURCE
WESTERN REGION

Completed Depth (Measurable): 193ft.
 Date Started: 10/28/15 Date Completed: 11/4/15

14. DRILLER'S CERTIFICATION:
 I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name Precision Well Drilling No. 522

*Principal Driller Jeff Ransom Date 11/15/15
 *Driller Jeff Ransom Date 11/15/15

*Operator II _____ Date _____
 Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required.

63

838703

Form 238-7
11/97 JGE

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

Office Use Only

Inspected by _____

Twp _____ Rge _____ Sec _____

1/4 _____ 1/4 _____ 1/4 _____

Lat: _____ Long: _____

1. WELL TAG NO. D 0042304

DRILLING PERMIT NO. _____

Other IDWR No. _____

2. OWNER:

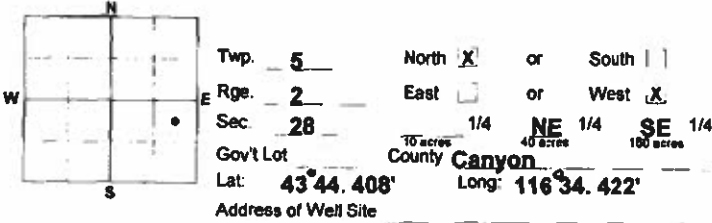
Name Justin & Aubrey Walker

Address 21570 Lansing Lane

City Middleton State ID Zip 83644

3. LOCATION OF WELL by legal description:

Sketch map location must agree with written location.



(Give at least name of road + Distance to Road or Landmark)
Lt. 11 Blk. 2 Sub. Name Willow Creek Ranch

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' 13 Sacks	Overbore

Was drive shoe used? Y N Shoe Depth(s) 218'

Was drive shoe seal tested? Y N How? _____

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2'	218'	.250	Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe 5' Length of Tailpipe 0

9. PERFORATIONS/SCREENS:

- Perforations Screens
 Method _____ Screen Type Johnson

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
218'	228'	.020		5"	SS	<input type="checkbox"/>	<input checked="" type="checkbox"/>

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

107 ft. below ground Artesian pressure _____ lb.

Depth flow encountered 221 ft. Describe access port or control devices: Cap

11. WELL TESTS:

Pump Bailor Air Flowing Artesian

Yield gal./min.	Drawdown	Pumping Level	Time
65	220'	220'	2 Hrs.

Water Temp 56 Bottom hole temp. 56

Water Quality test or comments: _____

Depth first Water Encounter 162'

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
10"	0	2'	Top Soil		
10"	2'	4'	Cliche		
10"	4'	18'	Cemented Sand & Gravel		
6"	18'	24'	Cemented Sand & Gravel		
6"	24'	32'	Sticky Tan Clay		
6"	32'	48'	Med. Brown Sand & Pea Gravel		
6"	48'	63'	Sand & Gravel		
6"	63'	94'	Sticky Brown Clay		
6"	94'	121'	Gravel		
6"	121'	161'	Sticky Tan Clay		
6"	161'	178'	Fine Brown Sand		X
6"	178'	201'	Fine Brown Sand		X
6"	201'	212'	Medium Brown Sand		X
6"	212'	221'	Sticky Tan Clay		
6"	221'	223'	Large Coarse Sand		X
6"	223'	227'	Medium Coarse Sand		X
6"	227'	228'	Sticky Tan Clay		

RECEIVED

MAR 20 2006

WATER RESOURCES
WESTERN REGION

Completed Depth 228 (Measurable)
Date: Started 3/7/2006 Completed 3/13/2006

13. DRILLER'S CERTIFICATION:

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

Company Name Treasure Valley Drilling Firm No. 560

Firm Official _____ Date 3/14/2006

and Driller or Operator _____ Date 3/14/2006
(Sign once if Firm Official & Operator)

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

804035

4

1. WELL TAG NO. D 0063885

Drilling Permit No. 915414-804035
Water right or injection well # _____

2. OWNER

Name Kara Christan
Address 6980 N.Meridian RD
City Eagle State ID Zip 83616

3. WELL LOCATION:

Twp. 5 North or South Rge. 2 East or West
Sec. 28 1/4 NE 1/4 SE 1/4
Gov't Lot _____ County CANYON
Lat. 43° 44.384 (Deg. and Decimal minutes)
Long. 116° 34.382 (Deg. and Decimal minutes)
Address of Well Site 9029 Temp RD - Kemp Rd.
City Middleton

Willow Creek Ranch
Lot 10 Blk. 2 Sub. Name Estate

4. USE:

Domestic Municipal Monitor Irrigation Thermal Injection
 Other

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

New Well Replacement well Modify existing well
 Abandonment Other

6. DRILL METHOD:

Air Rotary Mud Rotary Cable Other

7. SEALING PROCEDURES

Seal material	From (ft)	To (ft)	Quantity (lbs or ft³)	Placement method/procedure
3/4 bentonite	0	40	1450 lbs	pour

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Liner	Threaded	Welded
6	2	208	.250	steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5	200	212	.250	steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Was drive shoe used? Y N Shoe Depth(s) 208

9. PERFORATIONS/SCREENS:

Perforations Y N Method _____
Manufactured screen Y N Type Johnson
Method of installation wash in

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
212	217	.14	5ft	5	ss	.250

Length of Headpipe 11 ft Length of Tailpipe _____

Packer Y N Type 3 wing

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft³)	Placement method

11. FLOWING ARTESIAN:

Flowing Artesian? Y N Artesian Pressure (PSIG) _____
Describe control device _____

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) 129 Static water level (ft) 117
Water temp. (°F) 56 Bottom hole temp. (°F) _____

Describe access port cap

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	Pump	Bailer	Air	Flowing artesian
83	50	1/2hr	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Test method:

Water Quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
10	0	3	top soil		X
10	3	4	hard pan		X
10	4	40	sandy clay		X
6	40	93	brown sandy clay		X
6	93	115	gravel		X
6	115	125	brown sandy clay		X
6	125	132	brown sand	X	
6	132	136	brown clay		X
6	136	147	brown sand	X	
6	147	152	brown clay		X
6	152	157	brown sand	X	
6	157	161	brown clay		X
6	161	170	brown sand	X	
6	170	173	brown clay		X
6	173	175	brown sand	X	
6	175	196	brown sand w/clay stips	X	
6	196	201	brown clay		X
6	201	205	fine sand	X	
6	205	210	brown clay		X
6	210	217	brown sand	X	

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AUG 24 2012

WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable) 117

Date: Started 8-1-12 Completed 8-3-12

14. DRILLER'S CERTIFICATION

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

Company Name waterpro Well Drilling Co. No. 626

*Principal Driller Monte Post Date 8-6-12

*Driller _____ Date _____

*Operator II _____ Date _____

Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required.

63

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

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APR 22 2019

WATER RESOURCES
WESTERN REGION

6

1. WELL TAG NO. D 0082446

Drilling Permit No. 889221

Water right or injection well # _____

2. OWNER: Amerchoice

Name _____

Address PO Box 462

City Star State Id. Zip 83669

3. WELL LOCATION:

Twp. 5 North or South Rge. 2 East or West

Sec. 27 1/4 SW 1/4 SW 1/4

Gov't Lot _____ County Canyon

Lat. 43 ° 44.214 (Deg. and Decimal minutes)

Long. 116 ° 34.344 (Deg. and Decimal minutes)

Address of Well Site 25088 Lancing Lane

City Middleton

Lot _____ Blk. _____ Sub. Name _____

4. USE:

Domestic Municipal Monitor Irrigation Thermal Injection
 Other _____

5. TYPE OF WORK:

New well Replacement well Modify existing well
 Abandonment Other _____

6. DRILL METHOD:

Air Rotary Mud Rotary Cable Other _____

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement (method/procedure)
Bent 3/4 Chip	0	40	1550 Lbs	Pour

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Linear	Threaded	Welded
8	+2	258	.250	Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Was drive shoe used? Y N Shoe Depth(s) 258'

9. PERFORATIONS/SCREENS:

Perforations Y N Method _____

Manufactured screen Y N Type Johnson Stainless

Method of installation Washdown

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
272	282	.016		5"	Stainless	

Length of Headpipe 21'8" Length of Tailpipe 8"

Packer Y N Type K-Packer

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method
N/A				

11. FLOWING ARTESIAN:

Flowing Artesian? Y N Artesian Pressure (PSIG) _____

Describe control device _____

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) 132 Static water level (ft) 127

Water temp. (°F) Cold Bottom hole temp. (°F) _____

Describe access port _____

Well test:	Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	Test method:			
				Pump	Bailer	Air	Flowing artesian
	280	35	180	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
12	0	22	Brown Clay		X
10	22	28	Coarse dry sand		X
10	28	40	Sandy brown clay		X
8	40	96	Sandy brown clay		X
6	96	124	Dry Sand & Gravel		X
6	124	132	Brown Clay		X
6	132	134	Fine Sand	X	
6	134	180	Sandy brown clay		X
6	180	222	Cemented Sand		X
6	222	248	Fine Brown Sand	X	
6	248	271	Clay with sand streaks	X	
6	271	282	Medium Brown Sand	X	
6	282	283	Brown Clay		X

Completed Depth (Measurable): 282'

Date Started: 3/30/2019 Date Completed: 4/3/2019

14. DRILLER'S CERTIFICATION:

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

Company Name McLeran Well Drilling, LLC Co. No. 641

*Principal Driller [Signature] Date 4/18/2019

*Driller [Signature] Date 4/18/2019

*Operator I _____ Date _____

Operator II _____ Date _____

* Signature of Principal Driller and rig operator are required.

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT 60070
Use Typewriter or Ballpoint Pen

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

8

1. DRILLING PERMIT NO. 63-97-W-0225-000
Other IDWR No. _____

2. OWNER:
Name Steve Gadsill
Address P.O. Box 44
City Middletown State ID Zip 83644

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

N		Twp. <u>5</u> North <input checked="" type="checkbox"/> or South <input type="checkbox"/>	
E		Rge. <u>2</u> East <input type="checkbox"/> or West <input checked="" type="checkbox"/>	
S		Sec. <u>34</u> 1/4 <u>NE</u> 1/4 <u>NE</u> 1/4	
W		Gov't Lot _____ County <u>Canyon</u>	
		Lat: _____ Long: _____	
		Address of Well Site <u>8461 Purple</u>	
		City <u>Middletown</u>	

(Give at least one 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	
<u>Bentone</u>	<u>0</u>	<u>181</u>	<u>400</u>	<u>Powd</u>

Was drive shoe used? Y N Shoe Depth(s) 198
Was drive shoe seal tested? Y N How? Air

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
<u>6</u>	<u>42</u>	<u>198</u>	<u>0.50</u>	<u>Steel</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe _____ Length of Tailpipe _____

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

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
						<input type="checkbox"/>	<input type="checkbox"/>

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

11. WELL TESTS:

Yield gal./min.	Drawdown	Pumping Level	Time
<u>60</u>	<u>180</u>	<u>180</u>	<u>3 1/2 hrs</u>

Water Temp 56 Bottom hole temp 56
Water Quality test or comments: _____

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

Bore Dia	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
	0	2	TOP SOIL		
	2	4	Hard Pan		
	4	16	SAND & BRN CLAY		
	16	18	SAND & GRAVEL		
	18	57	" "		
	57	101	Thin CLAY		
	101	207	SHUD & CLAY layers	X	
	207	211	SAND		X

Completed Depth 210 (Measurable)
Date: Started 4-24-97 Completed 4-24-97

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 Tropic Valley Drilling Firm No. 560
Firm Official [Signature] Date 5-8-97
and _____
Supervisor or Operator _____ Date _____
(Sign once if Firm Official & Operator)

63

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

9

1. WELL TAG NO. D 0071733

Drilling Permit No. 971986-978043

Water right or injection well # _____

2. OWNER: Tradition Custom Homes

Name _____

Address 8454 Brookhaven Pl.

City Middleton State Id Zip 83624

3. WELL LOCATION:

Twp. 5 North or South Rge 2 East or West

Sec. 27 1/4 SE 1/4 SE 1/4

Gov't Lot _____ County Canyon

Lat. 43 ° 49:208 (Deg and Decimal minutes)

Long. 116 ° 33:340 (Deg and Decimal minutes)

Address of Well Site 8144 Opusky Rd.

City Middleton

Lot. 18 Blk. 1 Sub. Name Kingsbury Meadows

4. USE:

Domestic Municipal Monitor Irrigation Thermal Injection

Other _____

5. TYPE OF WORK:

New well Replacement well Modify existing well

Abandonment Other _____

6. DRILL METHOD:

Air Rotary Mud Rotary Cable Other _____

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method/procedure
<u>Robert</u>	<u>0</u>	<u>44</u>	<u>25 bags</u>	<u>Dry Pour</u>

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing Liner	Threaded	Welded
<u>6</u>	<u>42</u>	<u>337-6</u>	<u>250</u>	<u>Steel</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Was drive shoe used? Y N Shoe Depth(s) 337'-6"

9. PERFORATIONS/SCREENS:

Perforations Y N Method _____

Manufactured screen Y N Type Johnson

Method of Installation Wash DN valve

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
<u>338</u>	<u>343</u>	<u>15</u>	<u>6"</u>	<u>7de</u>	<u>Sis.</u>	

Length of Headpipe 7'-0" Length of Tailpipe 0

Packer Y N Type 3-Rib

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method

11. FLOWING ARTESIAN:

Flowing Artesian? Y N Artesian Pressure (PSIG) _____

Describe control device _____

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) 284 Static water level (ft) 169'

Water temp. (°F) 65 Bottom hole temp. (°F) _____

Describe access port 300 Seal well cap

Well test:	Test method:	Pump	Bailer	Air	Flowing artesian
Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<u>330</u>	<u>80</u>	<u>2 hrs.</u>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<u>280</u>	<u>75</u>	<u>1 hr.</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
	<u>12</u>	<u>0</u>	<u>Top Soil</u>		
		<u>4</u>	<u>Clay & Hard pan</u>		
		<u>8</u>	<u>Hard pan</u>		
		<u>11</u>	<u>Clay & Large Sand</u>		
		<u>55</u>	<u>Brn clay</u>		
		<u>61</u>	<u>Large Sand</u>		
		<u>66</u>	<u>Clay & Sand mixed</u>		
		<u>114</u>	<u>Gravel</u>		
		<u>131</u>	<u>Clay & Sand</u>		
		<u>166</u>	<u>Brn clay</u>		
		<u>171</u>	<u>med. Sand</u>		
		<u>180</u>	<u>Sandy clay</u>		
		<u>198</u>	<u>Large Sand</u>		
		<u>213</u>	<u>Sandy clay</u>		
		<u>254</u>	<u>Fractured clay & Sand</u>		
		<u>278</u>	<u>Brn clay</u>		
		<u>284</u>	<u>Fine Sand</u>		
		<u>291</u>	<u>Brn clay</u>		
		<u>294</u>	<u>Sandy clay</u>		
		<u>315</u>	<u>Fine silty Sand</u>		
		<u>322</u>	<u>Sandy clay</u>		
		<u>331</u>	<u>Brn clay</u>		
		<u>338</u>	<u>Fine lined white Sand</u>		

RECEIVED

APR 15 2016

WATER RESOURCES
WESTERN REGION

Completed Depth (Measurable): 343'

Date Started: 3-5-16 Date Completed: 3-15-16

14. DRILLER'S CERTIFICATION:

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

Company Name Precision Well Drilling Co. No. 522

*Principal Driller Jeff Dawson Date 4-7-16

*Driller _____ Date _____

*Operator II _____ Date _____

Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required.

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

63

1. WELL TAG NO. D 0067208

Drilling Permit No. 916101-872160

Water right or injection well # _____

2. OWNER:

Name Roger & Leah Csuengerich

Address 25300 Kingsbury rd.

City Middleton State IO Zip 83644

3. WELL LOCATION:

Twp. 5 North or South Rge. 2 East or West

Sec. 26 1/4 NW 1/4 SW

Gov't Lot _____ County CANYON

Lat. 43 44 ° 412 (Deg. and Decimal minutes)

Long 116 33 ° 094 (Deg. and Decimal minutes)

Address of Well Site 7951 Willow Creek dr.

City Middleton

(Give at least name of road + Distance to Road or Landmark)

Lot _____ Blk. _____ Sub. Name _____

4. USE:

Domestic Municipal Monitor Irrigation Thermal Injection

Other _____

5. TYPE OF WORK:

New well Replacement well Modify existing well

Abandonment Other _____

6. DRILL METHOD:

Air Rotary Mud Rotary Cable Other _____

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft)	Placement method/procedure
<u>7/8 Bentonite</u>	<u>0</u>	<u>40</u>	<u>1,700</u>	<u>dry pour</u>

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Liner	Threaded	Welded
<u>6"</u>	<u>42</u>	<u>277</u>	<u>250</u>	<u>steel</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Was drive shoe used? Y N Shoe Depth(s) 277

9. PERFORATIONS/SCREENS:

Perforations Y N Method _____

Manufactured screen Y N Type JOHNSON

Method of installation washdown

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
<u>277</u>	<u>282</u>	<u>.015</u>		<u>5"</u>	<u>SS</u>	

Length of Headpipe 6' Length of Tailpipe 0

Packer Y N Type H packer

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft ²)	Placement method

11. FLOWING ARTESIAN:

Flowing Artesian? Y N Artesian Pressure (PSIG) _____

Describe control device _____

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) 190 Static water level (ft) 160

Water temp. (°F) _____ Bottom hole temp. (°F) _____

Describe access port 6" well cap

Well test:	Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	Pump	Bailer	Air	Flowing artesian
	<u>220</u>	<u>.50</u>	<u>40</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
<u>10</u>	<u>0</u>	<u>5</u>	<u>TOP SOIL</u>		<input checked="" type="checkbox"/>
	<u>5</u>	<u>7</u>	<u>Gravel & red sand</u>		<input checked="" type="checkbox"/>
	<u>7</u>	<u>40</u>	<u>Sandy clay</u>		<input checked="" type="checkbox"/>
<u>6</u>	<u>40</u>	<u>108</u>	<u>Sandy clay</u>		<input checked="" type="checkbox"/>
	<u>108</u>	<u>140</u>	<u>Cemented gravel</u>		<input checked="" type="checkbox"/>
	<u>140</u>	<u>202</u>	<u>sand</u>		<input checked="" type="checkbox"/>
	<u>202</u>	<u>274</u>	<u>FINE heavy sand</u>	<input checked="" type="checkbox"/>	
	<u>274</u>	<u>277</u>	<u>clay</u>		<input checked="" type="checkbox"/>
	<u>277</u>	<u>287</u>	<u>sand</u>	<input checked="" type="checkbox"/>	

RECEIVED

 JUL 17 2014

 WATER RESOURCES
 WESTERN REGION

Completed Depth (Measurable): 282

Date Started: 6/4/14 Date Completed: 6/11/14

14. DRILLER'S CERTIFICATION:

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

Company Name Precision Well Drilling Co. No. 522

*Principal Driller _____ Date _____

*Driller Keith Spind Date 7/14/14

*Operator II _____ Date _____

Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required.

63

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

1. WELL TAG NO. D 0076906
 Drilling Permit No. 8832910
 Water right or injection well # _____

2. OWNER:
 Name Jim Stubblefield
 Address 25501 Kingbury Rd
 City Middleton State ID Zip 83644

3. WELL LOCATION:
 Twp. 5 North or South Rge. 2 East or West
 Sec. 27 SE 1/4 NE 1/4 _____ 1/4

Gov't Lot _____ County Canyon
 Lat. 43 ° 44.594 (Deg. and Decimal minutes)
 Long. 116 ° 33.174 (Deg. and Decimal minutes)
 Address of Well Site 25501 Kingbury Rd City Middleton
(Give at least name of road & distance to road at intersection)
 Lot. _____ Blk. _____ Sub. Name _____

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

5. TYPE OF WORK:
 New well Replacement well Modify existing well
 Abandonment Other _____

6. DRILL METHOD:
 Air Rotary Mud Rotary Cable Other _____

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method/procedure
<u>3/4 Chg</u>	<u>0</u>	<u>38</u>	<u>1600/lbs</u>	<u>Overbore</u>

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge/Schedule	Material	Casing	Linear	Threaded	Welded
<u>6</u>	<u>12</u>	<u>297</u>	<u>.250</u>	<u>Steel</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Was drive shoe used? Y N Shoe Depth(s) 297

9. PERFORATIONS/SCREENS:
 Perforations Y N Method _____

Manufactured screen Y N Type Johnson
 Method of installation _____

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
<u>303</u>	<u>298</u>	<u>.020</u>		<u>5"</u>	<u>S.S.</u>	<u>.250</u>

Length of Headpipe 7' Length of Tailpipe _____

Packer Y N Type K

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method
<u>NA</u>				

11. FLOWING ARTESIAN:
 Flowing Artesian? Y N Artesian Pressure (PSIG) _____
 Describe control device _____

12. STATIC WATER LEVEL and WELL TESTS:
 Depth first water encountered (ft) 115 Static water level (ft) 138
 Water temp. (°F) _____ Bottom hole temp. (°F) _____
 Describe access port _____

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	Pump	Bailer	Air	Flowing artesian
<u>280</u>	<u>70</u>	<u>2 Hrs</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
10	0	1	Gravel		
1	1	6	Brown Clay		
10	6	38	Course Sand		
6	38	42	Course Sand		
	42	97	Sand & Gravel		
	97	115	Sticky Tan Clay		
	115	123	Course Sand		X
	123	134	Sticky Tan Clay		
	134	153	S. Hy Tan Clay		
	153	155	Sticky Tan Clay		
	155	167	Course Brown Sand		X
	167	176	Sticky Tan Clay		
	176	184	Course Brown Sand		X
	184	201	Sticky Tan Clay		
	201	204	Fine Brown Sand		X
	204	239	Sticky Tan Clay		
	239	247	Fine Brown Sand		X
	247	262	S. Hy Tan Clay		
	262	265	Medium Sand		X
	265	274	Sticky Tan Clay		
	274	276	Fine Brown Sand		X
	276	299	Sticky Tan clay		
6	299	303	Medium White Sand		X

RECEIVED
AUG 31 2017
 WATER RESOURCES
 WESTERN REGION

Completed Depth (Measurable): 303
 Date Started: 8-1-17 Date Completed: 8-3-17

14. DRILLER'S CERTIFICATION:
 I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name Treasure Valley Drilling Co. No. 560

*Principal Driller [Signature] Date 8-9-17

*Driller [Signature] Date 8-3-17

*Operator I _____ Date _____

Operator [Signature] Date 8-3-17

* Signature of Principal Driller and rig operator are required.

63

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

845851 12
Office Use Only

Inspected by
Twp Rge Sec
1/4 1/4 1/4
Lat Long

1. WELL TAG NO. D 0047790
DRILLING PERMIT NO.
Other IDWR No.

2. OWNER:
Name Longbow Development
Address PO Box 670
City Middleton State ID Zip 83644

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

Map showing well location in Township 5 North, Range 2 East, Section 28. NE 1/4, NE 1/4. Address of Well Site: Off of Whispering Willow 25915 Whispering Willow St, City Middleton, Lt 7, Blk 1, Sub. Name Willow View.

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'	9 Sacks	Overbore

Was drive shoe used? X Y N Shoe Depth(s) 178'
Was drive shoe seal tested? X Y N How? Air

8. CASING/LINER:

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
6"	+2'	178'	.250	Steel	X		X	
5"	171'	179'	.250	Steel		X	X	

Length of Headpipe 8' Length of Tailpipe 0

9. PERFORATIONS/SCREENS:

Perforations Method Washdown
X Screens Screen Type Johnson

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
179'	189'	.020		5"	SS		X

10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:

68 ft. below ground Artesian pressure lb.
Depth flow encountered 180 ft. Describe access port or control devices Cap

11. WELL TESTS:

Pump Yield gal./min.	Bailer Drawdown	X Air Pumping Level	Flowing Artesian Time
60 gpm	92'	160'	1 Hr.

Water Temp. 56 Bottom hole temp 56
Water Quality test or comments:
Depth first Water Encounter 82'

12. LITHOLOGIC LOG: (Describe repairs or abandonment)

Bore Dia.	From	To	Remarks Lithology, Water Quality & Temperature	Y	N
10"	0	3'	Top Soil		
10"	3'	7'	Tan Clay		
10"	7'	18'	Tan Sand		
6"	18'	47'	Sandy Clay		
6"	47'	57'	Sticky Brown Clay		
6"	57'	88'	Gravel		X
6"	88'	94'	Brown Clay		
6"	94'	101'	Loose Brown Sand		X
6"	101'	113'	Sandy Clay		
6"	113'	118'	Brown Sand		X
6"	118'	123'	Sandy Clay		
6"	123'	137'	Brown Sand		X
6"	137'	139'	Sandy Clay		
6"	139'	144'	Brown Sand		X
6"	144'	156'	Sticky Brown Clay		
6"	156'	165'	Brown Sand		X
6"	165'	167'	Sticky Brown Clay		
6"	167'	176'	Brown Sand Fine-Med		X
6"	176'	180'	Sticky Brown Clay		
6"	180'	189'	Med - Coarse Sand		X

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MAY 09 2007

WATER RESOURCES
WESTERN REGION

Completed Depth 189' (Measurable)
Date: Started 3/27/2007 Completed 4/4/2007

13. DRILLER'S CERTIFICATION:

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

Company Name Treasure Valley Drilling Firm No. 560

Firm Official and Date 4/5/2007

Driller or Operator Date 4/5/2007
(Sign once if Firm Official & Operator)

AUG 30 2021

Form 238-7 8/07

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IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

WATER RESOURCES WESTERN REGION

13

1. WELL TAG NO. D 0090491

Drilling Permit No. 901321

Water right or injection well # 63-34958

2. OWNER: Willow Creek Whole Sale Nursery LLC

Name Willow Creek Whole Sale Nursery LLC

Address 25455 Lansing Ln.

City Middleton State ID Zip 83644

3. WELL LOCATION:

Twp. 05 North or South Rge. 02 East or West

Sec. 28 1/4 NE 1/4 SE 1/4

Gov't Lot County Canyon

Lat. 43 44.4895 (Deg. and Decimal minutes)

Long. 116 34.3756 (Deg. and Decimal minutes)

Address of Well Site 25455 Lansing Ln. City Middleton

Lot. Blk. Sub. Name

4. USE:

Domestic Municipal Monitor Irrigation Thermal Injection Other

5. TYPE OF WORK:

New well Replacement well Modify existing well Abandonment Other

6. DRILL METHOD:

Air Rotary Mud Rotary Cable Other

7. SEALING PROCEDURES:

Table with columns: Seal material, From (ft), To (ft), Quantity (lbs or ft³), Placement method/procedure. Row: 3/4 Chlp, 0, 200, 3000, Poured

8. CASING/LINER:

Table with columns: Diameter (nominal), From (ft), To (ft), Gauge/Schedule, Material, Casing Liner Threaded Welded. Row: 8, +2, 303, 375, Steel, checked boxes for Casing, Liner, Threaded, Welded

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

9. PERFORATIONS/SCREENS:

Perforations Y N Method

Manufactured screen Y N Type Johnson

Method of installation Set in

Table with columns: From (ft), To (ft), Slot size, Number/ft, Diameter (nominal), Material, Gauge or Schedule. Row: 303, 363, .25, 60, 8", SS, 375

Length of Headpipe Length of Tailpipe

Packer Y N Type

10. FILTER PACK:

Table with columns: Filter Material, From (ft), To (ft), Quantity (lbs or ft³), Placement method. Row: Silica Sand 8/16, 200, 363, 4,000, Poured

11. FLOWING ARTESIAN:

Flowing Artesian? Y N Artesian Pressure (PSIG)

Describe control device Cap

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) Static water level (ft) 117

Water temp. (°F) 68 Bottom hole temp. (°F) 66

Describe access port Well cap

Well test table with columns: Drawdown (feet), Discharge or yield (gpm), Test duration (minutes), Test method: Pump, Baser, Air, Flowing artesian. Row: 46, 500, 150, checked Pump, Baser, Air, Flowing artesian

Water quality test or comments:

13. LITHOLOGIC LOG and/or repairs or abandonment:

Lithologic log table with columns: Bore Dia. (in), From (ft), To (ft), Remarks, lithology or description of repairs or abandonment, water temp., Water Y N. Rows include Top Soil, Gravel, Brown Clay w/Sands, Brown Clay, Clay w/Sands, Sands, Clay, Clay w/ Sand strips, Gravel, Sands, Gravels and Sands, Gray Clay, Sandy Clay, Sands, Sandy Clay, Clay, Sands, Clay w/ Sands, Sands, Clay, Sands, Coarse Sands, Sands, Sandy Clay, Sands, Clays w/ fine Sand, Sands, Clay w/ Sand layers, Sands, Clay w/ fine Sand

Completed Depth (Measurable): 363

Date Started: 08/11/21 Date Completed: 08/16/21

14. DRILLER'S CERTIFICATION:

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

Company Name Treasure Valley Drilling Co. No. 560

Principal Driller Date 08/24/2021

Driller Date

Operator II Date

Operator I Date

* Signature of Principal Driller and rig operator are required.

IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

1. WELL TAG NO. D 0090491

Drilling Permit No. _____
 Water right or injection well # _____
2. OWNER: Willow Creek Wholesale Nursery LLC
 Name Willow Creek Wholesale Nursery LLC
 Address 25455 Lansing Lane
 City Middleton State ID Zip 83844

3. WELL LOCATION:

Twp. 05 North or South Rge. 02 East or West
 Sec. 28 1/4 NE 1/4 SE 1/4

Gov't Lot _____ County _____
 Lat. 43 44.4895 (Deg. and Decimal minutes)
 Long. 116 34.3756 (Deg. and Decimal minutes)

Address of Well Site
25455 Lansing Lane City Middleton
(Show street name or road + Distance to Road or Corner)
 Lot _____ Blk. _____ Sub. Name _____

4. USE:

Domestic Municipal Monitor Irrigation Thermal Injection
 Other _____

5. TYPE OF WORK:

New well Replacement well Modify existing well
 Abandonment Other _____

6. DRILL METHOD:

Air Rotary Mud Rotary Cable Other _____

7. SEALING PROCEDURES:

Seal material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method/procedure
3/4 Chip	0	200	3,000 lbs	Poured

8. CASING/LINER:

Diameter (nominal)	From (ft)	To (ft)	Gauge Schedule	Material	Casing Liner Threaded Welded			
					<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8	+2	303	.375	Steel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Was drive shoe used? Y N Shoe Depth(s) _____

9. PERFORATIONS/SCREENS:

Perforations Y N Method _____
 Manufactured screen Y N Type Johnson
 Method of installation Set in

From (ft)	To (ft)	Slot size	Number/ft	Diameter (nominal)	Material	Gauge or Schedule
303	363	.25	60	8"	SS	.375

Length of Headpipe _____ Length of Tailpipe _____

Packer Y N Type _____

10. FILTER PACK:

Filter Material	From (ft)	To (ft)	Quantity (lbs or ft ³)	Placement method
SilicaSand 8/16	200	363	4,000 lbs	Poured

11. FLOWING ARTESIAN:

Flowing Artesian? Y N Artesian Pressure (PSIG) _____
 Describe control device Cap

12. STATIC WATER LEVEL and WELL TESTS:

Depth first water encountered (ft) _____ Static water level (ft) 117
 Water temp. (°F) 68 Bottom hole temp. (°F) 68
 Describe access port Well Cap

Well test:

Drawdown (feet)	Discharge or yield (gpm)	Test duration (minutes)	Pump	Boiler	Air	Flowing artesian
46	500	150	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Test method:
 Pump Boiler Air Flowing artesian

Water quality test or comments: _____

13. LITHOLOGIC LOG and/or repairs or abandonment:

Bore Dia. (in)	From (ft)	To (ft)	Remarks, lithology or description of repairs or abandonment, water temp.	Water	
				Y	N
12.25	305	315	Coarse Sands	X	
12.25	315	317	Clay		X
12.25	317	322	Sands	X	
12.25	322	324	Clay		X
12.25	324	331	Sand	X	
12.25	331	362	Sand		X
12.25	362	365	Clay		X

Completed Depth (Measurable): 363
 Date Started: Aug 11, 2021 Date Completed: Aug 16, 2021

14. DRILLER'S CERTIFICATION:
 I/We certify that all minimum well construction standards were complied with at the time the rig was removed.

Company Name Treasure Valley Drilling Co. No. 560
 *Principal Driller [Signature] Date 08/24/2021
 *Driller _____ Date _____
 *Operator II _____ Date _____
 Operator I _____ Date _____

* Signature of Principal Driller and rig operator are required.

IDAHO DEPARTMENT OF WATER RESOURCES
WELL DRILLER'S REPORT

14

838641

Office Use Only
Well ID No. 409008
Inspected by _____
Twp _____ Rge _____ Sec _____
1/4 _____ 1/4 _____ 1/4 _____
Lat: _____ : _____ : _____ Long: _____ : _____ : _____

Page #1

1. WELL TAG NO. D 0047168
DRILLING PERMIT NO. 893314-838641
Water Right or Injection Well No. 63-32182 (CITY OF MIDDLETON)

2. OWNER:
Name REC. LLC, CITY OF MIDDLETON
Address 96 DARIN TAYLOR, 509 S. MIDDLETON BL., #105
City MIDDLETON State ID Zip 83644

3. LOCATION OF WELL by legal description:
You must provide address or Lot, Blk, Sub. or Directions to well WELL #8
Twp. 5 North or South
Rge. 2 East or West
Sec. 31 1/4 _____ SE 1/4 _____ NW 1/4 _____
Gov't Lot _____ County CANYON
Lat: _____ Long: _____
Address of Well Site MEADOW PARK BLVD. + CROSSING
AVE City MIDDLETON
Lt. 10 Blk. 4 Sub. Name THE CROSSING AT
MEADOW PARK

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 REVERSE

7. SEALING PROCEDURES

Seal Material	From	To	Weight / Volume	Seal Placement Method
BENTONITE	0	275	4A.500	DRY POUR
BENTONITE	480	493	2.500	" "

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

8. CASING/LINER: 18" x 10" REINFORCED @ 278'

Diameter	From	To	Gauge	Material	Casing	Liner	Welded	Threaded
18	48	278	375	STEEL	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
10	278	298	365	STEEL	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
10	338	418	365	STEEL	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Length of Headpipe _____ Length of Tailpipe _____
Packer Y N Type _____

9. PERFORATIONS/SCREENS PACKER TYPE

Perforation Method _____
Screen Type & Method of Installation JOHNSON WIRE WRAP

From	To	Slot Size	Number	Diameter	Material	Casing	Liner
298	338	.030		10	S.S.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
418	428	.030		10	S.S.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
446	456	.030		10	S.S.	<input checked="" type="checkbox"/>	<input type="checkbox"/>

10. FILTER PACK

Filter Material	From	To	Weight / Volume	Placement Method
#8-18 SAND	275	368	11.000	DRY POUR
#8-18 SAND	398	460	7.000	DRY POUR

11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:
52 ft. below ground Artesian pressure _____ lb.
Depth flow encountered _____ ft. Describe access port or control devices:
1 1/2" PIPE ON SIDE

12. WELL TESTS:

Pump Bailor Air Flowing Artesian

Yield gal/min	Drawdown	Pumping Level	Time
2600 gpm	100	152	8 hrs

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

13. LITHOLOGIC LOG: (Describe repairs or abandonment)

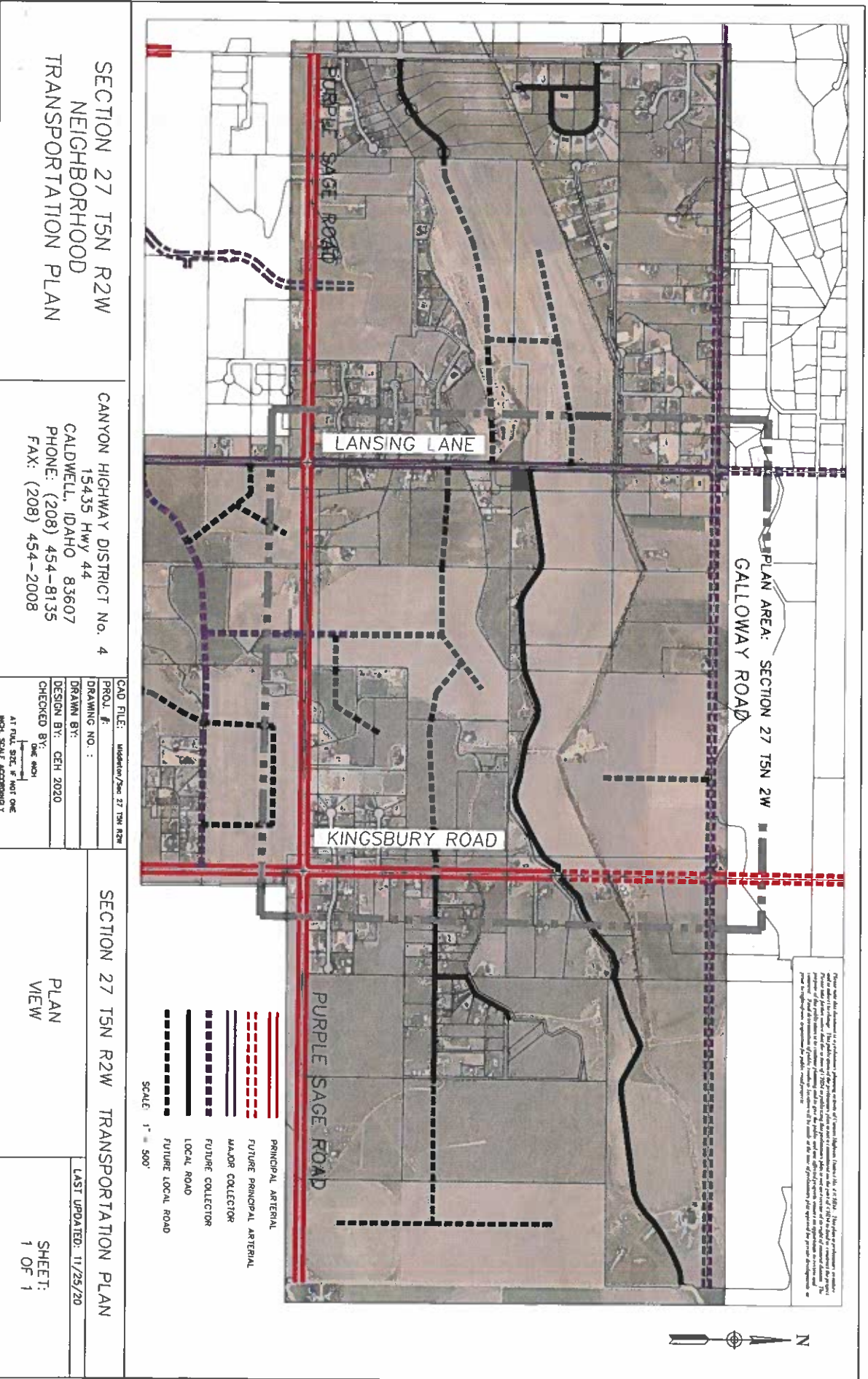
Bore Dia.	From	To	Remarks: Lithology, Water Quality & Temperature	Y	N
28	0	10	TOP SOIL		
	10	19	COARSE SAND		
	19	25	BRN CLAY		
	25	70	COARSE SAND, GRAVEL		
	70	76	BRN CLAY		
	76	83	FINE SAND		
	83	117	BRN CLAY w/sm SAND LAYERS		
	117	173	FINE-MED SAND		
	173	191	BRN CLAY		
	191	200	COARSE SAND		
	200	288	CLAY w/sm SAND STREAKS		
20	288	300	TAN CLAY		
	300	317	FINE-COARSE SAND		
	317	321	BRN CLAY		
	321	342	FINE-COARSE SAND		
	342	351	TAN CLAY		
	351	355	FINE SAND		
	355	378	TAN CLAY		
	378	381	MED. SAND		
	381	421	TAN CLAY w/SAND STREAK		
	421	433	FINE-MED SAND		
	433	439	BRN CLAY		
	439	483	FINE SAND w/sm CLAY STREAKS		
	483	488	BRN CLAY		
	488	493	COARSE-MED BLUE SAND		

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DEC 14 2006
WATER RESOURCES
WESTERN REGION

Completed Depth _____ (Measurable)
Date: Started 9-14-06 Completed 11-10-06

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

Company Name RIVERSIDE INC Firm No. 333
Principal Driller [Signature] Date 12-5-06
and Driller or Operator II [Signature] Date 12-5-06
Operator I [Signature] Date 12-5-06
Principal Driller and Rig Operator Required.
Operator I must have signature of Driller/Operator II.



This plan and the information on it are preliminary. Engineering is in progress. It is subject to change without notice. It is not to be used for any other purpose than that for which it was prepared. The user assumes all liability for any use of this information for any other purpose. The user assumes all liability for any use of this information for any other purpose.

- PRINCIPAL ARTERIAL
 - FUTURE PRINCIPAL ARTERIAL
 - MAJOR COLLECTOR
 - FUTURE COLLECTOR
 - LOCAL ROAD
 - FUTURE LOCAL ROAD
- SCALE: 1" = 500'

SECTION 27 T5N R2W NEIGHBORHOOD TRANSPORTATION PLAN		CANYON HIGHWAY DISTRICT NO. 4 15435 HWY 44 CALDWELL, IDAHO 83607 PHONE: (208) 454-8135 FAX: (208) 454-2008	
CAD FILE: <i>Midwest/Plan 27 T5N R2W</i>		PROJ. #:	
DRAWING NO.:		DRAWN BY:	
DESIGN BY: CEH 2020		CHECKED BY: <i>One inch</i>	
AT FULL SIZE, IF NOT ONE INCH SCALE, APPROXIMATE.			
SECTION 27 T5N R2W TRANSPORTATION PLAN PLAN VIEW		LAST UPDATED: 11/25/20	
		SHEET: 1 OF 1	

tabbles

EXHIBIT

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